ARCADIS



Long-Term Monitoring 2024 Data Summary Report

Watervliet Arsenal

Watervliet, New York

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Andrew R. Vitolins
Vice President



Stefan Bagnato.
Principal Geologist

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Data Summary Report

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Watervliet Arsenal
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Prepared by:
Arcadis US, Inc.
646 Plank Road, Ste 100
Clifton Park, NY 12065

Our Ref.:
30231255

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ACRONYMS

AGC	Annual Guideline Concentration
ASP	Analytical Services Protocol
cDCE	Cis-1,2, Dichloroethene
CMMP	Corrective Measures Monitoring Plan
CVOC	Chlorinated Volatile Organic Compound
DAR	Division of Air Resources
GAC	Granular Activated Carbon
HRC	Hydrogen-Release Compound
ICM	Interim Corrective Measures
IRP	Installation Restoration Program
LTM	Long Term Monitoring
MMA	Main Manufacturing Area
NAP	Natural Attenuation Parameters
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	Tetrachloroethene
PDB	Passive Diffusion Bag
RCRA	Resource Conservation and Recovery Act
RFI	Remedial Field Investigation
SA	Siberia Area
SGC	Short-Term Guideline Concentrations
SSDS	Sub-Slab Depressurization Systems
SVOC	Semi-Volatile Organic Compounds
TCA	1, 1, 1-Trichloroethane
TCE	Trichloroethylene
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
WVA	Watervliet Arsenal

1. Introduction

1.1 Purpose

Arcadis US, Inc. has been retained by the Watervliet Arsenal (WVA) to implement the Long-Term Monitoring Plan (LTM Plan) and vapor intrusion Interim Corrective Measures (ICMs) under the Installation Restoration Program (IRP) for the WVA in Watervliet, New York. Long-term monitoring is being conducted at the WVA in support of groundwater investigations and corrective measures that have been conducted at the WVA under a United States Environmental Protection Agency (USEPA) Administrative Order on Consent (Docket No. II RCRA-3008(h)-93-0210). In accordance with the results and recommendations of the Vapor Intrusion Investigation Report, Watervliet Arsenal, Watervliet, New York (Malcolm Pirnie 2008), and subsequent discussions and agreements between the WVA, the New York State Department of Environmental Conservation (NYSDEC), and the New York State Department of Health (NYSDOH), the WVA also implemented ICMs in the form of sub-slab depressurization systems (SSDSs) to mitigate vapor intrusion impacts at eight buildings within the Main Manufacturing Area of the WVA. In accordance with the LTM Plan, its subsequent approved modifications, and the ICM Work Plan (Malcolm Pirnie, 2009), the purpose of this report is to summarize the data collected during the July 2024 LTM groundwater monitoring event and 2024 data for the vapor intrusion ICMs.

1.2 Facility Description

The WVA encompasses approximately 140 acres in and around the City of Watervliet, New York, approximately 3.5 miles northeast of the City of Albany (**Figure 1-1**). To the east of the WVA, Broadway Street and a six-lane interstate highway (I-787) separate the WVA from the Hudson River. To the west, the WVA extends beyond the limits of the City of Watervliet into the Town of Colonie. Residential areas border the WVA to the north and south.

The WVA consists of two primary areas: (1) The "Main Manufacturing Area" (MMA), where manufacturing and administrative operations occur, comprises about 125 acres, and, (2) The "West Campus", formerly known as “Siberia Area”(SA), which is chiefly used for the storage of raw and hazardous materials, comprises about 15 acres. These areas are shown on **Figure 1-2**.

1.3 Previous and Ongoing Studies

1.3.1 Main Manufacturing Area

Several environmental studies have been conducted at the MMA of the WVA. The most comprehensive investigation, a Remedial Field Investigation (RFI), was conducted by Malcolm Pirnie, Inc. (Malcolm Pirnie) and Louis Berger & Associates, Inc. from 1995 to 1998. Previous investigations are summarized in the RFI. Two ICM studies involving in-situ groundwater remedial techniques were conducted at the MMA in the area of Buildings 25 and 40 between 2001 and 2003. Final corrective measures, in the form of in-situ chemical oxidation, were conducted at Building 40 from 2004 through 2007 in accordance with the Corrective Measures Work Plan – Building 40 Groundwater, dated July 2004 (Malcolm Pirnie, 2004). Monitoring of the wells in the Building 40 area (Building 40 Boundary Wells) was conducted separately under the Corrective Measures Monitoring Plan, Building 40 Groundwater, dated August 2004 (Malcolm Pirnie, 2004a) (CMMP) during that time, until they were added to the LTM Plan in 2009 with the approval of the NYSDEC.

A vapor intrusion investigation was performed within, and adjacent to, the MMA, and adjacent to the West Campus of the WVA, in November 2007 and February 2008 to assess whether Chlorinated Volatile Organic Compounds (CVOCs) were present in the sub-slab soil vapor beneath, and the indoor air within, buildings located in the MMA, including those that once contained degreasing operations, as well as three off-site private residences along the southeastern WVA property boundary. The evaluation also assessed whether soil vapor at the WVA southern property boundary and northern property boundary adjacent to the West Campus contained CVOCs. A total of 25 buildings in the MMA were sampled during at least one of the two investigation phases. Based on the results of the investigations, no further action was required at the off-site residences, the WVA property boundary, and at WVA Buildings 9, 18, 19, 23, 24, 35, 38, 44, 108, 110, 112, 115, 124, and 126. Sub-slab VOC concentrations at Building 15 would require monitoring of the indoor air, but not corrective measures. VOCs detected in the sub-slab at Buildings 116 and 123 were also in the range where indoor air monitoring would be required. However, since Building 116 is not occupied and Building 123 is only periodically used for painting operations, no monitoring would be conducted at these buildings. Indoor air monitoring would be conducted at Buildings 116 and 123 if the use of either building changes in the future. The buildings that required interim corrective measures are summarized in **Table 1-1** below.

Table 1-1 – Buildings Requiring Soil Vapor Interim Corrective Measures

Building	Impacted Media	Target Chlorinated VOCs
20	Sub-Slab Soil Vapor	PCE, TCE, TCA
21	Sub-Slab Soil Vapor	TCE
22	Sub-Slab Soil Vapor	TCE
25	Indoor Air, Sub-Slab Soil Vapor	TCE, TCA
114	Indoor Air, Sub-Slab Soil Vapor	PCE, TCE
120	Sub-Slab Soil Vapor	PCE, Carbon Tetrachloride
121	Sub-Slab Soil Vapor	TCE
130	Sub-Slab Soil Vapor	TCE

Notes:
PCE – Tetrachloroethene
TCE – Trichloroethene
TCA – 1,1,1-Trichloroethane

The construction, installation, and startup testing of the SSDSs were completed on September 3, 2010, and summarized in the Construction Certification Report (Malcolm Pirnie, 2010). Annual operation, maintenance, and monitoring of the MMA SSDSs was reported separately through 2011 and added to the annual LTM Report in 2012 with the approval of the NYSDEC.

1.3.2 Building 35 Plating Area

In August 2018, the WVA discovered a subsurface release of chromic acid plating solution in the area next to the 120-mm Gun Pit plating pit in Building 35. The release was associated with ventilation duct work that runs underground from the plating area to the air scrubber system. In conjunction with the necessary repairs to their plating systems, the WVA excavated hexavalent chromium-impacted soil from the vicinity of the underground ventilation duct work in August 2018. Arcadis conducted a Site Investigation in 2019 to further characterize the magnitude and extent of groundwater impacts associated with the chromic acid release at Building 35. The results of that investigation were summarized in the Plating Area Site Investigation Report, completed in June 2020 (Arcadis, 2020). Additional delineation and sampling efforts during the Site Investigation showed that overburden groundwater impacted by hexavalent chromium was present to the south and east of the release area following the 2018 excavation at concentrations up to 0.4 mg/L in adjacent groundwater and up to 260 J mg/L in the New Medium Tube (NMT) Pit. The NMT Pit was used for chrome plating and has been inoperable since the 1990s.

Due to the limited extent and migratory capacity of hexavalent chromium impacts in groundwater, and existing land use controls and ongoing monitoring at the site, no further

delineation or remedial actions were required at the site by NYSDEC. The Investigation Report was approved by the NYSDEC on July 8, 2020, and the spill case was closed in October 2020. Sampling of the NMT Pit sump, WVA-AW-35-MW-12, and 93EM-SP-11 for hexavalent chromium was added in 2020/2021 to the WVA's existing Long-Term Monitoring program to monitor conditions in this area. The NMT Pit is pumped dry immediately prior to sampling and sampled using a bailer. Down-gradient wells are sampled by traditional low-flow methods.

1.3.3 West Campus

An RFI was conducted by Malcolm Pirnie at the West Campus from 1994 to 1995. Additional investigations and ICMs were completed by Malcolm Pirnie from 1996 to 2002. The CMS Report for West Campus was approved in August 2003. The CMS Certification Report was approved by the NYSDEC and USEPA in 2007. The ICMs are summarized in the CMS report. The Statement of Basis for the West Campus was issued in 2008.

A voluntary subsurface investigation of the West Campus was conducted in 2024 to support the planning for a potential new manufacturing building. The objective of this investigation was to fill existing data gaps and collect sufficient information prior to planned redevelopment to evaluate if additional remediation through source removal, new treatment systems, and/or relocated treatment systems will be required prior to and/or during construction. The results of this investigation will be reported in 2025.

1.4 Generalized Site Geology and Hydrogeology

1.4.1 Main Manufacturing Area

The major overburden unit identified in the MMA is fill, consisting of brown or dark gray silty sand with angular gravel. The fill material is the only unit consistently found throughout the site, with the thickest amount of fill being in the eastern portion of the MMA. Underlying the fill are the following native overburden units: a fine-grained alluvium, a coarser alluvium, and glacial till. These units are not present in all areas of the site.

The bedrock underlying the site is a black, medium-hard laminated shale, showing some characteristics of minor metamorphism. This shale is part of the Snake Hill Formation. The bedrock can be described in three ways based on the degree of weathering observed. The first is an extremely weathered zone approximately four feet thick. This extremely weathered bedrock unit was encountered at depths ranging from near ground

surface to approximately 20 feet below ground surface (bgs). Beneath this extremely weathered bedrock is a zone of less weathered shale showing minimal competency. Competent bedrock is generally encountered at depths ranging from approximately 1.5 feet bgs to 18 feet bgs.

A majority of the MMA is relatively impervious to rainfall except at the residential and recreational areas of the northeastern portion of the WVA. Due to the shallow depth of bedrock and the limited amount of overburden in several areas of the WVA, groundwater is encountered within different geologic units (overburden, weathered bedrock, or bedrock) depending on the location. For instance, groundwater is encountered in the bedrock at the western end of WVA (topographic high and local recharge area); progressing eastward toward the Hudson River, groundwater is encountered in the weathered bedrock and then in the overburden deposits.

Groundwater flow in bedrock in the MMA is primarily controlled by the degree of fracturing within the bedrock itself and in the local recharge area, which is coincident with a topographic high along a bedrock ridge in the central portion of the facility. The most prominent feature on the potentiometric surface is a groundwater divide trending approximately north to south through Buildings 135 and 125. This feature appears to mirror the bedrock ridge. The primary discharge area for groundwater from the Main Manufacturing Area is the Hudson River, which is located to the east of WVA. For the area surrounding Building 25, groundwater in each of the hydrostratigraphic units flows from west to east towards the Hudson River, with a component of flow to the northeast. In the Building 40 area, groundwater in the bedrock unit flows to the east-southeast. West of the groundwater divide, shallow groundwater flow discharges toward the Kromma Kill, which ultimately flows into the Hudson River.

1.4.2 West Campus

According to the "Surficial Geologic Map of New York - Hudson-Mohawk Sheet, 1987", a majority of the SA is underlain by recent alluvial deposits. These are defined as fine sand and gravel deposits overlain by silt. The SA, which is at a lower elevation than the MMA of the WVA located to the east, is generally underlain by a layer of fill (sand, shale fragments, slag, cinders, brick, wire, wood and concrete). Alluvium, lenses of peat, and lacustrine clay deposits were encountered beneath the layer of fill material. Bedrock beneath the SA is also the Snake Hill shale. During the SA investigation, highly weathered shale was encountered from approximately 3.5 feet bgs to 31 feet bgs. In general, competent bedrock was encountered at approximately 12 feet bgs. The upper

portion of the competent bedrock was found to be fissile and highly fractured with 45-to-60-degree bedding planes.

Groundwater flows generally to the north-northwest in the NE Quadrant of the SA, and generally to the west across the remainder of the SA. The water table responds quickly to recharge events, and during times of low precipitation the water table may be present in the shale bedrock over portions of the SA. However, on the average, the water table is encountered in the overburden. Surface water in the SA that does not infiltrate is generally directed into the existing storm sewers. The WVA storm sewers are connected to the City of Watervliet storm sewer network.

2. Groundwater Field Sampling

2.1 Sampling Dates and Methods

Monitoring was conducted on July 16, 17, and 18, 2024 and August 15, 2024. Monitoring wells currently sampled as part of the LTM are listed in **Tables 2-1** and **2-2** and shown on **Figures 2-1** and **2-2**. In accordance with the NYSDEC Well Decommissioning Approval Letter dated June 18, 2024, and prior approvals for well decommissioning in previous years, 38 groundwater monitoring wells were decommissioned between September 23, 2024 and September 30, 2024. Additional information is included in Section 8 of this report. Groundwater sampling was conducted according to the USEPA protocol for Low Stress (Low Flow) Purging and Sampling (USEPA, 1998) using peristaltic pumps. In accordance with the NYSDEC LTM 2015 approval letter dated January 28, 2015, all wells that are sampled for only VOCs in any given year are sampled using passive diffusion bag (PDB) samplers. Prior to sampling, water levels in each well were measured. Water levels were consistent with groundwater elevations from previous sampling events.

In accordance with the LTM Plan and subsequent approved modifications, groundwater samples were analyzed by Pace Analytical, a New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP)-certified laboratory, for volatile organic compounds (VOCs). Additional laboratory analyses, including RCRA-listed metals and hexavalent chromium, were also performed at select locations listed in the LTM Plan. Analytes for each well are summarized in **Tables 2-1** and **2-2**. Field parameters, consisting of temperature, pH, specific conductivity, dissolved oxygen, oxidation-reduction potential, and turbidity were measured during purging using a Horiba U-52 water quality meter equipped with a flow-through cell. Sampling methods, specific analytical methods, and sampling locations are discussed in detail in the LTM

Plan. Purge logs for the 2024 monitoring event are presented in **Appendix A**. Analytical laboratory reporting forms for 2024 monitoring event are presented in **Appendix B**.

2.2 Sampling Summary

In accordance with the LTM Plan, a total of 35 MMA wells (including all zones of the five Building 40 Boundary wells included in the LTM Plan), plus one sample collected from the New Medium Pit (NMT) Pit in Building 35, and 11 West Campus wells (including four sewer monitoring points) were scheduled for sampling during the 2024 monitoring event. As shown in **Table 2-3**, three locations scheduled for sampling in the MMA and one location in the West Campus were not sampled during the 2024 monitoring event, due to insufficient water for sampling.

Fifteen sampling zones within five MMA wells (multi-level wells WVA-MW-82R through WVA-MW-86R) were added to the LTM Plan in 2009 and are sampled annually to monitor the bedrock groundwater quality in the vicinity of Building 40 following the corrective measures described in Section 1.3.1.

Two monitoring wells (WVA-AW-35-MW-12 and 93EM-SP-11) and one chrome plating pit (NMT Pit) were added to the LTM Plan in 2021 and are sampled annually to monitor groundwater quality in the vicinity of the Building 35 Chrome Scrubber following the corrective measures described in Section 1.3.2. WVA-AW-35-MW-12 was not sampled in 2024 due to insufficient water for sampling.

3. Groundwater Sampling Results

3.1 Main Manufacturing Area Analytical Results

Summary tables presenting results for each MMA well sampled during LTM are included in **Appendix B**. **Figure 3-1**, **Figure 3-10**, and **Table 3-1** summarize exceedances of NYSDEC Class GA standards for groundwater samples collected from the MMA LTM monitoring wells in the 2024 LTM sampling event.

3.1.1 VOCs

As listed on **Figure 3-1** and in **Table 3-1**, NYSDEC Class GA standards for VOCs were exceeded in samples collected from 17 of the 32 MMA LTM monitoring wells analyzed for VOCs during the 2024 monitoring event. Historically, VOC concentrations in MMA groundwater samples have exceeded Class GA standards in four general areas:

- East of Building 40;
- East of Building 25;
- East of Building 20; and
- In the area of Buildings 121/114.

Concentrations of tetrachloroethene (PCE) in the MMA groundwater samples to the east of Building 15 (94EM-MW-20 and 94EM-MW-21) exceeded the Class GA standard in 2018 and 2019. PCE was detected at concentrations exceeding standards in groundwater samples from these locations for the first time in 2018. However, as PCE was not detected at these locations during the 2020-2024 sampling events, earlier exceedances may have been anomalous.

There were discrepancies with the VOC concentrations in the groundwater samples collected from 94EM-MW-19 east of Building 15 and WVA-MW-85R-2 east of Building 40 during the 2023 event. Arcadis' evaluation of the data in comparison to long term trends including 2024 results from these wells suggest that the laboratory accidentally switched the sample results. The 2024 VOC results from these wells depicted more typical concentrations in line with long term trends at each location, thus confirming that a laboratory mistake in 2023 likely occurred.

Concentrations of trichloroethene (TCE) and cis-1,2-Dichloroethene (cDCE) in the MMA groundwater samples collected to the east of Building 20 at WVA-AW-MW-35 have generally exceeded the Class GA standards since the late 1990s. Since 2020, concentrations of TCE have been less than the GA Standard of 5 µg/l (or non-detect). In 2024, TCE slightly exceeded the Standard (5.07 µg/l). During the 2024 sampling event, cDCE exceeded the GA Standard of 5 µg/L (17.7 µg/L).

3.1.2 Data Trends

Due to the spatial and geological separation between the areas of concern in the MMA long-term monitoring program, analysis of trends in concentrations of parameters over the entire MMA is not feasible. However, trends in total contaminant concentrations in samples collected from representative monitoring wells in the areas of concern discussed above have been utilized to evaluate variations in groundwater conditions.

3.1.2.1 VOCs

Figures 3-2 through **3-9** present trends in total CVOC concentrations in groundwater samples collected from the following representative LTM wells located in the listed areas of concern.

- **Building 40 Area**: MW-82R, MW-83, MW-84R, MW-85R, MW-86R.
- **Building 25 Area**: 86EM-SP-1A, 93EM-SP-11, 25-MW-2, 25-MW-3, and 25-MW-6
- **Building 20 Area**: AW-MW-35 and AW-MW-36.
- **Building 114/121 Area**: AW-MW-52, AW-MW-64, and B121-S.

3.1.2.2 Building 40

As shown on **Figures 3-2** through **3-6**, generally consistent trends in chlorinated VOC concentrations are evident in samples collected from the multi-level boundary well network east of Building 40.

In accordance with the LTM Plan's contingency evaluation protocol, well-and contaminant-specific statistical "trigger" concentrations have been established that initiate a contingency evaluation in the event groundwater monitoring data indicate a potential change in site conditions. In 2024, at the request of the NYSDEC, the "trigger" values were updated using more recent data from 2012 through 2023. **Table 3-3** presents a summary of the minimum, maximum, average, and standard deviation for each compound in each well, and lists the statistical trigger concentrations calculated from the data.

VOC concentrations in Building 40 groundwater samples from the 2024 sampling event exceeded the established trigger values (**Table 3-3**) for the following:

- cDCE, TCE and PCE in WVA-MW-82R-1;
- cDCE in MW-82R-2; and
- vinyl chloride in WVA-MW-83-1.

Increases in cDCE and vinyl chloride have been generally coincident with decreases in PCE concentrations, indicating degradation of primary contaminant mass. PCE and TCE concentrations in the sample from WVA-MW-82R-1 are well within historical ranges, despite trigger value exceedances.

3.1.2.3 Building 25

As shown on **Figure 3-7**, generally decreasing overall trends in total chlorinated VOC concentrations are evident in samples collected from monitoring wells WVA-25-MW-2 and WVA-25-MW-6. These trends are likely associated with the Hydrogen-Release Compound (HRC©) ICM pilot study at Building 25. Trends in total chlorinated VOC concentrations in samples collected from monitoring well 86EM-SP-1A are stable, and do not appear to have been affected by the HRC ICM pilot study. Data from monitoring well WVA-25-MW-3 show an overall downward trend in total chlorinated VOC concentrations, suggesting that the increase in concentration in 2017 was anomalous, likely related to the 2017 well replacement after being damaged. VOC concentrations in Building 25 area groundwater samples from the 2024 sampling event did not exceed the established trigger values in **Table 3-3**.

3.1.2.4 Building 20

As shown on **Figure 3-8**, VOC concentrations in monitoring wells WVA-AW-MW-35 and WVA-AW-MW-36 are relatively stable or decreasing.

3.1.2.5 Building 114/121

As shown on **Figure 3-9**, the generally stable or decreasing long-term trends in total chlorinated VOC concentrations evident in the sample collected from monitoring wells WVA-AW-MW-52 and WVA-AW-MW-64 continued in 2024. Vinyl chloride exceeded the established trigger value at WVA-AW-MW-64 in 2016, 2019, 2020, 2022 and 2023. An increase in vinyl chloride has been generally coincident with a decrease in PCE concentration, indicating degradation of primary contaminant mass. In 2024, no VOC concentrations in Building 114 groundwater samples exceeded the updated established trigger values in **Table 3-3**.

During review of the 2024 groundwater sampling event analytical data, it was determined that sample IDs from samples collected at monitoring wells WVA-AW-MW-52 and WVA-AW-MW-64 were inadvertently reversed in the field. These wells are in close proximity to each other and were misidentified during sampling. To remedy this field error, the results were updated in the Appendix B Analytical Results Summary tables. The corrected

concentrations are consistent with historical values and trends in each well, supporting the correction. 2025 results from WVA-AW-MW-52 and WVA-AW-MW-64 will be specifically evaluated during the next groundwater sampling event to confirm this isolated incident.

3.1.3 Metals

Historically, samples collected from select monitoring wells have been analyzed for RCRA Metals during LTM events. In recent years, RCRA metals have been analyzed at the following locations: 83DM-SP-3 (chromium only), 86EM-SP-6 (when accessible), 94EM-MW-19, 94EM-MW-20, and 94EM-MW-21. At the request of NYSDEC, beginning with the 2020 LTM event, samples from the following locations were analyzed for hexavalent chromium: 93EM-SP-11, WVA-AW-35-MW-12, and the NMT Pit. At the request of the NYSDEC, beginning with the 2021 LTM event, samples from 92EM-SP-8 were also analyzed for chromium. **Figure 3-10** and **Table 3-1** document the metals exceedances for 2024.

Chromium at 83DM-SP-3 and 86EM-SP-6 is generally either not detected or detected at a concentration less than the NYSDEC Class GA Standard of 0.05 mg/L. In 2024, chromium was not detected at 83DM-SP-3, and was detected at a concentration of 0.0219 at 86EM-SP-6. Chromium at 92EM-SP-8 (0.445 mg/L) was detected at a concentration exceeding the GA Standard in 2024. The significance of the 2024 increase in chromium at 92EM-SP-8 will be evaluated in comparison to 2025 sample results.

Chromium concentrations have generally exceeded the NYSDEC Class GA Standard of 0.05 mg/L in groundwater samples from wells 94EM-MW-19, 94EM-MW-20, and 94EM-MW-21, during most LTM events. The chromium concentration in samples from these wells exceeded the GA Standard of 0.05 mg/L in 2024. The concentration of lead in the sample from 94EM-MW-20 (0.27 mg/L) also exceeded the GA Standard of 0.025 mg/L during the 2024 LTM event. Lead has occasionally exceeded at this location during past events, most recently in 2019 and 2022. No other metals exceeded NYSDEC Class GA Standards during the 2024 LTM event.

To monitor conditions in the vicinity of the Building 35 Plating Area, samples collected from 93EM-SP-11 and the NMT Pit were analyzed for hexavalent chromium during the 2024 LTM event. Monitoring well WVA-AW-35-MW-12 was dry during the 2024 event; therefore no sample was collected. Hexavalent chromium in the sample from 93EM-SP-11 was not detected above the laboratory reporting limit of 0.010 mg/L. The concentration of hexavalent chromium in the NMT pit sample (0.240 mg/L) exceeded the GA Standard of 0.05 mg/L.

3.2 West Campus Analytical Results

3.2.1 VOCs

Figure 3-11 and **Table 3-2** summarize exceedances of NYSDEC Class GA standards for groundwater samples collected from West Campus monitoring locations during the 2024 LTM event. As shown on **Figure 3-11** and in **Table 3-2**, NYSDEC Class GA standards for VOCs were exceeded in samples from 8 of the 10 West Campus LTM locations collected during the 2024 monitoring event.

Historically, VOC concentrations in West Campus groundwater samples generally exceeded Class GA standards in the area of the former burn pit and in monitoring wells up-gradient of the reactive walls.

3.2.2 Data Trends

3.2.2.1 Burn Pit

Figure 3-12 presents total chlorinated VOC concentrations in wells in the area of the former burn pit up-gradient of reactive wall A with historic and/or current exceedances of NYSDEC Class GA Groundwater Standards. Despite fluctuations in chlorinated VOC concentrations over time, wells in this area generally display stable or decreasing trends, indicating that ICMs at the former burn pit and the reactive wall are successfully reducing down-gradient total chlorinated VOC concentrations.

3.2.2.2 Boundary & Sewer

Figure 3-13 presents total chlorinated VOC concentrations in boundary wells and sewer points with historic and/or current exceedances of NYSDEC Class GA Groundwater Standards. Chlorinated VOCs in sanitary sewer SNS-6 show fluctuating concentrations over time, dominantly attributed to daughter products cDCE and vinyl chloride from the breakdown of PCE and/or trichloroethene (TCE), with an overall decreasing trend. In 2018, the concentration of PCE at SNS-6 and STS-6 exceeded the GA Standard, resulting in total chlorinated VOC concentrations at these locations that were elevated in comparison to previous results. In subsequent years, PCE was not detected above laboratory reporting limits and the total chlorinated VOCs at each location returned to more typical concentrations. CVOCs in overburden boundary well WVA-SA-MW-33 have historically been non-detect. In 2024, this location had insufficient water for sampling (ie., dry well).

In 2024, concentrations of vinyl chloride at SNS-6 (6.8 µg/l) and STS-5 (3.5 µg/l) exceeded the GA Standard (2 µg/l), and cDCE at STS-6 (5.6 µg/l) exceeded the GA Standard (5 µg/l). No other CVOCs exceeded the respective GA Standards at West Siberia locations in 2024.

As discussed in Section 2.1 and Section 8, West Campus monitoring wells were decommissioned in September 2024. This included the reactive wall monitoring wells SA-MW-60 and SA-MW-70, which had been previously sampled as part of the LTM program until 2023.

Figure 3-14 presents total chlorinated VOC concentrations in wells up-gradient of reactive wall A. While chlorinated VOC concentrations have fluctuated since the beginning of long-term monitoring, there are definite downward trends for up-gradient wells. Further, total chlorinated VOCs in these wells are dominantly attributed to daughter products cDCE and vinyl chloride. These trends indicate that the ICMs at the former burn pit and the reactive wall are successfully reducing total chlorinated VOC concentrations up-gradient and down-gradient of the reactive wall, respectively.

Toluene occasionally exceeds the GA Standard of 5 µg/l at WVA-SA-MW-33, most recently in 2020 (100 µg/l); however, during the last two sampling events where water was sufficient for sampling (2021 and 2023), toluene was not detected.

4. SSDS O&M

As presented in the Construction Certification Report (Malcolm Pirnie, 2010), three types of SSDS units are used for corrective measures at the WVA.

- Type A SSDS - The Type A SSDS is used at Buildings 21 and 114. The Type A SSDSs use regenerative blowers. The effluent air from these systems was treated using vapor-phase granular activated carbon (GAC) until 2016 when it was vented directly to the atmosphere based on reduced CVOC concentrations.

- Type B SSDS - Building 20 and Building 25 use Type B SSDS. The Type B SSDS uses positive-displacement rotary-lobe blowers. These systems are used where multiple extraction wells are required to provide negative sub-slab pressures over large areas. The effluent air streams from the Type B SSDSs are combined and was treated using vapor-phase GAC until 2016 when it was vented directly to the atmosphere based on reduced CVOC concentrations.

- Type C SSDS - Buildings 21, 22, 120, 121, and 130 use Type C SSDS. The Type C SSDSs (with the exception of the Building 120 SSDS) use individual in-line fans for each extraction well. The Building 120 Type C SSDSs uses a high-pressure fan system and is connected to two extraction wells. The effluent air from the Type C SSDSs vent directly to the atmosphere.

Operation and maintenance were performed on a monthly basis in accordance with the ICM Work Plan and as described below, with the exception of April through June, 2024 due to an interruption in contract funding. All systems except Building 21 were online once O&M proceeded in July 2024. However, Building 21 system run times for 2024 were normal, indicating the offline event was brief. No other issues were encountered. A summary of the O&M data is provided in **Tables 4-1** through **4-8** with field checklists provided in **Appendix C**.

4.1 Building 20

The system operated with minor interruptions, primarily due to blower alarms that stopped the system, for a total runtime of approximately 7,673 hours during 2024. The average SSDS flow was 427 cubic feet per minute (cfm) with an average vacuum pressure of -22.6 inches of water ("H2O). Average total flows had decreased during 2020 and 2021, indicating a reduction in blower efficiency. The system did not appear able to maintain proper vacuum pressure to produce flow rates consistent with startup parameters, indicating a restriction in the system. A recommendation to replace the three extraction point screens was included in the 2020 LTM report and was approved by the NYSDEC on October 20, 2021. The screen replacement was completed in March 2022. Total flow volumes increased by approximately 60-70 cfm after screen replacement, returning to 2019 levels. In July 2024, the blower belts and oil were changed.

As discussed in Section 5.3 influent concentrations have decreased significantly to the point where GAC treatment is no longer necessary.

4.2 Building 21

The system operated with limited interruptions for a total runtime of approximately 7,365 hours during 2024. As indicated in the Construction Certification Report (Malcolm Pirnie, 2010), Building 21 uses a Type A system to mitigate the basement area (EW-1). As described in Section 4.2.2, the Type C SSDS used to mitigate the western portion of the first floor (EW-2) was taken offline in 2014.

4.2.1 Type A SSDS

The average flow rate was approximately 18 cfm and average vacuum pressure of approximately -39.61" H_2O, consistent with startup parameters. The flow meter continues to display false readings, which is suspected to be the result of high moisture in the effluent air stream. However, the false flow meter readings do not shut down or inhibit performance of the SSDS. To monitor performance of the SSDS, direct readings from the effluent air stream are measured monthly using a portable anemometer. As discussed in Section 5.3, influent concentrations have decreased significantly to the point where GAC treatment is no longer necessary.

4.2.2 Type C SSDS

Due to a diminished flow rate, likely caused by subsurface materials (known to contain high clay content) preventing communication between the extraction point and the subsurface, which was not improved with extraction point replacement, the system was turned off in April 2014. Indoor air sampling before and after the shutdown did not show negative effects of the shutdown and the NYSDEC approved termination of system operation. The system was dismantled in October 2014.

4.3 Building 22

The system for EW-1 ran with one minor interruption in 2024. EW-2 operated continuously throughout the 2024 calendar year. The average flow rates were approximately 15 and 52 cfm and average vacuum pressures of -2.5 and -1.9" H_2O, for EW-1 and EW-2, respectively, consistent with startup parameters.

4.4 Building 25

The Building 25 SSDS operated with one minor interruption for a total runtime of approximately 7,753 hours during 2024. New blower belts and oil were changed in July 2024. Influent concentrations have decreased significantly to the point where GAC treatment is no longer necessary. During 2024, the SSDS had an average flow of approximately 391 cfm and average vacuum pressure of -36.3" H_2O, consistent with startup parameters.

4.5 Building 114

The system operated continuously for a total runtime of approximately 7,735 hours during 2024. During the February 2022 O&M visit, the system was discovered to be offline with water damage in the electrical conduit due to a leak at the junction box. The damaged wire was replaced on February 18, 2022, and the system restarted. The average flow for the B114 system during 2024 was approximately 69 cfm with an average vacuum pressure of -11.8" H_2O, consistent with startup parameters. As discussed in Section 5.3, influent concentrations have decreased significantly to the point where GAC treatment is no longer necessary.

4.6 Building 120

The system operated continuously in 2024. The average flow rates were approximately 9.8 cfm, for both EW-1 and EW-2, below startup parameters. The average vacuum pressure for extraction points EW-1 and EW-2 was -6.2" and -10.1" H_2O respectively.

4.7 Building 121

The system operated with one minor interruption in 2024. The average flow was approximately 42 cfm, and the average vacuum pressure was approximately -1.7" H_2O, consistent with startup parameters.

4.8 Building 130

The system operated continuously during 2024. The average flow was approximately 44 cfm, and the average vacuum pressure was approximately -2" H_2O, consistent with startup parameters.

5. ICM Performance Monitoring - SSDS

Performance monitoring was conducted in accordance with the approved ICM Work Plan (Malcolm Pirnie, 2009). Effluent air samples were collected from the Type A and B SSDSs on January 16, 2025. Indoor air sampling was also conducted on January 15 and 16, 2025. The January 2025 indoor air results are summarized in Section 6.

5.1 Effluent Sampling

Effluent samples were collected on January 16, 2025, from the Type A (Building 21 and 114), and Type B (Building 20 and 25) SSDSs.

The purpose of the sampling was to evaluate VOC discharge mass and monitor the potential need to bring the GAC vessels back online.

5.1.1 Sampling Procedures

Effluent samples were collected from the SSDS sampling ports using 6-liter Summa Canisters equipped with thirty-minute flow-controllers. The samples were submitted to Eurofins/Air Toxics, in Folsom, California, following chain-of-custody procedures for analysis of VOCs by United States Environmental Protection Agency (USEPA) Method TO-15. In February 2024, the NYSDOH established additional Soil Vapor Matrices to include 13 petroleum compounds. The 2024 air sampling event was expanded to include reporting of the additional compounds. Analytical reporting forms are provided in **Appendix B**. A NYSDEC Division of Air Resources (DAR-1) model was performed and reported in the 2016 LTM Report, which confirmed that CVOCs are below the thresholds and GAC treatment was not needed. The 2024 SSDS effluent sample results are less than the results from 2016, indicating that GAC treatment is still not needed.

5.1.2 Sampling Results

Effluent sample results are summarized in **Tables 5-1** through **5-3**.

5.1.2.1 Building 20

1,1,1-trichloroethane (TCA), carbon tetrachloride, chloromethane, m,p-xylene, TCE, PCE, and toluene were detected in the January 2025 effluent sample. The CVOCs with the highest concentrations were TCE and PCE (24 µg/m^3 and 18 µg/m^3, respectively). The petroleum-related VOCs with the highest concentrations were toluene and m,p-xylene (0.75 µg/m^3 and 0.53 µg/m^3, respectively). The following compounds were detected at estimated concentrations below the laboratory reporting limit: 1,1-dichloroethane (1,1 DCA), 1,2,4-trimethylbenzene, 2,2,4-trimethylpentane, benzene, chloroethane, cis-1,2-dichloroethene, ethyl benzene, hexane, o-xylene, and trans-1,2-dichloroethene.

CVOC concentrations are less than the 2016 effluent sample concentrations. The Building 20 effluent sampling results are listed in **Table 5-1**.

5.1.2.2 Building 21

As shown in **Table 5-2**, the January 2025 effluent sample from the Building 21 SSDS contained cDCE, carbon tetrachloride, benzene, ethyl benzene, m,p-xylene, o-xylene, toluene, TCE and PCE. The highest concentrations of CVOCs were TCE and cDCE (28 and 14 µg/m^3, respectively). The highest concentrations of petroleum-related VOCs were toluene and benzene (2.7 µg/m^3 and 1.8 µg/m^3, respectively). The following compounds were detected at estimated concentrations below the laboratory reporting limit: 1,1 DCA, 1,2 DCA, 1,2,4-trimethylbenzene, 2,2,4-trimethylpentane, chloromethane, cyclohexane, heptane, hexane, methylene chloride, naphthalene, and trans-1,2-dichloroethene.

CVOC concentrations are less than the 2016 effluent sample concentrations.

5.1.2.3 Building 25

As shown in **Table 5-1**, the January 2025 effluent sample contained 1,1 DCA, 1,1-dichloroethene (1,1 DCE), cDCE, 1,1,1-trichloroethane (1,1,1 TCA), carbon tetrachloride, TCE, PCE, toluene, naphthalene, and benzene. The highest concentrations of CVOCs were TCE and PCE (100 and 9.9 µg/m^3, respectively). As shown in **Table 5-1**, the January 2025 CVOC concentrations are lower than the 2016 effluent total CVOC concentrations. The highest concentrations of petroleum-related VOCs were naphthalene and benzene (0.46 µg/m^3 and 0.32 µg/m^3, respectively). The following compounds were detected at estimated concentrations below the laboratory reporting limit: methylene chloride, m,p-xylene, 1,2,4-trimethylbenzene, trans-1,2-DCE, o-xylene, ethyl benzene, chloroethane, and 1,2 DCA.

5.1.2.4 Building 114

As shown in **Table 5-3**, the January 2025 Building 114 effluent air samples contained cDCE, carbon tetrachloride, TCE and PCE. The highest concentrations of CVOCs were TCE and PCE (140 and 350 µg/m^3, respectively). **Table 5-3** shows that the concentrations of these compounds are similar or less than those of the 2016 sampling event. The following compounds were detected at estimated concentrations below the laboratory reporting limit: benzene, toluene, trans-1,2 DCE, and 1,1,1 TCA.

5.2 SSDS VOC Removal Mass

Tables 5-4 through **5-7** provide a summary of the estimated VOC removal mass for the Type A and B SSDSs.

5.2.1 Building 20

As shown in **Table 5-1**, the total VOC concentration in the effluent sample from the Building 20 SSDS was 51 µg/m^3 in January 2025. As shown in **Table 5-4**, based on a flow of 119 cfm in January 2025, the Type B SSDS was removing VOCs at a rate of 0.20 pounds per year (lbs/year).

5.2.2 Building 21

As shown in **Table 5-2**, the total VOC concentration in the effluent sample from the Building 21 Type A SSDS was 58 µg/m^3 in January 2025. As shown in **Table 5-5**, based on a flow of approximately 11.2 cfm in January 2025, the Type A SSDS was removing VOCs at a rate of 0.02 lbs/year.

5.2.3 Building 25

As shown in **Table 5-1**, the January 2025 effluent samples from the Building 25 SSDS contained a total VOC concentration of 119 µg/m^3. **Table 5-6** shows that at a flow of 101 cfm in January 2025, the system was removing 0.4 lbs/year.

5.2.4 Building 114

Table 5-3 shows that the January 2025 effluent samples from the Building 114 SSDS contained total VOC concentrations of 607 µg/m^3. As shown in **Table 5-7**, based on a flow of 36.2 cfm in January 2025, the system was removing VOCs at a rate of 0.7 lbs/year.

5.3 SSDS Performance Assessment

The Type A, B, and C SSDSs continue to operate at levels consistent with startup testing performance data. Based on NYSDEC DAR-1, Guidelines for Control of Toxic Ambient Air Contaminants, the facility is assumed to comply with 6 NYCRR 212-2.2 (Rule 212) if the facility-wide actual emissions are below the mass emission limits for High Toxicity Air Contaminants (HTACs) and less than 100 pounds/year for non-HTACs. The emission from SSDS were evaluated with the other non-exempt/non-trivial air emissions sources at the facility for the Rule 212 compliance determination (**Table 5-8**). The facility-wide emissions from SSDS and the other air emission sources at the facility are below the Rule 212 limits; therefore, the facility is in compliance, the SSDS systems still do not require GAC treatment of the system effluent, and no further action is required at this time.

6. ICM Performance Monitoring - Indoor Air

6.1 Sampling Procedures

On November 4, 2024, chemical inventories were updated for buildings and rooms where indoor air samples are collected. Products with ingredients listed in their SDSs that correspond to a compound on our analyte list were flagged for removal prior to sampling. The updated chemical inventory is provided in **Appendix D**. Indoor air samples were collected on January 15 and 16, 2025. Samples were collected using 6-liter Summa Canisters in accordance with the ICM Work Plan (Malcolm Pirnie 2009). The samples were submitted to Eurofins/Air Toxics, Folsom, California, following chain-of-custody procedures for analysis of VOCs by USEPA Method TO-15. As discussed in Section 5.1.1, in February 2024, the NYSDOH established additional Soil Vapor Matrices to include 13 petroleum compounds. The 2024 air sampling event was expanded to include reporting of the additional compounds. Analytical reporting forms are provided in **Appendix B**.

6.2 Sampling Results

Indoor air sample results are summarized in **Table 6-1**. Sample locations and sample results are shown on **Figures 6-1** through **6-9**. One duplicate sample (IA-DUP) was collected at the location of IA-B121-1. As listed in **Table 6-1**, the analytical results of the duplicate sample are consistent with the parent sample results.

All 2024 sampling event results were less than the corresponding NYSDOH Air Guidance Values.

Several of the new petroleum-related VOCs were detected in indoor air samples in 2024. A majority of the detections were very low concentrations; however, a few noteworthy results are discussed below.

Building 130: Hexane (54 µg/m^3) and cyclohexane (19 µg/m^3) were detected in the indoor air sample IA-B130-1. While the chemical inventory didn't identify any products specifically listing hexane or cyclohexane as ingredients, these compounds are often found in degreasers, paints, stain removers, and inks. The chemical inventory did identify at least seven products matching this description.

Building 25: Naphthalene (3.4 µg/m^3) was detected in the indoor air sample IA-B25-2. This sample was located within Room 300. While the chemical inventory did not identify

products specifically listing naphthalene as an ingredient, this compound can often be found in emissions from building materials. Ongoing construction activities within Building 25 may have played a role in this detection. It is also important to note that the effluent sample collected from the Building 25 SSDS detected naphthalene at a lower concentration (0.46 µg/m^3), which would also indicate the compound is originating from an interior building source.

As shown below, samples from Building 25 have contained TCE at a concentration greater than NYSDOH Guidance Value of 2 µg/m^3 in previous years. In 2021 and 2022, however, results were below the Guidance Value, and in 2023, there were no detections of TCE in Building 25. In 2024, TCE detections were below the Guidance Value 2 µg/m^3.

Table 6-2 – TCE Concentrations in Building 25 Indoor Air Samples

Building 25 Sample ID	2018 TCE Results (µg/m^3)	2019 TCE Results (µg/m^3)	2020 TCE Results (µg/m^3)	2021 TCE Results (µg/m^3)	2022 TCE Results (µg/m^3)	2023 TCE Results (µg/m^3)	2024 TCE Results (µg/m^3)
IA-B25-1	**2.3**	**3.3**	**13**	0.38	ND	ND	0.75
IA-B25-2	**10**	1.6	0.24	0.16	0.97	ND	0.83
IA-B25-3	**4.3**	0.56	ND	ND	0.15	ND	0.44
IA-B25-4	0.49	1.2	ND	0.18	ND	ND	0.65
IA-B25-5	**7.3**	0.52	0.19	ND	0.53	ND	0.47

Mitigative measures, related to building activities and/or products, put in place in Buildings 25, 120 and 121 in recent years to address previous indoor air exceedances continue to be effective, as shown by indoor air concentrations well below corresponding NYSDOH Air Guidance Values.

7. ICM Summary

The Type A (Building 21 and 114) and Type B (Building 20 and 25) SSDSs were inspected in accordance with the ICM Work Plan and generally performed consistent with startup test results.

Based on total run-time hours, the Building 21 and Building 114 SSDSs operated for approximately 89 percent and 93 percent, respectively, of the total available run-time for the year. System flow is currently being monitored using an anemometer. The GAC vessels for Building 21 and 114 effluent are currently offline due to concentrations below SGCs and AGCs. No significant repairs were required to the Building 21 or 114 systems in 2024.

The Building 20 and Building 25 SSDSs each operated at approximately 93 percent and 94 percent, respectively, of the total available run-time for the year. The GAC vessels are currently offline due to concentrations below SGCs and AGCs. Blower oil and belts were changed in July 2024 for Building 20 and 25 systems.

The Type C SSDSs (Buildings 21, 22, 120, 121, and 130) were generally inspected in accordance with the ICM Work Plan. Buildings 20 and 25 blower oil and belts were replaced in July 2024. None of the other Type C SSDSs required significant repairs or had any interruptions in 2024.

Effluent samples were collected from the Type A and B SSDSs in January 2025. Based on the January 2025 sample results and SSDS flow measurements, the total annual VOC mass removed from the SSDSs ranged from 0.02 lbs/year from the Building 21 SSDS to 0.7 lbs/year from the Building 114 SSDS. GAC treatment of system remains unnecessary.

Indoor air sampling was conducted on January 15 and 16, 2025, in accordance with the ICM Work Plan.

As previously recommended in 2023, based on favorable operational and sampling data, an evaluation of all eight buildings with vapor intrusion mitigation systems is recommended in order to assess the need for continued mitigation. This evaluation would involve a full soil vapor intrusion investigation, with pairings of sub-slab and indoor air samples at each building at comparable locations to those noted in the 2008 investigation report, for consistency with and comparison to data collected in 2007/2008. This

evaluation would also provide pertinent data to compare the newly reported petroleum compounds in indoor air to relevant sub-slab samples.

8. Removal of Monitoring Wells from LTM Program

In September 2024, 38 monitoring wells were decommissioned that had been approved for removal from the LTM Program by the NYSDEC between 2006 and 2024. One additional well was planned for decommissioning after approval from the NYSDEC was granted due to construction activities. A summary of these wells is included as **Table 8-1**. Decommissioning logs are included as **Appendix E**.

9. Conclusions and Recommendations

9.1 Conclusions

The following conclusions can be drawn based on the data generated during the 2024 LTM event.

1. In general, VOC concentrations in groundwater in the MMA are stable or decreasing.

2. VOC concentrations in groundwater in the area of the former burn pit and current permeable reactive walls in the West Campus are stable or decreasing.

3. Concentrations of hexavalent chromium in groundwater near Building 35 have decreased since 2019. Chromium, which is analyzed at select locations in the MMA, generally shows stable or decreasing trends. Chromium at 92EM-SP-8 (0.445 mg/L), adjacent to the Industrial Wastewater Treatment Plant, was detected at a concentration exceeding the GA Standard in 2024. The significance of the 2024 increase in chromium at 92EM-SP-8 will be specifically evaluated in comparison to 2025 sample results.

4. VOC mass removal in the Type A and B SSDSs ranged from 0.02 lbs/year (Building 21) to 0.7 lbs/year (Building 114).

5. 2024 CVOC concentrations in the SSDS effluent remain consistent with those observed in 2023. GAC treatment of Type A and B SSDS effluent remains unnecessary.

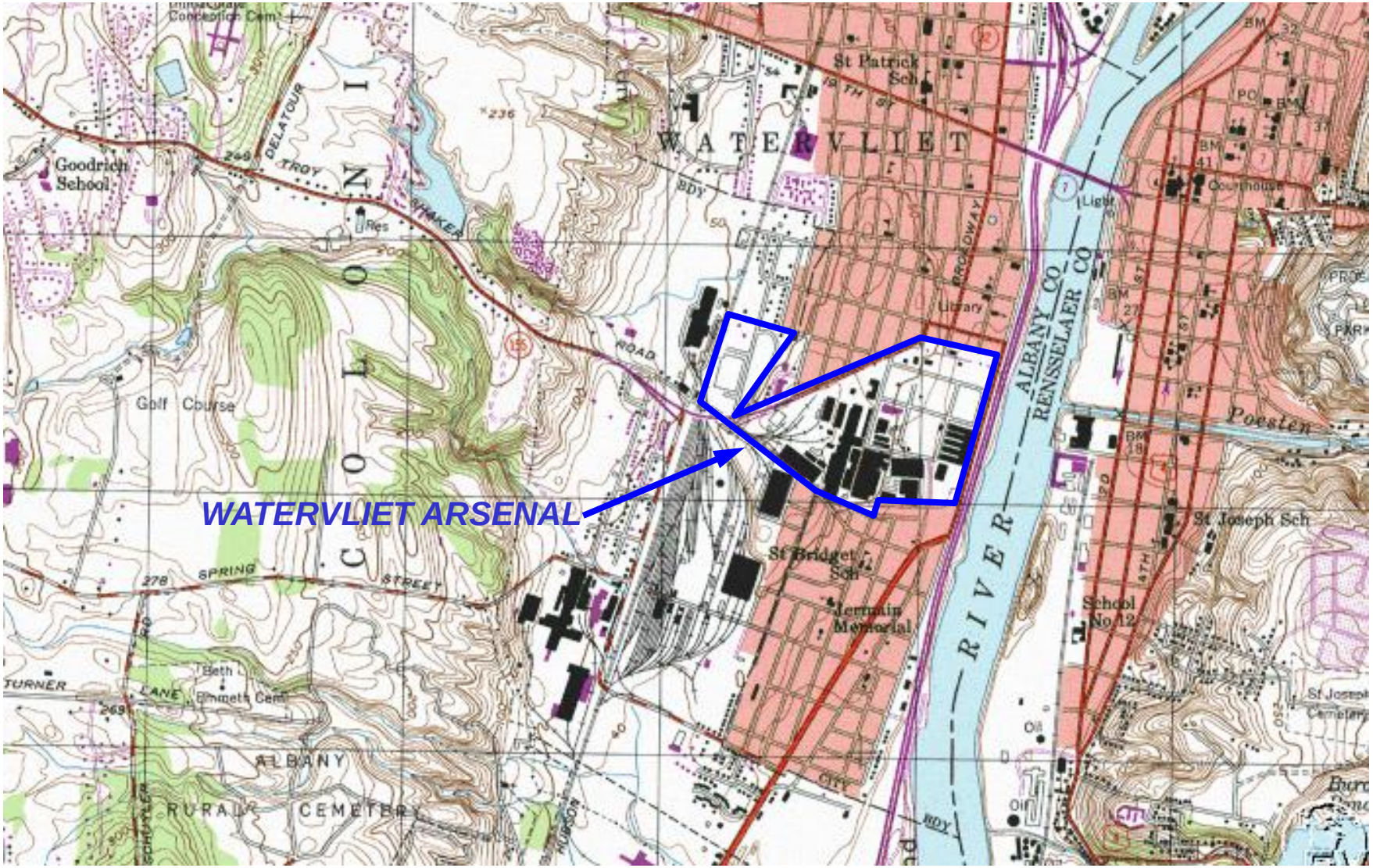
9.2 LTM Modifications and Recommendations

1. In 2010, WVA implemented and began monitoring ICMs in the form of SSDSs to mitigate vapor intrusion impacts at eight buildings within the MMA of the WVA. Based on favorable operational and sampling data, it is recommended that the need for continued SSDS operation be evaluated using soil vapor intrusion sampling following temporary system shutdowns during the heating season. A work plan would be submitted to NYSDEC for review and approval prior to the evaluation.

2. In accordance with the LTM Plan's contingency evaluation protocol, well-and contaminant-specific statistical "trigger" concentrations have been established that initiate a contingency evaluation in the event groundwater monitoring data indicate a potential change in site conditions. In 2024, at the request of the NYSDEC, the "trigger" values were updated using data from 2012 through 2023.

ARCADIS

Figures



SOURCE: U.S.G.S 7.5 MIN. TROY SOUTH QUADRANGLE

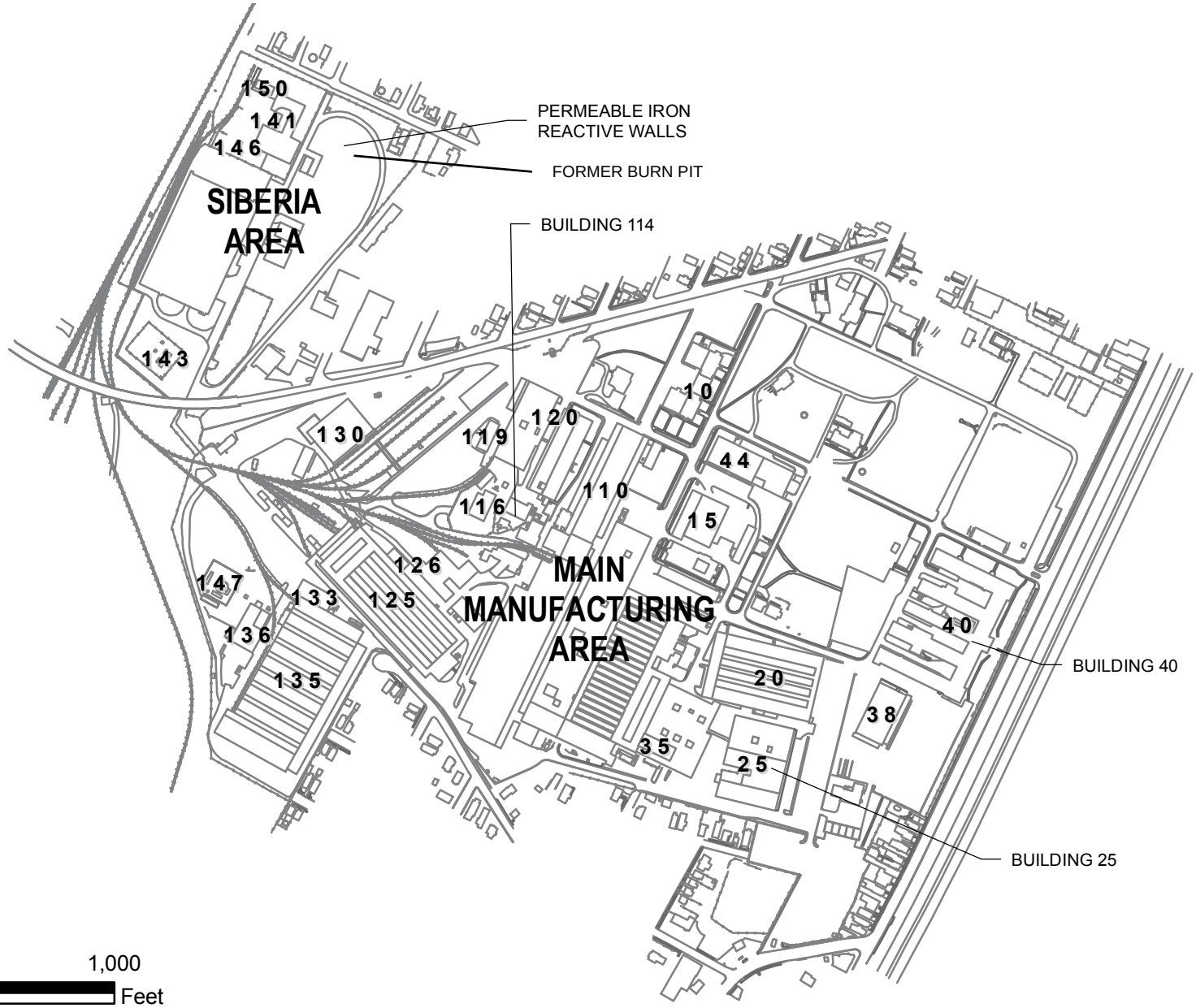
US Army Corps of Engineers
Baltimore District

WATERVLIET ARSENAL
WATERVLIET, NEW YORK

SITE LOCATION

FIGURE 1-1

G:\GISMOD\WatervlietArsenal\LTM\Figures\WVA Site Plan.mxd



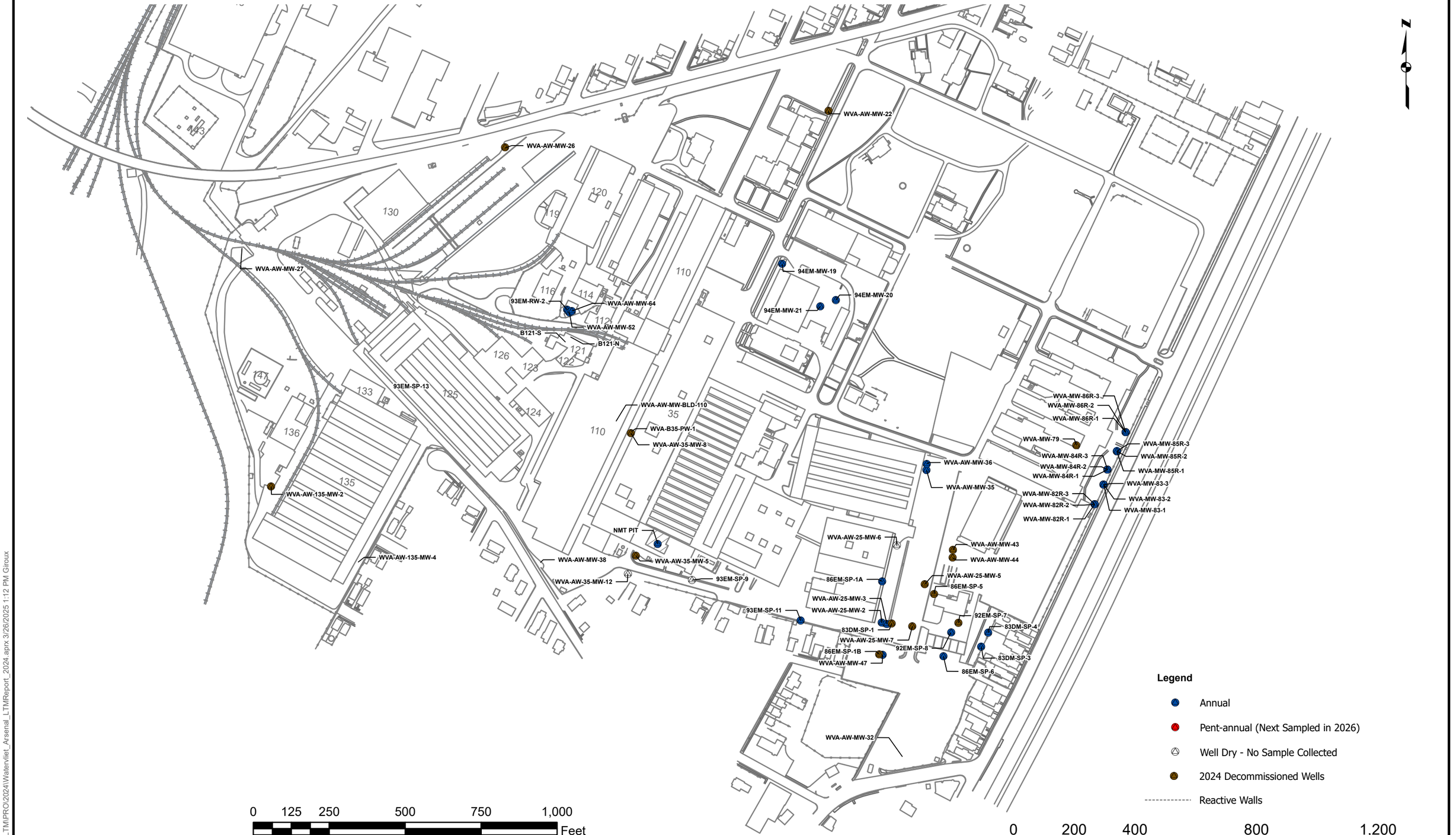
US Army Corps of Engineers

LONG-TERM MONITORING PROGRAM
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

SITE MAP

ARCADIS-MALCOLM PIRNIE

FIGURE 1-2



US Army Corps of Engineers

LONG-TERM MONITORING
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

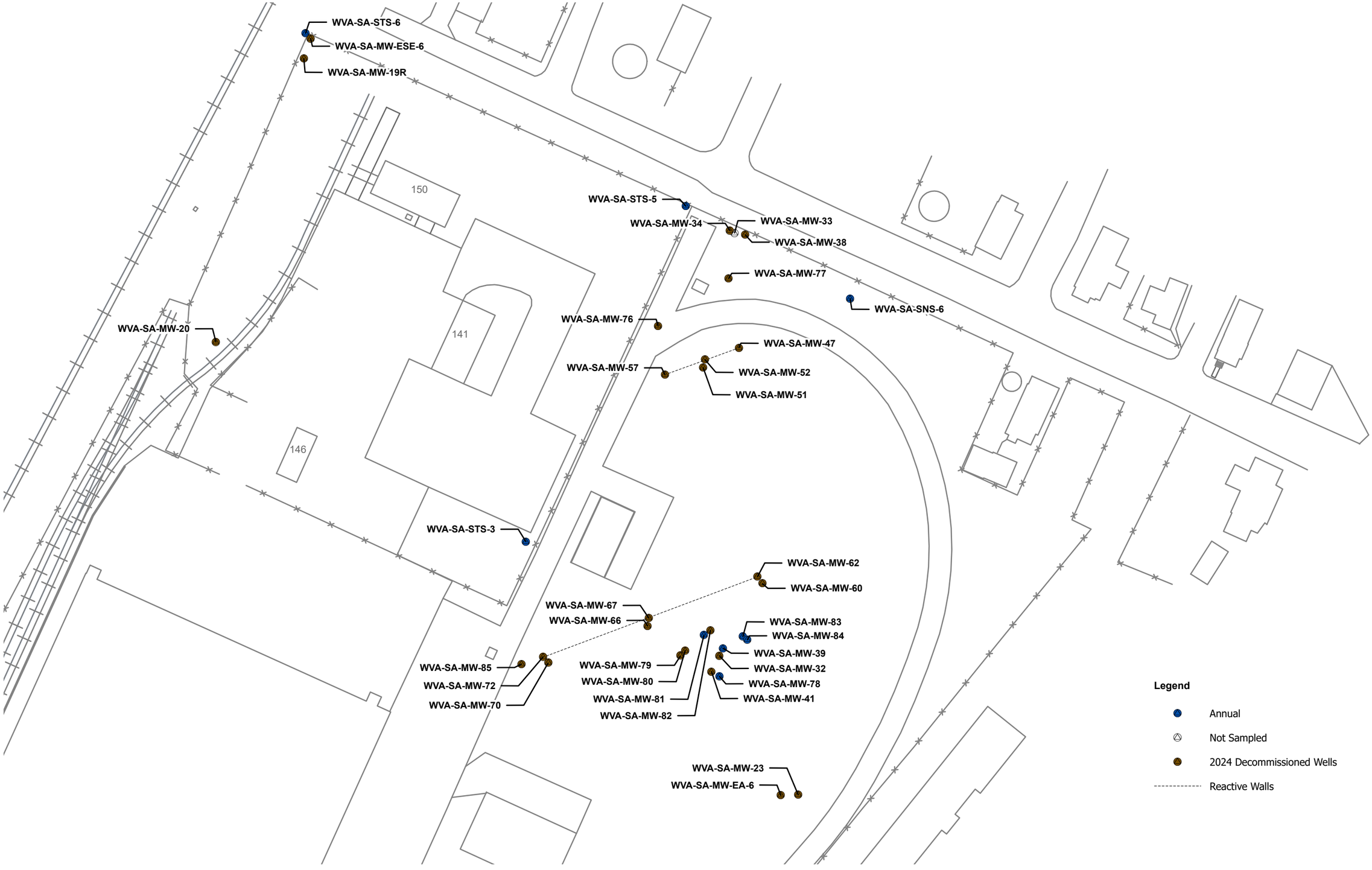
MAIN MANUFACTURING AREA
GROUNDWATER MONITORING LOCATIONS

ARCADIS

JULY 2024

FIGURE 2-1

T:_ENV\Watervliet_Arsenal\LTM\PRO\2024\Watervliet_Arsenal_LTMReport_2024.aprx 3/26/2025 1:12 PM Giroux



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US Army Corps of Engineers

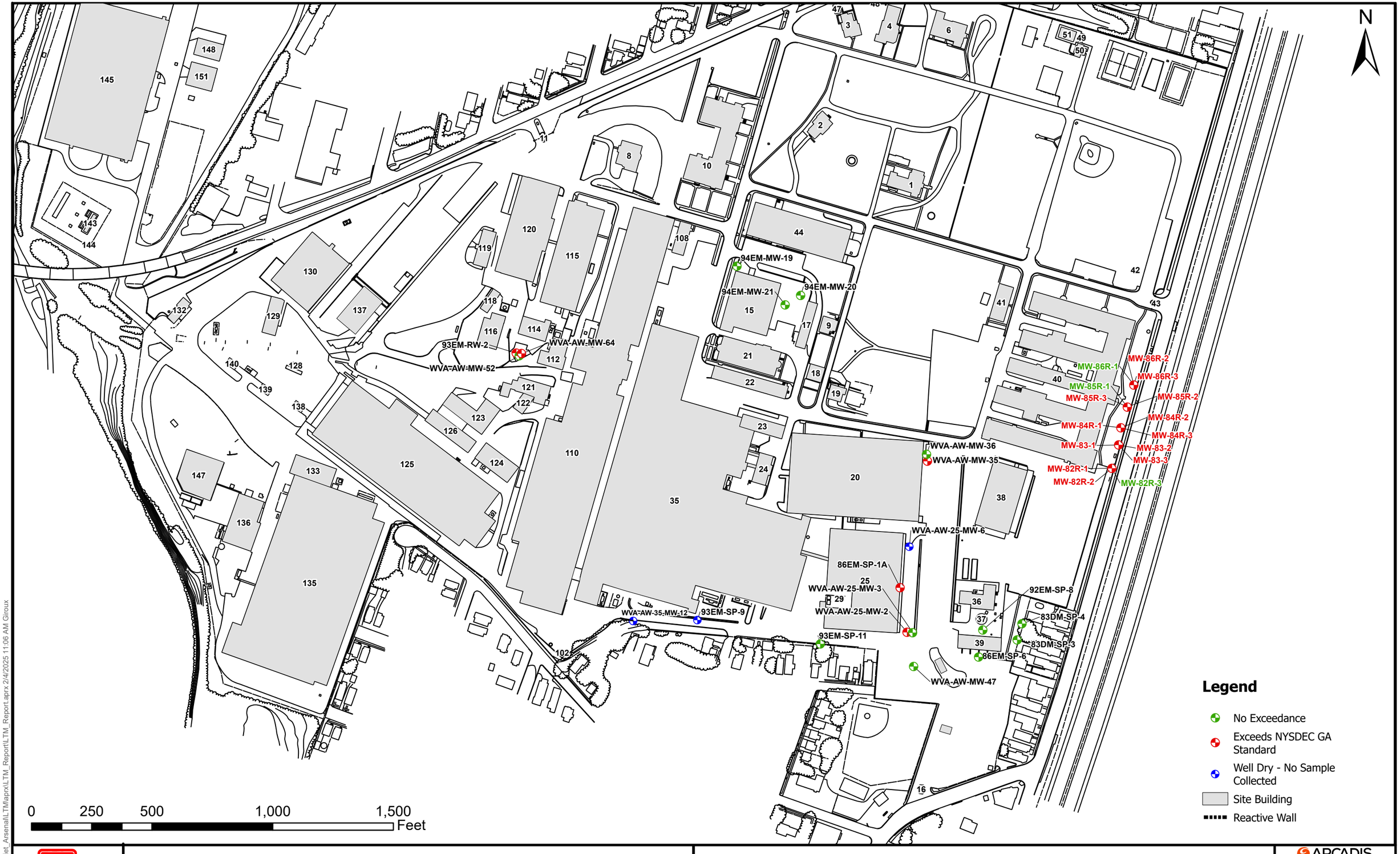
LONG-TERM MONITORING
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

SIBERIA AREA
GROUNDWATER MONITORING LOCATIONS

ARCADIS

JULY 2024

FIGURE 2-2



T:_ENV\Watervliet_Arsenal\LTM\aprx\LTM_Report\LTM_Report.aprx 2/4/2025 11:06 AM Giroux

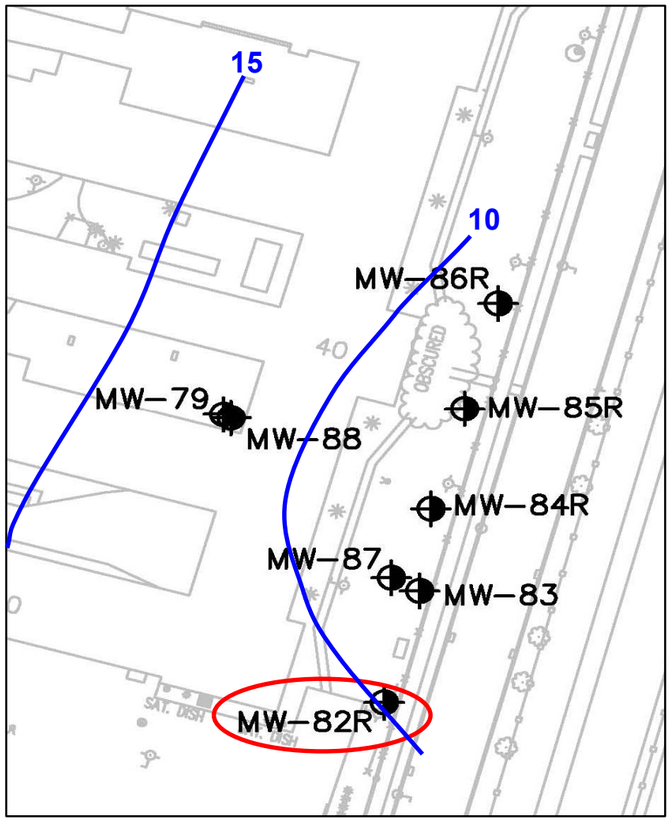
US Army Corps of Engineers

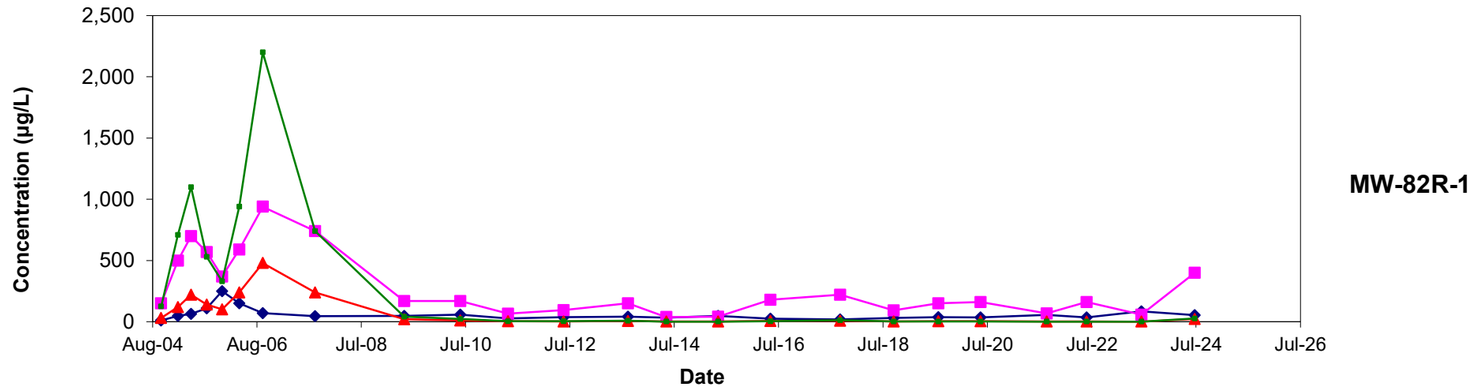
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

MAIN MANUFACTURING AREA
GROUNDWATER EXCEEDANCES (VOCs) - 2024

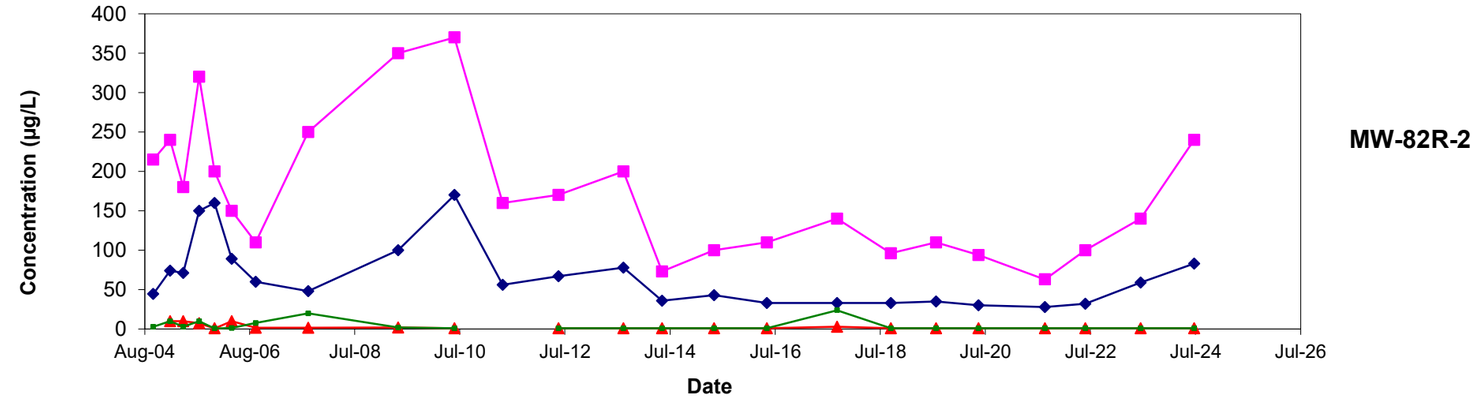
ARCADIS

FIGURE 3-1

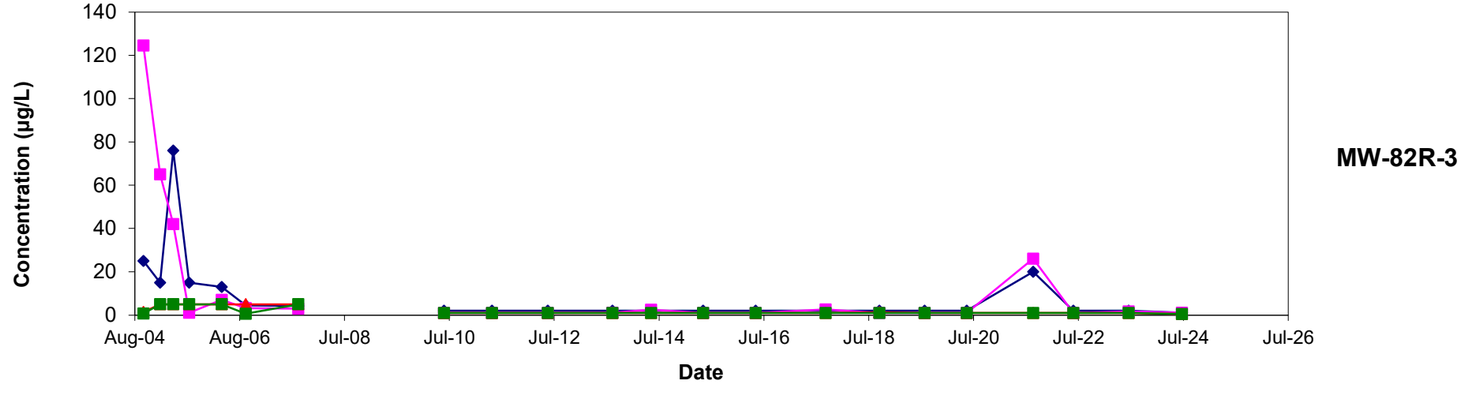




MW-82R-1



MW-82R-2



MW-82R-3



Note: Vertical scales are not the same.
Potentiometic contours based on May 2009 measurements.

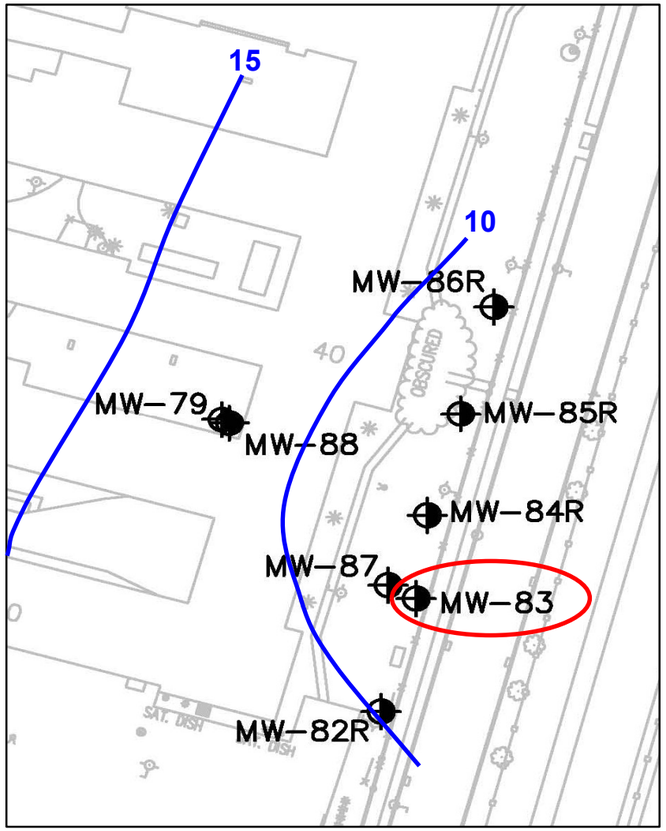
US Army Corps of Engineers
Baltimore District

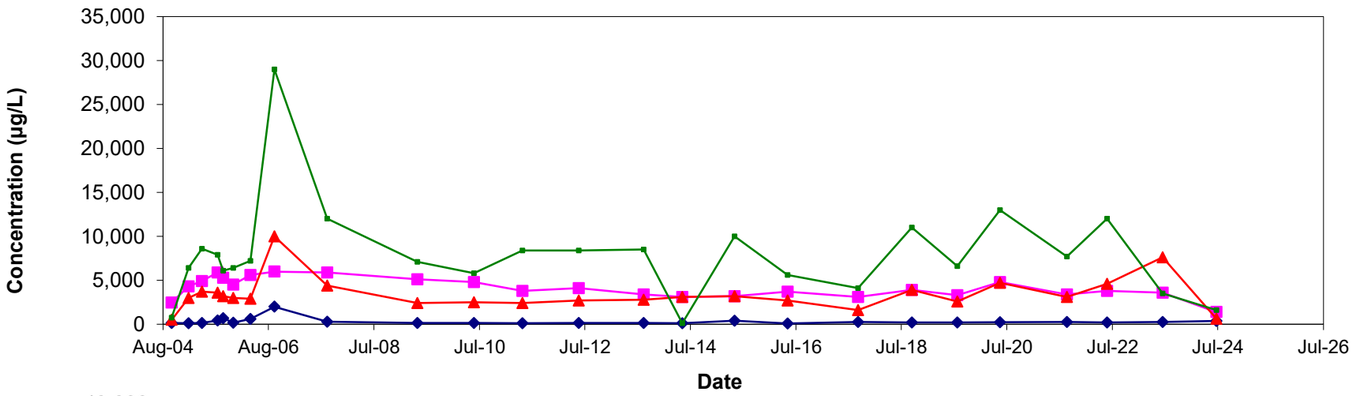
LONG-TERM MONITORING
BUILDING 40, WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN CHLORINATED VOC CONCENTRATIONS IN MONITORING WELL MW-82R

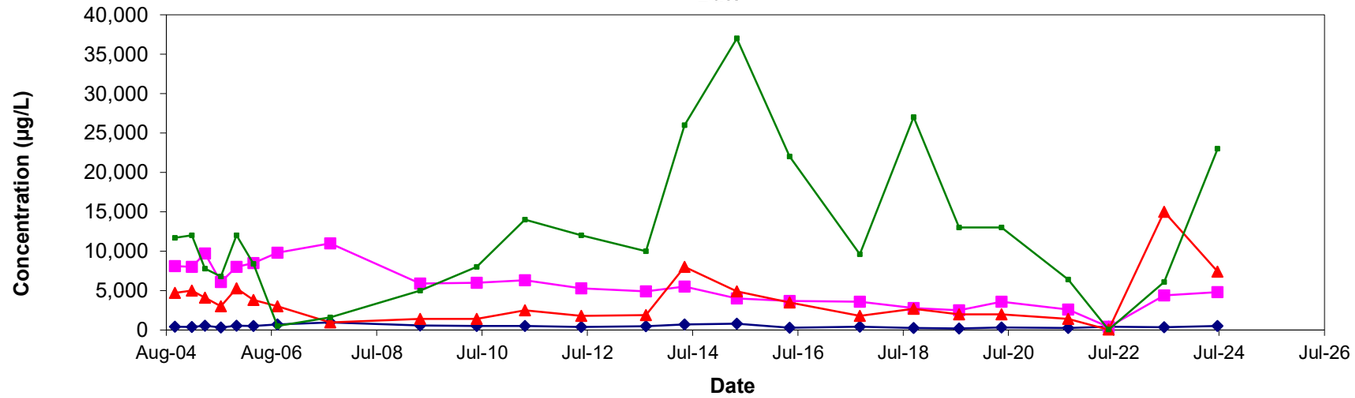
ARCADIS
JULY 2024

FIGURE 3-2

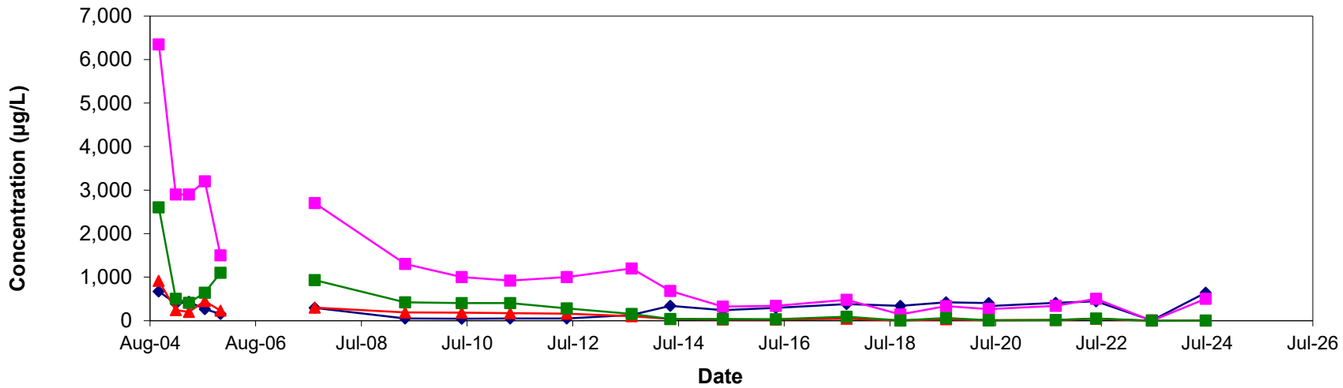




MW-83-1



MW-83-2



MW-83-3

Note: Vertical scales are not the same.
Potentiometic contours based on May 2009 measurements.

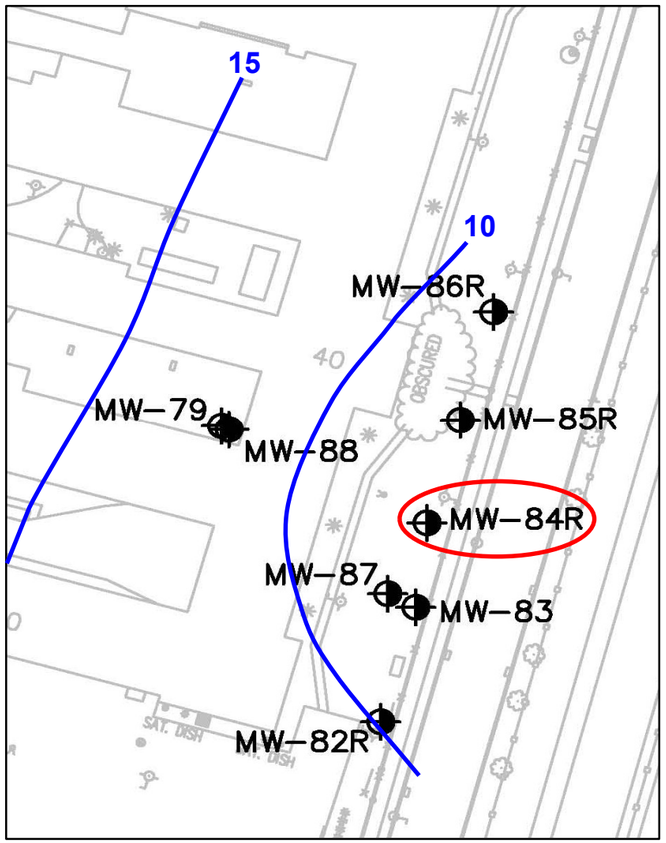
US Army Corps of Engineers
Baltimore District

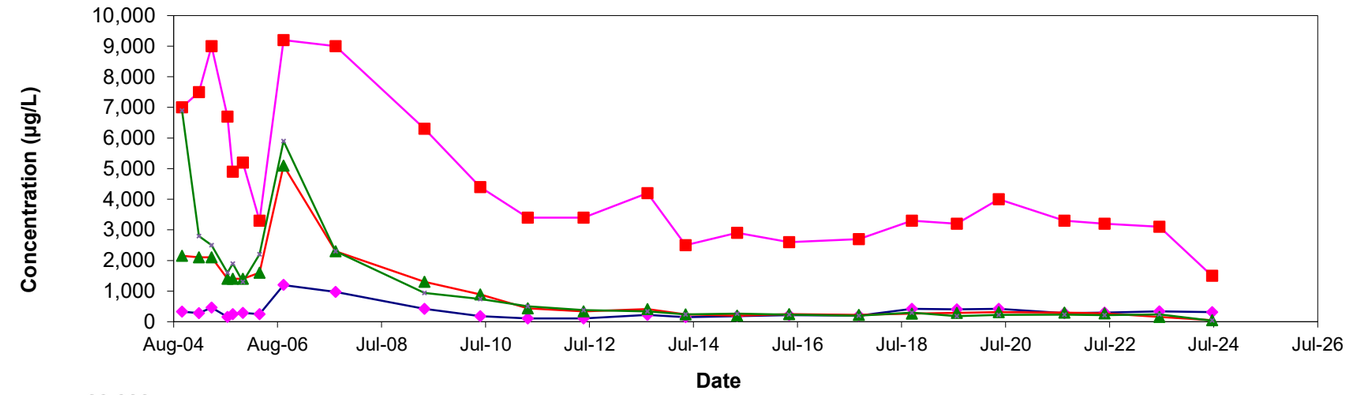
LONG-TERM MONITORING
BUILDING 40, WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN CHLORINATED VOC CONCENTRATIONS IN MONITORING WELL MW-83

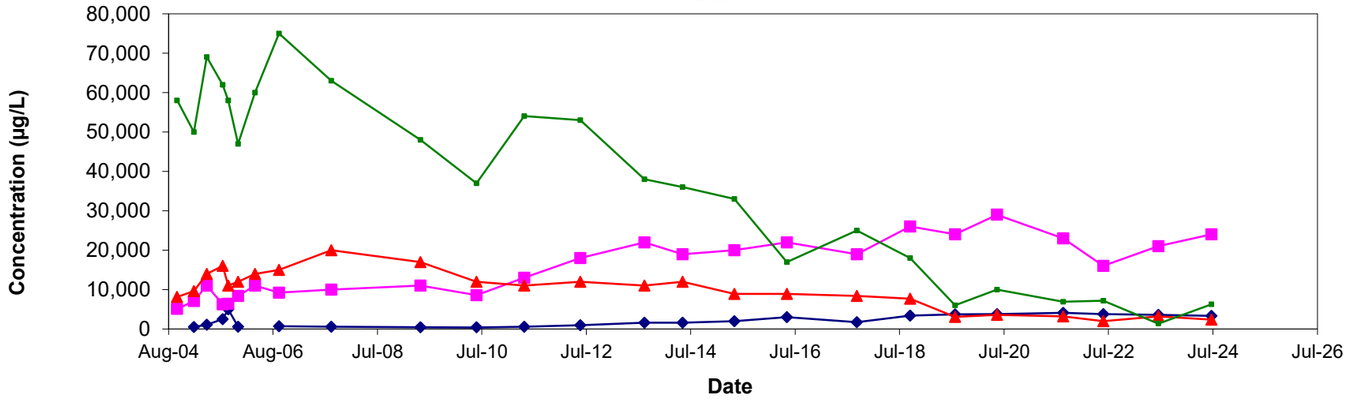
ARCADIS
JULY 2024

FIGURE 3-3

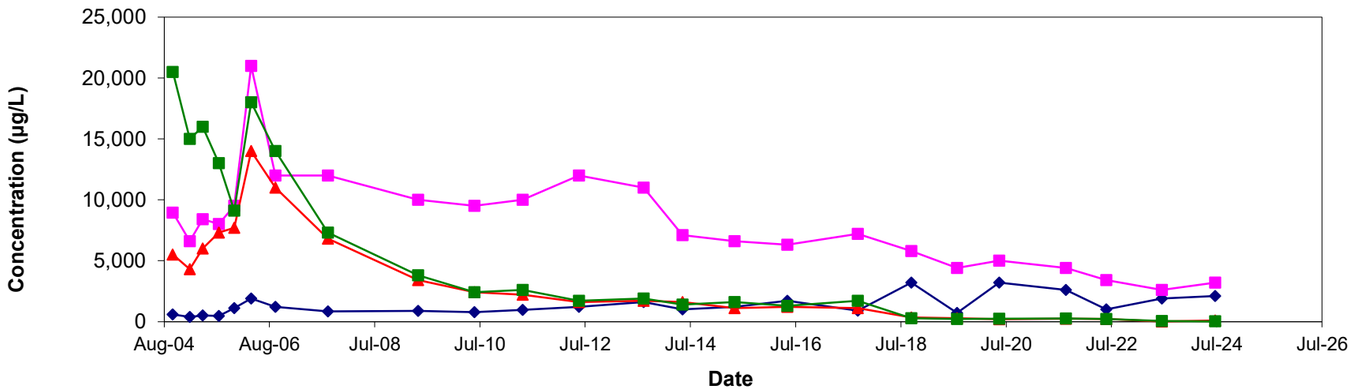




MW-84R-1



MW-84R-2



MW-84R-3



Note: Vertical scales are not the same.
Potentiometic contours based on May 2009 measurements.

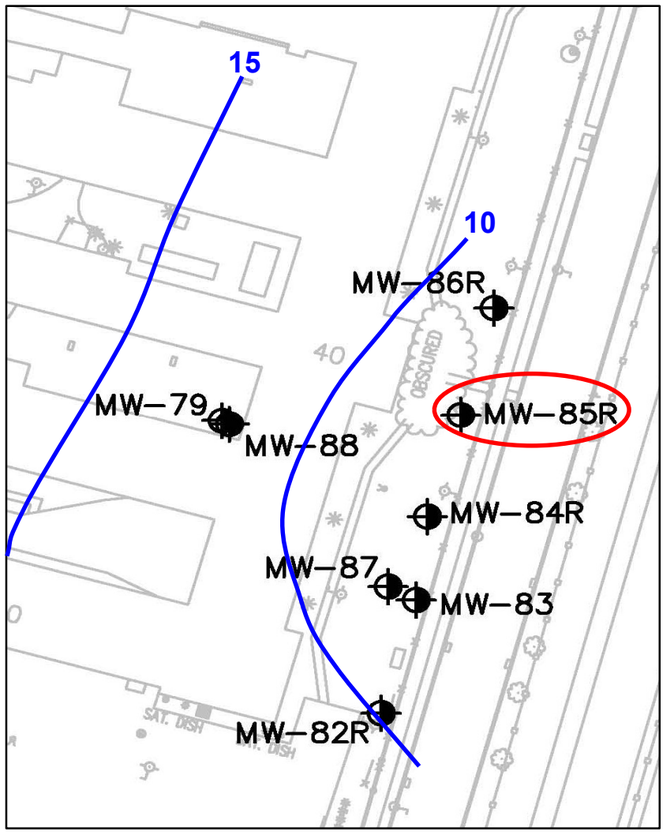
US Army Corps of Engineers
Baltimore District

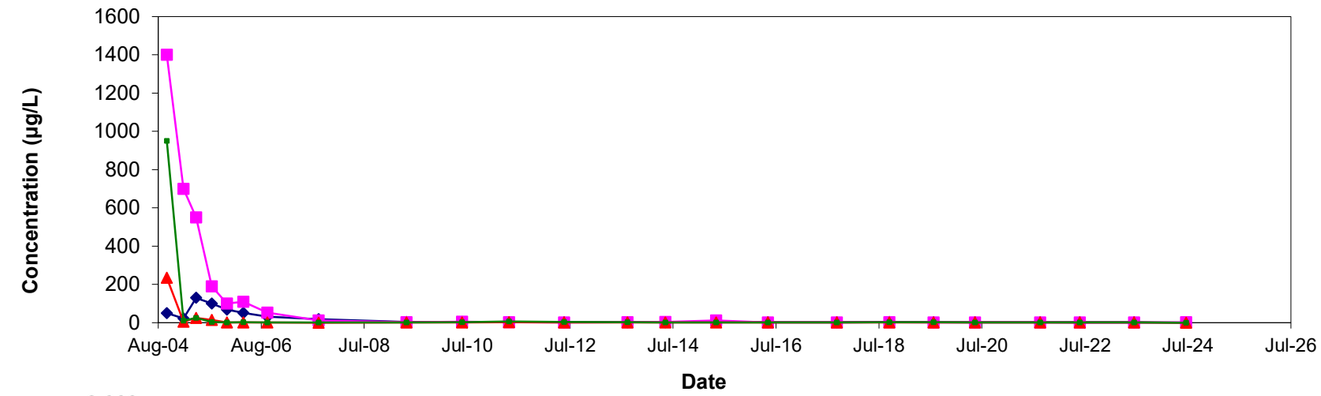
LONG-TERM MONITORING
BUILDING 40, WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN CHLORINATED VOC CONCENTRATIONS IN MONITORING WELL MW-84R

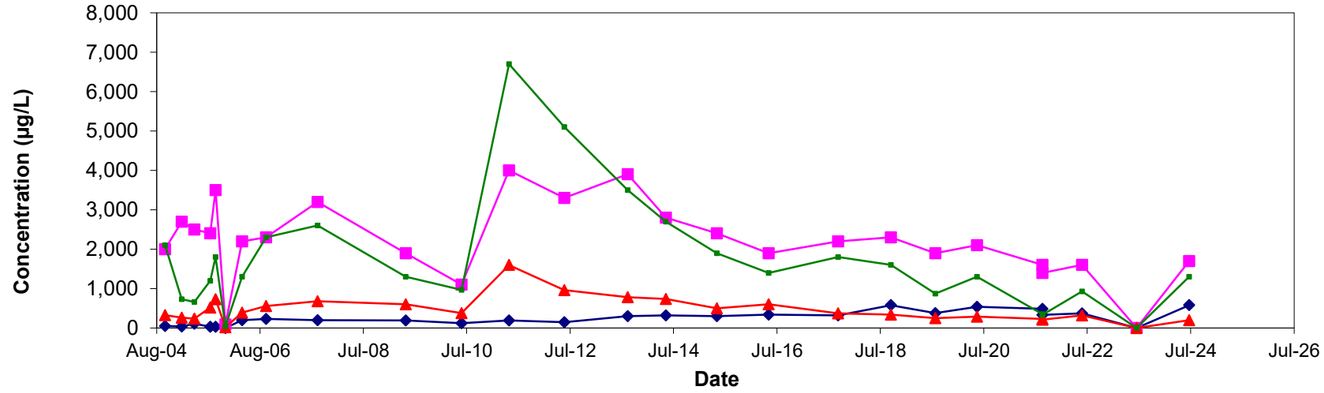
ARCADIS
JULY 2024

FIGURE 3-4

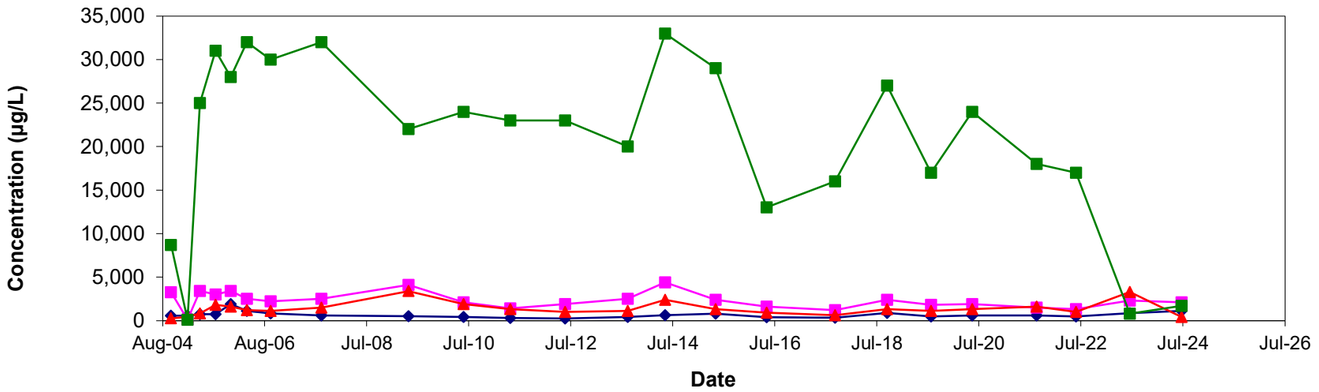




MW-85R-1



MW-85R-2



MW-85R-3

Note: Vertical scales are not the same.
Potentiometic contours based on May 2009 measurements.

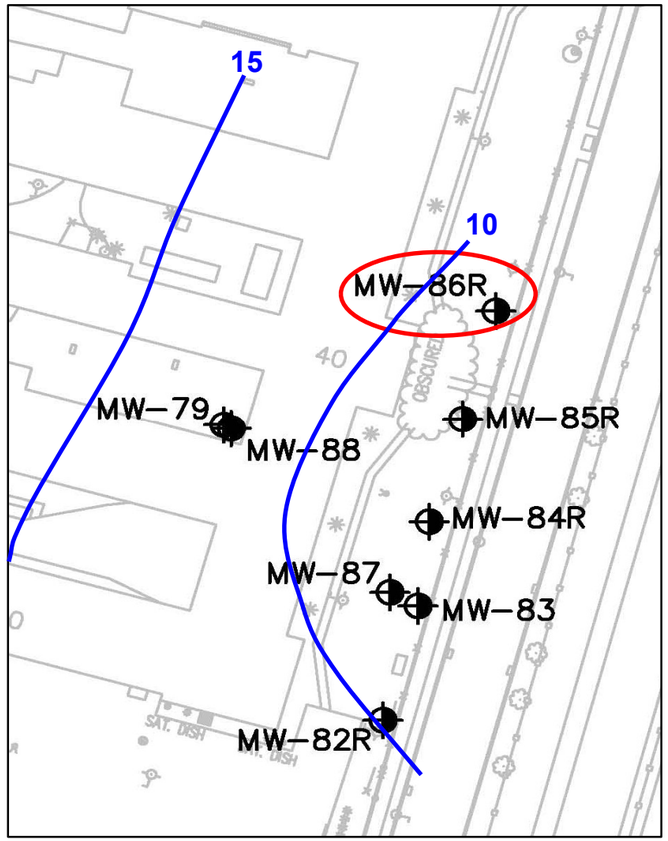
US Army Corps of Engineers
Baltimore District

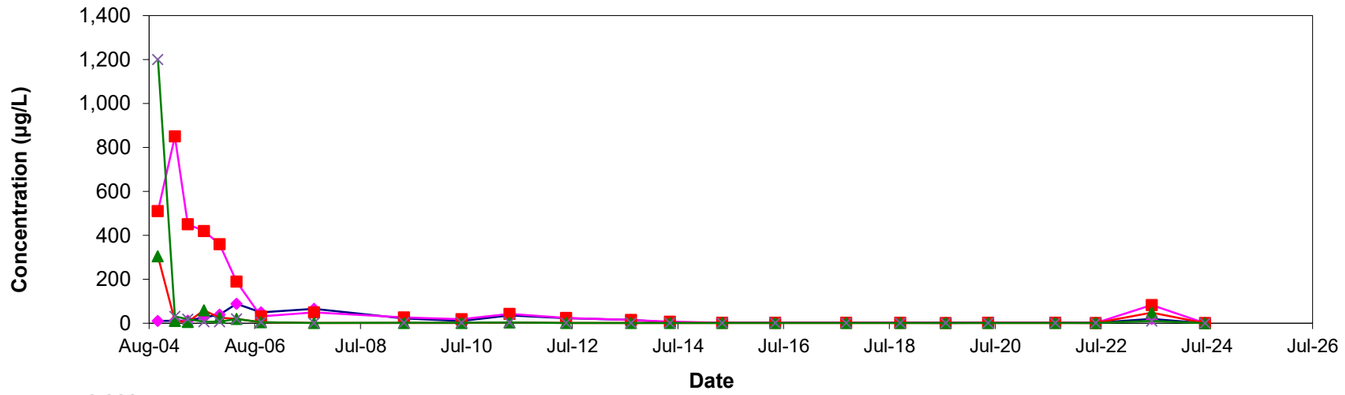
LONG-TERM MONITORING
BUILDING 40, WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN CHLORINATED VOC CONCENTRATIONS IN MONITORING WELL MW-85R

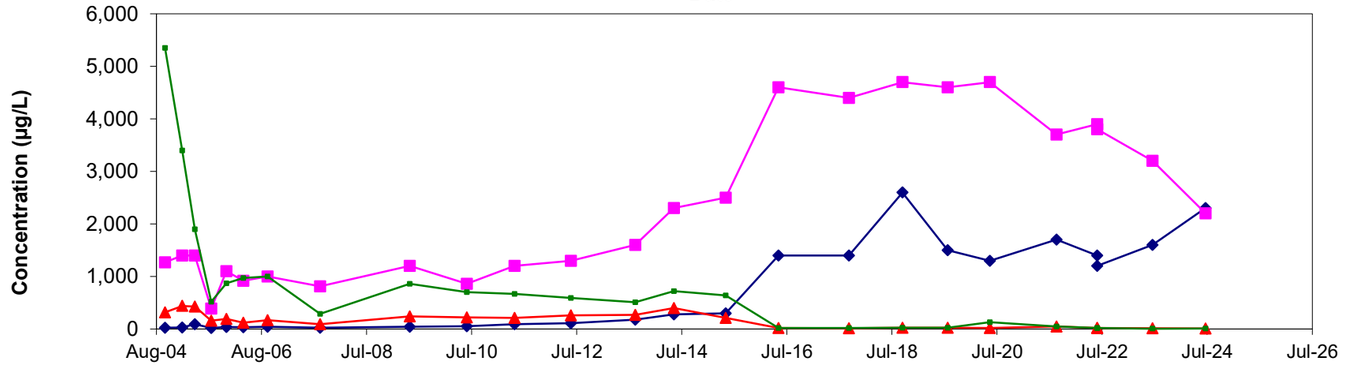
ARCADIS
JULY 2024

FIGURE 3-5

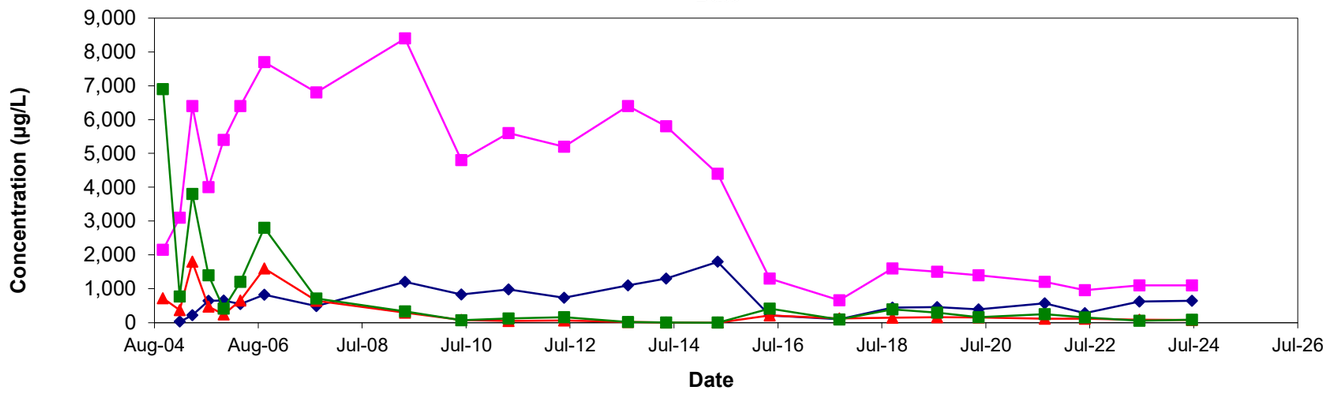




MW-86R-1



MW-86R-2



MW-86R-3



Note: Vertical scales are not the same.
Potentiometic contours based on May 2009 measurements.

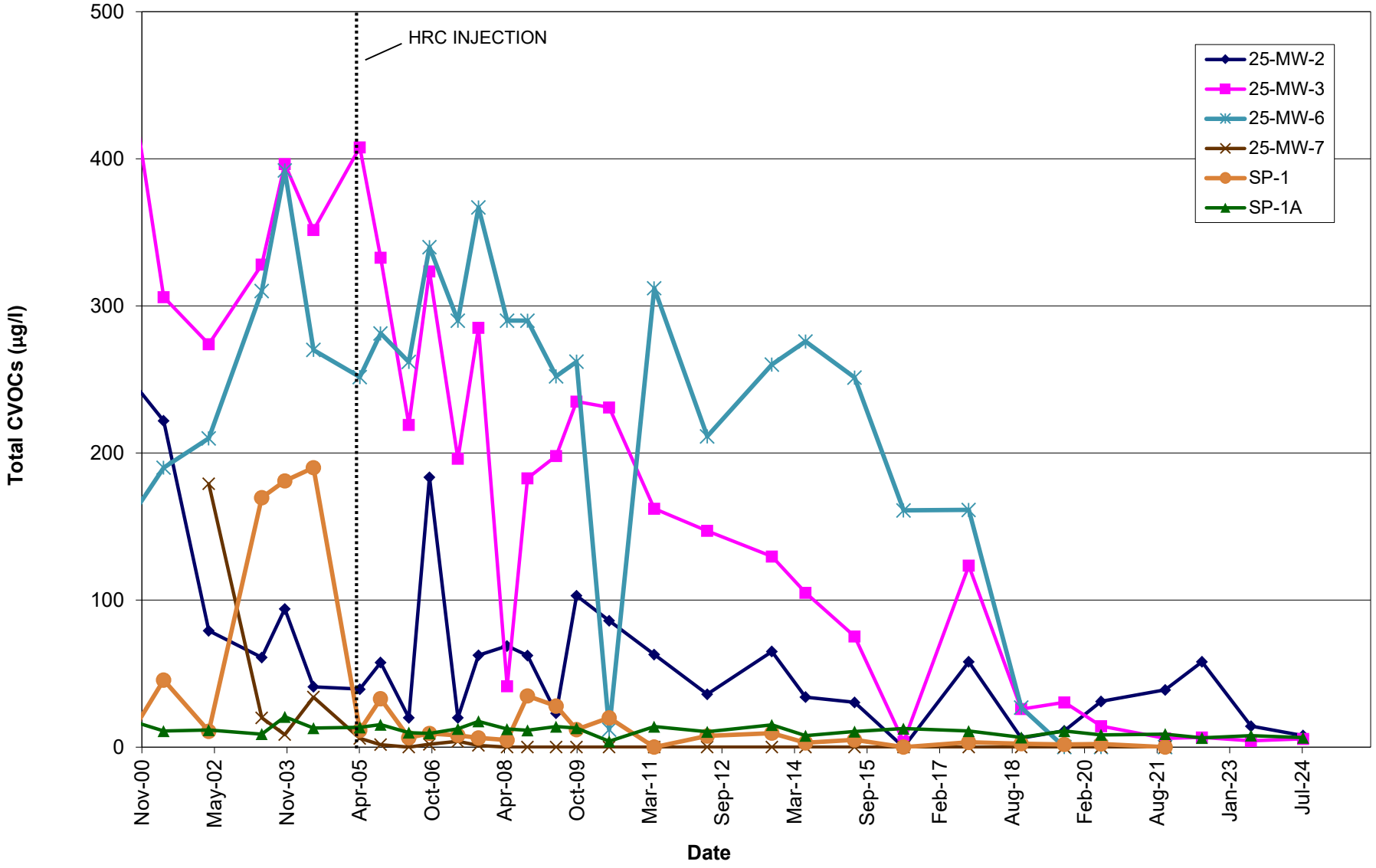
US Army Corps of Engineers
Baltimore District

LONG-TERM MONITORING
BUILDING 40, WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN CHLORINATED VOC CONCENTRATIONS IN MONITORING WELL MW-86R

ARCADIS
JULY 2024

FIGURE 3-6



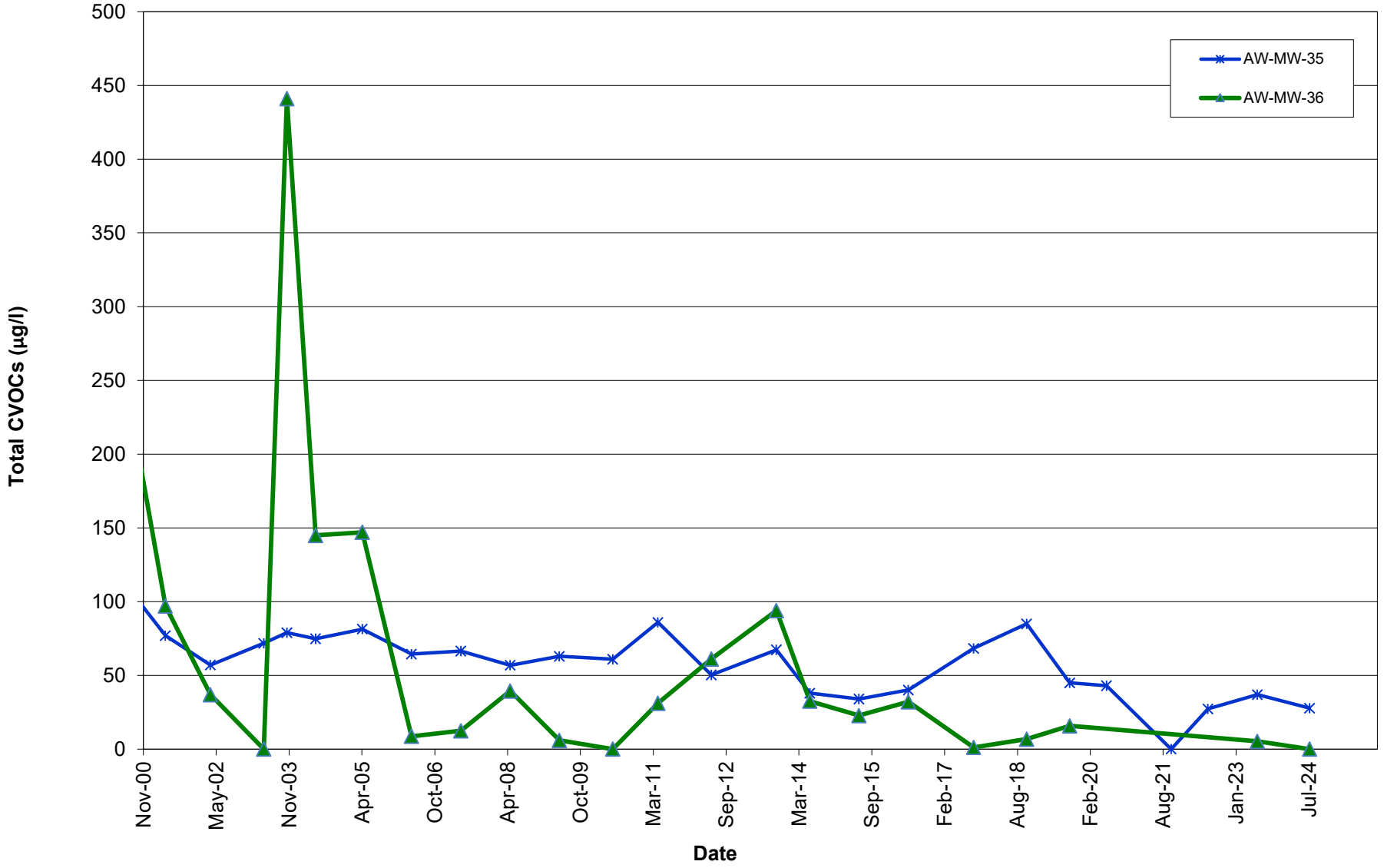
US Army Corps of Engineers
Baltimore District

LONG-TERM MONITORING
WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN TOTAL CVOC CONCENTRATIONS - BUILDING 25 AREA

ARCADIS
JULY 2024

FIGURE 3-7



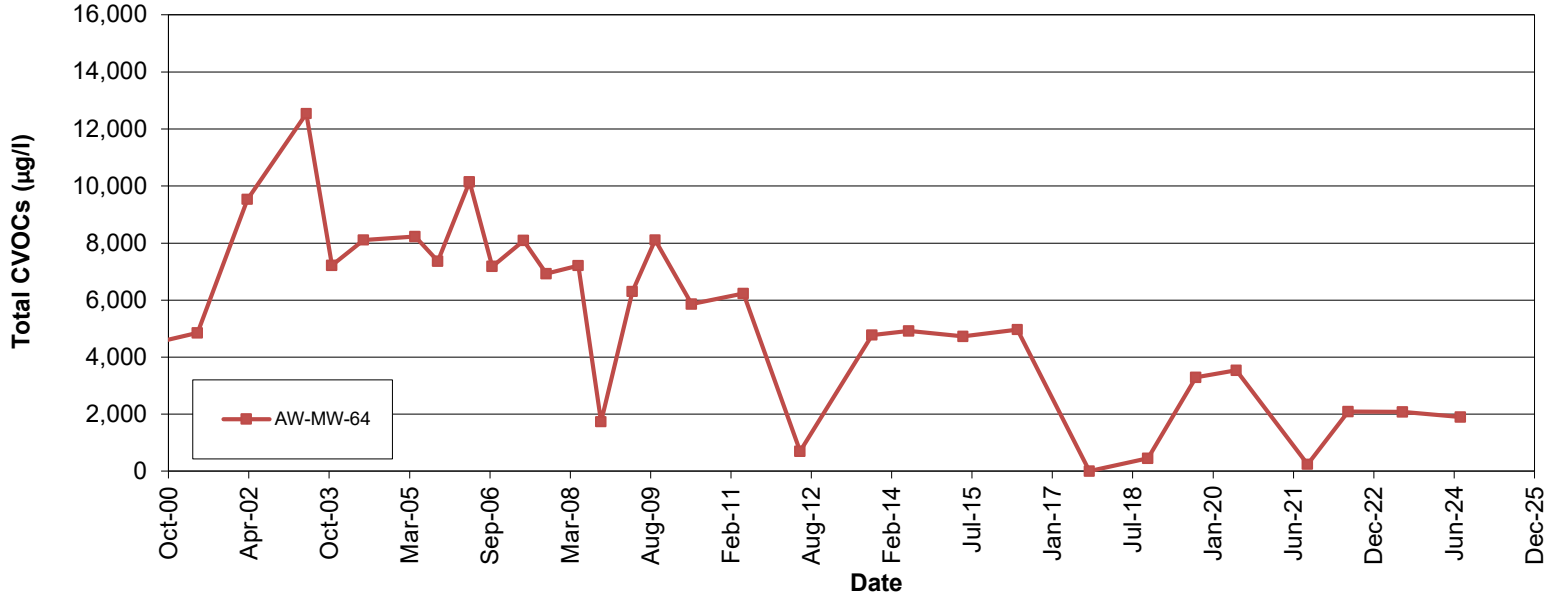
US Army Corps of Engineers
Baltimore District

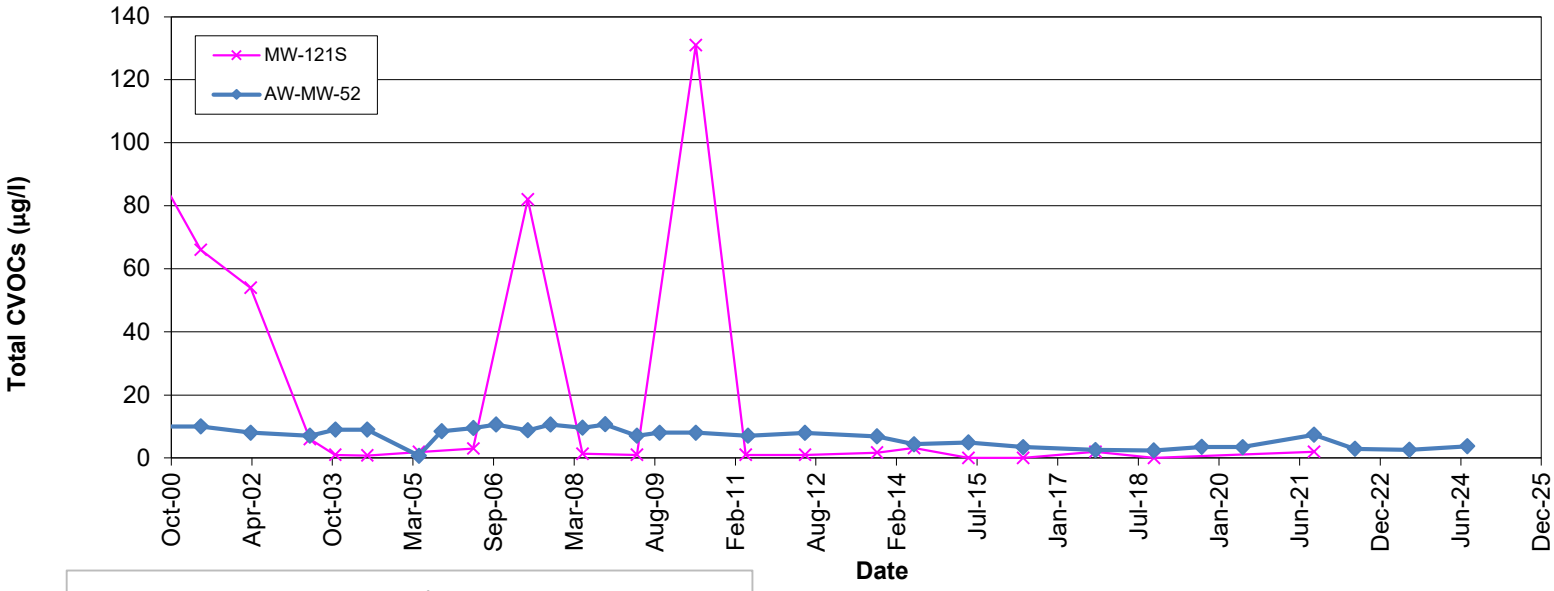
LONG-TERM MONITORING
WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN TOTAL CVOC CONCENTRATIONS - BUILDING 20 AREA

ARCADIS
JULY 2024

FIGURE 3-8





Note: MW-121S is now only sampled every five years. Next event is in 2026.

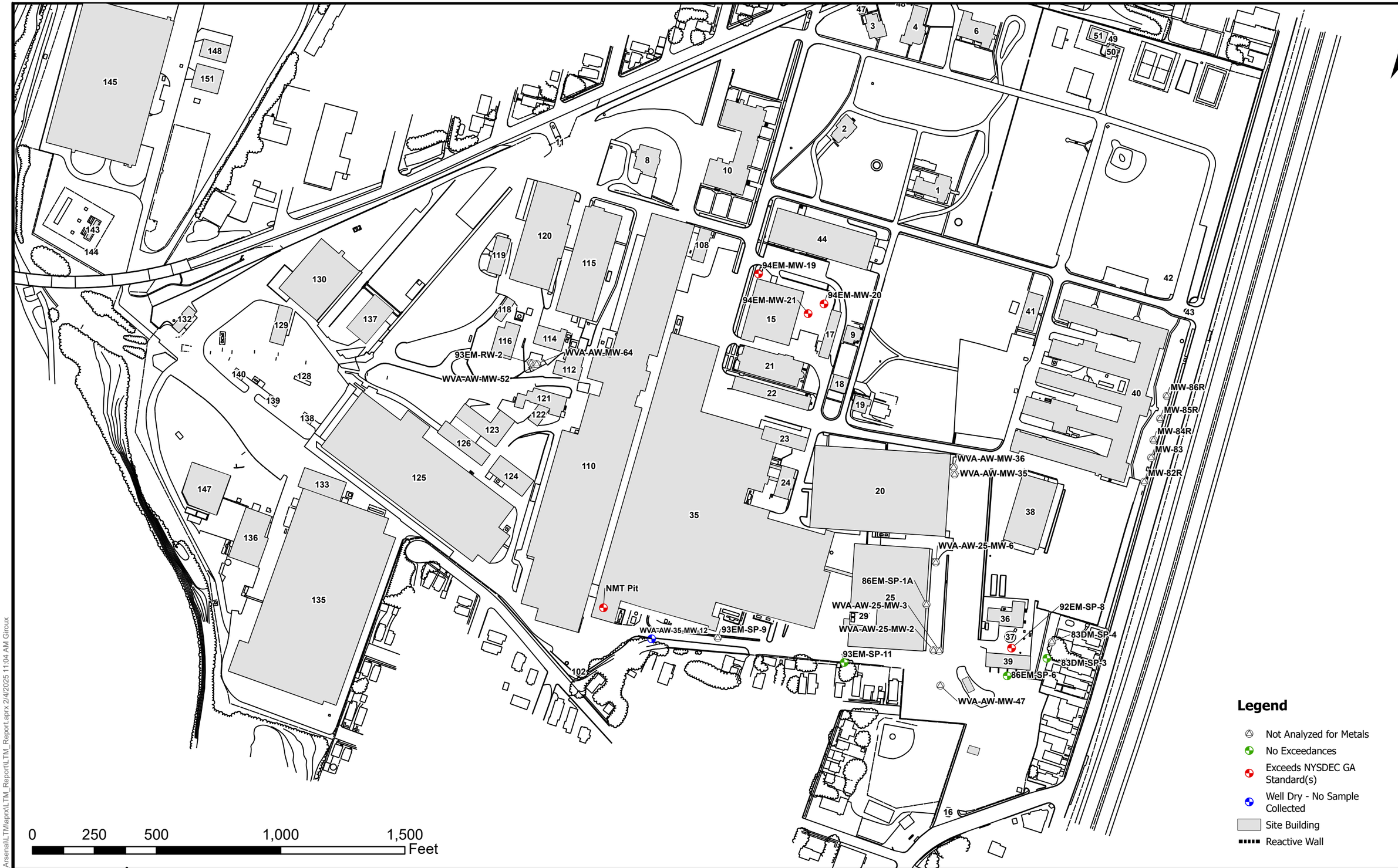
US Army Corps of Engineers
Baltimore District

LONG-TERM MONITORING
WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN TOTAL CVOC CONCENTRATIONS - BUILDING 114/121 AREA

ARCADIS
JULY 2024

FIGURE 3-9



US Army Corps of Engineers

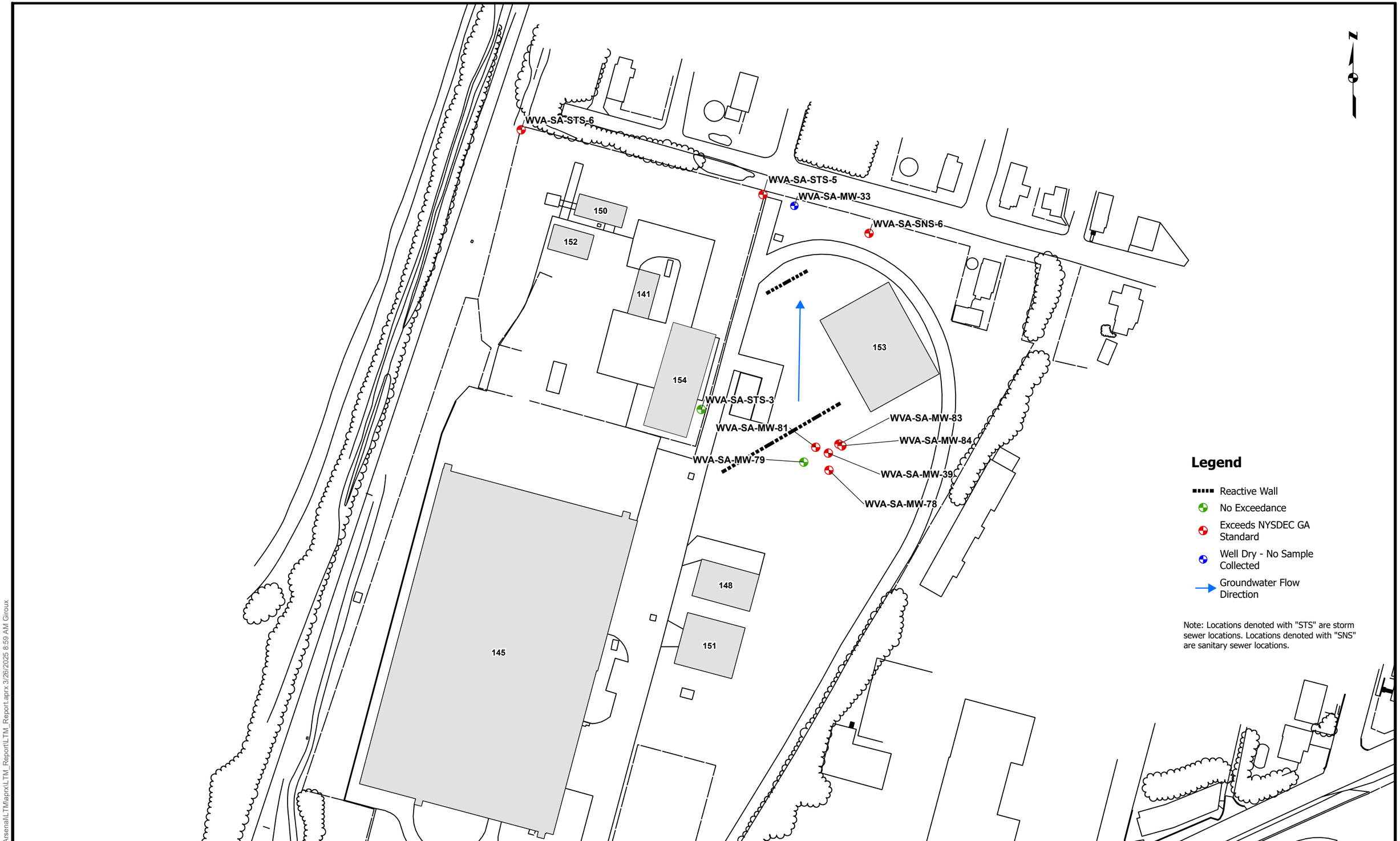
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

MAIN MANUFACTURING AREA
GROUNDWATER EXCEEDANCES (METALS) - 2024

ARCADIS

FIGURE 3-10

T:_ENV\Watervliet_Arsenal\LTM\aprx\LTM_Report\LTM_Report.aprx 2/4/2025 11:04 AM Giroux



US Army Corps of Engineers

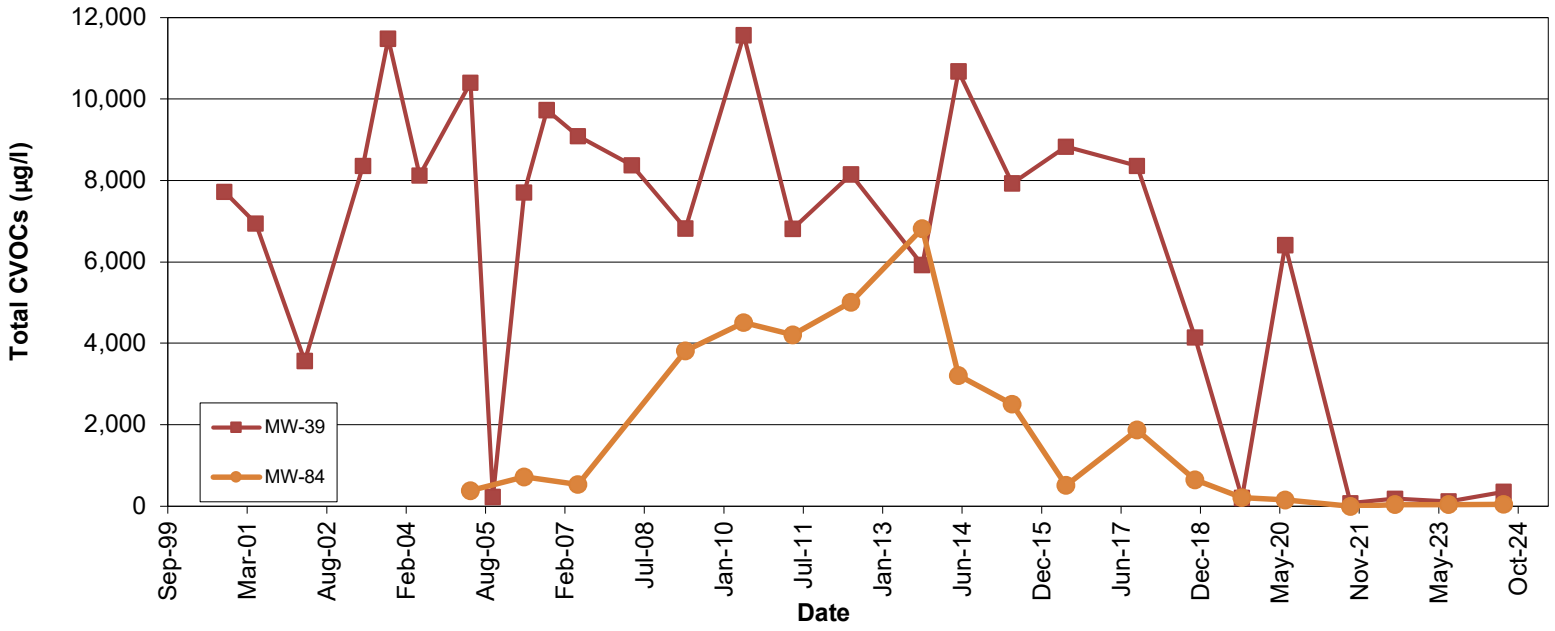
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

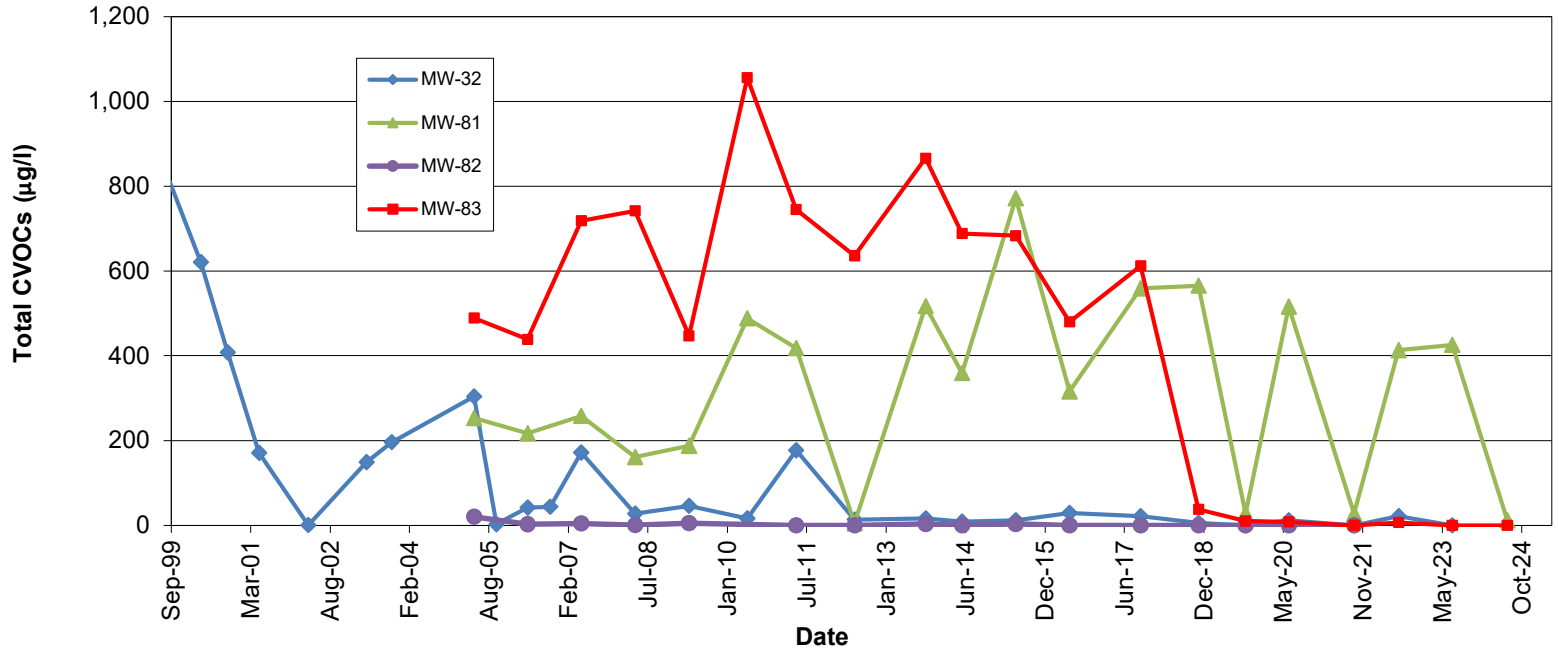
WEST CAMPUS
GROUNDWATER SAMPLE EXCEEDANCES (VOCs) - 2024

ARCADIS

FIGURE 3-11

T:_ENV\Watervliet_Arsenal\LTMaprx\LTM_Report\LTM_Report.aprx 3/26/2025 8:59 AM Giroux





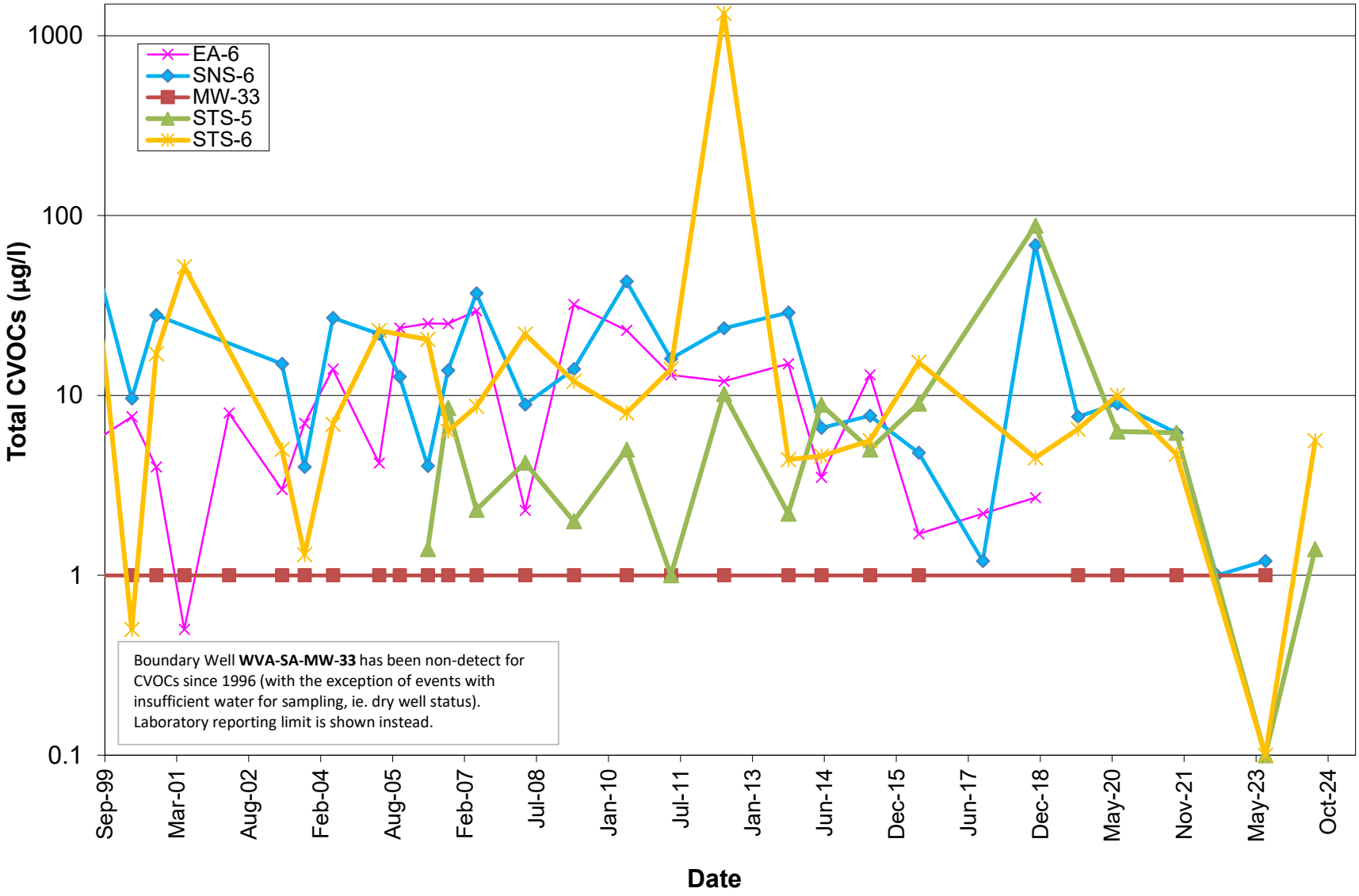
US Army Corps of Engineers
Baltimore District

LONG-TERM MONITORING
SIBERIA AREA, WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN TOTAL CVOC CONCENTRATIONS - BURN PIT AREA

ARCADIS
JULY 2024

FIGURE 3-12



US Army Corps of Engineers
Baltimore District

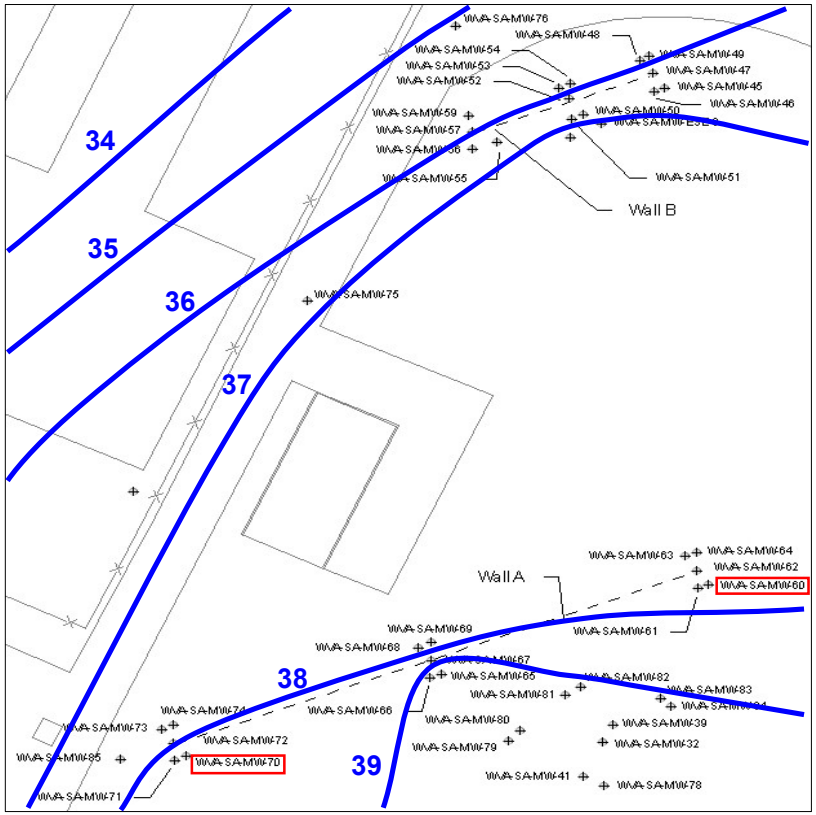
LONG-TERM MONITORING
SIBERIA AREA, WATERVLIET ARSENAL, WATERVLIET, NEW YORK

TRENDS IN TOTAL CVOC CONCENTRATIONS - BOUNDARY & SEWER

ARCADIS
JULY 2024

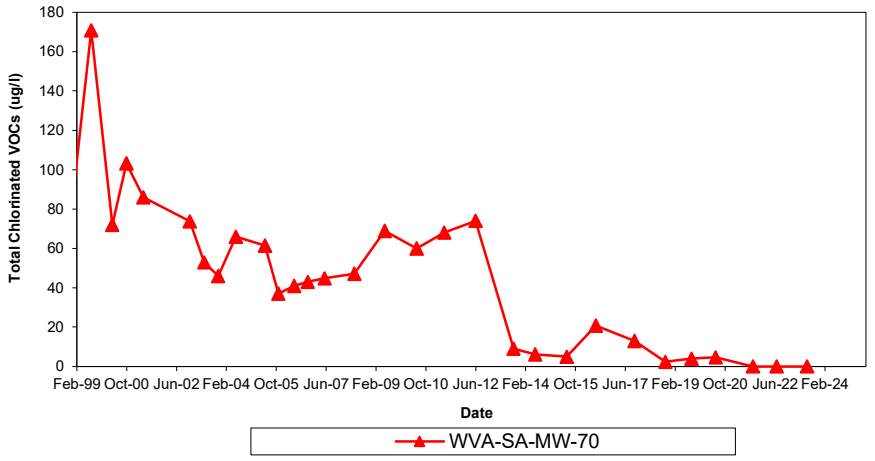
FIGURE 3-13

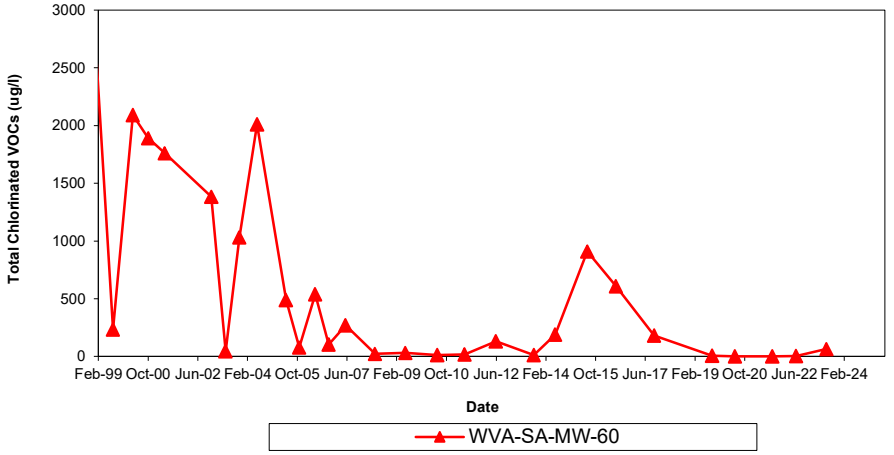
UP-GRADIENT



LEGEND

Weathered Bedrock Monitoring Well





Note: Vertical scales are not the same.
Potentiometric contours based on May 2009 measurements.
WVA-SA-MW-60 and WVA-SA-MW-70 were decommissioned in September 2024.

US Army Corps of Engineers
Baltimore District

LONG-TERM MONITORING
SIBERIA AREA, WATERVLIET ARSENAL, WATERVLIET, NEW YORK
TOTAL CHLORINATED ORGANIC COMPOUNDS UPGRADIENT OF PERMEABLE REACTIVE WALLS

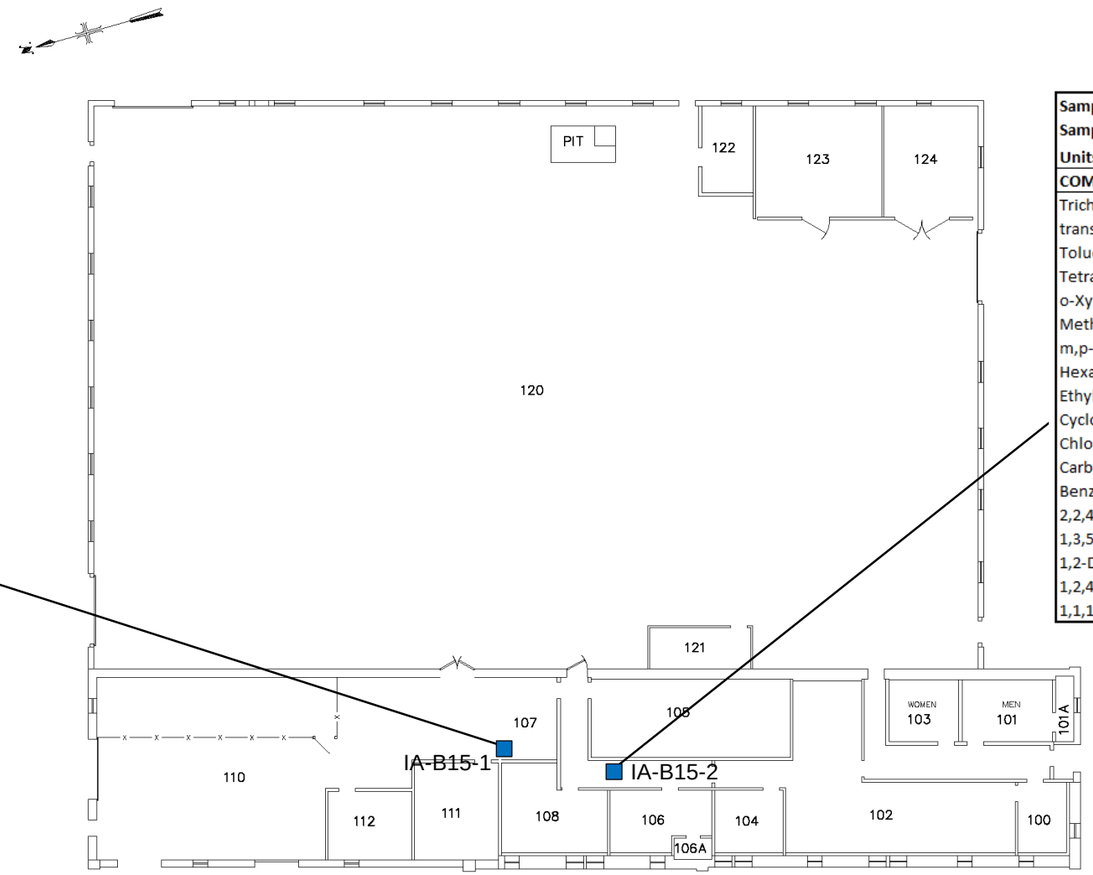
JULY 2024

FIGURE 3-14

Figure 6-1
Indoor Air VOC Concentrations
Building 15 - No SSDS

Watervliet Arsenal
Watervliet, New York

Sample ID	IA-B15-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.031	J
trans-1,2-Dichloroethene	0.098	J
Toluene	1.9	
Tetrachloroethene	0.19	
o-Xylene	0.34	
Methylene Chloride	0.54	J
m,p-Xylene	0.78	
Hexane	0.67	J
Heptane	0.52	J
Ethyl Benzene	0.29	
Cyclohexane	0.31	J
Chloromethane	1.1	J
Carbon Tetrachloride	0.44	
Benzene	0.69	
2,2,4-Trimethylpentane	0.68	J
1,3,5-Trimethylbenzene	0.27	J
1,2-Dichloroethane	0.072	J
1,2,4-Trimethylbenzene	0.89	



Sample ID	IA-B15-2	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.029	J
trans-1,2-Dichloroethene	0.092	J
Toluene	2.3	
Tetrachloroethene	0.2	
o-Xylene	0.33	
Methylene Chloride	0.6	J
m,p-Xylene	0.86	
Hexane	0.56	J
Ethyl Benzene	0.29	
Cyclohexane	0.17	J
Chloromethane	1.2	J
Carbon Tetrachloride	0.46	
Benzene	0.61	
2,2,4-Trimethylpentane	0.57	J
1,3,5-Trimethylbenzene	0.2	J
1,2-Dichloroethane	0.079	J
1,2,4-Trimethylbenzene	0.72	
1,1,1-Trichloroethane	0.018	J

LEGEND:

DOOR
WINDOW
INTERIOR WALL
EXTERIOR WALL
STAIRS
HAND RAIL
CAGED AREA
COLUMNS

NOT TO SCALE

BUILDING 15

WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date	Rev.	Date	Description
DRAWN	JJN	10/22/07			
CHECKED	–	–			
SUBMITTED	–	–			

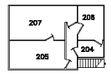
Scale: 1/8"=1'-0"
Date: OCTOBER 2007
Drawing Number: 6016–15–1
Sheet: 1 OF 1

CHIEF ENGINEERING DIVISION
DIRECTOR, ENGINEERING & HOUSING

Figure 6-2
Indoor Air VOC Concentrations
Building 20 – Type B SSDS

Watervliet Arsenal
Watervliet, New York





Sample ID	IA-B20-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
trans-1,2-Dichloroethene	0.069	J
Toluene	1	
Tetrachloroethene	0.36	
o-Xylene	0.2	
Methylene Chloride	0.52	J
m,p-Xylene	0.58	
Hexane	0.28	J
Ethyl Benzene	0.21	
Cyclohexane	0.095	J
Chloromethane	1.1	J
Carbon Tetrachloride	0.47	
Benzene	0.6	
1,3,5-Trimethylbenzene	0.095	J
1,2-Dichloroethane	0.079	J
1,2,4-Trimethylbenzene	0.24	J

NOT TO SCALE

LEGEND:
- DOOR
- WINDOW
- INTERIOR WALL / EXTERIOR WALL
- STAIRS
- HAND RAIL / CAGED AREA
- COLUMNS

BUILDING 20 – SECOND FLOOR

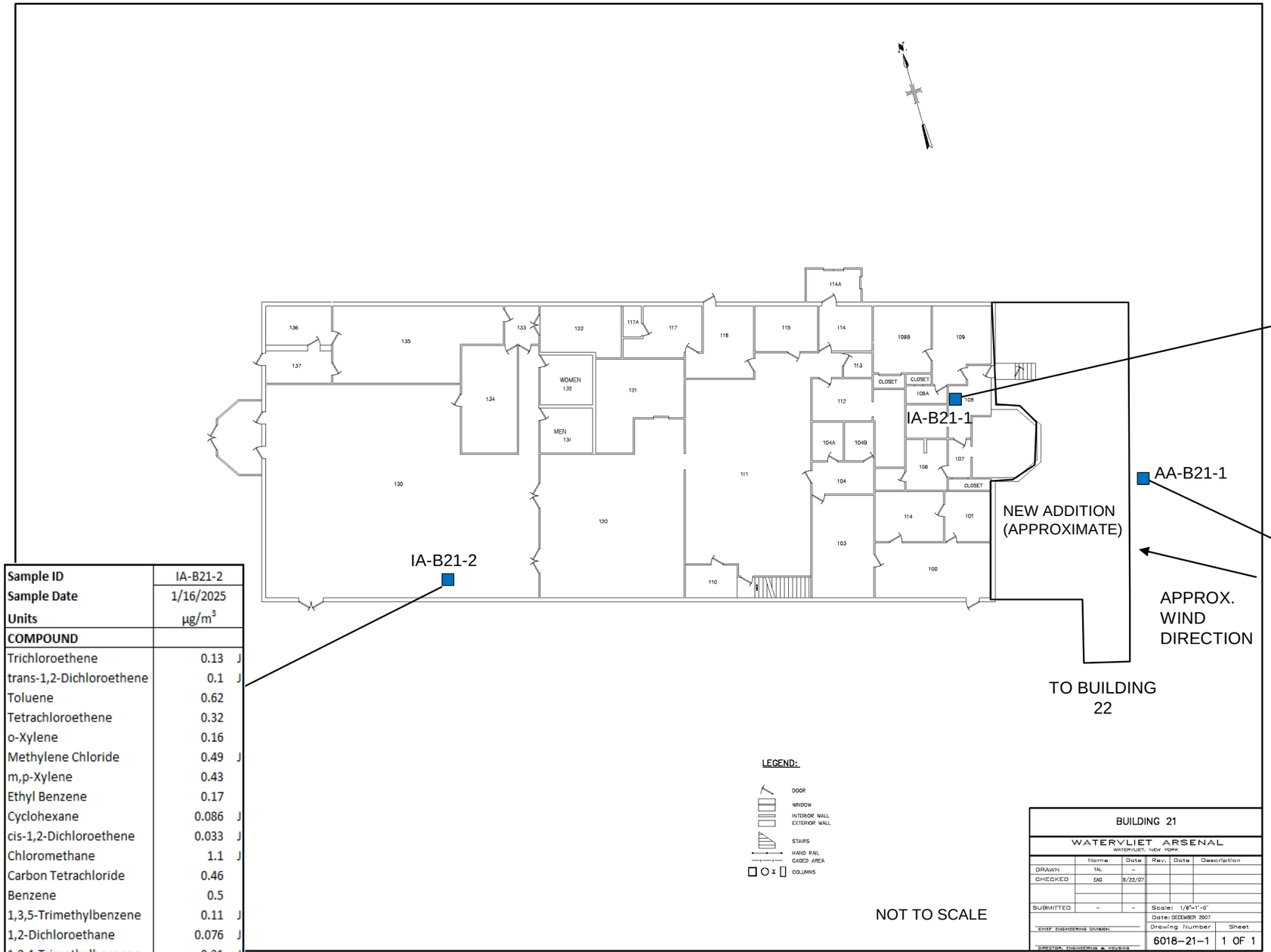
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date	Rev.	Date	Description
DRAWN	RNT	–			
CHECKED	EAG	6/22/07			
SUBMITTED	–	–	Scale: 1/16"=1'-0"		
			Date: APRIL 2007		
CHIEF ENGINEERING DIVISION			Drawing Number		Sheet
DIRECTOR, ENGINEERING & HOUSING			6017–20–2		2 OF 2

ARCADIS Design & Consultancy for natural and built assets

Figure 6-3
Indoor Air VOC Concentrations
Building 21 – Type A SSDS

Watervliet Arsenal
Watervliet, New York



Sample ID	IA-B21-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.06	J
trans-1,2-Dichloroethene	0.16	J
Toluene	1.4	
Tetrachloroethene	0.28	
o-Xylene	0.25	
Methylene Chloride	0.52	J
m,p-Xylene	0.61	
Hexane	0.48	J
Ethyl Benzene	0.24	
Cyclohexane	0.13	J
cis-1,2-Dichloroethene	0.028	J
Chloromethane	1.2	J
Carbon Tetrachloride	0.47	
Benzene	0.77	
2,2,4-Trimethylpentane	0.47	J
1,3,5-Trimethylbenzene	0.093	J
1,2-Dichloroethane	0.15	
1,2,4-Trimethylbenzene	0.25	J

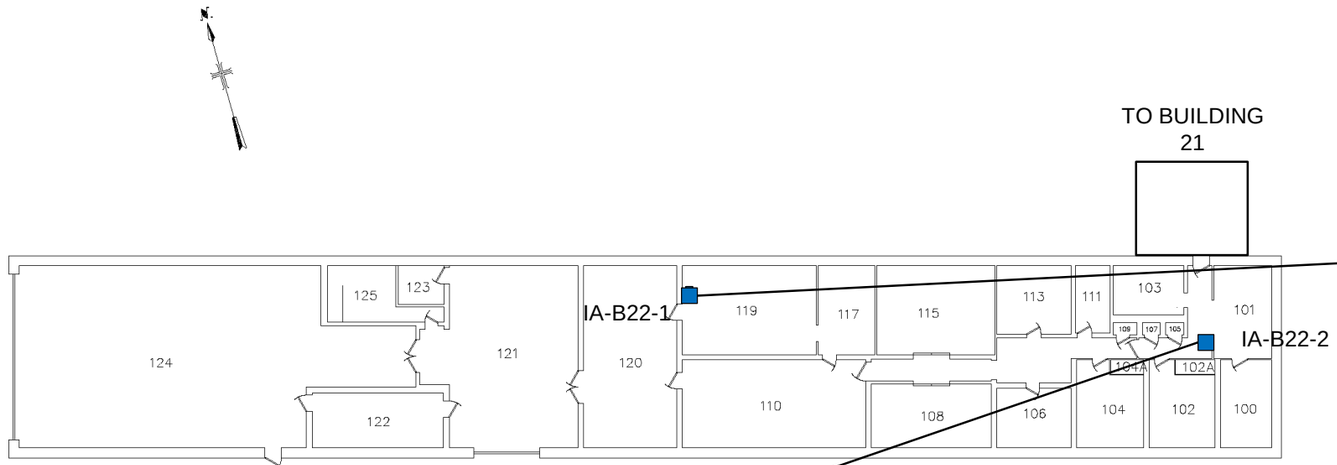
Sample ID	IA-B21-2	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.13	J
trans-1,2-Dichloroethene	0.1	J
Toluene	0.62	
Tetrachloroethene	0.32	
o-Xylene	0.16	
Methylene Chloride	0.49	J
m,p-Xylene	0.43	
Ethyl Benzene	0.17	
Cyclohexane	0.086	J
cis-1,2-Dichloroethene	0.033	J
Chloromethane	1.1	J
Carbon Tetrachloride	0.46	
Benzene	0.5	
1,3,5-Trimethylbenzene	0.11	J
1,2-Dichloroethane	0.076	J
1,2,4-Trimethylbenzene	0.31	J

Sample ID	AA-B21-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
trans-1,2-Dichloroethene	0.2	J
Toluene	2.6	
Tetrachloroethene	0.22	
o-Xylene	0.53	
Methylene Chloride	0.71	J
m,p-Xylene	1.4	
Hexane	0.94	J
Heptane	0.63	J
Ethyl Benzene	0.49	
Cyclohexane	0.26	J
Chloromethane	1.1	J
Carbon Tetrachloride	0.47	
Benzene	0.8	
2,2,4-Trimethylpentane	0.86	J
1,3,5-Trimethylbenzene	0.12	J
1,2-Dichloroethane	0.077	J
1,2,4-Trimethylbenzene	0.36	J

ARCADIS Design & Consultancy for natural and built assets

Figure 6-4
Indoor Air VOC Concentrations
Building 22 – Type C SSDS

Watervliet Arsenal
Watervliet, New York



Sample ID	IA-B22-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.17	
trans-1,2-Dichloroethene	0.15	J
Toluene	0.64	
Tetrachloroethene	0.56	
o-Xylene	0.11	J
Methylene Chloride	0.56	J
m,p-Xylene	0.27	
Ethyl Benzene	0.13	
Cyclohexane	0.15	J
cis-1,2-Dichloroethene	0.027	J
Chloromethane	1.6	
Carbon Tetrachloride	0.47	
Benzene	0.52	
1,2-Dichloroethane	0.085	J

Sample ID	IA-B22-2	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.21	
trans-1,2-Dichloroethene	0.17	J
Toluene	0.55	
Tetrachloroethene	0.86	
o-Xylene	0.099	J
Methylene Chloride	0.46	J
m,p-Xylene	0.25	
Ethyl Benzene	0.12	
cis-1,2-Dichloroethene	0.044	J
Chloromethane	1.2	J
Carbon Tetrachloride	0.47	
Benzene	0.52	
1,2-Dichloroethane	0.085	J
1,2,4-Trimethylbenzene	0.12	J

LEGEND:

DOOR
WINDOW
INTERIOR WALL
EXTERIOR WALL
STAIRS
HAND RAIL
CAGED AREA
COLUMNS

NOT TO SCALE

BUILDING 22 – FIRE STATION

WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date	Rev.	Date	Description
DRAWN	TAL	–			
CHECKED	EAD	6/22/07			
SUBMITTED	–	–			

Scale: 1/8"=1'-0"
Date: DECEMBER 2007

CHIEF ENGINEERING DIVISION
DIRECTOR, ENGINEERING & HOUSING

Drawing Number: 6019–22–1
Sheet: 1 OF 1

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ARCADIS Design & Consultancy for natural and built assets

Figure 6-5
Indoor Air VOC Concentrations
Building 25 – Type B SSDS

Watervliet Arsenal
Watervliet, New York

Sample ID	IA-B25-5
Sample Date	1/16/2025
Units	µg/m³
COMPOUND	
Trichloroethene	0.47
trans-1,2-Dichloroethene	0.022 J
Toluene	4
Tetrachloroethene	0.36
o-Xylene	0.26
Naphthalene	4.1
Methylene Chloride	0.66 J
m,p-Xylene	0.58
Hexane	1.4 J
Heptane	0.64 J
Ethyl Benzene	0.27
Cyclohexane	0.097 J
Chloromethane	1.1 J
Carbon Tetrachloride	0.5
Benzene	0.5
1,2-Dichloroethane	0.13
1,2,4-Trimethylbenzene	0.28 J
1,1,1-Trichloroethane	0.14 J

Sample ID	IA-B25-2
Sample Date	1/16/2025
Units	µg/m³
COMPOUND	
Trichloroethene	0.83
trans-1,2-Dichloroethene	0.026 J
Toluene	2.7
Tetrachloroethene	0.33
o-Xylene	0.31
Naphthalene	3.4
Methylene Chloride	0.6 J
m,p-Xylene	0.71
Hexane	0.86 J
Heptane	0.42 J
Ethyl Benzene	0.37
Cyclohexane	0.13 J
Chloromethane	1.2 J
Carbon Tetrachloride	0.47
Benzene	0.62
2,2,4-Trimethylpentane	0.38 J
1,3,5-Trimethylbenzene	0.093 J
1,2-Dichloroethane	0.26
1,2,4-Trimethylbenzene	0.29 J
1,1,1-Trichloroethane	0.042 J



Sample ID	IA-B25-4
Sample Date	1/16/2025
Units	µg/m³
COMPOUND	
Trichloroethene	0.65
trans-1,2-Dichloroethene	0.02 J
Toluene	1.5
Tetrachloroethene	0.36
o-Xylene	0.21
Naphthalene	0.13 J
Methylene Chloride	0.82 J
m,p-Xylene	0.6
Hexane	0.3 J
Ethyl Benzene	0.24
Cyclohexane	0.1 J
Chloromethane	1.2 J
Carbon Tetrachloride	0.46
Benzene	0.47
1,3,5-Trimethylbenzene	0.12 J
1,2-Dichloroethane	0.29
1,2,4-Trimethylbenzene	0.26 J
1,1,1-Trichloroethane	0.028 J

Sample ID	IA-B25-3
Sample Date	1/16/2025
Units	µg/m³
COMPOUND	
Trichloroethene	0.44
Toluene	4
Tetrachloroethene	0.37
o-Xylene	0.25
Naphthalene	0.3 J
Methylene Chloride	0.7 J
m,p-Xylene	0.56
Hexane	1.2 J
Ethyl Benzene	0.23
Chloromethane	1.1 J
Carbon Tetrachloride	0.46
Benzene	0.52
1,3,5-Trimethylbenzene	0.13 J
1,2-Dichloroethane	0.13
1,2,4-Trimethylbenzene	0.25 J
1,1,1-Trichloroethane	0.032 J

Sample ID	IA-B25-1
Sample Date	1/16/2025
Units	µg/m³
COMPOUND	
Trichloroethene	0.75
trans-1,2-Dichloroethene	0.026 J
Toluene	1.9
Tetrachloroethene	0.34
o-Xylene	0.2
Naphthalene	0.25 J
Methylene Chloride	16
m,p-Xylene	0.46
Hexane	0.34 J
Ethyl Benzene	0.22
Cyclohexane	0.13 J
Chloromethane	1.1 J
Carbon Tetrachloride	0.48
Benzene	0.5
1,3,5-Trimethylbenzene	0.18 J
1,2-Dichloroethane	0.23
1,2,4-Trimethylbenzene	0.42 J
1,1,1-Trichloroethane	0.025 J

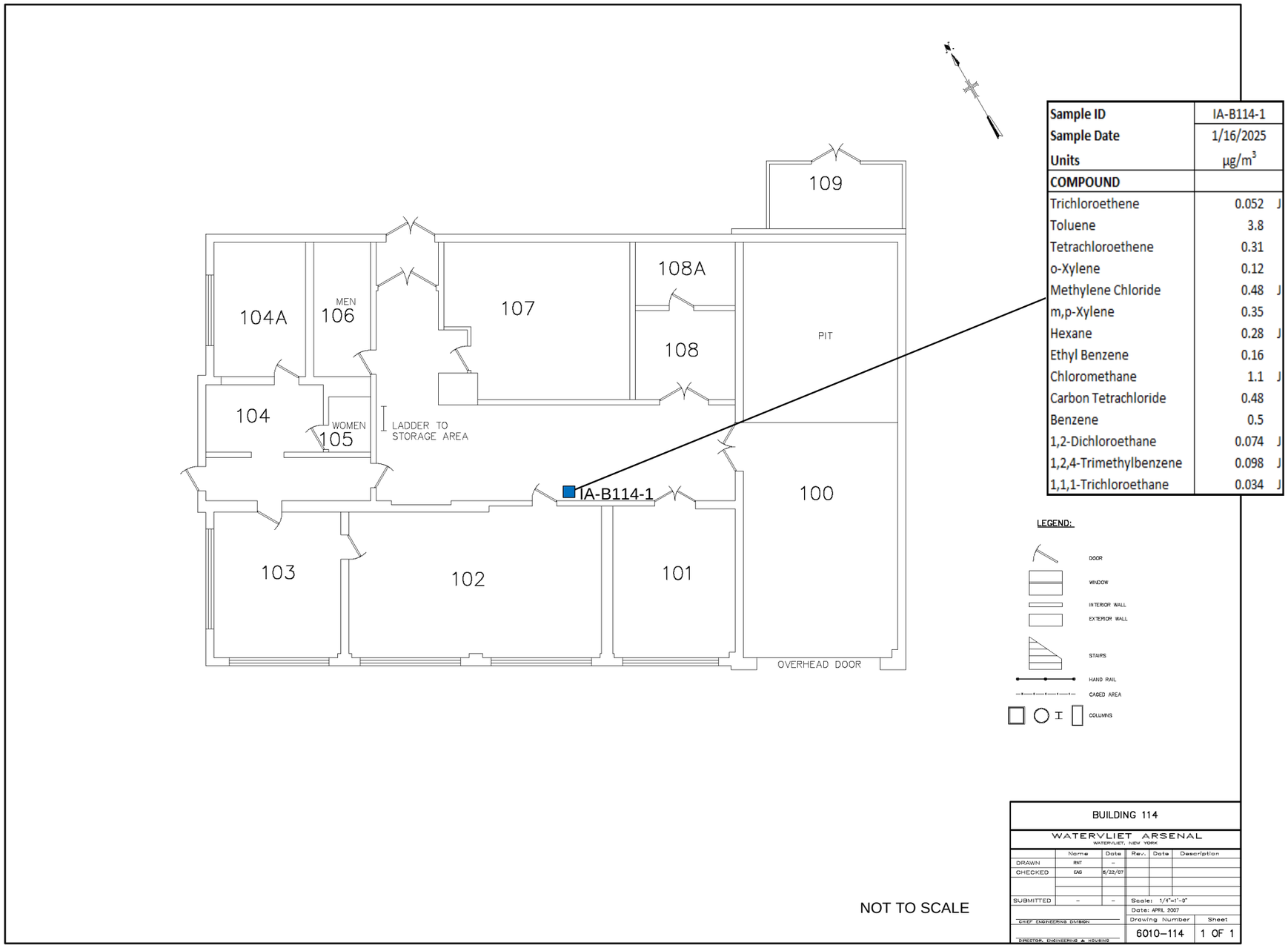
LEGEND:
DOOR
WINDOW
INTERIOR WALL
EXTERIOR WALL
STAIRS
HAND RAIL
CAGED AREA
COLUMNS

NOT TO SCALE

BUILDING 25 – THIRD FLOOR

WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date	Rev.	Date	Description
DRAWN	RNT	–			
CHECKED	EAG	6/22/07			
SUBMITTED	–	–	Scale: 3/32"=1'-0"		
			Date: APRIL 2007		
CHIEF ENGINEERING DIVISION			Drawing Number		Sheet
DIRECTOR, ENGINEERING & HOUSING			6003–25–3		3 OF 3



Sample ID	IA-B114-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.052	J
Toluene	3.8	
Tetrachloroethene	0.31	
o-Xylene	0.12	
Methylene Chloride	0.48	J
m,p-Xylene	0.35	
Hexane	0.28	J
Ethyl Benzene	0.16	
Chloromethane	1.1	J
Carbon Tetrachloride	0.48	
Benzene	0.5	
1,2-Dichloroethane	0.074	J
1,2,4-Trimethylbenzene	0.098	J
1,1,1-Trichloroethane	0.034	J

LEGEND:

DOOR
WINDOW
INTERIOR WALL
EXTERIOR WALL
STAIRS
HAND RAIL
CAGED AREA
COLUMNS

NOT TO SCALE

BUILDING 114

WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date	Rev.	Date	Description
DRAWN	RNT	–			
CHECKED	EAG	5/22/07			
SUBMITTED	–	–	Scale: 1/4"=1'-0"		
			Date: APRIL 2007		
CHIEF ENGINEERING DIVISION			Drawing Number		Sheet
DIRECTOR, ENGINEERING & HOUSING			6010–114		1 OF 1

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Figure 6-7
Indoor Air VOC Concentrations
Building 120 Type C SSDS

Watervliet Arsenal
Watervliet, New York



BUILDING 120 – FIRST FLOOR "A"

NOT TO SCALE

Sample ID	IA-B120-2	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
trans-1,2-Dichloroethene	0.021	J
Toluene	0.66	
Tetrachloroethene	0.24	
o-Xylene	0.13	
Methylene Chloride	0.47	J
m,p-Xylene	0.34	
Hexane	0.25	J
Ethyl Benzene	0.12	
Cyclohexane	0.17	J
Chloromethane	1.1	J
Carbon Tetrachloride	0.47	
Benzene	0.56	
1,2-Dichloroethane	0.071	J
1,2,4-Trimethylbenzene	0.13	J
1,1,1-Trichloroethane	0.028	J

Sample ID	IA-B120-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.2	
trans-1,2-Dichloroethene	0.03	J
Toluene	0.59	
Tetrachloroethene	0.59	
o-Xylene	0.16	
Methylene Chloride	0.51	J
m,p-Xylene	0.35	
Hexane	0.24	J
Ethyl Benzene	0.12	
Cyclohexane	2.1	J
Chloromethane	1.1	J
Carbon Tetrachloride	0.46	
Benzene	0.54	
1,2-Dichloroethane	0.079	J
1,2,4-Trimethylbenzene	0.13	J
1,1,1-Trichloroethane	0.042	J

BUILDING 120 – FIRST FLOOR

WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date
DRAWN	RNT	–
CHECKED	EAG	6/22/07
SUBMITTED	–	–

Rev.	Date	Description

Scale: SCALE: 3/32"=1'-0"
Date: APRIL 2007

CHIEF ENGINEERING DIVISION
DIRECTOR, ENGINEERING & HOUSING

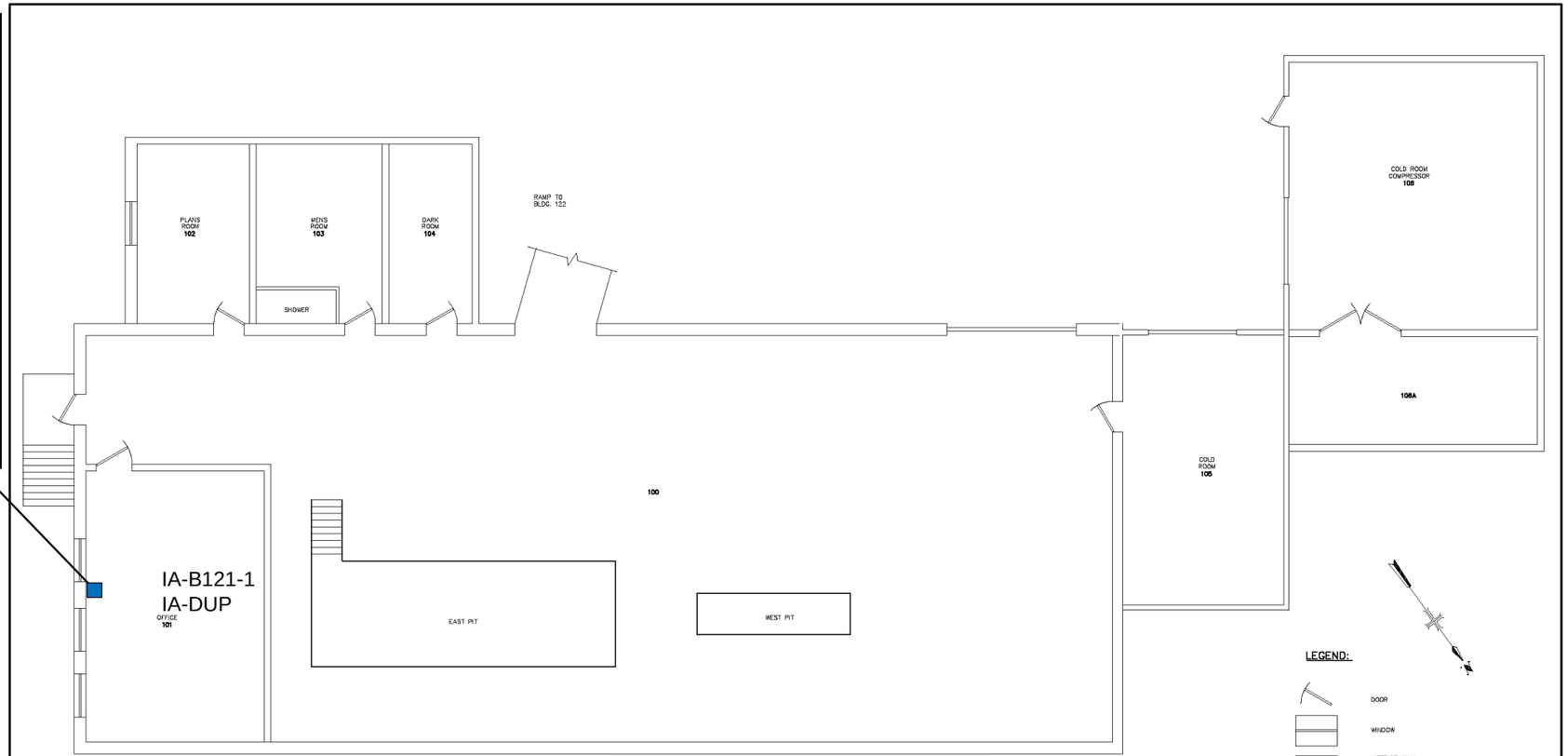
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ARCADIS Design & Consultancy for natural and built assets

Figure 6-8
Indoor Air VOC Concentrations
Building 121 – Type C SSDS

Watervliet Arsenal
Watervliet, New York

Sample ID	IA-B121-1	
Sample Date	1/16/2025	
Units	µg/m^3	
COMPOUND		
Toluene	0.6	
Tetrachloroethene	0.25	J
o-Xylene	0.12	J
Methylene Chloride	0.56	J
m,p-Xylene	0.29	J
Ethyl Benzene	0.14	J
Cyclohexane	0.31	J
Carbon Tetrachloride	0.47	
Benzene	0.54	
1,2-Dichloroethane	0.082	J



Sample ID	IA-DUP	
Sample Date	1/16/2025	
Units	µg/m^3	
COMPOUND		
Toluene	0.65	
Tetrachloroethene	0.25	J
o-Xylene	0.14	J
Methylene Chloride	0.56	J
m,p-Xylene	0.33	J
Ethyl Benzene	0.15	J
Cyclohexane	0.29	J
Carbon Tetrachloride	0.46	
Benzene	0.58	
1,2-Dichloroethane	0.089	J

NOT TO SCALE

LEGEND:

DOOR
WINDOW
INTERIOR WALL
EXTERIOR WALL
STAIRS
HAND RAIL
CAGED AREA
COLUMNS

BUILDING 121
WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date	Rev.	Date	Description
DRAWN	JJN	10/23/07			
CHECKED	--	--			
SUBMITTED	--	--	Scale: 1/4"=1'-0"		
			Date: OCTOBER 2007		
CHIEF, ENGINEERING DIVISION			Drawing Number		Sheet
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DIRECTOR, ENGINEERING & HOUSING					

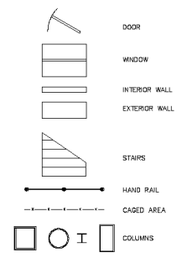
Figure 6-9
Indoor Air VOC Concentrations
Building 130 – Type C SSDS

Watervliet Arsenal
Watervliet, New York



Sample ID	IA-B130-1	
Sample Date	1/16/2025	
Units	µg/m³	
COMPOUND		
Trichloroethene	0.17	
Toluene	2.8	
Tetrachloroethene	0.47	
o-Xylene	0.2	
Methylene Chloride	0.45	J
m,p-Xylene	0.5	
Hexane	54	
Heptane	0.72	J
Ethyl Benzene	0.2	
Cyclohexane	19	
Chloromethane	1.1	J
Carbon Tetrachloride	0.45	
Benzene	0.72	
2,2,4-Trimethylpentane	1.5	J
1,2-Dichloroethane	0.082	J
1,2,4-Trimethylbenzene	0.29	J
1,1,1-Trichloroethane	0.033	J

LEGEND:



NOT TO SCALE

BUILDING 130

WATERVLIET ARSENAL
WATERVLIET, NEW YORK

	Name	Date	Rev.	Date	Description
DRAWN	TAL	–			
CHECKED					
SUBMITTED	–	–	Scale: 1/8"=1'-0"		
			Date: DECEMBER 2007		
CHIEF ENGINEERING DIVISION			Drawing Number		Sheet
DIRECTOR, ENGINEERING & HOUSING			6026–130		1 OF 1

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ARCADIS

Tables

Table 2-1
Long Term Monitoring Sampling Wells
Main Manufacturing Area
Watervliet Arsenal, Watervliet, New York

Well	Area Monitored	Geologic Unit	VOCs	Metals	Frequency
83DM-SP-3	WWTP	Bedrock	**X**	**X** (c)	Annual
83DM-SP-4	WWTP	Bedrock	**X** (b)		Annual
86EM-SP-1A	Building 25	Overburden	**X** (b)		Annual
86EM-SP-6	WWTP	Overburden	**X**	**X** (c)	Annual
92EM-SP-8	WWTP	Overburden	**X**	**X** (c)	Annual
93EM-SP-9	WVA boundary	Overburden	**X** (b)		Annual
93EM-SP-11	Building 25	Overburden	**X**	**X (d)**	Annual
93EM-SP-13	Building 135	Bedrock			VOCs every 5 yrs. - Next in 2026
94EM-MW-19	Building 15	Bedrock	**X**	**X**	Annual
94EM-MW-20	Building 15	Bedrock	**X**	**X**	Annual
94EM-MW-21	Building 15	Bedrock	**X**	**X**	Annual
93EM-RW-2	Building 114	Bedrock	**X** (b)		Annual
WVA-AW-25-MW-2	Building 25	Bedrock	**X** (b)		Annual
WVA-AW-25-MW-3	Building 25	Overburden	**X** (b)		Annual
WVA-AW-25-MW-6	Building 25	Overburden	**X** (b)		Annual
WVA-AW-35-MW-12	Building 35	Overburden		**X (d)**	Annual
NMT Pit	Building 35	--		**X (d)**	Annual
WVA-AW-135-MW-4	Building 135	Bedrock			VOCs every 5 yrs. - Next in 2026
WVA-AW-MW-26	WVA boundary	Bedrock			VOCs every 5 yrs. - Next in 2026
WVA-AW-MW-27	WVA boundary	Overburden			VOCs every 5 yrs. - Next in 2026
WVA-AW-MW-32	WVA boundary	Weathered			VOCs every 5 yrs. - Next in 2026
WVA-AW-MW-35	Building 20	Bedrock	**X** (b)		Annual
WVA-AW-MW-36	Building 20	Overburden	**X** (b)		Annual
WVA-AW-MW-38	WVA boundary	Bedrock			VOCs every 5 yrs. - Next in 2026
WVA-AW-MW-47	WVA boundary	Weathered	**X** (b)		Annual
WVA-AW-MW-52	Building 114	Bedrock	**X** (b)		Annual

Notes:

(a) Overburden and weathered bedrock (b) VOCs sampled using PDBs, (c) Chromium only, (d) Hexavalent Chromium only

Table 2-1
Long Term Monitoring Sampling Wells
Main Manufacturing Area
Watervliet Arsenal, Watervliet, New York

Well	Area Monitored	Geologic Unit	VOCs	Metals	Frequency
WVA-AW-MW-64	Building 114	Bedrock	**X** (b)		Annual
B121-N	Building 121	Hybrid (a)			VOCs every 5 yrs. - Next in 2026
B121-S	Building 121	Hybrid (a)			VOCs every 5 yrs. - Next in 2026
WVA-AW-MW-BLD-110	Building 110	Bedrock			VOCs every 5 yrs. - Next in 2026
WVA-B35-PW-1	Building 110	Bedrock			VOCs every 5 yrs. - Next in 2026
WVA-MW-82R-1	Building 40	Bedrock	**X**		Annual
WVA-MW-82R-2	Building 40	Bedrock	**X**		Annual
WVA-MW-82R-3	Building 40	Bedrock	**X**		Annual
WVA-MW-83-1	Building 40	Bedrock	**X**		Annual
WVA-MW-83-2	Building 40	Bedrock	**X**		Annual
WVA-MW-83-3	Building 40	Bedrock	**X**		Annual
WVA-MW-84R-1	Building 40	Bedrock	**X**		Annual
WVA-MW-84R-2	Building 40	Bedrock	**X**		Annual
WVA-MW-84R-3	Building 40	Bedrock	**X**		Annual
WVA-MW-85R-1	Building 40	Bedrock	**X**		Annual
WVA-MW-85R-2	Building 40	Bedrock	**X**		Annual
WVA-MW-85R-3	Building 40	Bedrock	**X**		Annual
WVA-MW-86R-1	Building 40	Bedrock	**X**		Annual
WVA-MW-86R-2	Building 40	Bedrock	**X**		Annual
WVA-MW-86R-3	Building 40	Bedrock	**X**		Annual

Notes:
(a) Overburden and weathered bedrock (b) VOCs sampled using PDBs, (c) Chromium only, (d) Hexavalent Chromium only

Table 2-2
Long Term Monitoring Sampling Wells
West Campus Area
Watervliet Arsenal, Watervliet, New York

Well	Area Monitored	Geologic Unit	VOCs (b)	Frequency
WVA-SA-MW-32	Burn Pit	Overburden	**X** (b)	Annual
WVA-SA-MW-33	WVA boundary	Overburden	**X** (b)	Annual
WVA-SA-MW-39	Burn Pit	Weathered	**X** (b)	Annual
WVA-SA-MW-60	Reactive Wall	Weathered	**X** (b)	Annual
WVA-SA-MW-70	Reactive Wall	Overburden	**X** (b)	Annual
WVA-SA-MW-78	Burn Pit	Bedrock	**X** (b)	Annual
WVA-SA-MW-79	Burn Pit	Bedrock	**X** (b)	Annual
WVA-SA-MW-80	Burn Pit	Bedrock	**X** (b)	Annual
WVA-SA-MW-81	Burn Pit	Bedrock	**X** (b)	Annual
WVA-SA-MW-83	Burn Pit	Bedrock	**X** (b)	Annual
WVA-SA-MW-84	Burn Pit	Bedrock	**X** (b)	Annual
WVA-SA-STS-3	Sewer	Storm Sewer	**X**	Annual
WVA-SA-STS-5	Sewer	Storm Sewer	**X**	Annual
WVA-SA-STS-6	Sewer	Storm Sewer	**X**	Annual
WVA-SA-SNS-6	Sewer	Sanitary Sewer	**X**	Annual

Notes:
(b) VOCs sampled using PDBs

Table 2-3
Summary of Incomplete Sampling Locations
2024 Long Term Monitoring
Watervliet Arsenal
Watervliet, New York

Monitoring Well	July 2024
Main Manufacturing Area	
93EM-SP-9	Well dry; no sample collected.
WVA-AW-25-MW-6	Well dry; no sample collected.
WVA-AW-35-MW-12	Well dry; no sample collected.
Siberia Area	
WVA-SA-MW-33	Well dry; no sample collected.

Table 3-1
Groundwater Sample Exceedances (2024)
Main Manufacturing Area
Watervliet Arsenal, Watervliet, New York

Well	Parameter	Result (µg/L)	NYSDEC GA Standard (µg/L)
86EM-SP-1A	Trichloroethene	6.38	5
92EM-SP-8	Chromium	445	50
93EM-RW-2	cis-1,2-Dichloroethene	33.7	5
	Tetrachloroethene	26.6	5
	Trichloroethene	51.8	5
94EM-MW-19	Chromium	106	50
94EM-MW-20	Chromium	104.1	50
	Lead	270.9	25
94EM-MW-21	Chromium	110.6	50
NMT PIT	Chromium VI	240	50
WVA-AW-25-MW-2	cis-1,2-Dichloroethene	6.43	5
	Vinyl chloride	5.54	2
WVA-AW-MW-35	cis-1,2-Dichloroethene	17.7	5
	Trichloroethene	5.07	5
	Vinyl chloride	5.02	2
WVA-AW-MW-64	cis-1,2-Dichloroethene	654	5
	trans-1,2-Dichloroethene	21.7	5
	Vinyl chloride	1210	2
WVA-MW-82R-1	cis-1,2-Dichloroethene	400	5
	Tetrachloroethene	26	5
	Trichloroethene	22	5
	Vinyl chloride	53	2
WVA-MW-82R-2	cis-1,2-Dichloroethene	240	5
	Vinyl chloride	83	2
WVA-MW-83-1	cis-1,2-Dichloroethene	1400	5
	Tetrachloroethene	1600	5
	trans-1,2-Dichloroethene	14	5
	Trichloroethene	640	5
	Vinyl chloride	380	2
WVA-MW-83-2	cis-1,2-Dichloroethene	4800	5
	Tetrachloroethene	18000	5
	Trichloroethene	7400	5
	Vinyl chloride	520	2
WVA-MW-83-3	cis-1,2-Dichloroethene	500	5
	Vinyl chloride	640	2
WVA-MW-84R-1	cis-1,2-Dichloroethene	1500	5
	Tetrachloroethene	37	5
	trans-1,2-Dichloroethene	16	5
	Trichloroethene	52	5
	Vinyl chloride	310	2

Table 3-1
Groundwater Sample Exceedances (2024)
Main Manufacturing Area
Watervliet Arsenal, Watervliet, New York

Well	Parameter	Result (µg/L)	NYSDEC GA Standard (µg/L)
WVA-MW-84R-2	1,1-Dichloroethene	46	5
	cis-1,2-Dichloroethene	7900	5
	Tetrachloroethene	3400	5
	trans-1,2-Dichloroethene	180	5
	Trichloroethene	1200	5
	Vinyl chloride	1400	2
WVA-MW-84R-3	cis-1,2-Dichloroethene	3200	5
	Tetrachloroethene	24	5
	Trichloroethene	79	5
	Vinyl chloride	2100	2
WVA-MW-85R-2	cis-1,2-Dichloroethene	1700	5
	Tetrachloroethene	1300	5
	trans-1,2-Dichloroethene	15	5
	Trichloroethene	200	5
	Vinyl chloride	580	2
WVA-MW-85R-3	cis-1,2-Dichloroethene	2100	5
	Tetrachloroethene	1700	5
	trans-1,2-Dichloroethene	16	5
	Trichloroethene	420	5
	Vinyl chloride	1100	2
WVA-MW-86R-2	cis-1,2-Dichloroethene	2200	5
	trans-1,2-Dichloroethene	28	5
	Vinyl chloride	2300	2
WVA-MW-86R-3	cis-1,2-Dichloroethene	1100	5
	Tetrachloroethene	84	5
	trans-1,2-Dichloroethene	27	5
	Trichloroethene	80	5
	Vinyl chloride	640	2

Table 3-2
Groundwater Sample Exceedances (VOCs) (2024)
West Campus Area
Watervliet Arsenal, Watervliet, New York

Well	Parameter	Result (µg/L)	NYSDEC GA Standard (µg/L)
WVA-SA-MW-39	cis-1,2-Dichloroethene	239	5
	Tetrachloroethene	30.8	5
	Trichloroethene	87.4	5
WVA-SA-MW-78	cis-1,2-Dichloroethene	9.21	5
	Vinyl chloride	38.5	2
WVA-SA-MW-81	Vinyl chloride	11.8	2
WVA-SA-MW-83	Vinyl chloride	3.64	2
WVA-SA-MW-84	cis-1,2-Dichloroethene	38.4	5
	Vinyl chloride	10.2	2
WVA-SA-SNS-6	Vinyl chloride	6.8	2
WVA-SA-STS-5	Vinyl chloride	3.5	2
WVA-SA-STS-6	cis-1,2-Dichloroethene	5.6	5

Table 3-3
Groundwater Sample Trigger Value Exceedances (2024)
Main Manufacturing Area
Watervliet Arsenal, Watervliet, New York

Well	Area Monitored	Date Collected	Parameter	Trigger Concentration (µg/L)	2024 Result (µg/L)
WVA-MW-82R-1	Building 40	7/18/2024	Vinyl chloride	91	53
			cis-1,2 DCE	297	**400**
			TCE	9	**22**
			PCE	14	**26**
WVA-MW-82R-2	Building 40	7/18/2024	Vinyl chloride	92	83
			cis-1,2 DCE	235	**240**
			TCE	3	1
			PCE	23	1
WVA-MW-82R-3	Building 40	7/18/2024	Vinyl chloride	19	1.1
			cis-1,2 DCE	25	1.1
			TCE	1	0.5
			PCE	1	0.5
WVA-MW-83-1	Building 40	7/17/2024	Vinyl chloride	374	**380**
			cis-1,2 DCE	5,091	1400
			TCE	5,828	640
			PCE	18,569	1600
WVA-MW-83-2	Building 40	7/17/2024	Vinyl chloride	775	520
			cis-1,2 DCE	7,852	4800
			TCE	9,846	7400
			PCE	46,679	18000
WVA-MW-83-3	Building 40	7/18/2024	Vinyl chloride	749	640
			cis-1,2 DCE	1,545	500
			TCE	179	3.1
			PCE	303	1.2
WVA-MW-84R-1	Building 40	7/17/2024	Vinyl chloride	591	310
			cis-1,2 DCE	4,740	1500
			TCE	450	52
			PCE	440	37
WVA-MW-84R-2	Building 40	7/17/2024	Vinyl chloride	6,102	1400
			cis-1,2 DCE	40,297	7900
			TCE	18,746	1200
			PCE	68,757	3400
WVA-MW-84R-3	Building 40	7/17/2024	Vinyl chloride	4,314	2100
			cis-1,2 DCE	14,772	3200
			TCE	2,723	79
			PCE	3,145	24
WVA-MW-85R-1	Building 40	7/16/2024	Vinyl chloride	4	0.52
			cis-1,2 DCE	12	ND
			TCE	1	ND
			PCE	5	ND
WVA-MW-85R-2	Building 40	7/16/2024	Vinyl chloride	818	580
			cis-1,2 DCE	5,062	1700
			TCE	1,272	200
			PCE	6,031	1300
WVA-MW-85R-3	Building 40	7/17/2024	Vinyl chloride	1,156	1100
			cis-1,2 DCE	4,642	2100
			TCE	2,586	420
			PCE	43,982	1500

Table 3-3
Groundwater Sample Trigger Value Exceedances (2024)
Main Manufacturing Area
Watervliet Arsenal, Watervliet, New York

Well	Area Monitored	Date Collected	Parameter	Trigger Concentration (µg/L)	2024 Result (µg/L)
WVA-MW-86R-1	Building 40	7/16/2024	Vinyl chloride	30	0.79
			cis-1,2 DCE	82	0.91
			TCE	10	0.5
			PCE	46	0.19
WVA-MW-86R-2	Building 40	7/16/2024	Vinyl chloride	3,443	2300
			cis-1,2 DCE	7,217	2200
			TCE	522	10
			PCE	1,102	10
WVA-MW-86R-3	Building 40	7/16/2024	Vinyl chloride	2,165	640
			cis-1,2 DCE	9,066	1100
			TCE	296	80
			PCE	592	84
86EM-SP-1A	Building 25	8/15/2024	Vinyl chloride	1	1
			cis-1,2 DCE	2	0.248
			TCE	16	6.38
			PCE	1	1
WVA-AW-25-MW-2	Building 25	8/15/2024	Vinyl chloride	20	5.54
			cis-1,2 DCE	58	6.43
			TCE	32	0.651
			PCE	1	1
WVA-AW-25-MW-3	Building 25	8/15/2024	Vinyl chloride	19	1
			cis-1,2 DCE	176	2.95
			TCE	59	2.95
			PCE	1	1
WVA-AW-MW-52	Building 114	8/15/2024	Vinyl chloride	1	1
			cis-1,2 DCE	1	0.401
			TCE	3	0.911
			PCE	9	2.78
WVA-AW-MW-64	Building 114	8/15/2024	Vinyl chloride	3,688	1210
			cis-1,2 DCE	3,440	654
			TCE	1,667	1.51
			PCE	4,143	2.04

Notes:
µg/L - micrograms per liter
Bold - Exceeded the Trigger value
DCE - Dichloroethene
TCE - Trichloroethene
PCE - Tetrachloroethene
Trigger Values calculated from data collected between 2012 and 2023

Table 4-1
Summary of 2024 SSDS Operational Parameters - Building 20
Watervliet Arsenal
Watervliet, New York

Date	Total Flow (cfm)	VFD Speed (%)	Vacuum (inches H_2O)	Run Time (hours)	Alarm	Pre-carbon PID (ppm)	Post-carbon PID (ppm)	Notes
1/9/2024	363	59.8 HZ	-29	106349.0	Yes			1/7/24: Blower Flow High High
2/5/2024	363	59.8 HZ	-28	106958.0	No			
3/4/2024	363	59.8 HZ	-24	107587.0	Yes			2/25/24: Blow Flow High High
7/15/2024	349	59.8 HZ	-25	110572	Yes			7/14/25: Influent Flow High High. Belts and OIl changed
8/5/2024	363	59.8 HZ	-29	111047	Yes			8/5/24: Influent Flow High High
9/9/2024	650	59.8 HZ	-12	111829	Yes			9/9/24: Influent Flow High High
10/11/2024	376	59.8 HZ	-15	112551	Yes			10/1/24: Influent Flow High High
11/4/2024	650	59.8 HZ	-17	113089	Yes			11/3/24: Influent Flow High High
12/19/2024	366	59.8 HZ	-24	114022	Yes			12/17/24: Influent Flow High High

NM - Not Measured

Table 4-2
Summary of 2024 Type A SSDS Operational Parameters - Building 21
Watervliet Arsenal
Watervliet, New York

Date	Total Flow (cfm)	Vacuum (inches H_2O)	Run Time (hours)	Alarm	Pre-carbon PID (ppm)	Post-carbon PID (ppm)	Notes
1/9/2024	19	-40	104494	None			
2/5/2024	17	-40	105104	None			
3/4/2024	17	-40	105732	None			
7/15/2024	19	-37.5	108331	None			System Offline on arrival. Vent fan VFD set at 40 HZ.
8/5/2024	17	-38	108800	None			
9/9/2024	17	-39	109582	None			
10/11/2024	19	-40	110304	None			
11/4/2024	19	-41	110841	None			
12/19/2024	18	-41	111859	None			

NM - Not Measured
(1) flow measured from extraction well

Table 4-3
Summary of 2024 SSDS Operational Parameters - Building 22
Watervliet Arsenal
Watervliet, New York

Date	Extraction Point	System On?	Vacuum (inches H_2O)	Total Flow (cfm)	Notes
1/9/2024	EW-1	Yes	-2.5	13.35	
	EW-2	Yes	-2	54.6	Condensate drained
2/5/2024	EW-1	Yes	-2.4	14	
	EW-2	Yes	-1.8	58.5	Condensate drained, GFCI @ fan tripped, reset
3/4/2024	EW-1	Yes	-2.6	14.05	
	EW-2	Yes	-2	49.2	
7/15/2024	EW-1	Yes	-2.5	16.45	
	EW-2	Yes	-2	48.8	
8/5/2024	EW-1	Yes	-2.5	16.1	
	EW-2	Yes	-2	49.4	
9/9/2024	EW-1	Yes	-2.6	16.2	
	EW-2	Yes	-1.8	54	
10/11/2024	EW-1	Yes	-2.4	16.4	
	EW-2	Yes	-2	48.5	Condensate drained
11/4/2024	EW-1	Yes	-2.6	13.25	
	EW-2	Yes	-2	49.6	Condensate drained
12/19/2024	EW-1	Yes	-2.5	14.55	
	EW-2	Yes	-1.9	55.1	Condensate drained
	EW-1				
	EW-2				
	EW-1				
	EW-2				
	EW-1				
	EW-2				

NM - Not Measured

Table 4-4
Summary of 2024 SSDS Operational Parameters - Building 25
Watervliet Arsenal
Watervliet, New York

Date	Total Flow (cfm)	VFD Speed (%)	Vacuum (inches H_2O)	Run Time (hours)	Alarm	Pre-carbon PID (ppm)	Post-carbon PID (ppm)	Notes
1/9/2024	396	55.02 HZ	-18	106732.00	None			
2/5/2024	396	55.02 HZ	-40	107341.00	None			
3/4/2024	393	55.02 HZ	-40	107970.00	None			
7/15/2024	383	55,02 HZ	-50	110955.00	None			Belts and Oil Changed
8/5/2024	390	55.05 HZ	-48	111430.00	None			
9/9/2024	393	55.02 HZ	-28	112212.00	None			
10/11/2024	386	55.02 HZ	-31	112934.00	None			
11/4/2024	396	55.02 HZ	-32	113472.00	None			
12/19/2024	386	55.02	-40	114485.00	None			

NM - Not Measured

Table 4-5
Summary of 2024 SSDS Operational Parameters - Building 114
Watervliet Arsenal
Watervliet, New York

Date	Total Flow (cfm)	Vacuum (inches H_2O)	Run Time (hours)	Alarm	Pre-carbon PID (ppm)	Post-carbon PID (ppm)	Notes
1/9/2024	69	-12	103097	None			
2/5/2024	69	-12	103706	None			
3/4/2024	69	-12	104335	None			
7/15/2024	71	-12	107296	None			
8/5/2024	68	-12	107774	None			
9/9/2024	70	-12	108557	None			
10/11/2024	67	-12.5	109277	None			
11/4/2024	67	-12	109814	None			
12/19/2024	71	-10	110832	None			

NM - Not Measured

Table 4-6
Summary of 2024 SSDS Operational Parameters - Building 120
Watervliet Arsenal
Watervliet, New York

Date	Extraction Point	System On?	Vacuum (inches H_2O)	Total Flow (cfm)
1/9/2024	EW-1	Yes	-5	11.45
	EW-2		-6	7.56
2/5/2024	EW-1	Yes	-6	7.26
	EW-2		-9	9.77
3/4/2024	EW-1	Yes	-6	6.97
	EW-2		-9	10.8
7/15/2024	EW-1	Yes	-7.5	6.72
	EW-2		-12.5	11.4
8/5/2024	EW-1	Yes	-8.5	9.47
	EW-2		-18	7.71
9/9/2024	EW-1	Yes	-5	9.67
	EW-2		-9.5	9.82
10/11/2024	EW-1	Yes	-5	11.7
	EW-2		-8.5	7.41
11/4/2024	EW-1	Yes	-6.5	11.6
	EW-2		-9	12.1
12/19/2024	EW-1	Yes	-6	13.3
	EW-2		-9	11.4
	EW-1			
	EW-2			
	EW-1			
	EW-2			
	EW-1			
	EW-2			

Table 4-7
Summary of 2024 SSDS Operational Parameters - Building 121
Watervliet Arsenal
Watervliet, New York

Date	System On?	Vacuum (inches H_2O)	Total Flow (cfm)	Notes
1/9/2024	Yes	-1.7	46.6	
2/5/2024	Yes	-1.6	42.8	
3/4/2024	Yes	-1.6	48.8	
7/15/2024	Yes	-1.6	39.7	
8/5/2024	Yes	-1.6	42.8	
9/9/2024	Yes	-1.6	42.1	
10/11/2024	Yes	-1.8	40.9	GFCI Outlet tripped on arrival. Rest, OK.
11/4/2024	Yes	-1.7	32.6	
12/19/2024	Yes	-1.8	38.7	

NM - Not Measured

Table 4-8
Summary of 2024 SSDS Operational Parameters - Building 130
Watervliet Arsenal
Watervliet, New York

Date	System On?	Vacuum (inches H_2O)	Total Flow (cfm)	Notes
1/9/2024	Yes	-2.2	45.4	
2/5/2024	Yes	-2	48	
3/4/2024	Yes	-2	47.5	
7/15/2024	Yes	-2.1	41.2	
8/5/2024	Yes	-2	43.7	
9/9/2024	Yes	-2.1	43.2	
10/11/2024	Yes	-2.1	44.4	
11/4/2024	Yes	-2.1	41.3	
12/19/2024	Yes	-2.2	43.7	

NM - Not Measured

Table 5-1
SSDS Effluent Sample Results Summary
Buildings 20 and 25
Watervliet Arsenal
Watervliet, New York

Building	20								
Sample ID	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**	**B20-Pre-carbon Effluent**
Sample Type									
Date	**9/10/2010**	**3/30/2011**	**11/17/2011**	**10/4/2012**	**5/30/2013**	**12/16/2013**	**6/12/2014**	**10/30/2014**	**3/17/2015**
Units	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**
VOCs (TO-15)									
Vinyl Chloride	1.9 U	1.8 U	1.9 U	2.1 U	ND	0.037 U	0.048 U	**0.053**	0.033 U
Trichloroethene	**250**	**59**	**78**	**110**	**47**	**40**	**42**	**2.8**	**21**
trans-1,2-Dichloroethene	3.0 U	2.8 U	3 U	3.2 U	ND	0.58 U	0.74 U	0.72 U	0.52 U
Toluene	--	--	--	--	--	--	--	--	--
Tetrachloroethene	**54**	**16**	**21**	**29**	**13**	**13**	**16**	0.25 U	**7.1**
o-Xylene	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	3.0 U	2.8 U	3 U	**3.4**	**4.3**	**2.1**	**4.8**	**4.4**	**1.3**
Chloromethane	6.3 U	5.9 U	6.2 U	17 U	**0.32**	**0.21**	**0.27**	**0.44**	**0.35**
Chloroethane	2.0 U	7.6 U	7.9 U	8.6 U	ND	0.15 U	0.25 U	0.24 U	0.17 U
Chlorobenzene	3.5 U	3.3 U	3.4 U	3.8 U	ND	0.13 U	0.17 U	0.17 U	0.12 U
Carbon Tetrachloride	4.8 U	4.5 U	4.7 U	5.2 U	**0.63**	**0.82**	**0.63**	**0.38**	**0.57**
Benzene	--	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	3.1 U	2.9 U	3 U	3.3 U	ND	0.12 U	0.15 U	0.15 U	0.11 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	3.0 U	2.8 U	3 U	3.2 U	ND	0.058 U	0.074 U	**0.24**	0.052 U
1,1-Dichloroethane	3.1 U	2.9 U	3 U	3.3 U	ND	0.12 U	0.15 U	**0.47**	0.11 U
1,1,2-Trichloroethane	4.1 U	3.9 U	4.1 U	4.5 U	ND	0.16 U	0.15 U	0.2 U	0.14 U
1,1,2,2-Tetrachloroethane	5.2 U	4.9 U	5.1 U	5.6 U	ND	0.20 U	0.26 U	0.25 U	0.18 U
1,1,1-Trichloroethane	**6.4**	3.9 U	4.1 U	4.5 U	**2.2**	**1.6**	**1.9**	**37**	**0.83**
Total VOCs	**310**	**125**	**151.4**	**207**	**67**	**58**	**68**	**46**	**31**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-1
SSDS Effluent Sample Results Summary
Buildings 20 and 25
Watervliet Arsenal
Watervliet, New York

Building	20								
Sample ID	**B20 Effluent**	**B20 Effluent**	**B20 Effluent**	**B20 Effluent**	**B20 Effluent**	**B20 Effluent**	**B20 Effluent**	**B20 Effluent**	**B20 Effluent**
Sample Type									
Date	**7/28/2016**	**12/14/2017**	**11/26/2018**	**11/25/2019**	**1/13/2021**	**12/16/2021**	**12/13/2022**	**12/4/2023**	**1/16/2025**
Units	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**
VOCs (TO-15)									
Vinyl Chloride	2 U	0.037 U	0.04 U	0.044 U	0.040 U	0.042 U	0.04 U	0.043 U	0.072 U
Trichloroethene	**77**	**27**	**35**	**23**	**18**	**25**	**27**	**30**	**24**
trans-1,2-Dichloroethene	3.2 U	0.58 U	0.61 U	0.68 U	0.62 U	0.66 U	0.63 U	0.67 U	**0.089** J
Toluene	--	--	--	--	--	--	--	--	**0.75**
Tetrachloroethene	**32**	**12**	**11**	**13**	**9.1**	**17**	**18**	**14**	**18**
o-Xylene	--	--	--	--	--	--	--	--	**0.18** J
Naphthalene	--	--	--	--	--	--	--	--	0.74 U
Methylene Chloride	--	--	--	--	--	--	--	--	2 U
m,p-Xylene	--	--	--	--	--	--	--	--	**0.53**
Hexane	--	--	--	--	--	--	--	--	**0.72** J
Heptane	--	--	--	--	--	--	--	--	5.8 U
Ethyl Benzene	--	--	--	--	--	--	--	--	**0.18** J
Cyclohexane	--	--	--	--	--	--	--	--	4.8 U
cis-1,2-Dichloroethene	**3.3**	**1.0**	**0.78**	**0.74**	**0.29**	**0.72**	**0.69**	**0.51**	**0.21** J
Chloromethane	17 U	1.5 U	1.6 U	1.8 U	1.6 U	1.7 U	1.6 U	1.8 U	**3.2**
Chloroethane	8.5 U	0.19 U	0.2 U	0.22 U	0.20 U	0.22 U	0.21 U	0.22 U	**0.14** J
Chlorobenzene	3.7 U	0.13 U	0.71 U	0.79 U	0.72 U	0.76 U	0.73 U	0.78 U	1.3 U
Carbon Tetrachloride	5.1 U	**0.5**	**0.53**	**0.55**	**0.49**	**0.48**	**0.54**	**0.45**	**0.46**
Benzene	--	--	--	--	--	--	--	--	**0.41** J
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	**1.1** J
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	1.4 U
1,2-Dichloroethane	3.2 U	0.12 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U	0.14 U	0.23 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	**0.19** J
1,1-Dichloroethene	3.2 U	0.058 U	0.061 U	0.068 U	0.062 U	0.066 U	0.063 U	0.067 U	0.11 U
1,1-Dichloroethane	3.2 U	0.12 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U	0.14 U	**0.039** J
1,1,2-Trichloroethane	4.4 U	0.16 U	0.17 U	0.19 U	0.17 U	0.18 U	0.17 U	0.18 U	0.31 U
1,1,2,2-Tetrachloroethane	5.5 U	0.2 U	0.21 U	0.23 U	0.21 U	0.23 U	0.22 U	0.23 U	0.39 U
1,1,1-Trichloroethane	**2.2 J**	**0.86**	**0.89**	**1.0**	**0.54**	**0.92**	**0.80**	**0.73**	**0.57**
Total VOCs	**115**	**41**	**48**	**38**	**28**	**44**	**47**	**46**	**51**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-1
SSDS Effluent Sample Results Summary
Buildings 20 and 25
Watervliet Arsenal
Watervliet, New York

Building	25								
Sample ID	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**	**B25-Pre-carbon Effluent**
Sample Type									
Date	**8/12/2010**	**3/30/2011**	**11/17/2011**	**10/4/2012**	**5/30/2013**	**12/16/2013**	**6/12/2014**	**10/30/2014**	**3/17/2015**
Units	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**
VOCs (TO-15)									
Vinyl Chloride	8.6 U	1.8 U	2 U	2.2 U	ND	0.096 U	**0.12**	0.11 U	0.073 U
Trichloroethene	**6,200**	**630**	**620**	**580**	**230**	**240**	**190**	**250**	**140**
trans-1,2-Dichloroethene	13 U	2.8 U	3.1 U	3.4 U	ND	1.5 U	1.3 U	1.7 U	1.1 U
Toluene	--	--	--	--	--	--	--	--	--
Tetrachloroethene	**58**	**20**	**24**	**26**	**12**	**14**	**13**	**15**	**7.4**
o-Xylene	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	**23**	**6.0**	**4.2**	3.4 U	**2.3**	**3**	**2.8**	**3**	**1.8**
Chloromethane	28 U	5.8 U	6.4 U	18 U	ND	**0.58**	**0.55**	**0.75**	**1.1**
Chloroethane	8.9 U	7.4 U	8.2 U	9.1 U	ND	0.49 U	0.43 U	0.58 U	0.38 U
Chlorobenzene	16 U	3.2 U	3.6 U	4 U	ND	0.34 U	0.3 U	0.4 U	0.26 U
Carbon Tetrachloride	21 U	4.4 U	4.9 U	5.4 U	ND	**0.96**	**0.67**	**0.79**	**0.6**
Benzene	--	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	14 U	2.8 U	3.1 U	3.5 U	ND	0.30 U	0.26 U	0.36 U	0.23 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	13 U	2.8 U	3.1 U	3.4 U	ND	0.15 U	0.13 U	0.17 U	0.11 U
1,1-Dichloroethane	14 U	2.8 U	3.1 U	3.5 U	ND	0.3 U	0.26 U	0.36 U	0.23 U
1,1,2-Trichloroethane	18 U	3.8 U	4.2 U	4.7 U	ND	0.41 U	0.36 U	0.48 U	0.31 U
1,1,2,2-Tetrachloroethane	23 U	4.8 U	5.3 U	5.9 U	ND	0.51 U	0.45 U	0.6 U	0.39 U
1,1,1-Trichloroethane	**100**	**17**	**16**	**17**	**14**	**10**	**10**	**13**	**5.9**
Total VOCs	**6,381**	**673.0**	**664**	**623**	**258**	**269**	**217**	**283**	**157**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-1
SSDS Effluent Sample Results Summary
Buildings 20 and 25
Watervliet Arsenal
Watervliet, New York

Building	25								
Sample ID	**B25 Effluent**	**B25 Effluent**	**B25 Effluent**	**B25 Effluent**	**B25 Effluent**	**B25 Effluent**	**B25 Effluent**	**B25 Effluent**	**B25 Effluent**
Sample Type									
Date	**7/28/2016**	**12/14/2017**	**11/26/2018**	**11/25/2019**	**1/13/2021**	**12/16/2021**	**12/13/2022**	**12/4/2023**	**1/16/2025**
Units	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**
VOCs (TO-15)									
Vinyl Chloride	2 U	**0.067**	0.076 U	**0.09**	**0.14**	0.053 U	**0.11**	0.043 U	0.04 U
Trichloroethene	**330**	**140**	**170**	**100**	**160**	**110**	**170**	**110**	**100**
trans-1,2-Dichloroethene	3.1 U	0.63 U	1.2 U	0.69 U	0.59 U	0.82 U	0.66 U	0.67 U	**0.15** J
Toluene	--	--	--	--	--	--	--	--	**0.3**
Tetrachloroethene	**27**	**12**	**21**	**13**	**13**	**12**	**12**	**9.2**	**9.9**
o-Xylene	--	--	--	--	--	--	--	--	**0.084** J
Naphthalene	--	--	--	--	--	--	--	--	**0.46**
Methylene Chloride	--	--	--	--	--	--	--	--	**0.36** J
m,p-Xylene	--	--	--	--	--	--	--	--	**0.19** J
Hexane	--	--	--	--	--	--	--	--	2.8 U
Heptane	--	--	--	--	--	--	--	--	3.2 U
Ethyl Benzene	--	--	--	--	--	--	--	--	**0.068** J
Cyclohexane	--	--	--	--	--	--	--	--	2.7 U
cis-1,2-Dichloroethene	**6.1**	**6.5**	**3.1**	**3.1**	**3.3**	**2.2**	**5.9**	**3.4**	**2.9**
Chloromethane	16 U	1.6 U	3 U	1.8 U	1.5 U	2.1 U	1.7 U	1.8 U	1.6 U
Chloroethane	8.3 U	0.21 U	0.39 U	0.23 U	0.2 U	0.27 U	0.22 U	0.22 U	**0.04** J
Chlorobenzene	3.6 U	0.14 U	1.4 U	0.8 U	0.69 U	0.95 U	0.76 U	0.78 U	0.72 U
Carbon Tetrachloride	5 U	**0.51**	**0.51**	**0.47**	**0.68**	**0.51**	**0.54**	**0.46**	**0.46**
Benzene	--	--	--	--	--	--	--	--	**0.32**
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	3.7 U
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	0.77 U
1,2-Dichloroethane	3.2 U	0.13 U	0.24 U	0.14 U	0.12 U	0.17 U	0.13 U	0.14 U	**0.03** J
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	**0.16** J
1,1-Dichloroethene	3.1 U	**0.17**	0.12 U	0.069 U	0.059 U	0.082 U	**0.18**	0.067 U	**0.068**
1,1-Dichloroethane	3.2 U	**0.25**	0.24 U	0.14 U	**0.14**	0.17 U	**0.27**	**0.15**	**0.15**
1,1,2-Trichloroethane	4.3 U	0.17 U	0.32 U	0.19 U	0.16 U	0.22 U	0.18 U	0.18 U	0.17 U
1,1,2,2-Tetrachloroethane	5.4 U	0.22 U	0.41 U	0.24 U	0.2 U	0.28 U	0.23 U	0.23 U	0.22 U
1,1,1-Trichloroethane	**14**	**6.8**	**7.1**	**5.5**	**5.8**	**5.7**	**6.1**	**4.4**	**3.6**
Total VOCs	**377**	**166**	**202**	**122**	**183**	**130**	**195**	**128**	**119**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-1
SSDS Effluent Sample Results Summary
Buildings 20 and 25
Watervliet Arsenal
Watervliet, New York

Building	20/25								
Sample ID	**B25-Post-carbon Effluent**	**B20/25-Post-C Effluent**	**B20/25-Post-C Effluent**	**B25-Post-carbon Effluent**	**B25-Post-carbon Effluent**	**B25-Post-carbon Effluent**	**B20/B25-Post-carbon Effluent**	**B20/B25-Post-carbon Effluent**	**B20/B25-Post-carbon Effluent**
Sample Type									
Date	**8/12/2010**	**3/30/2011**	**11/17/2011**	**10/4/2012**	**5/30/2013**	**12/16/2013**	**6/12/2014**	**10/30/2014**	**3/17/2015**
Units	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**
VOCs (TO-15)									
Vinyl Chloride	2.1 U	2.6 U	1.9 U	2.3 U	**0.21**	**0.063**	**0.064**	0.047 U	0.042 U
Trichloroethene	4.4 U	5.5 U	3.9 U	4.9 U	**0.21**	**3**	**2.8**	**48**	**0.27**
trans-1,2-Dichloroethene	3.2 U	4.1 U	2.9 U	3.6 U	ND	0.56 U	0.71 U	0.72 U	0.66 U
Toluene	--	--	--	--	--	--	--	--	--
Tetrachloroethene	5.6 U	7 U	5 U	6.2 U	ND	0.19 U	**1.2**	**17**	0.22 U
o-Xylene	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	3.2 U	4.1 U	**5.4**	3.6 U	**4.6**	**3**	**2**	**2.2**	**1.8**
Chloromethane	6.8 U	8.5 U	6 U	19 U	**7**	**0.37**	**0.65**	**0.23**	**0.62**
Chloroethane	2.2 U	11 U	7.7 U	9.6 U	**2.2**	0.19 U	0.24 U	0.24 U	0.22 U
Chlorobenzene	3.8 U	4.7 U	3.4 U	4.2 U	ND	0.13 U	0.16 U	0.17 U	0.15 U
Carbon Tetrachloride	5.2 U	6.5 U	4.6 U	5.8 U	ND	**0.21**	0.23 U	**0.44**	0.21 U
Benzene	--	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	3.3 U	4.2 U	3 U	3.7 U	**0.19**	0.11 U	0.14 U	0.15 U	0.13 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	3.2 U	4.1 U	2.9 U	3.6 U	**0.17**	**0.12**	**0.18**	0.072 U	0.066 U
1,1-Dichloroethane	3.3 U	4.2 U	3 U	3.7 U	**0.25**	**0.13**	0.14 U	0.15 U	0.13 U
1,1,2-Trichloroethane	4.5 U	5.6 U	4 U	5 U	ND	0.15 U	0.2 U	0.2 U	0.18 U
1,1,2,2-Tetrachloroethane	5.6 U	7.1 U	5 U	6.3 U	ND	0.19 U	0.25 U	0.25 U	0.23 U
1,1,1-Trichloroethane	4.5 U	5.6 U	4 U	5 U	ND	**8.7**	**11**	**1.8**	**0.44**
Total VOCs	**0**	**0**	**5.4**	**0**	**15**	**16**	**18**	**70**	**3**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-2
SSDS Effluent Sample Results Summary
Building 21
Watervliet Arsenal
Watervliet, New York

Building	21						
Sample ID	B21-Pre-carbon Effluent	B21-Pre-carbon Effluent	B21-Pre-carbon Effluent	B21-Pre-carbon Effluent	B21-Pre-carbon Effluent	B21-Pre-carbon Effluent	B21-Pre-carbon Effluent
Sample Type							
Date	8/12/2010	11/17/2011	10/4/2012	12/16/2013	6/12/2014	10/30/2014	3/17/2015
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
VOCs (TO-15)							
Vinyl Chloride	2.2 U	1.8 U	2.3 U	0.044 U	**0.052**	**0.047**	0.045 U
Trichloroethene	**270**	**72**	**190**	**43**	**55**	**40**	**0.68**
trans-1,2-Dichloroethene	3.5 U	2.8 U	3.5 U	0.68 U	0.65 U	0.63 U	0.7 U
Toluene	--	--	--	--	--	--	--
Tetrachloroethene	**63**	**14**	**43**	**5.8**	**15**	**9.3**	**1**
o-Xylene	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	**44**	**17**	**44**	**19**	**27**	**15**	**0.4**
Chloromethane	7.2 U	5.8 U	18 U	**0.19**	**0.83**	**0.77**	**1.2**
Chloroethane	2.3 U	7.4 U	9.4 U	0.18 U	0.17 U	0.21 U	0.23 U
Chlorobenzene	4 U	3.2 U	4.1 U	0.16 U	0.15 U	0.14 U	0.16 U
Carbon Tetrachloride	5.5 U	4.4 U	5.6 U	**0.71**	**0.61**	**0.42**	**0.49**
Benzene	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--
1,2-Dichloroethane	3.5 U	2.8 U	3.6 U	0.14 U	0.13 U	0.13 U	0.14 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--
1,1-Dichloroethene	3.5 U	2.8 U	3.5 U	**0.08**	0.065 U	0.063 U	0.07 U
1,1-Dichloroethane	3.5 U	2.8 U	3.6 U	0.14 U	0.13 U	0.13 U	0.14 U
1,1,2-Trichloroethane	4.8 U	3.8 U	4.9 U	0.19 U	0.18 U	0.17 U	0.19 U
1,1,2,2-Tetrachloroethane	6 U	4.8 U	6.1 U	0.24 U	0.23 U	0.22 U	0.24 U
1,1,1-Trichloroethane	4.8 U	3.8 U	4.9 U	0.19 U	0.18 U	0.17 U	0.19 U
Total VOCs	**377**	**103**	**277**	**69**	**98**	**66**	**4**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-2
SSDS Effluent Sample Results Summary
Building 21
Watervliet Arsenal
Watervliet, New York

Building	21								
Sample ID	B21 Effluent	B21 Effluent	B21 Effluent	B21 Effluent	B21 Effluent	B21 Effluent	B21 Effluent	B21 Effluent	B21 Effluent
Sample Type									
Date	7/28/2016	12/14/2017	11/26/2018	11/25/2019	1/13/2021	12/16/2021	12/13/2022	12/4/2023	1/16/2025
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
VOCs (TO-15)									
Vinyl Chloride	2.1 U	0.038 U	**0.042**	**0.043**	0.042 U	**0.16**	0.035 U	0.043 U	0.038 U
Trichloroethene	**49**	**30**	**44**	**29**	**33**	**68**	**30**	**22**	**28**
trans-1,2-Dichloroethene	3.2 U	0.59 U	**1.0**	0.65 U	0.65 U	**0.72**	0.54 U	0.67 U	**0.13** J
Toluene	--	--	--	--	--	--	--	--	**2.7**
Tetrachloroethene	**15**	**6.2**	**7.6**	**6.5**	**5.6**	**7**	**3.5**	**2.2**	**3.9**
o-Xylene	--	--	--	--	--	--	--	--	**0.4**
Naphthalene	--	--	--	--	--	--	--	--	**0.15** J
Methylene Chloride	--	--	--	--	--	--	--	--	**0.55** J
m,p-Xylene	--	--	--	--	--	--	--	--	**0.99**
Hexane	--	--	--	--	--	--	--	--	**0.93** J
Heptane	--	--	--	--	--	--	--	--	**0.55** J
Ethyl Benzene	--	--	--	--	--	--	--	--	**0.4**
Cyclohexane	--	--	--	--	--	--	--	--	**0.22** J
cis-1,2-Dichloroethene	**15**	**17**	**23**	**19**	**18**	**42**	**26**	**14**	**14**
Chloromethane	17 U	1.5 U	1.7 U	1.7 U	1.7 U	1.4 U	1.4 U	1.8 U	**1.1** J
Chloroethane	8.5 U	0.2 U	0.21 U	0.22 U	0.22 U	0.18 U	0.18 U	0.22 U	0.19 U
Chlorobenzene	3.7 U	0.14 U	0.74 U	0.76 U	0.76 U	0.64 U	0.63 U	0.78 U	0.68 U
Carbon Tetrachloride	5.1 U	**0.5**	**0.55**	**0.49**	**0.49**	**0.49**	**0.51**	**0.43**	**0.45**
Benzene	--	--	--	--	--	--	--	--	**1.8**
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	**1.1** J
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	0.72 U
1,2-Dichloroethane	3.3 U	0.12 U	0.13 U	0.13 U	0.13 U	0.11 U	0.11 U	**0.15**	**0.08** J
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	**0.32** J
1,1-Dichloroethene	3.2 U	0.059 U	0.064 U	0.065 U	0.065 U	0.055 U	0.054 U	0.067 U	**0.022** J
1,1-Dichloroethane	3.3 U	0.12 U	0.13 U	0.13 U	0.13 U	0.11 U	0.11 U	0.14 U	0.12 U
1,1,2-Trichloroethane	4.4 U	0.16 U	0.18 U	0.18 U	0.18 U	0.15 U	0.15 U	0.18 U	0.16 U
1,1,2,2-Tetrachloroethane	5.6 U	0.2 U	0.22 U	0.22 U	0.22 U	0.19 U	0.19 U	0.23 U	0.2 U
1,1,1-Trichloroethane	4.4 U	0.16 U	0.18 U	0.18 U	0.18 U	0.15 U	0.15 U	0.18 U	0.16 U
Total VOCs	**79**	**54**	**76**	**56**	**58**	**118**	**60**	**39**	**58**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-2
SSDS Effluent Sample Results Summary
Building 21
Watervliet Arsenal
Watervliet, New York

Building	21					
Sample ID	B21-Post-carbon Effluent	B21-Post-carbon Effluent	B21-Post-carbon Effluent	B21-Post-carbon Effluent	B21-Post-carbon Effluent	B21-Post-carbon Effluent
Sample Type	8/12/2010	11/17/2011	10/4/2012	6/12/2014	10/30/2014	3/17/2015
Date	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
Units						
VOCs (TO-15)						
Vinyl Chloride	2 U	1.9 U	2.1 U	**0.064**	0.052 U	**0.042**
Trichloroethene	4.2 U	3.9 U	4.4 U	0.18 U	0.22 U	0.15 U
trans-1,2-Dichloroethene	3.1 U	2.9 U	3.2 U	0.65 U	0.81 U	0.056 U
Toluene	--	--	--	--	--	--
Tetrachloroethene	5.4 U	5 U	5.6 U	0.22 U	0.28 U	**1.2**
o-Xylene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--
Hexane	--	--	--	--	--	--
Heptane	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--
cis-1,2-Dichloroethene	3.1 U	**8.2**	**34**	**16**	0.16 U	0.11 U
Chloromethane	**11**	6 U	17 U	**0.81**	**0.64**	**1**
Chloroethane	2.1 U	7.7 U	8.6 U	0.22 U	0.27 U	0.19 U
Chlorobenzene	3.6 U	3.4 U	3.8 U	0.15 U	0.19 U	0.13 U
Carbon Tetrachloride	5 U	4.6 U	5.2 U	0.21 U	0.26 U	**0.52**
Benzene	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2-Dichloroethane	3.2 U	3 U	3.3 U	0.13 U	0.16 U	0.11 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--
1,1-Dichloroethene	3.1 U	2.9 U	3.2 U	**0.1**	0.081 U	0.056 U
1,1-Dichloroethane	3.2 U	3 U	3.3 U	0.13 U	0.16 U	0.11 U
1,1,2-Trichloroethane	4.3 U	4 U	4.5 U	0.18 U	0.22 U	0.15 U
1,1,2,2-Tetrachloroethane	5.4 U	5 U	5.6 U	0.22 U	0.28 U	0.19 U
1,1,1-Trichloroethane	4.3 U	4 U	4.5 U	0.18 U	0.22 U	0.15 U
Total VOCs	**11**	**8.2**	**34**	**17**	**0.64**	**2.8**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-3
SSDS Effluent Sample Results Summary
Building 114
Watervliet Arsenal
Watervliet, New York

Building	114							
Sample ID	**B114-Pre-carbon Effluent**	**B114-Pre-carbon Effluent**	**B114-Pre-carbon Effluent**	**B114-Pre-carbon Effluent**	**B114-Pre-carbon Effluent**	**B114-Pre-carbon Effluent**	**B114-Pre-carbon Effluent**	**B114-Pre-carbon Effluent**
Sample Type								
Date	**8/12/2010**	**3/30/2011**	**11/17/2011**	**10/4/2012**	**5/30/2013**	**6/12/2014**	**10/30/2014**	**3/17/2015**
Units	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**
VOCs (TO-15)								
Vinyl Chloride	2 U	7.4 U	1.9 U	2.3 U	ND	0.26 U	0.36 U	0.16 U
Trichloroethene	**6**	**580**	**620**	**560**	**370**	**340**	**290**	**180**
trans-1,2-Dichloroethene	3.2 U	11 U	2.9 U	3.5 U	ND	4.1 U	5.5 U	2.5 U
Toluene	--	--	--	--	--	--	--	--
Tetrachloroethene	**7.1**	**1,700**	**1,800**	**1,700**	**1,000**	**1,200**	**810**	**500**
o-Xylene	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	3.2 U	**49**	**38**	**47**	**41**	**45**	**27**	**26**
Chloromethane	6.6 U	24 U	6 U	18 U	ND	1.1 U	**0.38**	0.65 U
Chloroethane	2.1 U	30 U	7.7 U	9.4 U	ND	1.4 U	1.8 U	0.83 U
Chlorobenzene	3.7 U	13 U	3.4 U	4.1 U	ND	0.96 U	1.3 U	0.58 U
Carbon Tetrachloride	5.1 U	18 U	4.6 U	5.6 U	**1.7**	**2**	1.7 U	**1.2**
Benzene	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--
1,2-Dichloroethane	3.2 U	12 U	3 U	3.6 U	ND	0.84 U	1.1 U	**6.3**
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--
1,1-Dichloroethene	3.2 U	11 U	2.9 U	3.5 U	ND	0.41 U	0.55 U	0.51 U
1,1-Dichloroethane	3.2 U	12 U	3 U	3.6 U	ND	0.84 U	1.1 U	**1.1**
1,1,2-Trichloroethane	4.4 U	16 U	4 U	4.9 U	ND	1.1 U	1.5 U	0.68 U
1,1,2,2-Tetrachloroethane	5.5 U	20 U	5 U	6.1 U	ND	1.4 U	1.9 U	0.86 U
1,1,1-Trichloroethane	4.4 U	16 U	4 U	4.9 U	ND	**1.2**	1.5 U	**2.4**
Total VOCs	**13.1**	**2,329**	**2,458**	**2,307**	**1,411**	**1,588**	**1,131**	**717**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-3
SSDS Effluent Sample Results Summary
Building 114
Watervliet Arsenal
Watervliet, New York

Building	114								
Sample ID	**B114 Effluent**	**B114 Effluent**	**B114 Effluent**	**B114 Effluent**	**B114 Effluent**	**B114 Effluent**	**B114 Effluent**	**B114 Effluent**	**B114 Effluent**
Sample Type									
Date	**7/28/2016**	**12/14/2017**	**11/26/2018**	**11/25/2019**	**1/13/2021**	**12/16/2021**	**12/13/2022**	**12/4/2023**	**1/16/2025**
Units	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**	**ug/m^3**
VOCs (TO-15)									
Vinyl Chloride	2.1 U	0.21 U	0.2 U	0.14 U	0.24 U	0.18 U	0.12 U	0.087 U	0.15 U
Trichloroethene	**440**	**180**	**200**	**140**	**150**	**170**	**200**	**140**	**140**
trans-1,2-Dichloroethene	3.2 U	3.2 U	3 U	2.2 U	3.7 U	2.8 U	1.8 U	1.3 U	**0.2** J
Toluene	--	--	--	--	--	--	--	--	**0.25** J
Tetrachloroethene	**1,400**	**600**	**590**	**490**	**510**	**630**	**620**	**350**	**450**
o-Xylene	--	--	--	--	--	--	--	--	0.52 U
Naphthalene	--	--	--	--	--	--	--	--	1.6 U
Methylene Chloride	--	--	--	--	--	--	--	--	4.1 U
m,p-Xylene	--	--	--	--	--	--	--	--	**0.044** J
Hexane	--	--	--	--	--	--	--	--	10 U
Heptane	--	--	--	--	--	--	--	--	12 U
Ethyl Benzene	--	--	--	--	--	--	--	--	0.52 U
Cyclohexane	--	--	--	--	--	--	--	--	10 U
cis-1,2-Dichloroethene	**26**	**26**	**22**	**23**	**18**	**23**	**19**	**13**	**15**
Chloromethane	17 U	8.4 U	8 U	5.8 U	9.7 U	7.3 U	4.7 U	3.5 U	6.2 U
Chloroethane	8.5 U	1.1 U	1 U	0.74 U	1.2 U	0.94 U	0.6 U	0.45 U	0.79 U
Chlorobenzene	3.7 U	0.75 U	3.5 U	2.6 U	4.3 U	3.3 U	2.1 U	1.6 U	2.7 U
Carbon Tetrachloride	**2.2 J**	**1.2**	0.97 U	**0.91**	**1.2**	**1.2**	**1.3**	**0.9**	**0.89**
Benzene	--	--	--	--	--	--	--	--	**0.34** J
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	14 U
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	2.9 U
1,2-Dichloroethane	3.3 U	0.66 U	0.62 U	0.45 U	0.76 U	0.57 U	0.37 U	0.28 U	0.48 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	2.9 U
1,1-Dichloroethene	3.2 U	0.32 U	0.3 U	0.22 U	0.37 U	0.28 U	0.18 U	0.13 U	0.24 U
1,1-Dichloroethane	3.3 U	0.66 U	0.62 U	0.45 U	0.76 U	0.57 U	0.37 U	0.28 U	0.48 U
1,1,2-Trichloroethane	4.4 U	0.89 U	0.84 U	0.61 U	1 U	0.77 U	0.5 U	0.37 U	0.65 U
1,1,2,2-Tetrachloroethane	5.6 U	1.1 U	1 U	0.77 U	1.3 U	0.97 U	0.63 U	0.47 U	0.82 U
1,1,1-Trichloroethane	**4.4**	0.89 U	0.84 U	0.61 U	1 U	0.77 U	**0.83**	0.37 U	**0.15** J
Total VOCs	**1,873**	**807**	**812**	**654**	**679**	**824**	**841**	**504**	**607**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-3
SSDS Effluent Sample Results Summary
Building 114
Watervliet Arsenal
Watervliet, New York

Building	114							
Sample ID	B114-Post-carbon Effluent	B114-Post-carbon Effluent	B114-Post-carbon Effluent	B114-Post-carbon Effluent	B114-Post-carbon Effluent	B114-Post-carbon Effluent	B114-Post-carbon Effluent	B114-Post-carbon Effluent
Sample Type								
Date	8/12/2010	3/30/2011	11/17/2011	10/4/2012	5/30/2013	6/12/2014	10/30/2014	3/17/2015
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
VOCs (TO-15)								
Vinyl Chloride	1.9 U	2 U	1.8 U	2.3 U	**0.084**	0.042 U	0.043 U	0.072 U
Trichloroethene	4.1 U	4.2 U	3.9 U	4.9 U	ND	0.18 U	0.18 U	**4.1**
trans-1,2-Dichloroethene	3 U	3.1 U	2.8 U	3.6 U	ND	0.66 U	0.67 U	1.1 U
Toluene	--	--	--	--	--	--	--	--
Tetrachloroethene	**6.6**	5.2 U	4.9 U	6.2 U	ND	0.22 U	0.23 U	0.38 U
o-Xylene	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	3 U	**6.9**	2.8 U	**53**	**16**	**2.3**	**22**	**37**
Chloromethane	6.3 U	6.4 U	5.9 U	19 U	**0.26**	0.17 U	**0.38**	0.29 U
Chloroethane	2 U	8.2 U	7.6 U	9.6 U	ND	0.22 U	0.22 U	0.37 U
Chlorobenzene	3.5 U	3.6 U	3.3 U	4.2 U	ND	0.15 U	0.15 U	0.26 U
Carbon Tetrachloride	4.8 U	4.9 U	4.5 U	5.8 U	ND	0.21 U	0.21 U	0.36 U
Benzene	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--
1,2-Dichloroethane	3.1 U	3.1 U	2.9 U	3.7 U	ND	0.13 U	0.14 U	**6.4**
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--
1,1-Dichloroethene	3 U	3.1 U	2.8 U	3.6 U	ND	0.066 U	0.067 U	0.11 U
1,1-Dichloroethane	3.1 U	3.1 U	2.9 U	3.7 U	ND	0.13 U	0.14 U	0.23 U
1,1,2-Trichloroethane	4.1 U	4.2 U	3.9 U	5 U	ND	0.18 U	0.18 U	0.31 U
1,1,2,2-Tetrachloroethane	5.2 U	5.3 U	4.9 U	6.3 U	ND	0.23 U	0.23 U	0.39 U
1,1,1-Trichloroethane	4.1 U	4.2 U	3.9 U	5 U	ND	0.18 U	0.18 U	**0.96**
Total VOCs	**6.6**	**6.9**		**53**	**16**	**2**	**22**	**48**

Notes:
ND - Compound not detected
ug/m^3 - micrograms per cubic meter
U - Not detected. Reporting limit provided.
-- - Not analyzed for this compound
J - Estimated concentration

Table 5-4
VOC Mass Removal Summary - Building 20
Watervliet Arsenal
Watervliet, New York

Building 20 Flow Rates (cfm)

Date	**9/10/10**	**3/30/11**	**11/17/11**	**10/4/12**	**5/30/13**	**12/16/13**	**6/12/14**	**10/30/14**	**3/17/15**	**7/28/16**	**12/14/17**
Extraction Well											
EW-1	185	177	160	168	177	180	156	150	172	172	160
EW-2	85	117	87	106	109	130	80	82	84	110.5	73.7
EW-3	84	90	89	92	98	93	90	87	92	97.2	89.1
Flow Rate for Mass Removal Calculation*	**118**	**128**	**112**	**122**	**128**	**134**	**109**	**106**	**116**	**127**	**108**

Building 20 Mass Removal (lb/year)**

Date	**9/10/10**	**3/30/11**	**11/17/11**	**10/4/12**	**5/30/13**	**12/16/13**	**6/12/14**	**10/30/14**	**3/17/15**	**7/28/16**	**12/14/17**
SSDS Flow Rate (cfm)	**118**	**128**	**112**	**122**	**128**	**134**	**109**	**106**	**116**	**127**	**108**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	**0.0002**	ND	ND	ND
Trichloroethene	**0.965**	**0.247**	**0.286**	**0.439**	**0.197**	**0.176**	**0.149**	**0.010**	**0.080**	**0.319**	**0.095**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	**0.209**	**0.067**	**0.077**	**0.116**	**0.054**	**0.057**	**0.057**	ND	**0.027**	**0.133**	**0.042**
o-Xylene	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ND	ND	ND	**0.014**	**0.018**	**0.009**	**0.017**	**0.015**	**0.005**	**0.014**	**0.004**
Chloromethane	ND	ND	ND	ND	**0.001**	**0.001**	**0.001**	**0.002**	**0.001**	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	**0.003**	**0.004**	**0.002**	**0.001**	**0.002**	ND	**0.002**
Benzene	--	--	--	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	**0.001**	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	**0.002**	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.025**	ND	ND	ND	**0.009**	**0.007**	**0.007**	**0.129**	**0.003**	**0.009**	**0.003**
Total VOC Mass Removal	**1.20**	**0.31**	**0.36**	**0.57**	**0.28**	**0.25**	**0.23**	**0.16**	**0.12**	**0.47**	**0.15**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-4
VOC Mass Removal Summary - Building 20
Watervliet Arsenal
Watervliet, New York

Building 20 Flow Rates (cfm)

Date	**11/26/18**	**11/25/19**	**1/13/21**	**12/14/21**	**12/13/22**	**12/4/23**	**1/15/25**
Extraction Well							
EW-1	159	123.5	82	139	126.5	134	145.5
EW-2	68	75	40	77.5	125	125	102
EW-3	96.9	102	49.3	84	99.7	103	109
Flow Rate for Mass Removal Calculation*	**108**	**100**	**57**	**100**	**117**	**121**	**119**

Building 20 Mass Removal (lb/year)**

Date	**11/26/18**	**11/25/19**	**1/13/21**	**12/16/21**	**12/13/22**	**12/4/23**	**1/16/25**
SSDS Flow Rate (cfm)	**108**	**100**	**57**	**100**	**117**	**121**	**119**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	**0.124**	**0.075**	**0.034**	**0.082**	**0.103**	**0.118**	**0.093**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	**0.0003**
Toluene	--	--	--	--	--	--	**0.003**
Tetrachloroethene	**0.039**	**0.043**	**0.017**	**0.056**	**0.069**	**0.055**	**0.070**
o-Xylene	--	--	--	--	--	--	**0.001**
Naphthalene	--	--	--	--	--	--	ND
Methylene Chloride	--	--	--	--	--	--	ND
m,p-Xylene	--	--	--	--	--	--	**0.002**
Hexane	--	--	--	--	--	--	**0.003**
Heptane	--	--	--	--	--	--	ND
Ethyl Benzene	--	--	--	--	--	--	**0.001**
Cyclohexane	--	--	--	--	--	--	ND
cis-1,2-Dichloroethene	**0.003**	**0.002**	**0.001**	**0.002**	**0.003**	**0.002**	**0.001**
Chloromethane	ND	ND	ND	ND	ND	ND	**0.012**
Chloroethane	ND	ND	ND	ND	ND	ND	**0.001**
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	**0.002**	**0.002**	**0.001**	**0.002**	**0.002**	**0.002**	**0.002**
Benzene	--	--	--	--	--	--	**0.002**
2,2,4-Trimethylpentane	--	--	--	--	--	--	**0.004**
1,3,5-Trimethylbenzene	--	--	--	--	--	--	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	--	--	--	--	--	--	**0.001**
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	**0.0002**
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.003**	**0.003**	**0.001**	**0.003**	**0.003**	ND	**0.002**
Total VOC Mass Removal	**0.17**	**0.13**	**0.05**	**0.14**	**0.18**	**0.18**	**0.20**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-5
VOC Mass Removal Summary - Building 21
Watervliet Arsenal
Watervliet, New York

Building 21 Flow Rates (cfm)

Date	**8/12/10**	**11/17/11**	**10/4/12**	**12/16/13**	**6/12/14**	**10/30/14**	**3/17/15**	**7/28/16**	**12/14/17**	**11/26/18**	**11/25/19**	**1/13/21**
Extraction Well												
EW-1	43	26	38	27	45	46	35	9.03	9.57	11.90	10.70	22.00
Flow Rate for Mass Removal Calculation*	**43**	**26**	**38**	**27**	**45**	**46**	**35**	**9.03**	**9.57**	**11.90**	**10.70**	**22.00**

Building 21 Mass Removal (lb/year)**

Date	**8/12/10**	**11/17/11**	**10/4/12**	**12/16/13**	**6/12/14**	**10/30/14**	**3/17/15**	**7/28/16**	**12/14/17**	**11/26/18**	**11/25/19**	**1/13/21**
SSDS Flow Rate (cfm)	**43**	**26**	**38**	**27**	**45**	**46**	**35**	**9.03**	**9.57**	**11.9**	**10.7**	**22**
Vinyl Chloride	ND	ND	ND	ND	**0.0001**	**0.0001**	ND	ND	ND	**0.00002**	**0.00002**	ND
Trichloroethene	**0.380**	**0.061**	**0.236**	**0.038**	**0.081**	**0.060**	**0.001**	**0.014**	**0.009**	**0.017**	**0.010**	**0.024**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0004**	ND	ND
Toluene	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	**0.089**	**0.012**	**0.053**	**0.005**	**0.022**	**0.014**	**0.001**	**0.004**	**0.002**	**0.003**	**0.002**	**0.004**
o-Xylene	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	**0.062**	**0.014**	**0.055**	**0.017**	**0.040**	**0.023**	**0.000**	**0.004**	**0.005**	**0.009**	**0.007**	**0.013**
Chloromethane	ND	ND	ND	**0.0002**	**0.001**	**0.001**	**0.001**	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	**0.001**	**0.001**	**0.001**	**0.001**	ND	**0.0002**	**0.0002**	**0.0002**	**0.0004**
Benzene	--	--	--	--	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ND	ND	ND	**0.0001**	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOC Mass Removal	**0.53**	**0.09**	**0.34**	**0.06**	**0.15**	**0.10**	**0.00**	**0.02**	**0.02**	**0.03**	**0.02**	**0.04**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-5
VOC Mass Removal Summary - Building 21
Watervliet Arsenal
Watervliet, New York

Building 21 Flow Rates (cfm)

Date	**12/14/21**	**12/13/22**	**12/4/23**	**1/15/25**
Extraction Well				
EW-1	8.1	11.6	13.3	11.2
Flow Rate for Mass Removal Calculation*	**8.1**	**11.6**	**13.3**	**11.2**

Building 21 Mass Removal (lb/year)**

Date	**12/14/21**	**12/13/22**	**12/4/23**	**1/16/25**
SSDS Flow Rate (cfm)	**8.1**	**11.6**	**11.2**	**11.2**
Vinyl Chloride	**0.00004**	ND	ND	ND
Trichloroethene	**0.018**	**0.011**	**0.008**	**0.010**
trans-1,2-Dichloroethene	**0.0002**	ND	ND	**0.00005**
Toluene	--	--	--	**0.001**
Tetrachloroethene	**0.002**	**0.001**	**0.001**	**0.001**
o-Xylene	--	--	--	**0.0001**
Naphthalene	--	--	--	**0.0001**
Methylene Chloride	--	--	--	**0.0002**
m,p-Xylene	--	--	--	**0.0004**
Hexane	--	--	--	**0.0003**
Heptane	--	--	--	**0.0002**
Ethyl Benzene	--	--	--	**0.0001**
Cyclohexane	--	--	--	**0.0001**
cis-1,2-Dichloroethene	**0.011**	**0.010**	**0.005**	**0.005**
Chloromethane	ND	ND	ND	**0.0004**
Chloroethane	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
Carbon Tetrachloride	**0.0001**	**0.0002**	**0.0002**	**0.0002**
Benzene	--	--	--	**0.001**
2,2,4-Trimethylpentane	--	--	--	**0.0004**
1,3,5-Trimethylbenzene	--	--	--	ND
1,2-Dichloroethane	ND	ND	**0.0001**	**0.00003**
1,2,4-Trimethylbenzene	--	--	--	**0.0001**
1,1-Dichloroethene	ND	ND	ND	**0.00001**
1,1-Dichloroethane	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Total VOC Mass Removal	**0.03**	**0.02**	**0.01**	**0.02**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-6
VOC Mass Removal Summary - Building 25
Watervliet Arsenal
Watervliet, New York

Building 25 Flow Rates (cfm)

Date / **Extraction Well**	**8/12/10**	**3/30/11**	**11/17/11**	**10/4/12**	**5/30/13**	**12/16/13**	**6/12/14**	**10/30/14**	**3/17/15**	**7/28/16**	**12/14/17**
EW-1	162	196	222	129	142	148	134	141	149	168.5	190
EW-2	117	125	86	149	150	174	160	159	173	185.5	219
EW-3	115	56	21	153	152	150	125	126	109	87.0	38.7
EW-4	148	177	186	114	126	110	100	102	105	98.5	68.8
Flow Rate for Mass Removal Calculation*	**136**	**139**	**129**	**136**	**143**	**146**	**130**	**132**	**134**	**135**	**129**

Building 25 Mass Removal (lb/year)**

Date / **SSDS Flow Rate (cfm)**	**8/12/10** **136**	**3/30/11** **139**	**11/17/11** **129**	**10/4/12** **136**	**5/30/13** **143**	**12/16/13** **146**	**6/12/14** **130**	**10/30/14** **132**	**3/17/15** **134**	**7/28/16** **135**	**12/14/17** **129**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	**0.001**	ND	ND	ND	**0.0003**
Trichloroethene	**27.491**	**2.855**	**2.612**	**2.586**	**1.073**	**1.143**	**0.807**	**1.080**	**0.614**	**1.456**	**0.592**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	**0.257**	**0.091**	**0.101**	**0.116**	**0.056**	**0.067**	**0.055**	**0.065**	**0.032**	**0.119**	**0.051**
o-Xylene	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	**0.102**	**0.027**	**0.018**	**0.015**	**0.011**	**0.014**	**0.012**	**0.013**	**0.008**	**0.027**	**0.027**
Chloromethane	ND	ND	ND	ND	ND	**0.003**	**0.002**	**0.003**	**0.005**	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	**0.005**	**0.003**	**0.003**	**0.003**	ND	**0.002**
Benzene	--	--	--	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.001**
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.001**
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	**0.077**	**0.067**	**0.076**	**0.065**	**0.048**	**0.042**	**0.056**	**0.026**	**0.062**	**0.029**
Total VOC Mass Removal	**27.85**	**3.05**	**2.80**	**2.79**	**1.20**	**1.28**	**0.92**	**1.22**	**0.69**	**1.66**	**0.70**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-6
VOC Mass Removal Summary - Building 25
Watervliet Arsenal
Watervliet, New York

Building 25 Flow Rates (cfm)

Date / **Extraction Well**	**11/26/18**	**11/25/19**	**1/13/21**	**12/14/21**	**12/13/22**	**12/4/23**	**1/15/25**
EW-1	197.5	167	172.5	186	184	189	184
EW-2	235	182.5	179	229	158	288	188
EW-3	22.4	67.5	47.1	16.2	21.6	30	13.6
EW-4	58.8	53.5	46.6	39.7	38.6	17.2	20.2
Flow Rate for Mass Removal Calculation*	**128**	**118**	**111**	**118**	**101**	**131**	**101**

Building 25 Mass Removal (lb/year)**

Date	**11/26/18**	**11/25/19**	**1/13/21**	**12/16/21**	**12/13/22**	**12/4/23**	**1/16/25**
SSDS Flow Rate (cfm)	**128**	**118**	**111**	**118**	**101**	**131**	**101**
Vinyl Chloride	ND	**0.0003**	**0.001**	ND	**0.0004**	ND	ND
Trichloroethene	**0.714**	**0.385**	**0.583**	**0.424**	**0.559**	**0.472**	**0.332**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	**0.0005**
Toluene	--	--	--	--	--	--	**0.001**
Tetrachloroethene	**0.088**	**0.050**	**0.047**	**0.046**	**0.039**	**0.039**	**0.033**
o-Xylene	--	--	--	--	--	--	**0.0003**
Naphthalene	--	--	--	--	--	--	**0.002**
Methylene Chloride	--	--	--	--	--	--	**0.001**
m,p-Xylene	--	--	--	--	--	--	**0.001**
Hexane	--	--	--	--	--	--	ND
Heptane	--	--	--	--	--	--	ND
Ethyl Benzene	--	--	--	--	--	--	**0.0002**
Cyclohexane	--	--	--	--	--	--	ND
cis-1,2-Dichloroethene	**0.013**	**0.012**	**0.012**	**0.008**	**0.019**	**0.015**	**0.010**
Chloromethane	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	**0.0001**
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**
Benzene	--	--	--	--	--	--	**0.001**
2,2,4-Trimethylpentane	--	--	--	--	--	--	ND
1,3,5-Trimethylbenzene	--	--	--	--	--	--	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	**0.0001**
1,2,4-Trimethylbenzene	--	--	--	--	--	--	**0.001**
1,1-Dichloroethene	ND	ND	ND	ND	**0.001**	ND	**0.0002**
1,1-Dichloroethane	ND	ND	**0.001**	ND	**0.001**	**0.001**	**0.0005**
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	**0.030**	**0.021**	**0.021**	**0.022**	**0.020**	**0.019**	**0.012**
Total VOC Mass Removal	**0.85**	**0.47**	**0.67**	**0.50**	**0.64**	**0.55**	**0.40**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-7
VOC Mass Removal Summary - Building 114
Watervliet Arsenal
Watervliet, New York

Building 114 Flow Rates (cfm)

Date / **Extraction Well**	**8/12/10**	**3/30/11*** **	**11/17/11**	**10/4/12**	**5/30/13**	**6/12/14**	**10/30/14**	**3/17/15**	**7/28/16**	**12/14/17**	**11/26/18**
EW-1	69	64	58	65	60	32	48	55	43	55	58
EW-2	21	22	23	22	30	30	28	31	31	20	22
Flow Rate for Mass Removal Calculation*	**45**	**43**	**40.5**	**43.5**	**45**	**31**	**37.75**	**43**	**36.8**	**37.5**	**39.6**

Building 114 Mass Removal (lb/year)**

Date	**8/12/10**	**3/30/11**	**11/17/11**	**10/4/12**	**5/30/13**	**6/12/14**	**10/30/14**	**3/17/15**	**7/28/16**	**12/14/17**	**11/26/18**
SSDS Flow Rate (cfm)	**45**	**43**	**40.5**	**43.5**	**45**	**31**	**37.75**	**43**	**36.8**	**37.5**	**39.6**
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	**0.009**	**0.816**	**0.822**	**0.797**	**0.545**	**0.345**	**0.358**	**0.253**	**0.530**	**0.221**	**0.259**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	**0.010**	**2.392**	**2.386**	**2.420**	**1.473**	**1.217**	**1.001**	**0.704**	**1.686**	**0.735**	**0.764**
o-Xylene	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ND	**0.069**	**0.050**	**0.067**	**0.060**	**0.046**	**0.033**	**0.037**	**0.031**	**0.032**	**0.028**
Chloromethane	ND	ND	ND	ND	ND	ND	**0.0005**	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	**0.003**	**0.002**	ND	**0.002**	**0.003**	**0.001**	ND
Benzene	--	--	--	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	**0.002**	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	**0.001**	ND	**0.003**	**0.005**	ND	ND
Total VOC Mass Removal	**0.02**	**3.28**	**3.26**	**3.28**	**2.08**	**1.61**	**1.39**	**1.00**	**2.26**	**0.99**	**1.05**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
*** No access to extraction wells - flow rates from 2/24/2011 site inspection.
****11/14/13 flow rates and 10/4/12 analytical used for calculations.
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-7
VOC Mass Removal Summary - Building 114
Watervliet Arsenal
Watervliet, New York

Building 114 Flow Rates (cfm)

Date / **Extraction Well**	**11/25/19**	**1/13/21**	**12/14/21**	**12/13/22**	**12/4/23**	**1/15/25**
EW-1	43	44	26	11	45	48
EW-2	25	24	20	25	26	25
Flow Rate for Mass Removal Calculation*	**34.0**	**34.0**	**23.3**	**17.6**	**35.5**	**36.2**

Building 114 Mass Removal (lb/year)**

Date	**11/25/19**	**1/13/21**	**12/16/21**	**12/13/22**	**12/4/23**	**1/16/25**
SSDS Flow Rate (cfm)	**34.0**	**34.0**	**23.3**	**17.6**	**35.5**	**36.2**
Vinyl Chloride	ND	ND	ND	ND	ND	ND
Trichloroethene	**0.156**	**0.167**	**0.130**	**0.115**	**0.162**	**0.166**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	**0.0002**
Toluene	--	--	--	--	--	**0.0003**
Tetrachloroethene	**0.545**	**0.567**	**0.480**	**0.357**	**0.406**	**0.533**
o-Xylene	--	--	--	--	--	ND
Naphthalene	--	--	--	--	--	ND
Methylene Chloride	--	--	--	--	--	ND
m,p-Xylene	--	--	--	--	--	**0.0001**
Hexane	--	--	--	--	--	ND
Heptane	--	--	--	--	--	ND
Ethyl Benzene	--	--	--	--	--	ND
Cyclohexane	--	--	--	--	--	ND
cis-1,2-Dichloroethene	**0.026**	**0.020**	**0.018**	**0.011**	**0.015**	**0.018**
Chloromethane	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**
Benzene	--	--	--	--	--	**0.0004**
2,2,4-Trimethylpentane	--	--	--	--	--	ND
1,3,5-Trimethylbenzene	--	--	--	--	--	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	--	--	--	--	--	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	**0.0005**	ND	**0.0002**
Total VOC Mass Removal	**0.73**	**0.75**	**0.63**	**0.48**	**0.58**	**0.72**

Notes:
* Per NYSDEC, calculated as sum of flow rates divided by the number of extraction wells
** Calculated based on pre-carbon effluent concentrations
*** No access to extraction wells - flow rates from 2/24/2011 site inspection.
****11/14/13 flow rates and 10/4/12 analytical used for calculations.
SSDS - sub-slab depressurization system
ND - compound not detected
ug/m^3 - micrograms per cubic meter
lb/year- pounds per year
cfm - cubic feet per minute
-- - Not analyzed for this compound

Conversion Factors:
2.2 E-09 lb/ug
0.0283 m^3/ft^3
525,600 min/year

Table 5-8
Facility-wide Summary 2020 through 2024
VOC Mass Removal Summary - Building 20, 21, 25, & 114
Watervliet Arsenal
Watervliet, New York

	VOC Mass Removal Summary - Building 20, 21, 25, & 114 (lb/yr)[1]						NYSDEC Mass Emission Limit	Are Actual Emissions
Date	**2020**	**2021**	**2022**	**2023**	**2024**	**HTAC?**	**(lb/yr)[2]**	**Over Limit?[3,4]**
Vinyl Chloride	5.10E-04	4.24E-05	3.62E-04	0.00E+00	0.00E+00	Y	100	No
Trichloroethene	8.07E-01	6.53E-01	7.89E-01	7.61E-01	6.01E-01	Y	500	No
trans-1,2-Dichloroethene	0.00E+00	1.91E-04	0.00E+00	0.00E+00	1.13E-03	N	100	No
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.20E-03	N	100	No
Tetrachloroethene	6.35E-01	5.84E-01	4.67E-01	5.02E-01	6.37E-01	Y	1000	No
o-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-03	N	100	No
Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E-03	N	100	No
Methylene Chloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-03	N	100	No
m,p-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.11E-03	N	100	No
Hexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.14E-03	N	100	No
Heptane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.02E-04	N	100	No
Ethyl Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-03	N	100	No
Cyclohexane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.06E-05	N	100	No
cis-1,2-Dichloroethene	4.55E-02	3.95E-02	4.29E-02	3.68E-02	3.33E-02	N	100	No
Chloromethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E-02	N	100	No
Chloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.77E-04	N	100	No
Chlorobenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	100	No
Carbon Tetrachloride	5.08E-03	4.58E-03	4.79E-03	4.95E-03	4.54E-03	N	100	No
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.72E-03	Y	100	No
2,2,4-Trimethylpentane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.68E-03	N	100	No
1,3,5-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	N	100	No
1,2-Dichloroethane	0.00E+00	0.00E+00	0.00E+00	5.50E-05	1.29E-04	Y	100	No
1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-03	N	100	No
1,1-Dichloroethene	0.00E+00	0.00E+00	5.92E-04	0.00E+00	2.34E-04	N	100	No
1,1-Dichloroethane	5.10E-04	0.00E+00	8.88E-04	6.43E-04	6.50E-04	N	100	No
1,1,2-Trichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Y	100	No
1,1,2,2-Tetrachloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Y	1000	No
1,1,1-Trichloroethane	2.21E-02	2.50E-02	2.36E-02	1.89E-02	1.43E-02	N	100	No

Notes:

1. Total emisisons from SSDS systems in Building 20, 21, 25, & 114

2. NYSDEC mass emission limits provided in Table 2 of 6 NYCRR 212-2.2 for High Toxicity Air Contaminants (HTAC). For non-HTACs, the limit is 100 lbs/yr.

3. Based on DAR-1 guidance, the facility is assumed to comply with Rule 212 if the facility-wide actual emissions are below the mass emission limits for HTACs and less than 100 pounds/year for non-HTACs

4. The emissions from SSDS were evaluated with the other non-exempt/non-trivial air emissions sources at the facility for the Rule 212 compliance determination. The facility-wide emissions from SSDS and the other air emission sources at the facility are below the Rule 212 limits.

lb/year- pounds per year
HTAC- High Toxicity Air Contaminants

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 25								
Sample ID	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	2.06	1.68	1.75	1.76	1.67	1.29	1.77	1.73	1.76
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.053 U	0.043 U	0.045 UJ	0.045 U	0.043 U	0.033 U	0.045 U	0.044 U	0.045 U
Trichloroethene	0.22 U	0.18 U	0.19 U	0.19 U	0.18 U	0.35	0.2	6.4	2.3
trans-1,2-Dichloroethene	0.82 U	0.67 U	0.69 U	0.7 U	0.66 U	0.51 U	0.7 U	0.68 U	0.7 U
Tetrachloroethene	0.28 U	0.31	0.24 U	0.24 U	0.23 U	0.59	0.24 U	0.23 U	0.24 U
cis-1,2-Dichloroethene	0.3	0.13 U	0.14 U	0.14 U	0.13 U	0.1 U	0.14 U	0.14 U	0.14 U
Chloromethane	1	0.93	0.97	0.98	1.4	0.95	0.95	1.8 U	1.8 U
Chloroethane	0.27 U	0.22 U	0.23 U	0.23 U	0.22 U	0.17 U	0.23 U	0.23 U	0.23 U
Chlorobenzene	0.19 U	0.15 U	0.16 U	0.16 U	0.15 U	0.12 U	0.16 U	0.16 U	0.81 U
Carbon Tetrachloride	0.42	0.44	0.62	0.47	0.44	0.42	0.42	0.38	0.51
1,2-Dichloroethane	0.17 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13	0.14 U	0.14 U	0.17
1,1-Dichloroethene	0.082 U	0.067 U	0.069 U	0.07 U	0.066 U	0.056	0.07 U	0.068 U	0.07 U
1,1-Dichloroethane	0.17 U	0.14 U	0.14 U	0.14 U	0.14 U	0.1 U	0.14 U	0.14 U	0.14 U
1,1,2-Trichloroethane	0.22 U	0.18 U	0.19 U	0.19 U	0.18 U	0.14 U	0.19 U	0.19 U	0.19 U
1,1,2,2-Tetrachloroethane	0.28 U	0.23 U	0.24 U	0.24 U	0.23 U	0.18 U	0.24 U	0.24 U	0.24 U
1,1,1-Trichloroethane	0.22 U	0.18 U	0.19 U	0.19 U	0.18 U	0.14 U	0.19 U	0.19 U	0.19 U

Building	Building 25					
Sample ID	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1	IA-B25-1
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.68	1.73	1.45	1.31	1.52	1.68
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.043 U	0.044 U	0.037 U	0.033 U	0.039 U	0.043 U
Trichloroethene	3.3	13	0.38	0.14 U	0.16 U	0.75
trans-1,2-Dichloroethene	0.67 U	0.68 U	0.57 U	0.52 U	0.6 U	0.026 J
Toluene	--	--	--	--	--	1.9
Tetrachloroethene	0.34	1.0	0.2 U	0.18 U	0.21 U	0.34
o-Xylene	--	--	--	--	--	0.2
Naphthalene	--	--	--	--	--	0.25 J
Methylene Chloride	--	--	--	--	--	16
m,p-Xylene	--	--	--	--	--	0.46
Hexane	--	--	--	--	--	0.34 J
Heptane	--	--	--	--	--	3.4 U
Ethyl Benzene	--	--	--	--	--	0.22
Cyclohexane	--	--	--	--	--	0.13 J
cis-1,2-Dichloroethene	0.13 U	0.14 U	0.11 U	0.1 U	0.12 U	0.13 U
Chloromethane	1.7 U	1.8 U	1.5 U	1.4 U	1.6 U	1.1 J
Chloroethane	0.22 U	0.23 U	0.19 U	0.17 U	0.2 U	0.22 U
Chlorobenzene	0.77 U	0.80 U	0.67 U	0.6 U	0.7 U	0.77 U
Carbon Tetrachloride	0.44	0.44	0.45	0.46	0.39	0.48
Benzene	--	--	--	--	--	0.5
2,2,4-Trimethylpentane	--	--	--	--	--	3.9 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.18 J
1,2-Dichloroethane	0.25	0.14	0.12 U	0.11 U	0.12	0.23
1,2,4-Trimethylbenzene	--	--	--	--	--	0.42 J
1,1-Dichloroethene	0.067 U	0.068 U	0.057 U	0.052 U	0.06 U	0.067 U
1,1-Dichloroethane	0.14 U	0.14 U	0.12 U	0.11 U	0.12 U	0.14 U
1,1,2-Trichloroethane	0.18 U	0.19 U	0.16 U	0.14 U	0.16 U	0.18 U
1,1,2,2-Tetrachloroethane	0.23 U	0.24 U	0.2 U	0.18 U	0.21 U	0.23 U
1,1,1-Trichloroethane	0.18 U	0.19 U	0.16 U	0.14 U	0.16 U	0.025 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	**Building 25**								
Sample ID	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.79	1.68	1.79	1.65	1.79	1.41	1.67	1.53	1.67
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.046 U	0.043 U	0.046 UJ	0.042 U	0.046 U	0.036 U	0.043 U	0.039 U	0.043 U
Trichloroethene	0.25	0.18 U	0.19 U	2.7	0.25	0.54	0.59	0.45	10
trans-1,2-Dichloroethene	0.71 U	0.67 U	0.71 U	0.65 U	0.71 U	0.56 U	0.66 U	0.61 U	0.66 U
Tetrachloroethene	0.24 U	0.33	0.24 U	0.22 U	0.24 U	0.35	0.23 U	0.21 U	0.23 U
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.14 U	0.13 U	0.14 U	0.11 U	0.13 U	0.12 U	0.13 U
Chloromethane	1.2	0.91	1.1	0.98	1.4	0.96	0.95	1.6 U	1.7 U
Chloroethane	0.24 U	0.22 U	0.24 U	0.22 U	0.24 U	0.19 U	0.22 U	0.2 U	0.22 U
Chlorobenzene	0.16 U	0.15 U	0.16 U	0.15 U	0.16 U	0.13 U	0.15 U	0.14 U	0.77 U
Carbon Tetrachloride	0.44	0.47	0.76	0.42	0.94	0.42	0.4	0.46	0.52
1,2-Dichloroethane	0.14 U	0.14 U	0.18	0.13 U	0.14 U	0.11 U	0.14 U	0.12 U	0.14
1,1-Dichloroethene	0.071 U	0.067 U	0.071 U	0.065 U	0.071 U	0.071	0.066 U	0.061 U	0.066 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.11 U	0.14 U	0.12 U	0.14 U
1,1,2-Trichloroethane	0.2 U	0.18 U	0.2 U	0.18 U	0.2 U	0.15 U	0.18 U	0.17 U	0.18 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.24 U	0.23 U	0.24 U	0.19 U	0.23 U	0.21 U	0.23 U
1,1,1-Trichloroethane	0.2 U	0.18 U	0.2 U	0.18 U	0.2 U	0.15 U	0.18 U	0.17 U	0.18 U

Building	**Building 25**					
Sample ID	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2	IA-B25-2
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.98	1.66	1.51	1.37	1.72	1.29
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m3
COMPOUND						
Vinyl Chloride	0.051 U	0.042 U	0.038 U	0.035 U	0.042 U	0.033 U
Trichloroethene	1.6	0.24	0.16	0.97	0.18 U	0.83
trans-1,2-Dichloroethene	0.78 U	0.66 U	0.6 U	0.54 U	0.65 U	0.026 J
Toluene	--	--	--	--	--	2.7
Tetrachloroethene	0.52	0.22 U	0.2 U	0.18 U	0.22 U	0.33
o-Xylene	--	--	--	--	--	0.31
Naphthalene	--	--	--	--	--	3.4
Methylene Chloride	--	--	--	--	--	0.6 J
m,p-Xylene	--	--	--	--	--	0.71
Hexane	--	--	--	--	--	0.86 J
Heptane	--	--	--	--	--	0.42 J
Ethyl Benzene	--	--	--	--	--	0.37
Cyclohexane	--	--	--	--	--	0.13 J
cis-1,2-Dichloroethene	0.16 U	0.13 U	0.12 U	0.11 U	0.13 U	0.1 U
Chloromethane	2 U	1.7 U	1.6 U	1.4 U	1.7 U	1.2 J
Chloroethane	0.26 U	0.22 U	0.2 U	0.18 U	0.22 U	0.17 U
Chlorobenzene	0.91 U	0.76 U	0.7 U	0.63 U	0.76 U	0.59 U
Carbon Tetrachloride	0.46	0.47	0.44	0.49	0.33	0.47
Benzene	--	--	--	--	--	0.62
2,2,4-Trimethylpentane	--	--	--	--	--	0.38 J
1,3,5-Trimethylbenzene	--	--	--	--	--	0.093 J
1,2-Dichloroethane	0.19	0.13 U	0.13	0.11 U	0.13 U	0.26
1,2,4-Trimethylbenzene	--	--	--	--	--	0.29 J
1,1-Dichloroethene	0.078 U	0.066 U	0.06 U	0.054 U	0.065 U	0.051 U
1,1-Dichloroethane	0.16 U	0.13 U	0.12 U	0.11 U	0.13 U	0.1 U
1,1,2-Trichloroethane	0.22 U	0.18 U	0.16 U	0.15 U	0.18 U	0.14 U
1,1,2,2-Tetrachloroethane	0.27 U	0.23 U	0.21 U	0.19 U	0.22 U	0.18 U
1,1,1-Trichloroethane	0.22 U	0.18 U	0.16 U	0.15 U	0.18 U	0.042 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 25								
Sample ID	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.68	1.75	1.79	1.66	1.77	1.31	1.59	1.72	1.68
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.043 U	0.045 U	0.046 UJ	0.042 U	0.045 U	0.033 U	0.041 U	0.044 U	0.043 U
Trichloroethene	0.22	0.19 U	0.19 U	0.83	0.2	0.44	0.36	0.28	4.3
trans-1,2-Dichloroethene	0.67 U	0.69 U	0.71 U	0.66 U	0.7 U	0.52 U	0.63 U	0.68 U	0.67 U
Tetrachloroethene	0.24	0.47	0.24 U	0.22 U	0.24 U	0.55	0.22 U	0.23 U	0.23 U
cis-1,2-Dichloroethene	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.1 U	0.13 U	0.14 U	0.13 U
Chloromethane	1.1	0.87	1	0.92	1.7	1.2	1	1.8 U	1.7 U
Chloroethane	0.22 U	0.23 U	0.24 U	0.22 U	0.23 U	0.17 U	0.21 U	0.23 U	0.22 U
Chlorobenzene	0.15 U	0.16 U	0.16 U	0.15 U	0.16 U	0.12 U	0.15 U	0.16 U	0.77 U
Carbon Tetrachloride	0.43	0.49	0.59	0.4	0.87	0.42	0.43	0.46	0.52
1,2-Dichloroethane	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.11 U	0.13 U	0.14 U	0.14 U
1,1-Dichloroethene	0.067 U	0.069 U	0.071 U	0.066 U	0.07 U	0.076	0.063 U	0.068 U	0.067 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.11 U	0.13 U	0.14 U	0.14 U
1,1,2-Trichloroethane	0.18 U	0.19 U	0.2 U	0.18 U	0.19 U	0.14 U	0.17 U	0.19 U	0.18 U
1,1,2,2-Tetrachloroethane	0.23 U	0.24 U	0.24 U	0.23 U	0.24 U	0.18 U	0.22 U	0.24 U	0.23 U
1,1,1-Trichloroethane	0.18 U	0.19 U	0.2 U	0.18 U	0.19 U	0.14 U	0.17 U	0.19 U	0.18 U

Building	Building 25					
Sample ID	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3	IA-B25-3
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.64	3.36	1.31	1.39	1.73	1.44
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.042 U	0.086 U	0.036 U	0.036 U	0.044 U	0.037 U
Trichloroethene	0.56	0.36 U	0.15 U	0.15	0.18 U	0.44
trans-1,2-Dichloroethene	0.65 U	1.3 U	0.55 U	0.55 U	0.68 U	0.57 U
Toluene	--	--	--	--	--	4
Tetrachloroethene	0.33	0.46 U	0.19 U	0.19 U	0.23 U	0.37
o-Xylene	--	--	--	--	--	0.25
Naphthalene	--	--	--	--	--	0.3 J
Methylene Chloride	--	--	--	--	--	0.7 J
m,p-Xylene	--	--	--	--	--	0.56
Hexane	--	--	--	--	--	1.2 J
Heptane	--	--	--	--	--	3 U
Ethyl Benzene	--	--	--	--	--	0.23
Cyclohexane	--	--	--	--	--	2.5 U
cis-1,2-Dichloroethene	0.13 U	0.27 U	0.11 U	0.11 U	0.14 U	0.11 U
Chloromethane	1.7 U	3.5 U	1.4 U	1.4 U	1.8 U	1.1 J
Chloroethane	0.22 U	0.44 U	0.18 U	0.18 U	0.23 U	0.19 U
Chlorobenzene	0.76 U	1.5 U	0.64 U	0.64 U	0.8 U	0.66 U
Carbon Tetrachloride	0.46	0.44	0.64	0.46	0.35	0.46
Benzene	--	--	--	--	--	0.52
2,2,4-Trimethylpentane	--	--	--	--	--	3.4 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.13 J
1,2-Dichloroethane	0.16	0.27 U	0.11 J	0.11 U	0.14 U	0.13
1,2,4-Trimethylbenzene	--	--	--	--	--	0.25 J
1,1-Dichloroethene	0.065 U	0.13 U	0.055 U	0.055 U	0.068 U	0.057 U
1,1-Dichloroethane	0.13 U	0.27 U	0.11 U	0.11 U	0.14 U	0.12 U
1,1,2-Trichloroethane	0.18 U	0.37 U	0.15 U	0.15 U	0.19 U	0.16 U
1,1,2,2-Tetrachloroethane	0.22 U	0.46 U	0.19 U	0.19 U	0.24 U	0.2 U
1,1,1-Trichloroethane	0.18 U	0.37 U	0.15 U	0.15 U	0.19 U	0.032 J

Notes:
µg/m3 - micrograms per cubic meter
U - not detected at indicated concentration
J - estimated concentration
NS - Not Sampled
-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 25								
Sample ID	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.79	1.75	1.91	1.55	1.77	1.34	1.66	1.5	1.68
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.046 U	0.045 U	0.049 UJ	0.04 U	0.045 U	0.034 U	0.042 U	0.038 U	0.043 U
Trichloroethene	0.19 U	0.19 U	0.2 U	0.17 U	0.19 U	0.2	0.18 U	0.17	0.49
trans-1,2-Dichloroethene	0.71 U	0.69 U	0.76 U	0.61 U	0.7 U	0.53 U	0.66 U	0.59 U	0.67 U
Tetrachloroethene	0.24 U	0.32	0.26 U	0.21 U	0.24 U	0.4	0.22 U	0.2 U	0.23 U
cis-1,2-Dichloroethene	0.14 U	0.14 U	0.15 U	0.12 U	0.14 U	0.11 U	0.13 U	0.12 U	0.13 U
Chloromethane	1.2	0.91	1.2	0.88	1.2	0.95	1	1.5 U	1.8
Chloroethane	0.24 U	0.23 U	0.25 U	0.2 U	0.23 U	0.18 U	0.22 U	0.2 U	0.22 U
Chlorobenzene	0.16 U	0.16 U	0.18 U	0.14 U	0.16 U	0.12 U	0.15 U	0.14 U	0.77 U
Carbon Tetrachloride	0.45	0.5	0.64	0.49	0.27	0.34	0.4	0.45	0.51
1,2-Dichloroethane	0.14 U	0.14 U	0.15 U	0.12 U	0.14 U	0.11 U	0.13 U	0.12 U	0.14 U
1,1-Dichloroethene	0.071 U	0.069 U	0.076 U	0.061 U	0.07 U	0.054	0.066 U	0.059 U	0.067 U
1,1-Dichloroethane	0.14 U	0.14 U	0.15 U	0.12 U	0.14 U	0.11 U	0.13 U	0.12 U	0.14 U
1,1,2-Trichloroethane	0.2 U	0.19 U	0.21 U	0.17 U	0.19 U	0.15 U	0.18 U	0.16 U	0.18 U
1,1,2,2-Tetrachloroethane	0.24 U	0.24 U	0.26 U	0.21 U	0.24 U	0.18 U	0.23 U	0.2 U	0.23 U
1,1,1-Trichloroethane	0.2 U	0.19 U	0.21 U	0.17 U	0.19 U	0.15 U	0.18 U	0.16 U	0.18 U

Building	Building 25					
Sample ID	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4	IA-B25-4
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.82	1.65	1.51	1.42	1.68	1.37
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.046 U	0.042 U	0.038 U	0.036 U	0.043 U	0.035 U
Trichloroethene	1.2	0.18 U	0.18	0.15 U	0.18 U	0.65
trans-1,2-Dichloroethene	0.72 U	0.65 U	0.6 U	0.56 U	0.67 U	0.02 J
Toluene	--	--	--	--	--	1.5
Tetrachloroethene	0.34	0.22 U	0.2 U	0.19 U	0.23 U	0.36
o-Xylene	--	--	--	--	--	0.21
Naphthalene	--	--	--	--	--	0.13 J
Methylene Chloride	--	--	--	--	--	0.82 J
m,p-Xylene	--	--	--	--	--	0.6
Hexane	--	--	--	--	--	0.3 J
Heptane	--	--	--	--	--	2.8 U
Ethyl Benzene	--	--	--	--	--	0.24
Cyclohexane	--	--	--	--	--	0.1 J
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.12 U	0.11 U	0.13 U	0.11 U
Chloromethane	1.9 U	1.7 U	1.6 U	1.5 U	1.7 U	1.2 J
Chloroethane	0.24 U	0.22 U	0.2 U	0.19 U	0.22 U	0.18 U
Chlorobenzene	0.84 U	0.76 U	0.7 U	0.65 U	0.77 U	0.63 U
Carbon Tetrachloride	0.56	0.48	0.45	0.42	0.37	0.46
Benzene	--	--	--	--	--	0.47
2,2,4-Trimethylpentane	--	--	--	--	--	3.2 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.12 J
1,2-Dichloroethane	0.33	0.31	0.16	0.14	0.2	0.29
1,2,4-Trimethylbenzene	--	--	--	--	--	0.26 J
1,1-Dichloroethene	0.072 U	0.065 U	0.06 U	0.056 U	0.067 U	0.054 U
1,1-Dichloroethane	0.15 U	0.13 U	0.12 U	0.11 U	0.14 U	0.11 U
1,1,2-Trichloroethane	0.2 U	0.18 U	0.16 U	0.15 U	0.18 U	0.15 U
1,1,2,2-Tetrachloroethane	0.25 U	0.23 U	0.21 U	0.19 U	0.23 U	0.19 U
1,1,1-Trichloroethane	0.2 U	0.18 U	0.16 U	0.15 U	0.18 U	0.028 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	**Building 25**								
Sample ID	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.79	1.79	1.75	1.66	1.79	1.43	1.65	1.63	1.64
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.046 U	0.046 U	0.045 UJ	0.042 U	0.046 U	0.036 U	0.042 U	0.042 U	0.042 U
Trichloroethene	0.19 U	0.19 U	0.19 U	0.98	0.25	3.1	0.84	0.77	7.3
trans-1,2-Dichloroethene	0.71 U	0.71 U	0.69 U	0.66 U	0.71 U	0.57 U	0.65 U	0.65 U	0.65 U
Tetrachloroethene	0.24 U	0.43	0.24 U	0.22 U	1.3	0.29	0.22 U	0.22 U	0.22 U
cis-1,2-Dichloroethene	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.11 U	0.13 U	0.13 U	0.13 U
Chloromethane	1	0.85	0.99	0.98	1.2	0.94	0.96	1.7 U	1.7 U
Chloroethane	0.24 U	0.24 U	0.23 U	0.22 U	0.24 U	0.19 U	0.22 U	0.22 U	0.22 U
Chlorobenzene	0.16 U	0.16 U	0.16 U	0.15 U	0.16 U	0.13 U	0.15 U	0.15 U	0.76 U
Carbon Tetrachloride	0.46	0.46	0.52	0.53	1.6	0.34	0.42	0.46	0.53
1,2-Dichloroethane	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.12 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethene	0.071 U	0.071 U	0.069 U	0.066 U	0.071 U	0.075	0.065 U	0.065 U	0.065 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.12 U	0.13 U	0.13 U	0.13 U
1,1,2-Trichloroethane	0.2 U	0.2 U	0.19 U	0.18 U	0.2 U	0.16 U	0.18 U	0.18 U	0.18 U
1,1,2,2-Tetrachloroethane	0.24 U	0.24 U	0.24 U	0.23 U	0.24 U	0.2 U	0.23 U	0.22 U	0.22 U
1,1,1-Trichloroethane	0.2 U	0.2 U	0.19 U	0.18 U	0.2 U	0.16 U	0.18 U	0.18 U	0.18 U

Building	**Building 25**					
Sample ID	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5	IA-B25-5
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.75	1.57	1.55	1.38	1.84	1.32
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.045 U	0.04 U	0.04 U	0.035 U	0.047 U	0.034 U
Trichloroethene	0.52	0.19	0.17 U	0.53	0.2 U	0.47
trans-1,2-Dichloroethene	0.69 U	0.78	0.61 U	0.55 U	0.73 U	0.022 J
Toluene	--	--	--	--	--	4
Tetrachloroethene	0.38	0.21 U	0.21 U	0.19 U	0.25 U	0.36
o-Xylene	--	--	--	--	--	0.26
Naphthalene	--	--	--	--	--	4.1
Methylene Chloride	--	--	--	--	--	0.66 J
m,p-Xylene	--	--	--	--	--	0.58
Hexane	--	--	--	--	--	1.4 J
Heptane	--	--	--	--	--	0.64 J
Ethyl Benzene	--	--	--	--	--	0.27
Cyclohexane	--	--	--	--	--	0.097 J
cis-1,2-Dichloroethene	0.14 U	0.12 U	0.12 U	0.11 U	0.14 U	0.1 U
Chloromethane	1.8 U	1.6 U	1.6 U	1.4 U	1.9 U	1.1 J
Chloroethane	0.23 U	0.21 U	0.2 U	0.18 U	0.24 U	0.17 U
Chlorobenzene	0.80 U	0.72 U	0.71 U	0.64 U	0.85 U	0.61 U
Carbon Tetrachloride	0.42	0.51	0.58	0.4	0.37	0.5
Benzene	--	--	--	--	--	0.5
2,2,4-Trimethylpentane	--	--	--	--	--	3.1 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.65 U
1,2-Dichloroethane	0.14 U	0.13	0.12 U	0.11 U	0.15 U	0.13
1,2,4-Trimethylbenzene	--	--	--	--	--	0.28 J
1,1-Dichloroethene	0.069 U	0.062 U	0.061 U	0.055 U	0.073 U	0.052 U
1,1-Dichloroethane	0.14 U	0.13 U	0.12 U	0.11 U	0.15 U	0.11 U
1,1,2-Trichloroethane	0.19 U	0.17 U	0.17 U	0.15 U	0.2 U	0.14 U
1,1,2,2-Tetrachloroethane	0.24 UJ	0.22 U	0.21 U	0.19 U	0.25 U	0.18 U
1,1,1-Trichloroethane	0.19 U	0.17 U	0.17 U	0.15 U	0.2 U	0.14 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 20								
Sample ID	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.75	1.68	1.87	1.71	2.15	1.71	1.52	1.66	1.67
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.045 U	0.043 U	0.048 UJ	0.044 U	0.055 U	0.044 U	0.039 U	0.042 U	0.043 U
Trichloroethene	0.19 U	0.18 U	0.2 U	0.18 U	0.23 U	0.18 U	0.16 U	0.18 U	0.18 U
trans-1,2-Dichloroethene	0.69 U	0.67 U	0.74 U	0.68 U	0.85 U	0.68 U	0.6 U	0.66 U	0.66 U
Tetrachloroethene	0.24 U	0.23 U	0.25 U	0.23 U	0.29 U	0.24	0.21 U	0.22 U	0.23 U
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.15 U	0.14 U	0.17 U	0.14 U	0.12 U	0.13 U	0.13 U
Chloromethane	1.1	0.89	0.96	1.2	1.5	1.0	0.98	1.7 U	1.7 U
Chloroethane	0.23 U	0.22 U	0.25 U	0.22 U	0.28 U	0.22 U	0.2 U	0.22 U	0.22 U
Chlorobenzene	0.16 U	0.15 U	0.17 U	0.16 U	0.2 U	0.16 U	0.14 U	0.15 U	0.77 U
Carbon Tetrachloride	0.41	0.35	0.28	0.43	0.54	0.37	0.43	0.46	0.51
1,2-Dichloroethane	0.14 U	0.14 U	0.15 U	0.14	0.17 U	0.14 U	0.12 U	0.13 U	0.14 U
1,1-Dichloroethene	0.069 U	0.067 U	0.074 U	0.068 U	0.085 U	0.078	0.06 U	0.066 U	0.066 U
1,1-Dichloroethane	0.14 U	0.14 U	0.15 U	0.14 U	0.17 U	0.14 U	0.12 U	0.13 U	0.14 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.2 U	0.19 U	0.23 U	0.19 U	0.16 U	0.18 U	0.18 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.26 U	0.23 U	0.3 U	0.23 U	0.21 U	0.23 U	0.23 U
1,1,1-Trichloroethane	0.19 U	0.18 U	0.2 U	0.19 U	0.23 U	0.19 U	0.16 U	0.18 U	0.18 U

Building	Building 20					
Sample ID	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1	IA-B20-1
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.7	1.73	1.62	1.58	1.66	1.34
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.043 U	0.044 U	0.041 U	0.036 U	0.042 U	0.034 U
Trichloroethene	0.18 U	0.18 U	0.17 U	0.15 U	0.18 U	0.14 U
trans-1,2-Dichloroethene	0.67 U	0.68 U	0.64 U	0.56 U	0.66 U	0.069 J
Toluene	--	--	--	--	--	1
Tetrachloroethene	0.31	0.23 U	0.22 U	0.19 U	0.22 U	0.36
o-Xylene	--	--	--	--	--	0.2
Naphthalene	--	--	--	--	--	0.35 U
Methylene Chloride	--	--	--	--	--	0.52 J
m,p-Xylene	--	--	--	--	--	0.58
Hexane	--	--	--	--	--	0.28 J
Heptane	--	--	--	--	--	2.7 U
Ethyl Benzene	--	--	--	--	--	0.21
Cyclohexane	--	--	--	--	--	0.095 J
cis-1,2-Dichloroethene	0.13 U	0.14 U	0.13 U	0.11 U	0.13 U	0.11 U
Chloromethane	1.8 U	1.8 U	1.7 U	1.4 U	1.7 U	1.1 J
Chloroethane	0.22 U	0.23 U	0.21 U	0.18 U	0.22 U	0.18 U
Chlorobenzene	0.78 U	0.8 U	0.74 U	0.64 U	0.76 U	0.62 U
Carbon Tetrachloride	0.46	0.48	0.45	0.3	0.34	0.47
Benzene	--	--	--	--	--	0.6
2,2,4-Trimethylpentane	--	--	--	--	--	3.1 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.095 J
1,2-Dichloroethane	0.14	0.14 U	0.13 U	0.11 U	0.13 U	0.079 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.24 J
1,1-Dichloroethene	0.067 U	0.068 U	0.064 U	0.056 U	0.066 U	0.053 U
1,1-Dichloroethane	0.14 U	0.14 U	0.13 U	0.11 U	0.13 U	0.11 U
1,1,2-Trichloroethane	0.18 U	0.19 U	0.18 U	0.15 U	0.18 U	0.15 U
1,1,2,2-Tetrachloroethane	0.23 U	0.24 U	0.22 U	0.19 U	0.23 U	0.18 U
1,1,1-Trichloroethane	0.18 U	0.19 U	0.18 U	0.15 U	0.18 U	0.15 U

Notes:
µg/m3 - micrograms per cubic meter
U - not detected at indicated concentration
J - estimated concentration
NS - Not Sampled
-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 22								
Sample ID	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.75	1.68	1.61	1.62	1.73	1.29	1.76	--	1.58
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.3	0.043 U	0.041 U	0.041 U	0.044 U	0.033 U	0.045 UJ	NS	0.04 U
Trichloroethene	0.19 U	0.18 U	0.17 U	0.17 U	0.18 U	0.14 U	0.19 UJ	NS	0.17 U
trans-1,2-Dichloroethene	0.69 U	0.67 U	0.64 U	0.64 U	0.68 U	0.51 U	0.7 UJ	NS	0.63 U
Tetrachloroethene	0.25	0.31	0.22 U	0.22	0.23 U	0.29	0.74 J	NS	0.28
cis-1,2-Dichloroethene	1.1	0.13 U	0.13 U	0.13 U	0.14 U	0.1 U	0.14 UJ	NS	0.12 U
Chloromethane	1.1	0.9	1.4	1.1	1.2	1.1	0.98 J	NS	1.7
Chloroethane	0.23 U	0.22 U	0.21 U	0.21 U	0.23 U	0.17 U	0.23 UJ	NS	0.21 U
Chlorobenzene	0.16 U	0.15 U	0.15 U	0.15 U	0.16 U	0.12 U	0.16 UJ	NS	0.73 U
Carbon Tetrachloride	0.4	0.47	0.62	0.46	0.46	0.42	0.43 J	NS	0.54
1,2-Dichloroethane	0.14 U	0.14 U	0.26	0.74	0.14 U	0.13	0.48 J	NS	0.15
1,1-Dichloroethene	0.069 U	0.067 U	0.064 U	0.064 U	0.068 U	0.051 U	0.07 UJ	NS	0.063 U
1,1-Dichloroethane	0.14 U	0.14 U	0.13 U	0.13 U	0.14 U	0.1 U	0.14 UJ	NS	0.13 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.18 U	0.18 U	0.19 U	0.14 U	0.19 UJ	NS	0.17 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.22 U	0.22 U	0.24 U	0.18 U	0.24 UJ	NS	0.22 U
1,1,1-Trichloroethane	0.19 U	0.18 U	0.18 U	0.18 U	0.19 U	0.14 U	0.19 UJ	NS	0.17 U

Building	Building 22					
Sample ID	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1	IA-B22-1
Sample Date	11/26/2019	1/13/2020	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.81	1.56	1.42	1.31	1.51	1.47
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.046 U	0.04 U	0.036 U	0.033 U	0.038 U	0.036 U
Trichloroethene	0.19 U	0.17 U	0.15 U	0.16	0.16 U	0.17
trans-1,2-Dichloroethene	0.72 U	0.62 U	0.56 U	0.52 U	0.6 U	0.15 J
Toluene	--	--	--	--	--	0.64
Tetrachloroethene	0.59	0.26	0.19 U	0.47	0.2 U	0.56
o-Xylene	--	--	--	--	--	0.11 J
Naphthalene	--	--	--	--	--	0.37 U
Methylene Chloride	--	--	--	--	--	0.56 J
m,p-Xylene	--	--	--	--	--	0.27
Hexane	--	--	--	--	--	2.5 U
Heptane	--	--	--	--	--	2.9 U
Ethyl Benzene	--	--	--	--	--	0.13
Cyclohexane	--	--	--	--	--	0.15 J
cis-1,2-Dichloroethene	0.14 U	0.12 U	0.11 U	0.1 U	0.12 U	0.027 J
Chloromethane	1.9 U	1.6 U	1.5 U	1.4 U	1.6 U	1.6
Chloroethane	0.24 U	0.2 U	0.19 U	0.17 U	0.2 U	0.18 U
Chlorobenzene	0.83 U	0.72 U	0.65 U	0.6 U	0.7 U	0.64 U
Carbon Tetrachloride	0.65	0.53	0.46	0.44	0.38	0.47
Benzene	--	--	--	--	--	0.52
2,2,4-Trimethylpentane	--	--	--	--	--	3.3 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.69 U
1,2-Dichloroethane	0.18	0.13 U	0.11 U	0.11 U	0.12	0.085 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.69 U
1,1-Dichloroethene	0.072 U	0.062 U	0.056 U	0.052 U	0.06 U	0.056 U
1,1-Dichloroethane	0.15 U	0.13 U	0.11 U	0.11 U	0.12 U	0.11 U
1,1,2-Trichloroethane	0.2 U	0.17 U	0.15 U	0.14 U	0.16 U	0.15 U
1,1,2,2-Tetrachloroethane	0.25 U	0.21 U	0.19 U	0.18 U	0.21 U	0.19 U
1,1,1-Trichloroethane	0.2 U	0.17 U	0.15 U	0.14 U	0.16 U	0.15 U

Notes:
µg/m3 - micrograms per cubic meter
U - not detected at indicated concentration
J - estimated concentration
NS - Not Sampled
-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	**Building 22**								
Sample ID	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.75	1.71	1.68		1.73	1.37	1.62	--	1.67
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.045 U	0.044 U	0.043 U	0.042 U	0.044 U	0.035 U	0.041 U	NS	0.043 U
Trichloroethene	0.19 U	0.18 U	0.18 U	0.18 U	0.18 U	0.15 U	0.17 U	NS	0.20
trans-1,2-Dichloroethene	0.69 U	0.68 U	0.67 U	0.65 U	0.68 U	0.54 U	0.64 U	NS	0.66 U
Tetrachloroethene	0.3	0.23 U	0.23 U	0.22 U	0.27	0.4	0.22 U	NS	0.59
cis-1,2-Dichloroethene	0.14 U	0.14 U	0.13 U	0.13 U	0.14 U	0.11 U	0.13 U	NS	0.13 U
Chloromethane	1.1	0.82	1.2	1.7	1.4	1.0	1.1	NS	1.7 U
Chloroethane	0.23 U	0.22 U	0.22 U	0.22 U	0.23 U	0.18 U	0.21 U	NS	0.22 U
Chlorobenzene	0.16 U	0.16 U	0.15 U	0.15 U	0.16 U	0.13 U	0.15 U	NS	0.77 U
Carbon Tetrachloride	0.43	0.22 U	0.75	0.63	0.49	0.45	0.43	NS	0.53
1,2-Dichloroethane	0.14 U	0.14 U	0.49	0.27	0.36	0.25	0.13 U	NS	0.29
1,1-Dichloroethene	0.069 U	0.068 U	0.067 U	0.065 U	0.068 U	0.054 U	0.064 U	NS	0.066 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.11 U	0.13 U	NS	0.14 U
1,1,2-Trichloroethane	0.19 U	0.19 U	0.18 U	0.18 U	0.19 U	0.15 U	0.18 U	NS	0.18 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.23 U	0.23 U	0.24 U	0.19 U	0.22 U	NS	0.23 U
1,1,1-Trichloroethane	0.33	0.19 U	0.19	0.18 U	0.19 U	0.15 U	0.18 U	NS	0.18 U

Building	**Building 22**					
Sample ID	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2	IA-B22-2
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.72	1.75	1.48		1.62	1.36
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.044 U	0.045 U	0.038 U	0.034 U	0.041 U	0.035 U
Trichloroethene	0.18 U	0.19 U	0.16 U	0.23	0.17 U	0.21
trans-1,2-Dichloroethene	0.68 U	0.69 U	0.59 U	0.53 U	0.64 U	0.17 J
Toluene	--	--	--	--	--	0.55
Tetrachloroethene	0.69	0.37	0.3	0.66	0.29	0.86
o-Xylene	--	--	--	--	--	0.099 J
Naphthalene	--	--	--	--	--	0.36 U
Methylene Chloride	--	--	--	--	--	0.46 J
m,p-Xylene	--	--	--	--	--	0.25
Hexane	--	--	--	--	--	2.4 U
Heptane	--	--	--	--	--	2.8 U
Ethyl Benzene	--	--	--	--	--	0.12
Cyclohexane	--	--	--	--	--	2.3 U
cis-1,2-Dichloroethene	0.14 U	0.14 U	0.12 U	0.11 U	0.13 U	0.044 J
Chloromethane	1.8 U	1.8 U	1.5 U	1.4 U	1.7 U	1.2 J
Chloroethane	0.23 U	0.23 U	0.2 U	0.18 U	0.21 U	0.18 U
Chlorobenzene	0.79 U	0.8 U	0.68 U	0.62 U	0.74 U	0.63 U
Carbon Tetrachloride	0.68	0.56	0.45	0.57	0.44	0.47
Benzene	--	--	--	--	--	0.52
2,2,4-Trimethylpentane	--	--	--	--	--	3.2 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.67 U
1,2-Dichloroethane	0.26	0.14 U	0.12 U	0.11	0.14	0.085 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.12 J
1,1-Dichloroethene	0.068 U	0.069 U	0.059 U	0.053 U	0.064 U	0.054 U
1,1-Dichloroethane	0.14 U	0.14 U	0.12 U	0.11 U	0.13 U	0.11 U
1,1,2-Trichloroethane	0.19 U	0.19 U	0.16 U	0.15 U	0.18 U	0.15 U
1,1,2,2-Tetrachloroethane	0.24 U	0.24 U	0.2 U	0.18 U	0.22 U	0.19 U
1,1,1-Trichloroethane	0.19 U	0.19 U	0.16 U	0.15 U	0.18 U	0.15 U

Notes:
µg/m3 - micrograms per cubic meter
U - not detected at indicated concentration
J - estimated concentration
NS - Not Sampled
-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 15								
Sample ID	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	2.12	1.64	1.75	1.66	2.05	1.28	1.43	1.69	1.78
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.054 U	0.042 U	0.045 UJ	0.042 U	0.052 U	0.033 U	0.036 U	0.043 U	0.046 U
Trichloroethene	0.23 U	0.18 U	0.19 U	0.18 U	1.7	0.14 U	0.15 U	0.18 U	1.6
trans-1,2-Dichloroethene	0.84 U	0.65 U	0.69 U	0.66 U	0.81 U	0.51 U	0.57 U	0.67 U	0.7 U
Tetrachloroethene	0.29 U	0.22 U	0.24 U	0.59	1.4	7.4	0.27	0.25	0.24 U
cis-1,2-Dichloroethene	0.17 U	0.13 U	0.14 U	0.13 U	0.16 U	0.1 U	0.11 U	0.13 U	0.14 U
Chloromethane	1.8	0.86	0.98	1	1.2	0.94	0.88	1.7 U	1.8 U
Chloroethane	0.28 U	0.22 U	0.23 U	0.22 U	0.27 U	0.17 U	0.19 U	0.22 U	0.23 U
Chlorobenzene	0.2 U	0.15 U	0.16 U	0.15 U	0.19 U	0.12 U	0.13 U	0.16 U	0.82 U
Carbon Tetrachloride	0.43	0.5	0.81	0.43	0.5	0.41	0.39	0.35	0.51
1,2-Dichloroethane	0.17 U	0.13 U	0.14 U	0.13 U	0.16 U	0.1 U	0.12 U	0.14 U	0.14 U
1,1-Dichloroethene	0.084 U	0.065 U	0.069 U	0.066 U	0.081 U	0.055	0.057 U	0.067 U	0.07 U
1,1-Dichloroethane	0.17 U	0.13 U	0.14 U	0.13 U	0.16 U	0.1 U	0.12 U	0.14 U	0.14 U
1,1,2-Trichloroethane	0.23 U	0.18 U	0.19 U	0.18 U	0.22 U	0.14 U	0.16 U	0.18 U	0.19 U
1,1,2,2-Tetrachloroethane	0.29 U	0.22 U	0.24 U	0.23 U	0.28 U	0.18 U	0.2 U	0.23 U	0.24 U
1,1,1-Trichloroethane	0.23 U	0.18 U	0.19 U	0.18 U	0.31	0.14 U	0.16 U	0.18 U	0.19 U

Building	Building 15					
Sample ID	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1	IA-B15-1
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.75	1.69	1.55	1.28	1.62	1.34
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.045 U	0.043 U	0.04 U	0.033 U	0.052 U	0.034 U
Trichloroethene	0.19 U	0.22	0.17 U	0.14 U	0.22 U	0.031 J
trans-1,2-Dichloroethene	0.69 U	0.67 U	0.61 U	0.51 U	0.8 U	0.098 J
Toluene	--	--	--	--	--	1.9
Tetrachloroethene	0.4	0.24	0.21 U	0.17 U	0.27 U	0.19
o-Xylene	--	--	--	--	--	0.34
Naphthalene	--	--	--	--	--	0.35 U
Methylene Chloride	--	--	--	--	--	0.54 J
m,p-Xylene	--	--	--	--	--	0.78
Hexane	--	--	--	--	--	0.67 J
Heptane	--	--	--	--	--	0.52 J
Ethyl Benzene	--	--	--	--	--	0.29
Cyclohexane	--	--	--	--	--	0.31 J
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.12 U	0.1 U	0.16 U	0.11 U
Chloromethane	1.8 U	1.7 U	1.6 U	1.3 U	2.1 U	1.1 J
Chloroethane	0.23 U	0.22 U	0.2 U	0.17 U	0.27 U	0.18 U
Chlorobenzene	0.8 U	0.78 U	0.71 U	0.59 U	0.93 U	0.62 U
Carbon Tetrachloride	0.54	0.46	0.46	0.41	0.35	0.44
Benzene	--	--	--	--	--	0.69
2,2,4-Trimethylpentane	--	--	--	--	--	0.68 J
1,3,5-Trimethylbenzene	--	--	--	--	--	0.27 J
1,2-Dichloroethane	0.16	0.14 U	0.12 U	0.1 U	0.16 U	0.072 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.89
1,1-Dichloroethene	0.069 U	0.13	0.061 U	0.051 U	0.08 U	0.053 U
1,1-Dichloroethane	0.14 U	0.14 U	0.12 U	0.1 U	0.16 U	0.11 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.17 U	0.14 U	0.22 U	0.15 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.21 U	0.18 U	0.28 U	0.18 U
1,1,1-Trichloroethane	0.19 U	0.18 U	0.17 U	0.14 U	0.22 U	0.15 U

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 15								
Sample ID	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.58	1.71	1.75	1.71	1.85	1.68	1.3	1.66	1.71
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.04 U	0.044 U	0.045 UJ	0.44 U	0.047 U	0.043 U	0.033 U	0.042 U	0.044 U
Trichloroethene	0.51	0.18 U	0.19 U	1.8 U	0.93	0.18 U	0.15	0.18 U	0.93
trans-1,2-Dichloroethene	0.63 U	0.68 U	0.69 U	6.8 U	0.73 U	0.67 U	0.52 U	0.66 U	0.68 U
Tetrachloroethene	16	0.23 U	0.24 U	2.3 U	0.47	70	0.23	0.22 U	0.23 U
cis-1,2-Dichloroethene	0.12 U	0.14 U	0.14 U	1.4 U	0.15 U	0.13 U	0.1 U	0.13 U	0.14 U
Chloromethane	1.6	0.92	1.2	1.8 U	1.2	1.1	0.87	1.7 U	1.8 U
Chloroethane	0.21 U	0.22 U	0.23 U	2.2 U	0.24 U	0.22 U	0.17 U	0.22 U	0.22 U
Chlorobenzene	0.14 U	0.16 U	0.16 U	1.6 U	0.17 U	0.15 U	0.12 U	0.46	0.79 U
Carbon Tetrachloride	0.42	0.48	0.78	2.2 U	0.41	0.4	0.41	0.41	0.52
1,2-Dichloroethane	0.14	0.14 U	0.14 U	1.4 U	0.15 U	0.14 U	0.1 U	0.13 U	0.14 U
1,1-Dichloroethene	0.063 U	0.068 U	0.069 U	0.68 U	0.073 U	0.066 J	0.052 U	0.066 U	0.068 U
1,1-Dichloroethane	0.13 U	0.14 U	0.14 U	1.4 U	0.15 U	0.14 U	0.1 U	0.13 U	0.14 U
1,1,2-Trichloroethane	0.17 U	0.19 U	0.19 U	1.9 U	0.2 U	0.18 U	0.14 U	0.18 U	0.19 U
1,1,2,2-Tetrachloroethane	0.22 U	0.23 U	0.24 U	2.3 U	0.25 U	0.23 U	0.18 U	0.23 U	0.23 U
1,1,1-Trichloroethane	0.17 U	0.19 U	0.19 U	1.9 U	0.2 U	0.18 U	0.14 U	0.18 U	0.19 U

Building	Building 15					
Sample ID	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2	IA-B15-2
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.76	1.69	1.55	1.28	2.02	1.26
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.045 U	0.043 U	0.04 U	0.038 U	0.041 U	0.032 U
Trichloroethene	0.19 U	0.2	0.17 U	0.16 U	0.17 U	0.029 J
trans-1,2-Dichloroethene	0.7 U	0.67 U	0.61 U	0.59 U	0.64 U	0.092 J
Toluene	--	--	--	--	--	2.3
Tetrachloroethene	0.54	0.23 U	0.21 U	0.2 U	0.22 U	0.2
o-Xylene	--	--	--	--	--	0.33
Naphthalene	--	--	--	--	--	0.33 U
Methylene Chloride	--	--	--	--	--	0.6 J
m,p-Xylene	--	--	--	--	--	0.86
Hexane	--	--	--	--	--	0.56 J
Heptane	--	--	--	--	--	2.6 U
Ethyl Benzene	--	--	--	--	--	0.29
Cyclohexane	--	--	--	--	--	0.17 J
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.12 U	0.12 U	0.13 U	0.1 U
Chloromethane	1.8 U	1.7 U	1.6 U	1.5 U	1.7 U	1.2 J
Chloroethane	0.23 U	0.22 U	0.2 U	0.2 U	0.21 U	0.17 U
Chlorobenzene	0.81 U	0.78 U	0.71 U	0.69 U	0.74 U	0.58 U
Carbon Tetrachloride	0.49	0.48	0.45	0.43	0.34	0.46
Benzene	--	--	--	--	--	0.61
2,2,4-Trimethylpentane	--	--	--	--	--	0.57 J
1,3,5-Trimethylbenzene	--	--	--	--	--	0.2 J
1,2-Dichloroethane	0.16	0.14 U	0.12 U	0.12 U	0.13 U	0.079 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.72
1,1-Dichloroethene	0.07 U	0.072	0.061 U	0.059 U	0.064 U	0.05 U
1,1-Dichloroethane	0.14 U	0.14 U	0.12 U	0.12 U	0.13 U	0.1 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.17 U	0.16 U	0.18 U	0.14 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.21 U	0.2 U	0.22 U	0.17 U
1,1,1-Trichloroethane	0.19 U	0.18 U	0.17 U	0.16 U	0.18 U	0.018 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	**Building 21**								
Sample ID	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	12/16/2014	11/24/2015	12/15/2017	11/27/2018
Dilution	1.52	1.71	1.68	1.73	1.87	1.41	1.6	1.58	1.85
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.039 U	0.044 U	0.043 U	0.044 U	0.048 U	0.036 U	0.041 U	0.04 U	0.047 U
Trichloroethene	0.52	0.18 U	0.18 U	0.18 U	0.2 U	0.25	0.17 U	0.17 U	0.2 U
trans-1,2-Dichloroethene	0.6 U	0.68 U	0.67 U	0.68 U	0.74 U	0.56 U	0.63 U	0.63 U	0.73 U
Tetrachloroethene	0.31	0.23 U	0.23 U	0.23 U	0.25 U	0.22	0.83	0.28	0.25 U
cis-1,2-Dichloroethene	0.12 U	0.14 U	0.13 U	0.14 U	0.15 U	0.11 U	0.13 U	0.12 U	0.15 U
Chloromethane	1.5	0.78	0.93	1.1	1.7	1.2	0.96	1.6 U	1.9 U
Chloroethane	0.2 U	0.22 U	0.22 U	0.23 U	0.25 U	0.19 U	0.21 U	0.21 U	0.24 U
Chlorobenzene	0.14 U	0.16 U	0.15 U	0.16 U	0.17 U	0.13 U	0.15 U	0.14 U	0.85 U
Carbon Tetrachloride	0.43	0.43	0.55	0.43	0.55	0.52	0.44	0.45	0.39
1,2-Dichloroethane	0.12 U	0.14 U	0.14 U	0.14 U	0.15 U	0.15	0.13 U	0.13 U	0.15 U
1,1-Dichloroethene	0.06 U	0.068 U	0.067 U	0.068 U	0.074 U	0.056 U	0.072	0.063 U	0.073 U
1,1-Dichloroethane	0.12 U	0.14 U	0.14 U	0.14 U	0.15 U	0.11 U	0.13 U	0.13 U	0.15 U
1,1,2-Trichloroethane	0.16 U	0.19 U	0.18 U	0.19 U	0.2 U	0.15 U	0.17 U	0.17 U	0.2 U
1,1,2,2-Tetrachloroethane	0.21 U	0.23 U	0.23 U	0.24 U	0.26 U	0.19 U	0.22 U	0.22 U	0.25 U
1,1,1-Trichloroethane	0.16 U	0.19 U	0.18 U	0.19 U	0.2 U	0.15 U	0.17 U	0.17 U	0.2 U

Building	**Building 21**					
Sample ID	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1	IA-B21-1
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.8	1.69	1.42	1.33	1.42	1.34
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.046 U	0.043 U	0.036 U	0.034 U	0.04 U	0.034 U
Trichloroethene	0.19 U	0.18 U	0.15 U	0.14 U	0.17 U	0.06 J
trans-1,2-Dichloroethene	0.71 U	0.67 U	0.56 U	0.57	0.61 U	0.16 J
Toluene	--	--	--	--	--	1.4
Tetrachloroethene	0.48	0.23 U	0.19 U	0.18 U	0.21 U	0.28
o-Xylene	--	--	--	--	--	0.25
Naphthalene	--	--	--	--	--	0.35 U
Methylene Chloride	--	--	--	--	--	0.52 J
m,p-Xylene	--	--	--	--	--	0.61
Hexane	--	--	--	--	--	0.48 J
Heptane	--	--	--	--	--	2.7 U
Ethyl Benzene	--	--	--	--	--	0.24
Cyclohexane	--	--	--	--	--	0.13 J
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.11 U	0.1 U	0.12 U	0.028 J
Chloromethane	1.8 U	1.7 U	1.5 U	1.4 U	1.6 U	1.2 J
Chloroethane	0.24 U	0.22 U	0.19 U	0.18 U	0.2 U	0.18 U
Chlorobenzene	0.83 U	0.78 U	0.65 U	0.61 U	0.71 U	0.62 U
Carbon Tetrachloride	0.59	0.7	0.26	0.67	0.46	0.47
Benzene	--	--	--	--	--	0.77
2,2,4-Trimethylpentane	--	--	--	--	--	0.47 J
1,3,5-Trimethylbenzene	--	--	--	--	--	0.093 J
1,2-Dichloroethane	0.18	0.14 U	0.11 U	0.11 U	0.15	0.15
1,2,4-Trimethylbenzene	--	--	--	--	--	0.25 J
1,1-Dichloroethene	0.071 U	0.067 U	0.056 U	0.053 U	0.061 U	0.053 U
1,1-Dichloroethane	0.14 U	0.14 U	0.11 U	0.11 U	0.12 U	0.11 U
1,1,2-Trichloroethane	0.2 U	0.18 U	0.15 U	0.14 U	0.17 U	0.15 U
1,1,2,2-Tetrachloroethane	0.25 U	0.23 U	0.19 U	0.18 U	0.21 U	0.18 U
1,1,1-Trichloroethane	0.2 U	0.18 U	0.15 U	0.14 U	0.17 U	0.15 U

Notes:
µg/m3 - micrograms per cubic meter
U - not detected at indicated concentration
J - estimated concentration
NS - Not Sampled
-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	**Building 21**						
Sample ID	AA-B21-1	AA-B21-1	AA-B21-1	AA-B21-1	AA-B21-1	AA-B21-1	AA-B21-1
Sample Date	12/16/2014	11/24/2015	12/15/2017	11/27/2018	11/26/2019	1/13/2021	12/16/2021
Dilution	1.5	1.48	1.4	1.54	1.57	1.47	4.01
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND							
Vinyl Chloride	0.038 U	0.038 U	0.036 U	0.039 U	0.04 U	0.038 U	0.1 U
Trichloroethene	0.16	0.16 U	0.22	0.16 U	0.17 U	0.16 U	0.43 U
trans-1,2-Dichloroethene	0.59 U	0.59 U	0.56 U	0.61 U	0.62 U	0.58 U	1.6 U
Tetrachloroethene	0.2 U	0.62	0.27	0.21 U	0.32	0.2 U	0.54 U
cis-1,2-Dichloroethene	0.12 U	0.12 U	0.11 U	0.12 U	0.12 U	0.12 U	0.32 U
Chloromethane	1.5	1.0	1.4 U	1.6 U	1.6 U	1.5 U	4.1 U
Chloroethane	0.2 U	0.2 U	0.18 U	0.2 U	0.21 U	0.19 U	0.53 U
Chlorobenzene	0.14 U	0.14 U	0.13 U	0.71 U	0.72 U	0.68 U	1.8 U
Carbon Tetrachloride	0.56	0.38	0.46	0.39	0.55	0.48	0.5 U
1,2-Dichloroethane	0.12 U	0.12 U	0.14	0.12 U	0.13	0.12 U	0.32 U
1,1-Dichloroethene	0.059 U	0.059 U	0.056 U	0.061 U	0.062 U	0.058 U	0.16 U
1,1-Dichloroethane	0.12 U	0.12 U	0.11 U	0.12 U	0.13 U	0.12 U	0.32 U
1,1,2-Trichloroethane	0.16 U	0.16 U	0.15 U	0.17 U	0.17 U	0.16 U	0.44 U
1,1,2,2-Tetrachloroethane	0.2 U	0.2 U	0.19 U	0.21 U	0.22 U	0.2 U	0.55 U
1,1,1-Trichloroethane	0.16 U	0.16 U	0.15 U	0.17 U	0.17 U	0.16 U	0.44 U

Building	**Building 21**		
Sample ID	AA-B21-1	AA-B21-1	AA-B21-1
Sample Date	12/13/2022	12/5/2023	1/16/2025
Dilution	1.17	1.42	1.16
Units	µg/m^3	µg/m^3	µg/m^3
COMPOUND			
Vinyl Chloride	0.030 U	0.036 U	0.03 U
Trichloroethene	0.12 U	0.15 U	0.12 U
trans-1,2-Dichloroethene	0.50	0.56 U	0.2 J
Toluene	--	--	2.6
Tetrachloroethene	0.16 U	0.19 U	0.22
o-Xylene	--	--	0.53
Naphthalene	--	--	0.3 U
Methylene Chloride	--	--	0.71 J
m,p-Xylene	--	--	1.4
Hexane	--	--	0.94 J
Heptane	--	--	0.63 J
Ethyl Benzene	--	--	0.49
Cyclohexane	--	--	0.26 J
cis-1,2-Dichloroethene	0.093 U	0.11 U	0.092 U
Chloromethane	1.2 U	1.5 U	1.1 J
Chloroethane	0.15 U	0.19 U	0.15 U
Chlorobenzene	0.54 U	0.65 U	0.53 U
Carbon Tetrachloride	0.44	0.36	0.47
Benzene	--	--	0.8
2,2,4-Trimethylpentane	--	--	0.86 J
1,3,5-Trimethylbenzene	--	--	0.12 J
1,2-Dichloroethane	0.095 U	0.11 U	0.077 J
1,2,4-Trimethylbenzene	--	--	0.36 J
1,1-Dichloroethene	0.046 U	0.056 U	0.046 U
1,1-Dichloroethane	0.095 U	0.11 U	0.094 U
1,1,2-Trichloroethane	0.13 U	0.15 U	0.13 U
1,1,2,2-Tetrachloroethane	0.16 U	0.19 U	0.16 U
1,1,1-Trichloroethane	0.13 U	0.15 U	0.13 U

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 21									
Sample ID	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	*IA-B21-2 Duplicate*	IA-B21-2	IA-B21-2	*IA-B21-2 Duplicate*	IA-B21-2
Sample Date	3/31/2010	11/21/2011	12/6/2012	12/16/2013	3/25/2014	3/25/2014	4/2/2014	11/24/2014	4/2/2014	12/16/2014
Dilution	1.68	1.71	1.71	1.60	1.93	1.88	1.90	1.73		1.68
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND										
Vinyl Chloride	0.043 U	0.044 U	0.044 UJ	0.041 U	0.049 U	0.048 U	0.048 U	0.044 U	0.046 U	0.043 U
Trichloroethene	0.18 U	0.18 U	0.18 U	0.17 U	0.21 U	0.2 U	0.2 U	0.18 U	0.19 U	0.18 U
trans-1,2-Dichloroethene	0.67 U	0.68 U	0.68 U	0.63 U	0.76 U	0.74 U	0.75 U	0.68 U	0.7 U	0.67 U
Tetrachloroethene	0.23 U	0.23 U	0.23 U	0.22 U	0.26 U	0.26 U	0.26 U	0.23 U	0.34	0.23 U
cis-1,2-Dichloroethene	0.13 U	0.14 U	0.14 U	0.13 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.13 U
Chloromethane	1.6	0.85	1.2	1	2.1	2.1	0.94	1.4	1.3	1.2
Chloroethane	0.22 U	0.22 U	0.22 U	0.21 U	0.25 U	0.25 U	0.25 U	0.23 U	0.23 U	0.22 U
Chlorobenzene	0.15 U	0.16 U	0.16 U	0.15 U	0.18 U	0.17 U	0.17 U	0.16 U	0.16 U	0.15 U
Carbon Tetrachloride	0.42	0.52	0.54	0.5	0.25	0.43	0.51	0.44	0.55	0.49
1,2-Dichloroethane	0.14 U	0.14 U	0.15	0.13 U	0.16 U	0.15 U	0.15 U	0.14 U	0.14 U	0.14 U
1,1-Dichloroethene	0.067 U	0.068 U	0.068 U	0.063 U	0.076 U	0.074 U	0.075 U	0.068 U	0.07 U	0.067 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	0.13 U	0.16 U	0.15 U	0.15 U	0.14 U	0.14 U	0.14 U
1,1,2-Trichloroethane	0.18 U	0.19 U	0.19 U	0.17 U	0.21 U	0.2 U	0.21 U	0.19 U	0.19 U	0.18 U
1,1,2,2-Tetrachloroethane	0.23 U	0.23 U	0.23 U	0.22 U	0.26 U	0.26 U	0.26 U	0.24 U	0.24 U	0.23 U
1,1,1-Trichloroethane	0.18 U	0.19 U	0.19 U	0.17 U	0.21 U	0.2 U	0.21 U	0.19 U	0.19 U	0.18 U

Building	Building 21									
Sample ID	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2	IA-B21-2
Sample Date	11/24/2015	11/22/2016	12/15/2017	11/27/2018	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.73	1.68	1.50	1.82	1.72	1.70	1.55	1.36	1.51	1.42
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND										
Vinyl Chloride	0.044 U	0.043 U	0.038 U	0.046 U	0.044 U	0.043 U	0.04 U	0.035 U	0.038 U	0.036 U
Trichloroethene	0.22	0.18 U	0.16 U	0.19	0.18 U	0.32	0.17 U	0.15 U	0.16 U	0.13 J
trans-1,2-Dichloroethene	0.68 U	0.67 U	0.59 U	0.72 U	0.68 U	0.67 U	0.61 U	0.54 U	0.6 U	0.1 J
Toluene	--	--	--	--	--	--	--	--	--	0.62
Tetrachloroethene	0.42	0.23 U	0.21	0.34	0.41	0.28	0.21 U	0.19	0.2 U	0.32
o-Xylene	--	--	--	--	--	--	--	--	--	0.16
Naphthalene	--	--	--	--	--	--	--	--	--	0.37 U
Methylene Chloride	--	--	--	--	--	--	--	--	--	0.49 J
m,p-Xylene	--	--	--	--	--	--	--	--	--	0.43
Hexane	--	--	--	--	--	--	--	--	--	2.5 U
Heptane	--	--	--	--	--	--	--	--	--	2.9 U
Ethyl Benzene	--	--	--	--	--	--	--	--	--	0.17
Cyclohexane	--	--	--	--	--	--	--	--	--	0.086 J
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.12 U	0.14 U	0.14 U	0.13 U	0.12 U	0.11 U	0.12 U	0.033 J
Chloromethane	1.0	0.95	1.5 U	1.9 U	1.8 U	1.8 U	1.6 U	1.4 U	1.6 U	1.1 J
Chloroethane	0.23 U	0.22 U	0.2 U	0.24 U	0.23 U	0.22 U	0.2 U	0.18 U	0.2 U	0.19 U
Chlorobenzene	0.16 U	0.15 U	0.14 U	0.84 U	0.79 U	0.78 U	0.71 U	0.63 U	0.7 U	0.65 U
Carbon Tetrachloride	0.41	0.38	0.46	0.4	0.49	0.5	0.48	0.49	0.35	0.46
Benzene	--	--	--	--	--	--	--	--	--	0.5
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--	--	3.3 U
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--	--	0.11 J
1,2-Dichloroethane	0.14 U	0.14 U	0.12 U	0.15 U	0.14 U	0.14 U	0.12 U	0.11 U	0.13	0.076 J
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--	--	0.31 J
1,1-Dichloroethene	0.068 U	0.067 U	0.059 U	0.072 U	0.068 U	0.067 U	0.061 U	0.054 U	0.06 U	0.056 U
1,1-Dichloroethane	0.14 U	0.14 U	0.12 U	0.15 U	0.14 U	0.14 U	0.12 U	0.11 U	0.12 U	0.11 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.16 U	0.2 U	0.19 U	0.18 U	0.17 U	0.15 U	0.16 U	0.15 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.2 U	0.25 U	0.24 U	0.23 U	0.21 U	0.19 U	0.21 U	0.19 U
1,1,1-Trichloroethane	0.19 U	0.18 U	0.16 U	0.2 U	0.19 U	0.18 U	0.17 U	0.15 U	0.16 U	0.15 U

Notes:
µg/m3 - micrograms per cubic meter
U - not detected at indicated concentration
J - estimated concentration
NS - Not Sampled
-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 120								
Sample ID	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1
Sample Date	4/1/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.75	1.71	1.61	1.72	1.71	1.5	1.74	1.59	1.77
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.045 U	0.044 U	0.041 U	0.044 U	0.044 U	0.038 U	0.044 U	0.041 U	0.045 U
Trichloroethene	0.19 U	0.18 U	0.17 U	0.18 U	0.65	0.32	0.19 U	0.17 U	0.19 U
trans-1,2-Dichloroethene	0.69 U	0.68 U	0.64 U	0.68 U	14	0.59 U	0.69 U	0.63 U	0.7 U
Tetrachloroethene	0.24 U	0.23 U	0.22 U	0.23 U	1.6	0.53	0.24 U	3.7	9.6
cis-1,2-Dichloroethene	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U
Chloromethane	1.7	0.86	1.2	1.2	1.4	0.96	0.99	1.6 U	1.8 U
Chloroethane	0.23 U	0.22 U	0.21 U	0.23 U	0.22 U	0.2 U	0.23 U	0.21 U	0.23 U
Chlorobenzene	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U	0.14 U	0.16 U	0.15 U	0.81 U
Carbon Tetrachloride	0.45	0.49	0.64	0.43	0.44	0.41	0.41	0.48	0.37
1,2-Dichloroethane	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.12 U	0.14 U	0.13 U	0.23
1,1-Dichloroethene	0.069 U	0.068 U	0.064 U	0.068 U	0.068 U	0.059 U	0.069 U	0.063 U	0.07 U
1,1-Dichloroethane	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.12 U	0.14 U	0.13 U	0.14 U
1,1,2-Trichloroethane	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.16 U	0.19 U	0.17 U	0.19 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.22 U	0.24 U	0.23 U	0.2 U	0.24 U	0.22 U	0.24 U
1,1,1-Trichloroethane	0.19 U	0.21	0.18 U	0.19 U	0.6	8.1	0.19 U	0.17 J	0.19 U

Building	Building 120					
Sample ID	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1	IA-B120-1
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.79	1.58	1.45	1.39	1.72	1.29
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.046 U	0.04 U	0.037 U	0.036 U	0.045 U	0.033 U
Trichloroethene	0.19 U	0.19	0.22	0.18	0.19 U	0.20
trans-1,2-Dichloroethene	0.84	0.63 U	0.57 U	0.55 U	0.69 U	0.030 J
Toluene	--	--	--	--	--	0.59
Tetrachloroethene	0.51	0.38	0.22	0.27	0.24 U	0.59
o-Xylene	--	--	--	--	--	0.16
Naphthalene	--	--	--	--	--	0.34 U
Methylene Chloride	--	--	--	--	--	0.51 J
m,p-Xylene	--	--	--	--	--	0.35
Hexane	--	--	--	--	--	0.24 J
Heptane	--	--	--	--	--	2.6 U
Ethyl Benzene	--	--	--	--	--	0.12
Cyclohexane	--	--	--	--	--	2.1 J
cis-1,2-Dichloroethene	0.14 U	0.12 U	0.11 U	0.11 U	0.14 U	0.10 U
Chloromethane	1.8 U	1.6 U	1.5 U	1.4 U	1.8 U	1.1 J
Chloroethane	0.24 U	0.21 U	0.19 U	0.18 U	0.23 U	0.17 U
Chlorobenzene	0.82 U	0.73 U	0.67 U	0.64 U	0.8 U	0.59 U
Carbon Tetrachloride	0.41	0.49	0.48	0.56	0.45	0.46
Benzene	--	--	--	--	--	0.54
2,2,4-Trimethylpentane	--	--	--	--	--	3.0 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.63 U
1,2-Dichloroethane	0.14 U	0.13 U	0.12 U	0.11	0.14 U	0.079 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.13 J
1,1-Dichloroethene	0.071 U	0.063 U	0.057 U	0.055 U	0.069 U	0.051 U
1,1-Dichloroethane	0.14 U	0.13 U	0.12 U	0.11 U	0.14 U	0.10 U
1,1,2-Trichloroethane	0.20 U	0.17 U	0.16 U	0.15 U	0.19 U	0.14 U
1,1,2,2-Tetrachloroethane	0.24 UJ	0.22 U	0.2 U	0.19 U	0.24 U	0.18 U
1,1,1-Trichloroethane	0.24	0.17 U	0.27	0.15 U	0.19 U	0.042 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 120								
Sample ID	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2
Sample Date	4/1/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.75	1.64	1.68	1.72	1.8	1.5	1.75	1.68	3.56
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.045 U	0.042 U	0.043 U	0.044 U	0.046 U	0.038 U	0.045 U	0.043 U	0.091 U
Trichloroethene	0.19 U	0.42	0.77	0.44	0.19 U	0.79	0.51	0.18 U	0.38 U
trans-1,2-Dichloroethene	0.69 U	0.65 U	0.67 U	0.68 U	0.71 U	0.59 U	0.69 U	0.67 U	1.4 U
Tetrachloroethene	1.1	0.25	0.48	0.23	0.24 U	0.5	0.51	13	240
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.13 U	0.14 U	0.14 U	0.12 U	0.14 U	0.13 U	0.28 U
Chloromethane	1.5	0.83	1.2	1.1	1.2	1.0	0.91	1.7 U	3.7 U
Chloroethane	0.23 U	0.22 U	0.22 U	0.22 U	0.24 U	0.2 U	0.23 U	0.22 U	0.47 U
Chlorobenzene	0.16 U	0.15 U	0.15 U	0.16 U	0.16 U	0.14 U	0.16 U	0.15 U	1.6 U
Carbon Tetrachloride	0.4	0.47	0.63	0.48	0.45	0.42	0.4	0.45	0.45 U
1,2-Dichloroethane	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.12 U	0.14 U	0.14 U	0.29 U
1,1-Dichloroethene	0.069 U	0.065 U	0.067 U	0.068 U	0.071 U	0.073	0.069 U	0.067 U	0.14 U
1,1-Dichloroethane	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.12 U	0.14 U	0.14 U	0.29 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.18 U	0.19 U	0.2 U	0.16 U	0.19 U	0.18 U	0.39 U
1,1,2,2-Tetrachloroethane	0.24 U	0.22 U	0.23 U	0.23 U	0.25 U	0.2 U	0.24 U	0.23 U	0.49 U
1,1,1-Trichloroethane	0.19 U	0.75	1.3	0.87	0.2 U	13	0.19 U	0.18 U	0.39 U

Building	Building 120					
Sample ID	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2	IA-B120-2
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.64	1.66	1.26	1.36	1.55	1.31
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.042 U	0.042 U	0.032 U	0.035 U	0.04 U	0.033 U
Trichloroethene	0.18 U	0.34	0.2	0.34	0.17 U	0.14 U
trans-1,2-Dichloroethene	0.88	0.66 U	0.5 U	0.54 U	0.61 U	0.021 J
Toluene	--	--	--	--	--	0.66
Tetrachloroethene	0.55	0.55	0.24	0.25	0.21 U	0.24
o-Xylene	--	--	--	--	--	0.13
Naphthalene	--	--	--	--	--	0.34 U
Methylene Chloride	--	--	--	--	--	0.47 J
m,p-Xylene	--	--	--	--	--	0.34
Hexane	--	--	--	--	--	0.25 J
Heptane	--	--	--	--	--	2.7 U
Ethyl Benzene	--	--	--	--	--	0.12
Cyclohexane	--	--	--	--	--	0.17 J
cis-1,2-Dichloroethene	0.13 U	0.13 U	0.1 U	0.11 U	0.12 U	0.1 U
Chloromethane	1.7 U	1.7 U	1.3 U	1.4 U	1.6 U	1.1 J
Chloroethane	0.22 U	0.22 U	0.17 U	0.18 U	0.2 U	0.17 U
Chlorobenzene	0.76 U	0.76 U	0.58 U	0.63 U	0.71 U	0.6 U
Carbon Tetrachloride	0.44	0.48	0.47	0.54	0.45	0.47
Benzene	--	--	--	--	--	0.56
2,2,4-Trimethylpentane	--	--	--	--	--	3 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.64 U
1,2-Dichloroethane	0.13 U	0.13 U	0.1 U	0.11 U	0.12 U	0.071 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.13 J
1,1-Dichloroethene	0.065 U	0.066 U	0.05 U	0.054 U	0.061 U	0.052 U
1,1-Dichloroethane	0.13 U	0.13 U	0.1 U	0.11 U	0.12 U	0.11 U
1,1,2-Trichloroethane	0.18 U	0.18 U	0.14 U	0.15 U	0.17 U	0.14 U
1,1,2,2-Tetrachloroethane	0.22 UJ	0.23 U	0.17 U	0.19 U	0.21 U	0.18 U
1,1,1-Trichloroethane	0.26	0.2	0.23	0.17	0.17 U	0.028 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 114								
Sample ID	IA-B114-1	IA-B114-1	IA-B114-1	IA-B114-1	IA-B114-1	IA-B114-1	IA-B114-1	IA-B114-1	IA-B114-1
Sample Date	4/1/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.87	1.75	1.64	1.66	1.76	1.28	1.32	1.34	1.89
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.048 U	0.045 U	0.042 U	0.042 U	0.045 U	0.033 U	0.034 U	0.034 U	0.048 U
Trichloroethene	3.7	0.19 U	0.44	0.73	0.19 U	0.14 U	0.14 U	0.14 U	0.2 U
trans-1,2-Dichloroethene	0.74 U	0.69 U	0.65 U	0.66 U	0.7 U	0.51 U	0.52 U	0.53 U	0.75 U
Tetrachloroethene	14	1.2	1.4	1.7	0.34	0.22	0.18 U	0.45	0.48
cis-1,2-Dichloroethene	0.32	0.14 U	0.13 U	0.13 J	0.14 U	0.1 U	0.1 U	0.11 U	0.15 U
Chloromethane	1.5	0.86	1	0.99	1.1	0.98	0.88	1.4 U	2 U
Chloroethane	0.25 U	0.23 U	0.22 U	0.22 U	0.23 U	0.17 U	0.17 U	0.18 U	0.25 U
Chlorobenzene	0.17 U	0.16 U	0.15 U	0.15 U	0.16 U	0.12 U	0.12 U	0.12 U	0.87 U
Carbon Tetrachloride	0.42	0.54	0.67	0.45	0.47	0.41	0.41	0.47	0.37
1,2-Dichloroethane	0.15 U	0.14 U	0.13 U	0.13 U	0.14 U	0.1 U	0.11 U	0.11 U	0.15 U
1,1-Dichloroethene	0.074 U	0.069 U	0.065 U	0.066 U	0.07 U	0.051 U	0.052 U	0.053 U	0.075 U
1,1-Dichloroethane	0.15 U	0.14 U	0.13 U	0.13 U	0.14 U	0.1 U	0.11 U	0.11 U	0.15 U
1,1,2-Trichloroethane	0.2 U	0.19 U	0.18 U	0.18 U	0.19 U	0.14 U	0.14 U	0.15 U	0.21 U
1,1,2,2-Tetrachloroethane	0.26 U	0.24 U	0.22 U	0.23 U	0.24 U	0.18 U	0.18 U	0.18 U	0.26 U
1,1,1-Trichloroethane	0.59	4.2	0.5	0.95	1	0.58	0.14 U	1	0.65

Building	Building 114					
Sample ID	IA-B114-1	IA-B114-1	IA-B114-1	IA-B114-2	IA-B114-1	IA-B114-1
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.91	1.7	1.45	1.39	1.55	1.33
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^4	µg/m^4	µg/m^4
COMPOUND						
Vinyl Chloride	0.049 U	0.043 U	0.037 U	0.036 U	0.04 U	0.034 U
Trichloroethene	0.20 U	0.21	0.16 U	0.15 U	0.17 U	0.052 J
trans-1,2-Dichloroethene	0.76 U	0.67 U	0.57 U	0.55 U	0.61 U	0.53 U
Toluene	--	--	--	--	--	3.8
Tetrachloroethene	0.45	0.3	0.24	0.19 U	0.21 U	0.31
o-Xylene	--	--	--	--	--	0.12
Naphthalene	--	--	--	--	--	0.35 U
Methylene Chloride	--	--	--	--	--	0.48 J
m,p-Xylene	--	--	--	--	--	0.35
Hexane	--	--	--	--	--	0.28 J
Heptane	--	--	--	--	--	2.7 U
Ethyl Benzene	--	--	--	--	--	0.16
Cyclohexane	--	--	--	--	--	2.3 U
cis-1,2-Dichloroethene	0.15 U	0.13 U	0.11 U	0.11 U	0.12 U	0.1 U
Chloromethane	2.0 U	1.8 U	1.5 U	1.4 U	1.6 U	1.1 J
Chloroethane	0.25 U	0.22 U	0.19 U	0.18 U	0.2 U	0.18 U
Chlorobenzene	0.88 U	0.78 U	0.67 U	0.64 U	0.71 U	0.61 U
Carbon Tetrachloride	0.43	0.48	0.48	0.53	0.43	0.48
Benzene	--	--	--	--	--	0.5
2,2,4-Trimethylpentane	--	--	--	--	--	3.1 U
1,3,5-Trimethylbenzene	--	--	--	--	--	0.65 U
1,2-Dichloroethane	0.15 U	0.14 U	0.12 U	0.11 U	0.12 U	0.074 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.098 J
1,1-Dichloroethene	0.076 U	0.067 U	0.057 U	0.055 U	0.061 U	0.053 U
1,1-Dichloroethane	0.15 U	0.14 U	0.12 U	0.11 U	0.12 U	0.11 U
1,1,2-Trichloroethane	0.21 U	0.18 U	0.16 U	0.15 U	0.17 U	0.14 U
1,1,2,2-Tetrachloroethane	0.26 UJ	0.23 U	0.2 U	0.19 U	0.21 U	0.18 U
1,1,1-Trichloroethane	0.45	0.18 U	0.48	0.15 U	0.17 U	0.034 J

Notes:
µg/m3 - micrograms per cubic meter
U - not detected at indicated concentration
J - estimated concentration
NS - Not Sampled
-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	**Building 121**								
Sample ID	IA-B121-1	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*
Sample Date	4/1/2010	11/21/2011	11/21/2011	12/6/2012	12/6/2012	12/16/2013	12/16/2013	11/24/2014	11/24/2014
Dilution	1.75	1.68	1.68	1.68	1.61	1.88	1.90	1.66	1.82
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.045 U	0.043 U	0.043 U	0.043 U	0.041 U	0.048 U	0.048 U	0.042 U	0.046 U
Trichloroethene	0.19 U	0.18 U	0.18 U	0.18 U	0.17	0.22	0.23	0.3	0.29
trans-1,2-Dichloroethene	0.69 U	0.67 U	0.67 U	0.67 U	0.64 U	0.74 U	0.75 U	0.66 U	0.72 U
Tetrachloroethene	0.24 U	0.23 U	0.23 U	0.23 U	0.22 U	0.26 U	0.26 U	0.22 U	0.25 U
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.13 U	0.13 U	0.13 U	0.15 U	0.15 U	0.13 U	0.14 U
Chloromethane	1.6	0.86	0.84	0.84	0.94	1.1	1.1	1.4	1.4
Chloroethane	0.23 U	0.22 U	0.22 U	0.22 U	0.21 U	0.25 U	0.25 U	0.22 U	0.24 U
Chlorobenzene	0.16 U	0.15 U	0.15 U	0.16	0.17	0.17 U	0.17 U	0.15 U	0.17 U
Carbon Tetrachloride	0.4	0.46	0.46	0.57	0.69	0.71	0.79	0.5	0.4
1,2-Dichloroethane	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.15 U	0.15 U	0.13 U	0.15 U
1,1-Dichloroethene	0.069 U	0.067 U	0.067 U	0.067 U	0.064 U	0.074 U	0.075 U	0.066 U	0.072 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.15 U	0.15 U	0.13 U	0.15 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.18 U	0.24	0.26	0.2 U	0.21 U	0.18 U	0.2 U
1,1,2,2-Tetrachloroethane	0.24 U	0.23 U	0.23 U	0.23 U	0.22 U	0.26 U	0.26 U	0.23 U	0.25 U
1,1,1-Trichloroethane	0.24	0.75	0.7	3.8	4	0.2 U	0.21 U	0.22	0.21

Building	**Building 121**							
Sample ID	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*
Sample Date	11/24/2015	11/24/2015	11/22/2016	11/22/2016	12/15/2017	12/15/2017	11/27/2018	11/27/2018
Dilution	1.3	1.31	1.78	1.68	1.54	1.60	1.74	1.61
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND								
Vinyl Chloride	0.033 U	0.033 U	0.046 U	0.043 U	0.039 U	0.041 U	0.044 U	0.041 U
Trichloroethene	0.43	0.48	0.68	0.68	0.16 U	0.17 U	0.19 U	0.17 U
trans-1,2-Dichloroethene	0.52 U	0.52 U	95	97	0.61 U	0.63 U	0.69 U	0.64 U
Toluene	--	--	--	--	--	--	--	--
Tetrachloroethene	0.29	0.3	0.24 U	0.23 U	0.21 U	0.22 U	0.24 U	0.22 U
o-Xylene	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--
Methylene Chloride	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--
Hexane	--	--	--	--	--	--	--	--
Heptane	--	--	--	--	--	--	--	--
Ethyl Benzene	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	0.1 U	0.1 U	0.14 U	0.13 U	0.12 U	0.13 U	0.14 U	0.13 U
Chloromethane	1.0	0.98	0.98	0.93	1.6 U	1.6 U	1.8 U	1.7 U
Chloroethane	0.17 U	0.17 U	0.23 U	0.22 U	0.2 U	0.21 U	0.23 U	0.21 U
Chlorobenzene	0.12 U	0.12 U	0.16 U	0.15 U	0.14 U	0.15 U	0.8 U	0.74 U
Carbon Tetrachloride	0.39	0.43	0.31	0.4	0.44	0.46	0.28	0.32
Benzene	--	--	--	--	--	--	--	--
2,2,4-Trimethylpentane	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--	--	--
1,2-Dichloroethane	0.1 U	0.11 U	0.14 U	0.14 U	0.12 U	0.13 U	0.14 U	0.13 U
1,2,4-Trimethylbenzene	--	--	--	--	--	--	--	--
1,1-Dichloroethene	0.052 U	0.052 U	0.07 U	0.067 U	0.061 U	0.063 U	0.069 U	0.064 U
1,1-Dichloroethane	0.1 U	0.11 U	0.14 U	0.14 U	0.12 U	0.13 U	0.14 U	0.13 U
1,1,2-Trichloroethane	0.14 U	0.14 U	0.19 U	0.18 U	0.17 U	0.17 U	0.19 U	0.18 U
1,1,2,2-Tetrachloroethane	0.18 U	0.18 U	0.24 U	0.23 U	0.21 U	0.22 U	0.24 U	0.22 U
1,1,1-Trichloroethane	0.14 U	0.15	0.19 U	0.18 U	0.17 U	0.17 U	0.19 U	0.18 U

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	Building 121					
Sample ID	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*
Sample Date	11/26/2019	11/26/2019	1/13/2021	1/13/2021	12/16/2021	12/16/2021
Dilution	1.68	1.68	1.67	1.72	14.5	12.40
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.043 U	0.043 U	0.043 U	0.044 U	0.37 U	0.32 U
Trichloroethene	0.18 U	0.18 U	0.18 U	0.18 U	1.6 U	1.3 U
trans-1,2-Dichloroethene	0.67 U	0.67 U	0.66 U	0.68 U	5.7 U	4.9 U
Tetrachloroethene	0.29	0.31	0.23 U	0.23 U	2 U	1.7 U
cis-1,2-Dichloroethene	0.13 U	0.13 U	0.13 U	0.14 U	1.1 U	0.98 U
Chloromethane	1.7 U	1.7 U	1.7 U	1.8 U	15 U	13 U
Chloroethane	0.22 U	0.22 U	0.22 U	0.23 U	1.9 U	1.6 U
Chlorobenzene	0.77 U	0.77 U	0.77 U	0.79 U	6.7 U	5.7 U
Carbon Tetrachloride	0.45	0.44	0.48	0.48	1.8 U	1.6 U
1,2-Dichloroethane	0.14 U	0.14 U	0.14 U	0.14 U	1.2 U	1 U
1,1-Dichloroethene	0.067 U	0.067 U	0.066 U	0.068 U	0.57 U	0.49 U
1,1-Dichloroethane	0.14 U	0.14 U	0.14 U	0.14 U	1.2 U	1 U
1,1,2-Trichloroethane	0.18 U	0.18 U	0.18 U	0.19 U	1.6 U	1.4 U
1,1,2,2-Tetrachloroethane	0.23 UJ	0.23 UJ	0.23 U	0.24 U	2 U	1.7 U
1,1,1-Trichloroethane	0.18 U	0.18 U	0.18 U	0.19 U	1.6 U	1.4 U

Building	Building 121					
Sample ID	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*	IA-B121-1	*IA-B121-1 Duplicate*
Sample Date	12/13/2022	12/13/2022	12/5/2023	12/5/2023	1/16/2025	1/16/2025
Dilution	1.32	1.32	2.35	1.66	2.65	2.68
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.034 U	0.034 U	0.06 U	0.042 U	0.068 U	0.068 U
Trichloroethene	0.14 U	0.14 U	0.25 U	0.18 U	0.28 U	0.29 U
trans-1,2-Dichloroethene	0.52 U	0.52 U	0.93 U	0.66 U	1 U	1.1 U
Toluene	--	--	--	--	0.6	0.65
Tetrachloroethene	0.18 U	0.18 U	0.32 U	0.22 U	0.25 J	0.25 J
o-Xylene	--	--	--	--	0.12 J	0.14 J
Naphthalene	--	--	--	--	0.69 U	0.7 U
Methylene Chloride	--	--	--	--	0.56 J	0.56 J
m,p-Xylene	--	--	--	--	0.29 J	0.33 J
Hexane	--	--	--	--	4.7 U	4.7 U
Heptane	--	--	--	--	5.4 U	5.5 U
Ethyl Benzene	--	--	--	--	0.14 J	0.15 J
Cyclohexane	--	--	--	--	0.31 J	0.29 J
cis-1,2-Dichloroethene	0.1 U	0.1 U	0.19 U	0.13 U	0.21 U	0.21 U
Chloromethane	1.4 U	1.4 U	2.4 U	1.7 U	2.7 U	2.8 U
Chloroethane	0.17 U	0.17 U	0.31 U	0.22 U	0.35 U	0.35 U
Chlorobenzene	0.61 U	0.61 U	1.1 U	0.76 U	1.2 U	1.2 U
Carbon Tetrachloride	0.54	0.55	0.44	0.44	0.47	0.46
Benzene	--	--	--	--	0.54	0.58
2,2,4-Trimethylpentane	--	--	--	--	6.2 U	6.2 U
1,3,5-Trimethylbenzene	--	--	--	--	1.3 U	1.3 U
1,2-Dichloroethane	0.11 U	0.11 U	0.19 U	0.13 U	0.082 J	0.089 J
1,2,4-Trimethylbenzene	--	--	--	--	1.3 U	1.3 U
1,1-Dichloroethene	0.052 U	0.052 U	0.093 U	0.066 U	0.1 U	0.11 U
1,1-Dichloroethane	0.11 U	0.11 U	0.19 U	0.13 U	0.21 U	0.22 U
1,1,2-Trichloroethane	0.14 U	0.14 U	0.26 U	0.18 U	0.29 U	0.29 U
1,1,2,2-Tetrachloroethane	0.18 U	0.18 U	0.32 U	0.23 U	0.36 U	0.37 U
1,1,1-Trichloroethane	0.14 U	0.14 U	0.26 U	0.18 U	0.29 U	0.29 U

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 6-1
Summary of Indoor Air Sampling
Watervliet Arsenal
Watervliet, New York

Building	**Building 130**								
Sample ID	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1
Sample Date	4/1/2010	11/21/2011	12/6/2012	12/16/2013	11/24/2014	11/24/2015	11/22/2016	12/15/2017	11/27/2018
Dilution	1.64	1.79	2.01	1.78	1.73	1.47	1.3	1.34	1.73
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND									
Vinyl Chloride	0.042 U	0.046 U	0.051 U	0.046 U	0.044 U	0.038 U	0.033 U	0.034 U	0.044 U
Trichloroethene	0.19	0.33	0.28	0.44	0.18 U	0.42	0.14 U	0.58	0.25
trans-1,2-Dichloroethene	0.65 U	0.71 U	0.8 U	0.7 U	0.68 U	0.58 U	0.52 U	0.53 U	0.68 U
Tetrachloroethene	0.32	0.46	0.67	0.52	0.46	0.4	0.18 U	0.59	0.56
cis-1,2-Dichloroethene	0.13 U	0.14 U	0.16 U	0.14 U	0.14 U	0.12 U	0.1 U	0.11 U	0.14 U
Chloromethane	1.6	0.82	1	0.95	1.4	1.0	0.9	1.4 U	1.8 U
Chloroethane	0.22 U	0.24 U	0.26 U	0.23 U	0.23 U	0.19 U	0.17 U	0.18 U	0.23 U
Chlorobenzene	0.15 U	0.16 U	0.18 U	0.16 U	0.16 U	0.14 U	0.12 U	0.12 U	0.8 U
Carbon Tetrachloride	0.43	0.47	0.7	0.52	0.47	0.44	0.38	0.46	0.34
1,2-Dichloroethane	0.13 U	0.14 U	0.16 U	0.14 U	0.14 U	0.12 U	0.1 U	0.11 U	0.14 U
1,1-Dichloroethene	0.065 U	0.071 U	0.08 U	0.07 U	0.068 U	0.07	0.052 U	0.053 U	0.068 U
1,1-Dichloroethane	0.13 U	0.14 U	0.16 U	0.14 U	0.14 U	0.12 U	0.1 U	0.11 U	0.14 U
1,1,2-Trichloroethane	0.18 U	0.2 U	0.22 U	0.19 U	0.19 U	0.16 U	0.14 U	0.15 U	0.19 U
1,1,2,2-Tetrachloroethane	0.22 U	0.24 U	0.28 U	0.24 U	0.24 U	0.2 U	0.18 U	0.18 U	0.24 U
1,1,1-Trichloroethane	0.18 U	0.2 U	0.22 U	0.19 U	0.19 U	0.16 U	0.14 U	0.15 U	0.19 U

Building	**Building 130**					
Sample ID	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1	IA-B130-1
Sample Date	11/26/2019	1/13/2021	12/16/2021	12/13/2022	12/5/2023	1/16/2025
Dilution	1.75	1.66	1.42	1.43	1.59	1.4
Units	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
COMPOUND						
Vinyl Chloride	0.045 U	0.042 U	0.036 U	0.036 U	0.041 U	0.036 U
Trichloroethene	0.19 U	0.21	0.15 U	0.39	0.17 U	0.17
trans-1,2-Dichloroethene	0.69 U	0.66 U	0.56 U	0.57 U	0.63 U	0.56 U
Toluene	--	--	--	--	--	2.8
Tetrachloroethene	0.59	0.36	0.54	0.27	0.29	0.47
o-Xylene	--	--	--	--	--	0.2
Naphthalene	--	--	--	--	--	0.37 U
Methylene Chloride	--	--	--	--	--	0.45 J
m,p-Xylene	--	--	--	--	--	0.5
Hexane	--	--	--	--	--	54
Heptane	--	--	--	--	--	0.72 J
Ethyl Benzene	--	--	--	--	--	0.2
Cyclohexane	--	--	--	--	--	19
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.11 U	0.11 U	0.13 U	0.11 U
Chloromethane	1.8 U	1.7 U	1.5 U	1.5 U	1.6 U	1.1 J
Chloroethane	0.23 U	0.22 U	0.19 U	0.19 U	0.21 U	0.18 U
Chlorobenzene	0.80 U	0.76 U	0.65 U	0.66 U	0.73 U	0.64 U
Carbon Tetrachloride	0.43	0.49	0.48	0.55	0.46	0.45
Benzene	--	--	--	--	--	0.72
2,2,4-Trimethylpentane	--	--	--	--	--	1.5 J
1,3,5-Trimethylbenzene	--	--	--	--	--	0.69 U
1,2-Dichloroethane	0.14 U	0.13 U	0.11 U	0.12 U	0.13 U	0.082 J
1,2,4-Trimethylbenzene	--	--	--	--	--	0.29 J
1,1-Dichloroethene	0.069 U	0.066 U	0.056 U	0.057 U	0.063 U	0.056 U
1,1-Dichloroethane	0.14 U	0.13 U	0.11 U	0.12 U	0.13 U	0.11 U
1,1,2-Trichloroethane	0.19 U	0.18 U	0.15 U	0.16 U	0.17 U	0.15 U
1,1,2,2-Tetrachloroethane	0.24 UJ	0.23 U	0.19 U	0.2 U	0.22 U	0.19 U
1,1,1-Trichloroethane	0.19 U	0.18 U	0.15 U	0.16 U	0.17 U	0.033 J

Notes:

µg/m3 - micrograms per cubic meter

U - not detected at indicated concentration

J - estimated concentration

NS - Not Sampled

-- - Not analyzed for this compound

Table 8-1
Summary of 2024 LTM Well Decommissioning
Watervliet Arsenal
Watervliet, New York

Well	Approved Removal from LTM Sampling Program	Approved for Decommissioning	Decommissioning Completed
MMA			
WVA-AW-135-MW-2	2018	2024	2024
WVA-AW-35-MW-5	2018	2024	2024
WVA-AW-MW-22	2018	2024	2024
83DM-SP-1	2021	2021	2024
86EM-SP-1B	2021	2021	2024
86EM-SP-5	2021	2021	2024
92EM-SP-7	2021	2021	2024
WVA-AW-25-MW-5	2021	2021	2024
WVA-AW-25-MW-7	2021	2021	2024
WVA-AW-35-MW-8	2021	2021	2024
WVA-AW-MW-43	2021	2021	2024
WVA-AW-MW-44	2021	2021	2024
WVA-MW-79	2021	2021	2024
WVA-AW-MW-26*	2024	2024	2025
West Campus			
WVA-SA-MW-47***	2006	2023	2024
WVA-SA-MW-52***	2006	2023	2024
WVA-SA-MW-57***	2006	2023	2024
WVA-SA-MW-62***	2006	2023	2024
WVA-SA-MW-67***	2006	2023	2024
WVA-SA-MW-72***	2006	2023	2024
WVA-SA-MW-41	2018	2023	2024
WVA-SA-MW-60	2018	2023	2024
WVA-SA-MW-75**	2018	2020	2020
WVA-SA-MW-76	2018	2023	2024
WVA-SA-MW-77	2018	2023	2024
WVA-SA-MW-19R	2019	2023	2024
WVA-SA-MW-20	2019	2023	2024
WVA-SA-MW-23	2019	2023	2024
WVA-SA-MW-34	2019	2023	2024
WVA-SA-MW-38	2019	2023	2024
WVA-SA-MW-82	2019	2023	2024
WVA-SA-MW-EA-6	2019	2023	2024
WVA-SA-MW-ESE-6	2019	2023	2024
WVA-SA-MW-32	2023	2023	2024
WVA-SA-MW-40	2023	2023	Not Found****
WVA-SA-MW-51	2023	2023	2024
WVA-SA-MW-66	2023	2023	2024
WVA-SA-MW-70	2023	2023	2024
WVA-SA-MW-79	2023	2023	2024
WVA-SA-MW-80	2023	2023	2024
WVA-SA-MW-85	2023	2023	2024

Notes:

* WVA-AW-MW-26 was planned for decommissioning with NYSDEC approval due to construction activities at this location related to the new WVA Gillespie Gate entrance.

** WVA-SA-MW-75 was decommissioned in early 2020 after being damaged.

***Permeable reactive walls were built using a mixture of iron and sand. In order to maintain groundwater flow through the reactive wall, the 6 wells within the walls were abandoned using filter pack sand consistent with the original construction specification for the reactive wall sand, followed by 2 feet of cement/bentonite grout at the surface.

****Assumed paved over.

ARCADIS

Appendix A

Purge Logs

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: 94EM-MW-19 **DATE:** July 18, 2024

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: BB

DUPLICATE? Y/N: Y (DUP-3(20240718))

A: Total Casing and Screen Length: 12.39

B: Casing Internal Diameter: 4"

C: Water Level Below Top of Casing: 5.60

D: Volume of Water in Casing:

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad 4.00 \quad)^2 \times (12.39 - 5.60 \quad) =$ 1.108 gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1032	1037	1042	1047	1052	1057	1102	1107				
Gallons												
Rate (mL/min)												
Depth to Water (ft.)	5.60	6.18	6.26	6.54	6.69	6.79	6.95	7.00				
Temperature (°C)	20.47	18.94	19.46	19.79	20.01	19.95	20.00	19.97				
pH	6.86	6.92	6.94	6.96	7.00	6.95	6.94	6.94				
REDOX (mV)	28	43	52	69	70	72	72	72				
Conductivity (mohm/cm)	2.32	2.34	2.26	2.04	1.89	1.80	1.82	1.86				
Turbidity	950	42.0	35.0	21.4	27.6	79.4	79.0	79.2				
Dissolved Oxygen mg/L	2.76	4.49	1.07	1.09	1.34	0.94	1.01	1.00				
TDS	-	-	-	-	-	-	-					
Salinity	-	-	-	-	-	-	-					
DO %	30.5	48.3	11.5	11.9	14.6	9.6	9.0	9.0				

Notes: SAMPLE TIME 11:09

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

DEPTH TO BOTTOM 17.95

WELL NUMBER: 94EM-MW-21 DATE: July 18, 2024

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: BB

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: _____

B: Casing Internal Diameter: 4"

C: Water Level Below Top of Casing: 5.94

D: Volume of Water in Casing: _____

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
	0937	0942					33	40	43			
Time	~~0937~~	~~0942~~	0947	0952	0957	1002	1007	1012	1017			
Gallons												
Rate (mL/min)												
Depth to Water (ft.)	5.94	6.34	6.60	6.60	6.60	6.82	6.83	6.84				
Temperature (°C)	22.20	22.26	23.07	23.24	23.13	23.09	23.10	23.11				
pH	6.36	7.05	7.09	7.35	7.12	7.11	7.11	7.12				
REDOX (mV)	97	59	66	67	50	52	50	51				
Conductivity (mohm/cm)	1.27	1.14	1.13	1.14	1.13	1.12	1.13	1.13				
Turbidity	56.1	7.3	7.3	133	90.4	36.8	36.7	36.6				
Dissolved Oxygen ~~mg/L~~	9.71	7.67	2.15	3.49	2.50	3.37	3.31	3.29				
TDS	-	-	-	-	-	-	-					
Salinity	-	-	-	-	-	-	-					
DO ~~mg/L~~ %	110.1	88.4	24.5	39.5	28.4	37.5	37.4	37.2				

Notes: MISSING A, NO LOG FROM LAST YEAR

SAMPLE TIME: 10:14

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: 94EM-MW-20 DATE: July 28, 2024

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: BB

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 11.33

B: Casing Internal Diameter: 4"

C: Water Level Below Top of Casing: 5.72

D: Volume of Water in Casing: _____

$v = 0.0408 (B)^2 \times (A-C) = D$

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1215	1220	1225	1230	1235	1240	1245	1250				
Gallons												
Rate (mL/min)												
Depth to Water (ft.)	5.72	6.50	6.69	6.75	6.77	7.25	7.65	7.81				
Temperature (°C)	24.37	24.83	25.38	25.94	27.77	24.24	22.89	22.84				
pH	6.82	6.84	6.83	6.73	6.83	6.66	6.65	6.67				
REDOX (mV)	-55	-41	-37	-34	-34	-34	-34	-34				
Conductivity (mohm/cm)	0.769	0.732	0.737	0.729	0.680	0.681	0.696	0.690				
Turbidity	353	205	158	143	1000	1000	1000	1000				
Dissolved Oxygen	3.89	8.53	1.64	2.10	0.88	0.80	0.82	0.80				
TDS	-	-	-	-	-	-	-					
Salinity	-	-	-	-	-	-	-					
DO %	45.3	102.8	19.6	25.3	10.1	5.4	5.3	5.4				

Notes: SAMPLE TIME 12:53

WATER FROM WELL CHANGED COLOR OF NITRILE GLOVES & MY PANTS. (GREEN PANTS TO ORANGE)

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-~~S~~2 MW-822-1 DATE: 7/18/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 57.02'

B: Casing Internal Diameter: 4"

C: Water Level Below Top of Casing: 10.29

D: Volume of Water in Casing: 1.87 gal

$v = 0.0408 (B)^2 \times (A-C) = D$

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1050	1055	1100	1105	1110	1115	1120					
Gallons												
Rate (mL/min)	200											
Depth to Water (ft.)	10.40	10.40	10.40	10.40	10.40	10.40	10.40					
Temperature (°C)	23.81	21.20	20.88	20.80	20.87	20.82	20.86					
pH	7.39	7.41	7.35	7.34	7.35	7.35	7.36					
REDOX (mV)	-72	-72	-49	-44	-42	-42	-41					
Conductivity (mohm/cm)	2.48	2.34	2.19	2.11	2.37	2.33	2.31					
Turbidity	0.0	0.0	0.0	0.0	17.0	0.0	0.0					
Dissolved Oxygen	0.37	0.30	0.27	0.26	0.25	0.24	0.24					
TDS	1.91	1.75	1.54	1.54	1.51	1.49	1.47					
Salinity	1.55	1.41	1.28	1.24	1.21	1.19	1.18					

Notes: Turbine well

Samples for VOCs @ 1125

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-82R-3 DATE: 7/18/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 1418.68

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.98

D: Volume of Water in Casing: 5.55 gal

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1215	1220	1225	1230	1235	1240	1245					
Gallons												
Rate (mL/min)	150	100	100	100	100	100	100					
Depth to Water (ft.)	12.63	13.50	14.71	16.65	18.50	20.65	~~20.65~~	22.08				
Temperature (°C) 25.30	~~7.90~~	23.91	25.32	25.21	24.46	24.21	24.58					
pH	7.90	8.01	8.01	8.07	8.10	8.12	8.08					
REDOX (mV)	-148	-148	-138	-140	-148	-154	-155					
Conductivity (mohm/cm)	1.52	2.05	1.94	2.11	2.09	2.11	2.16					
Turbidity	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Dissolved Oxygen	0.71	0.31	0.35	0.26	0.20	0.20	0.19					
TDS	1.08	1.31	1.24	1.34	1.34	1.36	1.38					
Salinity	0.56	1.041	0.99	1.07	1.07	1.09	1.10					

Notes: Tubing in well

*extreme drawdown, pumped as slow as possible

Sampled for VOCs @ 1250

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-83-L **DATE:** 7/02/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AL

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 57.16'

B: Casing Internal Diameter: 11'

C: Water Level Below Top of Casing: 9.45

D: Volume of Water in Casing: 1.91 gal

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1410	1415	1420	1425	1430	1435	1440	1445	1450			
Gallons												
Rate (mL/min)	175		9.71									
Depth to Water (ft.)	9.68	9.71	~~17.67~~	~~13~~ 9.71	9.71	9.71	9.71	9.71	9.71			
Temperature (°C)	31.81	18.08	17.67	17.55	17.51	17.58	17.56	17.65	17.50			
pH	7.60	7.57	7.41	7.24	7.15	7.15	7.18	7.25	7.29			
REDOX (mV)	-141	-38	-27	-15	-8	-8	-13	-17	-15			
Conductivity (mohm/cm)	2.21	1.94	1.64	1.58	1.58	1.62	1.73	1.80	1.82			
Turbidity	14	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Dissolved Oxygen	2.29	0.62	0.38	0.34	0.29	0.28	0.27	0.26	0.27			
TDS	1.62	1.23	1.05	1.01	1.01	1.04	1.05	1.05	1.05			
Salinity	1.31	0.98	0.82	0.79	0.80	0.81	0.88	0.91	0.94			

Notes: Tubing in well

Sampled for VOCs @ 1455

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-83-2 DATE: 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 99.83'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 11.98

D: Volume of Water in Casing: _____

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1505	1510	1515	1520	1525	1530	1535	1540				
Gallons												
Rate (mL/min)	150											
Depth to Water (ft.)	13.34	14.98	~~14.95~~	14.95	14.95	14.95	14.95	14.95				
Temperature (°C)	20.48	18.44	18.56	17.95	18.24	18.19	17.87	17.95				
pH	7.55	7.75	8.10	7.96	7.89	7.80	7.74	7.71				
REDOX (mV)	-8	-46	-62	-62	-67	-70	-70	-70				
Conductivity (mohm/cm)	2.89	2.09	2.18	2.58	2.71	2.90	2.97	2.97				
Turbidity	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Dissolved Oxygen	2.24	0.41	0.28	0.24	0.21	0.21	0.20	0.20				
TDS	2.09	1.40	1.40	1.65	1.74	1.86	1.90	1.90				
Salinity	1.41	1.12	1.12	1.34	1.38	1.51	1.54	1.54				

Notes: Tubing in well

Sampled for VOCs @ 1545

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-53-3 **DATE:** 7/18/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AZ

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 12.97'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 8.87

D: Volume of Water in Casing: 1.80 gal

v = 0.0408 $(B)^2$ x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	0930	0935	0940	0945	0950	0955	1000	1005	1010	1015	1020	1025	1030
Gallons													
Rate (mL/min)	160												
Depth to Water (ft.)	9.87	10.11	10.26	10.28	10.28	10.29	10.29	10.29	10.29	10.29	10.29	10.29	10.29
Temperature (°C)	22.25	17.80	17.56	17.60	17.31	17.20	17.44	17.54	17.49	17.45	17.66	17.74	17.78
pH	7.62	6.56	6.71	6.62	6.90	6.95	6.90	6.60	7.11	7.40	7.64	7.60	7.80
REDOX (mV)	310	60	38	34	21	17	3	-14	-64	-93	-111	-115	-120
Conductivity (mohm/cm)	0.662	0.216	0.151	0.135	0.131	0.134	0.378	1.37	1.77	1.88	1.93	1.95	1.95
Turbidity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dissolved Oxygen	7.92	6.40	4.94	3.67	2.76	2.20	1.63	1.37	1.06	0.82	0.58	0.62	0.58
TDS	0.381	0.141	0.097	0.087	0.085	0.088	0.256	0.919	1.19	0.85	1.24	1.25	1.25
Salinity	0.29	0.10	0.07	0.06	0.06	0.06	0.19	0.72	0.90	0.95	0.98	0.99	0.99

Notes: Tubing in well

Sampled for VOCs @ 1035

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-8MR-1 **DATE:** 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 58.74'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.41

D: Volume of Water in Casing: 1.97

v = 0.0408 $(B)^2$ x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1027	1032	1037	1042	1047	1052	1057	~~1102~~ 1102				
Gallons												
Rate (mL/min)	160											
Depth to Water (ft.)	10.35	10.35	10.35	10.35	10.35	10.35	10.35	10.35				
Temperature (°C)	20.93	19.89	19.70	19.22	19.23	19.39	19.43	19.56				
pH	8.05	8.07	8.07	8.00	7.95	7.90	7.83	7.80				
REDOX (mV)	-121	-127	-128	-124	-121	-117	-113	-111				
Conductivity (~~mohm/cm~~) mS/cm	1.20	0.984	0.966	0946	0.936	0.930	0.925	0.920				
Turbidity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Dissolved Oxygen	0.08	0.47	0.49	0.43	0.41	0.39	0.33	0.33				
TDS (g/L)	0.702	0.629	0.618	0.604	0.598	0.595	0.592	0.590				
Salinity (ppt)	0.54	0.48	0.48	0.46	0.46	0.46	0.45	0.45				

Notes: Tubing in well

Sampled for VOCs @ 1105

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-84B-2 **DATE:** 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 102.97'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.28

D: Volume of Water in Casing: 3.83 gal

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1118	1123	1128	1133	1138	1143	1148					
Gallons												
Rate (mL/min)	150											
Depth to Water (ft.)	11.42	11.86	11.94	12.02	12.02	12.02	12.02					
Temperature (°C)	26.13	25.74	25.53	25.66	25.99	26.13	26.17					
pH	7.38	5.02	7.94	7.94	7.95	7.97	7.96					
REDOX (mV)	-98	123	-116	-112	-113	-116	-116					
Conductivity (~~mohm/cm~~ mS/cm)	2.55	2.07	2.69	2.70	2.70	2.69	2.68					
Turbidity	5.9	0.0	0.0	0.0	0.0	0.0	0.0					
Dissolved Oxygen	1.15	0.31	0.24	0.22	0.24	0.23	0.23					
TDS (g/L)	1.64	1.71	1.74	1.73	1.73	1.72	1.72					
Salinity (ppt)	1.32	1.38	1.39	1.39	1.39	1.39	1.38					

Notes: Tubing at ~94 ft, left in well

Samples for VOCs @ 1150

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-84R-3 DATE: 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AL

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 148.31'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 8.92'

D: Volume of Water in Casing: 5.58 gal

$v = 0.0408 (B)^2 \times (A-C) = D$

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

v = 0.0408 ( )^2 x (-) = _____ gal.

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1205	1210	1215	1220	1235	1230	1235	1240	1245	1250	1255	
Gallons												
Rate (mL/min)	160											
Depth to Water (ft.)	9.61	9.69	9.84	9.84	9.84	9.82	9.82	9.82	9.82	9.82	9.82	
Temperature (°C)	32.78	31.28	30.59	31.11	31.49	30.20	30.54	32.44	32.22	32.07	32.87	
pH	7.53	7.28	7.14	7.09	7.07	7.84	7.44	7.60	7.65	7.64	7.62	
REDOX (mV)	-112	-110	-116	-122	-129	-164	-167	-172	-180	-174	-172	
Conductivity (mohm/cm)	2.06	1.11	0.638	0.526	0.543	1.67	1.66	1.55	2.55	2.55	2.58	
Turbidity	8.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Dissolved Oxygen	1.80	0.57	0.34	0.31	0.30	0.31	0.28	0.36	0.40	0.42	0.38	
TDS	1.28	0.703	0.397	0.337	0.348	1.07	1.07	1.20	1.40	1.63	1.65	
Salinity	1.00	0.54	0.30	0.25	0.26	0.84	0.84	0.94	1.11	1.31	1.33	

Notes: Tubing @ ~100 ft

Sample @ for VOCs @ 1300

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-85R1 DATE: 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: LB

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 56.55'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.84'

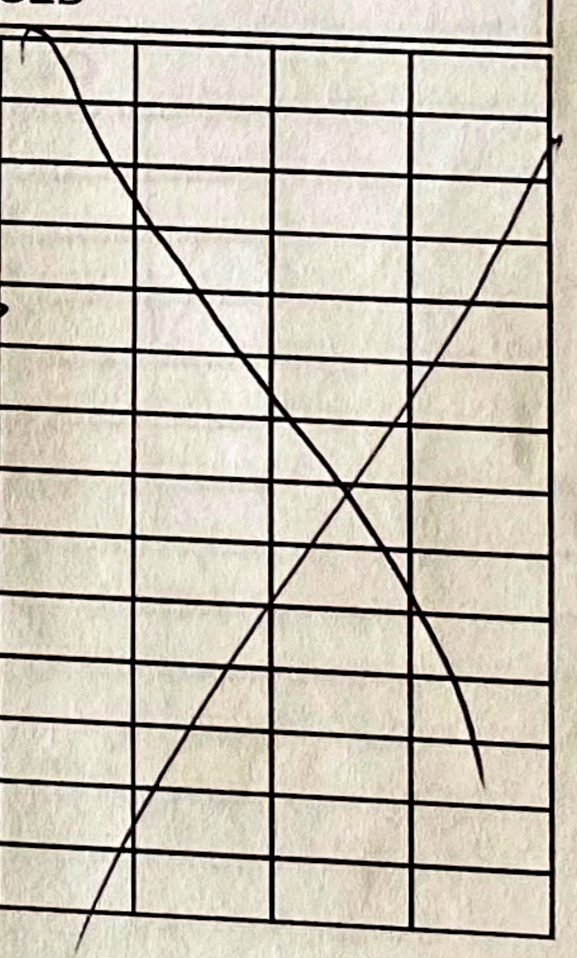
D: Volume of Water in Casing: 1.9 gal

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) = _____$ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED							
Time	845	850	855	900	905	910	915	920
Gallons								
Rate (mL/min)	250	250	250	250	150	150	150	150
Depth to Water (ft.)	13.28	17.5	21.42	23.10	25.20	25.88	26.70	26.60
Temperature (°C)	24.09	21.88	21.05	20.65	21.85	22.33	22.69	23.58
pH	6.83	7.66	7.94	8.11	8.35	8.46	8.54	8.60
REDOX (mV)	-97	-136	-160	-172	-171	-171	-171	-168
Conductivity (mohm/cm)	1.93	1.91	1.85	1.80	1.74	1.74	1.74	1.73
Turbidity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dissolved Oxygen	6.6	4.6	4.1	4.0	4.0	4.1	4.0	3.8
TDS	1.23	1.22	1.18	1.15	1.11	1.11	1.11	1.11
Salinity	0.97	0.97	0.93	0.91	0.88	0.88	0.88	0.87



Notes: Sampled at 9:25 Tubing left in well

~1.75 gal purged

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-8SR2 DATE: 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: LB

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 101.42'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.66

D: Volume of Water in Casing: 3.7 gal

v = 0.0408 (B)^2 x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	935	940	945	950	955	1000	1005	1010				
Gallons												
Rate (mL/min)	250	250	250	150	150	150	150	150				
Depth to Water (ft.)	9.66	10.13	10.20	9.84	9.85	9.85	9.85	9.85				
Temperature (°C)	24.46	21.93	21.52	22.92	23.21	23.71	24.08	24.41				
pH	8.76	8.62	9.39	9.38	9.41	9.10	9.05	9.03				
REDOX (mV)	-121	-163	-197	-189	-184	-174	-171	-168				
Conductivity (mohm/cm)	1.73	1.16	1.03	1.02	1.06	1.70	1.80	1.84				
Turbidity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Dissolved Oxygen	4.8	4.9	3.4	3.4	3.5	3.6	3.5	3.5				
TDS	1.11	0.732	0.657	0.654	0.680	1.09	1.15	1.18				
Salinity	0.87	0.57	0.51	0.50	0.53	0.86	0.91	0.93				

Notes: Sampled at 1015 Tubing left in well

~ 1.25 gal purged

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-85R-3 **DATE:** 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AZ

DUPLICATE? Y/N: Y Dup-1(20240717)

A: Total Casing and Screen Length: 148.09

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.78

D: Volume of Water in Casing: 5.53

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	0910	0915	0920	0925	0930	0935	0940	0945	0950			
Gallons												
Rate (mL/min)	250											
Depth to Water (ft.)	10.78	10.85	10.85	10.85	10.85	10.85	10.85	10.85	10.85			
Temperature (°C)	21.04	19.44	19.76	20.21	20.14	20.55	20.87	21.08	21.47			
pH	9.63	9.59	8.76	8.60	8.19	8.15	8.09	8.03	8.03			
REDOX (mV)	-170	-155	-145	-143	-169	-162	-154	-151	-157			
Conductivity (mohm/cm)	2.05	1.83	1.80	1.95	2.64	2.63	2.69	2.73	2.73			
Turbidity	0.0	0.0	0.0	0.0	1.1	2.1	2.5	3.3	3.2			
Dissolved Oxygen	1.12	0.56	0.43	0.37	0.32	0.31	0.29	0.28	0.28			
TDS	1.30	1.17	1.15	1.26	1.69	1.69	1.72	1.75	1.75			
Salinity	1.04	0.92	0.91	1.00	1.36	1.36	1.39	1.41	1.41			

Notes: Tubing in well Samples for VOCs @ 0955
* DUP-1(20240717) collected

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-86R-1 DATE: 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 58.55'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 10.12'

D: Volume of Water in Casing: 1.94 gal

v = 0.0408 (B)² x (A-C) = D

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	0400	0405	0410	0415	0420	0425	0430	0435	0440			
Gallons									1.85			
Rate (mL/min)	250	250	250	250	250	250	250	250	250			
Depth to Water (ft.)	11.91	11.92	11.98	12.02	12.02	12.02	12.03	12.02	12.02			
Temperature (°C)	25.19	23.00	21.02	20.12	19.34	19.10	14.09	19.16	9.17			
pH	7.01	7.43	7.85	7.71	7.65	7.61	7.57	7.57	7.57			
REDOX (mV)	-133	-195	-187	-183	-186	-188	-190	-190	-191			
Conductivity (~~mohm/cm~~ mS/cm)	2.49	2.48	2.25	1.88	1.79	1.74	1.73	1.73	1.74			
Turbidity	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0			
Dissolved Oxygen	5.95	5.88	5.72	5.44	4.54	4.26	3.88	3.87	3.84			
TDS (g/L)	1.60	1.59	1.44	1.20	1.15	1.11	1.11	1.11	1.11			
Salinity (ppt)	1.29	1.28	1.15	0.95	0.91	0.87	0.87	0.87	0.88			

Notes: TUBING IN WELL

Samples @ 0445 for VOCs

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-80R-2 **DATE:** 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 1419.22'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.81

D: Volume of Water in Casing: ~~3.941~~ 5.558 gal

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1000	1005	1010	1015	1020	1025	1030	1035	1040	1045	1050	1055
Gallons												
Rate (mL/min)	200											
Depth to Water (ft.)	10.12	10.12	10.12	10.12	10.14	10.14	10.12	10.12	10.12	10.12	10.12	10.12
Temperature (°C)	23.05	23.60	22.35	22.99	22.93	23.12	23.15	23.01	23.04	23.21	23.01	23.04
pH	7.60	7.89	8.92	8.36	8.36	8.38	8.38	8.40	8.43	8.44	8.45	8.46
REDOX (mV)	-166	-208	-223	-230	-238	-244	-254	-256	-261	-262	-261	-262
Conductivity (~~mohm/cm~~ us/cm)	2.14	2.14	2.19	2.18	2.18	2.17	2.17	2.16	2.15	2.10	2.09	2.09
Turbidity	0.0	0.0	0.0	0.0	1.5	8.0	10.6	13.2	8.6	6.5	7.0	7.1
Dissolved Oxygen	1.08	0.40	0.30	0.31	0.31	0.30	0.29	0.29	0.28	0.28	0.27	0.27
TDS	1.37	1.37	1.40	1.40	1.39	1.39	1.39	1.38	1.37	1.37	1.36	1.33
Salinity	1.09	1.09	1.12	1.12	1.11	1.11	1.11	1.11	1.10	1.07	1.06	1.06

Notes: Tubing in well

Samples for VOCs @ 1100

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-MW-80R-3 **DATE:** 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AZ

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 99.71'

B: Casing Internal Diameter: 1"

C: Water Level Below Top of Casing: 9.42'

D: Volume of Water in Casing: 3.59'

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) = _____$ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1110	1115	1120	1125	1130	1135	1140					
Gallons												
Rate (mL/min)	150											
Depth to Water (ft.)	10.01	10.02	10.02	10.02	10.02	10.02	10.02					
Temperature (°C)	26.42	24.70	23.82	23.69	23.70	23.64	23.51					
pH	7.27	7.89	8.34	8.50	8.54	8.55	8.55					
REDOX (mV)	-171	-174	-181	-188	-190	-190	-190					
Conductivity (mohm/cm)	2.55	2.63	2.62	2.59	2.57	2.55	2.55					
Turbidity	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Dissolved Oxygen	0.85	0.44	0.31	0.25	0.23	0.23	0.22					
TDS	1.63	1.68	1.68	1.65	1.65	1.63	1.62					
Salinity	1.31	1.36	1.35	1.33	1.33	1.31	1.31					

Notes: Tubing in well

Samples for VOCs @ 1145

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-SA-STS-3 **DATE:** 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: JD / AL

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: —

B: Casing Internal Diameter: —

C: Water Level Below Top of Casing: —

D: Volume of Water in Casing: —

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1405												
Gallons													
Rate (mL/min)	-												
Depth to Water (ft.)	-												
Temperature (°C)	26.34												
pH	8.33												
REDOX (mV)	158												
Conductivity (~~mohm/cm~~ mS/cm)	1.59												
Turbidity	0.0												
Dissolved Oxygen	5.18												
TDS	1.02												
Salinity	0.80												

Notes: Sampled for VOCs @ 1405

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-SA-STS-5 **DATE:** 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: JD / AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: —

B: Casing Internal Diameter: —

C: Water Level Below Top of Casing: —

D: Volume of Water in Casing: —

$v = 0.0408 (B)^2 \times (A-C) = D$

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1415												
Gallons													
Rate (mL/min)	-												
Depth to Water (ft.)	-												
Temperature (°C)	26.19												
pH	7.73												
REDOX (mV)	-12												
Conductivity (mohm/cm)	0.858												
Turbidity	0.0												
Dissolved Oxygen	5.44												
TDS	0.549												
Salinity	0.42												

Notes: Samples for VOCs @ 1415

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-SA-STS-6 DATE: 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: JD / AC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: –

B: Casing Internal Diameter: –

C: Water Level Below Top of Casing: –

D: Volume of Water in Casing: –

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1355												
Gallons													
Rate (mL/min)	–												
Depth to Water (ft.)	–												
Temperature (°C)	26.08												
pH	6.63												
REDOX (mV)	112												
Conductivity (mohm/cm)	0.714												
Turbidity	0.0												
Dissolved Oxygen	4.94												
TDS	0.457												
Salinity	0.35												

Notes: Sample collected @ 1355

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: WVA-SA-SNS-6 DATE: 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: JD / RC

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: –

B: Casing Internal Diameter: –

C: Water Level Below Top of Casing: –

D: Volume of Water in Casing: –

$v = 0.0408 (B)^2 \times (A-C) = D$

$v = 0.0408 (\quad)^2 \times (\quad - \quad) =$ _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1420												
Gallons													
Rate (mL/min)	–												
Depth to Water (ft.)	–												
Temperature (°C)	28.23												
pH	8.05												
REDOX (mV)	114												
Conductivity (mohm/cm)	0.606												
Turbidity	269												
Dissolved Oxygen	3.83												
TDS	0.388												
Salinity	0.29												

Notes: Samples for VOCs @ 1420

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: NMT Pit **DATE:** 7/16/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AC, JD

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: –

B: Casing Internal Diameter: –

C: Water Level Below Top of Casing: –

D: Volume of Water in Casing: –

$v = 0.0408 (B)^2 \times (A-C) = D$

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1534												
Gallons	–												
Rate (mL/min)	–												
Depth to Water (ft.)	–												
Temperature (°C)	27.24												
pH	8.71												
REDOX (mV)	~~-151~~												
Conductivity (mohm/cm)	1.90												
Turbidity	0.0												
Dissolved Oxygen	9.61												
TDS	1.22												
Salinity	0.96												

Notes: Sample time: 1330

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: BGEM-MSP-6 DATE: 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: AG

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 18.41

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 7.80

D: Volume of Water in Casing: 8.61 AG + 1.46

v = 0.0408 $(B)^2$ x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1038	1043	1048	1052	1058	1103	1108	1113	1118	1123	1128	1133
Gallons												
Rate (mL/min)	200	200	200	200	200	200	200	200	204	200	200	200
Depth to Water (ft.)	7.84	7.87	7.92	8.03	8.14	8.20	8.24	8.23	8.24	8.24	8.24	8.24
Temperature (°C)	23.17	23.41	24.53	24.91	25.21	25.67	25.63	25.67	25.88	25.75	25.79	25.82
pH	7.85	7.83	7.83	7.82	7.83	7.83	7.83	7.83	7.82	7.81	7.80	7.79
REDOX (mV)	198	196	200	194	196	201	200	201	201	200	200	199
Conductivity (mohm/cm)	0.758	0.758	0.751	0.743	0.741	0.736	0.741	0.759	0.763	0.771	0.780	0.786
Turbidity	276	543	825	75.6	77.2	60.4	58.2	45.7	36.6	26.1	26.4	27.3
Dissolved Oxygen	1.92	1.72	0.85	3.13	2.39	2.39	2.03	1.92	1.80	1.45	1.40	1.37
TDS	0.531	0.507	0.491	0.484	0.473	0.471	0.475	0.481	0.488	0.493	0.495	0.504
Salinity	0.40	0.40	0.40	0.39	0.38	0.36	0.37	0.37	0.37	0.37	0.38	0.38

Notes: @1134 Sampled for VOCs and Chromium
Tubing set left in well
Bladder Pump left in well

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: 12EM-SP-4 DATE: 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: A. Gibson

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: AG 6.67 10.17

B: Casing Internal Diameter: 4"

C: Water Level Below Top of Casing: 5.85

D: Volume of Water in Casing: 2.85

v = 0.0408 (B)² x (A-C) = D

v = 0.0408 ( )² x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	1204	1209	1214	1219	1224	1229	1234	1239	1244	1248		
Gallons												
Rate (mL/min)	200	200	200	200	200	200	200	200	200	200		
Depth to Water (ft.)	5.93	5.97	6.07	6.09	6.11	6.11	6.11	6.12	6.12	6.13		
Temperature (°C)	28.12	27.21	26.91	26.92	26.92	26.87	26.85	26.71	26.69	26.65		
pH	8.01	8.02	8.02	7.95	7.90	7.91	7.91	7.92	7.95	7.97		
REDOX (mV)	182	186	189	201	229	208	193	172	170	167		
Conductivity (mohm/cm)	1.72	1.75	1.84	1.85	1.86	1.85	1.85	1.84	1.85	1.84		
Turbidity	91.3	80.7	54.3	44.1	38.7	28.2	23.1	21.4	21.0	20.4		
Dissolved Oxygen	2.43	2.41	1.26	1.23	1.20	1.18	1.17	1.16	1.14	1.12		
TDS	1.13	1.15	1.18	1.18	1.19	1.18	1.15	1.17	1.17	1.17		
Salinity	0.95	0.94	0.93	0.93	0.94	0.93	0.93	0.93	0.93	0.93		

Notes: @ 1248 Sampled for- VOCs + chlorinated tubing left in well

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WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: 94EM-MW-19 DATE: 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York
PROJECT NUMBER: 30231255
SAMPLERS: A. Gibson
DUPLICATE? Y/N: Y

A: Total Casing and Screen Length: 12.86

B: Casing Internal Diameter: 4"

C: Water Level Below Top of Casing: 6.84

D: Volume of Water in Casing: 4.50

v = 0.0408 (B)^2 x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1403	1408	1413	1418	1424	1428	1434						
Gallons	~~0.75~~												
Rate (mL/min)	200	200	200	200	200	200	200						
Depth to Water (ft.)	6.18	6.31	6.49	6.63	6.71	6.75	6.91						
Temperature (°C)	28.81	28.02	27.13	26.78	26.82	25.75	25.81						
pH	7.86	7.88	7.91	7.94	7.90	7.83	7.78						
REDOX (mV)	47	51	54	57	60	61	64						
Conductivity (mohm/cm)	1.57	1.53	1.49	1.46	1.47	1.47	1.49						
Turbidity	924	321	114	0.0	0.0	0.0	0.0						
Dissolved Oxygen	0.31	0.30	0.30	0.29	0.28	0.28	0.27						
TDS	1.00	0.989	0.961	0.949	0.950	0.948	0.952						
Salinity	0.74	0.76	0.75	0.74	0.75	0.75	0.75						

Notes: @ 1435 sampled for Metals + VOCs
Dup collected here DUP-2 (20240717) metals + VOCs
tubing left in well

ARCADIS

WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: 830M-SP-3 DATE: 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: A. Gibson

DUPLICATE? Y/N: Y

A: Total Casing and Screen Length: 22.66

B: Casing Internal Diameter: 2"

C: Water Level Below Top of Casing: 7.56

D: Volume of Water in Casing: 2.601

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

v = 0.0408 (B)^2 x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

PARAMETER	ACCUMULATED VOLUME PURGED											
Time	0922	0927	0932	0937	0942	0947	0952	0957				
Gallons												
Rate (mL/min)	250	250	250	250	250	250	250	250				
Depth to Water (ft.)	8.72	8.75	8.78	8.80	8.87	9.00	8.99	8.99				
Temperature (°C)	21.43	21.13	21.06	20.96	20.99	20.56	20.58	20.61				
pH	7.51	7.56	7.59	7.62	7.63	7.65	7.67	7.68				
REDOX (mV)	193	190	189	189	190	191	192	193				
Conductivity (mohm/cm)	1.66	1.62	1.61	1.58	1.57	1.52	1.50	1.48				
Turbidity	1.8	1.3	0.8	0.0	0.3	0.6	0.9	1.5				
Dissolved Oxygen	0.63	0.64	0.64	0.65	0.63	0.62	0.60	0.59				
TDS	1.06	1.04	1.03	1.01	0.985	0.971	0.962	0.948				
Salinity	0.83	0.81	0.80	0.79	0.77	0.76	0.75	0.74				

Notes: @ 0958 sample collected for VOCs and chromium

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WELL DEVELOPMENT/ PURGING LOG

WELL NUMBER: 93EM-SP-11 DATE: 7/17/24

PROJECT NAME: WVA LTM, 2024, Watervliet, New York

PROJECT NUMBER: 30231255

SAMPLERS: V

DUPLICATE? Y/N: N

A: Total Casing and Screen Length: 14.57

B: Casing Internal Diameter: 4"

C: Water Level Below Top of Casing: 9.45

D: Volume of Water in Casing: 3.38

v = 0.0408 $(B)^2$ x (A-C) = D

v = 0.0408 ( )^2 x (-) = _____ gal.

Well I.D.	Vol. Gal./ft.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETER	ACCUMULATED VOLUME PURGED												
Time	1516	1521	1526	1531	1536	1541	1546						
Gallons													
Rate (mL/min)	200	200	200	200	200	200	200						
Depth to Water (ft.)	9.77	9.79	9.83	9.88	9.91	9.94	9.96						
Temperature (°C)	22.02	23.29	23.14	22.97	23.04	23.00	22.95						
pH	7.74	7.70	7.72	7.69	7.68	7.66	7.65						
REDOX (mV)	25	105	121	133	133	128	126						
Conductivity (mohm/cm)	1.71	1.64	1.70	1.72	1.72	1.71	1.71						
Turbidity	72.8	24.4	12.5	9.5	5.0	3.2	2.3						
Dissolved Oxygen	1.89	1.49	1.00	0.82	0.73	0.62	0.66						
TDS	0.86	9.86	1.01	1.10	1.10	1.09	1.10						
Salinity	0.87	0.87	0.87	9.87	0.87	0.86	0.87						

Notes: @ 9547 Sample for hex chrom + VOCs
tubing left in well
bladder pump left in well

ARCADIS

Appendix B

Summary Tables and Analytical Laboratory Reporting Forms

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	83DM-SP-1							
Date Collected:			9/25/2013	6/13/2014	6/26/2015	6/29/2016	9/29/2017	10/26/2018	9/10/2019	6/30/2020
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	**1.2**	<1.0	<1.0	**1.4**	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**3.4**	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	**6.2**	**3.0**	**3.8**	<1.0	**3.3**	**2.4**	**1.8**	**2.2**
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals										
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**1200**	**2170**	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	83DM-SP-3										
Date Collected:			6/16/2014	6/30/2015	6/15/2016	10/2/2017	10/12/2018	8/22/2019	6/11/2020	9/16/2021	6/23/2022	7/13/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Metals													
Arsenic	**25**	ug/l	--	--	--	--	<8.0	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	<32.7	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	<5.0	--	--	--	--	--	--
Chromium	**50**	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	**0.9 J**	<10.0
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	<5.0	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	<0.2	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	<10	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	<10	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	83DM-SP-4										
Date Collected:			6/16/2014	6/30/2015	6/29/2016	10/13/2017	10/26/2018	9/25/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U [<10.0 U]
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U [<10.0 U]
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.0949 J [<1.00 U]
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3 [<5.00 UC3]
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.199 J [<1.00 U]
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U [<5.00 U]
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U [<5.00 U]
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.00 U [<5.00 U]
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U [<2.50 U]
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U [<5.00 U]
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.00 U [<2.00 U]
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U [<1.00 U]
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.00 U [<1.00 U]
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	86EM-SP-1A										
Date Collected:			6/13/2014	6/26/2015	6/29/2016	10/13/2017	10/26/2018	9/11/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.315 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	**3.9**	**1.2**	**1.1**	<1.0	<1.0	<1.0	**0.218 J**
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	**1.0**	**1.7**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.248 J**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	**7.7**	**9.6**	**11**	**11**	**6.6**	**11**	**8.3**	**8.8**	**6.3**	**7.9**	**6.38**
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.00 U
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	86EM-SP-1B							
Date Collected:			9/19/2013	6/6/2014	6/26/2015	6/29/2016	10/13/2017	10/26/2018	9/11/2019	6/30/2020
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	**18**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals										
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	86EM-SP-5							
Date Collected:			9/11/2013	6/19/2014	6/30/2015	6/29/2016	10/2/2017	10/26/2018	9/25/2019	6/30/2020
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0 [<2.0]	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0 [<1.0]	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0
Metals										
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	**3170**	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	86EM-SP-6										
Date Collected:			9/13/2013	6/17/2014	6/30/2015	6/15/2016	10/2/2017	10/12/2018	8/22/2019	9/16/2021	6/23/2022	7/13/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	**5.6**	**13**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Metals													
Arsenic	**25**	ug/l	<0.008	--	<8	<8	<8	<8.0	<8.0	<8.0	--	--	--
Barium	**1000**	ug/l	**0.0479**	--	**104**	**45.9**	**86.5**	**76.5**	**75.1**	**106**	--	--	--
Cadmium	**5**	ug/l	<5	--	<5	<5	<5	<5.0	<5.0	<5.0	--	--	--
Chromium	**50**	ug/l	**20.1**	**10.9**	<10	**18.5**	**11.8**	**18.9**	**34**	<10	**12.8**	**2.51 J**	**21.9**
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**280**	**910**	--	--	**190**	--	--	--	--	--	--
Lead	**25**	ug/l	<5	--	<5	<5	<5	<5.0	<5.0	<5.0	--	--	--
Mercury	**0.7**	ug/l	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--	--	--
Selenium	**10**	ug/l	<10	--	<10	<10	<10	<10	<10	<10	--	--	--
Silver	**50**	ug/l	<10	--	<10	<10	<10	<10	<10	<10	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	92EM-SP-7							
Date Collected:			9/11/2013	6/16/2014	6/30/2015	6/29/2016	9/29/2017	10/26/2018	9/11/2019	6/30/2020
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	**2.0**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**1.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals										
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**380**	**120**	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	92EM-SP-8										
Date Collected:			6/16/2014	6/30/2015	6/29/2016	9/29/2017	10/26/2018	9/11/2019	6/30/2020	9/16/2021	6/23/2022	7/13/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**0.87**
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	**23.9**	**19.6**	**67.9**	**445**
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**770**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	93EM-RW-2										
Date Collected:			6/12/2014	6/29/2015	6/28/2016	9/28/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.101 J**
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.230 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	**62**	**57**	**9.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.405 J**
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**13**	**4.6**	**50**	**60**	**65**	**49**	**38**	**63**	**43**	**36**	**33.7**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	**6.8**	**4.7**	**16**	**27**	**29**	**26**	**14**	**35**	**18**	**24**	**26.6**
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.326 J**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	**14**	**10**	**39**	**34**	**58**	**56**	**28**	**76**	**40**	**51**	**51.8**
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.00 U
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**40**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	93EM-SP-9					
Date Collected:			9/26/2013	6/18/2014	7/1/2015	6/29/2016	10/13/2017	10/1/2021
Volatile Organic Compounds								
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	**3.8**	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals								
Arsenic	**25**	ug/l	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	93EM-SP-11										
Date Collected:			9/25/2013	6/19/2014	6/30/2015	10/13/2017	10/26/2018	9/10/2019	6/10/2020	9/14/2021	6/22/2022	7/14/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	**11**	**4.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	**70**	**53**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	<10	<10	<10
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	93EM-SP-13						
Date Collected:			9/24/2013	6/19/2014	7/1/2015	6/28/2016	10/13/2017	10/26/2018	10/1/2021
Volatile Organic Compounds									
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.0**
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals									
Arsenic	**25**	ug/l	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	94EM-MW-19[1]										
Date Collected:			6/11/2014	7/1/2015	6/15/2016	9/28/2017	10/11/2018	8/22/2019	7/1/2020	9/15/2021	6/23/2022	7/13/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.5 [<2.5]
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<1.5 [<1.5]
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-- [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.5 [<2.5]
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	**3.2** [<1.0]	<0.50 [<0.50]
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<1.0 [<1.0]
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0 [<5.0]	<5.0[<5.0]	<5.0 [<5.0]
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0 [<5.0]	<5.0[<5.0]	<5.0 [<5.0]
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.0 [<2.0]
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0 [<2.0]	<2.0[<2.0]	<2.5 [<2.5]
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<5.0 [<5.0]
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0 [<2.0]	<2.0[<2.0]	<2.5 [<2.5]
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.5 [<2.5]
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0 [<2.0]	<2.0[<2.0]	<2.5 [<2.5]
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.5 [<2.5]
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0 [<2.0]	<2.0[<2.0]	<2.5 [<2.5]
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	**1600** [<1.0]	<2.5 [<2.5]
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0 [<5.0]	<5.0[<5.0]	<2.5 [<2.5]
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.5 [<2.5]
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0 [<2.0]	<2.0[<2.0]	<2.5 [<2.5]
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.5 [<2.5]
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	**960** [<1.0]	<0.50 [<0.50]
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<2.5 [<2.5]
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	**16** [<1.0]	<2.5 [<2.5]
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	<1.0[<1.0]	<0.50 [<0.50]
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0 [<1.0]	**210** [<1.0]	<0.50 [<0.50]
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0 [<2.0]	**440** [<2.0]	<1.0 [<1.0]
Metals													
Arsenic	**25**	ug/l	<8	<8	<8	<8	<8.0	<8.0	<8.0	<8.0 [<8.0]	<8.0 [<8.0]	<8.0[<8.0]	<5.0 [<5.0]
Barium	**1000**	ug/l	**193**	**191**	**185**	**154**	**143**	**116**	**173**	**186 [184]**	**226 [225]**	**133 [137]**	**154 [156]**
Cadmium	**5**	ug/l	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0 [<5.0]	<5.0[<5.0]	<5.0 [<5.0]
Chromium	**50**	ug/l	**21.4**	**230**	**200**	**189**	**109**	**30 N*E**	**17**	**382 [380]**	**308 [199]**	**42.5 [98.7]**	**106 [95.2]**
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	<5	<5	**7**	**11**	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0 [<5.0]	**1.4 J[1.4 J]**	<10.0 [<10.0]
Mercury	**0.7**	ug/l	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.236**	<0.2 [<0.2]	<0.20 [<0.20]	<0.2[<0.2]	**0.10 [0.10]**
Selenium	**10**	ug/l	<10	<10	<10	<10	<10	<10	<10	<10 [<10]	<10 [<10]	**3.3 J[4.1 J]**	<10.0 [<10.0]
Silver	**50**	ug/l	<10	<10	<10	<10	<10	<10	<10	<10 [<10]	<10 [<10]	<10[<10]	<7.0 [<7.0]

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	94EM-MW-20										
Date Collected:			6/12/2014	6/30/2015	6/15/2016	9/28/2017	10/11/2018	8/22/2019	6/11/2020	9/15/2021	6/23/2022	7/13/2023	7/18/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**1.0**
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**30**	**15**	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.2**
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**1.6**	**1.0**	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Metals													
Arsenic	**25**	ug/l	<8	<8	<8	<8	<8.0	<5.0	<8.0	<8.0	<8.0	<8.0	**6.43**
Barium	**1000**	ug/l	**296**	**293**	**199**	**44.9**	**59.6**	**101**	**49.7**	**46.8**	**107**	**8.45**	**115.5**
Cadmium	**5**	ug/l	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**0.65**
Chromium	**50**	ug/l	**2120**	**6540**	**6620**	**216**	**406**	**144**	**119**	<10	**148**	**2.48 J**	**104.1**
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	<5	**9**	**11**	**18**	**70.5**	**38.3**	**16.9**	<5.0	**178**	**8.6**	**270.9**
Mercury	**0.7**	ug/l	**0.44**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20
Selenium	**10**	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**6.77**
Silver	**50**	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**0.32**

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	94EM-MW-21										
Date Collected:			6/11/2014	6/30/2015	6/15/2016	9/28/2017	10/12/2018	8/22/2019	6/11/2020	9/15/2021	6/23/2022	7/13/2023	7/18/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**44**	**21**	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**1.9**	**1.7**	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Metals													
Arsenic	**25**	ug/l	<8	<8	<8	<8	<8.0	<5.0	<8.0	<8.0	<8.0	<8.0	**0.79**
Barium	**1000**	ug/l	**117**	**93.9**	**64.7**	**47.6**	**38.4**	**69.4**	**41.2**	**121**	**160**	**100**	**85.62**
Cadmium	**5**	ug/l	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**0.19**
Chromium	**50**	ug/l	<10	**394**	**406**	**699**	**366**	**742**	**498**	**191**	**749**	**17.2**	**110.6**
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	<5	<5	<5	<5	<5.0	<5.0	**9.2**	<5.0	<5.0	**3.3 J**	**6.46**
Mercury	**0.7**	ug/l	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20
Selenium	**10**	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<5.00
Silver	**50**	ug/l	<10	<10	<10	<10	<10	<10	<10	<10	<10	**0.58 J**	<0.40

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	B121-N							B121-S						
Date Collected:			9/27/2013	6/18/2014	6/29/2015	6/28/2016	9/28/2017	10/31/2018	10/1/2021	9/27/2013	6/18/2014	6/29/2015	6/28/2016	9/28/2017	10/31/2018	10/1/2021
Volatile Organic Compounds																
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.5**	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**170**	**3.4**	<1.0	<1.0	**1.3**	**1.3**	**34**	**1.7**	**3.2**	<1.0	<1.0	**2.0**	<1.0	**2.0**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	--	--	--	--	--	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	--	--	--	--	--	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	<2.0	<2.0	<2.0	<5.0	<2.0	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**4.1**	<1.0	<1.0	<1.0	<1.0	<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	**100**	**11**	<2.0	<2.0	<2.0	<2.0	**26**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals																
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**1940**	**2060**	--	--	--	--	--	**1900**	**600**	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	NMT						WVA-AW-135-MW-2	WVA-AW-135-MW-4	
Date Collected:			10/24/2019	6/9/2020	11/3/2021	6/22/2022	7/11/2023	7/16/2024	6/28/2016	6/15/2016	10/1/2021
Volatile Organic Compounds											
1,1,1-Trichloroethane	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	--	--	--	--	--	--	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	--	--	--	--	--	--	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	--	--	--	--	--	--	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	--	--	--	--	--	--	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	--	--	--	--	--	--	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	--	--	--	--	--	--	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	--	--	--	--	--	--	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	--	--	--	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	--	--	--	<1.0
Tetrachloroethene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	--	--	--	--	--	--	<2.0	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	--	--	--	--	--	--	<2.0	<2.0	<2.0
Metals											
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	**1200**	**1500**	**21700**	**398**	**205**	**240**	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-25-MW-2										
Date Collected:			9/26/2013	6/13/2014	6/26/2015	9/29/2017	10/26/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	**9.0**	**4.0**	**2.2**	**6.3**	**1.7**	<1.0	**1.4 [1.3]**	<1.0	**2.6**	<1.0	**0.503 J**
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	**7.7**	**6.6**	**5.8**	**6.4**	**9.0**	**6.0**	**6.2 [6.2]**	**5.4**	**4.2**	**4.2**	**4.84**
1,1-Dichloroethene	**5**	ug/l	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	**13**	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	--	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	**0.333 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**33**	**18**	**17**	**30**	**6.1**	**4.2**	**16 [17]**	**22**	**42**	<1.0	**6.43**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	**5.7**	**1.8**	**2.7**	**2.0**	**1.6 [1.6]**	**1.8**	<1.0	**1.8**	**1.75**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	**24**	**16**	**7.8**	**19**	**1.8**	**1.4**	**3.6 [3.0]**	**1.2**	**7.6**	**3.1**	**0.651 J**
Vinyl chloride	**2**	ug/l	**8.0**	<2.0	<2.0	**7.3**	<2.0	**3.6**	**9.8 [10]**	**14**	**8.5**	**9.4**	**5.54**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**1470**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-25-MW-3										
Date Collected:			6/13/2014	6/26/2015	6/15/2016	9/29/2017	10/26/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	**1.6**	<1.0	<1.0	**2.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,1-Dichloroethane	**5**	ug/l	**4.2**	**3.0**	<1.0	**5.1**	**1.6**	**1.4**	<1.0	<1.0	<1.0	<1.0[<1.0]	**0.184 J**
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0[<5.0]	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0[<5.0]	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	**3.0**	<1.0	<1.0	<1.0	<1.0	**1.7**	<1.0	<1.0[<1.0]	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**92**	**62**	<1.0	**60**	**21**	**24**	**12**	**6.0**	**5.4**	**2.9 [2.9]**	**2.95**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0[<5.0]	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	**1.0 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Trichloroethene	**5**	ug/l	**4.0**	**2.8**	**3.6**	**61**	**3.4**	**2.7**	**2.3**	<1.0	**1.1**	**1.4 [1.5]**	**2.59**
Vinyl chloride	**2**	ug/l	**8.9**	**9.6**	<2.0	**2.3**	**4.8**	**3.7**	<2.0	<2.0	<2.0	<2.0[<2.0]	<1.00 U
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**1070**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-25-MW-5							
Date Collected:			9/13/2013	6/19/2014	6/26/2015	6/29/2016	10/13/2017	10/26/2018	9/11/2019	6/30/2020
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals										
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-25-MW-6									
Date Collected:			6/12/2014	6/26/2015	6/29/2016	10/13/2017	10/26/2018	9/11/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023
Volatile Organic Compounds												
1,1,1-Trichloroethane	**5**	ug/l	**6.5 [6.6]**	**5.9**	**4.8**	**4.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0 [<10]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**5.0**	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0 [<10]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0 [<4.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0 [<4.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0 [<4.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0 [<4.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**1.2 [5.8]**	**1.2**	**1.0**	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0 [<10]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0 [<4.0]	<2.0	<2.0	<2.0	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0 [<2.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	**270 [270 D]**	**250 D**	**160**	**160 D**	**27**	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0 [<4.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals												
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-25-MW-7							
Date Collected:			9/13/2013	6/19/2014	6/26/2015	6/16/2016	10/2/2017	10/26/2018	9/10/2019	6/30/2020
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals										
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**870**	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-35-MW-5	WVA-AW-35-MW-12			WVA-AW-35-MW-8							
Date Collected:			6/29/2016	6/10/2020	11/3/2021	7/12/2023	9/25/2013	6/18/2014	6/29/2015	6/29/2016	10/13/2017	10/25/2018	9/10/2019	6/30/2020
Volatile Organic Compounds														
1,1,1-Trichloroethane	**5**	ug/l	<1.0			--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	--	--	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	--	--	--	--	<2.0 [<2.0]	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	--	--	--	--	<1.0 [<1.0]	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0
Metals														
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	<120	**4 J**	**29**	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-22	WVA-AW-MW-26		WVA-AW-MW-27						
Date Collected:			6/28/2016	6/28/2016	10/1/2021	9/19/2013	6/19/2014	6/29/2015	6/28/2016	10/13/2017	10/25/2018	10/1/2021
Volatile Organic Compounds												
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	<2.0	--	--	--	--	--	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	<1.0	--	--	--	--	--	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	--	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals												
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-32						
Date Collected:			9/20/2013	6/6/2014	6/26/2015	6/29/2016	10/13/2017	10/26/2018	10/1/2021
Volatile Organic Compounds									
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals									
Arsenic	**25**	ug/l	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-35										
Date Collected:			6/17/2014	6/26/2015	6/29/2016	10/13/2017	10/26/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.199 J**
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.413 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**4.0**	**11**	**17**	**23**	**45**	**16**	**24**	<1.0	**26**	**32**	**17.7**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**1.4**	**2.7**	<1.0	<1.0	<1.0	<1.0	<1.0	**0.640 J**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	**34**	**23**	**23**	**44**	**40**	**29**	**19**	<1.0	**1.3**	**2.6**	**5.07**
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**2.4**	**5.02**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-36									WVA-AW-MW-38	
Date Collected:			9/12/2013	6/17/2014	6/26/2015	6/29/2016	10/13/2017	10/26/2018	9/10/2019	7/26/2023	8/15/2024	6/16/2016	10/1/2021
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.0942 J**	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.682 J**	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**1.28 J**	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.00 U	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**70**	**28**	**18**	**22**	<1.0	**2.3**	**9.9**	**2.8**	<1.00 U	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0	<2.00 U	--	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0	<1.00 U	--	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--	--	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	**2.0**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0
Trichloroethene	**5**	ug/l	**22**	**4.5**	**4.8**	**10**	**1.2**	**4.5**	**5.8**	**2.4**	<1.00 U	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.00 U	<2.0	<2.0
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-41	WVA-AW-MW-43							
Date Collected:			6/28/2016	9/12/2013	6/17/2014	6/25/2015	6/29/2016	10/13/2017	10/26/2018	9/11/2019	6/30/2020
Volatile Organic Compounds											
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	**3.1**	**1.7**	**2.4**	**1.8**	**1.1**	**1.9**	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	--	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	--	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals											
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-44							
Date Collected:			9/11/2013	6/13/2014	6/25/2015	6/29/2016	10/13/2017	10/26/2018	9/11/2019	6/30/2020
Volatile Organic Compounds										
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	**3.5**	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals										
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-47										
Date Collected:			6/6/2014	6/26/2015	6/29/2016	9/29/2017	10/26/2018	9/11/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	**0.325 J**
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0[<5.0]	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0[<5.0]	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	**0.532 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	**1.0**	**22**	**70**	**57**	**3.0**	**1.3**	**23**	<1.0[<1.0]	**0.245 J**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0[<5.0]	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0[<2.0]	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**1.0**	**1.2**	<1.0	<1.0	<1.0	**1.6**	<1.0[<1.0]	**0.406 J**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0[<1.0]	<1.00 U
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**2.6**	**2.3**	<1.0	<1.0	**4.2**	<1.0[<1.0]	<1.00 U
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	**18**	**3.8**	**2.4**	**7.0**	**3.2**	**3.7**	<2.0[<2.0]	**1.20**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**70**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-52										
Date Collected:			6/12/2014	6/29/2015	6/28/2016	9/28/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.77**
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.551 J**
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	**8.9**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.373 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<2.0	**2.8**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**654**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	**3.2**	**3.6**	**1.6**	**2.5**	**2.3**	**1.8**	**1.7**	**7.4**	**1.4**	**1.2**	**2.04**
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**21.7**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	**1.2**	**1.3**	**1.8**	<1.0	<1.0	**1.7**	**1.7**	<1.0	**1.5**	**1.4**	**1.51**
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**1210**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**50**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-64										
Date Collected:			9/23/2013	6/12/2014	6/29/2015	6/28/2016	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	**5.6**	8.7 [<10]	**6.6**	**7.0**	<1.0	**4.3**	**3.0**	<1.0 [<1.0]	**1.8**	**1.2**	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	**92 D**	<5.0 [<50]	<25	<25	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<25	<5.0 [<50]	<25	<25	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	**0.0980 J**
Bromodichloromethane	**50**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<10	<2.0 [<20]	<10	<10	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	**0.236 J**
Carbon Tetrachloride	**5**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<10	<2.0 [<20]	<10	<10	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	**10 D**	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<10	<2.0 [<20]	<10	<10	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<10	<2.0 [<20]	<10	<10	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**980 D**	**1200 D[1200]**	**1100 D**	**2900 D**	**130**	**1400**	--	**56 [55]**	**650**	**460**	**0.401 J**
cis-1,3-Dichloropropene	**0.4**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<25	<5.0 [<50]	<25	<25	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	**2800 D**	**2000 [2000 D]**	**2300 D**	**13**	--	**72**	<1.0	**130 [130]**	**7.7**	<1.0	**2.78**
Toluene	**5**	ug/l	**11 D**	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<10	<2.0 [<20]	<10	<10	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**7.5 D**	12 [<10]	<50	**35**	<1.0	**22**	**24**	<1.0 [<1.0]	**13**	**12**	<1.00 U
trans-1,3-Dichloropropene	**0.4**	ug/l	<5.0	<1.0 [<10]	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	**760 D**	**1300 D[1300]**	**880 D**	**14**	**97**	**99**	**5.3**	**47 [50]**	**11**	**3.3**	**0.911 J**
Vinyl chloride	**2**	ug/l	**230 D**	**410 [410 D]**	**440**	**2000 D**	**23**	**1700**	**2500**	<2.0 [<2.0]	**1400**	**1600**	<1.00 U
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**240**	**1070 [--]**	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-AW-MW-BLD-110						
Date Collected:			9/12/2013	6/18/2014	6/29/2015	6/29/2016	10/13/2017	10/25/2018	10/1/2021
Volatile Organic Compounds									
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals									
Arsenic	**25**	ug/l	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-B35-PW-1						
Date Collected:			9/24/2013	6/19/2014	7/1/2015	6/29/2016	10/13/2017	10/25/2018	10/1/2021
Volatile Organic Compounds									
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals									
Arsenic	**25**	ug/l	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-79		
Date Collected:			10/26/2018	9/10/2019	6/30/2020
Volatile Organic Compounds					
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	**3.2**	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0
Metals					
Arsenic	**25**	ug/l	--	--	--
Barium	**1000**	ug/l	--	--	--
Cadmium	**5**	ug/l	--	--	--
Chromium	**50**	ug/l	--	--	--
Chromium VI	**50**	ug/l	--	--	--
Ferrous iron	--	ug/l	--	--	--
Lead	**25**	ug/l	--	--	--
Mercury	**0.7**	ug/l	--	--	--
Selenium	**10**	ug/l	--	--	--
Silver	**50**	ug/l	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-82R-1											
Date Collected:			9/9/2013	6/4/2014	6/22/2015	6/16/2016	10/2/2017	10/11/2018	8/21/2019	6/10/2020	9/16/2021	6/22/2022	7/12/2023	7/18/2024
Volatile Organic Compounds														
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<6.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<20
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<8.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<20
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10
cis-1,2-Dichloroethene	**5**	ug/l	**150 D**	**39**	**42**	**180**	**220 D**	**93**	**150**	**160**	**67**	**160**	**58**	**400**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
Tetrachloroethene	**5**	ug/l	**7.4 D**	<1.0	<1.0	**4.8**	**12**	**2.2**	**2.4**	**1.6**	<1.0	<1.0	<1.0	**26**
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**1.4**	<1.0	<1.0	**1.3**	**1.2**	<1.0	**1.1**	**1.1**	<1.0	**1.2**	<1.0	<10
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Trichloroethene	**5**	ug/l	**5.4 D**	**1.5**	**1.2**	**5.2**	**7.7**	**2.4**	**3.8**	**3.3**	**1.2**	**1.8**	<1.0	**22**
Vinyl chloride	**2**	ug/l	**42 D**	**33**	**48**	**24**	**18**	**31**	**36**	**34**	**56**	**34**	**84**	**53**
Metals														
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-82R-2										
Date Collected:			6/4/2014	6/22/2015	6/16/2016	10/2/2017	10/11/2018	8/21/2019	6/11/2020	9/16/2021	6/22/2022	7/12/2023	7/18/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0
cis-1,2-Dichloroethene	**5**	ug/l	**73**	**100**	**110**	**140**	**96**	**110**	**94**	**63**	**100**	**140**	**240**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**24**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.6**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**3.0**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	**36**	**43**	**33**	**33**	**33**	**35**	**30**	**28**	**32**	**59**	**83**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	**1300**	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-82R-3										
Date Collected:			6/4/2014	6/22/2015	6/16/2016	10/2/2017	10/11/2018	8/21/2019	6/10/2020	9/16/2021	6/22/2022	7/12/2023	7/18/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	**2.5**	<1.0	<1.0	**2.6**	<1.0 [<1.0]	<1.0	<1.0	**26**	<1.0	**1.7**	**1.1**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	1.3 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	**20**	<2.0	<2.0	**1.1**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-83-1										
Date Collected:			6/4/2014	6/22/2015	6/16/2016	10/3/2017	10/10/2018	8/21/2019	6/10/2020	9/16/2021	6/22/2022	7/12/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<50
1,1,2,2-Tetrachloroethane	**5**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
1,1,2-Trichloroethane	**1**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<30
1,1-Dichloroethane	**5**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<50
1,1-Dichloroethene	**5**	ug/l	<20	**15**	<20	<20	<100	<10	**12**	<100	**13**	<10	<10
1,2-Dichloroethane	**0.6**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
1,2-Dichloropropane	**1**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<20
2-Butanone (MEK)	**50**	ug/l	<100	<5.0	<100	<100	<500	<50	<50	<500	<50	<50	<100
4-Methyl-2-Pentanone	--	ug/l	<100	<5.0	<100	<100	<500	<50	<50	<500	<50	<50	<100
Benzene	**1**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
Bromodichloromethane	**50**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
Bromoform	**50**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<40
Bromomethane	**5**	ug/l	<40	<2.0	<40	<40	<200	<20	<20	<200	<20	<20	<50
Carbon Disulfide	**60**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<100
Carbon Tetrachloride	**5**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
CFC-11	**5**	ug/l	<40	<2.0	<40	<40	<200	<20	<20	<200	<20	<20	<50
Chlorobenzene	**5**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<50
Chlorodibromomethane	**50**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
Chloroethane	**5**	ug/l	<40	<2.0	<40	<40	<200	<20	<20	<200	<20	<20	<50
Chloroform	**7**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<50
Chloromethane	**5**	ug/l	<40	<2.0	<40	<40	<200	<20	<20	<200	<20	<20	<50
cis-1,2-Dichloroethene	**5**	ug/l	**3100**	**3200 D**	**3700**	**3100 D**	**3900**	**3300**	**4800**	**3400 D**	**3800**	**3600**	**1400**
cis-1,3-Dichloropropene	**0.4**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
Dichloromethane	**5**	ug/l	<100	<5.0	<100	<100	<500	<50	<50	<500	<50	<50	<50
Ethylbenzene	**5**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<50
m&p-Xylenes	**5**	ug/l	--	--	--	--	<200	<20	<20	<200	<20	<20	<50
o-Xylene	**5**	ug/l	--	--	--	--	<100	<10	<10	<100	<10	<10	<50
Tetrachloroethene	**5**	ug/l	**120 D**	**10000 D**	**5600 D**	**4100 D**	**11000**	**6600**	**13000**	**7700 D**	**12000**	**7600**	**1600**
Toluene	**5**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<50
Total Xylenes	**5**	ug/l	<400	<2.0	<40	<60	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<20	<200	**20 J**	**27**	<100	**26**	**34**	<100	**26**	**21**	**14**
trans-1,3-Dichloropropene	**0.4**	ug/l	<20	<1.0	<20	<20	<100	<10	<10	<100	<10	<10	<10
Trichloroethene	**5**	ug/l	**3100**	**3200 D**	**2700**	**1600**	**3900**	**2600**	**4700**	**3100 D**	**4600**	**3500**	**640**
Vinyl chloride	**2**	ug/l	**120**	<400	**100**	**250**	**250**	**200**	**230**	**260**	**210**	**270**	**380**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-83-2										
Date Collected:			6/4/2014	6/22/2015	6/16/2016	10/2/2017	10/10/2018	8/21/2019	6/10/2020	9/16/2021	6/22/2022	7/12/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<250
1,1,2,2-Tetrachloroethane	**5**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
1,1,2-Trichloroethane	**1**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<150
1,1-Dichloroethane	**5**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<250
1,1-Dichloroethene	**5**	ug/l	**14**	**22**	<40	<25	<250	<25 [<20]	<20	<100	**1.4**	**12**	<50
1,2-Dichloroethane	**0.6**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
1,2-Dichloropropane	**1**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<100
2-Butanone (MEK)	**50**	ug/l	<50	<5.0	<200	<120	<1200	<120 [<100]	<100	<500	<5.0	<5.0	<500
4-Methyl-2-Pentanone	--	ug/l	<50	<5.0	<200	<120	<1200	<120 [<100]	<100	<500	<5.0	<5.0	<500
Benzene	**1**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
Bromodichloromethane	**50**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
Bromoform	**50**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<200
Bromomethane	**5**	ug/l	<20	<2.0	<80	<50	<500	<50 [<40]	<40	<200	<2.0	<2.0	<250
Carbon Disulfide	**60**	ug/l	<10	**1.9**	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<500
Carbon Tetrachloride	**5**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
CFC-11	**5**	ug/l	<20	<2.0	<80	<50	<500	<50 [<40]	<40	<200	<2.0	<2.0	<250
Chlorobenzene	**5**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<250
Chlorodibromomethane	**50**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
Chloroethane	**5**	ug/l	<20	<2.0	<80	<50	<500	<50 [<40]	<40	<200	<2.0	<2.0	<250
Chloroform	**7**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<250
Chloromethane	**5**	ug/l	<20	<2.0	<80	<50	<500	<50 [<40]	<40	<200	<2.0	<2.0	<250
cis-1,2-Dichloroethene	**5**	ug/l	**5500 D**	**4000 D**	**3700**	**3600 D**	**3600**	**2500 [3300]**	**3600**	**2600 D**	**410**	**4400 E**	**4800**
cis-1,3-Dichloropropene	**0.4**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
Dichloromethane	**5**	ug/l	<50	<5.0	<200	<120	<1200	<120 [<100]	<100	<500	<5.0	<5.0	<250
Ethylbenzene	**5**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<250
m&p-Xylenes	**5**	ug/l	--	--	--	--	<500	<50 [<40]	<40	<200	<2.0	<2.0	<250
o-Xylene	**5**	ug/l	--	--	--	--	<250	<25 [<20]	<20	<100	<1.0	<1.0	<250
Tetrachloroethene	**5**	ug/l	**26000 D**	**37000 D**	**22000 D**	**9600 D**	**27000**	**13000 [14000**	**13000**	**6400 D**	**56**	**15000 E**	**18000**
Toluene	**5**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<250
Total Xylenes	**5**	ug/l	<400	<2.0	<80	<75	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**26**	**120**	<40	**32**	<250	26 [<20]	<20	<100	**4.6**	**45**	<250
trans-1,3-Dichloropropene	**0.4**	ug/l	<10	<1.0	<40	<25	<250	<25 [<20]	<20	<100	<1.0	<1.0	<50
Trichloroethene	**5**	ug/l	**8000 D**	**4900 D**	**3500**	**1800**	**3500**	**2000 [2300]**	**2000**	**1400 D**	**58**	**6100 E**	**7400**
Vinyl chloride	**2**	ug/l	**710**	<800	**290**	**410**	<500	**200 [280]**	**310**	**260**	**420**	**350**	**520**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-83-3										
Date Collected:			6/4/2014	6/22/2015	6/16/2016	10/2/2017	10/10/2018	8/21/2019	6/10/2020	9/16/2021	6/22/2022	7/12/2023	7/18/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<10
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<6.0
1,1-Dichloroethane	**5**	ug/l	--	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<10
1,1-Dichloroethene	**5**	ug/l	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	**1.3**	<1.0	<2.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<4.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<25]	<5.0 [<10]	<5.0	<5.0	<5.0	<20
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<25]	<5.0 [<10]	<5.0	<5.0	<5.0	<20
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<8.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<10]	<2.0 [<4.0]	<2.0	<2.0	<2.0	<10
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<20
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<10]	<2.0 [<4.0]	<2.0	<2.0	<2.0	<10
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<10
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<10]	<2.0 [<4.0]	<2.0	<2.0	<2.0	<10
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<10
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<10]	<2.0 [<4.0]	<2.0	<2.0	<2.0	<10
cis-1,2-Dichloroethene	**5**	ug/l	**680 D**	**320 D**	**340 D**	**480 D**	**140**	**330 [330]**	**260 [260]**	--	**500**	<1.0	**500**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<25]	<5.0 [<10]	<5.0	<5.0	<5.0	<10
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<10
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0 [<10]	<2.0 [<4.0]	<2.0	<2.0	<2.0	<10
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<10
Tetrachloroethene	**5**	ug/l	**39**	**37**	**32**	**87**	**3.9**	**58 [47]**	**6.7 [6.1]**	**15**	**50**	<1.0	**1.2**
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<10
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**4.9**	**3.1**	**3.4**	**4.5**	**2.6**	3.3 [<5.0]	**3.6 [3.0]**	**4.0**	**4.9**	<1.0	**4.6**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<5.0]	<1.0 [<2.0]	<1.0	<1.0	<1.0	<2.0
Trichloroethene	**5**	ug/l	**35**	**26**	**22**	**43**	**2.5**	**30 [26]**	**5.4 [4.2]**	**13**	**41**	<1.0	**3.1**
Vinyl chloride	**2**	ug/l	**340 D**	**240 D**	**290 D**	**380 D**	**340**	**420 [420]**	**400 [330]**	--	**440**	<2.0	**640**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-84R-1										
Date Collected:			6/4/2014	6/22/2015	6/15/2016	10/3/2017	10/10/2018	8/21/2019	6/10/2020	9/15/2021	6/22/2022	7/12/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<25
1,1,2,2-Tetrachloroethane	**5**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	**1**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<15
1,1-Dichloroethane	**5**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<25
1,1-Dichloroethene	**5**	ug/l	**6.0**	**9.1**	<10	**5.0**	**8.7**	<10	<10	<50	**7.1**	**5.6**	**3.0**
1,2-Dichloroethane	**0.6**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
1,2-Dichloropropane	**1**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<10
2-Butanone (MEK)	**50**	ug/l	<25	<5.0	<50	<25	<5.0	<50	<50	<250	<25	<25	<50
4-Methyl-2-Pentanone	--	ug/l	<25	<5.0	<50	<25	<5.0	<50	<50	<250	<25	<25	<50
Benzene	**1**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
Bromodichloromethane	**50**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
Bromoform	**50**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<20
Bromomethane	**5**	ug/l	<10	<2.0	<20	<10	<2.0	<20	<20	<100	<10	<10	<25
Carbon Disulfide	**60**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<50
Carbon Tetrachloride	**5**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
CFC-11	**5**	ug/l	<10	<2.0	<20	<10	<2.0	<20	<20	<100	<10	<10	<25
Chlorobenzene	**5**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<25
Chlorodibromomethane	**50**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
Chloroethane	**5**	ug/l	<10	<2.0	<20	<10	<2.0	<20	<20	<100	<10	<10	<25
Chloroform	**7**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<25
Chloromethane	**5**	ug/l	<10	<2.0	<20	<10	<2.0	<20	<20	<100	<10	<10	<25
cis-1,2-Dichloroethene	**5**	ug/l	**2500 D**	**2900 D**	**2600 D**	**2700 D**	**3300**	**3200**	**4000**	**3300 D**	**3200**	**3100**	**1500**
cis-1,3-Dichloropropene	**0.4**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
Dichloromethane	**5**	ug/l	<25	<5.0	<50	<25	<5.0	<50	<50	<250	<25	<25	<25
Ethylbenzene	**5**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<25
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<20	<20	<100	<10	<10	<25
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<10	<10	<50	<5.0	<5.0	<25
Tetrachloroethene	**5**	ug/l	**240**	**260 D**	**230**	**200**	**300**	**180**	**220**	**230**	**210**	**160**	**37**
Toluene	**5**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<25
Total Xylenes	**5**	ug/l	<100	<2.0	<20	<15	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**13**	<50	**39**	**17**	**24**	**26**	**26**	<50	**25**	**25**	**16**
trans-1,3-Dichloropropene	**0.4**	ug/l	<5.0	<1.0	<10	<5.0	<1.0	<10	<10	<50	<5.0	<5.0	<5.0
Trichloroethene	**5**	ug/l	**240**	**200 D**	**250**	**220**	**260**	**290**	**310**	**300**	**270**	**240**	**52**
Vinyl chloride	**2**	ug/l	**150**	**180 D**	**210**	**200**	**420**	**400**	**420**	**280**	**300**	**340**	**310**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-84R-2										
Date Collected:			6/4/2014	6/23/2015	6/15/2016	10/3/2017	10/10/2018	8/21/2019	6/10/2020	9/15/2021	6/22/2022	7/12/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<25
1,1,2,2-Tetrachloroethane	**5**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
1,1,2-Trichloroethane	**1**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<15
1,1-Dichloroethane	**5**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<25
1,1-Dichloroethene	**5**	ug/l	**52**	**83**	<80	<50	**72**	**58**	**61**	<200	**36**	**48**	**46**
1,2-Dichloroethane	**0.6**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
1,2-Dichloropropane	**1**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<10
2-Butanone (MEK)	**50**	ug/l	<250	<5.0	<400	<250	<5.0	<100	<100	<1000	<100	<100	<50
4-Methyl-2-Pentanone	--	ug/l	<250	<5.0	<400	<250	<5.0	<100	<100	<1000	<100	<100	<50
Benzene	**1**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
Bromodichloromethane	**50**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
Bromoform	**50**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<20
Bromomethane	**5**	ug/l	<100	<2.0	<160	<100	<2.0	<40	<40	<400	<40	<40	<25
Carbon Disulfide	**60**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<50
Carbon Tetrachloride	**5**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
CFC-11	**5**	ug/l	<100	<2.0	<160	<100	<2.0	<40	<40	<400	<40	<40	<25
Chlorobenzene	**5**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<25
Chlorodibromomethane	**50**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
Chloroethane	**5**	ug/l	<100	<2.0	<160	<100	<2.0	<40	<40	<400	<40	<40	<25
Chloroform	**7**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<25
Chloromethane	**5**	ug/l	<100	**2.7**	<160	<100	<2.0	<40	<40	<400	<40	<40	<25
cis-1,2-Dichloroethene	**5**	ug/l	**19000 D**	**20000 D**	**22000 D**	**19000 D**	<1.0	**24000**	**29000**	**23000 D**	**16000**	**21000**	**7900**
cis-1,3-Dichloropropene	**0.4**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
Dichloromethane	**5**	ug/l	<250	<5.0	<400	<250	<5.0	<100	<100	<1000	<100	<100	<25
Ethylbenzene	**5**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<25
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<40	<40	<400	<40	<40	<25
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<20	<20	<200	<20	<20	<25
Tetrachloroethene	**5**	ug/l	**36000 D**	**33000 D**	**17000 D**	**25000 D**	**18000**	**6000**	**10000**	**6900 D**	**7200**	**3200**	**3400**
Toluene	**5**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<25
Total Xylenes	**5**	ug/l	<1000	<2.0	<160	<150	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**58**	<500	<80	**76**	<200	**130**	**110**	<200	**73**	**80**	**180**
trans-1,3-Dichloropropene	**0.4**	ug/l	<50	<1.0	<80	<50	<1.0	<20	<20	<200	<20	<20	<5.0
Trichloroethene	**5**	ug/l	**12000 D**	**8900 D**	**8900**	**8400 D**	**7700**	**3100**	**3600**	**3200 D**	**2000**	**1400**	**1200**
Vinyl chloride	**2**	ug/l	**1600**	**2000 D**	**3000**	**1700**	**3400**	**3700**	**3800**	**4100 D**	**3800**	**3600**	**1400**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-84R-3										
Date Collected:			6/5/2014	6/23/2015	6/15/2016	10/3/2017	10/10/2018	8/22/2019	6/10/2020	9/16/2021	6/22/2022	7/13/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<62
1,1,2,2-Tetrachloroethane	**5**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
1,1,2-Trichloroethane	**1**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<38
1,1-Dichloroethane	**5**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<62
1,1-Dichloroethene	**5**	ug/l	**19**	**23**	<20	<20	**13**	<10	<10	<100	**7.2**	<5.0	**4.8**
1,2-Dichloroethane	**0.6**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
1,2-Dichloropropane	**1**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<25
2-Butanone (MEK)	**50**	ug/l	<50	<5.0	<100	<100	<5.0	<50	<50	<500	<25	<25	<120
4-Methyl-2-Pentanone	--	ug/l	<50	<5.0	<100	<100	<5.0	<50	<50	<500	<25	<25	<120
Benzene	**1**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
Bromodichloromethane	**50**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
Bromoform	**50**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<50
Bromomethane	**5**	ug/l	<20	<2.0	<40	<40	<2.0	<20	<20	<200	<10	<10	<62
Carbon Disulfide	**60**	ug/l	<10	**2.4**	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<120
Carbon Tetrachloride	**5**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
CFC-11	**5**	ug/l	<20	<2.0	<40	<40	<2.0	<20	<20	<200	<10	<10	<62
Chlorobenzene	**5**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<62
Chlorodibromomethane	**50**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
Chloroethane	**5**	ug/l	<20	<2.0	<40	<40	<2.0	<20	<20	<200	<10	<10	<62
Chloroform	**7**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<62
Chloromethane	**5**	ug/l	<20	<2.0	<40	<40	<2.0	<20	<20	<200	<10	<10	<62
cis-1,2-Dichloroethene	**5**	ug/l	**7100 D**	**6600 D**	**6300 D**	**7200 D**	**5800**	**4400**	**5000**	**4400 D**	**3400**	**2600**	**3200**
cis-1,3-Dichloropropene	**0.4**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
Dichloromethane	**5**	ug/l	<50	<5.0	<100	<100	<5.0	<50	<50	<500	<25	<25	<62
Ethylbenzene	**5**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<62
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<20	<20	<200	<10	<10	<62
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<10	<10	<100	<5.0	<5.0	<62
Tetrachloroethene	**5**	ug/l	**1400**	**1600 D**	**1300**	**1700**	**270**	**220**	**230**	**250**	**220**	**14**	**24**
Toluene	**5**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<62
Total Xylenes	**5**	ug/l	<200	<2.0	<40	<60	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**29**	**81**	**60**	**43**	**75**	**23**	**19**	<100	**14**	**8.5**	<62
trans-1,3-Dichloropropene	**0.4**	ug/l	<10	<1.0	<20	<20	<1.0	<10	<10	<100	<5.0	<5.0	<12
Trichloroethene	**5**	ug/l	**1600**	**1100 D**	**1200**	**1100**	**330**	**270**	**200**	**240**	**220**	**41**	**79**
Vinyl chloride	**2**	ug/l	**1000**	**1200 D**	**1700**	**890**	**3200**	**720**	**3200**	**2600 D**	**1000**	**1900**	**2100**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	**77000**	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-85R-1										
Date Collected:			6/5/2014	6/23/2015	6/16/2016	10/3/2017	10/11/2018	8/21/2019	6/9/2020	9/15/2021	6/22/2022	7/12/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**1.9**
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	**3.6**	**12**	**1.5**	**1.4**	**2.5**	**1.6**	**1.1**	**1.3**	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	**1.2**	**1.8**	<1.0	**1.0**	**2.0**	**2.0**	**1.7**	**1.3**	**1.2**	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	**3.3**	<2.0	<2.0	**3.4**	**2.0**	<2.0	<2.0	<2.0	<2.0	**0.52**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-85R-2[1]										
Date Collected:			6/5/2014	6/23/2015	6/15/2016	10/3/2017	10/11/2018	8/21/2019	6/9/2020	9/15/2021	6/22/2022	7/12/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<25
1,1,2,2-Tetrachloroethane	**5**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
1,1,2-Trichloroethane	**1**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<15
1,1-Dichloroethane	**5**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	-- [<20]	<2.0	<1.0	<25
1,1-Dichloroethene	**5**	ug/l	**7.1**	**8.5**	<5.0	<10	**5.5**	<4.0	<4.0	<20 [<20]	**3.9**	<1.0	**2.8**
1,2-Dichloroethane	**0.6**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
1,2-Dichloropropane	**1**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<10
2-Butanone (MEK)	**50**	ug/l	<25	<5.0	<25	<50	<5.0	<20	<20	<100 [<100	<10	<5.0	<50
4-Methyl-2-Pentanone	--	ug/l	<25	<5.0	<25	<50	<5.0	<20	<20	<100 [<100	<10	<5.0	<50
Benzene	**1**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
Bromodichloromethane	**50**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
Bromoform	**50**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<20
Bromomethane	**5**	ug/l	<10	<2.0	<10	<20	<2.0	<8.0	<8.0	<40 [<40]	<4.0	<2.0	<25
Carbon Disulfide	**60**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<50
Carbon Tetrachloride	**5**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
CFC-11	**5**	ug/l	<10	<2.0	<10	<20	<2.0	<8.0	<8.0	<40 [<40]	<4.0	<2.0	<25
Chlorobenzene	**5**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<25
Chlorodibromomethane	**50**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
Chloroethane	**5**	ug/l	<10	<2.0	<10	<20	<2.0	<8.0	<8.0	<40 [<40]	<4.0	<2.0	<25
Chloroform	**7**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<25
Chloromethane	**5**	ug/l	<10	<2.0	<10	<20	<2.0	<8.0	<8.0	<40 [<40]	<4.0	<2.0	<25
cis-1,2-Dichloroethene	**5**	ug/l	**2800 D**	**2400 D**	**1900 D**	**2200 D**	**2300**	**1900**	**2100**	**00 D[1400**	**1600**	<1.0	**1700**
cis-1,3-Dichloropropene	**0.4**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
Dichloromethane	**5**	ug/l	<25	<5.0	<25	<50	<5.0	<20	<20	<100 [<100	<10	<5.0	<25
Ethylbenzene	**5**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<25
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<8.0	<8.0	<40 [<40]	<4.0	<2.0	<25
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<25
Tetrachloroethene	**5**	ug/l	**2700 D**	**1900 D**	**1400 D**	**1800 D**	**1600**	**870**	**1300**	**50 D[330 D**	**930**	<1.0	**1300**
Toluene	**5**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<25
Total Xylenes	**5**	ug/l	<100	<2.0	<10	<30	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**15**	**42**	**31**	**15**	**19**	**16**	**14**	<20 [<20]	**14**	<1.0	**15**
trans-1,3-Dichloropropene	**0.4**	ug/l	<5.0	<1.0	<5.0	<10	<1.0	<4.0	<4.0	<20 [<20]	<2.0	<1.0	<5.0
Trichloroethene	**5**	ug/l	**740**	**500 D**	**600**	**370**	**340**	**250**	**290**	**230 [210]**	**320**	<1.0	**200**
Vinyl chloride	**2**	ug/l	**320**	**300 D**	**340**	**320**	**580**	**380**	**540**	**90 D[330 D**	**370**	<2.0	**580**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-85R-3										
Date Collected:			6/5/2014	6/23/2015	6/15/2016	10/3/2017	10/11/2018	8/21/2019	6/9/2020	9/15/2021	6/22/2022	7/13/2023	7/17/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<50 [<50]
1,1,2,2-Tetrachloroethane	**5**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
1,1,2-Trichloroethane	**1**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<30 [<30]
1,1-Dichloroethane	**5**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<50 [<50]
1,1-Dichloroethene	**5**	ug/l	<20	**11**	<40	<40	**6.9**	<20	<20	<200	<20	<5.0[**4.8**]	**3.8 [3.8]**
1,2-Dichloroethane	**0.6**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
1,2-Dichloropropane	**1**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<20 [<20]
2-Butanone (MEK)	**50**	ug/l	<100	<5.0	<200	<200	<5.0	<100	<100	<1000	<100	<2.5[<20]	<100 [<100]
4-Methyl-2-Pentanone	--	ug/l	<100	<5.0	<200	<200	<5.0	<100	<100	<1000	<100	<2.5[<20]	<100 [<100]
Benzene	**1**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
Bromodichloromethane	**50**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
Bromoform	**50**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<40 [<40]
Bromomethane	**5**	ug/l	<40	<2.0	<80	<80	<2.0	<40	<40	<400	<40	<10[<8.0]	<50 [<50]
Carbon Disulfide	**60**	ug/l	<20	**4.6**	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<100 [<100]
Carbon Tetrachloride	**5**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
CFC-11	**5**	ug/l	<40	<2.0	<80	<80	<2.0	<40	<40	<400	<40	<10[<8.0]	<50 [<50]
Chlorobenzene	**5**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<50 [<50]
Chlorodibromomethane	**50**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
Chloroethane	**5**	ug/l	<40	<2.0	<80	<80	<2.0	<40	<40	<400	<40	<10[<8.0]	<50 [<50]
Chloroform	**7**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<50 [<50]
Chloromethane	**5**	ug/l	<40	<2.0	<80	<80	<2.0	<40	<40	<400	<40	<10[<8.0]	<50 [<50]
cis-1,2-Dichloroethene	**5**	ug/l	**4400**	**2400 D**	**1600**	**1200**	**2400**	**1800**	**1900**	**1500**	**1300**	**2300 [2300]**	**2100 [2200]**
cis-1,3-Dichloropropene	**0.4**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
Dichloromethane	**5**	ug/l	<100	<5.0	<200	<200	<5.0	<100	<100	<1000	<100	<2.5[<20]	<50 [<50]
Ethylbenzene	**5**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<50 [<50]
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<40	<40	<400	<40	<10[<8.0]	<50 [<50]
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<50 [<50]
Tetrachloroethene	**5**	ug/l	**33000 D**	**29000 D**	**13000 D**	**16000 D**	**27000**	**17000**	**24000**	**18000 D**	**17000**	**3300 [2900]**	**1700 [1500]**
Toluene	**5**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<50 [<50]
Total Xylenes	**5**	ug/l	<400	<2.0	<80	<120	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<20	**46**	<40	<40	**20**	<20	<20	<200	<20	**18 [23]**	**16 [15]**
trans-1,3-Dichloropropene	**0.4**	ug/l	<20	<1.0	<40	<40	<1.0	<20	<20	<200	<20	<5.0[<4.0]	<10 [<10]
Trichloroethene	**5**	ug/l	**2400**	**1300 D**	**920**	**610**	**1300**	**1100**	**1300**	**1600**	**1000**	**800 [760]**	**420 [390]**
Vinyl chloride	**2**	ug/l	**610**	<800	**380**	**330**	**870**	**470**	**580**	**580**	**470**	**850 [950]**	**1100 [1200]**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-86R-1										
Date Collected:			6/5/2014	6/23/2015	6/15/2016	10/3/2017	10/11/2018	8/21/2019	6/9/2020	9/15/2021	6/22/2022	7/13/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	**6.9**	**2.6**	**2.2**	**2.1**	**2.2**	**1.5**	**1.8**	**1.8**	**1.4**	**83**	**0.91**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**48**	**0.19**
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**1.2**	**2.5**	**1.7**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.9**	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**10**	<0.50
Vinyl chloride	**2**	ug/l	**4.5**	**2.7**	**2.7**	<2.0	<2.0	<2.0	**2.3**	<2.0	<2.0	**19**	**0.79**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-86R-2										
Date Collected:			6/5/2014	6/23/2015	6/15/2016	10/3/2017	10/11/2018	8/21/2019	6/8/2020	9/15/2021	6/23/2022	7/13/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<50
1,1,2,2-Tetrachloroethane	**5**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
1,1,2-Trichloroethane	**1**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<30
1,1-Dichloroethane	**5**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<50
1,1-Dichloroethene	**5**	ug/l	**7.7**	**8.1**	<20	**6.6**	**10**	<10	<10	<50	**7.6 [7.2]**	<5.0	<10
1,2-Dichloroethane	**0.6**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
1,2-Dichloropropane	**1**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<20
2-Butanone (MEK)	**50**	ug/l	<10	<5.0	<100	<25	<5.0	<50	<50	<250	<25 [<25]	<25	<100
4-Methyl-2-Pentanone	--	ug/l	<10	<5.0	<100	<25	<5.0	<50	<50	<250	<25 [<25]	<25	<100
Benzene	**1**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
Bromodichloromethane	**50**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
Bromoform	**50**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<40
Bromomethane	**5**	ug/l	<4.0	<2.0	<40	<10	<2.0	<20	<20	<100	<10 [<10]	<10	<50
Carbon Disulfide	**60**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<100
Carbon Tetrachloride	**5**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
CFC-11	**5**	ug/l	<4.0	<2.0	<40	<10	<2.0	<20	<20	<100	<10 [<10]	<10	<50
Chlorobenzene	**5**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<50
Chlorodibromomethane	**50**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
Chloroethane	**5**	ug/l	<4.0	<2.0	<40	<10	<2.0	<20	<20	<100	<10 [<10]	<10	<50
Chloroform	**7**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<50
Chloromethane	**5**	ug/l	<4.0	<2.0	<40	<10	<2.0	<20	<20	<100	<10 [<10]	<10	<50
cis-1,2-Dichloroethene	**5**	ug/l	**2300 D**	**2500 D**	**4600 D**	**4400 D**	**4700**	**4600**	**4700**	**3700 D**	**3900 [3800]**	**3200**	**2200**
cis-1,3-Dichloropropene	**0.4**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
Dichloromethane	**5**	ug/l	<10	<5.0	<100	<25	<5.0	<50	<50	<250	<25 [<25]	<25	<50
Ethylbenzene	**5**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<50
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<20	<20	<100	<10 [<10]	<10	<50
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<50
Tetrachloroethene	**5**	ug/l	**720 D**	**640 D**	<20	**18**	**26**	**23**	**130**	<50	**21 [20]**	**16**	<10
Toluene	**5**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<50
Total Xylenes	**5**	ug/l	<40	<2.0	<40	<15	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**25**	**47**	**38**	**36**	**54**	**27**	**24**	<50	**26 [24]**	**24**	**28**
trans-1,3-Dichloropropene	**0.4**	ug/l	<2.0	<1.0	<20	<5.0	<1.0	<10	<10	<50	<5.0 [<5.0]	<5.0	<10
Trichloroethene	**5**	ug/l	**400**	**210 D**	<20	**16**	**23**	**24**	**17**	<50	**17 [17]**	**7.8**	<10
Vinyl chloride	**2**	ug/l	**280**	**300 D**	**1400**	**1400 D**	**2600**	**1500**	**1300**	**1700 D**	**1400 [1200]**	**1600**	**2300**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-MW-86R-3										
Date Collected:			6/5/2014	6/23/2015	6/15/2016	10/3/2017	10/11/2018	8/21/2019	6/8/2020	9/15/2021	6/23/2022	7/13/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<25
1,1,2,2-Tetrachloroethane	**5**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
1,1,2-Trichloroethane	**1**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<15
1,1-Dichloroethane	**5**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<25
1,1-Dichloroethene	**5**	ug/l	**12**	**10**	<4.0	<4.0	**4.3**	**3.4**	**2.6**	<20	**3.0**	**2.2**	<5.0
1,2-Dichloroethane	**0.6**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
1,2-Dichloropropane	**1**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<10
2-Butanone (MEK)	**50**	ug/l	<20	<5.0	<20	<20	<5.0	<10	<10	<100	<10	<5.0	<50
4-Methyl-2-Pentanone	--	ug/l	<20	<5.0	<20	<20	<5.0	<10	<10	<100	<10	<5.0	<50
Benzene	**1**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
Bromodichloromethane	**50**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
Bromoform	**50**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<20
Bromomethane	**5**	ug/l	<8.0	<2.0	<8.0	<8.0	<2.0	<4.0	<4.0	<40	<4.0	<2.0	<25
Carbon Disulfide	**60**	ug/l	<4.0	**9.1**	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<50
Carbon Tetrachloride	**5**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
CFC-11	**5**	ug/l	<8.0	<2.0	<8.0	<8.0	<2.0	<4.0	<4.0	<40	<4.0	<2.0	<25
Chlorobenzene	**5**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<25
Chlorodibromomethane	**50**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
Chloroethane	**5**	ug/l	<8.0	<2.0	<8.0	<8.0	<2.0	<4.0	<4.0	<40	<4.0	<2.0	<25
Chloroform	**7**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<25
Chloromethane	**5**	ug/l	<8.0	<2.0	<8.0	<8.0	<2.0	<4.0	<4.0	<40	<4.0	<2.0	<25
cis-1,2-Dichloroethene	**5**	ug/l	**5800 D**	**4400 D**	**1300 D**	**660 D**	**1600**	**1500**	**1400**	**1200 D**	**960**	**1100**	**1100**
cis-1,3-Dichloropropene	**0.4**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
Dichloromethane	**5**	ug/l	<20	<5.0	<20	<20	<5.0	<10	<10	<100	<10	<5.0	<25
Ethylbenzene	**5**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<25
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<4.0	<4.0	<40	<4.0	<2.0	<25
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<25
Tetrachloroethene	**5**	ug/l	<4.0	**1.2**	**410**	**93**	**390**	**290**	**160**	**250**	**150**	**87**	**84**
Toluene	**5**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<25
Total Xylenes	**5**	ug/l	<80	<2.0	<8.0	<12	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**29**	<40	**16**	**11**	**34**	**20**	**21**	**21**	**22**	**22**	**27**
trans-1,3-Dichloropropene	**0.4**	ug/l	<4.0	<1.0	<4.0	<4.0	<1.0	<2.0	<2.0	<20	<2.0	<1.0	<5.0
Trichloroethene	**5**	ug/l	<4.0	**1.2**	**210**	**120**	**140**	**160**	**150**	**110**	**110**	**54**	**80**
Vinyl chloride	**2**	ug/l	**1300 D**	**1800 D**	**210**	**95**	**440**	**460**	**390**	**570 D**	**280**	**620**	**640**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-19R					WVA-SA-MW-20					WVA-SA-MW-22
Date Collected:			9/17/2013	6/10/2014	6/25/2015	6/28/2016	10/25/2018	9/17/2013	6/10/2014	6/25/2015	6/28/2016	10/25/2018	9/17/2013
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
cis-1,2-Dichloroethene	**5**	ug/l	**1.1**	<1.0	<1.0	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	--
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	--	--	--	--	<2.0	--
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	--	--	--	--	<1.0	--
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	<2.0	<2.0	<2.0	<2.0	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**320**	**1680**	--	--	--	**90**	**240**	--	--	--	**80**
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-23					
Date Collected:			9/17/2013	6/11/2014	6/25/2015	6/28/2016	9/26/2017	10/25/2018
Volatile Organic Compounds								
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	-- [<5.0]	<5.0	<5.0	<5.0 [<5.0]
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	-- [<5.0]	<5.0	<5.0	<5.0 [<5.0]
Benzene	**1**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Bromoform	**50**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Bromomethane	**5**	ug/l	<2.0	<2.0	-- [<2.0]	<2.0	<2.0	<2.0 [<2.0]
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
CFC-11	**5**	ug/l	<2.0	<2.0	-- [<2.0]	<2.0	<2.0	<2.0 [<2.0]
Chlorobenzene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Chloroethane	**5**	ug/l	<2.0	<2.0	-- [<2.0]	<2.0	<2.0	<2.0 [<2.0]
Chloroform	**7**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Chloromethane	**5**	ug/l	<2.0	<2.0	-- [<2.0]	<2.0	<2.0	<2.0 [<2.0]
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Dichloromethane	**5**	ug/l	<5.0	<5.0	-- [<5.0]	<5.0	<5.0	<5.0 [<5.0]
Ethylbenzene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0 [<2.0]
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0 [<1.0]
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Toluene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Total Xylenes	**5**	ug/l	<2.0	<2.0	-- [<2.0]	<2.0	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Trichloroethene	**5**	ug/l	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.0 [<1.0]
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0 [--]	<2.0	<2.0	<2.0 [<2.0]
Metals								
Arsenic	**25**	ug/l	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--
Ferrous iron	--	ug/l	**1230**	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-32									
Date Collected:			6/9/2014	6/24/2015	6/28/2016	9/26/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023
Volatile Organic Compounds												
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**3.5**	**2.7**	**12**	**9.1**	**2.0**	<1.0	**3.6**	<1.0	**3.1**	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	**5.3**	**6.9**	**9.6**	**8.6**	**3.0**	<1.0	**5.3**	<1.0	**13**	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	**2.3**	**8.0**	**4.4**	**1.3**	<1.0	**2.6**	<1.0	**5.4**	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals												
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-33								WVA-SA-MW-34					
Date Collected:			9/24/2013	6/11/2014	6/25/2015	6/28/2016	9/10/2019	6/30/2020	10/1/2021	7/26/2023	9/23/2013	6/10/2014	6/25/2015	6/28/2016	9/25/2017	10/25/2018
Volatile Organic Compounds																
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	**2.3**	**32**	**120**	**580**	**100**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals																
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	**240**	**2220**	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-38					
Date Collected:			9/24/2013	6/10/2014	6/25/2015	6/28/2016	9/25/2017	10/25/2018
Volatile Organic Compounds								
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals								
Arsenic	**25**	ug/l	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--
Ferrous iron	--	ug/l	**130**	**150**	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-39										
Date Collected:			6/6/2014	6/24/2015	6/28/2016	9/26/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<4.0	<40	**14**	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	**15**	--	--	**12**	<40	<1.0	**14**	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<20	<20	<50	<20	<200	<5.0	<25	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<20	<20	<50	<20	<200	<5.0	<25	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	**22**	<40	**25**	**25**	<40	<1.0	**16**	<1.0	<1.0	<1.0	**0.261 J**
Bromodichloromethane	**50**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<8.0	<8.0	<20	<8.0	<80	<2.0	<10	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	**0.568 J**
Carbon Tetrachloride	**5**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<8.0	<8.0	<20	<8.0	<80	<2.0	<10	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<8.0	<8.0	<20	<8.0	<80	<2.0	<10	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<8.0	<8.0	<20	<8.0	<80	<2.0	<10	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**6600 D**	**5100 D**	**5700 D**	**5900 D**	**2600**	**150**	**4100**	**56**	**150**	**87**	**239**
cis-1,3-Dichloropropene	**0.4**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<20	<20	<50	<20	<200	<5.0	<25	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<80	<2.0	<10	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	**170**	**190**	**320**	**58**	**83**	**11**	**240**	**4.9**	**7.4**	**7.6**	**30.8**
Toluene	**5**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<80	<8.0	<20	<12	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	**41**	<40	**28**	**30**	<40	**1.1**	**19**	<1.0	<1.0	<1.0	**3.88**
trans-1,3-Dichloropropene	**0.4**	ug/l	<4.0	<4.0	<10	<4.0	<40	<1.0	<5.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	**870**	**540**	**880**	**370**	**240**	**37**	**550**	**14**	**25**	**21**	**87.4**
Vinyl chloride	**2**	ug/l	**3000 D**	**2100 D**	**1900**	**2000 D**	**940**	**3.9**	**1500**	<2.0	<2.0	<2.0	**0.314 J**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**2620**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-41						WVA-SA-MW-49		WVA-SA-MW-54		WVA-SA-MW-59	
Date Collected:			9/19/2013	6/9/2014	6/24/2015	6/28/2016	9/26/2017	10/25/2018	9/24/2013	6/16/2014	9/24/2013	6/16/2014	9/24/2013	6/16/2014
Volatile Organic Compounds														
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0	--	--	--	--	--	--
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0	--	--	--	--	--	--
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals														
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**700**	**1990**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-60									
Date Collected:			6/16/2014	7/14/2015	6/28/2016	10/13/2017	10/25/2018	9/25/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023
Volatile Organic Compounds												
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**49**	**87**	**88**	**30**	<1.0	**6.3**	<1.0	**1.2**	**2.5**	**6.6**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	**1.3**	**1.0**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	**140 D**	**820 D**	**520 D**	**150**	<2.0	<2.0	<2.0	<2.0	<2.0	**56**
Metals												
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-66			WVA-SA-MW-70									
Date Collected:			9/24/2013	6/16/2014	7/8/2015	6/16/2014	7/8/2015	6/28/2016	10/13/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023
Volatile Organic Compounds															
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**4.2**	**5.0**	**15**	**11**	**2.4**	**2.9**	**4.6**	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**1.9**	<1.0	<1.0	<1.0	<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	**5.8**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals															
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-75				WVA-SA-MW-76				WVA-SA-MW-77		WVA-SA-MW-78						
Date Collected:			9/24/2013	6/16/2014	7/8/2015	6/28/2016	6/16/2014	7/8/2015	6/28/2016	10/13/2017	7/8/2015	6/28/2016	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds																			
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.5**	**1.1 [1.1]**	<1.0	<1.0	<1.0	<1.0	**0.635 J**
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	**0.121 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	**0.587 J**
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**28**	**26 [24]**	**7.4**	<1.0	**25**	**20**	**9.21**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.0**	<1.0 [<1.0]	<1.0	<1.0	**1.8**	**1**	**0.769 J**
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	**0.323 J**
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.5**	**1.8 [1.8]**	**1.1**	<1.0	**1.1**	**4**	**1.47**
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**39**	**14 [13]**	**14**	<2.0	**100**	**2.1**	**38.5**
Metals																			
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-79										
Date Collected:			6/2/2014	6/24/2015	6/28/2016	9/26/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	**5.5**	**1.2**	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	**0.995 J**
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.119 J**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.00 U
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**610**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-80									
Date Collected:			6/2/2014	6/24/2015	6/28/2016	9/26/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023
Volatile Organic Compounds												
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**1.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	**2.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	**2.5**	<2.0	**3.1**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals												
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**220**	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-81										
Date Collected:			6/3/2014	6/25/2015	6/28/2016	9/26/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.329 J**
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	**3.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**19**	**41**	**16**	**39**	**28**	**2.1**	**16**	**1.4**	**13**	**16**	**0.585 J**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00 U
Vinyl chloride	**2**	ug/l	**340 D**	**730 D**	**300 D**	**520 D**	**540**	**26**	**500**	**26**	**400**	**410**	**11.8**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**1780**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-82					
Date Collected:			9/18/2013	6/3/2014	6/25/2015	6/28/2016	9/26/2017	10/25/2018
Volatile Organic Compounds								
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	--	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	--	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	**3.2**	<2.0	**3.3**	<2.0	<2.0	<2.0
Metals								
Arsenic	**25**	ug/l	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--
Ferrous iron	--	ug/l	**2120**	**380**	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-83										
Date Collected:			6/3/2014	6/24/2015	6/28/2016	9/25/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.00 U
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-- [<1.0]	<1.0	<1.0	<1.00 U
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<10.0 U
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<10.0 U
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<5.00 UC3
Carbon Disulfide	**60**	ug/l	<1.0	**3.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	**2.38**
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<5.00 U
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<5.00 U
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<5.00 U
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.50 U
cis-1,2-Dichloroethene	**5**	ug/l	**48**	**23**	**20**	**22**	**5.8**	**4.0**	**3.0**	<1.0 [<1.0]	**1.8**	<1.0	**1.96**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.00 U
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.00 U
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.00 U
Vinyl chloride	**2**	ug/l	**640 D**	**660 D**	**460 D**	**590 D**	**32**	**6.2**	**4.7**	<2.0 [<2.0]	**5.0**	<2.0	**3.64**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**90**	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-84											WVA-SA-MW-85					
Date Collected:			6/3/2014	6/24/2015	6/28/2016	9/25/2017	10/25/2018	9/10/2019	6/30/2020	10/1/2021	7/18/2022	7/26/2023	8/15/2024	9/24/2013	6/16/2014	7/8/2015	6/28/2016	10/13/2017	9/17/2013
Volatile Organic Compounds																			
1,1,1-Trichloroethane	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	**6.6**	**3.8**	<1.0	**3.1**	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<10	<10	<5.0	<10	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<10.0 U	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<10	<10	<5.0	<10	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<10.0 U	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	**6.1**	<20	<1.0	**3.1**	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	**0.130 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<4.0	<4.0	<2.0	<4.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<5.00 UC3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	**0.678 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<4.0	<4.0	<2.0	<4.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<5.00 U	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<4.0	<4.0	<2.0	<4.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<5.00 U	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	**0.118 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<4.0	<4.0	<2.0	<4.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.50 U	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**1600 D**	**1200 D**	**340 D**	**910 D**	**340**	**140**	**110 [100]**	<1.0	**34**	**35**	**38.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<10	<10	<5.0	<10	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.00 U	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.00 U	--	--	--	--	--	--
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	--	--	--	--	--	--
Tetrachloroethene	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<40	<4.0	<2.0	<6.0	--	--	--	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
trans-1,2-Dichloroethene	**5**	ug/l	**8.4**	**3.8**	**1.6**	**3.4**	**2.3**	<1.0	<1.0 [1.9]	<1.0	<1.0	<1.0	**0.380 J**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.00 U	<1.0	<1.0	<1.0	<1.0	<1.0	**15**
Vinyl chloride	**2**	ug/l	**1600 D**	**1300 D**	**170**	**960 D**	**310**	**70**	**46 [45]**	<2.0	**8.4**	**3.3**	**10.2**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals																			
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2800**
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-MW-EA-6				WVA-SA-MW-ESE-6				
Date Collected:			6/11/2014	6/25/2015	6/28/2016	10/25/2018	9/16/2013	6/10/2014	6/25/2015	6/28/2016	10/25/2018
Volatile Organic Compounds											
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	<2.0	--	--	--	--	<2.0
o-Xylene	**5**	ug/l	--	--	--	<1.0	--	--	--	--	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	--	<2.0	<2.0	<2.0	<2.0	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	**3.5**	**13**	**1.7**	**1.6**	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Metals											
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**1710**	--	--	--	--	**2690**	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-SNS-6										
Date Collected:			9/20/2013	6/5/2014	6/24/2015	6/16/2016	10/12/2018	8/22/2019	6/11/2020	9/16/2021	6/23/2022	7/14/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	**2.8**	<1.0	<1.0	<1.0	**2.0**	<1.0	**0.93**
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	**2.6**	<1.0	<1.0	**18**	<1.0	**4.9**	<1.0	**17**	<1.0	**5.3**
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	**22**	**6.6**	**4.7**	**3.0**	**1.3**	**4.1**	<1.0	**3.6**	<1.0	**1.2**	**1.8**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**63**	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**12**	<1.0	**45**	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	**1.2**	<1.0	<1.0	**1.8**	**4.2**	**3.5**	**9.0**	**2.6**	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	**5.7**	<2.0	**3.0**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**6.8**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	**670**	**530**	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-STS-3										
Date Collected:			6/6/2014	6/23/2015	6/16/2016	10/4/2017	10/12/2018	8/22/2019	6/8/2020	9/14/2021	6/23/2022	7/14/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.8**	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	**1.2**	<1.0	<1.0	**110**	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**2.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-STS-5										
Date Collected:			9/16/2013	6/9/2014	6/23/2015	6/16/2016	10/12/2018	8/22/2019	6/8/2020	9/14/2021	6/23/2022	7/14/2023	7/16/2024
Volatile Organic Compounds													
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	**1.7**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
cis-1,2-Dichloroethene	**5**	ug/l	**2.2**	**4.9**	**1.5**	**1.3**	**3.8**	<1.0	**2.0**	**2.0**	**1.3**	<1.0	**1.4**
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.5
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.5
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**82**	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.5
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	**2.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50
Vinyl chloride	**2**	ug/l	<2.0	**4.0**	**3.5**	**6.0**	<2.0	<2.0	**4.3**	**4.2**	<2.0	<2.0	**3.5**
Metals													
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

Appendix - B
Summary of Groundwater Sampling Analytical Results (2013 - 2024)
Main Manufacturing Area and West Campus Area
Watervliet Arsenal, Watervliet, New York

Location ID:	NYSDEC GA Standard	Units	WVA-SA-STS-6									
Date Collected:			9/16/2013	6/9/2014	6/23/2015	6/16/2016	10/25/2018	8/22/2019	6/8/2020	9/16/2021	6/23/2022	7/26/2023
Volatile Organic Compounds												
1,1,1-Trichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	**0.6**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
2-Butanone (MEK)	**50**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	--	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0
Benzene	**1**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Bromoform	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Bromomethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0
Carbon Disulfide	**60**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
CFC-11	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0
Chlorobenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Chlorodibromomethane	**50**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Chloroethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0
Chloroform	**7**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Chloromethane	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0
cis-1,2-Dichloroethene	**5**	ug/l	**4.4**	**4.6**	**4.6**	**12**	**4.5**	**3.2 [3.3]**	**10**	**2.7**	**5.6**	<1.0
cis-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Dichloromethane	**5**	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 [<5.0]	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
m&p-Xylenes	**5**	ug/l	--	--	--	--	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0
o-Xylene	**5**	ug/l	--	--	--	--	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	ug/l	<1.0	<1.0	**1.0**	**1.1**	<1.0	<1.0 [<1.0]	<1.0	**2.0**	<1.0	<1.0
Toluene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Total Xylenes	**5**	ug/l	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--
trans-1,2-Dichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	**0.4**	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	ug/l	<1.0	<1.0	<1.0	**2.2**	<1.0	<1.0 [<1.0]	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	**2**	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0 [<2.0]	<2.0	<2.0	<2.0	<2.0
Metals												
Arsenic	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Barium	**1000**	ug/l	--	--	--	--	--	--	--	--	--	--
Cadmium	**5**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Chromium VI	**50**	ug/l	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	ug/l	--	--	--	--	--	--	--	--	--	--
Lead	**25**	ug/l	--	--	--	--	--	--	--	--	--	--
Mercury	**0.7**	ug/l	--	--	--	--	--	--	--	--	--	--
Selenium	**10**	ug/l	--	--	--	--	--	--	--	--	--	--
Silver	**50**	ug/l	--	--	--	--	--	--	--	--	--	--

Notes:
µg/L - micrograms per liter
Bold - Detected result including estimated values
Bold & highlighted– Exceeds the NYSDEC GA Standard
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value.
E - Concentration of analyte exceeds the range of the calibration
Bracketed values represent duplicate results.
-- = Not applicable, not available, or not analyzed
[1] 2023 VOC results for 94EM-MW-19 & WVA-MW-85R-2 suggest a potential laboratory mistake.

ANALYTICAL REPORT

Lab Number:	L2440485
Client:	Arcadis U.S, Inc. DPS Group/Arcadis 201 Fuller Road, Suite 201 Albany, NY 12203
ATTN:	Danielle Giroux
Phone:	(518) 650-7808
Project Name:	WATERVLIET ARSENAL
Project Number:	30231255
Report Date:	07/25/24

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440485
Report Date: 07/25/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2440485-01	WVA-MW-83-3 (20240718)	WATER	WATERVLIET,NY	07/18/24 10:35	07/18/24
L2440485-02	WVA-MW-82R-1 (20240718)	WATER	WATERVLIET,NY	07/18/24 11:25	07/18/24
L2440485-03	94EM-MW-20 (20240718)	WATER	WATERVLIET,NY	07/18/24 12:53	07/18/24
L2440485-04	94EM-MW-21 (20240718)	WATER	WATERVLIET,NY	07/18/24 10:14	07/18/24
L2440485-05	DUP-3 (20240718)	WATER	WATERVLIET,NY	07/18/24 00:00	07/18/24
L2440485-06	WVA-MW-82R-2 (20240718)	WATER	WATERVLIET,NY	07/18/24 12:05	07/18/24
L2440485-07	WVA-MW-82R-3 (20240718)	WATER	WATERVLIET,NY	07/18/24 12:50	07/18/24
L2440485-08	TRIP BLANK (20240718)	WATER	WATERVLIET,NY	07/18/24 00:00	07/18/24

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440485
Project Number:	30231255	**Report Date:**	07/25/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485
Project Number: 30231255 **Report Date:** 07/25/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 07/25/24

ORGANICS

VOLATILES

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-01 D
Client ID: WVA-MW-83-3 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 10:35
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 17:41
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	10	2.8	4
1,1-Dichloroethane	ND		ug/l	10	2.8	4
Chloroform	ND		ug/l	10	2.8	4
Carbon tetrachloride	ND		ug/l	2.0	0.54	4
1,2-Dichloropropane	ND		ug/l	4.0	0.55	4
Dibromochloromethane	ND		ug/l	2.0	0.60	4
1,1,2-Trichloroethane	ND		ug/l	6.0	2.0	4
Tetrachloroethene	1.2	J	ug/l	2.0	0.72	4
Chlorobenzene	ND		ug/l	10	2.8	4
Trichlorofluoromethane	ND		ug/l	10	2.8	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
1,1,1-Trichloroethane	ND		ug/l	10	2.8	4
Bromodichloromethane	ND		ug/l	2.0	0.77	4
trans-1,3-Dichloropropene	ND		ug/l	2.0	0.66	4
cis-1,3-Dichloropropene	ND		ug/l	2.0	0.58	4
Bromoform	ND		ug/l	8.0	2.6	4
1,1,2,2-Tetrachloroethane	ND		ug/l	2.0	0.67	4
Benzene	ND		ug/l	2.0	0.64	4
Toluene	ND		ug/l	10	2.8	4
Ethylbenzene	ND		ug/l	10	2.8	4
Chloromethane	ND		ug/l	10	2.8	4
Bromomethane	ND		ug/l	10	2.8	4
Vinyl chloride	640		ug/l	4.0	0.28	4
Chloroethane	ND		ug/l	10	2.8	4
1,1-Dichloroethene	ND		ug/l	2.0	0.68	4
trans-1,2-Dichloroethene	4.6	J	ug/l	10	2.8	4
Trichloroethene	3.1		ug/l	2.0	0.70	4
1,2-Dichlorobenzene	ND		ug/l	10	2.8	4

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-01 D
Client ID: WVA-MW-83-3 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 10:35
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	10	2.8	4
1,4-Dichlorobenzene	ND		ug/l	10	2.8	4
Methyl tert butyl ether	ND		ug/l	10	0.66	4
p/m-Xylene	ND		ug/l	10	2.8	4
o-Xylene	ND		ug/l	10	2.8	4
cis-1,2-Dichloroethene	500		ug/l	10	2.8	4
Styrene	ND		ug/l	10	2.8	4
Dichlorodifluoromethane	ND		ug/l	20	4.0	4
Acetone	ND		ug/l	20	5.8	4
Carbon disulfide	ND		ug/l	20	4.0	4
2-Butanone	ND		ug/l	20	7.8	4
4-Methyl-2-pentanone	ND		ug/l	20	4.0	4
2-Hexanone	ND		ug/l	20	4.0	4
Bromochloromethane	ND		ug/l	10	2.8	4
1,2-Dibromoethane	ND		ug/l	8.0	2.6	4
1,2-Dibromo-3-chloropropane	ND		ug/l	10	2.8	4
Isopropylbenzene	ND		ug/l	10	2.8	4
1,2,3-Trichlorobenzene	ND		ug/l	10	2.8	4
1,2,4-Trichlorobenzene	ND		ug/l	10	2.8	4
Methyl Acetate	0.96	J	ug/l	8.0	0.94	4
Cyclohexane	ND		ug/l	40	1.1	4
1,4-Dioxane	ND		ug/l	1000	240	4
Freon-113	ND		ug/l	10	2.8	4
Methyl cyclohexane	ND		ug/l	40	1.6	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	116		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-02 D
Client ID: WVA-MW-82R-1 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 11:25
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 17:19
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	10	2.8	4
1,1-Dichloroethane	ND		ug/l	10	2.8	4
Chloroform	ND		ug/l	10	2.8	4
Carbon tetrachloride	ND		ug/l	2.0	0.54	4
1,2-Dichloropropane	ND		ug/l	4.0	0.55	4
Dibromochloromethane	ND		ug/l	2.0	0.60	4
1,1,2-Trichloroethane	ND		ug/l	6.0	2.0	4
Tetrachloroethene	26		ug/l	2.0	0.72	4
Chlorobenzene	ND		ug/l	10	2.8	4
Trichlorofluoromethane	ND		ug/l	10	2.8	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
1,1,1-Trichloroethane	ND		ug/l	10	2.8	4
Bromodichloromethane	ND		ug/l	2.0	0.77	4
trans-1,3-Dichloropropene	ND		ug/l	2.0	0.66	4
cis-1,3-Dichloropropene	ND		ug/l	2.0	0.58	4
Bromoform	ND		ug/l	8.0	2.6	4
1,1,2,2-Tetrachloroethane	ND		ug/l	2.0	0.67	4
Benzene	ND		ug/l	2.0	0.64	4
Toluene	ND		ug/l	10	2.8	4
Ethylbenzene	ND		ug/l	10	2.8	4
Chloromethane	ND		ug/l	10	2.8	4
Bromomethane	ND		ug/l	10	2.8	4
Vinyl chloride	53		ug/l	4.0	0.28	4
Chloroethane	ND		ug/l	10	2.8	4
1,1-Dichloroethene	ND		ug/l	2.0	0.68	4
trans-1,2-Dichloroethene	ND		ug/l	10	2.8	4
Trichloroethene	22		ug/l	2.0	0.70	4
1,2-Dichlorobenzene	ND		ug/l	10	2.8	4

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-02 D
Client ID: WVA-MW-82R-1 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 11:25
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	10	2.8	4
1,4-Dichlorobenzene	ND		ug/l	10	2.8	4
Methyl tert butyl ether	ND		ug/l	10	0.66	4
p/m-Xylene	ND		ug/l	10	2.8	4
o-Xylene	ND		ug/l	10	2.8	4
cis-1,2-Dichloroethene	400		ug/l	10	2.8	4
Styrene	ND		ug/l	10	2.8	4
Dichlorodifluoromethane	ND		ug/l	20	4.0	4
Acetone	ND		ug/l	20	5.8	4
Carbon disulfide	ND		ug/l	20	4.0	4
2-Butanone	ND		ug/l	20	7.8	4
4-Methyl-2-pentanone	ND		ug/l	20	4.0	4
2-Hexanone	ND		ug/l	20	4.0	4
Bromochloromethane	ND		ug/l	10	2.8	4
1,2-Dibromoethane	ND		ug/l	8.0	2.6	4
1,2-Dibromo-3-chloropropane	ND		ug/l	10	2.8	4
Isopropylbenzene	ND		ug/l	10	2.8	4
1,2,3-Trichlorobenzene	ND		ug/l	10	2.8	4
1,2,4-Trichlorobenzene	ND		ug/l	10	2.8	4
Methyl Acetate	ND		ug/l	8.0	0.94	4
Cyclohexane	ND		ug/l	40	1.1	4
1,4-Dioxane	ND		ug/l	1000	240	4
Freon-113	ND		ug/l	10	2.8	4
Methyl cyclohexane	ND		ug/l	40	1.6	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	116		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440485
Report Date: 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-03
Client ID: 94EM-MW-20 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 12:53
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 16:34
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	1.2	J	ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-03 Date Collected: 07/18/24 12:53

Client ID: 94EM-MW-20 (20240718) Date Received: 07/18/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	3.7	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	1.0	J	ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	113		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-04
Client ID: 94EM-MW-21 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 10:14
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 16:12
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-04 Date Collected: 07/18/24 10:14

Client ID: 94EM-MW-21 (20240718) Date Received: 07/18/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	114		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440485
Report Date: 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-05
Client ID: DUP-3 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 00:00
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 15:50
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-05 Date Collected: 07/18/24 00:00

Client ID: DUP-3 (20240718) Date Received: 07/18/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	115		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-06 D
Client ID: WVA-MW-82R-2 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 12:05
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 16:57
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	5.0	1.4	2
1,1-Dichloroethane	ND		ug/l	5.0	1.4	2
Chloroform	ND		ug/l	5.0	1.4	2
Carbon tetrachloride	ND		ug/l	1.0	0.27	2
1,2-Dichloropropane	ND		ug/l	2.0	0.27	2
Dibromochloromethane	ND		ug/l	1.0	0.30	2
1,1,2-Trichloroethane	ND		ug/l	3.0	1.0	2
Tetrachloroethene	ND		ug/l	1.0	0.36	2
Chlorobenzene	ND		ug/l	5.0	1.4	2
Trichlorofluoromethane	ND		ug/l	5.0	1.4	2
1,2-Dichloroethane	ND		ug/l	1.0	0.26	2
1,1,1-Trichloroethane	ND		ug/l	5.0	1.4	2
Bromodichloromethane	ND		ug/l	1.0	0.38	2
trans-1,3-Dichloropropene	ND		ug/l	1.0	0.33	2
cis-1,3-Dichloropropene	ND		ug/l	1.0	0.29	2
Bromoform	ND		ug/l	4.0	1.3	2
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.33	2
Benzene	ND		ug/l	1.0	0.32	2
Toluene	ND		ug/l	5.0	1.4	2
Ethylbenzene	ND		ug/l	5.0	1.4	2
Chloromethane	ND		ug/l	5.0	1.4	2
Bromomethane	ND		ug/l	5.0	1.4	2
Vinyl chloride	83		ug/l	2.0	0.14	2
Chloroethane	ND		ug/l	5.0	1.4	2
1,1-Dichloroethene	ND		ug/l	1.0	0.34	2
trans-1,2-Dichloroethene	1.6	J	ug/l	5.0	1.4	2
Trichloroethene	ND		ug/l	1.0	0.35	2
1,2-Dichlorobenzene	ND		ug/l	5.0	1.4	2

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-06 D
Client ID: WVA-MW-82R-2 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 12:05
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	5.0	1.4	2
1,4-Dichlorobenzene	ND		ug/l	5.0	1.4	2
Methyl tert butyl ether	ND		ug/l	5.0	0.33	2
p/m-Xylene	ND		ug/l	5.0	1.4	2
o-Xylene	ND		ug/l	5.0	1.4	2
cis-1,2-Dichloroethene	240		ug/l	5.0	1.4	2
Styrene	ND		ug/l	5.0	1.4	2
Dichlorodifluoromethane	ND		ug/l	10	2.0	2
Acetone	ND		ug/l	10	2.9	2
Carbon disulfide	ND		ug/l	10	2.0	2
2-Butanone	ND		ug/l	10	3.9	2
4-Methyl-2-pentanone	ND		ug/l	10	2.0	2
2-Hexanone	ND		ug/l	10	2.0	2
Bromochloromethane	ND		ug/l	5.0	1.4	2
1,2-Dibromoethane	ND		ug/l	4.0	1.3	2
1,2-Dibromo-3-chloropropane	ND		ug/l	5.0	1.4	2
Isopropylbenzene	ND		ug/l	5.0	1.4	2
1,2,3-Trichlorobenzene	ND		ug/l	5.0	1.4	2
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1.4	2
Methyl Acetate	ND		ug/l	4.0	0.47	2
Cyclohexane	ND		ug/l	20	0.54	2
1,4-Dioxane	ND		ug/l	500	120	2
Freon-113	ND		ug/l	5.0	1.4	2
Methyl cyclohexane	ND		ug/l	20	0.79	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	116		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-07
Client ID: WVA-MW-82R-3 (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 12:50
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 15:27
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	1.1		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-07 Date Collected: 07/18/24 12:50

Client ID: WVA-MW-82R-3 (20240718) Date Received: 07/18/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	1.1	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	115		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-08
Client ID: TRIP BLANK (20240718)
Sample Location: WATERVLIET,NY

Date Collected: 07/18/24 00:00
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 15:05
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-08 Date Collected: 07/18/24 00:00

Client ID: TRIP BLANK (20240718) Date Received: 07/18/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	112		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440485
Report Date: 07/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/22/24 10:16
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-08 Batch: WG1950362-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/22/24 10:16
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-08 Batch: WG1950362-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440485
Report Date: 07/25/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/22/24 10:16
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-08 Batch: WG1950362-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	115		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440485

Report Date: 07/25/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-08 Batch: WG1950362-3 WG1950362-4								
Methylene chloride	99		100		70-130	1		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		110		70-130	10		20
Carbon tetrachloride	100		100		63-132	0		20
1,2-Dichloropropane	97		100		70-130	3		20
Dibromochloromethane	78		81		63-130	4		20
1,1,2-Trichloroethane	86		89		70-130	3		20
Tetrachloroethene	89		91		70-130	2		20
Chlorobenzene	95		96		75-130	1		20
Trichlorofluoromethane	96		100		62-150	4		20
1,2-Dichloroethane	99		100		70-130	1		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	95		98		67-130	3		20
trans-1,3-Dichloropropene	88		90		70-130	2		20
cis-1,3-Dichloropropene	90		96		70-130	6		20
Bromoform	75		79		54-136	5		20
1,1,2,2-Tetrachloroethane	88		92		67-130	4		20
Benzene	99		100		70-130	1		20
Toluene	96		98		70-130	2		20
Ethylbenzene	97		100		70-130	3		20
Chloromethane	96		100		64-130	4		20
Bromomethane	100		100		39-139	0		20
Vinyl chloride	100		100		55-140	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440485

Report Date: 07/25/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-08 Batch: WG1950362-3 WG1950362-4								
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	84		100		61-145	17		20
trans-1,2-Dichloroethene	99		99		70-130	0		20
Trichloroethene	92		97		70-130	5		20
1,2-Dichlorobenzene	90		93		70-130	3		20
1,3-Dichlorobenzene	92		94		70-130	2		20
1,4-Dichlorobenzene	90		93		70-130	3		20
Methyl tert butyl ether	88		95		63-130	8		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	98		100		70-130	2		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	86		82		36-147	5		20
Acetone	88		92		58-148	4		20
Carbon disulfide	89		100		51-130	12		20
2-Butanone	90		89		63-138	1		20
4-Methyl-2-pentanone	78		87		59-130	11		20
2-Hexanone	78		84		57-130	7		20
Bromochloromethane	94		96		70-130	2		20
1,2-Dibromoethane	80		84		70-130	5		20
1,2-Dibromo-3-chloropropane	73		76		41-144	4		20
Isopropylbenzene	95		97		70-130	2		20
1,2,3-Trichlorobenzene	80		84		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440485

Report Date: 07/25/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-08 Batch: WG1950362-3 WG1950362-4								
1,2,4-Trichlorobenzene	78		83		70-130	6		20
Methyl Acetate	86		91		70-130	6		20
Cyclohexane	95		98		70-130	3		20
1,4-Dioxane	78		84		56-162	7		20
Freon-113	84		99		70-130	16		20
Methyl cyclohexane	90		91		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		110		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	103		102		70-130
Dibromofluoromethane	104		103		70-130

METALS

Project Name: WATERVLIET ARSENAL
Lab Number: L2440485
Project Number: 30231255
Report Date: 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-03
Client ID: 94EM-MW-20 (20240718)
Sample Location: WATERVLIET,NY
Date Collected: 07/18/24 12:53
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00643		mg/l	0.00050	0.00016	1	07/21/24 16:14	07/25/24 07:25	EPA 3005A	1,6020B	EJF
Barium, Total	0.1155		mg/l	0.00050	0.00017	1	07/21/24 16:14	07/25/24 07:25	EPA 3005A	1,6020B	EJF
Cadmium, Total	0.00065		mg/l	0.00020	0.00005	1	07/21/24 16:14	07/25/24 07:25	EPA 3005A	1,6020B	EJF
Chromium, Total	0.1041		mg/l	0.00100	0.00017	1	07/21/24 16:14	07/25/24 07:25	EPA 3005A	1,6020B	EJF
Lead, Total	0.2709		mg/l	0.00500	0.00171	5	07/21/24 16:14	07/25/24 09:07	EPA 3005A	1,6020B	EJF
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/21/24 21:48	07/24/24 13:57	EPA 7470A	1,7470A	MJR
Selenium, Total	0.00677		mg/l	0.00500	0.00173	1	07/21/24 16:14	07/25/24 07:25	EPA 3005A	1,6020B	EJF
Silver, Total	0.00032	J	mg/l	0.00040	0.00016	1	07/21/24 16:14	07/25/24 07:25	EPA 3005A	1,6020B	EJF

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-04 Date Collected: 07/18/24 10:14

Client ID: 94EM-MW-21 (20240718) Date Received: 07/18/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00079		mg/l	0.00050	0.00016	1	07/21/24 16:14	07/25/24 08:34	EPA 3005A	1,6020B	EJF
Barium, Total	0.08562		mg/l	0.00050	0.00017	1	07/21/24 16:14	07/25/24 08:34	EPA 3005A	1,6020B	EJF
Cadmium, Total	0.00019	J	mg/l	0.00020	0.00005	1	07/21/24 16:14	07/25/24 08:34	EPA 3005A	1,6020B	EJF
Chromium, Total	0.1106		mg/l	0.00100	0.00017	1	07/21/24 16:14	07/25/24 08:34	EPA 3005A	1,6020B	EJF
Lead, Total	0.00646		mg/l	0.00100	0.00034	1	07/21/24 16:14	07/25/24 08:34	EPA 3005A	1,6020B	EJF
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/21/24 21:48	07/24/24 14:00	EPA 7470A	1,7470A	MJR
Selenium, Total	ND		mg/l	0.00500	0.00173	1	07/21/24 16:14	07/25/24 08:34	EPA 3005A	1,6020B	EJF
Silver, Total	ND		mg/l	0.00040	0.00016	1	07/21/24 16:14	07/25/24 08:34	EPA 3005A	1,6020B	EJF

Project Name: WATERVLIET ARSENAL
Lab Number: L2440485
Project Number: 30231255
Report Date: 07/25/24

SAMPLE RESULTS

Lab ID: L2440485-05
Client ID: DUP-3 (20240718)
Sample Location: WATERVLIET,NY
Date Collected: 07/18/24 00:00
Date Received: 07/18/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.00089		mg/l	0.00050	0.00016	1	07/21/24 16:14	07/25/24 08:39	EPA 3005A	1,6020B	EJF
Barium, Total	0.1674		mg/l	0.00050	0.00017	1	07/21/24 16:14	07/25/24 08:39	EPA 3005A	1,6020B	EJF
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	07/21/24 16:14	07/25/24 08:39	EPA 3005A	1,6020B	EJF
Chromium, Total	0.2252		mg/l	0.00500	0.00089	5	07/21/24 16:14	07/25/24 09:31	EPA 3005A	1,6020B	EJF
Lead, Total	0.00255		mg/l	0.00100	0.00034	1	07/21/24 16:14	07/25/24 08:39	EPA 3005A	1,6020B	EJF
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/21/24 21:48	07/24/24 14:03	EPA 7470A	1,7470A	MJR
Selenium, Total	0.00189	J	mg/l	0.00500	0.00173	1	07/21/24 16:14	07/25/24 08:39	EPA 3005A	1,6020B	EJF
Silver, Total	ND		mg/l	0.00040	0.00016	1	07/21/24 16:14	07/25/24 08:39	EPA 3005A	1,6020B	EJF

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440485

Project Number: 30231255 **Report Date:** 07/25/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03-05 Batch: WG1949347-1										
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	07/21/24 16:14	07/25/24 07:07	1,6020B	EJF
Barium, Total	ND		mg/l	0.00050	0.00017	1	07/21/24 16:14	07/25/24 07:07	1,6020B	EJF
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	07/21/24 16:14	07/25/24 07:07	1,6020B	EJF
Chromium, Total	ND		mg/l	0.00100	0.00017	1	07/21/24 16:14	07/25/24 07:07	1,6020B	EJF
Lead, Total	ND		mg/l	0.00100	0.00034	1	07/21/24 16:14	07/25/24 07:07	1,6020B	EJF
Selenium, Total	ND		mg/l	0.00500	0.00173	1	07/21/24 16:14	07/25/24 07:07	1,6020B	EJF
Silver, Total	ND		mg/l	0.00040	0.00016	1	07/21/24 16:14	07/25/24 07:07	1,6020B	EJF

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03-05 Batch: WG1949348-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	07/21/24 21:48	07/24/24 13:40	1,7470A	MJR

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440485

Report Date: 07/25/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-05 Batch: WG1949347-2								
Arsenic, Total	108		-		80-120	-		
Barium, Total	109		-		80-120	-		
Cadmium, Total	105		-		80-120	-		
Chromium, Total	111		-		80-120	-		
Lead, Total	104		-		80-120	-		
Selenium, Total	105		-		80-120	-		
Silver, Total	111		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 03-05 Batch: WG1949348-2								
Mercury, Total	95		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440485
Report Date: 07/25/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-05 QC Batch ID: WG1949347-3 WG1949347-4 QC Sample: L2440934-02 Client ID: MS Sample												
Arsenic, Total	0.00024J	0.12	0.1261	105		0.1244	104		75-125	1		20
Barium, Total	0.1352	2	2.270	107		2.247	106		75-125	1		20
Cadmium, Total	ND	0.053	0.05478	103		0.05514	104		75-125	1		20
Chromium, Total	0.00039J	0.2	0.2084	104		0.2071	104		75-125	1		20
Lead, Total	ND	0.53	0.5539	104		0.5741	108		75-125	4		20
Selenium, Total	0.00221J	0.12	0.124	103		0.128	107		75-125	3		20
Silver, Total	ND	0.05	0.05559	111		0.05524	110		75-125	1		20
Total Metals - Mansfield Lab Associated sample(s): 03-05 QC Batch ID: WG1949348-3 WG1949348-4 QC Sample: L2440934-02 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00474	95		0.00491	98		75-125	3		20

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2440485
Report Date: 07/25/24

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03-05 QC Batch ID: WG1949347-6 QC Sample: L2440934-02 Client ID: DUP Sample						
Barium, Total	0.1352	0.1273	mg/l	6		20

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440485
Report Date: 07/25/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2440485-01A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-01B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-01C	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-02A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-02B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-02C	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-03A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-03B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-03C	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-03D	Plastic 250ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		SE-6020T(180),BA-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),HG-T(28),CD-6020T(180)
L2440485-04A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-04B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-04C	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-04D	Plastic 250ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		BA-6020T(180),SE-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28)
L2440485-05A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-05B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-05C	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-05D	Plastic 250ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		SE-6020T(180),BA-6020T(180),CR-6020T(180),PB-6020T(180),AS-6020T(180),HG-T(28),CD-6020T(180),AG-6020T(180)
L2440485-06A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440485
Report Date: 07/25/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2440485-06B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-06C	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-07A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-07B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-07C	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-08A	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)
L2440485-08B	Vial HCl preserved	A	NA		5.0	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440485
Project Number:	30231255	**Report Date:**	07/25/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440485
Project Number:	30231255	**Report Date:**	07/25/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440485
Project Number:	30231255	**Report Date:**	07/25/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440485
Project Number:	30231255	**Report Date:**	07/25/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

L2440485 25JUL24
MALCOLM – NY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of

Date Rec'd in Lab 7/19/24

Client Information
Client: Arcadis
Address: 201 Fuller Rd, Suite 201
Albany, NY 12233
Phone: (518) 701-8457
Fax:
Email: danielle.giroux@arcadis.com

Project Information
Project Name: Watervliet Arsenal
Project Location: Watervliet, NY
Project # 30231255
(Use Project name as Project #) ☐
Project Manager: Stefan Bagnato / Danielle Giroux
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs	RCRA Metals							Sample Specific Comments	Total Bottle
40485-01	WVA-MW-53-3 (20240718)	7/18/24	1035	W	AC	X									3
02	WVA-MW-52R-1 (20240718)	7/18/24	1125	W	AC	X									3
~~02EM-MW-19 (20240718)~~		~~7/18/24~~	1109	W	BB	X	X								4
03	9MEM-MW-20 (20240718)	7/18/24	1253	W	BB	X	X								4
04	9MEM-MW-21 (20240718)	7/18/24	1014	W	BB	X	X								4
05	DUP-3 (20240718)	7/18/24	–	W	BB	X	X								4
06	WVA-MW-52R-2 (20240718)	7/18/24	1205	W	AC	X									3
07	WVA-MW-52R-3 (20240718)	7/18/24	1250	W	AC	X									3
08	Trip Blank (20240718)	7/18/24	–	W	–	X									2

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	P
Preservative	B	C

Relinquished By:	Date/Time	Received By:	Date/Time
A.Calderon	7/18/24 1420	Isis Sotos PACE	7/18/24 14:20
Isis Sotos PACE	7/18/24 14:36		7/18 2200
	7/19 140	Eglee Ortiz	7/19 0140

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

August 28, 2024

ARCADIS US - Clifton Park, NY

Sample Delivery Group:	L1768887
Samples Received:	08/17/2024
Project Number:	30231255
Description:	WVA-LTM-2024
Report To:	Danielle Giroux

Entire Report Reviewed By:

Haley Torrence
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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WVA-SA-MW-79(20240815) L1768887-01 GW

Collected by	Collected date/time	Received date/time
	08/15/24 08:50	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 12:09	08/25/24 12:09	JAH	Mt. Juliet, TN

WVA-SA-MW-81(20240815) L1768887-02 GW

Collected by	Collected date/time	Received date/time
	08/15/24 08:55	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 12:30	08/25/24 12:30	JAH	Mt. Juliet, TN

WVA-SA-MW-78(20240815) L1768887-03 GW

Collected by	Collected date/time	Received date/time
	08/15/24 09:15	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 12:50	08/25/24 12:50	JAH	Mt. Juliet, TN

WVA-SA-MW-39(20240815) L1768887-04 GW

Collected by	Collected date/time	Received date/time
	08/15/24 09:10	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 13:10	08/25/24 13:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2351394	10	08/28/24 03:13	08/28/24 03:13	JHH	Mt. Juliet, TN

WVA-SA-MW-83(20240815) L1768887-05 GW

Collected by	Collected date/time	Received date/time
	08/15/24 09:20	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 13:30	08/25/24 13:30	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2351394	1	08/28/24 02:32	08/28/24 02:32	JHH	Mt. Juliet, TN

WVA-SA-MW-84(20240815) L1768887-06 GW

Collected by	Collected date/time	Received date/time
	08/15/24 09:25	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 13:51	08/25/24 13:51	JAH	Mt. Juliet, TN

83DM-SP-4(20240815) L1768887-07 GW

Collected by	Collected date/time	Received date/time
	08/15/24 10:45	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 14:11	08/25/24 14:11	JAH	Mt. Juliet, TN

86EM-SP-1A(20240815) L1768887-08 GW

Collected by	Collected date/time	Received date/time
	08/15/24 10:00	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 14:31	08/25/24 14:31	JAH	Mt. Juliet, TN

93EM-RW-2(20240815) L1768887-09 GW

Collected by | Collected date/time 08/15/24 09:35 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 14:52	08/25/24 14:52	JAH	Mt. Juliet, TN

WVA-AW-25-MW-2(20240815) L1768887-10 GW

Collected by | Collected date/time 08/15/24 10:10 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 15:12	08/25/24 15:12	JAH	Mt. Juliet, TN

WVA-AW-25-MW-3(20240815) L1768887-11 GW

Collected by | Collected date/time 08/15/24 10:15 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 15:33	08/25/24 15:33	JAH	Mt. Juliet, TN

WVA-AW-MW-35(20240815) L1768887-12 GW

Collected by | Collected date/time 08/15/24 10:35 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 15:53	08/25/24 15:53	JAH	Mt. Juliet, TN

WVA-AW-MW-36(20240815) L1768887-13 GW

Collected by | Collected date/time 08/15/24 10:30 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 16:14	08/25/24 16:14	JAH	Mt. Juliet, TN

WVA-AW-MW-47(20240815) L1768887-14 GW

Collected by | Collected date/time 08/15/24 10:20 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 16:34	08/25/24 16:34	JAH	Mt. Juliet, TN

WVA-AW-MW-52(20240815) L1768887-15 GW

Collected by | Collected date/time 08/15/24 09:40 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 16:54	08/25/24 16:54	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2351394	25	08/28/24 03:34	08/28/24 03:34	JHH	Mt. Juliet, TN

WVA-AW-MW-64(20240815) L1768887-16 GW

Collected by | Collected date/time 08/15/24 09:45 | Received date/time 08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 17:15	08/25/24 17:15	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2351394	1	08/28/24 02:53	08/28/24 02:53	JHH	Mt. Juliet, TN

DUP-3(20240815) L1768887-17 GW

Collected by	Collected date/time	Received date/time
	08/15/24 00:00	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 17:35	08/25/24 17:35	JAH	Mt. Juliet, TN

TRIP BLANK-20240815 L1768887-18 GW

Collected by	Collected date/time	Received date/time
	08/15/24 00:00	08/17/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2350081	1	08/25/24 11:49	08/25/24 11:49	JAH	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Haley Torrence
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	12.3	J	11.3	50.0	1	08/25/2024 12:09	WG2350081
Benzene	0.995	J	0.0941	1.00	1	08/25/2024 12:09	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 12:09	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 12:09	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 12:09	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 12:09	WG2350081
Carbon disulfide	0.119	J	0.0962	1.00	1	08/25/2024 12:09	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 12:09	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 12:09	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 12:09	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 12:09	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 12:09	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 12:09	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 12:09	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 12:09	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 12:09	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 12:09	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 12:09	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 12:09	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 12:09	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 12:09	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 12:09	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 12:09	WG2350081
cis-1,2-Dichloroethene	U		0.126	1.00	1	08/25/2024 12:09	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 12:09	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 12:09	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 12:09	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 12:09	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 12:09	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 12:09	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 12:09	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 12:09	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 12:09	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 12:09	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 12:09	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 12:09	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 12:09	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 12:09	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 12:09	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 12:09	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 12:09	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 12:09	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 12:09	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 12:09	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 12:09	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 12:09	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 12:09	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 12:09	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 12:09	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 12:09	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 12:09	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 12:09	WG2350081
(S) Toluene-d8	*102*			*80.0-120*		*08/25/2024 12:09*	WG2350081
(S) 4-Bromofluorobenzene	*92.7*			*77.0-126*		*08/25/2024 12:09*	WG2350081
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*08/25/2024 12:09*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	08/25/2024 12:30	WG2350081
Benzene	0.329	J	0.0941	1.00	1	08/25/2024 12:30	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 12:30	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 12:30	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 12:30	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 12:30	WG2350081
Carbon disulfide	U		0.0962	1.00	1	08/25/2024 12:30	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 12:30	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 12:30	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 12:30	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 12:30	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 12:30	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 12:30	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 12:30	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 12:30	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 12:30	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 12:30	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 12:30	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 12:30	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 12:30	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 12:30	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 12:30	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 12:30	WG2350081
cis-1,2-Dichloroethene	0.585	J	0.126	1.00	1	08/25/2024 12:30	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 12:30	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 12:30	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 12:30	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 12:30	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 12:30	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 12:30	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 12:30	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 12:30	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 12:30	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 12:30	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 12:30	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 12:30	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 12:30	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 12:30	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 12:30	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 12:30	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 12:30	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 12:30	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 12:30	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 12:30	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 12:30	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 12:30	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 12:30	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 12:30	WG2350081
Vinyl chloride	11.8		0.234	1.00	1	08/25/2024 12:30	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 12:30	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 12:30	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 12:30	WG2350081
(S) Toluene-d8	*101*			*80.0-120*		*08/25/2024 12:30*	WG2350081
(S) 4-Bromofluorobenzene	*93.3*			*77.0-126*		*08/25/2024 12:30*	WG2350081
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*08/25/2024 12:30*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	11.9	J	11.3	50.0	1	08/25/2024 12:50	WG2350081
Benzene	0.635	J	0.0941	1.00	1	08/25/2024 12:50	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 12:50	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 12:50	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 12:50	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 12:50	WG2350081
Carbon disulfide	0.121	J	0.0962	1.00	1	08/25/2024 12:50	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 12:50	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 12:50	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 12:50	WG2350081
Chloroethane	0.587	J	0.192	5.00	1	08/25/2024 12:50	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 12:50	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 12:50	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 12:50	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 12:50	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 12:50	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 12:50	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 12:50	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 12:50	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 12:50	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 12:50	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 12:50	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 12:50	WG2350081
cis-1,2-Dichloroethene	9.21		0.126	1.00	1	08/25/2024 12:50	WG2350081
trans-1,2-Dichloroethene	0.323	J	0.149	1.00	1	08/25/2024 12:50	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 12:50	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 12:50	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 12:50	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 12:50	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 12:50	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 12:50	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 12:50	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 12:50	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 12:50	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 12:50	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 12:50	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 12:50	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 12:50	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 12:50	WG2350081
Tetrachloroethene	0.769	J	0.300	1.00	1	08/25/2024 12:50	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 12:50	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 12:50	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 12:50	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 12:50	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 12:50	WG2350081
Trichloroethene	1.47		0.190	1.00	1	08/25/2024 12:50	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 12:50	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 12:50	WG2350081
Vinyl chloride	38.5		0.234	1.00	1	08/25/2024 12:50	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 12:50	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 12:50	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 12:50	WG2350081
(S) Toluene-d8	*101*			*80.0-120*		*08/25/2024 12:50*	WG2350081
(S) 4-Bromofluorobenzene	*92.4*			*77.0-126*		*08/25/2024 12:50*	WG2350081
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*08/25/2024 12:50*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	11.7	J	11.3	50.0	1	08/25/2024 13:10	WG2350081
Benzene	0.261	J	0.0941	1.00	1	08/25/2024 13:10	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 13:10	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 13:10	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 13:10	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 13:10	WG2350081
Carbon disulfide	0.568	J	0.0962	1.00	1	08/25/2024 13:10	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 13:10	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 13:10	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 13:10	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 13:10	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 13:10	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 13:10	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 13:10	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 13:10	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 13:10	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 13:10	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 13:10	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 13:10	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 13:10	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 13:10	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 13:10	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 13:10	WG2350081
cis-1,2-Dichloroethene	239		1.26	10.0	10	08/28/2024 03:13	WG2351394
trans-1,2-Dichloroethene	3.88		0.149	1.00	1	08/25/2024 13:10	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 13:10	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 13:10	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 13:10	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 13:10	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 13:10	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 13:10	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 13:10	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 13:10	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 13:10	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 13:10	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 13:10	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 13:10	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 13:10	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 13:10	WG2350081
Tetrachloroethene	30.8		0.300	1.00	1	08/25/2024 13:10	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 13:10	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 13:10	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 13:10	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 13:10	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 13:10	WG2350081
Trichloroethene	87.4		0.190	1.00	1	08/25/2024 13:10	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 13:10	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 13:10	WG2350081
Vinyl chloride	0.314	J	0.234	1.00	1	08/25/2024 13:10	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 13:10	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 13:10	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 13:10	WG2350081
(S) Toluene-d8	*102*			*80.0-120*		*08/25/2024 13:10*	WG2350081
(S) Toluene-d8	*106*			*80.0-120*		*08/28/2024 03:13*	WG2351394
(S) 4-Bromofluorobenzene	*90.3*			*77.0-126*		*08/25/2024 13:10*	WG2350081
(S) 4-Bromofluorobenzene	*92.6*			*77.0-126*		*08/28/2024 03:13*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*08/25/2024 13:10*	WG2350081
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*08/28/2024 03:13*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	12.1	J	11.3	50.0	1	08/25/2024 13:30	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 13:30	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 13:30	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 13:30	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 13:30	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 13:30	WG2350081
Carbon disulfide	2.38		0.0962	1.00	1	08/25/2024 13:30	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 13:30	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 13:30	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 13:30	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 13:30	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 13:30	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 13:30	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 13:30	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 13:30	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 13:30	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 13:30	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 13:30	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 13:30	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 13:30	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 13:30	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 13:30	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 13:30	WG2350081
cis-1,2-Dichloroethene	1.96		0.126	1.00	1	08/28/2024 02:32	WG2351394
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 13:30	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 13:30	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 13:30	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 13:30	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 13:30	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 13:30	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 13:30	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 13:30	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 13:30	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 13:30	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 13:30	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 13:30	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 13:30	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 13:30	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 13:30	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 13:30	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 13:30	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 13:30	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 13:30	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 13:30	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 13:30	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 13:30	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 13:30	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 13:30	WG2350081
Vinyl chloride	3.64		0.234	1.00	1	08/25/2024 13:30	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 13:30	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 13:30	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 13:30	WG2350081
(S) Toluene-d8	*102*			*80.0-120*		*08/25/2024 13:30*	WG2350081
(S) Toluene-d8	*104*			*80.0-120*		*08/28/2024 02:32*	WG2351394
(S) 4-Bromofluorobenzene	*89.7*			*77.0-126*		*08/25/2024 13:30*	WG2350081
(S) 4-Bromofluorobenzene	*93.5*			*77.0-126*		*08/28/2024 02:32*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*08/25/2024 13:30*	WG2350081
(S) 1,2-Dichloroethane-d4	*97.0*			*70.0-130*		*08/28/2024 02:32*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	16.5	J	11.3	50.0	1	08/25/2024 13:51	WG2350081
Benzene	0.130	J	0.0941	1.00	1	08/25/2024 13:51	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 13:51	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 13:51	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 13:51	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 13:51	WG2350081
Carbon disulfide	0.678	J	0.0962	1.00	1	08/25/2024 13:51	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 13:51	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 13:51	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 13:51	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 13:51	WG2350081
Chloroform	0.118	J	0.111	5.00	1	08/25/2024 13:51	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 13:51	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 13:51	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 13:51	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 13:51	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 13:51	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 13:51	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 13:51	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 13:51	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 13:51	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 13:51	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 13:51	WG2350081
cis-1,2-Dichloroethene	38.4		0.126	1.00	1	08/25/2024 13:51	WG2350081
trans-1,2-Dichloroethene	0.380	J	0.149	1.00	1	08/25/2024 13:51	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 13:51	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 13:51	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 13:51	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 13:51	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 13:51	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 13:51	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 13:51	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 13:51	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 13:51	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 13:51	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 13:51	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 13:51	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 13:51	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 13:51	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 13:51	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 13:51	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 13:51	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 13:51	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 13:51	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 13:51	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 13:51	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 13:51	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 13:51	WG2350081
Vinyl chloride	10.2		0.234	1.00	1	08/25/2024 13:51	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 13:51	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 13:51	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 13:51	WG2350081
(S) Toluene-d8	*105*			*80.0-120*		*08/25/2024 13:51*	WG2350081
(S) 4-Bromofluorobenzene	*92.8*			*77.0-126*		*08/25/2024 13:51*	WG2350081
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*08/25/2024 13:51*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	08/25/2024 14:11	WG2350081
Benzene	0.0949	J	0.0941	1.00	1	08/25/2024 14:11	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 14:11	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 14:11	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 14:11	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 14:11	WG2350081
Carbon disulfide	0.199	J	0.0962	1.00	1	08/25/2024 14:11	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 14:11	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 14:11	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 14:11	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 14:11	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 14:11	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 14:11	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 14:11	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 14:11	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 14:11	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 14:11	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 14:11	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 14:11	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 14:11	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 14:11	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 14:11	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 14:11	WG2350081
cis-1,2-Dichloroethene	U		0.126	1.00	1	08/25/2024 14:11	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 14:11	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 14:11	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 14:11	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 14:11	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 14:11	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 14:11	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 14:11	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 14:11	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 14:11	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 14:11	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 14:11	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 14:11	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 14:11	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 14:11	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 14:11	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 14:11	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 14:11	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 14:11	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 14:11	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 14:11	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 14:11	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 14:11	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 14:11	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 14:11	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 14:11	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 14:11	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 14:11	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 14:11	WG2350081
(S) Toluene-d8	*97.1*			*80.0-120*		*08/25/2024 14:11*	WG2350081
(S) 4-Bromofluorobenzene	*90.3*			*77.0-126*		*08/25/2024 14:11*	WG2350081
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*08/25/2024 14:11*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	12.9	J	11.3	50.0	1	08/25/2024 14:31	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 14:31	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 14:31	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 14:31	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 14:31	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 14:31	WG2350081
Carbon disulfide	0.315	J	0.0962	1.00	1	08/25/2024 14:31	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 14:31	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 14:31	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 14:31	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 14:31	WG2350081
Chloroform	0.218	J	0.111	5.00	1	08/25/2024 14:31	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 14:31	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 14:31	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 14:31	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 14:31	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 14:31	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 14:31	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 14:31	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 14:31	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 14:31	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 14:31	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 14:31	WG2350081
cis-1,2-Dichloroethene	0.248	J	0.126	1.00	1	08/25/2024 14:31	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 14:31	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 14:31	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 14:31	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 14:31	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 14:31	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 14:31	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 14:31	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 14:31	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 14:31	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 14:31	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 14:31	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 14:31	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 14:31	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 14:31	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 14:31	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 14:31	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 14:31	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 14:31	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 14:31	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 14:31	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 14:31	WG2350081
Trichloroethene	6.38		0.190	1.00	1	08/25/2024 14:31	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 14:31	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 14:31	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 14:31	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 14:31	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 14:31	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 14:31	WG2350081
(S) Toluene-d8	*102*			*80.0-120*		*08/25/2024 14:31*	WG2350081
(S) 4-Bromofluorobenzene	*91.4*			*77.0-126*		*08/25/2024 14:31*	WG2350081
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*08/25/2024 14:31*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	08/25/2024 14:52	WG2350081
Benzene	0.101	J	0.0941	1.00	1	08/25/2024 14:52	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 14:52	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 14:52	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 14:52	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 14:52	WG2350081
Carbon disulfide	0.230	J	0.0962	1.00	1	08/25/2024 14:52	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 14:52	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 14:52	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 14:52	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 14:52	WG2350081
Chloroform	0.405	J	0.111	5.00	1	08/25/2024 14:52	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 14:52	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 14:52	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 14:52	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 14:52	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 14:52	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 14:52	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 14:52	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 14:52	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 14:52	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 14:52	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 14:52	WG2350081
cis-1,2-Dichloroethene	33.7		0.126	1.00	1	08/25/2024 14:52	WG2350081
trans-1,2-Dichloroethene	0.326	J	0.149	1.00	1	08/25/2024 14:52	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 14:52	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 14:52	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 14:52	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 14:52	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 14:52	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 14:52	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 14:52	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 14:52	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 14:52	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 14:52	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 14:52	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 14:52	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 14:52	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 14:52	WG2350081
Tetrachloroethene	26.6		0.300	1.00	1	08/25/2024 14:52	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 14:52	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 14:52	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 14:52	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 14:52	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 14:52	WG2350081
Trichloroethene	51.8		0.190	1.00	1	08/25/2024 14:52	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 14:52	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 14:52	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 14:52	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 14:52	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 14:52	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 14:52	WG2350081
(S) Toluene-d8	*101*			*80.0-120*		*08/25/2024 14:52*	WG2350081
(S) 4-Bromofluorobenzene	*92.1*			*77.0-126*		*08/25/2024 14:52*	WG2350081
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*08/25/2024 14:52*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	13.7	J	11.3	50.0	1	08/25/2024 15:12	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 15:12	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 15:12	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 15:12	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 15:12	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 15:12	WG2350081
Carbon disulfide	0.333	J	0.0962	1.00	1	08/25/2024 15:12	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 15:12	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 15:12	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 15:12	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 15:12	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 15:12	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 15:12	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 15:12	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 15:12	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 15:12	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 15:12	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 15:12	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 15:12	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 15:12	WG2350081
1,1-Dichloroethane	4.84		0.100	1.00	1	08/25/2024 15:12	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 15:12	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 15:12	WG2350081
cis-1,2-Dichloroethene	6.43		0.126	1.00	1	08/25/2024 15:12	WG2350081
trans-1,2-Dichloroethene	1.75		0.149	1.00	1	08/25/2024 15:12	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 15:12	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 15:12	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 15:12	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 15:12	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 15:12	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 15:12	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 15:12	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 15:12	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 15:12	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 15:12	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 15:12	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 15:12	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 15:12	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 15:12	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 15:12	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 15:12	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 15:12	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 15:12	WG2350081
1,1,1-Trichloroethane	0.503	J	0.149	1.00	1	08/25/2024 15:12	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 15:12	WG2350081
Trichloroethene	0.651	J	0.190	1.00	1	08/25/2024 15:12	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 15:12	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 15:12	WG2350081
Vinyl chloride	5.54		0.234	1.00	1	08/25/2024 15:12	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 15:12	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 15:12	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 15:12	WG2350081
(S) Toluene-d8	*103*			*80.0-120*		*08/25/2024 15:12*	WG2350081
(S) 4-Bromofluorobenzene	*93.8*			*77.0-126*		*08/25/2024 15:12*	WG2350081
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*08/25/2024 15:12*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	50.0	1	08/25/2024 15:33	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 15:33	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 15:33	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 15:33	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 15:33	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 15:33	WG2350081
Carbon disulfide	U		0.0962	1.00	1	08/25/2024 15:33	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 15:33	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 15:33	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 15:33	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 15:33	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 15:33	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 15:33	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 15:33	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 15:33	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 15:33	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 15:33	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 15:33	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 15:33	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 15:33	WG2350081
1,1-Dichloroethane	0.184	J	0.100	1.00	1	08/25/2024 15:33	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 15:33	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 15:33	WG2350081
cis-1,2-Dichloroethene	2.95		0.126	1.00	1	08/25/2024 15:33	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 15:33	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 15:33	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 15:33	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 15:33	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 15:33	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 15:33	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 15:33	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 15:33	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 15:33	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 15:33	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 15:33	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 15:33	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 15:33	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 15:33	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 15:33	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 15:33	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 15:33	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 15:33	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 15:33	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 15:33	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 15:33	WG2350081
Trichloroethene	2.59		0.190	1.00	1	08/25/2024 15:33	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 15:33	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 15:33	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 15:33	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 15:33	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 15:33	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 15:33	WG2350081
(S) Toluene-d8	*98.6*			*80.0-120*		*08/25/2024 15:33*	WG2350081
(S) 4-Bromofluorobenzene	*88.6*			*77.0-126*		*08/25/2024 15:33*	WG2350081
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*08/25/2024 15:33*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	08/25/2024 15:53	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 15:53	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 15:53	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 15:53	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 15:53	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 15:53	WG2350081
Carbon disulfide	0.413	J	0.0962	1.00	1	08/25/2024 15:53	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 15:53	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 15:53	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 15:53	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 15:53	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 15:53	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 15:53	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 15:53	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 15:53	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 15:53	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 15:53	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 15:53	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 15:53	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 15:53	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 15:53	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 15:53	WG2350081
1,1-Dichloroethene	0.199	J	0.188	1.00	1	08/25/2024 15:53	WG2350081
cis-1,2-Dichloroethene	17.7		0.126	1.00	1	08/25/2024 15:53	WG2350081
trans-1,2-Dichloroethene	0.640	J	0.149	1.00	1	08/25/2024 15:53	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 15:53	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 15:53	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 15:53	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 15:53	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 15:53	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 15:53	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 15:53	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 15:53	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 15:53	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 15:53	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 15:53	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 15:53	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 15:53	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 15:53	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 15:53	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 15:53	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 15:53	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 15:53	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 15:53	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 15:53	WG2350081
Trichloroethene	5.07		0.190	1.00	1	08/25/2024 15:53	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 15:53	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 15:53	WG2350081
Vinyl chloride	5.02		0.234	1.00	1	08/25/2024 15:53	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 15:53	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 15:53	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 15:53	WG2350081
(S) Toluene-d8	*100*			*80.0-120*		*08/25/2024 15:53*	WG2350081
(S) 4-Bromofluorobenzene	*93.6*			*77.0-126*		*08/25/2024 15:53*	WG2350081
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*08/25/2024 15:53*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	11.7	J	11.3	50.0	1	08/25/2024 16:14	WG2350081
Benzene	0.0942	J	0.0941	1.00	1	08/25/2024 16:14	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 16:14	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 16:14	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 16:14	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 16:14	WG2350081
Carbon disulfide	0.682	J	0.0962	1.00	1	08/25/2024 16:14	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 16:14	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 16:14	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 16:14	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 16:14	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 16:14	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 16:14	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 16:14	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 16:14	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 16:14	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 16:14	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 16:14	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 16:14	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 16:14	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 16:14	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 16:14	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 16:14	WG2350081
cis-1,2-Dichloroethene	U		0.126	1.00	1	08/25/2024 16:14	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 16:14	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 16:14	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 16:14	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 16:14	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 16:14	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 16:14	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 16:14	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 16:14	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 16:14	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 16:14	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 16:14	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 16:14	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 16:14	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 16:14	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 16:14	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 16:14	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 16:14	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 16:14	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 16:14	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 16:14	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 16:14	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 16:14	WG2350081
Trichlorofluoromethane	1.28	J	0.160	5.00	1	08/25/2024 16:14	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 16:14	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 16:14	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 16:14	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 16:14	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 16:14	WG2350081
(S) Toluene-d8	*99.9*			*80.0-120*		*08/25/2024 16:14*	WG2350081
(S) 4-Bromofluorobenzene	*89.6*			*77.0-126*		*08/25/2024 16:14*	WG2350081
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*08/25/2024 16:14*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	13.3	J	11.3	50.0	1	08/25/2024 16:34	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 16:34	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 16:34	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 16:34	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 16:34	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 16:34	WG2350081
Carbon disulfide	0.532	J	0.0962	1.00	1	08/25/2024 16:34	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 16:34	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 16:34	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 16:34	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 16:34	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 16:34	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 16:34	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 16:34	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 16:34	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 16:34	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 16:34	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 16:34	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 16:34	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 16:34	WG2350081
1,1-Dichloroethane	0.325	J	0.100	1.00	1	08/25/2024 16:34	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 16:34	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 16:34	WG2350081
cis-1,2-Dichloroethene	0.245	J	0.126	1.00	1	08/25/2024 16:34	WG2350081
trans-1,2-Dichloroethene	0.406	J	0.149	1.00	1	08/25/2024 16:34	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 16:34	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 16:34	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 16:34	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 16:34	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 16:34	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 16:34	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 16:34	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 16:34	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 16:34	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 16:34	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 16:34	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 16:34	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 16:34	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 16:34	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 16:34	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 16:34	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 16:34	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 16:34	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 16:34	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 16:34	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 16:34	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 16:34	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 16:34	WG2350081
Vinyl chloride	1.20		0.234	1.00	1	08/25/2024 16:34	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 16:34	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 16:34	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 16:34	WG2350081
(S) Toluene-d8	*104*			*80.0-120*		*08/25/2024 16:34*	WG2350081
(S) 4-Bromofluorobenzene	*89.2*			*77.0-126*		*08/25/2024 16:34*	WG2350081
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*08/25/2024 16:34*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	08/25/2024 16:54	WG2350081
Benzene	0.551	J	0.0941	1.00	1	08/25/2024 16:54	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 16:54	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 16:54	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 16:54	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 16:54	WG2350081
Carbon disulfide	0.373	J	0.0962	1.00	1	08/25/2024 16:54	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 16:54	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 16:54	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 16:54	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 16:54	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 16:54	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 16:54	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 16:54	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 16:54	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 16:54	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 16:54	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 16:54	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 16:54	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 16:54	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 16:54	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 16:54	WG2350081
1,1-Dichloroethene	1.77		0.188	1.00	1	08/25/2024 16:54	WG2350081
cis-1,2-Dichloroethene	654		3.15	25.0	25	08/28/2024 03:34	WG2351394
trans-1,2-Dichloroethene	21.7		0.149	1.00	1	08/25/2024 16:54	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 16:54	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 16:54	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 16:54	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 16:54	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 16:54	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 16:54	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 16:54	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 16:54	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 16:54	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 16:54	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 16:54	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 16:54	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 16:54	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 16:54	WG2350081
Tetrachloroethene	2.04		0.300	1.00	1	08/25/2024 16:54	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 16:54	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 16:54	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 16:54	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 16:54	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 16:54	WG2350081
Trichloroethene	1.51		0.190	1.00	1	08/25/2024 16:54	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 16:54	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 16:54	WG2350081
Vinyl chloride	1210		5.85	25.0	25	08/28/2024 03:34	WG2351394
o-Xylene	U		0.174	1.00	1	08/25/2024 16:54	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 16:54	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 16:54	WG2350081
(S) Toluene-d8	*101*			*80.0-120*		*08/25/2024 16:54*	WG2350081
(S) Toluene-d8	*103*			*80.0-120*		*08/28/2024 03:34*	WG2351394
(S) 4-Bromofluorobenzene	*90.1*			*77.0-126*		*08/25/2024 16:54*	WG2350081
(S) 4-Bromofluorobenzene	*95.4*			*77.0-126*		*08/28/2024 03:34*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*08/25/2024 16:54*	WG2350081
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*08/28/2024 03:34*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	15.5	J	11.3	50.0	1	08/25/2024 17:15	WG2350081
Benzene	0.0980	J	0.0941	1.00	1	08/25/2024 17:15	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 17:15	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 17:15	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 17:15	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 17:15	WG2350081
Carbon disulfide	0.236	J	0.0962	1.00	1	08/25/2024 17:15	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 17:15	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 17:15	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 17:15	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 17:15	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 17:15	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 17:15	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 17:15	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 17:15	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 17:15	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 17:15	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 17:15	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 17:15	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 17:15	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 17:15	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 17:15	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 17:15	WG2350081
cis-1,2-Dichloroethene	0.401	J	0.126	1.00	1	08/28/2024 02:53	WG2351394
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 17:15	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 17:15	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 17:15	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 17:15	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 17:15	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 17:15	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 17:15	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 17:15	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 17:15	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 17:15	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 17:15	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 17:15	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 17:15	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 17:15	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 17:15	WG2350081
Tetrachloroethene	2.78		0.300	1.00	1	08/25/2024 17:15	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 17:15	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 17:15	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 17:15	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 17:15	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 17:15	WG2350081
Trichloroethene	0.911	J	0.190	1.00	1	08/25/2024 17:15	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 17:15	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 17:15	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 17:15	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 17:15	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 17:15	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 17:15	WG2350081
(S) Toluene-d8	*103*			*80.0-120*		*08/25/2024 17:15*	WG2350081
(S) Toluene-d8	*103*			*80.0-120*		*08/28/2024 02:53*	WG2351394
(S) 4-Bromofluorobenzene	*94.3*			*77.0-126*		*08/25/2024 17:15*	WG2350081
(S) 4-Bromofluorobenzene	*93.9*			*77.0-126*		*08/28/2024 02:53*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*08/25/2024 17:15*	WG2350081
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*08/28/2024 02:53*	WG2351394

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	08/25/2024 17:35	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 17:35	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 17:35	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 17:35	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 17:35	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 17:35	WG2350081
Carbon disulfide	U		0.0962	1.00	1	08/25/2024 17:35	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 17:35	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 17:35	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 17:35	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 17:35	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 17:35	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 17:35	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 17:35	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 17:35	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 17:35	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 17:35	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 17:35	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 17:35	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 17:35	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 17:35	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 17:35	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 17:35	WG2350081
cis-1,2-Dichloroethene	U		0.126	1.00	1	08/25/2024 17:35	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 17:35	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 17:35	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 17:35	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 17:35	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 17:35	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 17:35	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 17:35	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 17:35	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 17:35	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 17:35	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 17:35	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 17:35	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 17:35	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 17:35	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 17:35	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 17:35	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 17:35	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 17:35	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 17:35	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 17:35	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 17:35	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 17:35	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 17:35	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 17:35	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 17:35	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 17:35	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 17:35	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 17:35	WG2350081
(S) Toluene-d8	*96.8*			*80.0-120*		*08/25/2024 17:35*	WG2350081
(S) 4-Bromofluorobenzene	*90.4*			*77.0-126*		*08/25/2024 17:35*	WG2350081
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*08/25/2024 17:35*	WG2350081

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	08/25/2024 11:49	WG2350081
Benzene	U		0.0941	1.00	1	08/25/2024 11:49	WG2350081
Bromochloromethane	U		0.128	1.00	1	08/25/2024 11:49	WG2350081
Bromodichloromethane	U		0.136	1.00	1	08/25/2024 11:49	WG2350081
Bromoform	U		0.129	1.00	1	08/25/2024 11:49	WG2350081
Bromomethane	U	C3	0.605	5.00	1	08/25/2024 11:49	WG2350081
Carbon disulfide	U		0.0962	1.00	1	08/25/2024 11:49	WG2350081
Carbon tetrachloride	U		0.128	1.00	1	08/25/2024 11:49	WG2350081
Chlorobenzene	U		0.116	1.00	1	08/25/2024 11:49	WG2350081
Chlorodibromomethane	U		0.140	1.00	1	08/25/2024 11:49	WG2350081
Chloroethane	U		0.192	5.00	1	08/25/2024 11:49	WG2350081
Chloroform	U		0.111	5.00	1	08/25/2024 11:49	WG2350081
Chloromethane	U		0.960	2.50	1	08/25/2024 11:49	WG2350081
Cyclohexane	U		0.188	1.00	1	08/25/2024 11:49	WG2350081
1,2-Dibromoethane	U		0.126	1.00	1	08/25/2024 11:49	WG2350081
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	08/25/2024 11:49	WG2350081
1,2-Dichlorobenzene	U		0.107	1.00	1	08/25/2024 11:49	WG2350081
1,3-Dichlorobenzene	U		0.110	1.00	1	08/25/2024 11:49	WG2350081
1,4-Dichlorobenzene	U		0.120	1.00	1	08/25/2024 11:49	WG2350081
Dichlorodifluoromethane	U		0.374	5.00	1	08/25/2024 11:49	WG2350081
1,1-Dichloroethane	U		0.100	1.00	1	08/25/2024 11:49	WG2350081
1,2-Dichloroethane	U		0.0819	1.00	1	08/25/2024 11:49	WG2350081
1,1-Dichloroethene	U		0.188	1.00	1	08/25/2024 11:49	WG2350081
cis-1,2-Dichloroethene	U		0.126	1.00	1	08/25/2024 11:49	WG2350081
trans-1,2-Dichloroethene	U		0.149	1.00	1	08/25/2024 11:49	WG2350081
1,2-Dichloropropane	U		0.149	1.00	1	08/25/2024 11:49	WG2350081
cis-1,3-Dichloropropene	U		0.111	1.00	1	08/25/2024 11:49	WG2350081
trans-1,3-Dichloropropene	U		0.118	1.00	1	08/25/2024 11:49	WG2350081
Ethylbenzene	U		0.137	1.00	1	08/25/2024 11:49	WG2350081
2-Hexanone	U		0.787	10.0	1	08/25/2024 11:49	WG2350081
Isopropylbenzene	U		0.105	1.00	1	08/25/2024 11:49	WG2350081
Methyl Acetate	U		1.29	20.0	1	08/25/2024 11:49	WG2350081
Methyl Cyclohexane	U		0.660	1.00	1	08/25/2024 11:49	WG2350081
Methyl tert-butyl ether	U		0.101	1.00	1	08/25/2024 11:49	WG2350081
2-Butanone (MEK)	U		1.19	10.0	1	08/25/2024 11:49	WG2350081
Methylene Chloride	U		0.430	5.00	1	08/25/2024 11:49	WG2350081
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	08/25/2024 11:49	WG2350081
Styrene	U		0.118	1.00	1	08/25/2024 11:49	WG2350081
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	08/25/2024 11:49	WG2350081
Tetrachloroethene	U		0.300	1.00	1	08/25/2024 11:49	WG2350081
Toluene	U		0.278	1.00	1	08/25/2024 11:49	WG2350081
1,2,3-Trichlorobenzene	U	C3 J4	0.230	1.00	1	08/25/2024 11:49	WG2350081
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	08/25/2024 11:49	WG2350081
1,1,1-Trichloroethane	U		0.149	1.00	1	08/25/2024 11:49	WG2350081
1,1,2-Trichloroethane	U		0.158	1.00	1	08/25/2024 11:49	WG2350081
Trichloroethene	U		0.190	1.00	1	08/25/2024 11:49	WG2350081
Trichlorofluoromethane	U		0.160	5.00	1	08/25/2024 11:49	WG2350081
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	08/25/2024 11:49	WG2350081
Vinyl chloride	U		0.234	1.00	1	08/25/2024 11:49	WG2350081
o-Xylene	U		0.174	1.00	1	08/25/2024 11:49	WG2350081
m&p-Xylene	U		0.430	2.00	1	08/25/2024 11:49	WG2350081
1,4-Dioxane	U		36.0	100	1	08/25/2024 11:49	WG2350081
(S) Toluene-d8	*104*			*80.0-120*		*08/25/2024 11:49*	WG2350081
(S) 4-Bromofluorobenzene	*93.0*			*77.0-126*		*08/25/2024 11:49*	WG2350081
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*08/25/2024 11:49*	WG2350081

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R4112246-4 08/25/24 10:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Benzene	U		0.0941	1.00
Bromochloromethane	U		0.128	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
Carbon disulfide	U		0.0962	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
Cyclohexane	U		0.188	1.00
1,2-Dibromoethane	U		0.126	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
Ethylbenzene	U		0.137	1.00
2-Hexanone	U		0.787	10.0
Isopropylbenzene	U		0.105	1.00
Methyl Acetate	U		1.29	20.0
Methyl Cyclohexane	U		0.660	1.00
Methyl tert-butyl ether	U		0.101	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Styrene	U		0.118	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Tetrachloroethene	U		0.300	1.00

Method Blank (MB)

(MB) R4112246-4 08/25/24 10:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Toluene	U		0.278	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Vinyl chloride	U		0.234	1.00
o-Xylene	U		0.174	1.00
m&p-Xylene	U		0.430	2.00
1,4-Dioxane	U		36.0	100
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*89.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4112246-1 08/25/24 09:24 • (LCSD) R4112246-2 08/25/24 09:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	25.9	20.5	104	82.0	19.0-160	J	J	23.3	27
Benzene	5.00	5.01	4.72	100	94.4	70.0-123			5.96	20
Bromochloromethane	5.00	5.34	5.09	107	102	76.0-122			4.79	20
Bromodichloromethane	5.00	5.31	5.00	106	100	75.0-120			6.01	20
Bromoform	5.00	5.37	5.10	107	102	68.0-132			5.16	20
Bromomethane	5.00	3.07	3.25	61.4	65.0	10.0-160	J	J	5.70	25
Carbon disulfide	5.00	4.95	4.50	99.0	90.0	61.0-128			9.52	20
Carbon tetrachloride	5.00	4.94	4.98	98.8	99.6	68.0-126			0.806	20
Chlorobenzene	5.00	5.15	4.81	103	96.2	80.0-121			6.83	20
Chlorodibromomethane	5.00	5.38	5.03	108	101	77.0-125			6.72	20
Chloroethane	5.00	6.27	5.53	125	111	47.0-150			12.5	20
Chloroform	5.00	5.14	4.94	103	98.8	73.0-120		J	3.97	20
Chloromethane	5.00	5.00	4.71	100	94.2	41.0-142			5.97	20
Cyclohexane	5.00	4.97	4.95	99.4	99.0	71.0-124			0.403	20
1,2-Dibromoethane	5.00	5.18	4.81	104	96.2	80.0-122			7.41	20
1,2-Dibromo-3-Chloropropane	5.00	4.67	4.52	93.4	90.4	58.0-134	J	J	3.26	20
1,2-Dichlorobenzene	5.00	4.52	4.57	90.4	91.4	79.0-121			1.10	20
1,3-Dichlorobenzene	5.00	4.66	4.56	93.2	91.2	79.0-120			2.17	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4112246-1 08/25/24 09:24 • (LCSD) R4112246-2 08/25/24 09:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	5.00	4.31	4.41	86.2	88.2	79.0-120			2.29	20
Dichlorodifluoromethane	5.00	6.43	5.86	129	117	51.0-149			9.28	20
1,1-Dichloroethane	5.00	5.26	4.92	105	98.4	70.0-126			6.68	20
1,2-Dichloroethane	5.00	5.17	4.95	103	99.0	70.0-128			4.35	20
1,1-Dichloroethene	5.00	5.21	4.93	104	98.6	71.0-124			5.52	20
cis-1,2-Dichloroethene	5.00	5.19	4.71	104	94.2	73.0-120			9.70	20
trans-1,2-Dichloroethene	5.00	4.95	4.56	99.0	91.2	73.0-120			8.20	20
1,2-Dichloropropane	5.00	5.35	4.82	107	96.4	77.0-125			10.4	20
cis-1,3-Dichloropropene	5.00	4.84	4.36	96.8	87.2	80.0-123			10.4	20
trans-1,3-Dichloropropene	5.00	5.26	5.01	105	100	78.0-124			4.87	20
Ethylbenzene	5.00	4.93	4.64	98.6	92.8	79.0-123			6.06	20
2-Hexanone	25.0	25.7	23.2	103	92.8	67.0-149			10.2	20
Isopropylbenzene	5.00	4.75	4.63	95.0	92.6	76.0-127			2.56	20
Methyl Acetate	25.0	25.9	24.6	104	98.4	57.0-148			5.15	20
Methyl Cyclohexane	5.00	4.79	4.63	95.8	92.6	68.0-126			3.40	20
Methyl tert-butyl ether	5.00	4.97	4.75	99.4	95.0	68.0-125			4.53	20
2-Butanone (MEK)	25.0	25.6	22.1	102	88.4	44.0-160			14.7	20
Methylene Chloride	5.00	5.19	4.88	104	97.6	67.0-120		J	6.16	20
4-Methyl-2-pentanone (MIBK)	25.0	25.1	23.2	100	92.8	68.0-142			7.87	20
Styrene	5.00	4.71	4.52	94.2	90.4	73.0-130			4.12	20
1,1,2,2-Tetrachloroethane	5.00	5.06	4.93	101	98.6	65.0-130			2.60	20
Tetrachloroethene	5.00	5.19	5.14	104	103	72.0-132			0.968	20
Toluene	5.00	4.65	4.38	93.0	87.6	79.0-120			5.98	20
1,2,3-Trichlorobenzene	5.00	1.97	2.09	39.4	41.8	50.0-138	J4	J4	5.91	20
1,2,4-Trichlorobenzene	5.00	3.51	3.43	70.2	68.6	57.0-137			2.31	20
1,1,1-Trichloroethane	5.00	5.12	4.94	102	98.8	73.0-124			3.58	20
1,1,2-Trichloroethane	5.00	5.23	4.93	105	98.6	80.0-120			5.91	20
Trichloroethene	5.00	5.12	4.66	102	93.2	78.0-124			9.41	20
Trichlorofluoromethane	5.00	6.12	6.06	122	121	59.0-147			0.985	20
1,1,2-Trichlorotrifluoroethane	5.00	5.57	5.15	111	103	69.0-132			7.84	20
Vinyl chloride	5.00	5.82	5.39	116	108	67.0-131			7.67	20
o-Xylene	5.00	4.83	4.47	96.6	89.4	80.0-122			7.74	20
m&p-Xylene	10.0	9.82	9.42	98.2	94.2	80.0-122			4.16	20
(S) Toluene-d8				*94.9*	*95.6*	*80.0-120*				
(S) 4-Bromofluorobenzene				*94.9*	*93.5*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*105*	*107*	*70.0-130*				

Laboratory Control Sample (LCS)

(LCS) R4112246-3 08/25/24 10:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,4-Dioxane	1000	1330	133	13.0-160	
(S) Toluene-d8			*96.9*	*80.0-120*	
(S) 4-Bromofluorobenzene			*96.8*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*100*	*70.0-130*	

Method Blank (MB)

(MB) R4112832-3 08/27/24 21:44

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.126	1.00
Vinyl chloride	U		0.234	1.00
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*93.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4112832-1 08/27/24 20:41 • (LCSD) R4112832-2 08/27/24 21:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	5.00	4.62	4.65	92.4	93.0	73.0-120			0.647	20
Vinyl chloride	5.00	5.37	5.38	107	108	67.0-131			0.186	20
(S) Toluene-d8				*105*	*106*	*80.0-120*				
(S) 4-Bromofluorobenzene				*99.4*	*96.8*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*96.7*	*97.7*	*70.0-130*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

L-183

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order # L1768887

Send Results to:

Contact & Company Name: Danielle Giroux

Telephone: (518) 935-7720

Address: 201 Fuller Rd Ste 201

Fax:

City: Albany State: NY Zip: 12203

E-mail Address: Danielle.Giroux@arcadis.com

Project Name/Location (City, State): WVA-LTM-2024

Project #: 30231255

Sampler's Printed Name: Josh Doquette

Sampler's Signature:

Preservative	HCl
Filtered (✓)	
# of Containers	3
Container Information	VOA

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil
W - Water, SL - Sludge, SW - Sample Wipe
T - Tissue, A - Air, Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	VOCs 8260	REMARKS
WVA-SA-MW-79(20240815)	8/15	0850		✓	W	X	-01
WVA-SA-MW-81(20240815)		0855				X	-02
WVA-SA-MW-78(20240815)		0915				X	-03
WVA-SA-MW-39(20240815)		0910				X	-04
WVA-SA-MW-83(20240815)		0920				X	-05
WVA-SA-MW-84(20240815)		0925				X	-06
83DM-SP-4(20240815)		1045				X	-07
86EM-SP-1A(20240815)		1000				X	-08
93EM-RW-2(20240815)		0935				X	-09
WVA-AW-25-MW-2(20240815)		1010				X	-10
WVA-AW-25-MW-3(20240815)		1015				X	-11
WVA-AW-MW-35(20240815)		1035				X	-12
WVA-AW-MW-36(20240815)		1030				X	-13
WVA-AW-MW-47(20240815)		1020				X	-14

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name:

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Sample Receipt:

Condition/Cooler Temp: _____

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Andrew Gibson	Printed Name: Chris Larson	Printed Name: Chris Jones	Printed Name:
Signature:	Signature: Chris Jones	Signature: Pace	Signature: Orlando
Firm: Arcadis	Firm/Courier: Pace	Firm/Courier: Pace	Firm:
Date/Time: 8/15/24/16/6	Date/Time: 8.15.24 16:16	Date/Time: 8.15.24 16:30	Date/Time: 08/17/24 0900

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order # L1768887

Send Results to:

Contact & Company Name: Danielle Giroux	Telephone: (518) 935-7720
Address: 201 Fuller Rd Ste 201	Fax:
City: Albany State: NY Zip: 12203	E-mail Address: Danielle.Giroux@arcadis.com
Project Name/Location (City, State):	Project #: 3023 1255
Sampler's Printed Name: Josh Duquette	Sampler's Signature:

Preservative	HCl
Filtered (✓)	
# of Containers	3
Container Information	VOA

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil
W - Water, SL - Sludge, SW - Sample Wipe
T - Tissue, A - Air, Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	PARAMETER ANALYSIS & METHOD: VOCs 8260D	REMARKS
WVA-AW-MW-52(20240815)	8/15	0940		X	W	X	-15
WVA-AW-MW-64(20240815)	"	0945		"	"	X	-16
Dup-4 (20240815)	"	—		"	"	X	-17
TB-Blank-20240815	8/15/24	—		G	W	X	-18

AG 8/15/24

4011 8008 0509

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres. Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	Y N		

3.6+0.3=3.9 EDAB

Special Instructions/Comments:

☐ **Special QA/QC Instructions(✓):**

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: Andrew Gibson	Printed Name: Chris Lawson Pace	Printed Name: ~~Chris Lawson~~	Printed Name:
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature: Chris	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: Pace	Firm/Courier: Pace	Firm:
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 8/15/24 16:16	Date/Time: 8.15.24 16:16	Date/Time: 8.15.24 16:30	Date/Time: 08.17.24 0900

Distribution: WHITE – Laboratory returns with results; YELLOW – Lab copy; PINK – Retained by Arcadis

ANALYTICAL REPORT

Lab Number:	L2439953
Client:	Arcadis U.S, Inc. DPS Group/Arcadis 201 Fuller Road, Suite 201 Albany, NY 12203
ATTN:	Danielle Giroux
Phone:	(518) 650-7808
Project Name:	WATERVLIET ARSENAL
Project Number:	30231255
Report Date:	07/22/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2439953
Report Date: 07/22/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2439953-01	WVA-MW-86R-1 (20240716)	WATER	WATERVLIET,NY	07/16/24 09:45	07/16/24
L2439953-02	WVA-MW-86R-2 (20240716)	WATER	WATERVLIET,NY	07/16/24 11:00	07/16/24
L2439953-03	WVA-MW-86R-3 (20240716)	WATER	WATERVLIET,NY	07/16/24 11:45	07/16/24
L2439953-04	WVA-MW-85R-1 (20240716)	WATER	WATERVLIET,NY	07/16/24 08:25	07/16/24
L2439953-05	WVA-MW-85R-2 (20240716)	WATER	WATERVLIET,NY	07/16/24 10:15	07/16/24
L2439953-06	WVA-MW-STS-6 (20240716)	WATER	WATERVLIET,NY	07/16/24 13:55	07/16/24
L2439953-07	WVA-MW-STS-3 (20240716)	WATER	WATERVLIET,NY	07/16/24 14:05	07/16/24
L2439953-08	WVA-MW-STS-5 (20240716)	WATER	WATERVLIET,NY	07/16/24 14:15	07/16/24
L2439953-09	WVA-MW-SNS-6 (20240716)	WATER	WATERVLIET,NY	07/16/24 14:20	07/16/24
L2439953-10	NMT PIT (20240716)	WATER	WATERVLIET,NY	07/16/24 13:30	07/16/24
L2439953-11	TRIP BLANK (20240716)	WATER	WATERVLIET,NY	07/12/24 00:00	07/16/24

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2439953
Project Number:	30231255	**Report Date:**	07/22/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2439953
Project Number:	30231255	**Report Date:**	07/22/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2439953-10: A sample container for Total Metals was received, but not listed on the chain of custody. At the client's request, the analysis was not performed.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 07/22/24

ORGANICS

VOLATILES

Project Name: WATERVLIET ARSENAL
Lab Number: L2439953
Project Number: 30231255
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-01
Client ID: WVA-MW-86R-1 (20240716)
Sample Location: WATERVLIET,NY
Date Collected: 07/16/24 09:45
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 13:14
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.19	J	ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.79	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-01 Date Collected: 07/16/24 09:45

Client ID: WVA-MW-86R-1 (20240716) Date Received: 07/16/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	0.91	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	92		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-02 D
Client ID: WVA-MW-86R-2 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 11:00
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 15:29
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	50	14.	20
1,1-Dichloroethane	ND		ug/l	50	14.	20
Chloroform	ND		ug/l	50	14.	20
Carbon tetrachloride	ND		ug/l	10	2.7	20
1,2-Dichloropropane	ND		ug/l	20	2.7	20
Dibromochloromethane	ND		ug/l	10	3.0	20
1,1,2-Trichloroethane	ND		ug/l	30	10.	20
Tetrachloroethene	ND		ug/l	10	3.6	20
Chlorobenzene	ND		ug/l	50	14.	20
Trichlorofluoromethane	ND		ug/l	50	14.	20
1,2-Dichloroethane	ND		ug/l	10	2.6	20
1,1,1-Trichloroethane	ND		ug/l	50	14.	20
Bromodichloromethane	ND		ug/l	10	3.8	20
trans-1,3-Dichloropropene	ND		ug/l	10	3.3	20
cis-1,3-Dichloropropene	ND		ug/l	10	2.9	20
Bromoform	ND		ug/l	40	13.	20
1,1,2,2-Tetrachloroethane	ND		ug/l	10	3.3	20
Benzene	ND		ug/l	10	3.2	20
Toluene	ND		ug/l	50	14.	20
Ethylbenzene	ND		ug/l	50	14.	20
Chloromethane	ND		ug/l	50	14.	20
Bromomethane	ND		ug/l	50	14.	20
Vinyl chloride	2300		ug/l	20	1.4	20
Chloroethane	ND		ug/l	50	14.	20
1,1-Dichloroethene	ND		ug/l	10	3.4	20
trans-1,2-Dichloroethene	28	J	ug/l	50	14.	20
Trichloroethene	ND		ug/l	10	3.5	20
1,2-Dichlorobenzene	ND		ug/l	50	14.	20

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-02 D
Client ID: WVA-MW-86R-2 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 11:00
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	50	14.	20
1,4-Dichlorobenzene	ND		ug/l	50	14.	20
Methyl tert butyl ether	ND		ug/l	50	3.3	20
p/m-Xylene	ND		ug/l	50	14.	20
o-Xylene	ND		ug/l	50	14.	20
cis-1,2-Dichloroethene	2200		ug/l	50	14.	20
Styrene	ND		ug/l	50	14.	20
Dichlorodifluoromethane	ND		ug/l	100	20.	20
Acetone	ND		ug/l	100	29.	20
Carbon disulfide	ND		ug/l	100	20.	20
2-Butanone	ND		ug/l	100	39.	20
4-Methyl-2-pentanone	ND		ug/l	100	20.	20
2-Hexanone	ND		ug/l	100	20.	20
Bromochloromethane	ND		ug/l	50	14.	20
1,2-Dibromoethane	ND		ug/l	40	13.	20
1,2-Dibromo-3-chloropropane	ND		ug/l	50	14.	20
Isopropylbenzene	ND		ug/l	50	14.	20
1,2,3-Trichlorobenzene	ND		ug/l	50	14.	20
1,2,4-Trichlorobenzene	ND		ug/l	50	14.	20
Methyl Acetate	ND		ug/l	40	4.7	20
Cyclohexane	ND		ug/l	200	5.4	20
1,4-Dioxane	ND		ug/l	5000	1200	20
Freon-113	ND		ug/l	50	14.	20
Methyl cyclohexane	ND		ug/l	200	7.9	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	98		70-130

Project Name: WATERVLIET ARSENAL
Lab Number: L2439953
Project Number: 30231255
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-03 D
Client ID: WVA-MW-86R-3 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 11:45
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 16:14
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	84		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	ND		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	640		ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	ND		ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	27		ug/l	25	7.0	10
Trichloroethene	80		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-03 D
Client ID: WVA-MW-86R-3 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 11:45
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	1.7	10
p/m-Xylene	ND		ug/l	25	7.0	10
o-Xylene	ND		ug/l	25	7.0	10
cis-1,2-Dichloroethene	1100		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
Bromochloromethane	ND		ug/l	25	7.0	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	ND		ug/l	25	7.0	10
1,2,3-Trichlorobenzene	ND		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	ND		ug/l	100	2.7	10
1,4-Dioxane	ND		ug/l	2500	610	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	ND		ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2439953
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-04
Client ID: WVA-MW-85R-1 (20240716)
Sample Location: WATERVLIET,NY
Date Collected: 07/16/24 08:25
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 13:36
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.52	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-04 Date Collected: 07/16/24 08:25

Client ID: WVA-MW-85R-1 (20240716) Date Received: 07/16/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	1.9	J	ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	97		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-05 D
Client ID: WVA-MW-85R-2 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 10:15
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 09:23
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	1300		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	ND		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	580		ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	2.8	J	ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	15	J	ug/l	25	7.0	10
Trichloroethene	200		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-05 D
Client ID: WVA-MW-85R-2 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 10:15
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	1.7	10
p/m-Xylene	ND		ug/l	25	7.0	10
o-Xylene	ND		ug/l	25	7.0	10
cis-1,2-Dichloroethene	1700		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
Bromochloromethane	ND		ug/l	25	7.0	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	ND		ug/l	25	7.0	10
1,2,3-Trichlorobenzene	ND		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	ND		ug/l	100	2.7	10
1,4-Dioxane	ND		ug/l	2500	610	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	ND		ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: WATERVLIET ARSENAL
Lab Number: L2439953
Project Number: 30231255
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-06
Client ID: WVA-MW-STS-6 (20240716)
Sample Location: WATERVLIET,NY
Date Collected: 07/16/24 13:55
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 13:59
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	1.2		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-06 Date Collected: 07/16/24 13:55

Client ID: WVA-MW-STS-6 (20240716) Date Received: 07/16/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	5.6		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	97		70-130

Project Name: WATERVLIET ARSENAL
Lab Number: L2439953
Project Number: 30231255
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-07
Client ID: WVA-MW-STS-3 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 14:05
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 14:21
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-07 Date Collected: 07/16/24 14:05

Client ID: WVA-MW-STS-3 (20240716) Date Received: 07/16/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	98		70-130

Project Name: WATERVLIET ARSENAL
Lab Number: L2439953
Project Number: 30231255
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-08
Client ID: WVA-MW-STS-5 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 14:15
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 14:44
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	3.5		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-08 Date Collected: 07/16/24 14:15

Client ID: WVA-MW-STS-5 (20240716) Date Received: 07/16/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	1.4	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	92		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-09
Client ID: WVA-MW-SNS-6 (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 14:20
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 15:06
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	5.3		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	0.93		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	6.8		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-09 Date Collected: 07/16/24 14:20

Client ID: WVA-MW-SNS-6 (20240716) Date Received: 07/16/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	0.22	J	ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	1.8	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	7.4		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	98		70-130

Project Name: WATERVLIET ARSENAL
Lab Number: L2439953
Project Number: 30231255
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-11
Client ID: TRIP BLANK (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/12/24 00:00
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/18/24 08:20
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-11 Date Collected: 07/12/24 00:00

Client ID: TRIP BLANK (20240716) Date Received: 07/16/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	96		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2439953
Report Date: 07/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/18/24 07:58
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-09,11 Batch: WG1948695-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: WATERVLIET ARSENAL **Lab Number:** L2439953

Project Number: 30231255 **Report Date:** 07/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/18/24 07:58
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-09,11 Batch: WG1948695-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2439953
Report Date: 07/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/18/24 07:58
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-09,11 Batch: WG1948695-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	97		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2439953
Report Date: 07/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/24 08:16
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1948960-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2439953
Report Date: 07/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/24 08:16
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1948960-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2439953
Report Date: 07/22/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/24 08:16
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1948960-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-09,11 Batch: WG1948695-3 WG1948695-4								
Methylene chloride	92		90		70-130	2		20
1,1-Dichloroethane	95		94		70-130	1		20
Chloroform	94		94		70-130	0		20
Carbon tetrachloride	99		99		63-132	0		20
1,2-Dichloropropane	94		93		70-130	1		20
Dibromochloromethane	95		94		63-130	1		20
1,1,2-Trichloroethane	95		93		70-130	2		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	99		97		75-130	2		20
Trichlorofluoromethane	100		100		62-150	0		20
1,2-Dichloroethane	86		86		70-130	0		20
1,1,1-Trichloroethane	97		96		67-130	1		20
Bromodichloromethane	92		90		67-130	2		20
trans-1,3-Dichloropropene	94		92		70-130	2		20
cis-1,3-Dichloropropene	92		91		70-130	1		20
Bromoform	77		75		54-136	3		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	95		94		70-130	1		20
Toluene	100		100		70-130	0		20
Ethylbenzene	99		97		70-130	2		20
Chloromethane	94		91		64-130	3		20
Bromomethane	77		80		39-139	4		20
Vinyl chloride	100		98		55-140	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-09,11 Batch: WG1948695-3 WG1948695-4								
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	**200**	Q	**190**	Q	61-145	5		20
trans-1,2-Dichloroethene	96		96		70-130	0		20
Trichloroethene	89		86		70-130	3		20
1,2-Dichlorobenzene	100		98		70-130	2		20
1,3-Dichlorobenzene	100		97		70-130	3		20
1,4-Dichlorobenzene	100		98		70-130	2		20
Methyl tert butyl ether	84		84		63-130	0		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		90		70-130	5		20
cis-1,2-Dichloroethene	94		95		70-130	1		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	100		98		36-147	2		20
Acetone	76		76		58-148	0		20
Carbon disulfide	120		110		51-130	9		20
2-Butanone	77		81		63-138	5		20
4-Methyl-2-pentanone	83		82		59-130	1		20
2-Hexanone	76		78		57-130	3		20
Bromochloromethane	93		92		70-130	1		20
1,2-Dibromoethane	100		96		70-130	4		20
1,2-Dibromo-3-chloropropane	97		92		41-144	5		20
Isopropylbenzene	110		100		70-130	10		20
1,2,3-Trichlorobenzene	99		95		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-09,11 Batch: WG1948695-3 WG1948695-4								
1,2,4-Trichlorobenzene	100		98		70-130	2		20
Methyl Acetate	75		79		70-130	5		20
Cyclohexane	100		97		70-130	3		20
1,4-Dioxane	100		98		56-162	2		20
Freon-113	120		110		70-130	9		20
Methyl cyclohexane	99		96		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	88		87		70-130
Toluene-d8	107		107		70-130
4-Bromofluorobenzene	101		100		70-130
Dibromofluoromethane	97		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1948960-3 WG1948960-4								
Methylene chloride	90		89		70-130	1		20
1,1-Dichloroethane	89		90		70-130	1		20
Chloroform	90		91		70-130	1		20
Carbon tetrachloride	91		110		63-132	19		20
1,2-Dichloropropane	94		92		70-130	2		20
Dibromochloromethane	92		95		63-130	3		20
1,1,2-Trichloroethane	91		95		70-130	4		20
Tetrachloroethene	99		96		70-130	3		20
Chlorobenzene	94		94		75-130	0		20
Trichlorofluoromethane	110		100		62-150	10		20
1,2-Dichloroethane	84		85		70-130	1		20
1,1,1-Trichloroethane	92		90		67-130	2		20
Bromodichloromethane	90		90		67-130	0		20
trans-1,3-Dichloropropene	89		93		70-130	4		20
cis-1,3-Dichloropropene	91		88		70-130	3		20
Bromoform	80		78		54-136	3		20
1,1,2,2-Tetrachloroethane	100		110		67-130	10		20
Benzene	90		90		70-130	0		20
Toluene	97		96		70-130	1		20
Ethylbenzene	91		91		70-130	0		20
Chloromethane	82		78		64-130	5		20
Bromomethane	66		62		39-139	6		20
Vinyl chloride	100		98		55-140	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1948960-3 WG1948960-4								
Chloroethane	120		120		55-138	0		20
1,1-Dichloroethene	94		88		61-145	7		20
trans-1,2-Dichloroethene	90		90		70-130	0		20
Trichloroethene	86		83		70-130	4		20
1,2-Dichlorobenzene	95		95		70-130	0		20
1,3-Dichlorobenzene	98		94		70-130	4		20
1,4-Dichlorobenzene	98		96		70-130	2		20
Methyl tert butyl ether	78		82		63-130	5		20
p/m-Xylene	85		85		70-130	0		20
o-Xylene	85		85		70-130	0		20
cis-1,2-Dichloroethene	89		93		70-130	4		20
Styrene	80		80		70-130	0		20
Dichlorodifluoromethane	92		84		36-147	9		20
Acetone	75		77		58-148	3		20
Carbon disulfide	94		89		51-130	5		20
2-Butanone	75		77		63-138	3		20
4-Methyl-2-pentanone	74		79		59-130	7		20
2-Hexanone	70		72		57-130	3		20
Bromochloromethane	88		90		70-130	2		20
1,2-Dibromoethane	94		94		70-130	0		20
1,2-Dibromo-3-chloropropane	87		87		41-144	0		20
Isopropylbenzene	100		97		70-130	3		20
1,2,3-Trichlorobenzene	95		95		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1948960-3 WG1948960-4								
1,2,4-Trichlorobenzene	99		97		70-130	2		20
Methyl Acetate	71		77		70-130	8		20
Cyclohexane	90		86		70-130	5		20
1,4-Dioxane	100		94		56-162	6		20
Freon-113	97		91		70-130	6		20
Methyl cyclohexane	83		83		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		90		70-130
Toluene-d8	107		108		70-130
4-Bromofluorobenzene	101		100		70-130
Dibromofluoromethane	97		101		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2439953
Report Date: 07/22/24

SAMPLE RESULTS

Lab ID: L2439953-10
Client ID: NMT PIT (20240716)
Sample Location: WATERVLIET,NY

Date Collected: 07/16/24 13:30
Date Received: 07/16/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chromium, Hexavalent	0.240		mg/l	0.010	0.003	1	07/17/24 05:15	07/17/24 06:12	121,3500CR-B	CAR

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2439953
Report Date: 07/22/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 10 Batch: WG1947850-1										
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	07/17/24 05:15	07/17/24 06:12	121,3500CR-B	CAR

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 10 Batch: WG1947850-2								
Chromium, Hexavalent	99		-		85-115	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2439953
Report Date: 07/22/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 10 QC Batch ID: WG1947850-4 QC Sample: L2439953-10 Client ID: NMT PIT (20240716)												
Chromium, Hexavalent	0.240	0.1	0.344	104		-	-		85-115	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2439953

Report Date: 07/22/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 10 QC Batch ID: WG1947850-3 QC Sample: L2439953-10 Client ID: NMT PIT (20240716)						
Chromium, Hexavalent	0.240	0.239	mg/l	0		20

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2439953
Report Date: 07/22/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2439953-01A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-01B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-01C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-02A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-02B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-02C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-03A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-03B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-03C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-04A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-04B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-04C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-05A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-05B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-05C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-06A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-06B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-06C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-07A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-07B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-07C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-08A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-08B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2439953
Report Date: 07/22/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2439953-08C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-09A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-09B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-09C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-10A	Plastic 250ml unpreserved	A	7	7	3.4	Y	Absent		HEXCR-3500(1)
L2439953-10B	Plastic 250ml HNO3 preserved	A	<2	<2	3.4	Y	Absent		HOLD-METAL-TOTAL(180)
L2439953-11A	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-11B	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-11C	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)
L2439953-11D	Vial HCl preserved	A	NA		3.4	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2439953
Project Number:	30231255	**Report Date:**	07/22/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2439953
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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2439953
Project Number:	30231255	**Report Date:**	07/22/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2439953
Project Number:	30231255	**Report Date:**	07/22/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

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Date Rec'd in Lab 7/17/24

Client Information
Client: Arcadis
Address: 201 Fuller Rd Suite 201
Albany, NY, 12233
Phone: (518) 709-8487
Fax:
Email: danielle.giroux@arcadis.com

Project Information
Project Name: Watervliet Arsenal
Project Location: Watervliet, NY
Project # 30231255
(Use Project name as Project #) ☐
Project Manager: Stefan Bognaro / Danielle Giroux
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

☐ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOC	HEXCR-3500	Total Bottle	Sample Specific Comments
39453-01	WVA-MW-86R-1(20240716)	7/16/24	0945	W	AC	X		3	
-02	WVA-MW-86R-2(20240716)	7/16/24	1100	W	AC	X		3	
-03	WVA-MW-86R-3(20240716)	7/16/24	1145	W	AC	X		3	
-04	WVA-MW-85R-1(20240716)	7/16/24	0925	W	~~AC~~ LB	X		3	
-05	WVA-MW-85R-2(20240716)	7/16/24	1015	W	LB	X		3	
-06	WVA-SA-STS-6(20240716)	7/16/24	1355	W	JD	X		3	
-07	WVA-SA-STS-3(20240716)	7/16/24	1405	W	JD	X		3	
-08	WVA-SA-STS-5(20240716)	7/16/24	1415	W	JD	X		3	
-09	WVA-SA-SNS-6(20240716)	7/16/24	1420	W	JD	X		3	
-10	NMT Pit (20240716)	7/16/24	1330	W	JD		X	1	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	P										
Preservative	B	A										

Relinquished By:	Date/Time	Received By:	Date/Time
A. Calderini	7/16/24 1610	Ch. Tang Pace	7-16-24 16:00
Chi Tang	7-16-24 16:25		7/16 2200
	7/17 120	Tyler Forsyth	7/17 01220

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab 7/17/24

ALPHA Job # L2439953

Client Information

Client: Arcadis
Address: 201 Fuller Rd, Suite 201
Albany, NY 12233
Phone: (518) 709-8487
Fax:
Email: danielle.giroux@arcadis.com

Project Information

Project Name: Watervliet Arsenal
Project Location: Watervliet, NY
Project # 30231255
(Use Project name as Project #) ☐
Project Manager: Stefan Bagnato / Danielle Giroux
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☐ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs	Sample Specific Comments	Total Bottle
59953-(1)	Trip Blank (20241016)	—	—	W	—	x		2

Container Type: A
Preservative: B

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Anna Colleran	7/16/24 1610	Chi Tam Pace	7.16.24 16:10
Chi Tam Pace	7.16.24 16:25		7/16 2200
	7/17 120	Tyler Dabbs	7/17 01:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2440259
Client:	Arcadis U.S, Inc. DPS Group/Arcadis 201 Fuller Road, Suite 201 Albany, NY 12203
ATTN:	Danielle Giroux
Phone:	(518) 650-7808
Project Name:	WATERVLIET ARSENAL
Project Number:	30231255
Report Date:	07/24/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440259
Report Date: 07/24/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2440259-01	WVA-MW-85R-3 (20240717)	WATER	WATERVLIET,NY	07/17/24 09:55	07/17/24
L2440259-02	WVA-MW-84R-1 (20240717)	WATER	WATERVLIET,NY	07/17/24 11:05	07/17/24
L2440259-03	WVA-MW-84R-2 (20240717)	WATER	WATERVLIET,NY	07/17/24 11:50	07/17/24
L2440259-04	DUP-1 (20240717)	WATER	WATERVLIET,NY	07/17/24 00:00	07/17/24
L2440259-05	92EM-SP-8 (20240717)	WATER	WATERVLIET,NY	07/17/24 12:48	07/17/24
L2440259-06	86EM-SP-6 (20240717)	WATER	WATERVLIET,NY	07/17/24 11:34	07/17/24
L2440259-07	83DM-SP-3 (20240717)	WATER	WATERVLIET,NY	07/17/24 09:58	07/17/24
L2440259-08	DUP-2 (20240717)	WATER	WATERVLIET,NY	07/17/24 00:00	07/17/24
L2440259-09	94EM-MW-19 (20240717)	WATER	WATERVLIET,NY	07/17/24 14:35	07/17/24
L2440259-10	WVA-MW-83-1 (20240717)	WATER	WATERVLIET,NY	07/17/24 14:55	07/17/24
L2440259-11	WVA-MW-84R-3 (20240717)	WATER	WATERVLIET,NY	07/17/24 13:00	07/17/24
L2440259-12	WVA-MW-83-2 (20240717)	WATER	WATERVLIET,NY	07/17/24 15:45	07/17/24
L2440259-13	93EM-SP-11 (20240717)	WATER	WATERVLIET,NY	07/17/24 15:47	07/17/24
L2440259-14	TRIP BLANK (20240717)	WATER	WATERVLIET,NY	07/17/24 00:00	07/17/24

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440259
Project Number:	30231255	**Report Date:**	07/24/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440259
Project Number:	30231255	**Report Date:**	07/24/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

L2440259-13: The collection date and time on the chain of custody was 17-JUL-24 15:47; however, the collection date/time on the container label was 17-JUL-24 13:47. At the client's request, the collection date/time is reported as 17-JUL-24 15:47.

Volatile Organics

L2440259-03D2: Differences were noted between the results of the analyses which have been attributed to vial discrepancies. Further re-analysis could not be performed due to the existing vials being compromised.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 07/24/24

ORGANICS

VOLATILES

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-01 D
Client ID: WVA-MW-85R-3 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 09:55
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 15:31
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	50	14.	20
1,1-Dichloroethane	ND		ug/l	50	14.	20
Chloroform	ND		ug/l	50	14.	20
Carbon tetrachloride	ND		ug/l	10	2.7	20
1,2-Dichloropropane	ND		ug/l	20	2.7	20
Dibromochloromethane	ND		ug/l	10	3.0	20
1,1,2-Trichloroethane	ND		ug/l	30	10.	20
Tetrachloroethene	1700		ug/l	10	3.6	20
Chlorobenzene	ND		ug/l	50	14.	20
Trichlorofluoromethane	ND		ug/l	50	14.	20
1,2-Dichloroethane	ND		ug/l	10	2.6	20
1,1,1-Trichloroethane	ND		ug/l	50	14.	20
Bromodichloromethane	ND		ug/l	10	3.8	20
trans-1,3-Dichloropropene	ND		ug/l	10	3.3	20
cis-1,3-Dichloropropene	ND		ug/l	10	2.9	20
Bromoform	ND		ug/l	40	13.	20
1,1,2,2-Tetrachloroethane	ND		ug/l	10	3.3	20
Benzene	ND		ug/l	10	3.2	20
Toluene	ND		ug/l	50	14.	20
Ethylbenzene	ND		ug/l	50	14.	20
Chloromethane	ND		ug/l	50	14.	20
Bromomethane	ND		ug/l	50	14.	20
Vinyl chloride	1100		ug/l	20	1.4	20
Chloroethane	ND		ug/l	50	14.	20
1,1-Dichloroethene	3.8	J	ug/l	10	3.4	20
trans-1,2-Dichloroethene	16	J	ug/l	50	14.	20
Trichloroethene	420		ug/l	10	3.5	20
1,2-Dichlorobenzene	ND		ug/l	50	14.	20

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-01 D
Client ID: WVA-MW-85R-3 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 09:55
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	50	14.	20
1,4-Dichlorobenzene	ND		ug/l	50	14.	20
Methyl tert butyl ether	ND		ug/l	50	3.3	20
p/m-Xylene	ND		ug/l	50	14.	20
o-Xylene	ND		ug/l	50	14.	20
cis-1,2-Dichloroethene	2100		ug/l	50	14.	20
Styrene	ND		ug/l	50	14.	20
Dichlorodifluoromethane	ND		ug/l	100	20.	20
Acetone	ND		ug/l	100	29.	20
Carbon disulfide	ND		ug/l	100	20.	20
2-Butanone	ND		ug/l	100	39.	20
4-Methyl-2-pentanone	ND		ug/l	100	20.	20
2-Hexanone	ND		ug/l	100	20.	20
Bromochloromethane	ND		ug/l	50	14.	20
1,2-Dibromoethane	ND		ug/l	40	13.	20
1,2-Dibromo-3-chloropropane	ND		ug/l	50	14.	20
Isopropylbenzene	ND		ug/l	50	14.	20
1,2,3-Trichlorobenzene	ND		ug/l	50	14.	20
1,2,4-Trichlorobenzene	ND		ug/l	50	14.	20
Methyl Acetate	ND		ug/l	40	4.7	20
Cyclohexane	ND		ug/l	200	5.4	20
1,4-Dioxane	ND		ug/l	5000	1200	20
Freon-113	ND		ug/l	50	14.	20
Methyl cyclohexane	ND		ug/l	200	7.9	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-02 D
Client ID: WVA-MW-84R-1 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 11:05
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 15:56
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	37		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	ND		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	310		ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	3.0	J	ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	16	J	ug/l	25	7.0	10
Trichloroethene	52		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-02 D
Client ID: WVA-MW-84R-1 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 11:05
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	1.7	10
p/m-Xylene	ND		ug/l	25	7.0	10
o-Xylene	ND		ug/l	25	7.0	10
cis-1,2-Dichloroethene	1500		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
Bromochloromethane	ND		ug/l	25	7.0	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	ND		ug/l	25	7.0	10
1,2,3-Trichlorobenzene	ND		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	ND		ug/l	100	2.7	10
1,4-Dioxane	ND		ug/l	2500	610	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	ND		ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	105		70-130

Project Name: WATERVLIET ARSENAL
Lab Number: L2440259
Project Number: 30231255
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-03 D2
Client ID: WVA-MW-84R-2 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 11:50
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 21:57
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	3400		ug/l	200	72.	400
Vinyl chloride	1400		ug/l	400	28.	400
Trichloroethene	1200		ug/l	200	70.	400
cis-1,2-Dichloroethene	7900		ug/l	1000	280	400

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	100		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-03 D
Client ID: WVA-MW-84R-2 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 11:50
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 16:20
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	6300	E	ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	ND		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	ND		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	3300	E	ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	46		ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	180		ug/l	25	7.0	10
Trichloroethene	2400	E	ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-03 D
Client ID: WVA-MW-84R-2 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 11:50
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	1.7	10
p/m-Xylene	ND		ug/l	25	7.0	10
o-Xylene	ND		ug/l	25	7.0	10
cis-1,2-Dichloroethene	24000	E	ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
Bromochloromethane	ND		ug/l	25	7.0	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	ND		ug/l	25	7.0	10
1,2,3-Trichlorobenzene	ND		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	ND		ug/l	100	2.7	10
1,4-Dioxane	ND		ug/l	2500	610	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	ND		ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	106		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-04 D
Client ID: DUP-1 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 00:00
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 16:44
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	50	14.	20
1,1-Dichloroethane	ND		ug/l	50	14.	20
Chloroform	ND		ug/l	50	14.	20
Carbon tetrachloride	ND		ug/l	10	2.7	20
1,2-Dichloropropane	ND		ug/l	20	2.7	20
Dibromochloromethane	ND		ug/l	10	3.0	20
1,1,2-Trichloroethane	ND		ug/l	30	10.	20
Tetrachloroethene	1500		ug/l	10	3.6	20
Chlorobenzene	ND		ug/l	50	14.	20
Trichlorofluoromethane	ND		ug/l	50	14.	20
1,2-Dichloroethane	ND		ug/l	10	2.6	20
1,1,1-Trichloroethane	ND		ug/l	50	14.	20
Bromodichloromethane	ND		ug/l	10	3.8	20
trans-1,3-Dichloropropene	ND		ug/l	10	3.3	20
cis-1,3-Dichloropropene	ND		ug/l	10	2.9	20
Bromoform	ND		ug/l	40	13.	20
1,1,2,2-Tetrachloroethane	ND		ug/l	10	3.3	20
Benzene	ND		ug/l	10	3.2	20
Toluene	ND		ug/l	50	14.	20
Ethylbenzene	ND		ug/l	50	14.	20
Chloromethane	ND		ug/l	50	14.	20
Bromomethane	ND		ug/l	50	14.	20
Vinyl chloride	1200		ug/l	20	1.4	20
Chloroethane	ND		ug/l	50	14.	20
1,1-Dichloroethene	3.8	J	ug/l	10	3.4	20
trans-1,2-Dichloroethene	15	J	ug/l	50	14.	20
Trichloroethene	390		ug/l	10	3.5	20
1,2-Dichlorobenzene	ND		ug/l	50	14.	20

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-04 D
Client ID: DUP-1 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 00:00
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	50	14.	20
1,4-Dichlorobenzene	ND		ug/l	50	14.	20
Methyl tert butyl ether	ND		ug/l	50	3.3	20
p/m-Xylene	ND		ug/l	50	14.	20
o-Xylene	ND		ug/l	50	14.	20
cis-1,2-Dichloroethene	2200		ug/l	50	14.	20
Styrene	ND		ug/l	50	14.	20
Dichlorodifluoromethane	ND		ug/l	100	20.	20
Acetone	ND		ug/l	100	29.	20
Carbon disulfide	ND		ug/l	100	20.	20
2-Butanone	ND		ug/l	100	39.	20
4-Methyl-2-pentanone	ND		ug/l	100	20.	20
2-Hexanone	ND		ug/l	100	20.	20
Bromochloromethane	ND		ug/l	50	14.	20
1,2-Dibromoethane	ND		ug/l	40	13.	20
1,2-Dibromo-3-chloropropane	ND		ug/l	50	14.	20
Isopropylbenzene	ND		ug/l	50	14.	20
1,2,3-Trichlorobenzene	ND		ug/l	50	14.	20
1,2,4-Trichlorobenzene	ND		ug/l	50	14.	20
Methyl Acetate	ND		ug/l	40	4.7	20
Cyclohexane	ND		ug/l	200	5.4	20
1,4-Dioxane	ND		ug/l	5000	1200	20
Freon-113	ND		ug/l	50	14.	20
Methyl cyclohexane	ND		ug/l	200	7.9	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-05
Client ID: 92EM-SP-8 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 12:48
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 13:07
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	0.87	J	ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-05 Date Collected: 07/17/24 12:48

Client ID: 92EM-SP-8 (20240717) Date Received: 07/17/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	101		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-06
Client ID: 86EM-SP-6 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 11:34
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 13:31
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-06 Date Collected: 07/17/24 11:34

Client ID: 86EM-SP-6 (20240717) Date Received: 07/17/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-07
Client ID: 83DM-SP-3 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 09:58
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 13:55
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-07 Date Collected: 07/17/24 09:58

Client ID: 83DM-SP-3 (20240717) Date Received: 07/17/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	102		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-08
Client ID: DUP-2 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 00:00
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 14:19
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-08 Date Collected: 07/17/24 00:00

Client ID: DUP-2 (20240717) Date Received: 07/17/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	106		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-09
Client ID: 94EM-MW-19 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 14:35
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 14:43
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-09 Date Collected: 07/17/24 14:35

Client ID: 94EM-MW-19 (20240717) Date Received: 07/17/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-10 D
Client ID: WVA-MW-83-1 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 14:55
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 17:08
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	50	14.	20
1,1-Dichloroethane	ND		ug/l	50	14.	20
Chloroform	ND		ug/l	50	14.	20
Carbon tetrachloride	ND		ug/l	10	2.7	20
1,2-Dichloropropane	ND		ug/l	20	2.7	20
Dibromochloromethane	ND		ug/l	10	3.0	20
1,1,2-Trichloroethane	ND		ug/l	30	10.	20
Tetrachloroethene	1600		ug/l	10	3.6	20
Chlorobenzene	ND		ug/l	50	14.	20
Trichlorofluoromethane	ND		ug/l	50	14.	20
1,2-Dichloroethane	ND		ug/l	10	2.6	20
1,1,1-Trichloroethane	ND		ug/l	50	14.	20
Bromodichloromethane	ND		ug/l	10	3.8	20
trans-1,3-Dichloropropene	ND		ug/l	10	3.3	20
cis-1,3-Dichloropropene	ND		ug/l	10	2.9	20
Bromoform	ND		ug/l	40	13.	20
1,1,2,2-Tetrachloroethane	ND		ug/l	10	3.3	20
Benzene	ND		ug/l	10	3.2	20
Toluene	ND		ug/l	50	14.	20
Ethylbenzene	ND		ug/l	50	14.	20
Chloromethane	ND		ug/l	50	14.	20
Bromomethane	ND		ug/l	50	14.	20
Vinyl chloride	380		ug/l	20	1.4	20
Chloroethane	ND		ug/l	50	14.	20
1,1-Dichloroethene	ND		ug/l	10	3.4	20
trans-1,2-Dichloroethene	14	J	ug/l	50	14.	20
Trichloroethene	640		ug/l	10	3.5	20
1,2-Dichlorobenzene	ND		ug/l	50	14.	20

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-10 D
Client ID: WVA-MW-83-1 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 14:55
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	50	14.	20
1,4-Dichlorobenzene	ND		ug/l	50	14.	20
Methyl tert butyl ether	ND		ug/l	50	3.3	20
p/m-Xylene	ND		ug/l	50	14.	20
o-Xylene	ND		ug/l	50	14.	20
cis-1,2-Dichloroethene	1400		ug/l	50	14.	20
Styrene	ND		ug/l	50	14.	20
Dichlorodifluoromethane	ND		ug/l	100	20.	20
Acetone	ND		ug/l	100	29.	20
Carbon disulfide	ND		ug/l	100	20.	20
2-Butanone	ND		ug/l	100	39.	20
4-Methyl-2-pentanone	ND		ug/l	100	20.	20
2-Hexanone	ND		ug/l	100	20.	20
Bromochloromethane	ND		ug/l	50	14.	20
1,2-Dibromoethane	ND		ug/l	40	13.	20
1,2-Dibromo-3-chloropropane	ND		ug/l	50	14.	20
Isopropylbenzene	ND		ug/l	50	14.	20
1,2,3-Trichlorobenzene	ND		ug/l	50	14.	20
1,2,4-Trichlorobenzene	ND		ug/l	50	14.	20
Methyl Acetate	ND		ug/l	40	4.7	20
Cyclohexane	ND		ug/l	200	5.4	20
1,4-Dioxane	ND		ug/l	5000	1200	20
Freon-113	ND		ug/l	50	14.	20
Methyl cyclohexane	ND		ug/l	200	7.9	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	100		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-11 D
Client ID: WVA-MW-84R-3 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 13:00
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 17:33
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	62	18.	25
1,1-Dichloroethane	ND		ug/l	62	18.	25
Chloroform	ND		ug/l	62	18.	25
Carbon tetrachloride	ND		ug/l	12	3.4	25
1,2-Dichloropropane	ND		ug/l	25	3.4	25
Dibromochloromethane	ND		ug/l	12	3.7	25
1,1,2-Trichloroethane	ND		ug/l	38	12.	25
Tetrachloroethene	24		ug/l	12	4.5	25
Chlorobenzene	ND		ug/l	62	18.	25
Trichlorofluoromethane	ND		ug/l	62	18.	25
1,2-Dichloroethane	ND		ug/l	12	3.3	25
1,1,1-Trichloroethane	ND		ug/l	62	18.	25
Bromodichloromethane	ND		ug/l	12	4.8	25
trans-1,3-Dichloropropene	ND		ug/l	12	4.1	25
cis-1,3-Dichloropropene	ND		ug/l	12	3.6	25
Bromoform	ND		ug/l	50	16.	25
1,1,2,2-Tetrachloroethane	ND		ug/l	12	4.2	25
Benzene	ND		ug/l	12	4.0	25
Toluene	ND		ug/l	62	18.	25
Ethylbenzene	ND		ug/l	62	18.	25
Chloromethane	ND		ug/l	62	18.	25
Bromomethane	ND		ug/l	62	18.	25
Vinyl chloride	2100		ug/l	25	1.8	25
Chloroethane	ND		ug/l	62	18.	25
1,1-Dichloroethene	4.8	J	ug/l	12	4.2	25
trans-1,2-Dichloroethene	ND		ug/l	62	18.	25
Trichloroethene	79		ug/l	12	4.4	25
1,2-Dichlorobenzene	ND		ug/l	62	18.	25

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-11 D
Client ID: WVA-MW-84R-3 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 13:00
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	62	18.	25
1,4-Dichlorobenzene	ND		ug/l	62	18.	25
Methyl tert butyl ether	ND		ug/l	62	4.2	25
p/m-Xylene	ND		ug/l	62	18.	25
o-Xylene	ND		ug/l	62	18.	25
cis-1,2-Dichloroethene	3200		ug/l	62	18.	25
Styrene	ND		ug/l	62	18.	25
Dichlorodifluoromethane	ND		ug/l	120	25.	25
Acetone	ND		ug/l	120	36.	25
Carbon disulfide	ND		ug/l	120	25.	25
2-Butanone	ND		ug/l	120	48.	25
4-Methyl-2-pentanone	ND		ug/l	120	25.	25
2-Hexanone	ND		ug/l	120	25.	25
Bromochloromethane	ND		ug/l	62	18.	25
1,2-Dibromoethane	ND		ug/l	50	16.	25
1,2-Dibromo-3-chloropropane	ND		ug/l	62	18.	25
Isopropylbenzene	ND		ug/l	62	18.	25
1,2,3-Trichlorobenzene	ND		ug/l	62	18.	25
1,2,4-Trichlorobenzene	ND		ug/l	62	18.	25
Methyl Acetate	ND		ug/l	50	5.8	25
Cyclohexane	ND		ug/l	250	6.8	25
1,4-Dioxane	ND		ug/l	6200	1500	25
Freon-113	ND		ug/l	62	18.	25
Methyl cyclohexane	ND		ug/l	250	9.9	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	102		70-130

Project Name: WATERVLIET ARSENAL
Lab Number: L2440259
Project Number: 30231255
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-12 D2
Client ID: WVA-MW-83-2 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 15:45
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/22/24 21:35
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	18000		ug/l	500	180	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	101		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-12 D
Client ID: WVA-MW-83-2 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 15:45
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 17:57
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	250	70.	100
1,1-Dichloroethane	ND		ug/l	250	70.	100
Chloroform	ND		ug/l	250	70.	100
Carbon tetrachloride	ND		ug/l	50	13.	100
1,2-Dichloropropane	ND		ug/l	100	14.	100
Dibromochloromethane	ND		ug/l	50	15.	100
1,1,2-Trichloroethane	ND		ug/l	150	50.	100
Tetrachloroethene	23000	E	ug/l	50	18.	100
Chlorobenzene	ND		ug/l	250	70.	100
Trichlorofluoromethane	ND		ug/l	250	70.	100
1,2-Dichloroethane	ND		ug/l	50	13.	100
1,1,1-Trichloroethane	ND		ug/l	250	70.	100
Bromodichloromethane	ND		ug/l	50	19.	100
trans-1,3-Dichloropropene	ND		ug/l	50	16.	100
cis-1,3-Dichloropropene	ND		ug/l	50	14.	100
Bromoform	ND		ug/l	200	65.	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	17.	100
Benzene	ND		ug/l	50	16.	100
Toluene	ND		ug/l	250	70.	100
Ethylbenzene	ND		ug/l	250	70.	100
Chloromethane	ND		ug/l	250	70.	100
Bromomethane	ND		ug/l	250	70.	100
Vinyl chloride	520		ug/l	100	7.1	100
Chloroethane	ND		ug/l	250	70.	100
1,1-Dichloroethene	ND		ug/l	50	17.	100
trans-1,2-Dichloroethene	ND		ug/l	250	70.	100
Trichloroethene	7400		ug/l	50	18.	100
1,2-Dichlorobenzene	ND		ug/l	250	70.	100

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-12 D
Client ID: WVA-MW-83-2 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 15:45
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	250	70.	100
1,4-Dichlorobenzene	ND		ug/l	250	70.	100
Methyl tert butyl ether	ND		ug/l	250	17.	100
p/m-Xylene	ND		ug/l	250	70.	100
o-Xylene	ND		ug/l	250	70.	100
cis-1,2-Dichloroethene	4800		ug/l	250	70.	100
Styrene	ND		ug/l	250	70.	100
Dichlorodifluoromethane	ND		ug/l	500	100	100
Acetone	ND		ug/l	500	150	100
Carbon disulfide	ND		ug/l	500	100	100
2-Butanone	ND		ug/l	500	190	100
4-Methyl-2-pentanone	ND		ug/l	500	100	100
2-Hexanone	ND		ug/l	500	100	100
Bromochloromethane	ND		ug/l	250	70.	100
1,2-Dibromoethane	ND		ug/l	200	65.	100
1,2-Dibromo-3-chloropropane	ND		ug/l	250	70.	100
Isopropylbenzene	ND		ug/l	250	70.	100
1,2,3-Trichlorobenzene	ND		ug/l	250	70.	100
1,2,4-Trichlorobenzene	ND		ug/l	250	70.	100
Methyl Acetate	ND		ug/l	200	23.	100
Cyclohexane	ND		ug/l	1000	27.	100
1,4-Dioxane	ND		ug/l	25000	6100	100
Freon-113	ND		ug/l	250	70.	100
Methyl cyclohexane	ND		ug/l	1000	40.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	99		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-13
Client ID: 93EM-SP-11 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 15:47
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 15:07
Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-13 Date Collected: 07/17/24 15:47

Client ID: 93EM-SP-11 (20240717) Date Received: 07/17/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	104		70-130

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-14
Client ID: TRIP BLANK (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 00:00
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/19/24 11:30
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-14 Date Collected: 07/17/24 00:00

Client ID: TRIP BLANK (20240717) Date Received: 07/17/24

Sample Location: WATERVLIET,NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	101		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/24 11:06
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-14 Batch: WG1949713-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/24 11:06
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-14 Batch: WG1949713-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/24 11:06
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-14 Batch: WG1949713-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	100		70-130

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/22/24 19:45
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03,12 Batch: WG1950297-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: WATERVLIET ARSENAL **Lab Number:** L2440259

Project Number: 30231255 **Report Date:** 07/24/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/22/24 19:45
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03,12 Batch: WG1950297-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/22/24 19:45
Analyst: RAW

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03,12 Batch: WG1950297-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-14 Batch: WG1949713-3 WG1949713-4								
Methylene chloride	99		99		70-130	0		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		110		70-130	10		20
Carbon tetrachloride	99		95		63-132	4		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	92		95		63-130	3		20
1,1,2-Trichloroethane	110		110		70-130	0		20
Tetrachloroethene	99		98		70-130	1		20
Chlorobenzene	110		100		75-130	10		20
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	100		99		67-130	1		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	94		96		70-130	2		20
cis-1,3-Dichloropropene	89		94		70-130	5		20
Bromoform	81		86		54-136	6		20
1,1,2,2-Tetrachloroethane	100		110		67-130	10		20
Benzene	110		110		70-130	0		20
Toluene	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
Chloromethane	100		99		64-130	1		20
Bromomethane	130		130		39-139	0		20
Vinyl chloride	120		110		55-140	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-14 Batch: WG1949713-3 WG1949713-4								
Chloroethane	100		110		55-138	10		20
1,1-Dichloroethene	98		99		61-145	1		20
trans-1,2-Dichloroethene	95		100		70-130	5		20
Trichloroethene	100		98		70-130	2		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		110		70-130	10		20
1,4-Dichlorobenzene	100		110		70-130	10		20
Methyl tert butyl ether	84		86		63-130	2		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		110		70-130	5		20
cis-1,2-Dichloroethene	100		99		70-130	1		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	90		87		36-147	3		20
Acetone	78		82		58-148	5		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	96		80		63-138	18		20
4-Methyl-2-pentanone	90		87		59-130	3		20
2-Hexanone	84		81		57-130	4		20
Bromochloromethane	92		90		70-130	2		20
1,2-Dibromoethane	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	72		76		41-144	5		20
Isopropylbenzene	110		110		70-130	0		20
1,2,3-Trichlorobenzene	89		92		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-14 Batch: WG1949713-3 WG1949713-4								
1,2,4-Trichlorobenzene	91		92		70-130	1		20
Methyl Acetate	81		77		70-130	5		20
Cyclohexane	99		97		70-130	2		20
1,4-Dioxane	**54**	Q	76		56-162	**34**	Q	20
Freon-113	100		93		70-130	7		20
Methyl cyclohexane	92		88		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	113		114		70-130
Toluene-d8	108		107		70-130
4-Bromofluorobenzene	98		101		70-130
Dibromofluoromethane	100		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03,12 Batch: WG1950297-3 WG1950297-4								
Methylene chloride	88		88		70-130	0		20
1,1-Dichloroethane	90		92		70-130	2		20
Chloroform	90		90		70-130	0		20
Carbon tetrachloride	95		98		63-132	3		20
1,2-Dichloropropane	90		90		70-130	0		20
Dibromochloromethane	93		96		63-130	3		20
1,1,2-Trichloroethane	93		98		70-130	5		20
Tetrachloroethene	98		98		70-130	0		20
Chlorobenzene	90		92		75-130	2		20
Trichlorofluoromethane	120		120		62-150	0		20
1,2-Dichloroethane	83		84		70-130	1		20
1,1,1-Trichloroethane	93		96		67-130	3		20
Bromodichloromethane	88		88		67-130	0		20
trans-1,3-Dichloropropene	91		95		70-130	4		20
cis-1,3-Dichloropropene	89		88		70-130	1		20
Bromoform	84		83		54-136	1		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	89		90		70-130	1		20
Toluene	96		96		70-130	0		20
Ethylbenzene	90		91		70-130	1		20
Chloromethane	68		66		64-130	3		20
Bromomethane	39		41		39-139	5		20
Vinyl chloride	100		110		55-140	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03,12 Batch: WG1950297-3 WG1950297-4								
Chloroethane	130		130		55-138	0		20
1,1-Dichloroethene	93		94		61-145	1		20
trans-1,2-Dichloroethene	91		91		70-130	0		20
Trichloroethene	82		82		70-130	0		20
1,2-Dichlorobenzene	95		94		70-130	1		20
1,3-Dichlorobenzene	96		94		70-130	2		20
1,4-Dichlorobenzene	96		94		70-130	2		20
Methyl tert butyl ether	82		84		63-130	2		20
p/m-Xylene	85		85		70-130	0		20
o-Xylene	80		85		70-130	6		20
cis-1,2-Dichloroethene	91		93		70-130	2		20
Styrene	80		80		70-130	0		20
Dichlorodifluoromethane	78		76		36-147	3		20
Acetone	75		79		58-148	5		20
Carbon disulfide	90		92		51-130	2		20
2-Butanone	80		84		63-138	5		20
4-Methyl-2-pentanone	88		88		59-130	0		20
2-Hexanone	82		86		57-130	5		20
Bromochloromethane	88		88		70-130	0		20
1,2-Dibromoethane	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	100		97		41-144	3		20
Isopropylbenzene	100		100		70-130	0		20
1,2,3-Trichlorobenzene	87		89		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03,12 Batch: WG1950297-3 WG1950297-4								
1,2,4-Trichlorobenzene	92		92		70-130	0		20
Methyl Acetate	78		83		70-130	6		20
Cyclohexane	97		92		70-130	5		20
1,4-Dioxane	100		98		56-162	2		20
Freon-113	94		97		70-130	3		20
Methyl cyclohexane	84		90		70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	88		95		70-130
Toluene-d8	107		110		70-130
4-Bromofluorobenzene	106		105		70-130
Dibromofluoromethane	96		98		70-130

METALS

Project Name: WATERVLIET ARSENAL
Lab Number: L2440259
Project Number: 30231255
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-05
Client ID: 92EM-SP-8 (20240717)
Sample Location: WATERVLIET,NY
Date Collected: 07/17/24 12:48
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.445		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 20:14	EPA 3005A	1,6010D	MAM

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-06
Client ID: 86EM-SP-6 (20240717)
Sample Location: WATERVLIET,NY
Date Collected: 07/17/24 11:34
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.0219		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 20:20	EPA 3005A	1,6010D	MAM

Project Name: WATERVLIET ARSENAL
Lab Number: L2440259
Project Number: 30231255
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-07
Client ID: 83DM-SP-3 (20240717)
Sample Location: WATERVLIET,NY
Date Collected: 07/17/24 09:58
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 20:26	EPA 3005A	1,6010D	MAM

Project Name: WATERVLIET ARSENAL
Lab Number: L2440259
Project Number: 30231255
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-08
Client ID: DUP-2 (20240717)
Sample Location: WATERVLIET,NY
Date Collected: 07/17/24 00:00
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/l	0.0050	0.0019	1	07/18/24 17:42	07/19/24 20:33	EPA 3005A	1,6010D	MAM
Barium, Total	0.156		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 20:33	EPA 3005A	1,6010D	MAM
Cadmium, Total	ND		mg/l	0.0050	0.0010	1	07/18/24 17:42	07/19/24 20:33	EPA 3005A	1,6010D	MAM
Chromium, Total	0.0952		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 20:33	EPA 3005A	1,6010D	MAM
Lead, Total	ND		mg/l	0.0100	0.0027	1	07/18/24 17:42	07/19/24 20:33	EPA 3005A	1,6010D	MAM
Mercury, Total	0.00010	J	mg/l	0.00020	0.00009	1	07/18/24 18:53	07/23/24 19:57	EPA 7470A	1,7470A	MJR
Selenium, Total	ND		mg/l	0.0100	0.0035	1	07/18/24 17:42	07/19/24 20:33	EPA 3005A	1,6010D	MAM
Silver, Total	ND		mg/l	0.0070	0.0028	1	07/18/24 17:42	07/19/24 20:33	EPA 3005A	1,6010D	MAM

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-09
Client ID: 94EM-MW-19 (20240717)
Sample Location: WATERVLIET,NY
Date Collected: 07/17/24 14:35
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/l	0.0050	0.0019	1	07/18/24 17:42	07/19/24 20:39	EPA 3005A	1,6010D	MAM
Barium, Total	0.154		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 20:39	EPA 3005A	1,6010D	MAM
Cadmium, Total	ND		mg/l	0.0050	0.0010	1	07/18/24 17:42	07/19/24 20:39	EPA 3005A	1,6010D	MAM
Chromium, Total	0.106		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 20:39	EPA 3005A	1,6010D	MAM
Lead, Total	ND		mg/l	0.0100	0.0027	1	07/18/24 17:42	07/19/24 20:39	EPA 3005A	1,6010D	MAM
Mercury, Total	0.00010	J	mg/l	0.00020	0.00009	1	07/18/24 18:53	07/23/24 20:01	EPA 7470A	1,7470A	MJR
Selenium, Total	ND		mg/l	0.0100	0.0035	1	07/18/24 17:42	07/19/24 20:39	EPA 3005A	1,6010D	MAM
Silver, Total	ND		mg/l	0.0070	0.0028	1	07/18/24 17:42	07/19/24 20:39	EPA 3005A	1,6010D	MAM

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 05-09 Batch: WG1948599-1										
Arsenic, Total	ND		mg/l	0.0050	0.0019	1	07/18/24 17:42	07/19/24 17:21	1,6010D	MAM
Barium, Total	ND		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 17:21	1,6010D	MAM
Cadmium, Total	ND		mg/l	0.0050	0.0010	1	07/18/24 17:42	07/19/24 17:21	1,6010D	MAM
Chromium, Total	ND		mg/l	0.0100	0.0021	1	07/18/24 17:42	07/19/24 17:21	1,6010D	MAM
Lead, Total	ND		mg/l	0.0100	0.0027	1	07/18/24 17:42	07/19/24 17:21	1,6010D	MAM
Selenium, Total	ND		mg/l	0.0100	0.0035	1	07/18/24 17:42	07/19/24 17:21	1,6010D	MAM
Silver, Total	ND		mg/l	0.0070	0.0028	1	07/18/24 17:42	07/19/24 17:21	1,6010D	MAM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08-09 Batch: WG1948651-1										
Mercury, Total	0.00010	J	mg/l	0.00020	0.00009	1	07/18/24 18:53	07/23/24 18:51	1,7470A	MJR

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 05-09 Batch: WG1948599-2								
Arsenic, Total	102		-		80-120	-		
Barium, Total	98		-		80-120	-		
Cadmium, Total	104		-		80-120	-		
Chromium, Total	105		-		80-120	-		
Lead, Total	104		-		80-120	-		
Selenium, Total	101		-		80-120	-		
Silver, Total	104		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 08-09 Batch: WG1948651-2								
Mercury, Total	113		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440259
Report Date: 07/24/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 05-09 QC Batch ID: WG1948599-3 QC Sample: L2440229-01 Client ID: MS Sample												
Arsenic, Total	0.002J	0.12	0.136	113		-	-		75-125	-		20
Barium, Total	0.076	2	2.15	104		-	-		75-125	-		20
Cadmium, Total	ND	0.053	0.0539	102		-	-		75-125	-		20
Chromium, Total	ND	0.2	0.206	103		-	-		75-125	-		20
Lead, Total	ND	0.53	0.555	105		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.130	108		-	-		75-125	-		20
Silver, Total	ND	0.05	0.0531	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1948651-3 QC Sample: L2440062-12 Client ID: MS Sample												
Mercury, Total	0.00011J	0.005	0.00515	103		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-09 QC Batch ID: WG1948651-4 QC Sample: L2440062-12 Client ID: DUP Sample						
Mercury, Total	0.00011J	0.00012J	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440259
Report Date: 07/24/24

SAMPLE RESULTS

Lab ID: L2440259-13
Client ID: 93EM-SP-11 (20240717)
Sample Location: WATERVLIET,NY

Date Collected: 07/17/24 15:47
Date Received: 07/17/24
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	07/18/24 12:30	07/18/24 13:02	121,3500CR-B	JBB

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 13 Batch: WG1948529-1										
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	07/18/24 12:30	07/18/24 12:59	121,3500CR-B	JBB

Lab Control Sample Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 13 Batch: WG1948529-2								
Chromium, Hexavalent	94		-		85-115	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440259
Report Date: 07/24/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 13 (20240717) QC Batch ID: WG1948529-4 QC Sample: L2440259-13 Client ID: 93EM-SP-11												
Chromium, Hexavalent	ND	0.1	0.099	99		-	-		85-115	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: WATERVLIET ARSENAL

Project Number: 30231255

Lab Number: L2440259

Report Date: 07/24/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 13 QC Batch ID: WG1948529-3 QC Sample: L2440259-13 Client ID: 93EM-SP-11 (20240717)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440259
Report Date: 07/24/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2440259-01A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-01B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-01C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-02A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-02B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-02C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-03A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-03B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-03C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-04A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-04B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-04C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-05A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-05B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-05C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-05D	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		CR-TI(180)
L2440259-06A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-06B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-06C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-06D	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		CR-TI(180)
L2440259-07A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-07B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-07C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: WATERVLIET ARSENAL
Project Number: 30231255

Lab Number: L2440259
Report Date: 07/24/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2440259-07D	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		CR-TI(180)
L2440259-08A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-08B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-08C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-08D	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),SE-TI(180),PB-TI(180),HG-T(28),CD-TI(180)
L2440259-09A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-09B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-09C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-09D	Plastic 250ml HNO3 preserved	A	<2	<2	2.6	Y	Absent		BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L2440259-10A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-10B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-10C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-11A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-11B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-11C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-12A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-12B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-12C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-13A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-13B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-13C	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-13D	Plastic 250ml unpreserved	A	7	7	2.6	Y	Absent		HEXCR-3500(1)
L2440259-14A	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)
L2440259-14B	Vial HCl preserved	A	NA		2.6	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440259
Project Number:	30231255	**Report Date:**	07/24/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440259
Project Number:	30231255	**Report Date:**	07/24/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	WATERVLIET ARSENAL	**Lab Number:**	L2440259
Project Number:	30231255	**Report Date:**	07/24/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: WATERVLIET ARSENAL
Project Number: 30231255
Lab Number: L2440259
Report Date: 07/24/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L2440259 24JUL24
MALCOLM – NY

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab 07/18/24

Client Information
Client: Arcadis
Address: 201 Fuller Rd, Suite 201
Albany, NY 12233
Phone: (518) 709-8457
Fax:
Email: danielle.giroux@arcadis.com

Project Information
Project Name: Watervliet Arsenal
Project Location: Watervliet, NY
Project # 30231255
(Use Project name as Project #) ☐
Project Manager: Stefan Begnato / Danielle Giroux
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs	Chromium	RCRA Metals						Sample Specific Comments	Total Bottle
40259-01	WVA-MW-551R-3(20240717)	7/17/24	0955	W	MC	x									3
-02	WVA-MW-541R-1(20240717)	7/17/24	1105	W	MC	x									3
-03	WVA-MW-541R-2(20240717)	7/17/24	1150	W	MC	x									3
-04	DUP-1(20240717)	7/17/24	–	W	MC	x									3
-05	92EM-SP-8(20240717)	7/17/24	1218	W	AG	x	x								H
-06	86EM-SP-6(20240717)	7/17/24	1134	W	AG	x	x								H
-07	83DM-SP-3(20240717)	7/17/24	0958	W	AG	x	x								H
-08	DUP-2(20240717)	7/17/24	–	W	AG	x		x							H
-09	94EM-MW-14(20240717)	7/17/24	1435	W	AG	x		x							H
-10	WVA-MW-553-1(20240717)	7/17/24	1455	W	MC	x									3

Container Type: A P P
Preservative: B C C

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
A Calderaio	7/17/24 1640	PACE	7/17/24 1620
	7/17/24 1645		7/17 2200
	7/18 720		7/18 1:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 07/18/24

ALPHA Job #: L2440259

Client Information

Client: Arcadis
Address: 201 Fuller Rd, Suite 201
Albany, NY 12233
Phone: (518) 709-5457
Fax:
Email: danielle.giroux@arcadis.com

Project Information

Project Name: Watervliet Arsenal
Project Location: Watervliet, NY
Project # 30231255
(Use Project name as Project #) ☐
Project Manager: Steban Bagnato/ Danielle Giroux
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☐ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs	HEXLP-3500	Sample Specific Comments	Total Bottle
L2440259-11	WVA-MW-84R-3(20240717)	7/17/24	1300	W	AC	x			3
-12	WVA-MW-83-2(20240717)	7/17/24	1545	W	AC	x			3
-13	93EM-SP-11(20240717)	7/17/24	1547	W	AC	x	x		4
-14	Trip Blank (20240717)	7/17/24	-	W	-	x			2

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	P						
Preservative	B	A						

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	7/17/24 1620	PACE	7/17/24 1646
PACE	7/17/24 1641	[illegible]	7/17 2200
[illegible]	7/18 120	[illegible]	7/18 1:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

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Analytical Report

2/3/2025
Mr. Stefan Bagnato
ARCADIS, U.S., Inc.
855 Route 146
Suite 210
Clifton Park NY 12065

Project Name: WVA
Project #: 30231255.01
Workorder #: 2501479A

Dear Mr. Stefan Bagnato

The following report includes the data for the above referenced project for sample(s) received on 1/21/2025 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jade White at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Jade White

Project Manager

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WORK ORDER #: 2501479A

Work Order Summary

CLIENT:	Mr. Stefan Bagnato ARCADIS, U.S., Inc. 855 Route 146 Suite 210 Clifton Park, NY 12065	**BILL TO:**	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch, CO 80129
PHONE:	518-250-7300	**P.O. #**	30231255.01
FAX:	518-250-7301	**PROJECT #**	30231255.01 WVA
DATE RECEIVED:	01/21/2025	**CONTACT:**	Jade White
DATE COMPLETED:	02/03/2025		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA-B15-1	Modified TO-15	4.5 "Hg	2 psi
01B	IA-B15-1	Modified TO-15	4.5 "Hg	2 psi
02A	IA-B15-2	Modified TO-15	3.0 "Hg	2 psi
02B	IA-B15-2	Modified TO-15	3.0 "Hg	2 psi
03A	IA-B20-1	Modified TO-15	4.5 "Hg	2 psi
03B	IA-B20-1	Modified TO-15	4.5 "Hg	2 psi
04A	IA-B21-1	Modified TO-15	4.5 "Hg	2 psi
04B	IA-B21-1	Modified TO-15	4.5 "Hg	2 psi
05A	IA-B21-2	Modified TO-15	6.0 "Hg	2 psi
05B	IA-B21-2	Modified TO-15	6.0 "Hg	2 psi
06A	AA-B21-1	Modified TO-15	0.8 "Hg	1.9 psi
06B	AA-B21-1	Modified TO-15	0.8 "Hg	1.9 psi
07A	IA-B22-1	Modified TO-15	5.9 "Hg	1.9 psi
07B	IA-B22-1	Modified TO-15	5.9 "Hg	1.9 psi
08A	IA-B22-2	Modified TO-15	5.1 "Hg	1.9 psi
08B	IA-B22-2	Modified TO-15	5.1 "Hg	1.9 psi
09A	IA-B25-1	Modified TO-15	9.8 "Hg	1.9 psi
09B	IA-B25-1	Modified TO-15	9.8 "Hg	1.9 psi
10A	IA-B25-2	Modified TO-15	3.7 "Hg	1.9 psi
10B	IA-B25-2	Modified TO-15	3.7 "Hg	1.9 psi
11A	IA-B25-3	Modified TO-15	6.5 "Hg	1.9 psi
11B	IA-B25-3	Modified TO-15	6.5 "Hg	1.9 psi
12A	IA-B25-4	Modified TO-15	5.5 "Hg	1.8 psi

Continued on next page

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WORK ORDER #: 2501479A

Work Order Summary

CLIENT:	Mr. Stefan Bagnato ARCADIS, U.S., Inc. 855 Route 146 Suite 210 Clifton Park, NY 12065	**BILL TO:**	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch, CO 80129
PHONE:	518-250-7300	**P.O. #**	30231255.01
FAX:	518-250-7301	**PROJECT #**	30231255.01 WVA
DATE RECEIVED:	01/21/2025	**CONTACT:**	Jade White
DATE COMPLETED:	02/03/2025		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
12B	IA-B25-4	Modified TO-15	5.5 "Hg	1.8 psi
13A	Lab Blank	Modified TO-15	NA	NA
13B	Lab Blank	Modified TO-15	NA	NA
14A	CCV	Modified TO-15	NA	NA
14B	CCV	Modified TO-15	NA	NA
15A	LCS	Modified TO-15	NA	NA
15AA	LCSD	Modified TO-15	NA	NA
15B	LCS	Modified TO-15	NA	NA
15BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 02/03/25

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2836569, NH NELAP–209224-A, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-13180, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-21
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
ARCADIS, U.S., Inc.
Workorder# 2501479A

Eleven 6 Liter Summa Canister (Ambient) and one 6 Liter Summa Canister (100% SIM Ambient) samples were received on January 21, 2025. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The samples arrived at the laboratory without a Chain of Custody (COC). The client subsequently provided the COC by e-mail on 1/20/2025.

The canisters used for the collection of samples IA-B15-1, IA-B15-2, IA-B20-1, IA-B21-1, IA-B21-2, AA-B21-1, IA-B22-1, IA-B22-2, IA-B25-1, IA-B25-3 and IA-B25-4 were not certified at the requested reporting limit levels. Per client's request analysis proceeded.

Analytical Notes

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified may be false positives.

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B15-1		
Lab ID:	2501479A-01A	**Date/Time Analyzed:**	1/24/25 03:20 PM
Date/Time Collected:	1/16/25 10:08 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012409

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.080	0.46	0.66	0.89
1,3,5-Trimethylbenzene	108-67-8	0.088	0.46	0.66	0.27 J
2,2,4-Trimethylpentane	540-84-1	0.38	2.2	3.1	0.68 J
Chlorobenzene	108-90-7	0.073	0.43	0.62	Not Detected
Cyclohexane	110-82-7	0.062	1.6	2.3	0.31 J
Heptane	142-82-5	0.36	1.9	2.7	0.52 J
Hexane	110-54-3	0.24	1.6	2.4	0.67 J
Methylene Chloride	75-09-2	0.18	0.32	0.93	0.54 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	101

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B15-1		
Lab ID:	2501479A-01B	**Date/Time Analyzed:**	1/24/25 03:20 PM
Date/Time Collected:	1/16/25 10:08 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012409sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.11	0.15	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.035	0.14	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.030	0.11	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.018	0.081	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.048	0.053	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.081	0.11	0.072 J
Benzene	71-43-2	0.015	0.064	0.21	0.69
Carbon Tetrachloride	56-23-5	0.018	0.13	0.17	0.44
Chloroethane	75-00-3	0.022	0.053	0.18	Not Detected
Chloromethane	74-87-3	0.70	0.83	1.4	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.020	0.080	0.11	Not Detected
Ethyl Benzene	100-41-4	0.014	0.087	0.12	0.29
m,p-Xylene	108-38-3	0.0089	0.087	0.23	0.78
Naphthalene	91-20-3	0.072	0.21	0.35	Not Detected
o-Xylene	95-47-6	0.018	0.087	0.12	0.34
Tetrachloroethene	127-18-4	0.016	0.14	0.18	0.19
Toluene	108-88-3	0.014	0.076	0.25	1.9
trans-1,2-Dichloroethene	156-60-5	0.015	0.080	0.53	0.098 J
Trichloroethene	79-01-6	0.030	0.11	0.14	0.031 J
Vinyl Chloride	75-01-4	0.014	0.031	0.034	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B15-1		
Lab ID:	2501479A-01B	**Date/Time Analyzed:**	1/24/25 03:20 PM
Date/Time Collected:	1/16/25 10:08 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012409sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	108

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B15-2		
Lab ID:	2501479A-02A	**Date/Time Analyzed:**	1/24/25 03:52 PM
Date/Time Collected:	1/16/25 10:56 AM	**Dilution Factor:**	1.26
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012410

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.075	0.43	0.62	0.72
1,3,5-Trimethylbenzene	108-67-8	0.083	0.43	0.62	0.20 J
2,2,4-Trimethylpentane	540-84-1	0.36	2.1	2.9	0.57 J
Chlorobenzene	108-90-7	0.069	0.41	0.58	Not Detected
Cyclohexane	110-82-7	0.058	1.5	2.2	0.17 J
Heptane	142-82-5	0.34	1.8	2.6	Not Detected
Hexane	110-54-3	0.22	1.6	2.2	0.56 J
Methylene Chloride	75-09-2	0.17	0.31	0.88	0.60 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B15-2		
Lab ID:	2501479A-02B	**Date/Time Analyzed:**	1/24/25 03:52 PM
Date/Time Collected:	1/16/25 10:56 AM	**Dilution Factor:**	1.26
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012410sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.10	0.14	0.018 J
1,1,2,2-Tetrachloroethane	79-34-5	0.033	0.13	0.17	Not Detected
1,1,2-Trichloroethane	79-00-5	0.028	0.10	0.14	Not Detected
1,1-Dichloroethane	75-34-3	0.016	0.076	0.10	Not Detected
1,1-Dichloroethene	75-35-4	0.015	0.045	0.050	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.076	0.10	0.079 J
Benzene	71-43-2	0.014	0.060	0.20	0.61
Carbon Tetrachloride	56-23-5	0.017	0.12	0.16	0.46
Chloroethane	75-00-3	0.021	0.050	0.17	Not Detected
Chloromethane	74-87-3	0.66	0.78	1.3	1.2 J
cis-1,2-Dichloroethene	156-59-2	0.019	0.075	0.10	Not Detected
Ethyl Benzene	100-41-4	0.014	0.082	0.11	0.29
m,p-Xylene	108-38-3	0.0084	0.082	0.22	0.86
Naphthalene	91-20-3	0.068	0.20	0.33	Not Detected
o-Xylene	95-47-6	0.017	0.082	0.11	0.33
Tetrachloroethene	127-18-4	0.015	0.13	0.17	0.20
Toluene	108-88-3	0.013	0.071	0.24	2.3
trans-1,2-Dichloroethene	156-60-5	0.014	0.075	0.50	0.092 J
Trichloroethene	79-01-6	0.028	0.10	0.14	0.029 J
Vinyl Chloride	75-01-4	0.013	0.029	0.032	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B15-2		
Lab ID:	2501479A-02B	**Date/Time Analyzed:**	1/24/25 03:52 PM
Date/Time Collected:	1/16/25 10:56 AM	**Dilution Factor:**	1.26
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012410sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B20-1		
Lab ID:	2501479A-03A	**Date/Time Analyzed:**	1/24/25 04:24 PM
Date/Time Collected:	1/16/25 09:44 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012411

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.080	0.46	0.66	0.24 J
1,3,5-Trimethylbenzene	108-67-8	0.088	0.46	0.66	0.095 J
2,2,4-Trimethylpentane	540-84-1	0.38	2.2	3.1	Not Detected
Chlorobenzene	108-90-7	0.073	0.43	0.62	Not Detected
Cyclohexane	110-82-7	0.062	1.6	2.3	0.095 J
Heptane	142-82-5	0.36	1.9	2.7	Not Detected
Hexane	110-54-3	0.24	1.6	2.4	0.28 J
Methylene Chloride	75-09-2	0.18	0.32	0.93	0.52 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B20-1		
Lab ID:	2501479A-03B	**Date/Time Analyzed:**	1/24/25 04:24 PM
Date/Time Collected:	1/16/25 09:44 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012411sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.11	0.15	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.035	0.14	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.030	0.11	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.018	0.081	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.048	0.053	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.081	0.11	0.079 J
Benzene	71-43-2	0.015	0.064	0.21	0.60
Carbon Tetrachloride	56-23-5	0.018	0.13	0.17	0.47
Chloroethane	75-00-3	0.022	0.053	0.18	Not Detected
Chloromethane	74-87-3	0.70	0.83	1.4	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.020	0.080	0.11	Not Detected
Ethyl Benzene	100-41-4	0.014	0.087	0.12	0.21
m,p-Xylene	108-38-3	0.0089	0.087	0.23	0.58
Naphthalene	91-20-3	0.072	0.21	0.35	Not Detected
o-Xylene	95-47-6	0.018	0.087	0.12	0.20
Tetrachloroethene	127-18-4	0.016	0.14	0.18	0.36
Toluene	108-88-3	0.014	0.076	0.25	1.0
trans-1,2-Dichloroethene	156-60-5	0.015	0.080	0.53	0.069 J
Trichloroethene	79-01-6	0.030	0.11	0.14	Not Detected
Vinyl Chloride	75-01-4	0.014	0.031	0.034	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B20-1		
Lab ID:	2501479A-03B	**Date/Time Analyzed:**	1/24/25 04:24 PM
Date/Time Collected:	1/16/25 09:44 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012411sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B21-1		
Lab ID:	2501479A-04A	**Date/Time Analyzed:**	1/24/25 04:57 PM
Date/Time Collected:	1/16/25 10:14 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012412

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.080	0.46	0.66	0.25 J
1,3,5-Trimethylbenzene	108-67-8	0.088	0.46	0.66	0.093 J
2,2,4-Trimethylpentane	540-84-1	0.38	2.2	3.1	0.47 J
Chlorobenzene	108-90-7	0.073	0.43	0.62	Not Detected
Cyclohexane	110-82-7	0.062	1.6	2.3	0.13 J
Heptane	142-82-5	0.36	1.9	2.7	Not Detected
Hexane	110-54-3	0.24	1.6	2.4	0.48 J
Methylene Chloride	75-09-2	0.18	0.32	0.93	0.52 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B21-1		
Lab ID:	2501479A-04B	**Date/Time Analyzed:**	1/24/25 04:57 PM
Date/Time Collected:	1/16/25 10:14 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012412sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.11	0.15	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.035	0.14	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.030	0.11	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.018	0.081	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.048	0.053	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.081	0.11	0.15
Benzene	71-43-2	0.015	0.064	0.21	0.77
Carbon Tetrachloride	56-23-5	0.018	0.13	0.17	0.47
Chloroethane	75-00-3	0.022	0.053	0.18	Not Detected
Chloromethane	74-87-3	0.70	0.83	1.4	1.2 J
cis-1,2-Dichloroethene	156-59-2	0.020	0.080	0.11	0.028 J
Ethyl Benzene	100-41-4	0.014	0.087	0.12	0.24
m,p-Xylene	108-38-3	0.0089	0.087	0.23	0.61
Naphthalene	91-20-3	0.072	0.21	0.35	Not Detected
o-Xylene	95-47-6	0.018	0.087	0.12	0.25
Tetrachloroethene	127-18-4	0.016	0.14	0.18	0.28
Toluene	108-88-3	0.014	0.076	0.25	1.4
trans-1,2-Dichloroethene	156-60-5	0.015	0.080	0.53	0.16 J
Trichloroethene	79-01-6	0.030	0.11	0.14	0.060 J
Vinyl Chloride	75-01-4	0.014	0.031	0.034	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B21-1		
Lab ID:	2501479A-04B	**Date/Time Analyzed:**	1/24/25 04:57 PM
Date/Time Collected:	1/16/25 10:14 AM	**Dilution Factor:**	1.34
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012412sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B21-2		
Lab ID:	2501479A-05A	**Date/Time Analyzed:**	1/24/25 05:29 PM
Date/Time Collected:	1/16/25 01:02 PM	**Dilution Factor:**	1.42
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012413

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.085	0.49	0.70	0.31 J
1,3,5-Trimethylbenzene	108-67-8	0.094	0.49	0.70	0.11 J
2,2,4-Trimethylpentane	540-84-1	0.41	2.3	3.3	Not Detected
Chlorobenzene	108-90-7	0.078	0.46	0.65	Not Detected
Cyclohexane	110-82-7	0.065	1.7	2.4	0.086 J
Heptane	142-82-5	0.38	2.0	2.9	Not Detected
Hexane	110-54-3	0.25	1.8	2.5	Not Detected
Methylene Chloride	75-09-2	0.19	0.34	0.99	0.49 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B21-2		
Lab ID:	2501479A-05B	**Date/Time Analyzed:**	1/24/25 05:29 PM
Date/Time Collected:	1/16/25 01:02 PM	**Dilution Factor:**	1.42
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012413sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.018	0.12	0.15	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.037	0.15	0.19	Not Detected
1,1,2-Trichloroethane	79-00-5	0.031	0.12	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.019	0.086	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.017	0.051	0.056	Not Detected
1,2-Dichloroethane	107-06-2	0.014	0.086	0.11	0.076 J
Benzene	71-43-2	0.016	0.068	0.23	0.50
Carbon Tetrachloride	56-23-5	0.019	0.13	0.18	0.46
Chloroethane	75-00-3	0.024	0.056	0.19	Not Detected
Chloromethane	74-87-3	0.74	0.88	1.5	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.021	0.084	0.11	0.033 J
Ethyl Benzene	100-41-4	0.015	0.092	0.12	0.17
m,p-Xylene	108-38-3	0.0094	0.092	0.25	0.43
Naphthalene	91-20-3	0.077	0.22	0.37	Not Detected
o-Xylene	95-47-6	0.020	0.092	0.12	0.16
Tetrachloroethene	127-18-4	0.017	0.14	0.19	0.32
Toluene	108-88-3	0.014	0.080	0.27	0.62
trans-1,2-Dichloroethene	156-60-5	0.016	0.084	0.56	0.10 J
Trichloroethene	79-01-6	0.032	0.11	0.15	0.13 J
Vinyl Chloride	75-01-4	0.015	0.033	0.036	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B21-2		
Lab ID:	2501479A-05B	**Date/Time Analyzed:**	1/24/25 05:29 PM
Date/Time Collected:	1/16/25 01:02 PM	**Dilution Factor:**	1.42
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012413sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	AA-B21-1		
Lab ID:	2501479A-06A	**Date/Time Analyzed:**	1/24/25 06:01 PM
Date/Time Collected:	1/16/25 08:00 AM	**Dilution Factor:**	1.16
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012414

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.069	0.40	0.57	0.36 J
1,3,5-Trimethylbenzene	108-67-8	0.076	0.40	0.57	0.12 J
2,2,4-Trimethylpentane	540-84-1	0.33	1.9	2.7	0.86 J
Chlorobenzene	108-90-7	0.063	0.37	0.53	Not Detected
Cyclohexane	110-82-7	0.053	1.4	2.0	0.26 J
Heptane	142-82-5	0.31	1.7	2.4	0.63 J
Hexane	110-54-3	0.20	1.4	2.0	0.94 J
Methylene Chloride	75-09-2	0.16	0.28	0.80	0.71 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	101

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	AA-B21-1		
Lab ID:	2501479A-06B	**Date/Time Analyzed:**	1/24/25 06:01 PM
Date/Time Collected:	1/16/25 08:00 AM	**Dilution Factor:**	1.16
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012414sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.014	0.095	0.13	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.030	0.12	0.16	Not Detected
1,1,2-Trichloroethane	79-00-5	0.026	0.095	0.13	Not Detected
1,1-Dichloroethane	75-34-3	0.015	0.070	0.094	Not Detected
1,1-Dichloroethene	75-35-4	0.014	0.041	0.046	Not Detected
1,2-Dichloroethane	107-06-2	0.012	0.070	0.094	0.077 J
Benzene	71-43-2	0.013	0.056	0.18	0.80
Carbon Tetrachloride	56-23-5	0.016	0.11	0.14	0.47
Chloroethane	75-00-3	0.019	0.046	0.15	Not Detected
Chloromethane	74-87-3	0.61	0.72	1.2	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.017	0.069	0.092	Not Detected
Ethyl Benzene	100-41-4	0.012	0.076	0.10	0.49
m,p-Xylene	108-38-3	0.0077	0.076	0.20	1.4
Naphthalene	91-20-3	0.063	0.18	0.30	Not Detected
o-Xylene	95-47-6	0.016	0.076	0.10	0.53
Tetrachloroethene	127-18-4	0.014	0.12	0.16	0.22
Toluene	108-88-3	0.012	0.066	0.22	2.6
trans-1,2-Dichloroethene	156-60-5	0.013	0.069	0.46	0.20 J
Trichloroethene	79-01-6	0.026	0.094	0.12	Not Detected
Vinyl Chloride	75-01-4	0.012	0.027	0.030	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	AA-B21-1		
Lab ID:	2501479A-06B	**Date/Time Analyzed:**	1/24/25 06:01 PM
Date/Time Collected:	1/16/25 08:00 AM	**Dilution Factor:**	1.16
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012414sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B22-1		
Lab ID:	2501479A-07A	**Date/Time Analyzed:**	1/24/25 06:34 PM
Date/Time Collected:	1/16/25 09:58 AM	**Dilution Factor:**	1.40
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012415

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.084	0.48	0.69	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.092	0.48	0.69	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.40	2.3	3.3	Not Detected
Chlorobenzene	108-90-7	0.076	0.45	0.64	Not Detected
Cyclohexane	110-82-7	0.064	1.7	2.4	0.15 J
Heptane	142-82-5	0.38	2.0	2.9	Not Detected
Hexane	110-54-3	0.25	1.7	2.5	Not Detected
Methylene Chloride	75-09-2	0.19	0.34	0.97	0.56 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B22-1		
Lab ID:	2501479A-07B	**Date/Time Analyzed:**	1/24/25 06:34 PM
Date/Time Collected:	1/16/25 09:58 AM	**Dilution Factor:**	1.40
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012415sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.017	0.11	0.15	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.036	0.14	0.19	Not Detected
1,1,2-Trichloroethane	79-00-5	0.031	0.11	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.018	0.085	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.017	0.050	0.056	Not Detected
1,2-Dichloroethane	107-06-2	0.014	0.085	0.11	0.085 J
Benzene	71-43-2	0.016	0.067	0.22	0.52
Carbon Tetrachloride	56-23-5	0.019	0.13	0.18	0.47
Chloroethane	75-00-3	0.023	0.055	0.18	Not Detected
Chloromethane	74-87-3	0.74	0.87	1.4	1.6
cis-1,2-Dichloroethene	156-59-2	0.021	0.083	0.11	0.027 J
Ethyl Benzene	100-41-4	0.015	0.091	0.12	0.13
m,p-Xylene	108-38-3	0.0093	0.091	0.24	0.27
Naphthalene	91-20-3	0.076	0.22	0.37	Not Detected
o-Xylene	95-47-6	0.019	0.091	0.12	0.11 J
Tetrachloroethene	127-18-4	0.016	0.14	0.19	0.56
Toluene	108-88-3	0.014	0.079	0.26	0.64
trans-1,2-Dichloroethene	156-60-5	0.016	0.083	0.56	0.15 J
Trichloroethene	79-01-6	0.032	0.11	0.15	0.17
Vinyl Chloride	75-01-4	0.015	0.032	0.036	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B22-1		
Lab ID:	2501479A-07B	**Date/Time Analyzed:**	1/24/25 06:34 PM
Date/Time Collected:	1/16/25 09:58 AM	**Dilution Factor:**	1.40
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012415sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B22-2		
Lab ID:	2501479A-08A	**Date/Time Analyzed:**	1/24/25 07:06 PM
Date/Time Collected:	1/16/25 09:59 AM	**Dilution Factor:**	1.36
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012416

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.081	0.47	0.67	0.12 J
1,3,5-Trimethylbenzene	108-67-8	0.090	0.47	0.67	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.39	2.2	3.2	Not Detected
Chlorobenzene	108-90-7	0.074	0.44	0.63	Not Detected
Cyclohexane	110-82-7	0.062	1.6	2.3	Not Detected
Heptane	142-82-5	0.37	2.0	2.8	Not Detected
Hexane	110-54-3	0.24	1.7	2.4	Not Detected
Methylene Chloride	75-09-2	0.18	0.33	0.94	0.46 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B22-2		
Lab ID:	2501479A-08B	**Date/Time Analyzed:**	1/24/25 07:06 PM
Date/Time Collected:	1/16/25 09:59 AM	**Dilution Factor:**	1.36
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012416sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.017	0.11	0.15	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.035	0.14	0.19	Not Detected
1,1,2-Trichloroethane	79-00-5	0.030	0.11	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.018	0.082	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.048	0.054	Not Detected
1,2-Dichloroethane	107-06-2	0.014	0.082	0.11	0.085 J
Benzene	71-43-2	0.016	0.065	0.22	0.52
Carbon Tetrachloride	56-23-5	0.018	0.13	0.17	0.47
Chloroethane	75-00-3	0.023	0.054	0.18	Not Detected
Chloromethane	74-87-3	0.71	0.84	1.4	1.2 J
cis-1,2-Dichloroethene	156-59-2	0.020	0.081	0.11	0.044 J
Ethyl Benzene	100-41-4	0.015	0.088	0.12	0.12
m,p-Xylene	108-38-3	0.0090	0.088	0.24	0.25
Naphthalene	91-20-3	0.073	0.21	0.36	Not Detected
o-Xylene	95-47-6	0.019	0.088	0.12	0.099 J
Tetrachloroethene	127-18-4	0.016	0.14	0.18	0.86
Toluene	108-88-3	0.014	0.077	0.26	0.55
trans-1,2-Dichloroethene	156-60-5	0.015	0.081	0.54	0.17 J
Trichloroethene	79-01-6	0.031	0.11	0.15	0.21
Vinyl Chloride	75-01-4	0.014	0.031	0.035	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B22-2		
Lab ID:	2501479A-08B	**Date/Time Analyzed:**	1/24/25 07:06 PM
Date/Time Collected:	1/16/25 09:59 AM	**Dilution Factor:**	1.36
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012416sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-1		
Lab ID:	2501479A-09A	**Date/Time Analyzed:**	1/24/25 07:38 PM
Date/Time Collected:	1/16/25 09:19 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012417

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.10	0.58	0.82	0.42 J
1,3,5-Trimethylbenzene	108-67-8	0.11	0.58	0.82	0.18 J
2,2,4-Trimethylpentane	540-84-1	0.48	2.7	3.9	Not Detected
Chlorobenzene	108-90-7	0.092	0.54	0.77	Not Detected
Cyclohexane	110-82-7	0.077	2.0	2.9	0.13 J
Heptane	142-82-5	0.45	2.4	3.4	Not Detected
Hexane	110-54-3	0.30	2.1	3.0	0.34 J
Methylene Chloride	75-09-2	0.23	0.41	1.2	16

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	115
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	105

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-1		
Lab ID:	2501479A-09B	**Date/Time Analyzed:**	1/24/25 07:38 PM
Date/Time Collected:	1/16/25 09:19 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012417sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.021	0.14	0.18	0.025 J
1,1,2,2-Tetrachloroethane	79-34-5	0.044	0.17	0.23	Not Detected
1,1,2-Trichloroethane	79-00-5	0.037	0.14	0.18	Not Detected
1,1-Dichloroethane	75-34-3	0.022	0.10	0.14	Not Detected
1,1-Dichloroethene	75-35-4	0.020	0.060	0.067	Not Detected
1,2-Dichloroethane	107-06-2	0.017	0.10	0.14	0.23
Benzene	71-43-2	0.019	0.080	0.27	0.50
Carbon Tetrachloride	56-23-5	0.023	0.16	0.21	0.48
Chloroethane	75-00-3	0.028	0.066	0.22	Not Detected
Chloromethane	74-87-3	0.88	1.0	1.7	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.025	0.10	0.13	Not Detected
Ethyl Benzene	100-41-4	0.018	0.11	0.14	0.22
m,p-Xylene	108-38-3	0.011	0.11	0.29	0.46
Naphthalene	91-20-3	0.091	0.26	0.44	0.25 J
o-Xylene	95-47-6	0.023	0.11	0.14	0.20
Tetrachloroethene	127-18-4	0.020	0.17	0.23	0.34
Toluene	108-88-3	0.017	0.095	0.32	1.9
trans-1,2-Dichloroethene	156-60-5	0.019	0.10	0.67	0.026 J
Trichloroethene	79-01-6	0.038	0.14	0.18	0.75
Vinyl Chloride	75-01-4	0.018	0.039	0.043	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-1		
Lab ID:	2501479A-09B	**Date/Time Analyzed:**	1/24/25 07:38 PM
Date/Time Collected:	1/16/25 09:19 AM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012417sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	112

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-2		
Lab ID:	2501479A-10A	**Date/Time Analyzed:**	1/24/25 10:33 PM
Date/Time Collected:	1/16/25 09:26 AM	**Dilution Factor:**	1.29
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012418

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.077	0.44	0.63	0.29 J
1,3,5-Trimethylbenzene	108-67-8	0.085	0.44	0.63	0.093 J
2,2,4-Trimethylpentane	540-84-1	0.37	2.1	3.0	0.38 J
Chlorobenzene	108-90-7	0.070	0.42	0.59	Not Detected
Cyclohexane	110-82-7	0.059	1.6	2.2	0.13 J
Heptane	142-82-5	0.35	1.8	2.6	0.42 J
Hexane	110-54-3	0.23	1.6	2.3	0.86 J
Methylene Chloride	75-09-2	0.18	0.31	0.90	0.60 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	101

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-2		
Lab ID:	2501479A-10B	**Date/Time Analyzed:**	1/24/25 10:33 PM
Date/Time Collected:	1/16/25 09:26 AM	**Dilution Factor:**	1.29
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012418sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.10	0.14	0.042 J
1,1,2,2-Tetrachloroethane	79-34-5	0.034	0.13	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.028	0.10	0.14	Not Detected
1,1-Dichloroethane	75-34-3	0.017	0.078	0.10	Not Detected
1,1-Dichloroethene	75-35-4	0.015	0.046	0.051	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.078	0.10	0.26
Benzene	71-43-2	0.015	0.062	0.21	0.62
Carbon Tetrachloride	56-23-5	0.017	0.12	0.16	0.47
Chloroethane	75-00-3	0.022	0.051	0.17	Not Detected
Chloromethane	74-87-3	0.68	0.80	1.3	1.2 J
cis-1,2-Dichloroethene	156-59-2	0.019	0.077	0.10	Not Detected
Ethyl Benzene	100-41-4	0.014	0.084	0.11	0.37
m,p-Xylene	108-38-3	0.0086	0.084	0.22	0.71
Naphthalene	91-20-3	0.070	0.20	0.34	3.4
o-Xylene	95-47-6	0.018	0.084	0.11	0.31
Tetrachloroethene	127-18-4	0.015	0.13	0.18	0.33
Toluene	108-88-3	0.013	0.073	0.24	2.7
trans-1,2-Dichloroethene	156-60-5	0.015	0.077	0.51	0.026 J
Trichloroethene	79-01-6	0.029	0.10	0.14	0.83
Vinyl Chloride	75-01-4	0.014	0.030	0.033	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-2		
Lab ID:	2501479A-10B	**Date/Time Analyzed:**	1/24/25 10:33 PM
Date/Time Collected:	1/16/25 09:26 AM	**Dilution Factor:**	1.29
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012418sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	108

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-3		
Lab ID:	2501479A-11A	**Date/Time Analyzed:**	1/24/25 11:05 PM
Date/Time Collected:	1/16/25 09:22 AM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012419

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.086	0.50	0.71	0.25 J
1,3,5-Trimethylbenzene	108-67-8	0.095	0.50	0.71	0.13 J
2,2,4-Trimethylpentane	540-84-1	0.41	2.4	3.4	Not Detected
Chlorobenzene	108-90-7	0.079	0.46	0.66	Not Detected
Cyclohexane	110-82-7	0.066	1.7	2.5	Not Detected
Heptane	142-82-5	0.39	2.1	3.0	Not Detected
Hexane	110-54-3	0.25	1.8	2.5	1.2 J
Methylene Chloride	75-09-2	0.20	0.35	1.0	0.70 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-3		
Lab ID:	2501479A-11B	**Date/Time Analyzed:**	1/24/25 11:05 PM
Date/Time Collected:	1/16/25 09:22 AM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012419sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.018	0.12	0.16	0.032 J
1,1,2,2-Tetrachloroethane	79-34-5	0.037	0.15	0.20	Not Detected
1,1,2-Trichloroethane	79-00-5	0.032	0.12	0.16	Not Detected
1,1-Dichloroethane	75-34-3	0.019	0.087	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.017	0.051	0.057	Not Detected
1,2-Dichloroethane	107-06-2	0.014	0.087	0.12	0.13
Benzene	71-43-2	0.016	0.069	0.23	0.52
Carbon Tetrachloride	56-23-5	0.019	0.14	0.18	0.46
Chloroethane	75-00-3	0.024	0.057	0.19	Not Detected
Chloromethane	74-87-3	0.76	0.89	1.5	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.022	0.086	0.11	Not Detected
Ethyl Benzene	100-41-4	0.016	0.094	0.12	0.23
m,p-Xylene	108-38-3	0.0096	0.094	0.25	0.56
Naphthalene	91-20-3	0.078	0.23	0.38	0.30 J
o-Xylene	95-47-6	0.020	0.094	0.12	0.25
Tetrachloroethene	127-18-4	0.017	0.15	0.20	0.37
Toluene	108-88-3	0.015	0.081	0.27	4.0
trans-1,2-Dichloroethene	156-60-5	0.016	0.086	0.57	Not Detected
Trichloroethene	79-01-6	0.032	0.12	0.15	0.44
Vinyl Chloride	75-01-4	0.015	0.033	0.037	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-3		
Lab ID:	2501479A-11B	**Date/Time Analyzed:**	1/24/25 11:05 PM
Date/Time Collected:	1/16/25 09:22 AM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012419sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-4		
Lab ID:	2501479A-12A	**Date/Time Analyzed:**	1/24/25 11:38 PM
Date/Time Collected:	1/16/25 09:21 AM	**Dilution Factor:**	1.37
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012420

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.082	0.47	0.67	0.26 J
1,3,5-Trimethylbenzene	108-67-8	0.090	0.47	0.67	0.12 J
2,2,4-Trimethylpentane	540-84-1	0.39	2.2	3.2	Not Detected
Chlorobenzene	108-90-7	0.075	0.44	0.63	Not Detected
Cyclohexane	110-82-7	0.063	1.6	2.4	0.10 J
Heptane	142-82-5	0.37	2.0	2.8	Not Detected
Hexane	110-54-3	0.24	1.7	2.4	0.30 J
Methylene Chloride	75-09-2	0.19	0.33	0.95	0.82 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-4		
Lab ID:	2501479A-12B	**Date/Time Analyzed:**	1/24/25 11:38 PM
Date/Time Collected:	1/16/25 09:21 AM	**Dilution Factor:**	1.37
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012420sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.017	0.11	0.15	0.028 J
1,1,2,2-Tetrachloroethane	79-34-5	0.036	0.14	0.19	Not Detected
1,1,2-Trichloroethane	79-00-5	0.030	0.11	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.018	0.083	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.049	0.054	Not Detected
1,2-Dichloroethane	107-06-2	0.014	0.083	0.11	0.29
Benzene	71-43-2	0.016	0.066	0.22	0.47
Carbon Tetrachloride	56-23-5	0.018	0.13	0.17	0.46
Chloroethane	75-00-3	0.023	0.054	0.18	Not Detected
Chloromethane	74-87-3	0.72	0.85	1.4	1.2 J
cis-1,2-Dichloroethene	156-59-2	0.021	0.081	0.11	Not Detected
Ethyl Benzene	100-41-4	0.015	0.089	0.12	0.24
m,p-Xylene	108-38-3	0.0091	0.089	0.24	0.60
Naphthalene	91-20-3	0.074	0.22	0.36	0.13 J
o-Xylene	95-47-6	0.019	0.089	0.12	0.21
Tetrachloroethene	127-18-4	0.016	0.14	0.18	0.36
Toluene	108-88-3	0.014	0.077	0.26	1.5
trans-1,2-Dichloroethene	156-60-5	0.016	0.081	0.54	0.020 J
Trichloroethene	79-01-6	0.031	0.11	0.15	0.65
Vinyl Chloride	75-01-4	0.014	0.032	0.035	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-4		
Lab ID:	2501479A-12B	**Date/Time Analyzed:**	1/24/25 11:38 PM
Date/Time Collected:	1/16/25 09:21 AM	**Dilution Factor:**	1.37
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012420sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479A-13A	**Date/Time Analyzed:**	1/24/25 01:20 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012408a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.060	0.34	0.49	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.066	0.34	0.49	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.29	1.6	2.3	Not Detected
Chlorobenzene	108-90-7	0.054	0.32	0.46	Not Detected
Cyclohexane	110-82-7	0.046	1.2	1.7	Not Detected
Heptane	142-82-5	0.27	1.4	2.0	Not Detected
Hexane	110-54-3	0.18	1.2	1.8	Not Detected
Methylene Chloride	75-09-2	0.14	0.24	0.69	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479A-13B	**Date/Time Analyzed:**	1/24/25 01:20 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012408sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.012	0.082	0.11	0.014 J
1,1,2,2-Tetrachloroethane	79-34-5	0.026	0.10	0.14	Not Detected
1,1,2-Trichloroethane	79-00-5	0.022	0.082	0.11	Not Detected
1,1-Dichloroethane	75-34-3	0.013	0.061	0.081	Not Detected
1,1-Dichloroethene	75-35-4	0.012	0.036	0.040	0.013 J
1,2-Dichloroethane	107-06-2	0.010	0.061	0.081	0.017 J
Benzene	71-43-2	0.011	0.048	0.16	0.066 J
Carbon Tetrachloride	56-23-5	0.013	0.094	0.12	0.022 J
Chloroethane	75-00-3	0.017	0.040	0.13	Not Detected
Chloromethane	74-87-3	0.52	0.62	1.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.015	0.059	0.079	Not Detected
Ethyl Benzene	100-41-4	0.011	0.065	0.087	0.016 J
m,p-Xylene	108-38-3	0.0066	0.065	0.17	0.022 J
Naphthalene	91-20-3	0.054	0.16	0.26	Not Detected
o-Xylene	95-47-6	0.014	0.065	0.087	0.017 J
Tetrachloroethene	127-18-4	0.012	0.10	0.14	0.025 J
Toluene	108-88-3	0.010	0.056	0.19	0.035 J
trans-1,2-Dichloroethene	156-60-5	0.011	0.059	0.40	Not Detected
Trichloroethene	79-01-6	0.022	0.081	0.11	0.023 J
Vinyl Chloride	75-01-4	0.010	0.023	0.026	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479A-13B	**Date/Time Analyzed:**	1/24/25 01:20 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012408sima

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479A-14A	**Date/Time Analyzed:**	1/24/25 11:09 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012404

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	102
1,3,5-Trimethylbenzene	108-67-8	104
2,2,4-Trimethylpentane	540-84-1	99
Chlorobenzene	108-90-7	104
Cyclohexane	110-82-7	92
Heptane	142-82-5	109
Hexane	110-54-3	96
Methylene Chloride	75-09-2	92

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479A-14B	**Date/Time Analyzed:**	1/24/25 11:09 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012404sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	90
1,1,2,2-Tetrachloroethane	79-34-5	97
1,1,2-Trichloroethane	79-00-5	103
1,1-Dichloroethane	75-34-3	88
1,1-Dichloroethene	75-35-4	79
1,2-Dichloroethane	107-06-2	111
Benzene	71-43-2	100
Carbon Tetrachloride	56-23-5	106
Chloroethane	75-00-3	85
Chloromethane	74-87-3	94
cis-1,2-Dichloroethene	156-59-2	81
Ethyl Benzene	100-41-4	103
m,p-Xylene	108-38-3	92
Naphthalene	91-20-3	102
o-Xylene	95-47-6	94
Tetrachloroethene	127-18-4	120
Toluene	108-88-3	99
trans-1,2-Dichloroethene	156-60-5	84
Trichloroethene	79-01-6	118
Vinyl Chloride	75-01-4	84

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479A-14B	**Date/Time Analyzed:**	1/24/25 11:09 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012404sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479A-15A	**Date/Time Analyzed:**	1/24/25 11:42 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012405

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	104
1,3,5-Trimethylbenzene	108-67-8	105
2,2,4-Trimethylpentane	540-84-1	102
Chlorobenzene	108-90-7	104
Cyclohexane	110-82-7	95
Heptane	142-82-5	107
Hexane	110-54-3	97
Methylene Chloride	75-09-2	90

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	106
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	101

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479A-15AA	**Date/Time Analyzed:**	1/24/25 12:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012406

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	105
1,3,5-Trimethylbenzene	108-67-8	105
2,2,4-Trimethylpentane	540-84-1	96
Chlorobenzene	108-90-7	104
Cyclohexane	110-82-7	90
Heptane	142-82-5	106
Hexane	110-54-3	97
Methylene Chloride	75-09-2	91

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	105

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479A-15B	**Date/Time Analyzed:**	1/24/25 11:42 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012405sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	91
1,1,2,2-Tetrachloroethane	79-34-5	96
1,1,2-Trichloroethane	79-00-5	103
1,1-Dichloroethane	75-34-3	88
1,1-Dichloroethene	75-35-4	76
1,2-Dichloroethane	107-06-2	110
Benzene	71-43-2	100
Carbon Tetrachloride	56-23-5	105
Chloroethane	75-00-3	86
Chloromethane	74-87-3	93
cis-1,2-Dichloroethene	156-59-2	81
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	92
Naphthalene	91-20-3	137
o-Xylene	95-47-6	93
Tetrachloroethene	127-18-4	119
Toluene	108-88-3	96
trans-1,2-Dichloroethene	156-60-5	84
Trichloroethene	79-01-6	115
Vinyl Chloride	75-01-4	85

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479A-15B	**Date/Time Analyzed:**	1/24/25 11:42 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012405sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	109

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479A-15BB	**Date/Time Analyzed:**	1/24/25 12:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012406sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	91
1,1,2,2-Tetrachloroethane	79-34-5	97
1,1,2-Trichloroethane	79-00-5	104
1,1-Dichloroethane	75-34-3	88
1,1-Dichloroethene	75-35-4	79
1,2-Dichloroethane	107-06-2	109
Benzene	71-43-2	98
Carbon Tetrachloride	56-23-5	106
Chloroethane	75-00-3	90
Chloromethane	74-87-3	96
cis-1,2-Dichloroethene	156-59-2	81
Ethyl Benzene	100-41-4	105
m,p-Xylene	108-38-3	93
Naphthalene	91-20-3	143 Q
o-Xylene	95-47-6	94
Tetrachloroethene	127-18-4	120
Toluene	108-88-3	99
trans-1,2-Dichloroethene	156-60-5	87
Trichloroethene	79-01-6	116
Vinyl Chloride	75-01-4	89

Q = Exceeds Quality Control limits.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479A-15BB	**Date/Time Analyzed:**	1/24/25 12:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012406sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	111

* % Recovery is calculated using unrounded analytical results.

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Method : Modified TO-15 Hi/Lo (SP)-Arcadis (Watervliet) v3

CAS Number	Compound	Rpt. Limit (ppbv)
74-87-3	Chloromethane	0.50
75-01-4	Vinyl Chloride	0.010
75-00-3	Chloroethane	0.050
75-35-4	1,1-Dichloroethene	0.010
75-09-2	Methylene Chloride	0.20
156-60-5	trans-1,2-Dichloroethene	0.10
156-59-2	cis-1,2-Dichloroethene	0.020
71-55-6	1,1,1-Trichloroethane	0.020
56-23-5	Carbon Tetrachloride	0.020
71-43-2	Benzene	0.050
107-06-2	1,2-Dichloroethane	0.020
79-01-6	Trichloroethene	0.020
108-88-3	Toluene	0.050
79-00-5	1,1,2-Trichloroethane	0.020
127-18-4	Tetrachloroethene	0.020
100-41-4	Ethyl Benzene	0.020
108-38-3	m,p-Xylene	0.040
95-47-6	o-Xylene	0.020
79-34-5	1,1,2,2-Tetrachloroethane	0.020
110-54-3	Hexane	0.50
110-82-7	Cyclohexane	0.50
540-84-1	2,2,4-Trimethylpentane	0.50
142-82-5	Heptane	0.50
108-90-7	Chlorobenzene	0.10
108-67-8	1,3,5-Trimethylbenzene	0.10
95-63-6	1,2,4-Trimethylbenzene	0.10
91-20-3	Naphthalene	0.050

	Surrogate	Method Limits
17060-07-0	1,2-Dichloroethane-d4	70-130
2037-26-5	Toluene-d8	70-130
460-00-4	**4-Bromofluorobenzene**	**70-130**

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Analytical Report

2/3/2025
Mr. Stefan Bagnato
ARCADIS, U.S., Inc.
855 Route 146
Suite 210
Clifton Park NY 12065

Project Name: WVA
Project #: 30231255.01
Workorder #: 2501479B

Dear Mr. Stefan Bagnato

The following report includes the data for the above referenced project for sample(s) received on 1/21/2025 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Jade White at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Jade White

Project Manager

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WORK ORDER #: 2501479B

Work Order Summary

CLIENT:	Mr. Stefan Bagnato ARCADIS, U.S., Inc. 855 Route 146 Suite 210 Clifton Park, NY 12065	**BILL TO:**	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch, CO 80129
PHONE:	518-250-7300	**P.O. #**	30231255.01
FAX:	518-250-7301	**PROJECT #**	30231255.01 WVA
DATE RECEIVED:	01/21/2025	**CONTACT:**	Jade White
DATE COMPLETED:	02/03/2025		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
13A	IA-B25-5	Modified TO-15	4.3 "Hg	1.9 psi
13B	IA-B25-5	Modified TO-15	4.3 "Hg	1.9 psi
14A	IA-B114-1	Modified TO-15	4.5 "Hg	1.9 psi
14B	IA-B114-1	Modified TO-15	4.5 "Hg	1.9 psi
15A	IA-B120-1	Modified TO-15	3.7 "Hg	1.9 psi
15B	IA-B120-1	Modified TO-15	3.7 "Hg	1.9 psi
16A	IA-B120-2	Modified TO-15	4.1 "Hg	1.9 psi
16B	IA-B120-2	Modified TO-15	4.1 "Hg	1.9 psi
17A	IA-B121-1	Modified TO-15	17.3 "Hg	1.8 psi
17B	IA-B121-1	Modified TO-15	17.3 "Hg	1.8 psi
18A	IA-B130-1	Modified TO-15	5.7 "Hg	2 psi
18B	IA-B130-1	Modified TO-15	5.7 "Hg	2 psi
19A	IA-DUP-1	Modified TO-15	17.3 "Hg	2 psi
19B	IA-DUP-1	Modified TO-15	17.3 "Hg	2 psi
20A	EFF-B20-1	Modified TO-15	18 "Hg	1.9 psi
20B	EFF-B20-1	Modified TO-15	18 "Hg	1.9 psi
21A	EFF-B21-1	Modified TO-15	7.1 "Hg	1.8 psi
21B	EFF-B21-1	Modified TO-15	7.1 "Hg	1.8 psi
22A	EFF-B25-1	Modified TO-15	8.4 "Hg	1.9 psi
22B	EFF-B25-1	Modified TO-15	8.4 "Hg	1.9 psi
23A	EFF-B114-1	Modified TO-15	6.3 "Hg	1.9 psi
23B	EFF-B114-1	Modified TO-15	6.3 "Hg	1.9 psi
24A	Lab Blank	Modified TO-15	NA	NA

Continued on next page

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WORK ORDER #: 2501479B

Work Order Summary

CLIENT:	Mr. Stefan Bagnato ARCADIS, U.S., Inc. 855 Route 146 Suite 210 Clifton Park, NY 12065	**BILL TO:**	Accounts Payable Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch, CO 80129
PHONE:	518-250-7300	**P.O. #**	30231255.01
FAX:	518-250-7301	**PROJECT #**	30231255.01 WVA
DATE RECEIVED:	01/21/2025	**CONTACT:**	Jade White
DATE COMPLETED:	02/03/2025		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
24B	Lab Blank	Modified TO-15	NA	NA
24C	Lab Blank	Modified TO-15	NA	NA
24D	Lab Blank	Modified TO-15	NA	NA
25A	CCV	Modified TO-15	NA	NA
25B	CCV	Modified TO-15	NA	NA
25C	CCV	Modified TO-15	NA	NA
25D	CCV	Modified TO-15	NA	NA
26A	LCS	Modified TO-15	NA	NA
26AA	LCSD	Modified TO-15	NA	NA
26B	LCS	Modified TO-15	NA	NA
26BB	LCSD	Modified TO-15	NA	NA
26C	LCS	Modified TO-15	NA	NA
26CC	LCSD	Modified TO-15	NA	NA
26D	LCS	Modified TO-15	NA	NA
26DD	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 02/03/25

Technical Director

Cert. No.: AZ Licensure-AZ0775, FL NELAP-E87680, LA NELAP–02089, MN NELAP-2836569, NH NELAP–209224-A, NJ NELAP-CA016, NY NELAP-11291, TX NELAP-T104704434, UT NELAP-CA009332023-16, VA NELAP-13180, WA NELAP-C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-21
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

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LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
ARCADIS, U.S., Inc.
Workorder# 2501479B

Seven 6 Liter Summa Canister (Ambient) and four 6 Liter Summa Canister (100% SIM Ambient) samples were received on January 21, 2025. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

Per TNI Standard, a legal Chain of Custody (COC) must accompany samples when they arrive at the laboratory. In this case, a COC was not received with the samples.

Samples IA-B121-1, IA-DUP-1 and EFF-B20-1 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

The canisters used for the collection of samples IA-B25-5, IA-B130-1, IA-DUP-1, EFF-B20-1, EFF-B21-1, EFF-B25-1, and EFF-B114-1 were not certified at the requested reporting limit levels. Per client's request analysis proceeded.

Analytical Notes

As per client project requirements, the laboratory has reported estimated values for target compound

hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified may be false positives.

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

Dilution was performed on sample EFF-B114-1 due to the presence of high level target species.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-5		
Lab ID:	2501479B-13A	**Date/Time Analyzed:**	1/25/25 12:10 AM
Date/Time Collected:	1/16/25 09:24 AM	**Dilution Factor:**	1.32
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012421

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.079	0.45	0.65	0.28 J
1,3,5-Trimethylbenzene	108-67-8	0.087	0.45	0.65	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.38	2.2	3.1	Not Detected
Chlorobenzene	108-90-7	0.072	0.42	0.61	Not Detected
Cyclohexane	110-82-7	0.061	1.6	2.3	0.097 J
Heptane	142-82-5	0.36	1.9	2.7	0.64 J
Hexane	110-54-3	0.23	1.6	2.3	1.4 J
Methylene Chloride	75-09-2	0.18	0.32	0.92	0.66 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-5		
Lab ID:	2501479B-13B	**Date/Time Analyzed:**	1/25/25 12:10 AM
Date/Time Collected:	1/16/25 09:24 AM	**Dilution Factor:**	1.32
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012421sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.11	0.14	0.14 J
1,1,2,2-Tetrachloroethane	79-34-5	0.034	0.14	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.029	0.11	0.14	Not Detected
1,1-Dichloroethane	75-34-3	0.017	0.080	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.047	0.052	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.080	0.11	0.13
Benzene	71-43-2	0.015	0.063	0.21	0.50
Carbon Tetrachloride	56-23-5	0.018	0.12	0.17	0.50
Chloroethane	75-00-3	0.022	0.052	0.17	Not Detected
Chloromethane	74-87-3	0.69	0.82	1.4	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.020	0.078	0.10	Not Detected
Ethyl Benzene	100-41-4	0.014	0.086	0.11	0.27
m,p-Xylene	108-38-3	0.0088	0.086	0.23	0.58
Naphthalene	91-20-3	0.071	0.21	0.34	4.1
o-Xylene	95-47-6	0.018	0.086	0.11	0.26
Tetrachloroethene	127-18-4	0.015	0.13	0.18	0.36
Toluene	108-88-3	0.013	0.075	0.25	4.0
trans-1,2-Dichloroethene	156-60-5	0.015	0.078	0.52	0.022 J
Trichloroethene	79-01-6	0.030	0.11	0.14	0.47
Vinyl Chloride	75-01-4	0.014	0.030	0.034	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B25-5		
Lab ID:	2501479B-13B	**Date/Time Analyzed:**	1/25/25 12:10 AM
Date/Time Collected:	1/16/25 09:24 AM	**Dilution Factor:**	1.32
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012421sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B114-1		
Lab ID:	2501479B-14A	**Date/Time Analyzed:**	1/25/25 12:43 AM
Date/Time Collected:	1/16/25 10:44 AM	**Dilution Factor:**	1.33
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012422

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.080	0.46	0.65	0.098 J
1,3,5-Trimethylbenzene	108-67-8	0.088	0.46	0.65	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.38	2.2	3.1	Not Detected
Chlorobenzene	108-90-7	0.073	0.43	0.61	Not Detected
Cyclohexane	110-82-7	0.061	1.6	2.3	Not Detected
Heptane	142-82-5	0.36	1.9	2.7	Not Detected
Hexane	110-54-3	0.24	1.6	2.3	0.28 J
Methylene Chloride	75-09-2	0.18	0.32	0.92	0.48 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B114-1		
Lab ID:	2501479B-14B	**Date/Time Analyzed:**	1/25/25 12:43 AM
Date/Time Collected:	1/16/25 10:44 AM	**Dilution Factor:**	1.33
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012422sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.11	0.14	0.034 J
1,1,2,2-Tetrachloroethane	79-34-5	0.035	0.14	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.029	0.11	0.14	Not Detected
1,1-Dichloroethane	75-34-3	0.017	0.081	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.047	0.053	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.081	0.11	0.074 J
Benzene	71-43-2	0.015	0.064	0.21	0.50
Carbon Tetrachloride	56-23-5	0.018	0.12	0.17	0.48
Chloroethane	75-00-3	0.022	0.053	0.18	Not Detected
Chloromethane	74-87-3	0.70	0.82	1.4	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.020	0.079	0.10	Not Detected
Ethyl Benzene	100-41-4	0.014	0.087	0.12	0.16
m,p-Xylene	108-38-3	0.0088	0.087	0.23	0.35
Naphthalene	91-20-3	0.072	0.21	0.35	Not Detected
o-Xylene	95-47-6	0.018	0.087	0.12	0.12
Tetrachloroethene	127-18-4	0.016	0.14	0.18	0.31
Toluene	108-88-3	0.014	0.075	0.25	3.8
trans-1,2-Dichloroethene	156-60-5	0.015	0.079	0.53	Not Detected
Trichloroethene	79-01-6	0.030	0.11	0.14	0.052 J
Vinyl Chloride	75-01-4	0.014	0.031	0.034	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B114-1		
Lab ID:	2501479B-14B	**Date/Time Analyzed:**	1/25/25 12:43 AM
Date/Time Collected:	1/16/25 10:44 AM	**Dilution Factor:**	1.33
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012422sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B120-1		
Lab ID:	2501479B-15A	**Date/Time Analyzed:**	1/25/25 01:15 AM
Date/Time Collected:	1/16/25 10:48 AM	**Dilution Factor:**	1.29
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012423

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.077	0.44	0.63	0.13 J
1,3,5-Trimethylbenzene	108-67-8	0.085	0.44	0.63	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.37	2.1	3.0	Not Detected
Chlorobenzene	108-90-7	0.070	0.42	0.59	Not Detected
Cyclohexane	110-82-7	0.059	1.6	2.2	2.1 J
Heptane	142-82-5	0.35	1.8	2.6	Not Detected
Hexane	110-54-3	0.23	1.6	2.3	0.24 J
Methylene Chloride	75-09-2	0.18	0.31	0.90	0.51 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B120-1		
Lab ID:	2501479B-15B	**Date/Time Analyzed:**	1/25/25 01:15 AM
Date/Time Collected:	1/16/25 10:48 AM	**Dilution Factor:**	1.29
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012423sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.10	0.14	0.042 J
1,1,2,2-Tetrachloroethane	79-34-5	0.034	0.13	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.028	0.10	0.14	Not Detected
1,1-Dichloroethane	75-34-3	0.017	0.078	0.10	Not Detected
1,1-Dichloroethene	75-35-4	0.015	0.046	0.051	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.078	0.10	0.079 J
Benzene	71-43-2	0.015	0.062	0.21	0.54
Carbon Tetrachloride	56-23-5	0.017	0.12	0.16	0.46
Chloroethane	75-00-3	0.022	0.051	0.17	Not Detected
Chloromethane	74-87-3	0.68	0.80	1.3	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.019	0.077	0.10	Not Detected
Ethyl Benzene	100-41-4	0.014	0.084	0.11	0.12
m,p-Xylene	108-38-3	0.0086	0.084	0.22	0.35
Naphthalene	91-20-3	0.070	0.20	0.34	Not Detected
o-Xylene	95-47-6	0.018	0.084	0.11	0.16
Tetrachloroethene	127-18-4	0.015	0.13	0.18	0.59
Toluene	108-88-3	0.013	0.073	0.24	0.59
trans-1,2-Dichloroethene	156-60-5	0.015	0.077	0.51	0.030 J
Trichloroethene	79-01-6	0.029	0.10	0.14	0.20
Vinyl Chloride	75-01-4	0.014	0.030	0.033	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B120-1		
Lab ID:	2501479B-15B	**Date/Time Analyzed:**	1/25/25 01:15 AM
Date/Time Collected:	1/16/25 10:48 AM	**Dilution Factor:**	1.29
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012423sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B120-2		
Lab ID:	2501479B-16A	**Date/Time Analyzed:**	1/25/25 01:48 AM
Date/Time Collected:	1/16/25 10:49 AM	**Dilution Factor:**	1.31
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012424

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.078	0.45	0.64	0.13 J
1,3,5-Trimethylbenzene	108-67-8	0.086	0.45	0.64	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.38	2.1	3.0	Not Detected
Chlorobenzene	108-90-7	0.072	0.42	0.60	Not Detected
Cyclohexane	110-82-7	0.060	1.6	2.2	0.17 J
Heptane	142-82-5	0.35	1.9	2.7	Not Detected
Hexane	110-54-3	0.23	1.6	2.3	0.25 J
Methylene Chloride	75-09-2	0.18	0.32	0.91	0.47 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B120-2		
Lab ID:	2501479B-16B	**Date/Time Analyzed:**	1/25/25 01:48 AM
Date/Time Collected:	1/16/25 10:49 AM	**Dilution Factor:**	1.31
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012424sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.016	0.11	0.14	0.028 J
1,1,2,2-Tetrachloroethane	79-34-5	0.034	0.13	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.029	0.11	0.14	Not Detected
1,1-Dichloroethane	75-34-3	0.017	0.080	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.016	0.047	0.052	Not Detected
1,2-Dichloroethane	107-06-2	0.013	0.080	0.11	0.071 J
Benzene	71-43-2	0.015	0.063	0.21	0.56
Carbon Tetrachloride	56-23-5	0.018	0.12	0.16	0.47
Chloroethane	75-00-3	0.022	0.052	0.17	Not Detected
Chloromethane	74-87-3	0.69	0.81	1.4	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.020	0.078	0.10	Not Detected
Ethyl Benzene	100-41-4	0.014	0.085	0.11	0.12
m,p-Xylene	108-38-3	0.0087	0.085	0.23	0.34
Naphthalene	91-20-3	0.071	0.21	0.34	Not Detected
o-Xylene	95-47-6	0.018	0.085	0.11	0.13
Tetrachloroethene	127-18-4	0.015	0.13	0.18	0.24
Toluene	108-88-3	0.013	0.074	0.25	0.66
trans-1,2-Dichloroethene	156-60-5	0.015	0.078	0.52	0.021 J
Trichloroethene	79-01-6	0.030	0.10	0.14	Not Detected
Vinyl Chloride	75-01-4	0.014	0.030	0.033	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B120-2		
Lab ID:	2501479B-16B	**Date/Time Analyzed:**	1/25/25 01:48 AM
Date/Time Collected:	1/16/25 10:49 AM	**Dilution Factor:**	1.31
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012424sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B121-1		
Lab ID:	2501479B-17A	**Date/Time Analyzed:**	1/25/25 02:20 AM
Date/Time Collected:	1/16/25 11:21 AM	**Dilution Factor:**	2.65
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012425

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.16	0.91	1.3	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.17	0.91	1.3	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.76	4.3	6.2	Not Detected
Chlorobenzene	108-90-7	0.14	0.85	1.2	Not Detected
Cyclohexane	110-82-7	0.12	3.2	4.6	0.31 J
Heptane	142-82-5	0.71	3.8	5.4	Not Detected
Hexane	110-54-3	0.47	3.3	4.7	Not Detected
Methylene Chloride	75-09-2	0.36	0.64	1.8	0.56 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B121-1		
Lab ID:	2501479B-17B	**Date/Time Analyzed:**	1/25/25 02:20 AM
Date/Time Collected:	1/16/25 11:21 AM	**Dilution Factor:**	2.65
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012425sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.033	0.22	0.29	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.069	0.27	0.36	Not Detected
1,1,2-Trichloroethane	79-00-5	0.058	0.22	0.29	Not Detected
1,1-Dichloroethane	75-34-3	0.035	0.16	0.21	Not Detected
1,1-Dichloroethene	75-35-4	0.032	0.094	0.10	Not Detected
1,2-Dichloroethane	107-06-2	0.026	0.16	0.21	0.082 J
Benzene	71-43-2	0.030	0.13	0.42	0.54
Carbon Tetrachloride	56-23-5	0.036	0.25	0.33	0.47
Chloroethane	75-00-3	0.044	0.10	0.35	Not Detected
Chloromethane	74-87-3	1.4	1.6	2.7	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.040	0.16	0.21	Not Detected
Ethyl Benzene	100-41-4	0.029	0.17	0.23	0.14 J
m,p-Xylene	108-38-3	0.018	0.17	0.46	0.29 J
Naphthalene	91-20-3	0.14	0.42	0.69	Not Detected
o-Xylene	95-47-6	0.036	0.17	0.23	0.12 J
Tetrachloroethene	127-18-4	0.031	0.27	0.36	0.25 J
Toluene	108-88-3	0.027	0.15	0.50	0.60
trans-1,2-Dichloroethene	156-60-5	0.030	0.16	1.0	Not Detected
Trichloroethene	79-01-6	0.060	0.21	0.28	Not Detected
Vinyl Chloride	75-01-4	0.028	0.061	0.068	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B121-1		
Lab ID:	2501479B-17B	**Date/Time Analyzed:**	1/25/25 02:20 AM
Date/Time Collected:	1/16/25 11:21 AM	**Dilution Factor:**	2.65
Media:	6 Liter Summa Canister (100% SIM Ambier	**Instrument/Filename:**	msdj.i / j012425sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B130-1		
Lab ID:	2501479B-18A	**Date/Time Analyzed:**	1/25/25 02:53 AM
Date/Time Collected:	1/16/25 11:13 AM	**Dilution Factor:**	1.40
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012426

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.084	0.48	0.69	0.29 J
1,3,5-Trimethylbenzene	108-67-8	0.092	0.48	0.69	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.40	2.3	3.3	1.5 J
Chlorobenzene	108-90-7	0.076	0.45	0.64	Not Detected
Cyclohexane	110-82-7	0.064	1.7	2.4	19
Heptane	142-82-5	0.38	2.0	2.9	0.72 J
Hexane	110-54-3	0.25	1.7	2.5	54
Methylene Chloride	75-09-2	0.19	0.34	0.97	0.45 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B130-1		
Lab ID:	2501479B-18B	**Date/Time Analyzed:**	1/25/25 02:53 AM
Date/Time Collected:	1/16/25 11:13 AM	**Dilution Factor:**	1.40
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012426sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.017	0.11	0.15	0.033 J
1,1,2,2-Tetrachloroethane	79-34-5	0.036	0.14	0.19	Not Detected
1,1,2-Trichloroethane	79-00-5	0.031	0.11	0.15	Not Detected
1,1-Dichloroethane	75-34-3	0.018	0.085	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.017	0.050	0.056	Not Detected
1,2-Dichloroethane	107-06-2	0.014	0.085	0.11	0.082 J
Benzene	71-43-2	0.016	0.067	0.22	0.72
Carbon Tetrachloride	56-23-5	0.019	0.13	0.18	0.45
Chloroethane	75-00-3	0.023	0.055	0.18	Not Detected
Chloromethane	74-87-3	0.74	0.87	1.4	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.021	0.083	0.11	Not Detected
Ethyl Benzene	100-41-4	0.015	0.091	0.12	0.20
m,p-Xylene	108-38-3	0.0093	0.091	0.24	0.50
Naphthalene	91-20-3	0.076	0.22	0.37	Not Detected
o-Xylene	95-47-6	0.019	0.091	0.12	0.20
Tetrachloroethene	127-18-4	0.016	0.14	0.19	0.47
Toluene	108-88-3	0.014	0.079	0.26	2.8
trans-1,2-Dichloroethene	156-60-5	0.016	0.083	0.56	Not Detected
Trichloroethene	79-01-6	0.032	0.11	0.15	0.17
Vinyl Chloride	75-01-4	0.015	0.032	0.036	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-B130-1		
Lab ID:	2501479B-18B	**Date/Time Analyzed:**	1/25/25 02:53 AM
Date/Time Collected:	1/16/25 11:13 AM	**Dilution Factor:**	1.40
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012426sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	95
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-DUP-1		
Lab ID:	2501479B-19A	**Date/Time Analyzed:**	1/25/25 03:25 AM
Date/Time Collected:	1/16/25 12:00 PM	**Dilution Factor:**	2.68
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012427

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.16	0.92	1.3	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.18	0.92	1.3	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.77	4.4	6.2	Not Detected
Chlorobenzene	108-90-7	0.15	0.86	1.2	Not Detected
Cyclohexane	110-82-7	0.12	3.2	4.6	0.29 J
Heptane	142-82-5	0.72	3.8	5.5	Not Detected
Hexane	110-54-3	0.47	3.3	4.7	Not Detected
Methylene Chloride	75-09-2	0.37	0.65	1.9	0.56 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-DUP-1		
Lab ID:	2501479B-19B	**Date/Time Analyzed:**	1/25/25 03:25 AM
Date/Time Collected:	1/16/25 12:00 PM	**Dilution Factor:**	2.68
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012427sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.033	0.22	0.29	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.070	0.28	0.37	Not Detected
1,1,2-Trichloroethane	79-00-5	0.059	0.22	0.29	Not Detected
1,1-Dichloroethane	75-34-3	0.035	0.16	0.22	Not Detected
1,1-Dichloroethene	75-35-4	0.032	0.096	0.11	Not Detected
1,2-Dichloroethane	107-06-2	0.027	0.16	0.22	0.089 J
Benzene	71-43-2	0.031	0.13	0.43	0.58
Carbon Tetrachloride	56-23-5	0.036	0.25	0.34	0.46
Chloroethane	75-00-3	0.045	0.11	0.35	Not Detected
Chloromethane	74-87-3	1.4	1.7	2.8	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.040	0.16	0.21	Not Detected
Ethyl Benzene	100-41-4	0.029	0.17	0.23	0.15 J
m,p-Xylene	108-38-3	0.018	0.17	0.46	0.33 J
Naphthalene	91-20-3	0.14	0.42	0.70	Not Detected
o-Xylene	95-47-6	0.037	0.17	0.23	0.14 J
Tetrachloroethene	127-18-4	0.031	0.27	0.36	0.25 J
Toluene	108-88-3	0.027	0.15	0.50	0.65
trans-1,2-Dichloroethene	156-60-5	0.030	0.16	1.1	Not Detected
Trichloroethene	79-01-6	0.060	0.22	0.29	Not Detected
Vinyl Chloride	75-01-4	0.028	0.062	0.068	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	IA-DUP-1		
Lab ID:	2501479B-19B	**Date/Time Analyzed:**	1/25/25 03:25 AM
Date/Time Collected:	1/16/25 12:00 PM	**Dilution Factor:**	2.68
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012427sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B20-1		
Lab ID:	2501479B-20A	**Date/Time Analyzed:**	1/25/25 03:58 AM
Date/Time Collected:	1/16/25 09:09 AM	**Dilution Factor:**	2.82
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012428

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.17	0.97	1.4	0.19 J
1,3,5-Trimethylbenzene	108-67-8	0.19	0.97	1.4	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.81	4.6	6.6	1.1 J
Chlorobenzene	108-90-7	0.15	0.91	1.3	Not Detected
Cyclohexane	110-82-7	0.13	3.4	4.8	Not Detected
Heptane	142-82-5	0.76	4.0	5.8	Not Detected
Hexane	110-54-3	0.50	3.5	5.0	0.72 J
Methylene Chloride	75-09-2	0.38	0.68	2.0	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	104

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B20-1		
Lab ID:	2501479B-20B	**Date/Time Analyzed:**	1/25/25 03:58 AM
Date/Time Collected:	1/16/25 09:09 AM	**Dilution Factor:**	2.82
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012428sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.035	0.23	0.31	0.57
1,1,2,2-Tetrachloroethane	79-34-5	0.073	0.29	0.39	Not Detected
1,1,2-Trichloroethane	79-00-5	0.062	0.23	0.31	Not Detected
1,1-Dichloroethane	75-34-3	0.037	0.17	0.23	0.039 J
1,1-Dichloroethene	75-35-4	0.034	0.10	0.11	Not Detected
1,2-Dichloroethane	107-06-2	0.028	0.17	0.23	Not Detected
Benzene	71-43-2	0.032	0.14	0.45	0.41 J
Carbon Tetrachloride	56-23-5	0.038	0.27	0.35	0.46
Chloroethane	75-00-3	0.047	0.11	0.37	0.14 J
Chloromethane	74-87-3	1.5	1.7	2.9	3.2
cis-1,2-Dichloroethene	156-59-2	0.042	0.17	0.22	0.21 J
Ethyl Benzene	100-41-4	0.031	0.18	0.24	0.18 J
m,p-Xylene	108-38-3	0.019	0.18	0.49	0.53
Naphthalene	91-20-3	0.15	0.44	0.74	Not Detected
o-Xylene	95-47-6	0.039	0.18	0.24	0.18 J
Tetrachloroethene	127-18-4	0.033	0.29	0.38	18
Toluene	108-88-3	0.029	0.16	0.53	0.75
trans-1,2-Dichloroethene	156-60-5	0.032	0.17	1.1	0.089 J
Trichloroethene	79-01-6	0.064	0.23	0.30	24
Vinyl Chloride	75-01-4	0.030	0.065	0.072	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B20-1		
Lab ID:	2501479B-20B	**Date/Time Analyzed:**	1/25/25 03:58 AM
Date/Time Collected:	1/16/25 09:09 AM	**Dilution Factor:**	2.82
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012428sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	112

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B21-1		
Lab ID:	2501479B-21A	**Date/Time Analyzed:**	1/27/25 05:50 PM
Date/Time Collected:	1/16/25 01:13 PM	**Dilution Factor:**	1.47
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012708

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.088	0.50	0.72	0.32 J
1,3,5-Trimethylbenzene	108-67-8	0.097	0.50	0.72	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.42	2.4	3.4	1.1 J
Chlorobenzene	108-90-7	0.080	0.47	0.68	Not Detected
Cyclohexane	110-82-7	0.067	1.8	2.5	0.22 J
Heptane	142-82-5	0.40	2.1	3.0	0.55 J
Hexane	110-54-3	0.26	1.8	2.6	0.93 J
Methylene Chloride	75-09-2	0.20	0.36	1.0	0.55 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B21-1		
Lab ID:	2501479B-21B	**Date/Time Analyzed:**	1/27/25 05:50 PM
Date/Time Collected:	1/16/25 01:13 PM	**Dilution Factor:**	1.47
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012708sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.018	0.12	0.16	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.038	0.15	0.20	Not Detected
1,1,2-Trichloroethane	79-00-5	0.032	0.12	0.16	Not Detected
1,1-Dichloroethane	75-34-3	0.019	0.089	0.12	Not Detected
1,1-Dichloroethene	75-35-4	0.017	0.052	0.058	0.022 J
1,2-Dichloroethane	107-06-2	0.015	0.089	0.12	0.080 J
Benzene	71-43-2	0.017	0.070	0.23	1.8
Carbon Tetrachloride	56-23-5	0.020	0.14	0.18	0.45
Chloroethane	75-00-3	0.025	0.058	0.19	Not Detected
Chloromethane	74-87-3	0.77	0.91	1.5	1.1 J
cis-1,2-Dichloroethene	156-59-2	0.022	0.087	0.12	14
Ethyl Benzene	100-41-4	0.016	0.096	0.13	0.40
m,p-Xylene	108-38-3	0.0098	0.096	0.26	0.99
Naphthalene	91-20-3	0.079	0.23	0.38	0.15 J
o-Xylene	95-47-6	0.020	0.096	0.13	0.40
Tetrachloroethene	127-18-4	0.017	0.15	0.20	3.9
Toluene	108-88-3	0.015	0.083	0.28	2.7
trans-1,2-Dichloroethene	156-60-5	0.017	0.087	0.58	0.13 J
Trichloroethene	79-01-6	0.033	0.12	0.16	28
Vinyl Chloride	75-01-4	0.015	0.034	0.038	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B21-1		
Lab ID:	2501479B-21B	**Date/Time Analyzed:**	1/27/25 05:50 PM
Date/Time Collected:	1/16/25 01:13 PM	**Dilution Factor:**	1.47
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012708sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	109
Toluene-d8	2037-26-5	70-130	109

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B25-1		
Lab ID:	2501479B-22A	**Date/Time Analyzed:**	1/27/25 06:22 PM
Date/Time Collected:	1/16/25 09:10 AM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012709

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.094	0.54	0.77	0.16 J
1,3,5-Trimethylbenzene	108-67-8	0.10	0.54	0.77	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.45	2.6	3.7	Not Detected
Chlorobenzene	108-90-7	0.086	0.50	0.72	Not Detected
Cyclohexane	110-82-7	0.072	1.9	2.7	Not Detected
Heptane	142-82-5	0.42	2.2	3.2	Not Detected
Hexane	110-54-3	0.28	1.9	2.8	Not Detected
Methylene Chloride	75-09-2	0.21	0.38	1.1	0.36 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B25-1		
Lab ID:	2501479B-22B	**Date/Time Analyzed:**	1/27/25 06:22 PM
Date/Time Collected:	1/16/25 09:10 AM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012709sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.019	0.13	0.17	3.6
1,1,2,2-Tetrachloroethane	79-34-5	0.041	0.16	0.22	Not Detected
1,1,2-Trichloroethane	79-00-5	0.035	0.13	0.17	Not Detected
1,1-Dichloroethane	75-34-3	0.020	0.095	0.13	0.15
1,1-Dichloroethene	75-35-4	0.019	0.056	0.062	0.068
1,2-Dichloroethane	107-06-2	0.016	0.095	0.13	0.030 J
Benzene	71-43-2	0.018	0.075	0.25	0.32
Carbon Tetrachloride	56-23-5	0.021	0.15	0.20	0.46
Chloroethane	75-00-3	0.026	0.062	0.21	0.040 J
Chloromethane	74-87-3	0.82	0.97	1.6	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.024	0.093	0.12	2.9
Ethyl Benzene	100-41-4	0.017	0.10	0.14	0.068 J
m,p-Xylene	108-38-3	0.010	0.10	0.27	0.19 J
Naphthalene	91-20-3	0.085	0.25	0.41	0.46
o-Xylene	95-47-6	0.022	0.10	0.14	0.084 J
Tetrachloroethene	127-18-4	0.018	0.16	0.21	9.9
Toluene	108-88-3	0.016	0.089	0.30	0.30
trans-1,2-Dichloroethene	156-60-5	0.018	0.093	0.62	0.15 J
Trichloroethene	79-01-6	0.035	0.13	0.17	100
Vinyl Chloride	75-01-4	0.016	0.036	0.040	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B25-1		
Lab ID:	2501479B-22B	**Date/Time Analyzed:**	1/27/25 06:22 PM
Date/Time Collected:	1/16/25 09:10 AM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012709sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	111

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B114-1		
Lab ID:	2501479B-23A	**Date/Time Analyzed:**	1/27/25 11:16 PM
Date/Time Collected:	1/16/25 11:02 AM	**Dilution Factor:**	5.96
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012718

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.36	2.0	2.9	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.39	2.0	2.9	Not Detected
2,2,4-Trimethylpentane	540-84-1	1.7	9.7	14	Not Detected
Chlorobenzene	108-90-7	0.32	1.9	2.7	Not Detected
Cyclohexane	110-82-7	0.27	7.2	10	Not Detected
Heptane	142-82-5	1.6	8.5	12	Not Detected
Hexane	110-54-3	1.0	7.4	10	Not Detected
Methylene Chloride	75-09-2	0.81	1.4	4.1	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	89
Toluene-d8	2037-26-5	70-130	105

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B114-1		
Lab ID:	2501479B-23B	**Date/Time Analyzed:**	1/27/25 11:16 PM
Date/Time Collected:	1/16/25 11:02 AM	**Dilution Factor:**	5.96
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012718sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.074	0.49	0.65	0.15 J
1,1,2,2-Tetrachloroethane	79-34-5	0.16	0.61	0.82	Not Detected
1,1,2-Trichloroethane	79-00-5	0.13	0.49	0.65	Not Detected
1,1-Dichloroethane	75-34-3	0.078	0.36	0.48	Not Detected
1,1-Dichloroethene	75-35-4	0.071	0.21	0.24	Not Detected
1,2-Dichloroethane	107-06-2	0.060	0.36	0.48	Not Detected
Benzene	71-43-2	0.068	0.28	0.95	0.34 J
Carbon Tetrachloride	56-23-5	0.080	0.56	0.75	0.89
Chloroethane	75-00-3	0.10	0.24	0.79	Not Detected
Chloromethane	74-87-3	3.1	3.7	6.2	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.090	0.35	0.47	15
Ethyl Benzene	100-41-4	0.065	0.39	0.52	Not Detected
m,p-Xylene	108-38-3	0.040	0.39	1.0	0.044 J
Naphthalene	91-20-3	0.32	0.94	1.6	Not Detected
o-Xylene	95-47-6	0.082	0.39	0.52	Not Detected
Tetrachloroethene	127-18-4	0.070	0.61	0.81	450
Toluene	108-88-3	0.061	0.34	1.1	0.25 J
trans-1,2-Dichloroethene	156-60-5	0.068	0.35	2.4	0.20 J
Trichloroethene	79-01-6	0.13	0.48	0.64	140
Vinyl Chloride	75-01-4	0.062	0.14	0.15	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	EFF-B114-1		
Lab ID:	2501479B-23B	**Date/Time Analyzed:**	1/27/25 11:16 PM
Date/Time Collected:	1/16/25 11:02 AM	**Dilution Factor:**	5.96
Media:	6 Liter Summa Canister (Ambient)	**Instrument/Filename:**	msdj.i / j012718sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	112

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479B-24A	**Date/Time Analyzed:**	1/24/25 01:20 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012408a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.060	0.34	0.49	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.066	0.34	0.49	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.29	1.6	2.3	Not Detected
Chlorobenzene	108-90-7	0.054	0.32	0.46	Not Detected
Cyclohexane	110-82-7	0.046	1.2	1.7	Not Detected
Heptane	142-82-5	0.27	1.4	2.0	Not Detected
Hexane	110-54-3	0.18	1.2	1.8	Not Detected
Methylene Chloride	75-09-2	0.14	0.24	0.69	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479B-24B	**Date/Time Analyzed:**	1/24/25 01:20 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012408sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.012	0.082	0.11	0.014 J
1,1,2,2-Tetrachloroethane	79-34-5	0.026	0.10	0.14	Not Detected
1,1,2-Trichloroethane	79-00-5	0.022	0.082	0.11	Not Detected
1,1-Dichloroethane	75-34-3	0.013	0.061	0.081	Not Detected
1,1-Dichloroethene	75-35-4	0.012	0.036	0.040	0.013 J
1,2-Dichloroethane	107-06-2	0.010	0.061	0.081	0.017 J
Benzene	71-43-2	0.011	0.048	0.16	0.066 J
Carbon Tetrachloride	56-23-5	0.013	0.094	0.12	0.022 J
Chloroethane	75-00-3	0.017	0.040	0.13	Not Detected
Chloromethane	74-87-3	0.52	0.62	1.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.015	0.059	0.079	Not Detected
Ethyl Benzene	100-41-4	0.011	0.065	0.087	0.016 J
m,p-Xylene	108-38-3	0.0066	0.065	0.17	0.022 J
Naphthalene	91-20-3	0.054	0.16	0.26	Not Detected
o-Xylene	95-47-6	0.014	0.065	0.087	0.017 J
Tetrachloroethene	127-18-4	0.012	0.10	0.14	0.025 J
Toluene	108-88-3	0.010	0.056	0.19	0.035 J
trans-1,2-Dichloroethene	156-60-5	0.011	0.059	0.40	Not Detected
Trichloroethene	79-01-6	0.022	0.081	0.11	0.023 J
Vinyl Chloride	75-01-4	0.010	0.023	0.026	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479B-24B	**Date/Time Analyzed:**	1/24/25 01:20 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012408sima

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479B-24C	**Date/Time Analyzed:**	1/27/25 01:28 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012707a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	95-63-6	0.060	0.34	0.49	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.066	0.34	0.49	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.29	1.6	2.3	Not Detected
Chlorobenzene	108-90-7	0.054	0.32	0.46	Not Detected
Cyclohexane	110-82-7	0.046	1.2	1.7	Not Detected
Heptane	142-82-5	0.27	1.4	2.0	Not Detected
Hexane	110-54-3	0.18	1.2	1.8	Not Detected
Methylene Chloride	75-09-2	0.14	0.24	0.69	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	115
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	104

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479B-24D	**Date/Time Analyzed:**	1/27/25 01:28 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012707sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.012	0.082	0.11	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.026	0.10	0.14	Not Detected
1,1,2-Trichloroethane	79-00-5	0.022	0.082	0.11	Not Detected
1,1-Dichloroethane	75-34-3	0.013	0.061	0.081	Not Detected
1,1-Dichloroethene	75-35-4	0.012	0.036	0.040	Not Detected
1,2-Dichloroethane	107-06-2	0.010	0.061	0.081	0.019 J
Benzene	71-43-2	0.011	0.048	0.16	0.056 J
Carbon Tetrachloride	56-23-5	0.013	0.094	0.12	Not Detected
Chloroethane	75-00-3	0.017	0.040	0.13	Not Detected
Chloromethane	74-87-3	0.52	0.62	1.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.015	0.059	0.079	Not Detected
Ethyl Benzene	100-41-4	0.011	0.065	0.087	0.012 J
m,p-Xylene	108-38-3	0.0066	0.065	0.17	0.016 J
Naphthalene	91-20-3	0.054	0.16	0.26	Not Detected
o-Xylene	95-47-6	0.014	0.065	0.087	0.014 J
Tetrachloroethene	127-18-4	0.012	0.10	0.14	0.023 J
Toluene	108-88-3	0.010	0.056	0.19	0.026 J
trans-1,2-Dichloroethene	156-60-5	0.011	0.059	0.40	Not Detected
Trichloroethene	79-01-6	0.022	0.081	0.11	Not Detected
Vinyl Chloride	75-01-4	0.010	0.023	0.026	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	Lab Blank		
Lab ID:	2501479B-24D	**Date/Time Analyzed:**	1/27/25 01:28 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012707sima

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	112

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479B-25A	**Date/Time Analyzed:**	1/24/25 11:09 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012404

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	102
1,3,5-Trimethylbenzene	108-67-8	104
2,2,4-Trimethylpentane	540-84-1	99
Chlorobenzene	108-90-7	104
Cyclohexane	110-82-7	92
Heptane	142-82-5	109
Hexane	110-54-3	96
Methylene Chloride	75-09-2	92

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	103

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479B-25B	**Date/Time Analyzed:**	1/24/25 11:09 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012404sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	90
1,1,2,2-Tetrachloroethane	79-34-5	97
1,1,2-Trichloroethane	79-00-5	103
1,1-Dichloroethane	75-34-3	88
1,1-Dichloroethene	75-35-4	79
1,2-Dichloroethane	107-06-2	111
Benzene	71-43-2	100
Carbon Tetrachloride	56-23-5	106
Chloroethane	75-00-3	85
Chloromethane	74-87-3	94
cis-1,2-Dichloroethene	156-59-2	81
Ethyl Benzene	100-41-4	103
m,p-Xylene	108-38-3	92
Naphthalene	91-20-3	102
o-Xylene	95-47-6	94
Tetrachloroethene	127-18-4	120
Toluene	108-88-3	99
trans-1,2-Dichloroethene	156-60-5	84
Trichloroethene	79-01-6	118
Vinyl Chloride	75-01-4	84

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479B-25B	**Date/Time Analyzed:**	1/24/25 11:09 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012404sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479B-25C	**Date/Time Analyzed:**	1/27/25 11:17 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012703

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	98
1,3,5-Trimethylbenzene	108-67-8	100
2,2,4-Trimethylpentane	540-84-1	97
Chlorobenzene	108-90-7	99
Cyclohexane	110-82-7	90
Heptane	142-82-5	109
Hexane	110-54-3	95
Methylene Chloride	75-09-2	90

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	102

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479B-25D	**Date/Time Analyzed:**	1/27/25 11:17 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012703sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	84
1,1,2,2-Tetrachloroethane	79-34-5	94
1,1,2-Trichloroethane	79-00-5	99
1,1-Dichloroethane	75-34-3	83
1,1-Dichloroethene	75-35-4	74
1,2-Dichloroethane	107-06-2	105
Benzene	71-43-2	97
Carbon Tetrachloride	56-23-5	100
Chloroethane	75-00-3	82
Chloromethane	74-87-3	89
cis-1,2-Dichloroethene	156-59-2	76
Ethyl Benzene	100-41-4	100
m,p-Xylene	108-38-3	89
Naphthalene	91-20-3	92
o-Xylene	95-47-6	90
Tetrachloroethene	127-18-4	116
Toluene	108-88-3	96
trans-1,2-Dichloroethene	156-60-5	79
Trichloroethene	79-01-6	114
Vinyl Chloride	75-01-4	80

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	CCV		
Lab ID:	2501479B-25D	**Date/Time Analyzed:**	1/27/25 11:17 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012703sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	110

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479B-26A	**Date/Time Analyzed:**	1/24/25 11:42 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012405

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	104
1,3,5-Trimethylbenzene	108-67-8	105
2,2,4-Trimethylpentane	540-84-1	102
Chlorobenzene	108-90-7	104
Cyclohexane	110-82-7	95
Heptane	142-82-5	107
Hexane	110-54-3	97
Methylene Chloride	75-09-2	90

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	106
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	101

* % Recovery is calculated using unrounded analytical results.

Client ID:	LCSD		
Lab ID:	2501479B-26AA	**Date/Time Analyzed:**	1/24/25 12:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012406

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	105
1,3,5-Trimethylbenzene	108-67-8	105
2,2,4-Trimethylpentane	540-84-1	96
Chlorobenzene	108-90-7	104
Cyclohexane	110-82-7	90
Heptane	142-82-5	106
Hexane	110-54-3	97
Methylene Chloride	75-09-2	91

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	105

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479B-26B	**Date/Time Analyzed:**	1/24/25 11:42 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012405sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	91
1,1,2,2-Tetrachloroethane	79-34-5	96
1,1,2-Trichloroethane	79-00-5	103
1,1-Dichloroethane	75-34-3	88
1,1-Dichloroethene	75-35-4	76
1,2-Dichloroethane	107-06-2	110
Benzene	71-43-2	100
Carbon Tetrachloride	56-23-5	105
Chloroethane	75-00-3	86
Chloromethane	74-87-3	93
cis-1,2-Dichloroethene	156-59-2	81
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	92
Naphthalene	91-20-3	137
o-Xylene	95-47-6	93
Tetrachloroethene	127-18-4	119
Toluene	108-88-3	96
trans-1,2-Dichloroethene	156-60-5	84
Trichloroethene	79-01-6	115
Vinyl Chloride	75-01-4	85

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479B-26B	**Date/Time Analyzed:**	1/24/25 11:42 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012405sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	109

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479B-26BB	**Date/Time Analyzed:**	1/24/25 12:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012406sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	91
1,1,2,2-Tetrachloroethane	79-34-5	97
1,1,2-Trichloroethane	79-00-5	104
1,1-Dichloroethane	75-34-3	88
1,1-Dichloroethene	75-35-4	79
1,2-Dichloroethane	107-06-2	109
Benzene	71-43-2	98
Carbon Tetrachloride	56-23-5	106
Chloroethane	75-00-3	90
Chloromethane	74-87-3	96
cis-1,2-Dichloroethene	156-59-2	81
Ethyl Benzene	100-41-4	105
m,p-Xylene	108-38-3	93
Naphthalene	91-20-3	143 Q
o-Xylene	95-47-6	94
Tetrachloroethene	127-18-4	120
Toluene	108-88-3	99
trans-1,2-Dichloroethene	156-60-5	87
Trichloroethene	79-01-6	116
Vinyl Chloride	75-01-4	89

Q = Exceeds Quality Control limits.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479B-26BB	**Date/Time Analyzed:**	1/24/25 12:14 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012406sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	88
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	111

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479B-26C	**Date/Time Analyzed:**	1/27/25 11:50 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012704

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	102
1,3,5-Trimethylbenzene	108-67-8	102
2,2,4-Trimethylpentane	540-84-1	98
Chlorobenzene	108-90-7	102
Cyclohexane	110-82-7	90
Heptane	142-82-5	110
Hexane	110-54-3	92
Methylene Chloride	75-09-2	86

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	103

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479B-26CC	**Date/Time Analyzed:**	1/27/25 12:23 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012705

Compound	CAS#	%Recovery
1,2,4-Trimethylbenzene	95-63-6	101
1,3,5-Trimethylbenzene	108-67-8	102
2,2,4-Trimethylpentane	540-84-1	90
Chlorobenzene	108-90-7	100
Cyclohexane	110-82-7	84
Heptane	142-82-5	101
Hexane	110-54-3	92
Methylene Chloride	75-09-2	86

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	104

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479B-26D	**Date/Time Analyzed:**	1/27/25 11:50 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012704sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	87
1,1,2,2-Tetrachloroethane	79-34-5	95
1,1,2-Trichloroethane	79-00-5	102
1,1-Dichloroethane	75-34-3	85
1,1-Dichloroethene	75-35-4	73
1,2-Dichloroethane	107-06-2	108
Benzene	71-43-2	100
Carbon Tetrachloride	56-23-5	102
Chloroethane	75-00-3	85
Chloromethane	74-87-3	91
cis-1,2-Dichloroethene	156-59-2	78
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	91
Naphthalene	91-20-3	133
o-Xylene	95-47-6	92
Tetrachloroethene	127-18-4	119
Toluene	108-88-3	96
trans-1,2-Dichloroethene	156-60-5	81
Trichloroethene	79-01-6	115
Vinyl Chloride	75-01-4	81

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCS		
Lab ID:	2501479B-26D	**Date/Time Analyzed:**	1/27/25 11:50 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012704sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	87
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	110

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479B-26DD	**Date/Time Analyzed:**	1/27/25 12:23 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012705sim

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	85
1,1,2,2-Tetrachloroethane	79-34-5	94
1,1,2-Trichloroethane	79-00-5	99
1,1-Dichloroethane	75-34-3	82
1,1-Dichloroethene	75-35-4	74
1,2-Dichloroethane	107-06-2	104
Benzene	71-43-2	96
Carbon Tetrachloride	56-23-5	100
Chloroethane	75-00-3	85
Chloromethane	74-87-3	92
cis-1,2-Dichloroethene	156-59-2	75
Ethyl Benzene	100-41-4	102
m,p-Xylene	108-38-3	90
Naphthalene	91-20-3	140
o-Xylene	95-47-6	91
Tetrachloroethene	127-18-4	116
Toluene	108-88-3	96
trans-1,2-Dichloroethene	156-60-5	81
Trichloroethene	79-01-6	111
Vinyl Chloride	75-01-4	83

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS SIM/FULL SCAN
WVA

Client ID:	LCSD		
Lab ID:	2501479B-26DD	**Date/Time Analyzed:**	1/27/25 12:23 PM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msdj.i / j012705sim

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	86
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	112

* % Recovery is calculated using unrounded analytical results.

eurofins | Air Toxics

Method : Modified TO-15 Hi/Lo (SP)-Arcadis (Watervliet) v3

CAS Number	Compound	Rpt. Limit (ppbv)
74-87-3	Chloromethane	0.50
75-01-4	Vinyl Chloride	0.010
75-00-3	Chloroethane	0.050
75-35-4	1,1-Dichloroethene	0.010
75-09-2	Methylene Chloride	0.20
156-60-5	trans-1,2-Dichloroethene	0.10
156-59-2	cis-1,2-Dichloroethene	0.020
71-55-6	1,1,1-Trichloroethane	0.020
56-23-5	Carbon Tetrachloride	0.020
71-43-2	Benzene	0.050
107-06-2	1,2-Dichloroethane	0.020
79-01-6	Trichloroethene	0.020
108-88-3	Toluene	0.050
79-00-5	1,1,2-Trichloroethane	0.020
127-18-4	Tetrachloroethene	0.020
100-41-4	Ethyl Benzene	0.020
108-38-3	m,p-Xylene	0.040
95-47-6	o-Xylene	0.020
79-34-5	1,1,2,2-Tetrachloroethane	0.020
110-54-3	Hexane	0.50
110-82-7	Cyclohexane	0.50
540-84-1	2,2,4-Trimethylpentane	0.50
142-82-5	Heptane	0.50
108-90-7	Chlorobenzene	0.10
108-67-8	1,3,5-Trimethylbenzene	0.10
95-63-6	1,2,4-Trimethylbenzene	0.10
91-20-3	Naphthalene	0.050

	Surrogate	Method Limits
17060-07-0	1,2-Dichloroethane-d4	70-130
2037-26-5	Toluene-d8	70-130
460-00-4	**4-Bromofluorobenzene**	**70-130**

ARCADIS

Appendix C

Operation and Maintenance Field Checklists

Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 1/9/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	5.0	0.09	0.10	0.51	All Filters OK
2	East Body Forge	5.7	0.14	0.05	0.50	RAFs Rotated to RPFs, RAFs New
3	West Body Forge	5.8	0.10	0.08	0.44	↓
4	West Turret Lab	6.7	0.12	0.11	0.51	All Filters OK
5	East Turret Lab	5.5	0.15	0.07	0.60	↓
6	North Mechanical Closet	4.4	0.09	0.09	0.64	All Filters OK
7	South Mechanical Closet	4.5	0.05	0.08	0.42	↓
8	South Mechanical Closet	4.7	0.09	0.09	0.41	

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 1/9/24

Inspector ES

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_20)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.5	13.35
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	-2.0	54.6
		Notes: Condensation Present → Drained				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-5.0	11.45
	EW-2	Main floor, north end of wood shop	Wood Shop		-6.0	7.56
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.7	46.6
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.2	45.4
		Notes:				

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 1/9/24

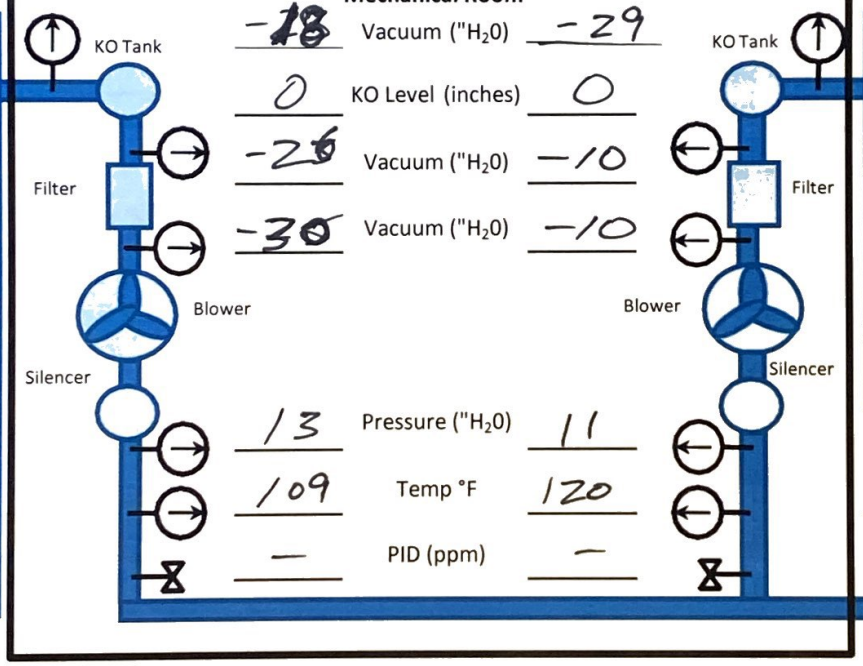
Inspector ES

Building 25 System	Control Panel Room	Building 20 System
396	Flow (cfm)	363
	Pressure ("H_2O) 11	
	Temp (°F) 107	
106732	Run Time (hours)	106349
55.02	VFD Speed ~~(%)~~ Hz	59.8
None	Alarms? 1/7/24 Blower Flow High High	

B-25 Extraction Wells

EW-1	
Vacuum	-60
Flow	191
EW-2	
Vacuum	-34
Flow	185
EW-3	
Vacuum	-59
Flow	31
EW-4	
Vacuum	-60
Flow	19.5

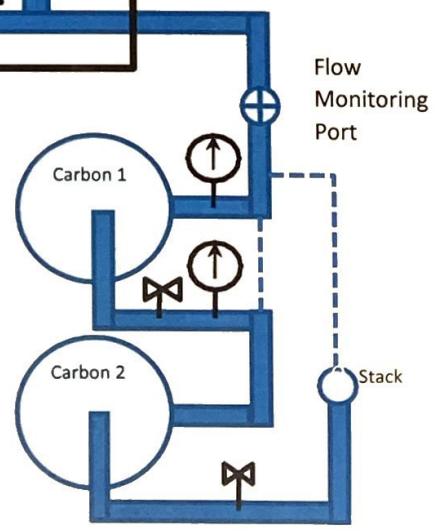
Mechanical Room



-18	Vacuum ("H_2O)	-29
0	KO Level (inches)	0
-26	Vacuum ("H_2O)	-10
-30	Vacuum ("H_2O)	-10
13	Pressure ("H_2O)	11
109	Temp °F	120
—	PID (ppm)	—

B-20 Extraction Wells

EW-1	
Vacuum	-63
Flow	134
EW-2	
Vacuum	-64
Flow	121.5
EW-3	
Vacuum	-58
Flow	102



Flow (cfm) —

"H_2O —

PID (ppm) —

"H_2O —

PID (ppm) —

Notes: * Carbon Bypassed

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 1/9/24

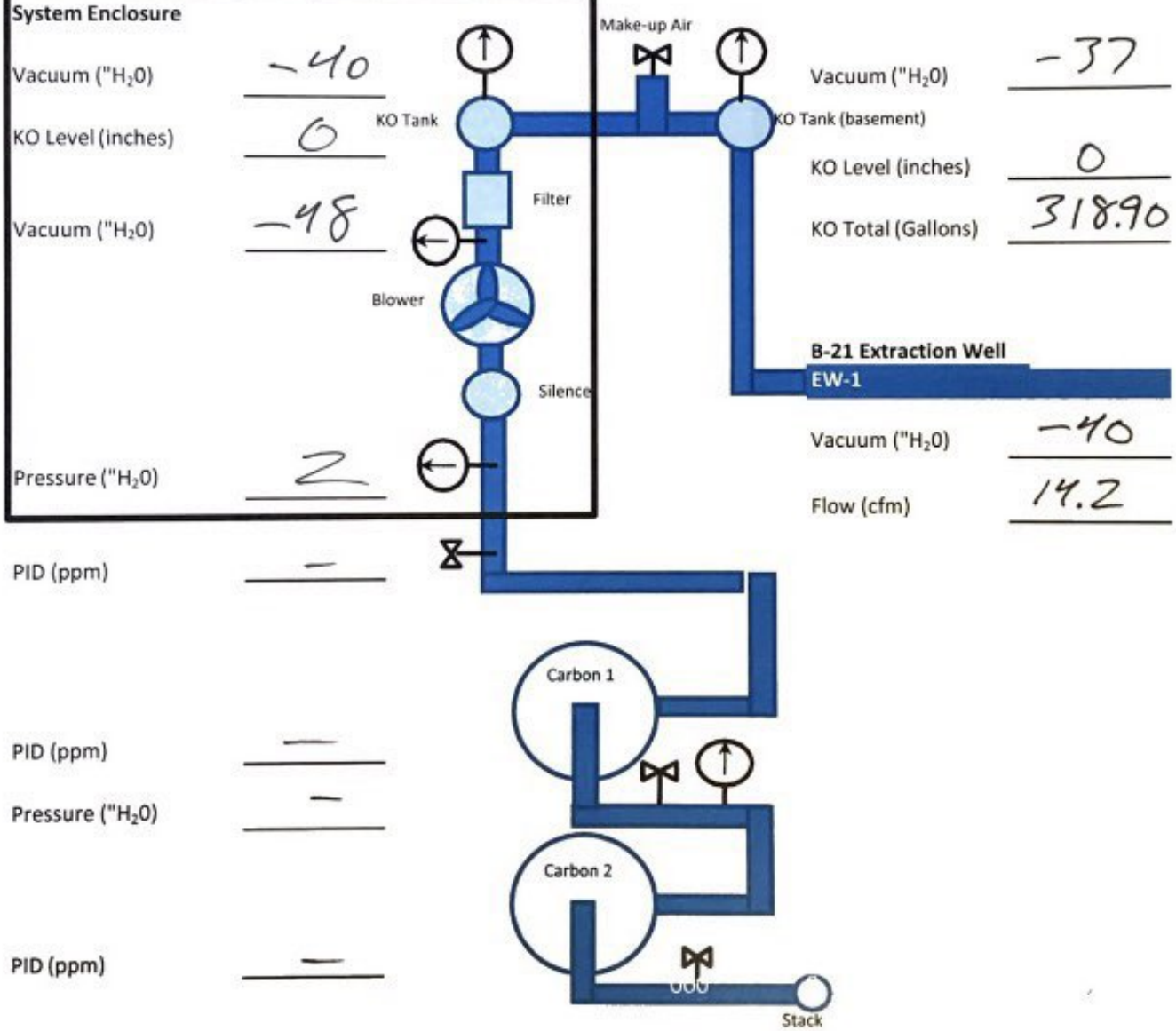
Inspector ES

Control Panel

Flow (cfm)	19
Temp (°F)	86
Run Time (hours)	104494
VFD Speed (%)	90.1
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-40
KO Level (inches)	0
Vacuum ("H_2O)	-48
Pressure ("H_2O)	2
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—



Vacuum ("H_2O)	-37
KO Level (inches)	0
KO Total (Gallons)	318.90

B-21 Extraction Well
EW-1

Vacuum ("H_2O)	-40
Flow (cfm)	14.2

* Carbon Bypassed

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 1/9/24

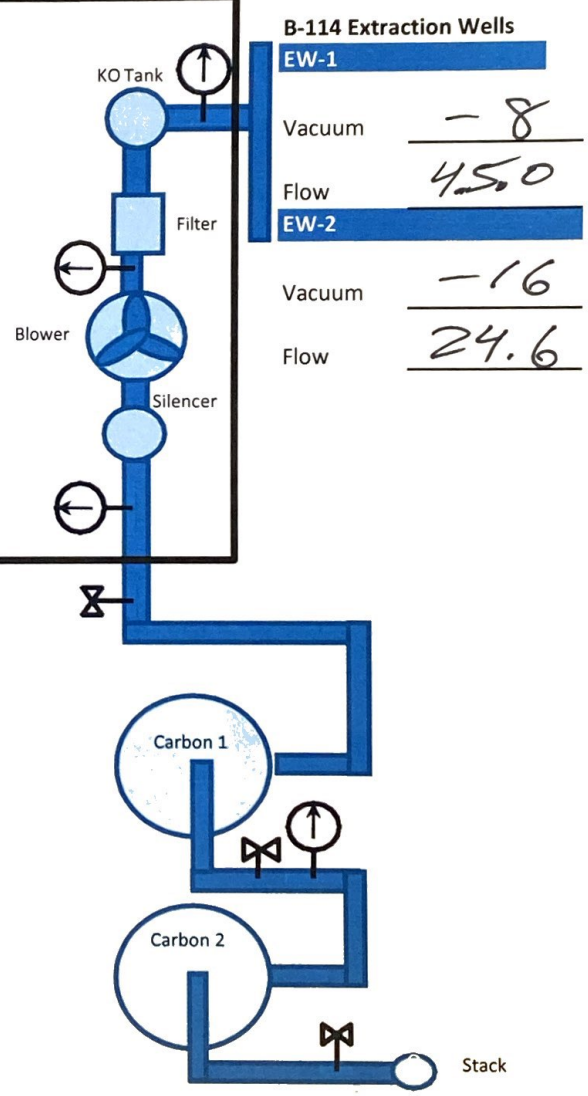
Inspector ES

Control Panel

Flow (cfm)	69
Temp (°F)	99
Run Time (hours)	103097
VFD Speed (%)	96.6
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-12
KO Level (inches)	6
Vacuum ("H_2O)	-27
Pressure ("H_2O)	7
PID (ppm)	—
PID (ppm)	4.0
Pressure ("H_2O)	—
PID (ppm)	—



B-114 Extraction Wells

EW-1	
Vacuum	-8
Flow	45.0
EW-2	
Vacuum	-16
Flow	24.6

Notes: _____

Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 2/5/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	4.9	0.09	0.11	0.59	All Filters OK
2	East Body Forge	5.7	0.13	0.06	0.62	RAFs Rotated to RPFs, RAFs New
3	West Body Forge	5.8	0.14	0.10	0.45	↓
4	West Turret Lab	6.6	0.12	0.13	0.51	↑
5	East Turret Lab	5.5	0.13	0.07	0.62	
6	North Mechanical Closet	4.5	0.09	0.09	0.65	All Filters OK
7	South Mechanical Closet	4.6	0.06	0.07	0.44	↓
8	South Mechanical Closet	4.9	0.09	0.11	0.43	

Filters Replaced @ AFUs 2+3

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 2/5/24

Inspector ES

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_2O)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.4	14.0
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	-1.8	58.5
		Notes: Condensate Present → Drained.				
		GFCI outlet tripped → Reset, OK				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-6.0	7.26
	EW-2	Main floor, north end of wood shop	Wood Shop		-9.0	9.77
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.6	42.8
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.0	48.0
		Notes:				

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 2/5/24

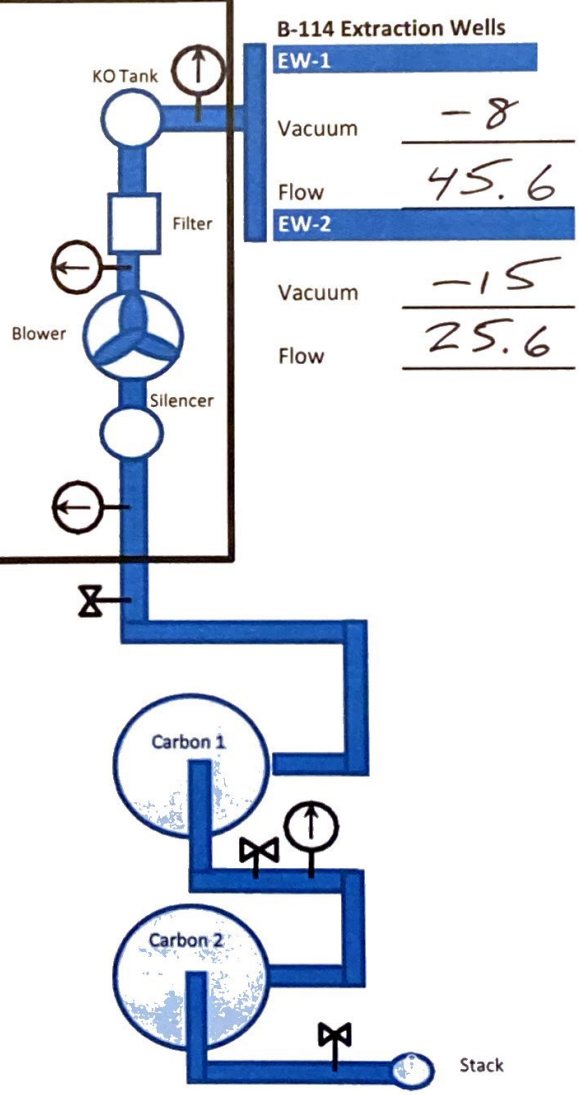
Inspector ES

Control Panel

Flow (cfm)	69
Temp (°F)	102
Run Time (hours)	103706
VFD Speed (%)	96.6
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-12
KO Level (inches)	0
Vacuum ("H_2O)	-27
Pressure ("H_2O)	6
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	4
PID (ppm)	—



B-114 Extraction Wells

EW-1	
Vacuum	-8
Flow	45.6
EW-2	
Vacuum	-15
Flow	25.6

Notes: _____

_____

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 2/5/24

Inspector ES

Building 25 System	Control Panel Room	Building 20 System
396	Flow (cfm)	363
	Pressure ("H_2O) 10	
	Temp (°F) 107	
107341	Run Time (hours)	106958
55.02	VFD Speed ~~(%)~~ Hz	59.8
None	Alarms? 1/7/24 Influent Flow High High	

B-25 Extraction Wells

EW-1	
Vacuum	-60
Flow	191
EW-2	
Vacuum	-35
Flow	200
EW-3	
Vacuum	-58
Flow	19.6
EW-4	
Vacuum	-60
Flow	15.3

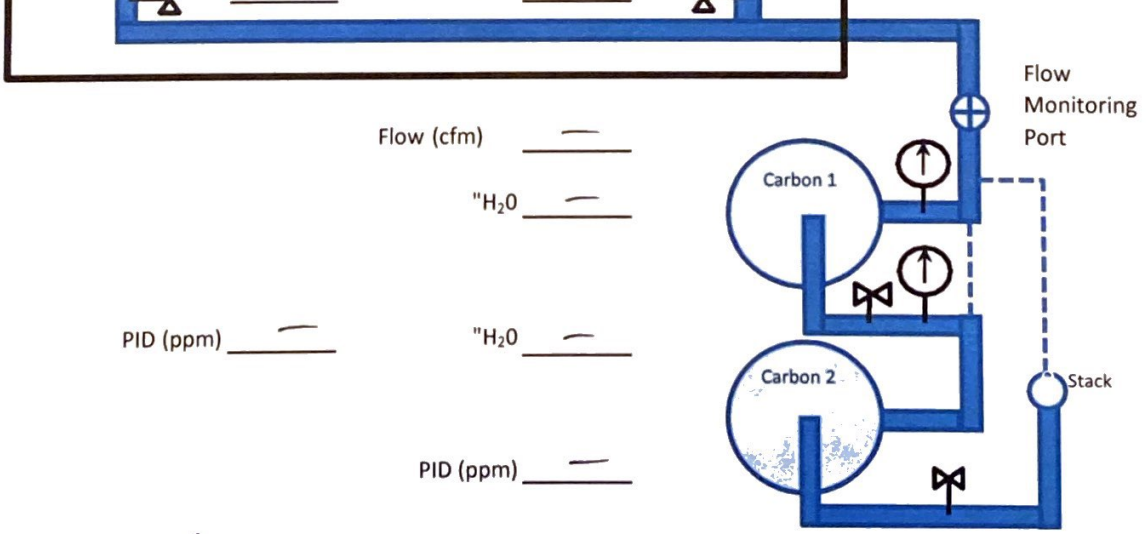
Mechanical Room

	Vacuum ("H_2O)	
-40		-28
0	KO Level (inches)	0
-46	Vacuum ("H_2O)	-40
-50	Vacuum ("H_2O)	-33
12	Pressure ("H_2O)	10
110	Temp °F	120
—	PID (ppm)	—

KO Tank, Filter, Blower, Silencer

B-20 Extraction Wells

EW-1	
Vacuum	-64
Flow	120.5
EW-2	
Vacuum	-64
Flow	120
EW-3	
Vacuum	-58
Flow	101



Notes: Carbon Bypassed.

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 2/5/24

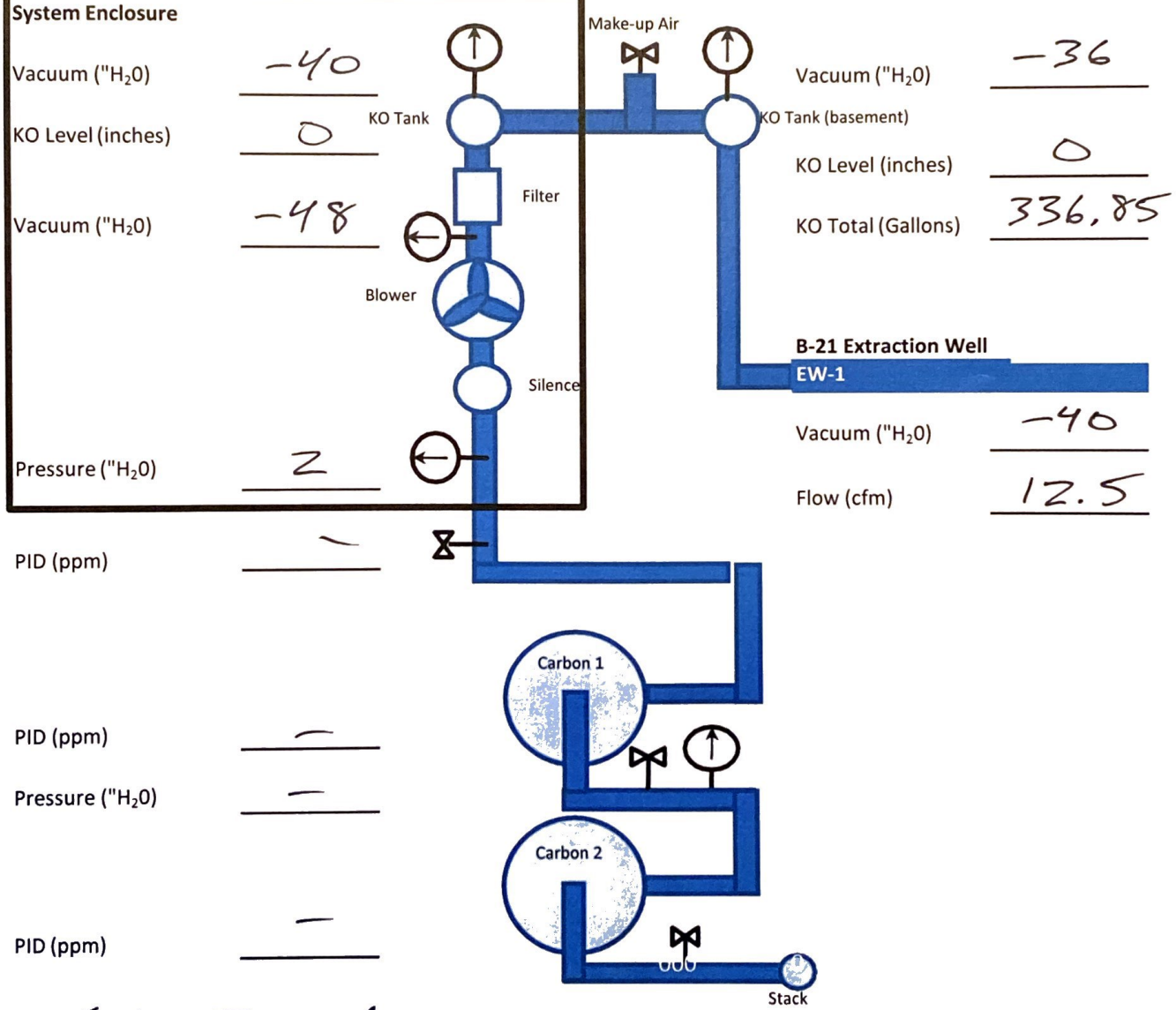
Inspector ES

Control Panel

Flow (cfm)	17
Temp (°F)	90
Run Time (hours)	105104
VFD Speed (%)	90.2
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-40
KO Level (inches)	0
Vacuum ("H_2O)	-48
Pressure ("H_2O)	2
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—



Vacuum ("H_2O)	-36
KO Level (inches)	0
KO Total (Gallons)	336,85
Vacuum ("H_2O)	-40
Flow (cfm)	12.5

Carbon Bypassed.

Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 3/4/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	5.0	0.09	0.11	0.52	All Filters OK
2	East Body Forge	5.8	0.10	0.07	0.65	RAFs Rotated to RPFs, RAFs New
3	West Body Forge	6.0	0.13	0.10	0.41	↓
4	West Turret Lab	6.7	0.12	0.14	0.51	All Filters OK
5	East Turret Lab	5.5	0.14	0.07	0.62	↓
6	North Mechanical Closet	4.5	0.09	0.09	0.66	RAFs Rotated to RPFs, RAFs New
7	South Mechanical Closet	4.6	0.06	0.08	0.45	All Filters OK
8	South Mechanical Closet	4.9	0.09	0.11	0.45	↓

* Filters Replaced @ AFUs 2, 3, 6, 7

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 3/4/24

Inspector ES

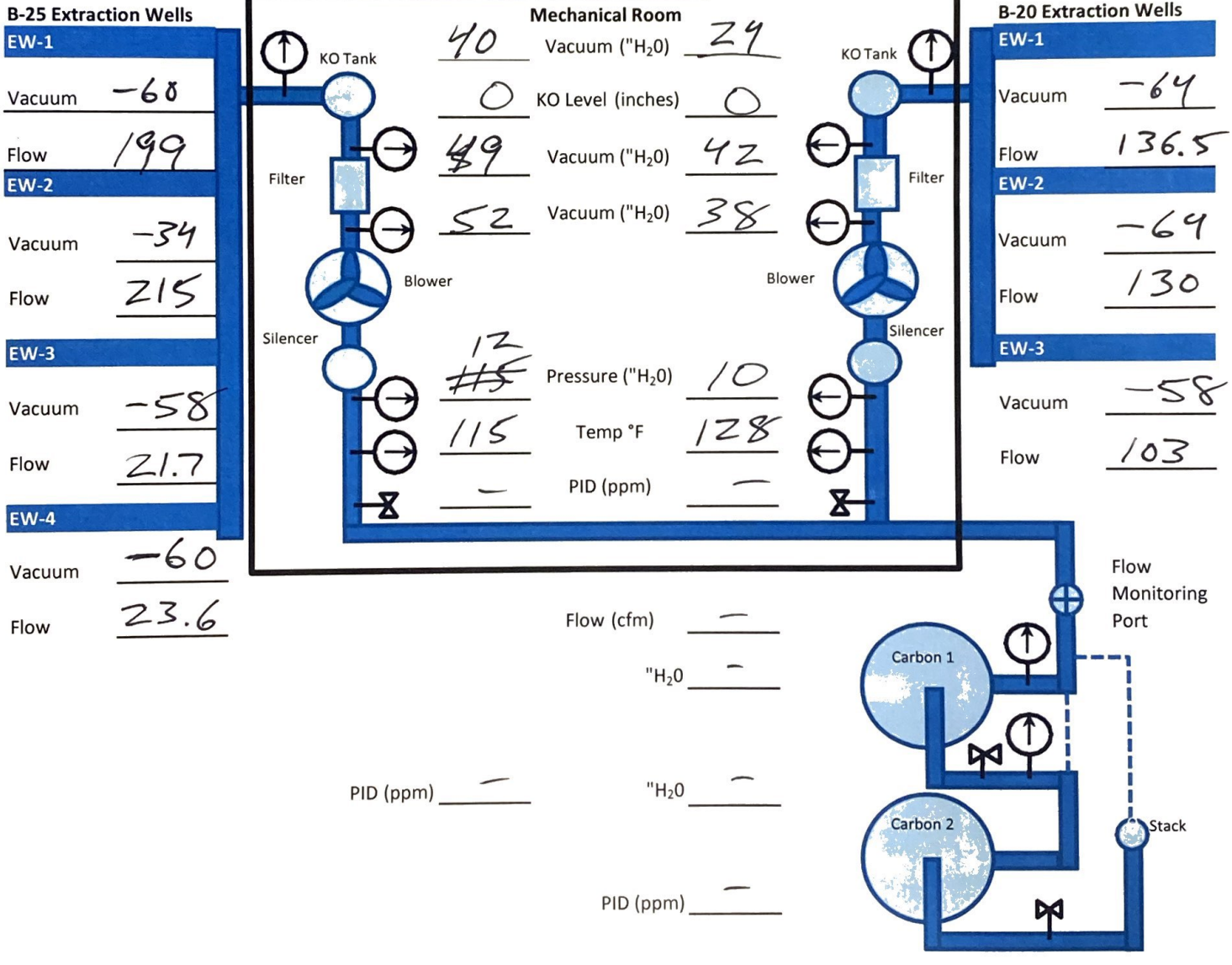
Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_2O)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.6	14.05
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	-2.0	49.2
		Notes: No Condensate.				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-6.0	6.97
	EW-2	Main floor, north end of wood shop	Wood Shop		-9.0	10.80
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.6	48.8
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.0	47.5
		Notes:				

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 3/4/24

Inspector ES

Building 25 System	Control Panel Room	Building 20 System
393	Flow (cfm)	363
	Pressure ("H_2O) 8	
	Temp (°F) 113	
107970	Run Time (hours)	107587
55.02	VFD Speed ~~(%)~~ Hz	59.8
None	Alarms? 2/25/24 - Influent Flow High High	



Notes: Carbon Bypassed.

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 3/4/24

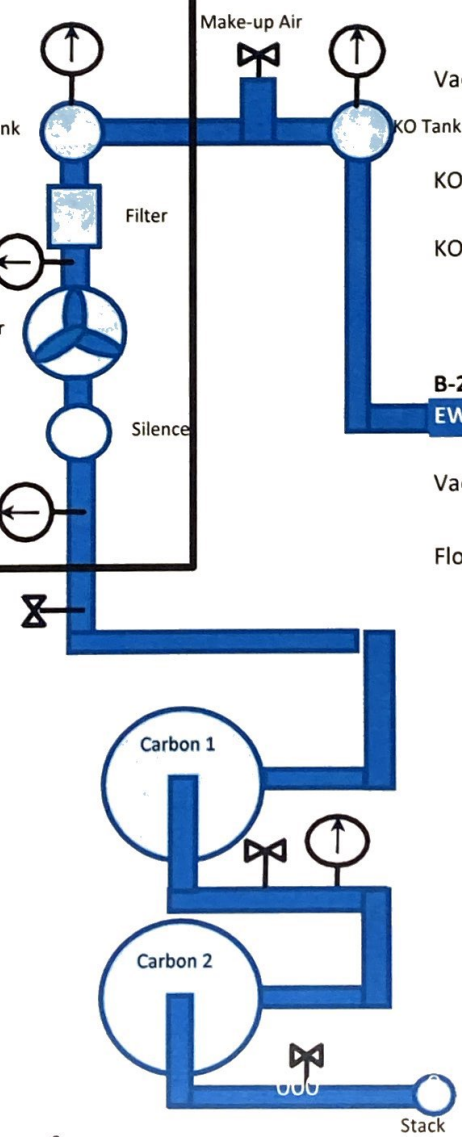
Inspector ES

Control Panel

Flow (cfm)	~~103~~ 17
Temp (°F)	103
Run Time (hours)	105732
VFD Speed (%)	90.2
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-40
KO Level (inches)	0
Vacuum ("H_2O)	-47
Pressure ("H_2O)	2



Vacuum ("H_2O)	-36 ~~-40~~
KO Level (inches)	0
KO Total (Gallons)	336.85

B-21 Extraction Well
EW-1

Vacuum ("H_2O)	-40
Flow (cfm)	10.3

PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—

Carbon Bypassed.

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 3/4/24

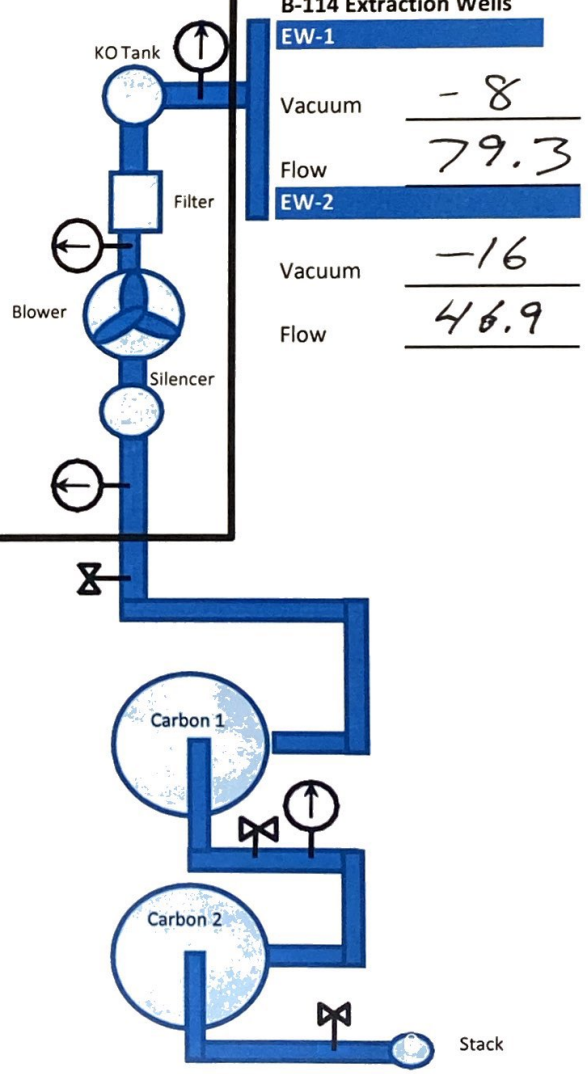
Inspector ES

Control Panel

Flow (cfm)	69
Temp (°F)	102
Run Time (hours)	104335
VFD Speed (%)	96.6
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-12
KO Level (inches)	0
Vacuum ("H_2O)	-27
Pressure ("H_2O)	6
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	4
PID (ppm)	—



B-114 Extraction Wells

EW-1	
Vacuum	-8
Flow	79.3
EW-2	
Vacuum	-16
Flow	46.9

Notes: _____

C:\Users\Esousa\Documents\WVA\OMM Field Forms\Copy of SSDS OM Checklists

Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 7/15/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	4.9	0.10	0.10	0.45	
2	East Body Forge	5.7	0.11	0.05	0.62	
3	West Body Forge	~~5.8~~	0.17	0.10	0.49	
4	West Turret Lab	6.5	0.10	0.13	0.47	
5	East Turret Lab	4.6	0.11	0.05	0.50	
6	North Mechanical Closet	4.5	0.09	0.08	0.65	RAFs Rotated to RPFs, RAFs New
7	South Mechanical Closet	4.5	0.06	0.06	0.45	
8	South Mechanical Closet	4.7	0.10	0.10	0.45	

* Filters replaced @ all 8 locations

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 7/15/24

Inspector ES

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_20)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.5	16.45
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	-2.0	48.8
		Notes: No Condensate.				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-7.5	6.72
	EW-2	Main floor, north end of wood shop	Wood Shop		-12.5	11.40
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.6	39.7
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.1	41.2
		Notes:				

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 7/15/24

Inspector ES

Building 25 System	Control Panel Room	Building 20 System
383	Flow (cfm)	349
	Pressure ("H_2O) 11	
	Temp (°F) 132	
110955.00	Run Time (hours)	110572.00
55.02	VFD Speed ~~(%)~~ HZ	59.8
None	Alarms? 7/14/25 Influent Flow High High	

B-25 Extraction Wells

EW-1	
Vacuum	-59
Flow	188
EW-2	
Vacuum	-34
Flow	187
EW-3	
Vacuum	-56
Flow	18.3
EW-4	
Vacuum	-58
Flow	20.2

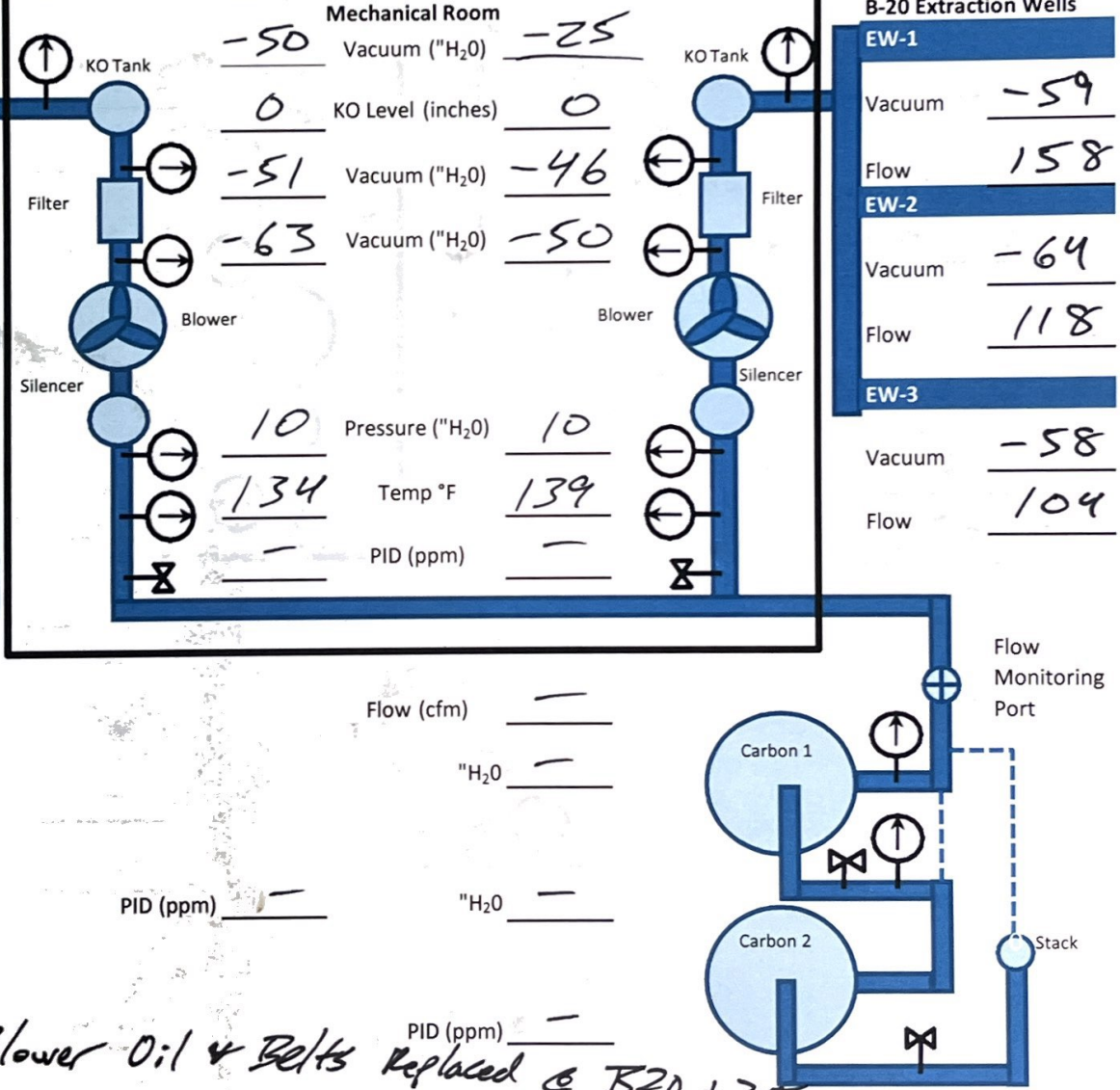
Mechanical Room

-50	Vacuum ("H_2O)	-25
0	KO Level (inches)	0
-51	Vacuum ("H_2O)	-46
-63	Vacuum ("H_2O)	-50
10	Pressure ("H_2O)	10
134	Temp °F	139
—	PID (ppm)	—

KO Tank, Filter, Blower, Silencer

B-20 Extraction Wells

EW-1	
Vacuum	-59
Flow	158
EW-2	
Vacuum	-64
Flow	118
EW-3	
Vacuum	-58
Flow	104



Flow (cfm) —

"H_2O —

PID (ppm) —

"H_2O —

PID (ppm) —

* Blower Oil & Belts Replaced @ B20 +25.

Notes: * Carbon Bypassed

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 7/15/24

Inspector ES

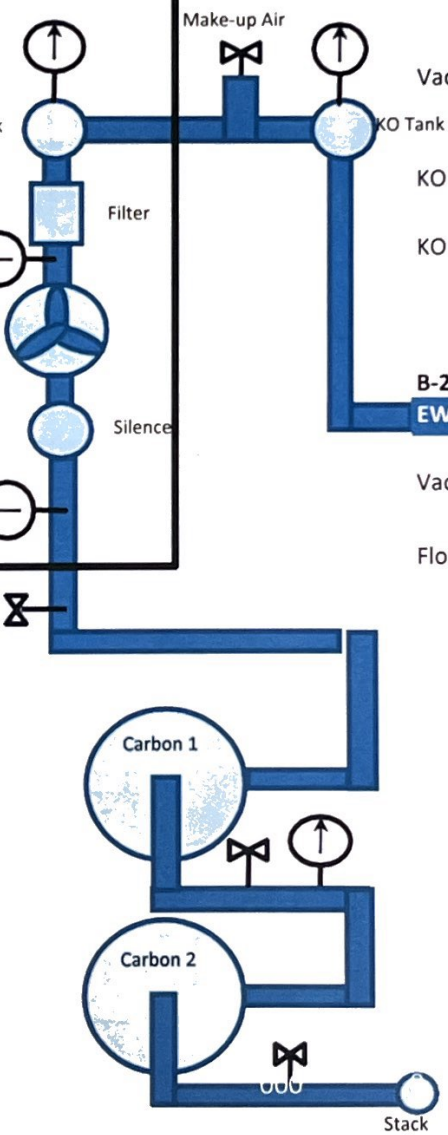
* System Offline on Arrival

Control Panel

Flow (cfm)	19
Temp (°F)	126
Run Time (hours)	108331.00
VFD Speed (%)	90.2
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-37.5
KO Level (inches)	0
Vacuum ("H_2O)	-44.5
Pressure ("H_2O)	1
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—



Vacuum ("H_2O)	-34
KO Level (inches)	0
KO Total (Gallons)	358.18

B-21 Extraction Well
EW-1

Vacuum ("H_2O)	-36.5
Flow (cfm)	15.2

* Carbon Bypassed.

* Vent Fan VFD turned on @ 40.0 HZ

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 7/15/24

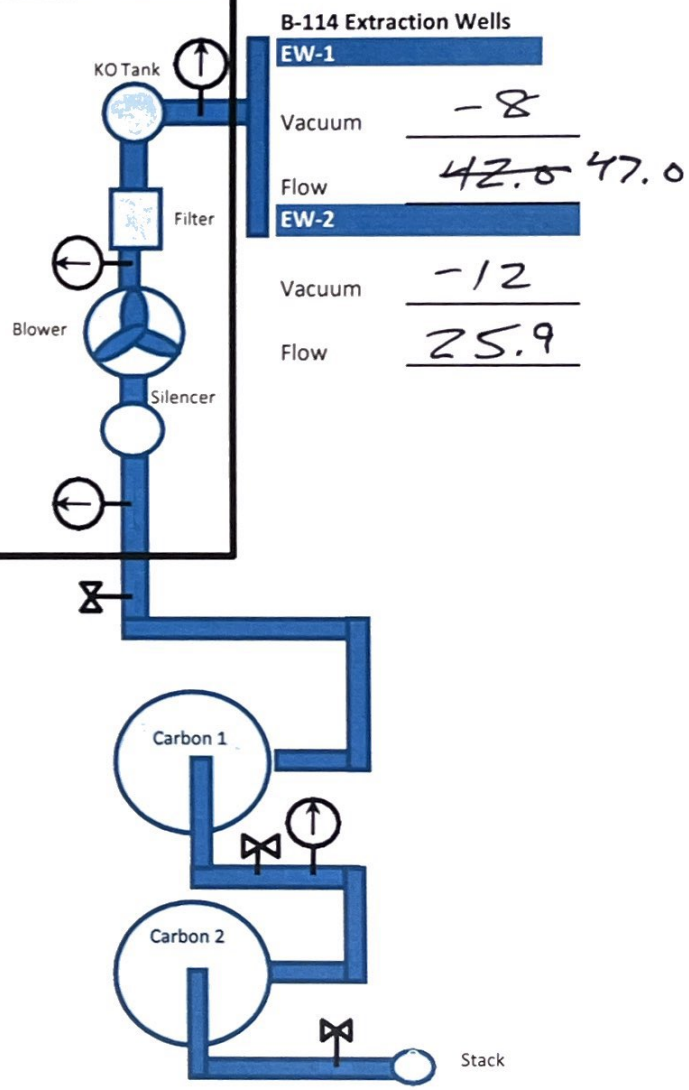
Inspector ES

Control Panel

Flow (cfm)	71
Temp (°F)	111
Run Time (hours)	107296.00
VFD Speed (%)	96.4
Alarms?	None

System Enclosure

Vacuum ("$H_2$0)	-12
KO Level (inches)	0
Vacuum ("$H_2$0)	-27
Pressure ("$H_2$0)	5
PID (ppm)	—
PID (ppm)	—
Pressure ("$H_2$0)	2.5
PID (ppm)	—



B-114 Extraction Wells

EW-1

Vacuum	-8
Flow	~~42.0~~ 47.0

EW-2

Vacuum	-12
Flow	25.9

Notes: * Vent fan turned on @ 40.1 HZ

Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 8/5/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	5.0	0.10	0.11	0.46	All Filters OK
2	East Body Forge	5.7	0.09	0.04	0.62	RAFs Rotated to RPFs, RAFs New
3	West Body Forge	5.7	0.11	0.06	0.51	↓
4	West Turret Lab	6.5	0.10	0.12	0.49	↑
5	East Turret Lab	4.7	0.10	0.07	0.50	
6	North Mechanical Closet	4.5	~~0.04~~ 0.09	0.08	~~0.09~~ 0.64	All Filters OK.
7	South Mechanical Closet	4.5	0.06	0.06	0.45	↓
8	South Mechanical Closet	4.7	0.09	0.08	0.45	

Filters Replaced @ AFUs 2+3

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 8/5/24

Inspector ES

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_2O)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.5	16.10
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	-2.0	49.40
		Notes: No Condensate				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-8.5	9.47
	EW-2	Main floor, north end of wood shop	Wood Shop		-18	7.71
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.6	42.8
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.0	43.7
		Notes:				

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 8/5/24

Inspector ES

Building 25 System	Control Panel Room	Building 20 System
390	Flow (cfm)	363
	Pressure ("H_2O) 8	
	Temp (°F) 136	
111430	Run Time (hours)	111047
55.05	VFD Speed ~~(%)~~ HZ	59.8
None	Alarms? 8/5/24 Influent Flow High High	

B-25 Extraction Wells

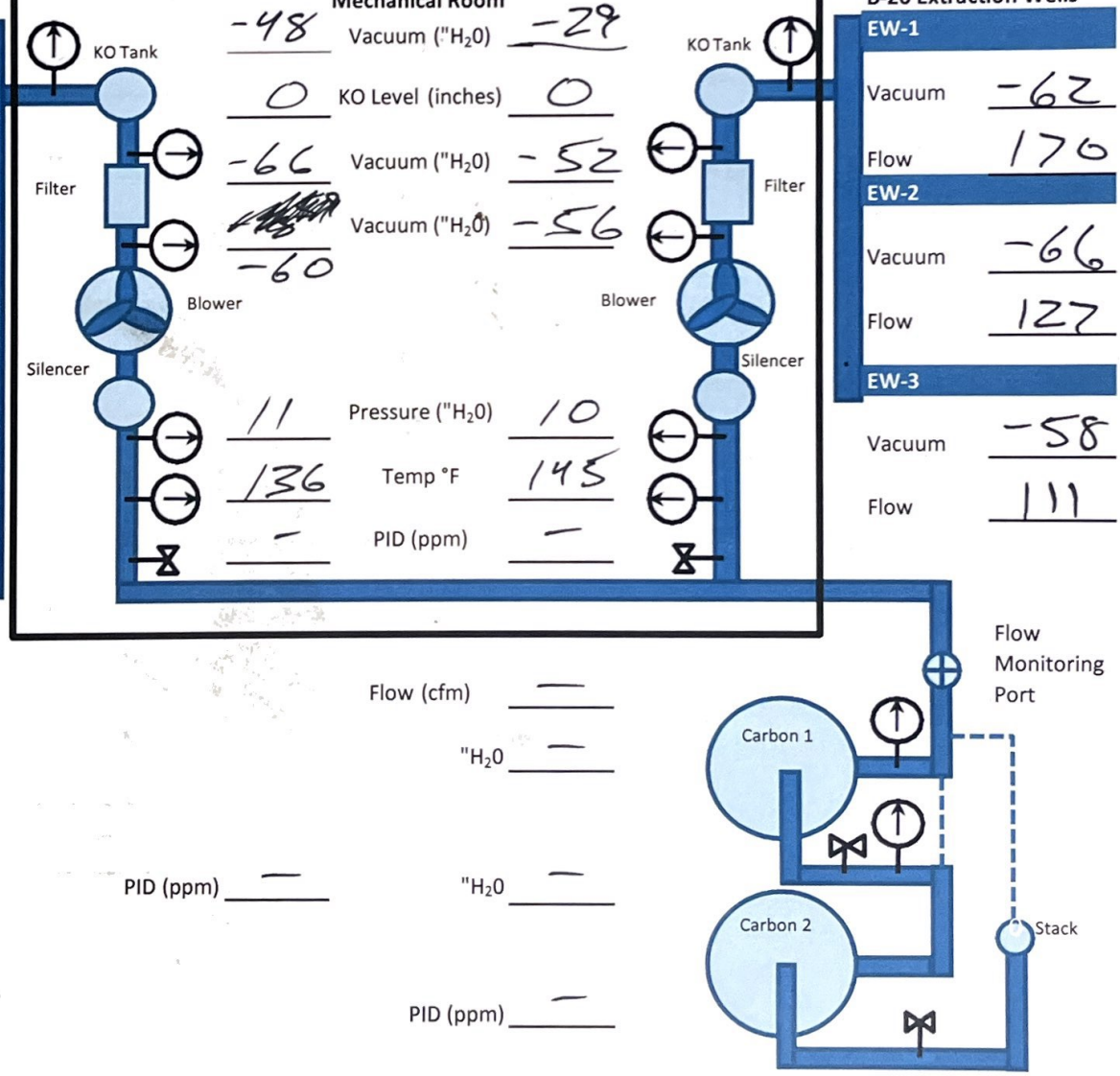
EW-1	
Vacuum	-60
Flow	190.5
EW-2	
Vacuum	-34
Flow	184
EW-3	
Vacuum	-54
Flow	36.7
EW-4	
Vacuum	-55
Flow	29.8

Mechanical Room

-48	Vacuum ("H_2O)	-29
0	KO Level (inches)	0
-66	Vacuum ("H_2O)	-52
-60	Vacuum ("H_2O)	-56
11	Pressure ("H_2O)	10
136	Temp °F	145
—	PID (ppm)	—

B-20 Extraction Wells

EW-1	
Vacuum	-62
Flow	170
EW-2	
Vacuum	-66
Flow	127
EW-3	
Vacuum	-58
Flow	111



Flow (cfm) —

"H_2O —

PID (ppm) — "H_2O —

PID (ppm) —

Notes: * Carbon Bypassed.

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 8/5/24

Inspector ES

Control Panel

Flow (cfm) 17

Temp (°F) 125

Run Time (hours) 108800

VFD Speed (%) 90.2

Alarms? 7/15/24 Blower failed to stop. → other alarms pointing to power outage → confirmed w/ employees

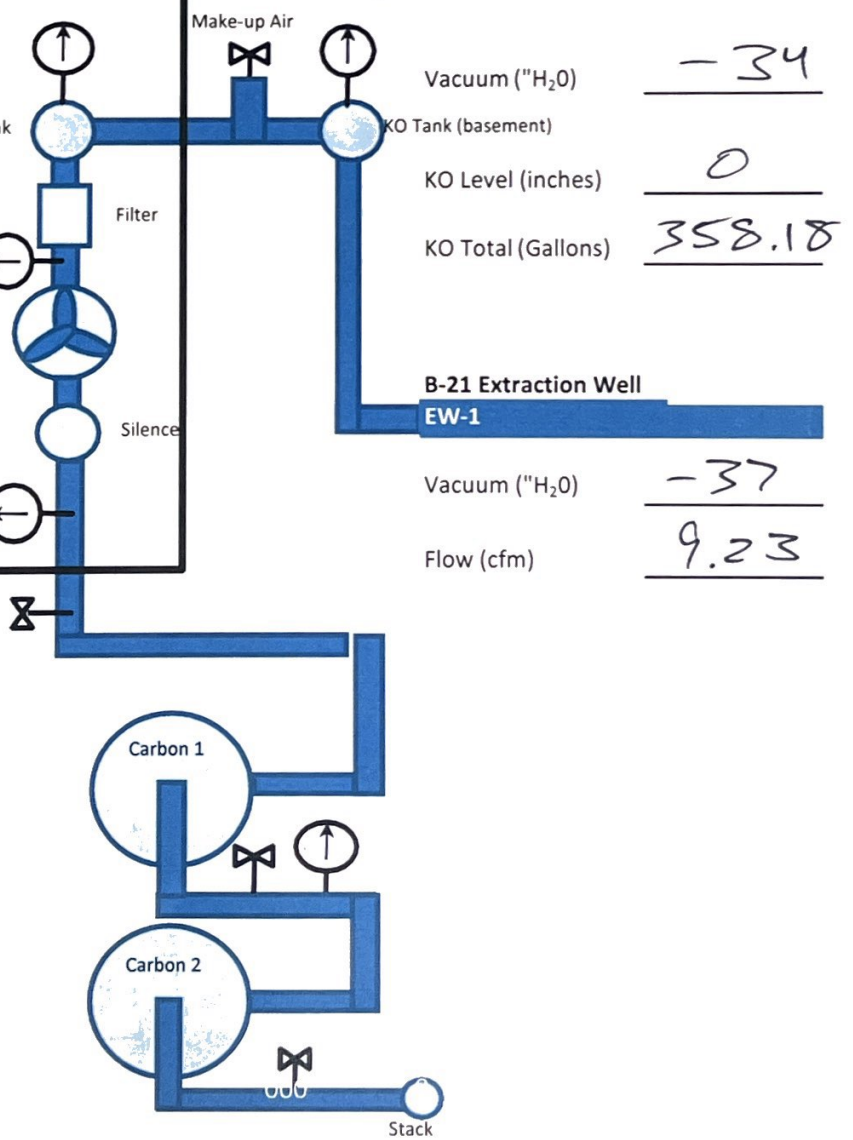
System Enclosure

Vacuum ("H_2O) -38

KO Level (inches) 0

Vacuum ("H_2O) -45

Pressure ("H_2O) 1



Vacuum ("H_2O) -34

KO Level (inches) 0

KO Total (Gallons) 358.18

B-21 Extraction Well
EW-1

Vacuum ("H_2O) -37

Flow (cfm) 9.23

PID (ppm) —

PID (ppm) —

Pressure ("H_2O) —

PID (ppm) —

* Carbon Bypassed.

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 8/5/24

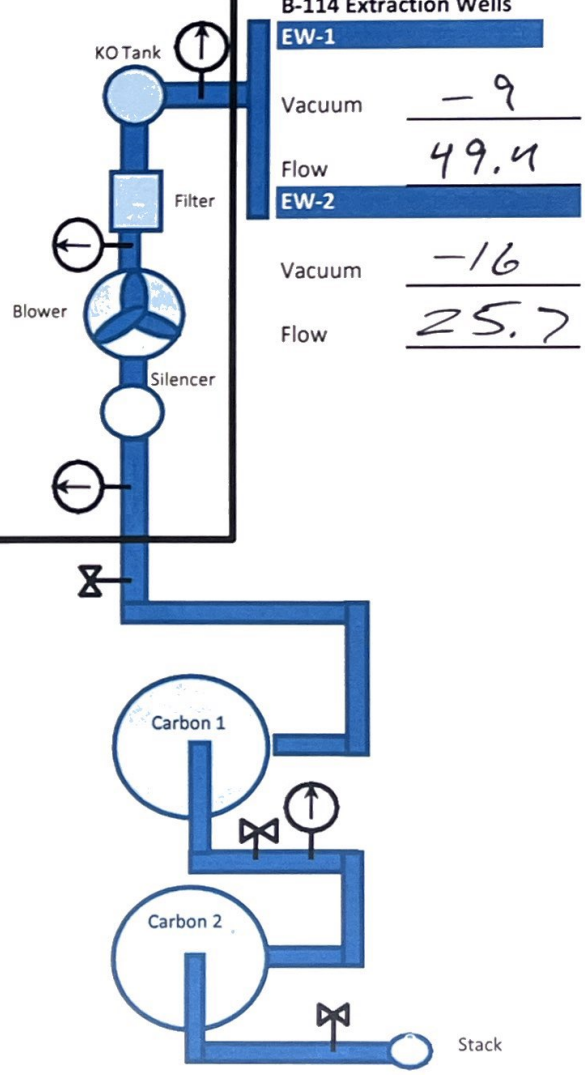
Inspector ES

Control Panel

Flow (cfm)	68
Temp (°F)	111
Run Time (hours)	107774
VFD Speed (%)	96.5
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-12
KO Level (inches)	0
Vacuum ("H_2O)	-27
Pressure ("H_2O)	5
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	2.5
PID (ppm)	—



B-114 Extraction Wells

EW-1	
Vacuum	-9
Flow	49.4
EW-2	
Vacuum	-16
Flow	25.7

Notes: _____

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Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 9/9/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	5.0	0.10	0.10	0.47	Filter OK
2	East Body Forge	5.8	0.09	0.06	0.59	All Filters OK ↓
3	West Body Forge	5.7	0.11	0.11	0.50	↓
4	West Turret Lab	6.5	0.07	0.10	0.50	↑
5	East Turret Lab	5.6	0.05	0.05	0.53	↑
6	North Mechanical Closet	4.5	0.08	0.08	0.62	All Filters OK ↓
7	South Mechanical Closet	4.6	0.04	0.06	0.45	↓
8	South Mechanical Closet	4.7	0.09	0.08	0.45	↓

* No Filters Replaced this event.

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 9/9/24

Inspector ES

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_2O)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.6	16.2
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	-1.8	54.0
		Notes: No Condensate Present.				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-5.0	9.67
	EW-2	Main floor, north end of wood shop	Wood Shop		-9.5	9.82
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.6	42.1
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.1	43.2
		Notes:				

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 9/9/24

Inspector BS

Building 25 System	Control Panel Room	Building 20 System
393	Flow (cfm)	650
	Pressure ("H_2O) 10	
	Temp (°F) 124	
112212.00	Run Time (hours)	111829.00
55.02	VFD Speed ~~(%)~~ Hz	59.8
None	Alarms? 9/9/24 Influent Flow High High	

B-25 Extraction Wells

EW-1	
Vacuum	-60
Flow	182
EW-2	
Vacuum	-34
Flow	178
EW-3	
Vacuum	-56
Flow	15.6
EW-4	
Vacuum	-58
Flow	25.0

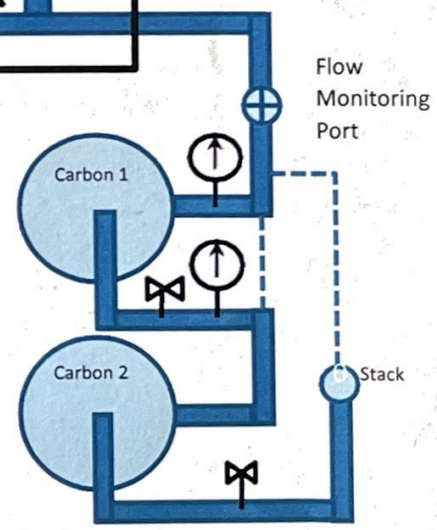
Mechanical Room

-28	Vacuum ("H_2O)	-12
0	KO Level (inches)	0
-46	Vacuum ("H_2O)	-27
-47	Vacuum ("H_2O)	-32
10	Pressure ("H_2O)	12.5
132	Temp °F	124
—	PID (ppm)	—

KO Tank, Filter, Blower, Silencer

B-20 Extraction Wells

EW-1	
Vacuum	-61
Flow	152
EW-2	
Vacuum	-66
Flow	119
EW-3	
Vacuum	-58
Flow	104.5



Flow (cfm) —

"H_2O —

PID (ppm) —

"H_2O —

PID (ppm) —

Notes: * Carbon Bypassed.

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 9/9/24

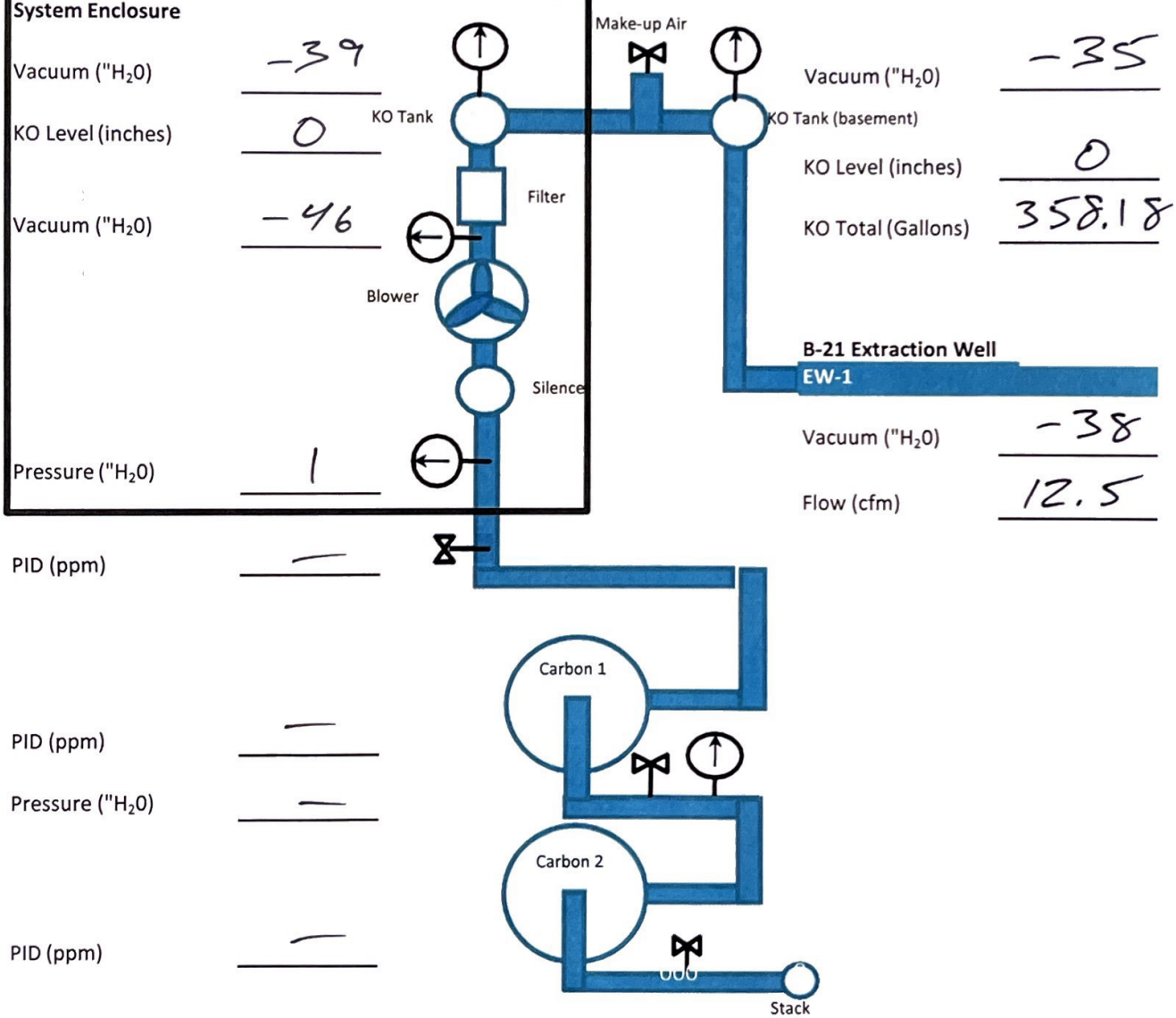
Inspector ES

Control Panel

Flow (cfm)	17
Temp (°F)	103
Run Time (hours)	109582.00
VFD Speed (%)	90.1
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-39
KO Level (inches)	0
Vacuum ("H_2O)	-46
Pressure ("H_2O)	1



Vacuum ("H_2O)	-35
KO Level (inches)	0
KO Total (Gallons)	358.18

B-21 Extraction Well
EW-1

Vacuum ("H_2O)	-38
Flow (cfm)	12.5

PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—

* Carbon Bypassed.

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 9/9/24

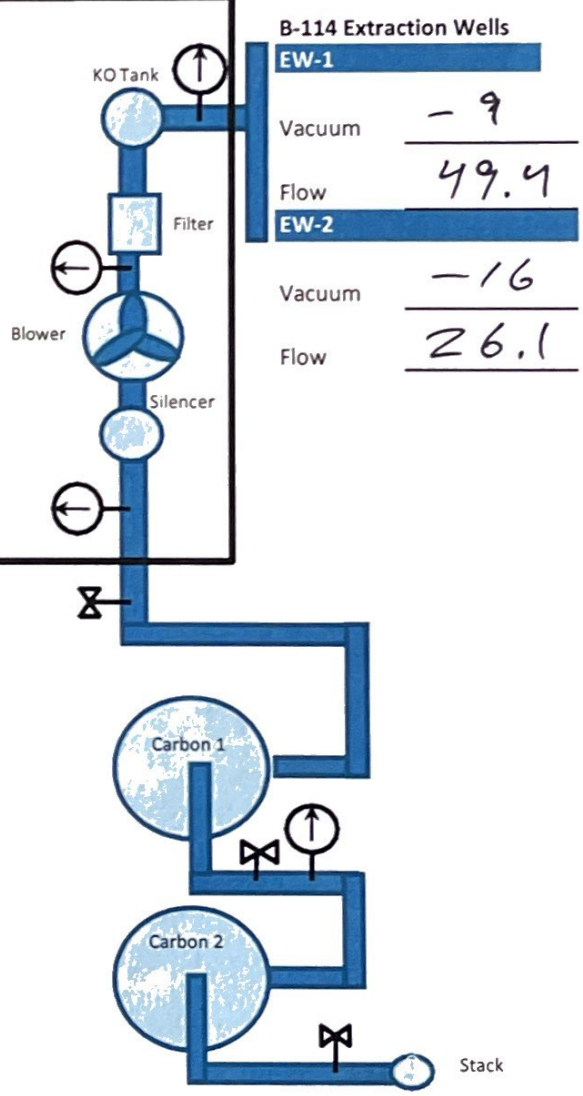
Inspector ES

Control Panel

Flow (cfm)	70
Temp (°F)	94
Run Time (hours)	108557.00
VFD Speed (%)	90.3
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-12
KO Level (inches)	0
Vacuum ("H_2O)	-27
Pressure ("H_2O)	6
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	2.5
PID (ppm)	—



Notes: _____

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Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 10/11/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	4.9	0.10	0.12	0.55	All Filters OK RAFs Rotated to RPFs, RAFs New ↓ ↑ ↓ All Filters OK
2	East Body Forge	5.8	0.08	0.06	0.59	
3	West Body Forge	5.8	0.12	0.11	0.50	
4	West Turret Lab	6.5	0.07	0.09	0.51	
5	East Turret Lab	5.7	0.06	0.05	0.53	
6	North Mechanical Closet	4.5	0.08	0.08	0.64	
7	South Mechanical Closet	4.6	0.06	0.06	0.45	
8	South Mechanical Closet	4.7	0.09	0.08	0.44	

Filters Replaced @ AFUs 2+3,

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 10/11/24

Inspector ES

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_2O)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	−2.4	16.4
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	−2.0	48.5
		Notes: * Condensate Present → Drained				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	−5.0	11.7
	EW-2	Main floor, north end of wood shop	Wood Shop		−8.5	7.41
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	−1.8	40.9
		Notes: GFCI outlet Tripped on arrival → Reset OK				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	−2.1	44.4
		Notes:				

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 10/11/24

Inspector ES

Building 25 System	Control Panel Room	Building 20 System
386	Flow (cfm)	376
	Pressure ("H_2O) 10	
	Temp (°F) 125	
112934	Run Time (hours)	112551
55.02	VFD Speed ~~(%)~~ HZ	59.8
None	Alarms? 10/1/24 Influent Flow High High	

B-25 Extraction Wells

EW-1	
Vacuum	-60
Flow	184
EW-2	
Vacuum	-34
Flow	181
EW-3	
Vacuum	-59
Flow	28.4
EW-4	
Vacuum	-61
Flow	21.6

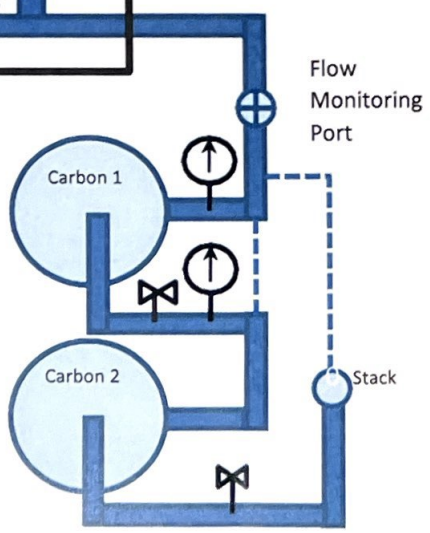
Mechanical Room

-31	Vacuum ("H_2O)	-15
0	KO Level (inches)	0
-42	Vacuum ("H_2O)	-21
-50	Vacuum ("H_2O)	-38
11	Pressure ("H_2O)	10
123	Temp °F	130
—	PID (ppm)	—

KO Tank, Filter, Blower, Silencer

B-20 Extraction Wells

EW-1	
Vacuum	-62
Flow	153
EW-2	
Vacuum	-66
Flow	120
EW-3	
Vacuum	-58
Flow	101



Flow (cfm) —

"H_2O —

PID (ppm) —

"H_2O —

PID (ppm) —

Notes: *Carbon Bypassed.

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 10/11/24

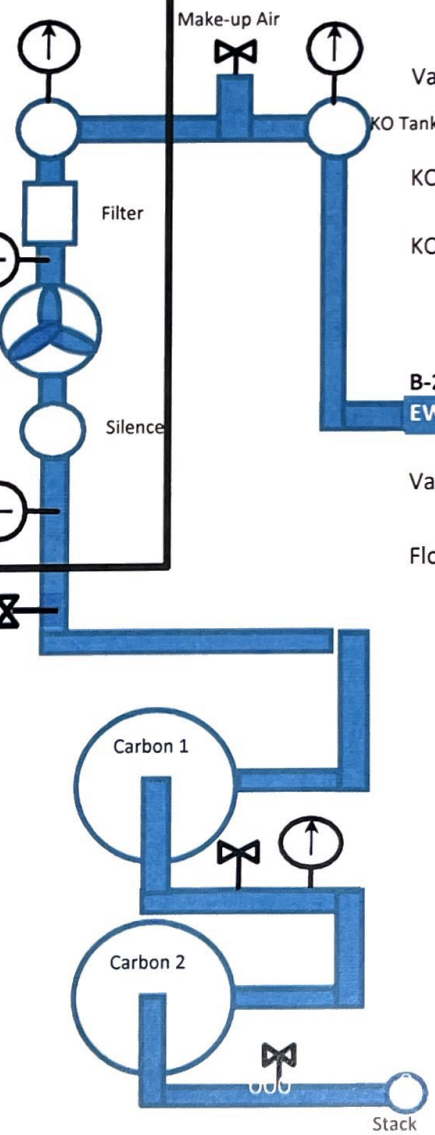
Inspector ES

Control Panel

Flow (cfm)	19
Temp (°F)	96
Run Time (hours)	110304
VFD Speed (%)	90.1
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-40
KO Level (inches)	0
Vacuum ("H_2O)	-46
Pressure ("H_2O)	2
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—



Vacuum ("H_2O)	-36
KO Level (inches)	0
KO Total (Gallons)	358.18

B-21 Extraction Well
EW-1

Vacuum ("H_2O)	-37
Flow (cfm)	13.5

* Carbon Bypassed.

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 10/11/24

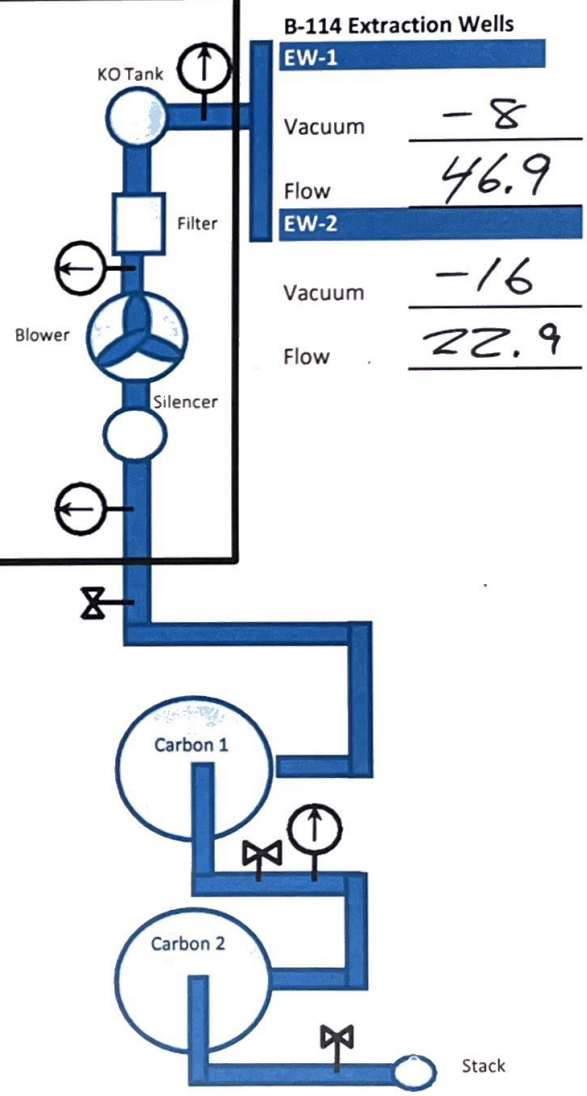
Inspector ES

Control Panel

Flow (cfm)	67
Temp (°F)	95
Run Time (hours)	10927
VFD Speed (%)	96.5
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-12.5
KO Level (inches)	0
Vacuum ("H_2O)	-28
Pressure ("H_2O)	2.5
PID (ppm)	-
PID (ppm)	-
Pressure ("H_2O)	2.5
PID (ppm)	-



B-114 Extraction Wells

EW-1	
Vacuum	-8
Flow	46.9
EW-2	
Vacuum	-16
Flow	22.9

Notes: _____

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Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 11/4/24

Inspector ES

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	5.0	0.10	0.12	0.55	
2	East Body Forge	5.8	0.08	0.04	0.62	
3	West Body Forge	5.8	0.10	0.09	0.51	
4	West Turret Lab	~~4.5~~ 6.7	0.08	~~0.08~~ 0.10	~~0.65~~ 0.51	
5	East Turret Lab	5.7	0.13	0.07	0.57	
6	North Mechanical Closet	4.5	0.10	0.08	0.65	All Filters OK
7	South Mechanical Closet	4.6	0.05	0.06	0.45	
8	South Mechanical Closet	4.8	0.10	0.08	0.44	

No Filters

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 11/4/24

Inspector ES

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_20)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.6	13.25
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	-2.0	49.6
		Notes: Condensate Present → Drained.				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-6.5	11.6
	EW-2	Main floor, north end of wood shop	Wood Shop		-9.0	12.1
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.7	32.6
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.10	41.3
		Notes:				

and Maintenance Checklist

Bui 20/25 SSDS

Watervliet Arsenal

Watervliet, New York

Date 11/4/24

Inspector ES

Building 25 System	Control Panel Room	Building 20 System
396	Flow (cfm)	650
	Pressure ("H_2O) 8	
	Temp (°F) 123	
113472.00	Run Time (hours)	113089.00
55.02	VFD Speed ~~(%)~~ HZ	59.8
Now ~~113472.00~~	Alarms? 11/3/24 Influent Flow High High	

B-25 Extraction Wells

EW-1	
Vacuum	-59
Flow	182
EW-2	
Vacuum	-34
Flow	182
EW-3	
Vacuum	-61
Flow	21.6
EW-4	
Vacuum	-63
Flow	21.9

Mechanical Room

	Vacuum ("H_2O)	
-32		-17
0	KO Level (inches)	0
-35	Vacuum ("H_2O)	-18
-50	Vacuum ("H_2O)	-25
11	Pressure ("H_2O)	10
120	Temp °F	130
—	PID (ppm)	—

KO Tank, Filter, Blower, Silencer

B-20 Extraction Wells

EW-1	
Vacuum	-63
Flow	147
EW-2	
Vacuum	-67
Flow	114
EW-3	
Vacuum	-58
Flow	99.7

Flow (cfm) —

"H_2O —

PID (ppm) —

"H_2O —

PID (ppm) —

Flow Monitoring Port

Carbon 1

Carbon 2

Stack

Notes: Carbon Bypassed

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 11/4/24

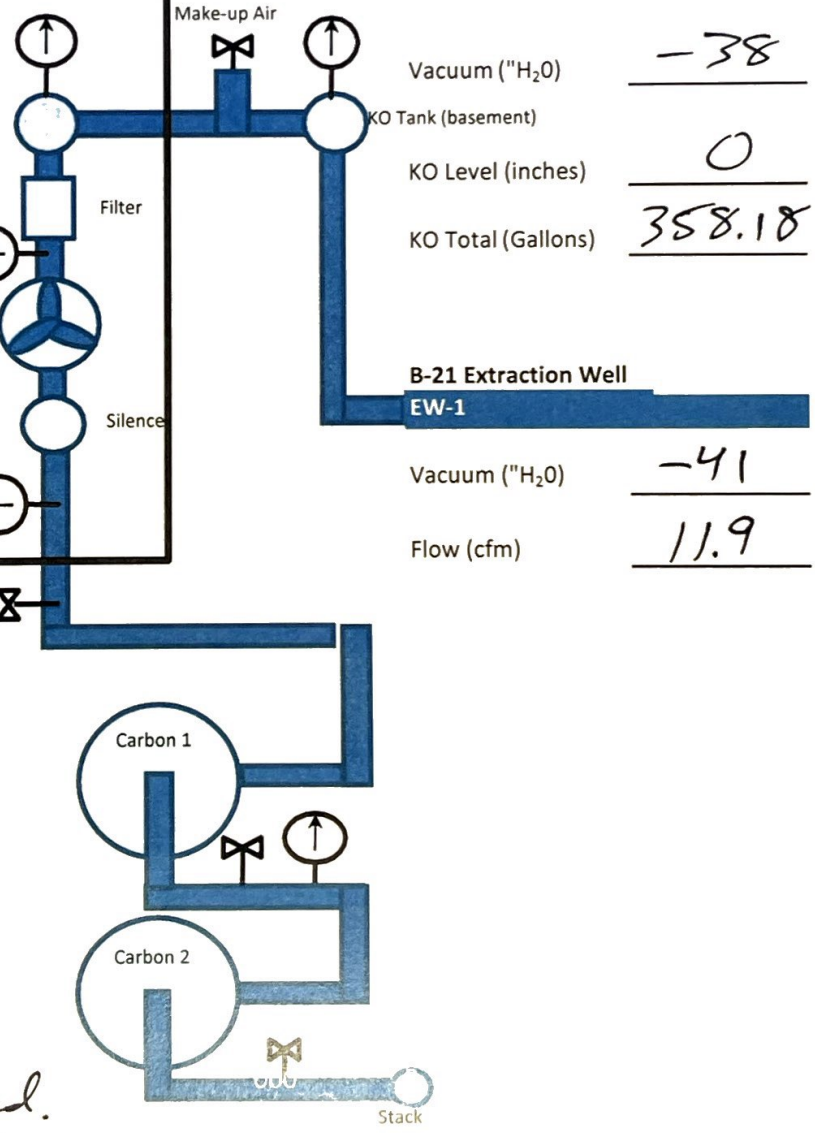
Inspector ES

Control Panel

Flow (cfm)	19
Temp (°F)	80
Run Time (hours)	110841.00
VFD Speed (%)	90.1
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-41
KO Level (inches)	0
Vacuum ("H_2O)	-59
Pressure ("H_2O)	2
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—



Vacuum ("H_2O)	-38
KO Level (inches)	0
KO Total (Gallons)	358.18

B-21 Extraction Well
EW-1

Vacuum ("H_2O)	-41
Flow (cfm)	11.9

Carbon Bypassed.

Vent Fan VFD set @ 0HZ → turned off for season.

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 11/4/24

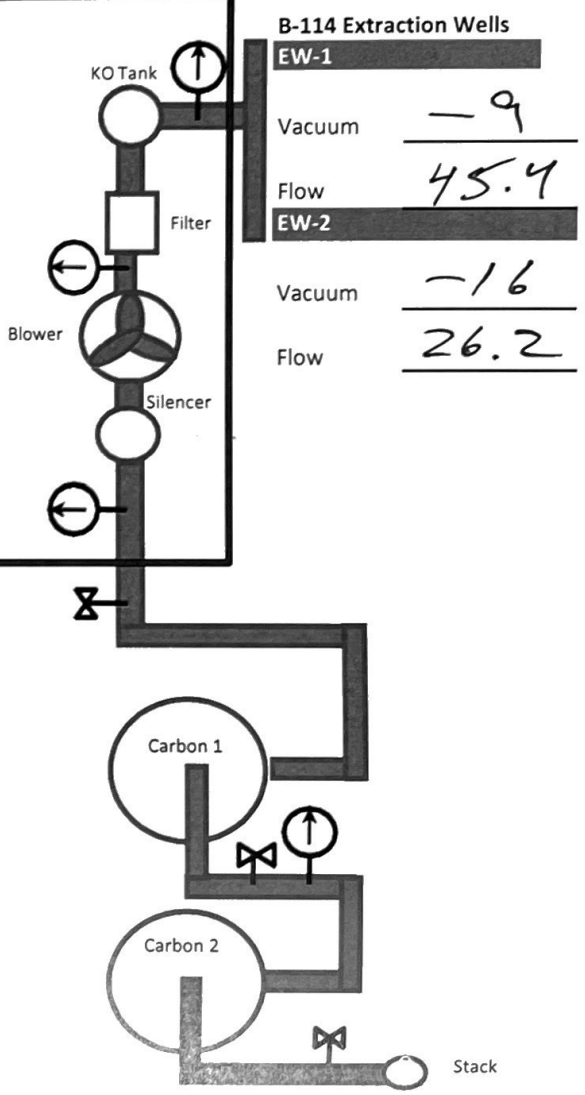
Inspector ES

Control Panel

Flow (cfm)	67
Temp (°F)	73
Run Time (hours)	109814.00
VFD Speed (%)	96.5
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-12
KO Level (inches)	1.75"
Vacuum ("H_2O)	-29
Pressure ("H_2O)	6
PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	2.5
PID (ppm)	—



B-114 Extraction Wells

EW-1	
Vacuum	-9
Flow	45.4
EW-2	
Vacuum	-16
Flow	26.2

Notes: Vent Fan VFD set @ 0 HZ → Turned off for season.

Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 12/19/24 + 12/20/24

Inspector ES/BB

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	5.0	0.09	0.12	0.57	Filter OK
2	East Body Forge	5.8	0.08	0.04	0.66	RAFs Rotated to RPFs, RAFs New
3	West Body Forge	4.9	0.10	0.10	0.53	↓
4	West Turret Lab	6.7	0.07	0.10	0.55	
5	East Turret Lab	5.6	0.12	0.05	0.64	
6	North Mechanical Closet	4.5	0.10	0.08	0.65	RAFs Rotated to RPFs, RAFs New.
7	South Mechanical Closet	4.6	0.05	0.07	0.47	All Filters OK
8	South Mechanical Closet	4.8	0.09	0.08	0.45	↓

Filters Replaced @ AFUs 2, 3, 4, 5, 6

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 12/19/24

Inspector ES/BB

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_20)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	Yes	-2.5	14.55
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	~~Yes~~ 1.9	-1.9	55.1
		Notes: Condensate present → Drained.				
120	EW-1	Main floor, south end of wood shop	Wood Shop	Yes	-6	13.3
	EW-2	Main floor, north end of wood shop	Wood Shop		-9	11.4
		Notes: Will be under construction Starting January				
121	EW-1	Main floor, southeast corner of building	Lab	Yes	-1.8	38.7
		Notes: ~~Will be under construction starting~~ January				
130	EW-1	Main floor, northeast corner of building	Storage Area	Yes	-2.2	43.7
		Notes:				

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 12/19/24

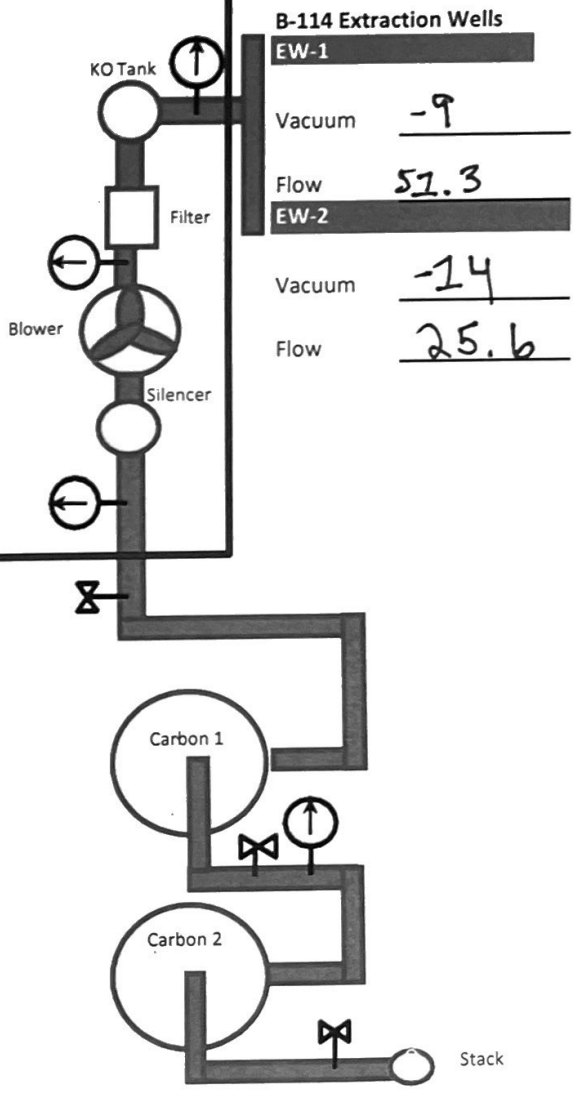
Inspector ES/BB

Control Panel

Flow (cfm)	~~120~~ 71
Temp (°F)	99
Run Time (hours)	110832.00
VFD Speed (%)	96.5
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-10
KO Level (inches)	0
Vacuum ("H_2O)	-25
Pressure ("H_2O)	6
PID (ppm)	-
PID (ppm)	-
Pressure ("H_2O)	4
PID (ppm)	-



B-114 Extraction Wells

EW-1	
Vacuum	-9
Flow	51.3
EW-2	
Vacuum	-14
Flow	25.6

Notes: _____

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 12/19/24

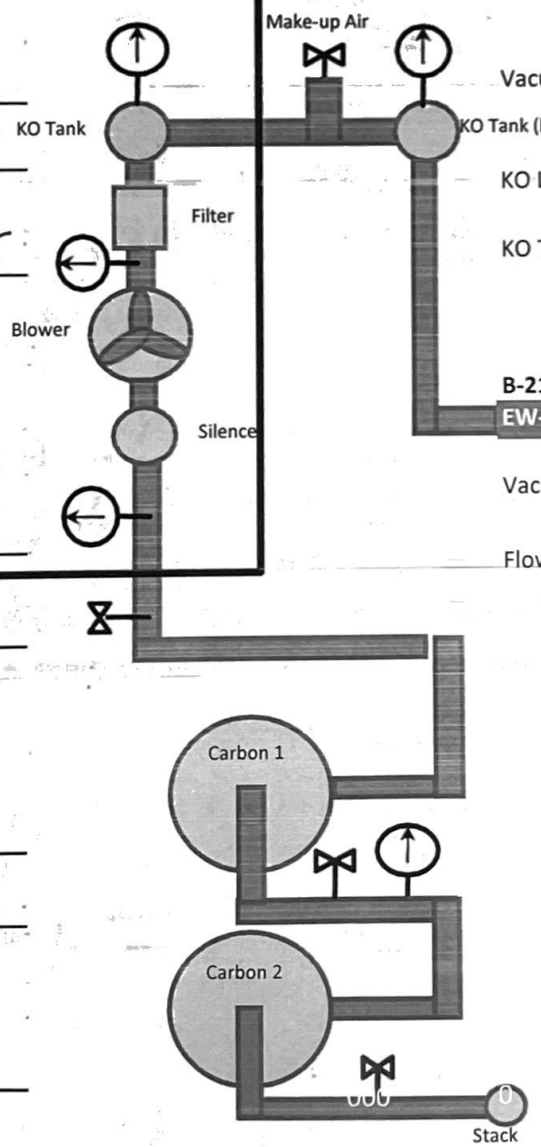
Inspector ES/BB

Control Panel

Flow (cfm)	18
Temp (°F)	97
Run Time (hours)	111859.00
VFD Speed (%)	90.2
Alarms?	None

System Enclosure

Vacuum ("H_2O)	-41
KO Level (inches)	0
Vacuum ("H_2O)	-48
Pressure ("H_2O)	2



Vacuum ("H_2O)	-37
KO Level (inches)	0
KO Total (Gallons)	358.18

B-21 Extraction Well
EW-1

Vacuum ("H_2O)	-41
Flow (cfm)	16.3

PID (ppm)	—
PID (ppm)	—
Pressure ("H_2O)	—
PID (ppm)	—

Carbon Bypassed.

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 12/19/24

Inspector _____

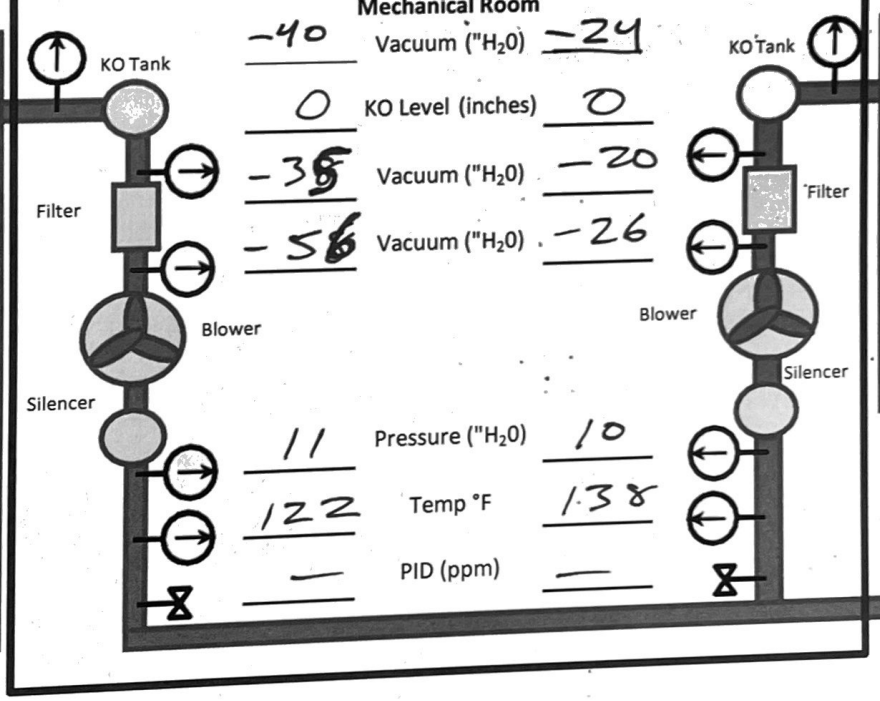
Building 25 System	Control Panel Room	Building 20 System
386	Flow (cfm)	366
	Pressure ("H_2O) 10	
	Temp (°F) 125	
114485.00	Run Time (hours)	11402.00
55.02	VFD Speed ~~(%)~~ Hz	59.80
None	Alarms? 12/17/24	B20 ~~Influent~~ Flow High High

B-25 Extraction Wells

EW-1	
Vacuum	-60
Flow	163
EW-2	
Vacuum	-34
Flow	185
EW-3	
Vacuum	-60
Flow	19.7
EW-4	
Vacuum	-63
Flow	24.0

Mechanical Room

-40	Vacuum ("H_2O)	-24
0	KO Level (inches)	0
-35	Vacuum ("H_2O)	-20
-56	Vacuum ("H_2O)	-26
11	Pressure ("H_2O)	10
122	Temp °F	138
—	PID (ppm)	—



B-20 Extraction Wells

EW-1	
Vacuum	-64
Flow	152
EW-2	
Vacuum	-68
Flow	114
EW-3	
Vacuum	-58
Flow	96.3

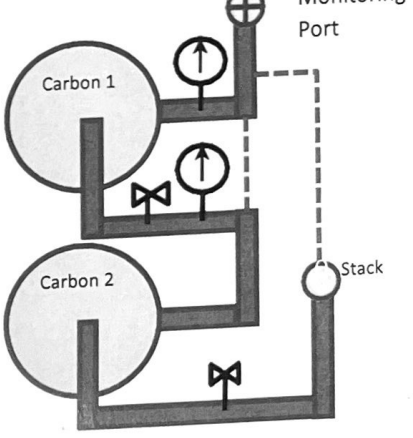
Flow (cfm) —

"H_2O —

PID (ppm) —

"H_2O —

PID (ppm) —



Notes: Carbon Bypassed.

Operation and Maintenance Checklist
Building 40 AFUs
Watervliet Arsenal
Watervliet, New York

Date 1/15/25

Inspector B.B./NELO

AFU	AFU Location	System Data				Notes
		Δ P	RPF	RAF	FF	
1	South Conference Room	5.0	0.09	0.12	0.61	ALL FILTERS OKAY
2	East Body Forge	5.8	0.08	0.05	0.66	ALL FILTERS OKAY
3	West Body Forge	5.8	0.09	0.10	0.55	↓
4	West Turret Lab	6.6	0.08	0.10	0.63	ALL FILTERS OKAY
5	East Turret Lab	5.6	0.11	0.07	0.68	ALL FILTERS OKAY
6	North Mechanical Closet	4.5	0.09	0.05	0.70	ALL FILTERS OKAY
7	South Mechanical Closet	4.6	0.06	0.06	0.47	ALL FILTERS OKAY
8	South Mechanical Closet	4.8	0.10	0.09	0.47	" ↓ "

Δ P - Differential Pressure
RPF - Roughing Pre-filter
RAF - Roughing After Filter
FF - Final Filter

Operation and Maintenance Checklist
Type "C" SSDSs
Watervliet Arsenal
Watervliet, New York

Date 1/15/25

Inspector ES/BB

Building	Extraction Well	Extraction Well Location	Room	System On?	Vacuum ("H_2O)	Flow (cfm)
22	EW-1	Basement, east side of building	Storage Area	YES	-2.6	13.4
		Notes:				
22	EW-2	Main floor, west side of building	Truck Bay	Yes	- 2.0	57.9
		Notes: Condensate Present → Drained.				
120	EW-1	Main floor, south end of wood shop	Wood Shop	YES	-5.0	8.05
	EW-2	Main floor, north end of wood shop	Wood Shop		-8.5	14.7
		Notes:				
121	EW-1	Main floor, southeast corner of building	Lab	YES	-1.7	37.6
		Notes:				
130	EW-1	Main floor, northeast corner of building	Storage Area	YES	-2.2	43.2
		Notes:				

Operation and Maintenance Checklist
Building 20/25 SSDS
Watervliet Arsenal
Watervliet, New York

Date 1/15/25

Inspector ES/BB

Building 25 System	Control Panel Room	Building 20 System
393	Flow (cfm)	366
	Pressure ("H_20) 10	
	Temp (°F) 124	
115093	Run Time (hours)	114710
55.02	VFD Speed ~~(%)~~ HZ	59.8
None	Alarms? 1/15/25 Influent flow High High	

B-25 Extraction Wells

EW-1	
Vacuum	-60
Flow	184
EW-2	
Vacuum	-34
Flow	188
EW-3	
Vacuum	-61
Flow	13.6
EW-4	
Vacuum	-62
Flow	20.2

Mechanical Room

-42	Vacuum ("H_20)	-24
0	KO Level (inches)	0
-44	Vacuum ("H_20)	-22
-59	Vacuum ("H_20)	-30
10	Pressure ("H_20)	10
120	Temp °F	136
—	PID (ppm)	—

KO Tank, Filter, Blower, Silencer

B-20 Extraction Wells

EW-1	
Vacuum	-64
Flow	145.5
EW-2	
Vacuum	-58
Flow	102
EW-3	
Vacuum	-69
Flow	109

Flow (cfm) —

"H_20 —

PID (ppm) —

"H_20 —

PID (ppm) —

Flow Monitoring Port

Carbon 1

Carbon 2

Stack

Notes: Carbon Bypassed.

Operation and Maintenance Checklist
Building 21 SSDS
Watervliet Arsenal
Watervliet, New York

Date 1/15/25

Inspector B.B/NELD

Control Panel

Flow (cfm) 17

Temp (°F) 88

Run Time (hours) 112465

VFD Speed (%) 90.2

Alarms? NONE

System Enclosure

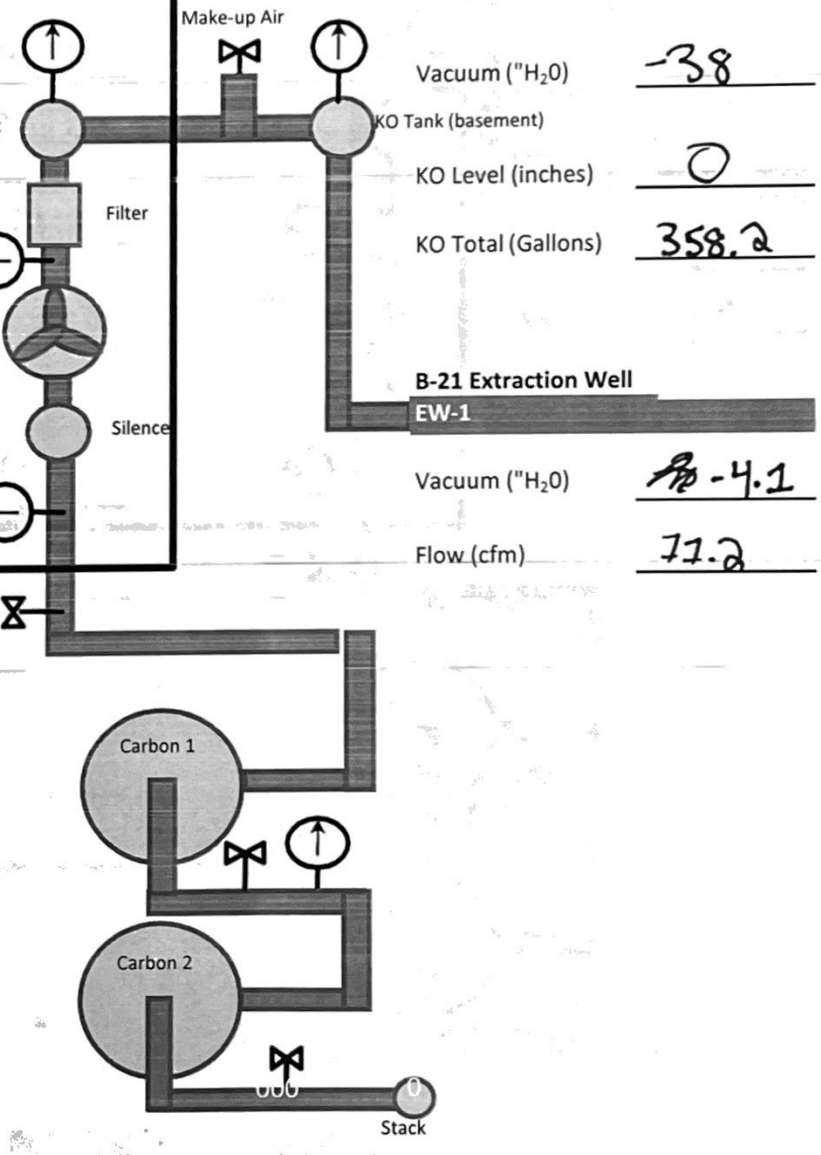
Vacuum ("H_2O) -41

KO Level (inches) 0

Vacuum ("H_2O) -48

Pressure ("H_2O) +2

PID (ppm) –



Vacuum ("H_2O) -38

KO Level (inches) 0

KO Total (Gallons) 358.2

B-21 Extraction Well
EW-1

Vacuum ("H_2O) -4.1

Flow (cfm) 11.2

PID (ppm) –

Pressure ("H_2O) –

PID (ppm) –

*CARBON BYPASSED

Operation and Maintenance Checklist
Building 114 SSDS
Watervliet Arsenal
Watervliet, New York

Date 1/15/25

Inspector NELO + B.B

Control Panel

Flow (cfm) 69

Temp (°F) 99

Run Time (hours) 211439

VFD Speed (%) 96.5

Alarms? NONE

System Enclosure

Vacuum ("H_2O) -10

KO Level (inches) ~~-24~~ 0

Vacuum ("H_2O) -24

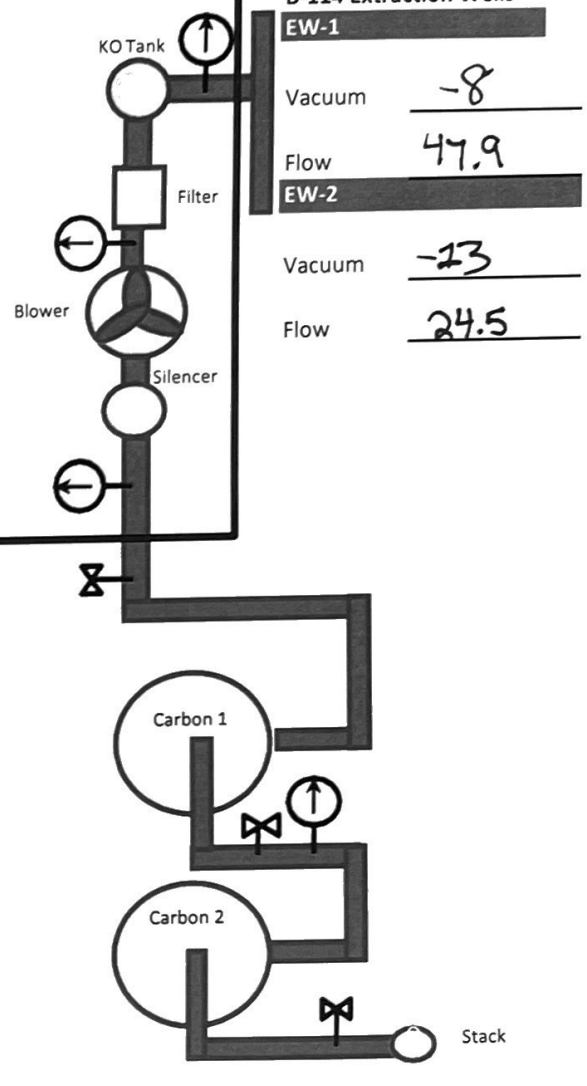
Pressure ("H_2O) 9

PID (ppm) -

PID (ppm) -

Pressure ("H_2O) 4

PID (ppm) -



B-114 Extraction Wells

EW-1

Vacuum -8

Flow 47.9

EW-2

Vacuum -13

Flow 24.5

Notes: HMI STILL MALFUNCTIONING

ARCADIS

Appendix D

Chemical Inventory

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
15	Zep All Purpose Cleaner	Alcohols, C9-11, ethoxylated	N
15	Rite Kem Medi-Scrubs	Rite Kem Medi-Scrubs	N
15	Skilcraft Dry Erase Cleaner	Ethylene Glycol Monopropyl Ether	N
15	Expo White Board Care Cleaner	(2-methoxymethylethoxy)propanol	N
15	Loctite 222MS Threadlocker	Oleic acid, saccharin, silica, cumene, propane-1,2-diol, cumene, titanium dioxide	N
15	SprayPak Foaming Cleaner	Water, n-butane, Trisodium Phosphate Crystals, 2-Butoxyethanol, Propane	N
15	Skilcraft Power Duster	1,1-Difluoroethane	N
15	Red Clover Tea Bio-Enzymatic Urine Digester Odor Neutralizer	Odor Counteractant, Nonionic Surfactant, Fragrance	N
15	Spartan M 95 Mild Acid Cleaner	Water, Hydrochloric acid	N
15	Spartan Consume Bio-Bowl Nature's Way	Water, Citric Acid, C9-11 Pareth-6, Xanthan Gum, Fragrance, Direct Blue 199, Bacterial Spores	N
15	Dawn Professional Multi-Surface Heavy Duty Degreaser	Non Hazardous	N
15	Pro Link Stainless Steel Cleaner	Distillates (Petroleum), 64742-47-8 35.253 Hydrotreated Light, Propane, Acetone, Methyl Acetate, Orange Terpenes, Citral	N
15	Diversey Spitfire RTU	Benzyl alcohol, Diethylene glycol monoethyl ether, sodium xylene sulfonate, alcohol ethoxylates,	**Y**
15	Superior High Shine Stainless Steel Cleaner & Polish	C13-14 Alkane, Middle alkanes, propane, butane, limonene, citral, fragrance	N
15	SC Johnson Professional Glade Spray	Not Hazardous	N
15	Ecolab Ultra Concentrated General Purpose Cleaner Facilpro	Fattyalcohol ethoxylates > C15 and =/< 5EO, 2-(2-ethoxyethoxy)ethanol, Sodium Xylenesulfonate	N
15	SC Johnson Professional Multi-Surface Heavy Duty Neutral Floor Cleaner	Not Hazardous	N
15	Transcend by Vondrehle Moisture-Lux Antibacterial Foam Soap	Not Hazardous	N
15	Spartan Consume Nature's Way RTU Handi Spray	C9-11 Alkyl Glucoside, Tetrasodium Glutamate, Diacetate, Sodium Myristoyl Srcosinate, Citric Acid, Fragrance, Methylchloroisothiazolinone, Colorant, Methylisothiazolinone, Acid Blue 9	N
15	Old English Wood Protector & Cleaner	White mineral oil	N
15	Spic and Span Advanced Clean Multi-Purpose Cleaner	C9-11 Alcohols Ethoxylated	N
15	Comet Classic Foam Bath Cleaner Foam Bath Cleaner with Bleach	Sulfuric acid sodium salt, sodium hypochlorite	N
15	Pro Lube 0-190 PL-S General Purpose Lubricant and Preservatiove	Distillates (petroleum), hydrotreated light naphthenic, Dec-1-ene, dimers, hydrogenated	**Y**
15	Harbor Clear the Deck Industrial Hand Cleaner	Not available	N
15	Transcend Vondrehle Knock it off Industrial Hand Cleaner	Not Hazardous	N

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
20	Weiman Stainless Steel Cleaner & Polish	White mineral oil	N
20	WD-40	LVP Aliphatic Hydrocarbon, Petroleum base oil, aliphatic hydrocarbon, carbon dioxide	N
20	Tub O' Towels Heavy Duty Cleaning Wipes	d-limonene, (R)-p-mentha-1,8-diene, glycerin	N
20	Bernzomatic Butane	Isobutane, Butane	N
20	Rustoleum Painter's Touch 2x UltraCover Paint + Primer	Acetone, Propane , Dimethyl Carbonate, n-Butane, Hydrotreated Light Distillate , Naphtha, Petroleum, Hydrotreated Light, Hydrous Magnesium Silicate, Xylenes (o-, m-, p- Isomers), n-Butyl Acetate , Carbon Black , Ethylbenzene , Barium Sulfate , Zinc Phosphate, Zinc Oxide, Zirconium Acetate	**Y**
20	**Krylon Colormaxx Paint + Primer**	Acetone, Propane, ethylbenzene, dimethyl carbonate, butane, talc, 2-methyl-1-propanol, xylenes, heptane, octane	**Y**
20	Sta Put Plumber's Putty	Calcium carbonate, Kaolin, mineral wool, petroleum-based lubricating oil	N
20	Oatey Plumber's Putty	Limestone, Distillates, crystalline silica	N
20	Hercules CPVC Medium Body Fast Set Plastic Pipe Cement	Acetone, tetrahydrofuran, polyvinbyl chloride, methyl ethyl ketone, cyclohexanon, silica amorphous	N
20	Hercules PVC & CPVC Primer	acetone, cyclohexanon, furan, methyl ethyl ketone	N
20	Hercules PVC Medium Body Medium Set Plastic Pipe Cement	Furan, Acetone, Methyl ethyl ketone, polyvinyl chloride, cyclohexanon, fumed silica	N
20	Ideal Clear Glide Wire Pulling Lubricant	Not Hazardous	N
20	Quil.com Electronics Compressed-Gas Duster	1,1-Difluoroethane, Ethanol, Denatonium Benzoate	N
20	Sun Proof Exterior Ultra Deep Base Paint	Nepheline syenite, Mica-group minerals	N
20	Passonng Paints Pen-Rust Marine Enamel	Kerosene	N
20	Dur-A-Flex Accelera Fast Track Flooring Hardener	Non Hazardous	N
20	USG Sheetrock All Purpose Joint Compound	Limestone, attapulgite, perlite	N
20	USG Sheetrock Plus 3 Joint Compound	Limestone, perlite, attapulgite	N
20	ProForm Professional Formula Multi-Use Midweight Joint Compound	Calcium Carbonate or Calcium/Magnesium Carbonate, Mixture-silicates and aluminates , Mixture-various metal oxides, Magnesium aluminum phyllosilicate, Magnesium silicate, Magnesium aluminum phyllosilicate, Polyvinyl Acetate Latex, Ethylene Vinyl Alcohol	N
20	Serman Williams Pro Industrial Waterbased Catalyzed Epoxy Hardener	Poly(oxypropylene)diamine, Tetraethylene Pentamine, Zinc Pyrithione	N
20	**Armaacell ArmaFlex 620 BLV Adhesive**	Acetone, Hexane, Toluene, Phenolic Resin	**Y**
20	PPG 7-Line INT/EXT Gloss Alkyd Pastel Base	proprietary alkyd resin, titanium dioxide, Distillates (petroleum), hydrotreated light, Limestone, Naphtha (petroleum), hydrotreated heavy, Stoddard solvent, Kaolin, zinc oxide , Solvent naphtha (petroleum), light aromatic, 2-ethylhexanoic acid, zirconium salt, 2-butanone oxime, Fatty acids, C9-13-neo-, cobalt salts	**Y**
20	PPG Speedhide Quick-Drying Latex Sealer	Kaolin, titanium dioxide	N
20	Vimasco WC-7 Vinyl Acrylic Mastic Brush/Trowel	Not Hazardous	N
20	Simple green All-Purpose Cleaner	Water, surfactant, C9-11 Alcohols Ethoxylated, Tetrasodium Glutamate Diacetate, Sodium Bicarbonate, Hydrochloric Acid, Fragrances, Anethole, Eucalyptol, Methylchloroisothiazolinone, Methylisothiazolinone	N
20	Titebond Fast Grab FRP Adhesive	Not Hazardous	N
20	Maxtite Isopropyl alcohol	isopropyl alcholol	N

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
20	Loctite PL 200 Projects Construction Adhesive	Limestone, kaolin, ethylene glycol	N
21	SC Johnson Shout Triple Acting Stain Remover	Poly(oxy-1,2-ethanediyl), .alpha.- isotridecyl-.omega.-hydroxy, Polyethylene Glycol Isotridecyl Ether, Subtilisins	N
21	Skilcraft Glass Cleaner Biobased	Water, alkyl Ppolyglycoside, Dipropylene glycol n-butyl ether, Glycine, Tetrasodium iminodisuccinate	N
21	Tide Original Laundry Detergent	Poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-hydroxy-, C10-16-alkyl ethers, sodium salts, Benzenesulfonic acid, mono-C10-16-alkyl derivs., sodium salts, MEA-Dodecylbenzenesulfonate, Ethanol, 2-amino-, 2-hydroxy· 1,2,3-propanetricarboxylate (1:?), Propylene glycol, 2,2'-Oxybisethanol, Ethaniol, Disodium tetraborate pentahydrate, Sulfuric acid, mono-C10-16-alkyl esters, sodium salts, Glycine	N
21	Tide Pods Coldwater Clean	MEA-C10-13 Alkyl Benzenesulfonate, Ethanol, 2-amino-, Propylene glycol, glycerin, C14-16 Pareth-n, Fatty acids, Glycine, protease, tetrahydrolinalool	N
21	Bounce Wrinkleguard Mega Sheets	Cant locate	N
21	Affresh Dishwasher Cleaner	Citric acid, sodium bisulfate, sodium carbonate, sodium gluconate, polyethylene glycol, sodium polyacrylate co-polymer, sodium benzoate, sodium acetate	N
21	P&G Professional Dawn Pot & Pan Detergent	Sulphuric Acid sodium salts, lauramine oxide, C9-11 Pareth-n, deceth-n	N
21	Pam Original Cooking Spray	Not Hazardous	N
21	Clorox Toilet Bowl Cleaner with Bleach	Sodium Hypochlorite, sodium cocoate, sodium hydroxide, myristamine oxide, lauramine oxide	N
21	Skilcraft All-Purpose Cleaner	Water, Alkyl polyglycoside , Dipropylene glycol n-butyl ether, Glycine, n-methyl-n-(1-oxododecyl)-, sodium salt , Tetrasodium iminodisuccinate	N
21	Professional Lysol Disinfectant Spray	ethanol, butane, propane	N
21	Clorox Clean-Up Disinfectant Cleaner with Bleach	sodiuum hypochlorite, sodium hydroxide	N
21	SC Johnson Professional Scrubbing Bubbles Restroom Cleaner	Isobutane, Diethylene glycol monobutyl ether, Tetrasodium ethylene diamine tetraacetate, Alkyl dimethyl benzyl ammonium chloride, Decyldimethyloctylammonium chloride, Dimethyldioctylammonium chloride, Didecyldimethylammonium chloride	N
21	Klean-Hands Antimicrobial Hand Soap	Not Hazardous	N
21	Micrell Antibacterial Lotion Soap	ethanolamine, chloroxylenol	N
21	CLR Pro Calcium, Lime & Rust Remover	Lactic Acid Lauramine Oxide	N
21	WD-40 Specialist Protective White Lithium Grease	Petroleum Solvents (LVP) , Propellant, Hydrotreated Heavy Naphthenic Distillate, Solvent-refined Heavy Paraffinic Petroleum Distillates, Calcium Sulfonate, Titanium Dioxide	**Y**
21	Smoke Detector Tester Model 25 S	Hydrocarbon Blend, Propane, Butane	N
21	The Safe Way to Train training Smoke Exteme Density	Water, triethylene glycol, 1.2-propylene glycol	N
21	Ecolab Lime-A-Way Multipurpose Lime Scale Remover	Phosphoric Acid, citric acid, oxirane, methyl-, polymer with oxirane	N
21	Microban 24 Hour Multi-Purpose Cleaner	Not Hazardous	N
21	Liquid Power Low-Suds Cleaner	water, dodecyl benzene sodium sulfonate, sodium laureth, propylene glycol	N
21	Purell Foodservice Surface Sanitizer	Ethyl Alcohol , Isopropyl Alcohol	N
21	Monogram Stainless Steel Cleaner and Polish	mineral oil with petroleum butane	N

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
21	Skilcraft Clean All-Purpose Cleaner Biobased	Water, Alkyl polyglycoside , Dipropylene glycol n-butyl ether, Glycine, n-methyl-n-(1-oxododecyl)-, sodium salt , Tetrasodium iminodisuccinate	N
21	Spartan Airlift Smoke & Odor Eliminator	Water, Isopropyl Alcohol, C9-11 Pareth-6, Alkyl C12-16 Dimethylbenzyl Ammonium Chloride, Fragrance, Phenethyl Alcohol, Linalool, Isopropylcyclohexanol, Citronellol	N
21	Fabuloso Professional All Purpose Cleaner and Degreasser	Sodium dodecyl Benzene Sulfonate	N
21	Lysol Professional No Rinse Sanitzier	ethanol, butane, propane	N
21	Original Krud Kutter Concentrated Cleaner/Degreaser	Alcohols, C9-11, ethoxylated, disodium metasilicate pentahydrate,	N
21	Diamond Disinfectant 1000	Non Hazardous	N
21	Lysol Disinfecting Wipes	Ethanol, D-Glucopyranose, oligomeric, C9-11-alkyl glycosides, quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	N
21	Ecolab Solid Brilliance Concentrated Solid Rinse Additive	oxirane, methyl-, polymer with oxirane, Urea, Propylene glycol , Phosphonates	N
21	Spartan Tough Duty Industrial Strength All Purpose Cleaner & Degreaser	Water, Butoxydiglycol, Undeceth-3, 3-Isodecyloxypropanamine Chloride Ethoxylated, Fragrance, Potassium Hydroxide, Cyclamen Aldehyde, Phenethyl Alcohol, Citronellol, Acid Red 52	N
21	Spartan M 95 Mild Acid Cleaner	Water, Hydrochloric acid	N
21	Tru Shot 2.0 Multi-Surface Cleaner & Disinfectant	Alkyl dimethyl benzyl ammonium chloride, Alcohols C9-11, ethoxylated, tetrasodium ethylene diamine tetraacetate	N
21	Multi-Use CLR Calcium, Lime & Rust Remover	Lactic Acid Lauramine Oxide	N
21	Red Clover Tea Bio-Enzymatic Urine Digester	Odor Counteractant, Nonionic Surfactant, Fragrance	N
21	Scrubbing Bubbles Disinfectant Restroom Cleaner	Isobutane, Diethylene glycol monobutyl ether, Tetrasodium ethylene diamine tetraacetate, Alkyl dimethyl benzyl ammonium chloride, Decyldimethyloctylammonium chloride, Dimethyldioctylammonium chloride, Didecyldimethylammonium chloride	N
21	Brasso Metal Polish	Pumice, propan-2-ol, ammonia	N
21	Glance Professional Glass Cleaner	Butane, Isopropyl Alcohol, 2-butoxyethanol, propane, sodium nitrate	N
21	Superior High Shine Stainless Steel Cleaner & Polish	C13-14 Alkane, Middle alkanes, propane, butane, limonene, citral, fragrance	N
21	Dawn Professional Multi-Surface Heavy Duty Degreaser	Non Hazardous	N
21	Earth Sense Dual-Blend Class & Window Cleaner	Non Hazardous	N
21	Stainless Steel & Metal Polish Oil Based Cleans, Polishes, Preserves, Protects	white mineral oil, petroleum, butane, propane, solvent naphtha	**Y**
21	Ecolab Lime-A-Way Multi Purpose Lime Scale Remover	Phosphoric Acid, citric acid, oxirane, methyl-, polymer with oxirane	N
21	SC Johnson Professional Heavy Duty Neutral pH Floor & Surface Cleaner	Not Hazardous	N
21	Manitowoc ConvoClean new	Lactic Acid, lauryl dimethyl amine oxide	N
21	Manitowoc ConvoCare	Lactic Acid, lauryl dimethyl amine oxide	N

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
21	Dawn Professional Manual Pot & Pan Detergent	Sulphuric Acid sodium salts, lauramine oxide, C9-11 Pareth-n, deceth-n	N
21	Gonzo Disinfectant Deodorizer & Cleaner	Non Hazardous	N
21	Skyline Professional Grease Trap Treatment	Benzenesulfonic acid, C10-13-alkyl derivatives, sodium salts, Amides, coco, N-(hydroxyethyl), magnesium distearate	N
21	Aleene's Original 'Tacky Glue'	Non Hazardous	N
21	Monogram Disinfectant Bleach	sodium hypochlorite, secondary alkanesulphonates, fragrance	N
21	Pink Lotion Hand Soap	Not Hazardous	N
21	Monogram Clean Force Spray Cleaner with Bleach	sodium hypochlorite, secondary alkanesulphonates, fragrance	N
21	Monogram Stainless Steel Cleaner and Polish	mineral oil with petroleum butane	N
21	**NOW Spray Paint**	Acetone, Propane, n-butyl acetate, butane, ethylbenzene, Lt. Aliphatic Hydrocarbon Solvent, Ethyl 3-Ethoxypropionate	**Y**
21	Lubriquik Silicone Lubricant	Acetone, Heptane, Propane/n-Butane	**Y**
21	Nu-Foam Sanitizing Tablets	ALKYL (C14 95%, C12 3%, C16 2%), AMMONIUM CHLORIDE DIHYDRATE (QUATERNARY AMMONIUM COMPOUND – MYRISTALKONIUM CHLORIDE) DIMETHYL BENZYL	N
21	Manitowoc Ice Machine Descaler	Lactic Acid, lauryl dimethyl amine oxide	N
21	Oven and Grill Cleaner Aerosol	propane	N
21	Procter & Gamble Professional Comet Crème Deodorizing Cleaner	Sodium carbonate, Perlite, expanded, Bentonite, Sulfonic acids, C13-18-alkane hydroxy and C13-18-alkene, sodium salts, Sodium hypochlorite	N
21	WD-40	LVP Aliphatic Hydrocarbon, Petroleum base oil, aliphatic hydrocarbon, carbon dioxide	N
21	Ecolab Disinfectant Cleaner 2.0 One-Step Germicidal Cleaner and Deodorant	alcohols, c12-15, ethoxylated, Didecyl Dimethyl Ammonium Chloride, n-Alkyl (C14 50%, C12 40%, C16 10%) dimethyl benzyl ammonium chloride	N

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
22	Lysol Professional Disinfectant Spray	ethanol, butane, propane	N
22	Affresh Dishwasher Cleaner	Citric acid, sodium bisulfate, sodium carbonate, sodium gluconate, polyethylene glycol, sodium polyacrylate co-polymer, sodium benzoate, sodium acetate	N
22	Simply Done Disinfecting Wipes	Ammonia	N
22	Dawn Professional Manual Pot & Pan Detergent	Sulphuric Acid sodium salts, lauramine oxide, C9-11 Pareth-n, deceth-n	N
22	Skilcraft Glass Cleaner Biobased	Water, alkyl Ppolyglycoside, Dipropylene glycol n-butyl ether, Glycine, Tetrasodium iminodisuccinate	N
22	7930-00-721-8592 Scouring Powder (with Chlorine Bleach) A-A-269 Type 1	Calcium hypochlorite, Sodium Carbonatem Dodecylbenzenesulfonic Acid, Calcium Carbonate	N
22	Dymon Clear Reflections Glass Cleaner & Polish	Ethyl alcohol, ethylene glycol monobutyl ether, petroleum gases, sodium nitrate	N
22	Tide Pods	MEA-C10-13 Alkyl Benzenesulfonate, Ethanol, 2-amino-, Propylene glycol, glycerin, C14-16 Pareth-n, Fatty acids, Glycine, protease, tetrahydrolinalool	N
22	Formula 409 Multi-Surface Cleaner	Non Hazardous	N
22	Clorox Toilet Bowl Cleaner with Bleach	Sodium Hypochlorite, sodium cocoate, sodium hydroxide, myristamine oxide, lauramine oxide	N
22	Scrubbing Bubbles Disinfectant Restroom Cleaner	Isobutane, Diethylene glycol monobutyl ether, Tetrasodium ethylene diamine tetraacetate, Alkyl dimethyl benzyl ammonium chloride, Decyldimethyloctylammonium chloride, Dimethyldioctylammonium chloride, Didecyldimethylammonium chloride	N
22	Estesol Hand, Hair & Body Wash	Aqua (Water), Sodium Laureth Sulfate, Sodium Chloride, Cocamidopropyl Betaine, Glycerin, Citric Acid, Coco-Glucoside, PEG-7 Glyceryl Cocoate, Tetrasodium Iminodisuccinate, Sodium Benzoate, Parfum (Fragrance), Blue 1 (CI42090), Yellow 5 (CI 19140).	N
22	Arm & Hammer Carpet Odor Eliminator	sodium bicarbonate, calcium silicate, quaternary ammonium compounds, ethylbis, tallow alkyl, ethoxylated, ethyl sulfates	N
22	Instant Power Washing Machine Cleaner	Citric Acid	N
114	**Dynachem Breaker**	Not Available, would remove	**Y**
114	**Plasti Dip**	Aliphatic Petroleum Distillates, Propane, Heptane, N-Butane, Xylene, Ethylbenzene, Methyl Ethyl Ketone, Methyl N-Amyl Ketone, Mineral Spirits, carbon Black	**Y**
114	**Break Free CLP Cleaner**	1-decene, dimer, hydrotreated, 1-decene, homopolymer, hydrogenated distillates (petroleum), hydrotreated heavy napthenic, Calcium dinonylnapthalenesulfonate	**Y**

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
120	Dyna 901 Spray Cleaner & Degreaser	Methyl ethyl ketone, acetone	N
120	Hydro Ban Waterproofing & Crack Isolation Membrane	Zinc oxide, titanium dioxide	N
120	Eastwood Pre Green Painting Prep Environmentally-Safe Cleaner	Non Hazardous	N
120	New Industrial Kano Aerokroil	Severely Hydrotreated Petroleum Distillates, LVP Aliphatic Hydrocarbon, Terpene Alcohol, Diisobutyl Ketone (2,6-dimethylheptan-4-one; 4-heptanone, 2,6-dimethyl), Diacetone Alcohol (2-hydroxy-2-methyl-4-pentanone; 4-hydroxy-4-methylpentan-2-one), Isobutyl Alcohol (1-propanol, 2-methyl-; isobutanol)	N
120	Seymour Hot Spot High Heat	Toluene , Acetone , Propane, n-butane, barium sulfate, VM&P Naphtha, Aluminum flake, xylene	**Y**
120	Tribology Inc. Tech-Lub	Not Hazardous	N
120	Mobil SHC Mobilith SHC 220	1H-BENZOTRIAZOLE-1-METHANAMINE, N,N-BIS(2-ETHYLHEXYL)-METHYL, BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE, LITHIUM HYDROXIDE MONOHYDRATE, LITHIUM SALT OF ALIPHATIC ACID, METHYLENE BIS(DIBUTYLDITHIOCARBAMATE), ZINC DITHIOPHOSPHATE	N
120	Turbotorch Pro Generation MAPP Replacement	Propylene, propane	N
120	T&B Kopr-shield Surface Compound	Lubricating greases; a complex combination of hydrocarbons having carbon numbers predominantly in the range of C12 through C50.	N
120	Formula 409 Cleaner Degreaser Disinfectent	Non Hazardous	N
120	Skilcraft Dry Erase Cleaner	Ethylene Glycol Monopropyl Ether	N
120	Hobby Lobby Puzzle Glue	Not available	N
120	Tap Magic Eco-Oil Food Grade Cutting Fluid	White mineral oil	N
120	LA-CO Slic-Tite Heavy Duty Thread Sealing Compound	Ethanol, distillates, hydrotreated heavy naphtenic, PTFE	**Y**
120	**Blaster Since 1957 Penetrating Catalyst**	Petroleum distillates, solvent naptha, petroleum, distillates, petroleum, methyl salicylate	**Y**
120	Skilcraft Glass Cleaner Biobased	Water, alkyl Ppolyglycoside, Dipropylene glycol n-butyl ether, Glycine, Tetrasodium iminodisuccinate	N
120	Rite-Kem, Inc. Anti-Fogging Compound NSN 6856-00-754-2672	Isopropyl Alcohol	N
120	DAP Touch 'N Seal Fireblock Foam Sealant	Polymeric diphenylmethane diisocyanate, Paraffin and hydrocarbon Waxes, 4,4'-Methylene diphenyl diisocyanate (MDI), Tris(2-chloro-1-methylethyl) phosphate, 2-Butyne-1,4-diol, polymer with (chloromethyl) oxirane, brominated, dehydrochlorinated, Dimethyl ether, Isobutane, Propane	N
121	Skilcraft Glass Cleaner	Water, alkyl Ppolyglycoside, Dipropylene glycol n-butyl ether, Glycine, Tetrasodium iminodisuccinate	N
121	Simple Green All-Purpose Cleaner	Water, surfactant, C9-11 Alcohols Ethoxylated, Tetrasodium Glutamate Diacetate, Sodium Bicarbonate, Hydrochloric Acid, Fragrances, Anethole, Eucalyptol, Methylchloroisothiazolinone, Methylisothiazolinone	N
121	Clorox Disinfecting Wipes	Non Hazardous	N
121	**Loctite LB-8008 C5-A**	Distillates (petroleum), hydrotreated heavy naphthenic, Calcium dihydroxide, copper, graphite, quartz	**Y**

Appendix D
Indoor Air Sampling Chemical Inventory by Building
Long Term Monitoring Report
Watervliet Arsenal, Watervliet, New York

Building	Compound	Description	Recommended Removal (Y/N)
130	Skilcraft Brake Parts Cleaner	Water, Alkyl polyglycoside , Dipropylene glycol n-butyl ether, Glycine, n-methyl-n-(1-oxododecyl)-, sodium salt , Tetrasodium iminodisuccinate	N
130	RTU Hard Surface Cleaner and Disinfectant	2-(2-butoxyethoxy)ethanol, Tetrasodium EDTA, Alkyl dimethyl ethylbenzyl ammonium chloride	N
130	Gojo Scrubbing Towels	Laureth-7, limonene	N
130	Sani Professional Multi-Surface Wipes	Isobutane , Propane	N
130	Purell Advanced Hand Sanitizer	Ethyl Alcohol	N
130	Skilcraft Glass Cleaner	Water, alkyl Ppolyglycoside, Dipropylene glycol n-butyl ether, Glycine, Tetrasodium iminodisuccinate	N
130	Dyna Chem Dyna 901 Spray Cleaner & Degreaser	Methyl ethyl ketone, acetone	N
130	WD-40	LVP Aliphatic Hydrocarbon, Petroleum base oil, aliphatic hydrocarbon, carbon dioxide	N
130	**Do it Best Rust Coat Enamel**	Acetone, Liquified Petroleum Gas, Xylene, ethylbenzene, ethylene Gylcol, Monobutyl ether, carbon black, mixed cobalt, carboxylates	**Y**
130	**Krylon Colormaxx Paint+Primer**	Acetone, Propane, ethylbenzene, dimethyl carbonate, butane, talc, 2-methyl-1-propanol, xylenes, heptane, octane	**Y**
130	Passonno Paints Pen-Rust Marine Enamel	Kerosene	N
130	**Chemarrow ArrowClean GPS Water Soluble Degreasing Cleaner**	Cannot Find, Recommend removing	**Y**
130	EcoLink 250-SS Low VOC Degreasing Solvent	Octamethylcyclotetrasiloxane, Dipropylene glycol dimethyl ether	N
130	EcoLink Navsolve Low VOC Degreasing Solvent	Octamethylcyclotetrasiloxane, Dipropylene glycol dimethyl ether	N
130	Fabuloso Antibacterial Multi-Purpose Cleaner	Non Hazardous	N
130	American Writing Ink Co. Penetrating Oil	Sliphatic petroleum solvent, mineral oil, petroleum distillates, hydrotreated light naphthenic Petrolatum	**Y**
130	CRC Industrial 3-36 Multi-Purpose Lubricant & Corrosion Inhibitor	Distillates, Paraffin Oils, dipropylene glycol monomethyl ether acetate, n-butylstearate, petrolatun, fatty acids, d-limonene, terpinolene	N
130	LA's Totally Awesome Floor cleaner	Orange Oil Blend, Ethoxylated Alcohol, disodium salt, tetra sodium EDTA, Hydroxy sodium, water	N
130	Fabuloso Original Multi-Purpose Cleaner	Non Hazardous	N
130	Spartan M95 Mild Acid Cleaner	water, hydrochloric acid	N
130	Spartan Airlift Smoke & Odor Eliminator	Water, Isopropyl Alcohol, C9-11 Pareth-6, Alkyl C12-16 Dimethylbenzyl Ammonium Chloride, Fragrance, Phenethyl Alcohol, Linalool, Isopropylcyclohexanol, Citronellol...	N
130	Spartan Airlift Air Freshener and Deodorant	Water, C9-11 Pareth-6, Isopropyl Alcohol, Alkyl C12-16 Dimethylbenzyl Ammonium Chloride, Fragrance, Methyldihydrojasmonate, Linalool, Hexyl Acetate, Hexamethylindanopyran, Gamma-Undecalactone, 2-T-Butylcyclohexyl Acetate, ...	N
130	Spartan Tough Duty Industrial Strength All Purpose Cleaner & Degreaser	Water, Butoxydiglycol, Undeceth-3, 3-Isodecyloxypropanamine Chloride Ethoxylated, Fragrance, Potassium Hydroxide, Cyclamen Aldehyde, Phenethyl Alcohol, Citronellol, Acid Red 52	N
130	Ecolab Sha-Zyme	Alcohol ethoxylate	N

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Appendix E

Well Decommissioning Logs

FIGURE 3

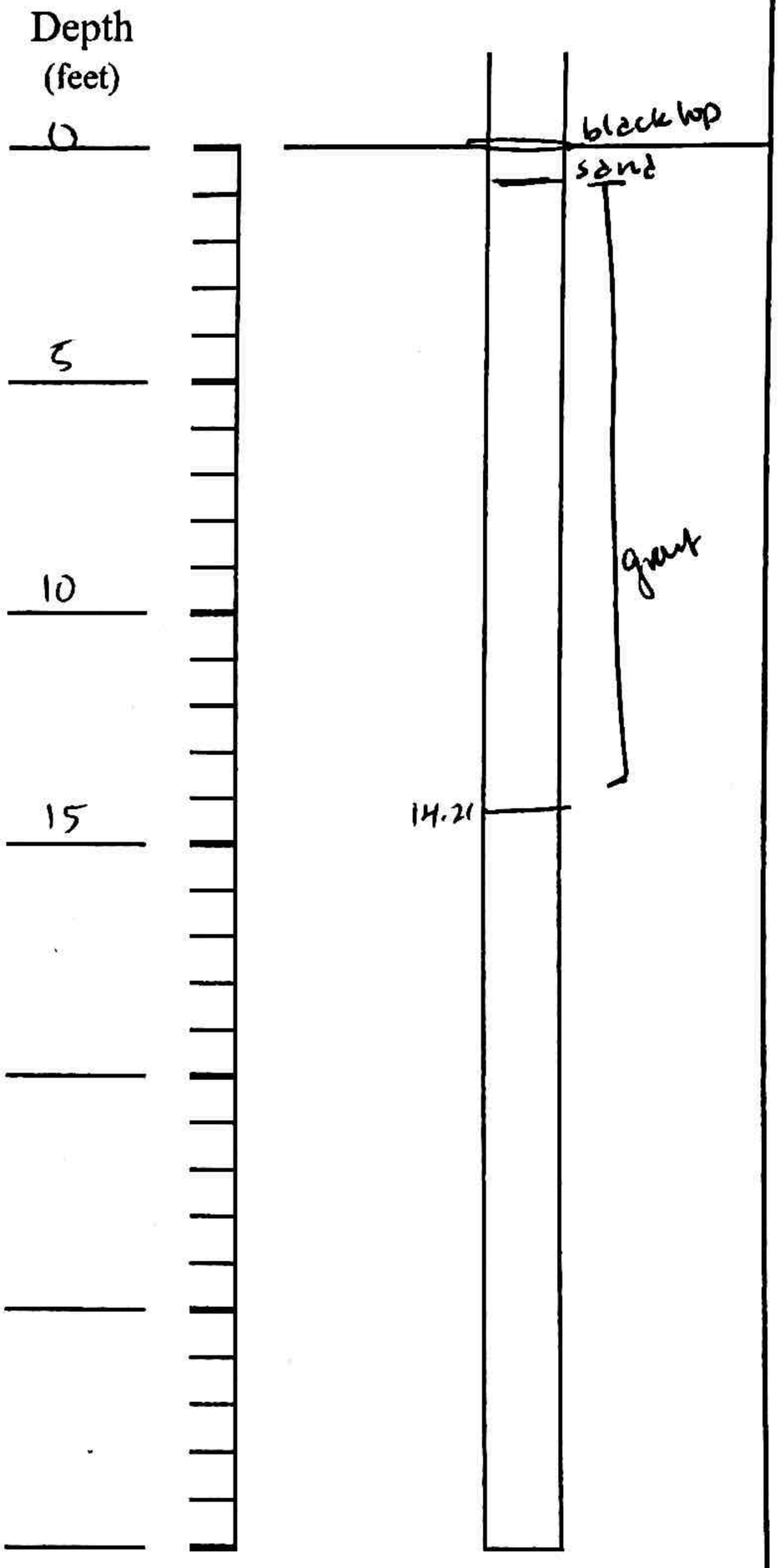
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: 92EM-SP-7
Site Location: Wakefield, MI	Driller: Jeff
Drilling Co.: Cascade	Inspector: AC
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	14.21-0
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	-
Quantity of bentonite used (lbs.)	-
Quantity of calcium chloride used (lbs.)	-
Volume of grout prepared (gal.)	-
Volume of grout used (gal.)	9.41

WELL SCHEMATIC*



COMMENTS: DTB 14.21, leftover grout from 7A

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

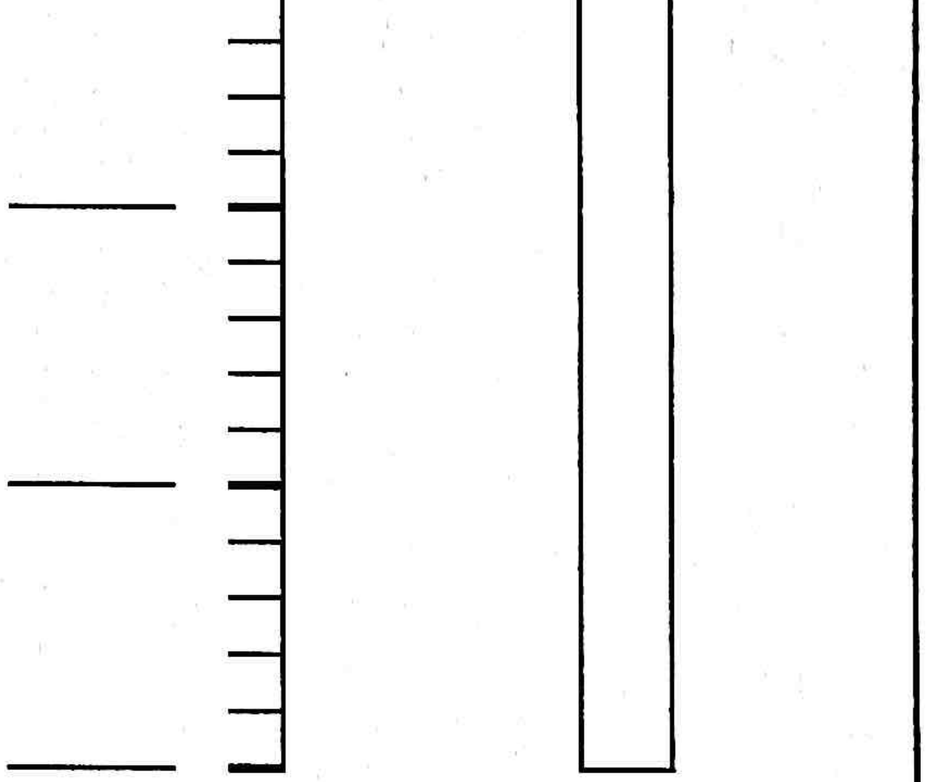
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: SBEM-SP-1B
Site Location: Waterlet, NM	Driller: Jeff
Drilling Co.: Cascade	Inspector: KC
	Date: 4/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	11.4-0
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~20
Quantity of cement used (lbs.)	97
Cement type	Type 1
Quantity of bentonite used (lbs.)	~0.5
Quantity of calcium chloride used (lbs.)	0.0
Volume of grout prepared (gal.)	~25
Volume of grout used (gal.)	1.81

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

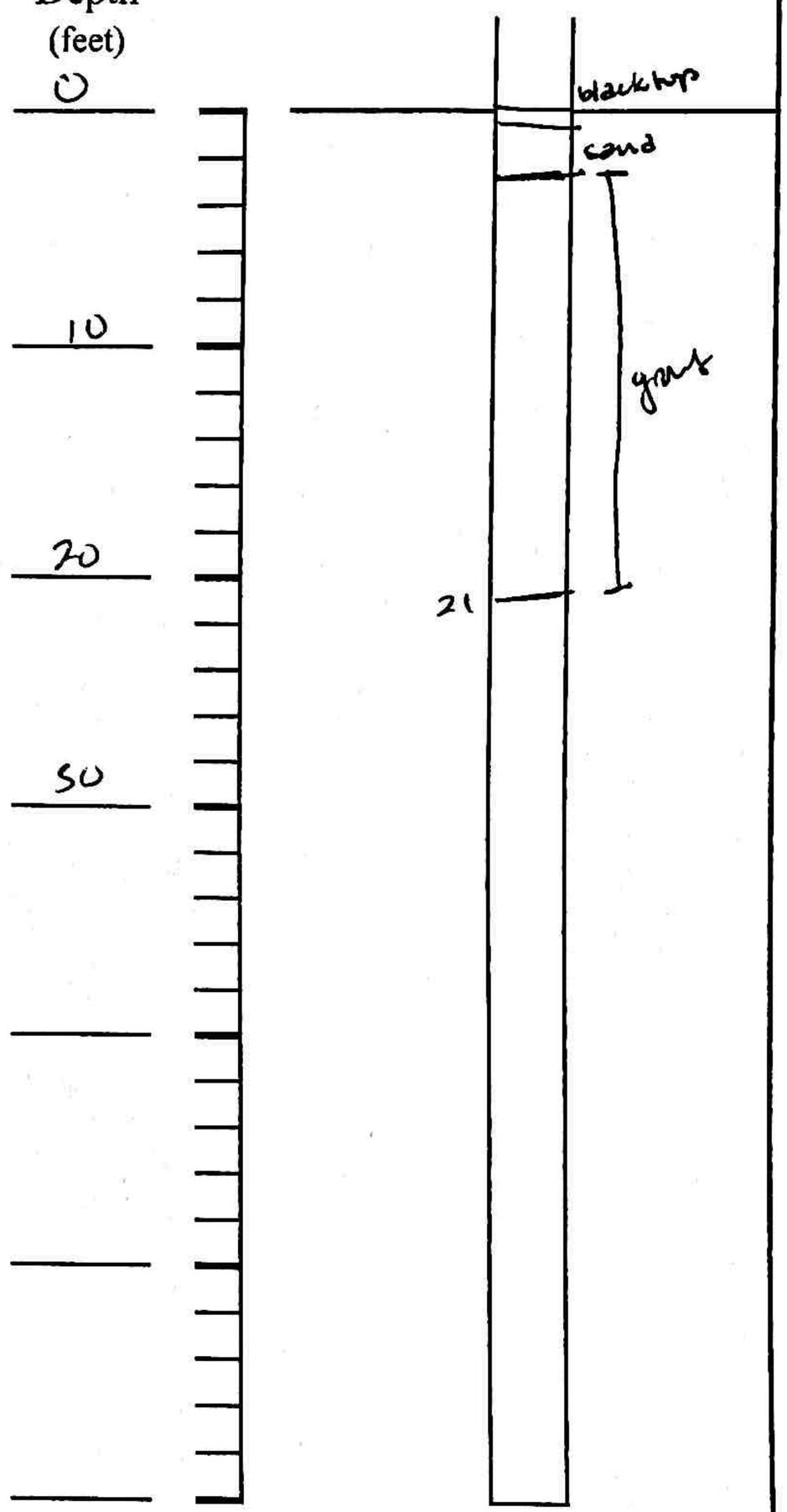
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WJA	Well I.D.: 83DM-SP-1
Site Location: Watervliet, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AZ
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	21-0
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	~
Quantity of cement used (lbs.)	-
Cement type	-
Quantity of bentonite used (lbs.)	-
Quantity of calcium chloride used (lbs.)	-
Volume of grout prepared (gal.)	-
Volume of grout used (gal.)	~35

WELL SCHEMATIC*



COMMENTS: grout batch letters from MW-7C1

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

FIGURE 3

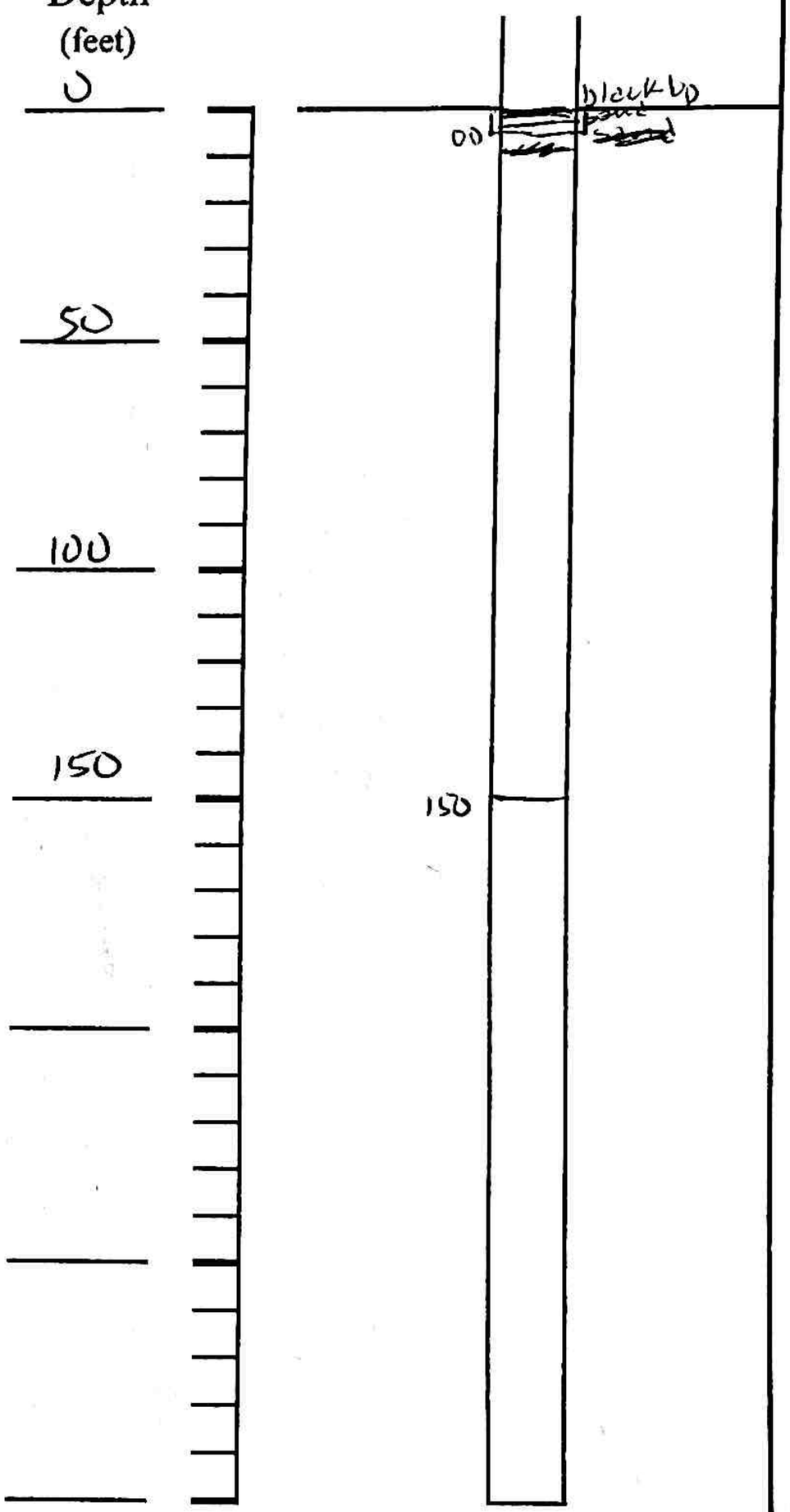
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-MW-74
Site Location: Waterlick, VA	Driller: Jeff
Drilling Co.: Cascade	Inspector: MC
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5'
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	150-0
# of batches prepared	2
For each batch record:	
Quantity of water used (gal.)	~50
Quantity of cement used (lbs.)	186 376 (4 bags)
Cement type	Type 1
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	~50
Volume of grout used (gal.)	~100

WELL SCHEMATIC*



COMMENTS: sodium permanganate, SZW on 9/26, no ton 9/27

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

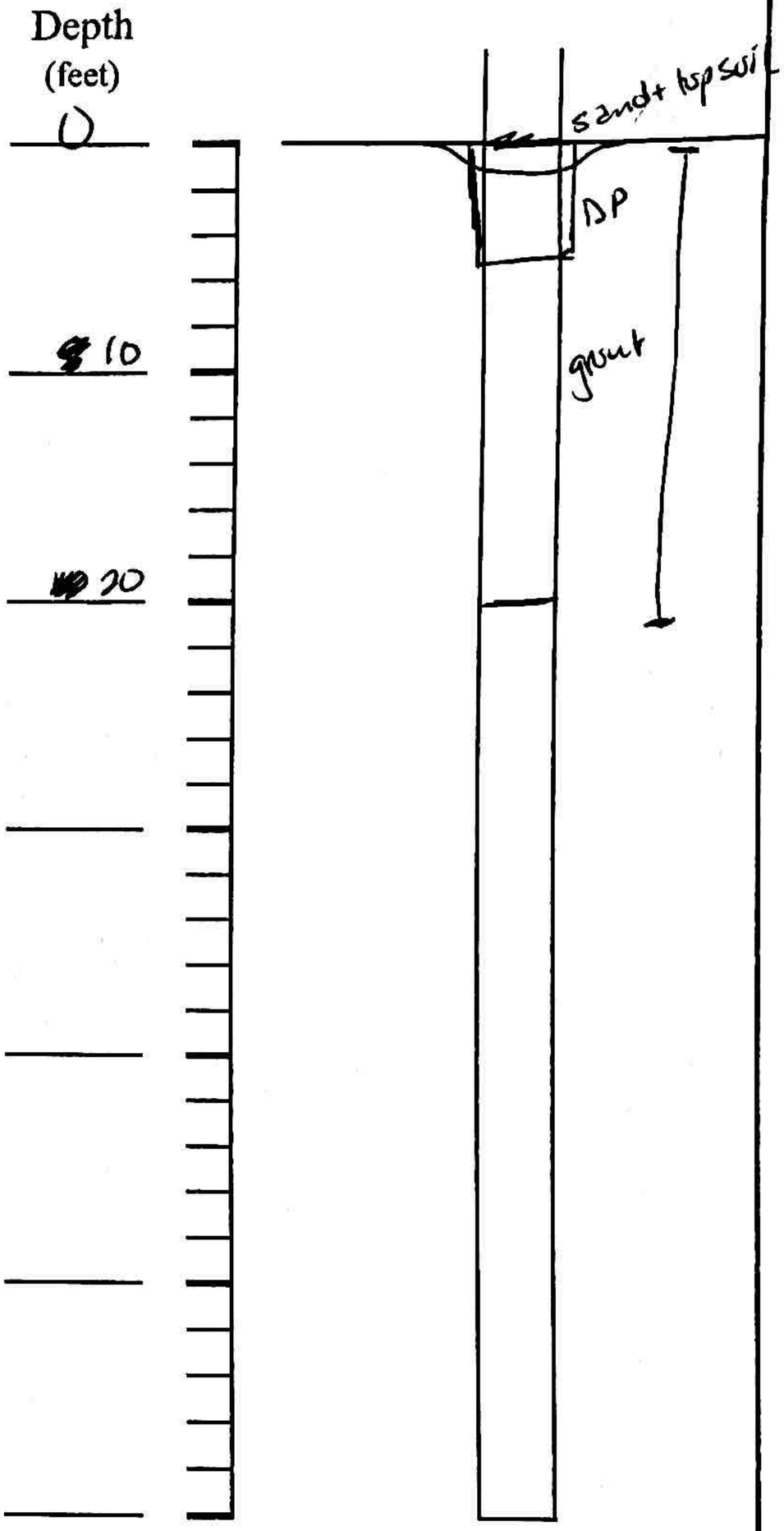
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WJA	Well I.D.: WJA-AW-135-MW-2
Site Location: Waterver, NM	Driller: Jeff
Drilling Co.: Cascade	Inspector: MC
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-20
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	4
Quantity of cement used (lbs.)	47
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	5
Volume of grout used (gal.)	~4

WELL SCHEMATIC*



COMMENTS: 2 in well inside 4 in PVC casing

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

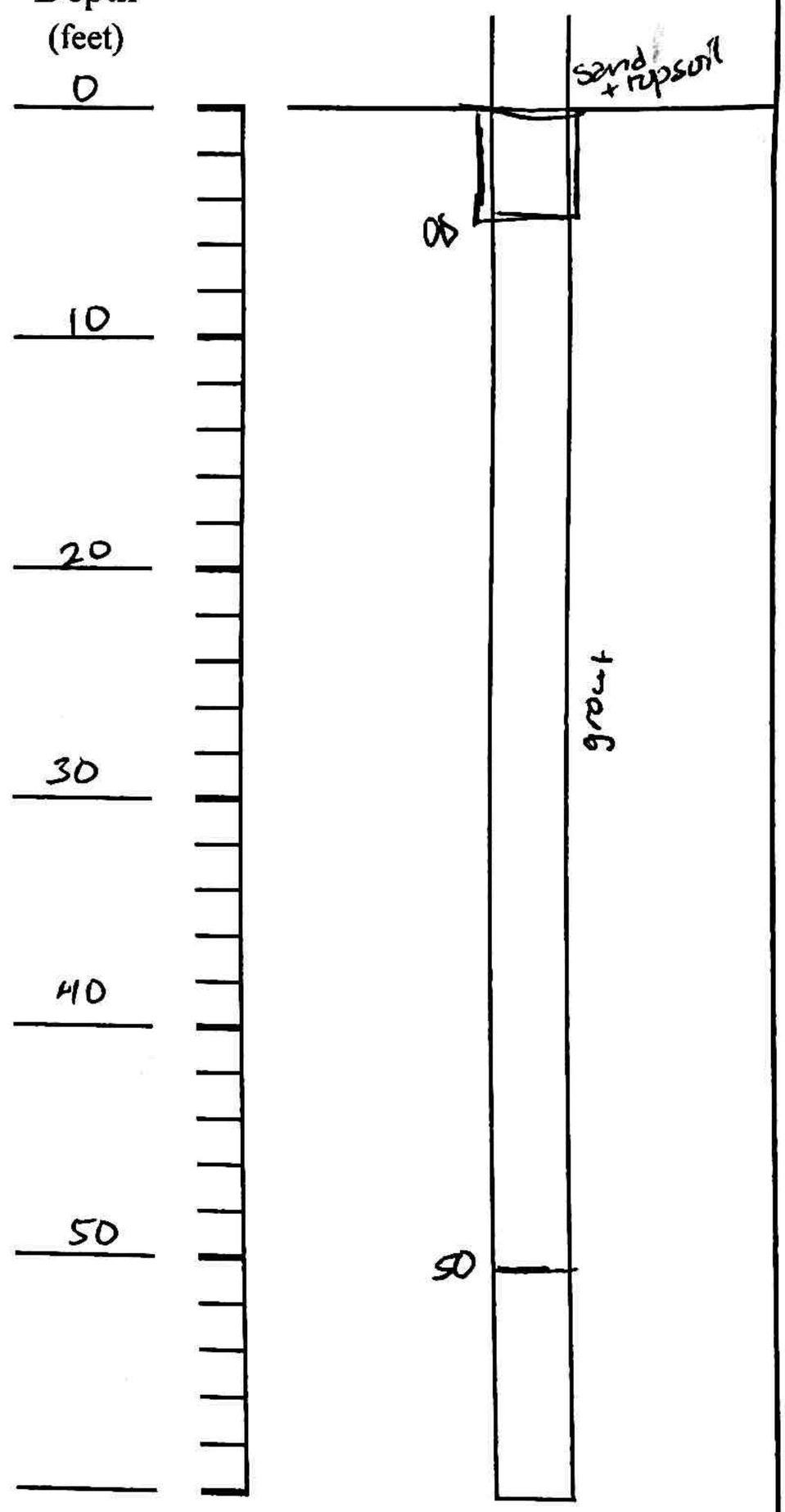
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-AW-35-MW-5
Site Location: Waterford, MI	Driller: Jeff
Drilling Co.: Cascade	Inspector: BC
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-50
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	~30
Quantity of cement used (lbs.)	188
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~40
Volume of grout used (gal.)	~35

WELL SCHEMATIC*



COMMENTS: DTB 49.75

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

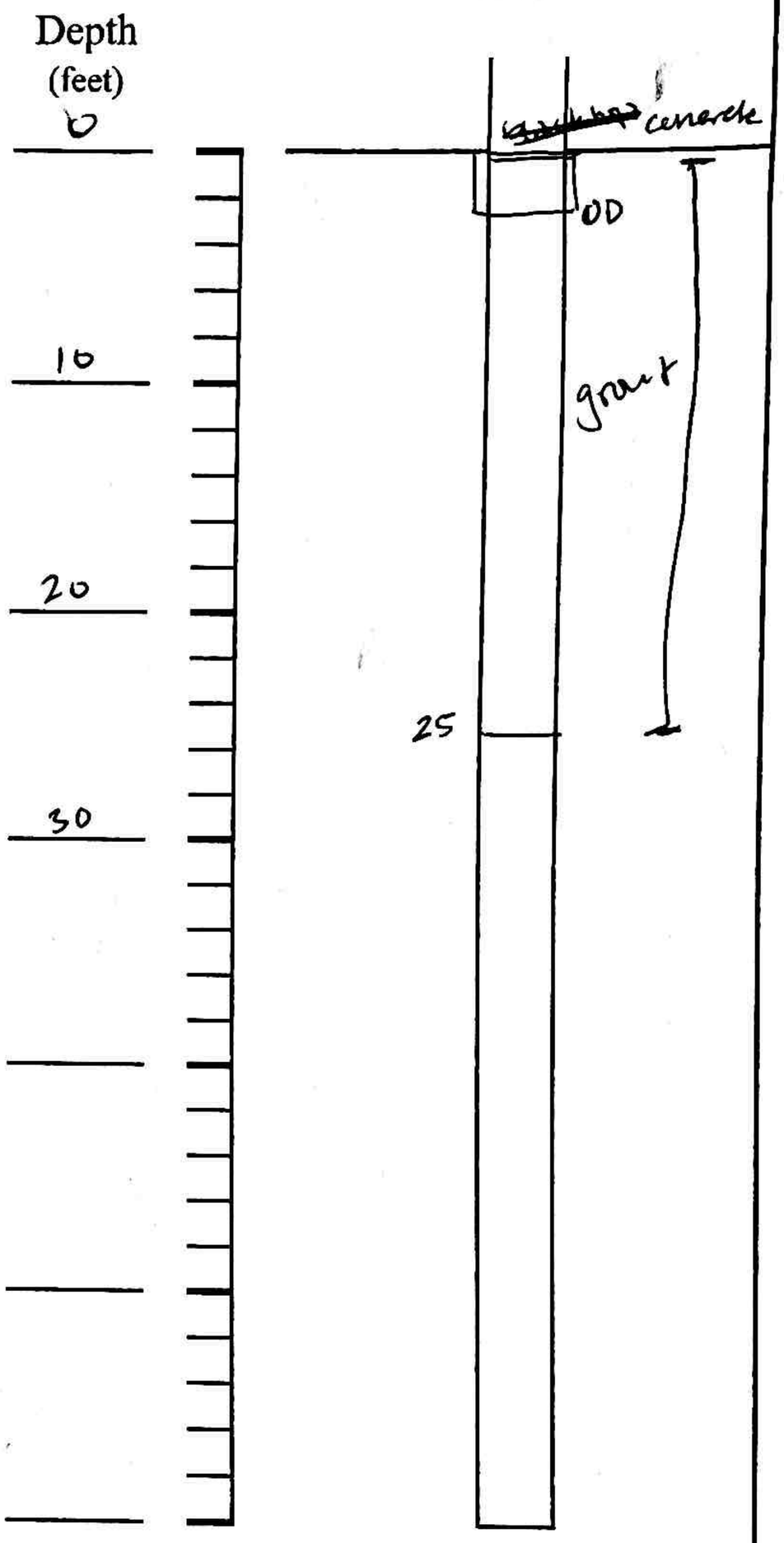
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVH	Well I.D.: WVA-MW-35-MW-8
Site Location: Waterbet, MI	Driller: Jeff
Drilling Co.: Cascade	Inspector: AZ
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-3
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-25
# of batches prepared	0, leftover from MW-5
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	25
Volume of grout used (gal.)	16.5

WELL SCHEMATIC*



COMMENTS: Casing not cut down due to concerns about subsidence, as displayed by the LTM location nearby
→ like they ended up doing it anyways
→ finish w/ concrete

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

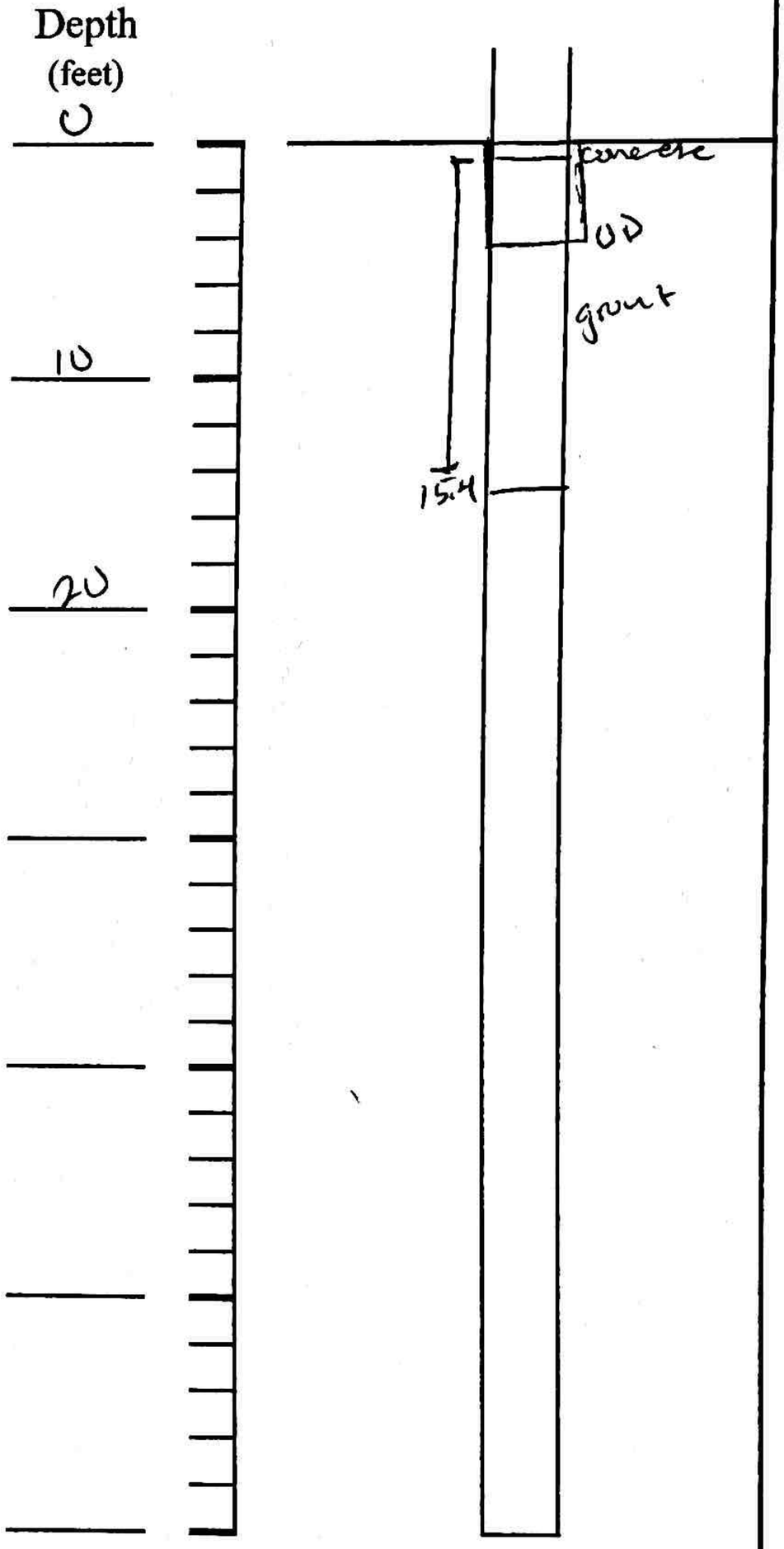
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-AW-25-14U-5
Site Location: Waterlick, VA	Driller: Jeff
Drilling Co.: Cascade	Inspector: MC
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0.5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	15.4-0
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	-
Quantity of bentonite used (lbs.)	-
Quantity of calcium chloride used (lbs.)	-
Volume of grout prepared (gal.)	-
Volume of grout used (gal.)	~10.5

WELL SCHEMATIC*



COMMENTS: DTB 15.23, same batch as 7-9

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

FIGURE 3

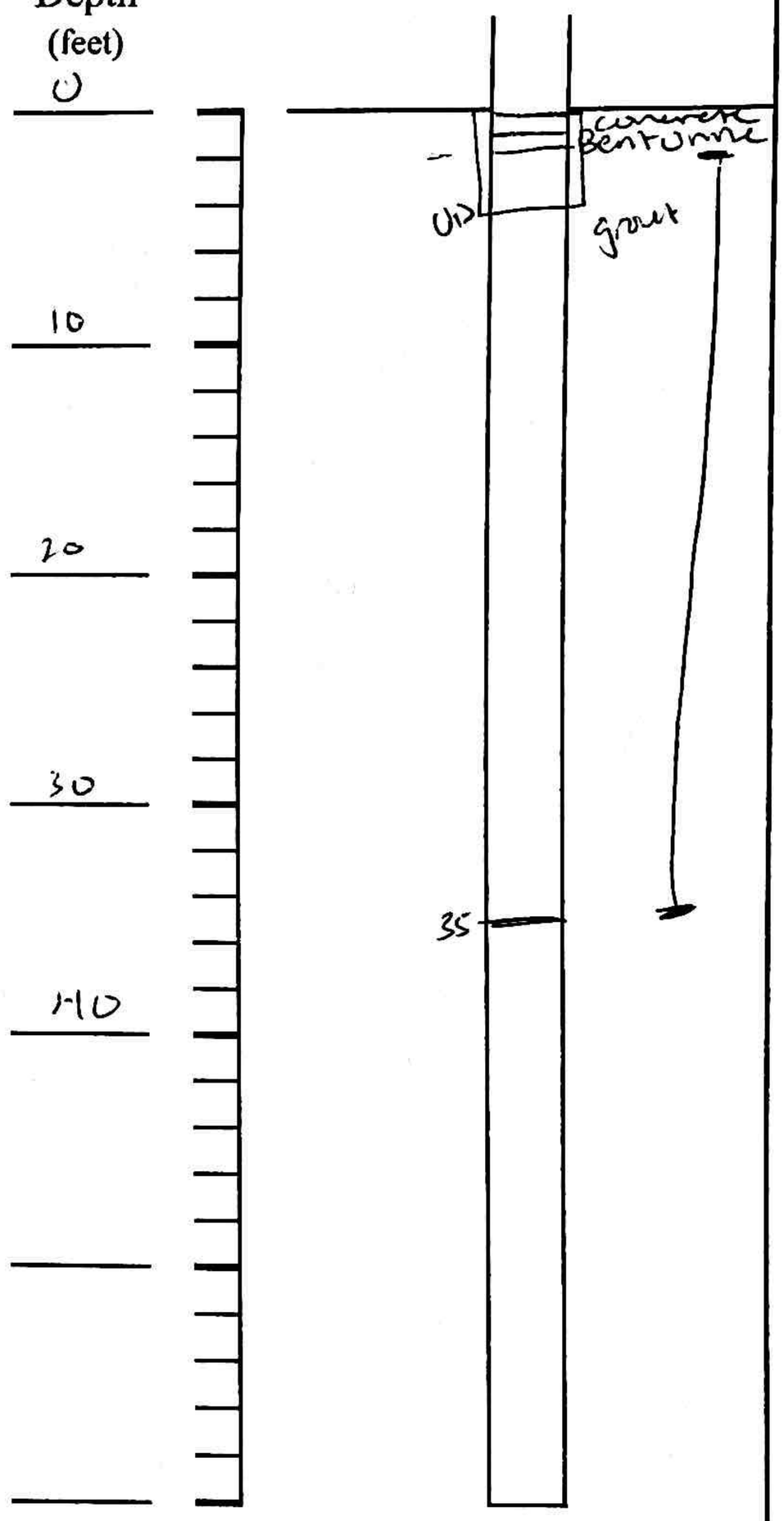
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-AW-25-MW-7
Site Location: Wakeket, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AC
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-35
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	-
Quantity of bentonite used (lbs.)	-
Quantity of calcium chloride used (lbs.)	-
Volume of grout prepared (gal.)	-
Volume of grout used (gal.)	~22

WELL SCHEMATIC*



COMMENTS: DTB 33.42, some grout taken as fill

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

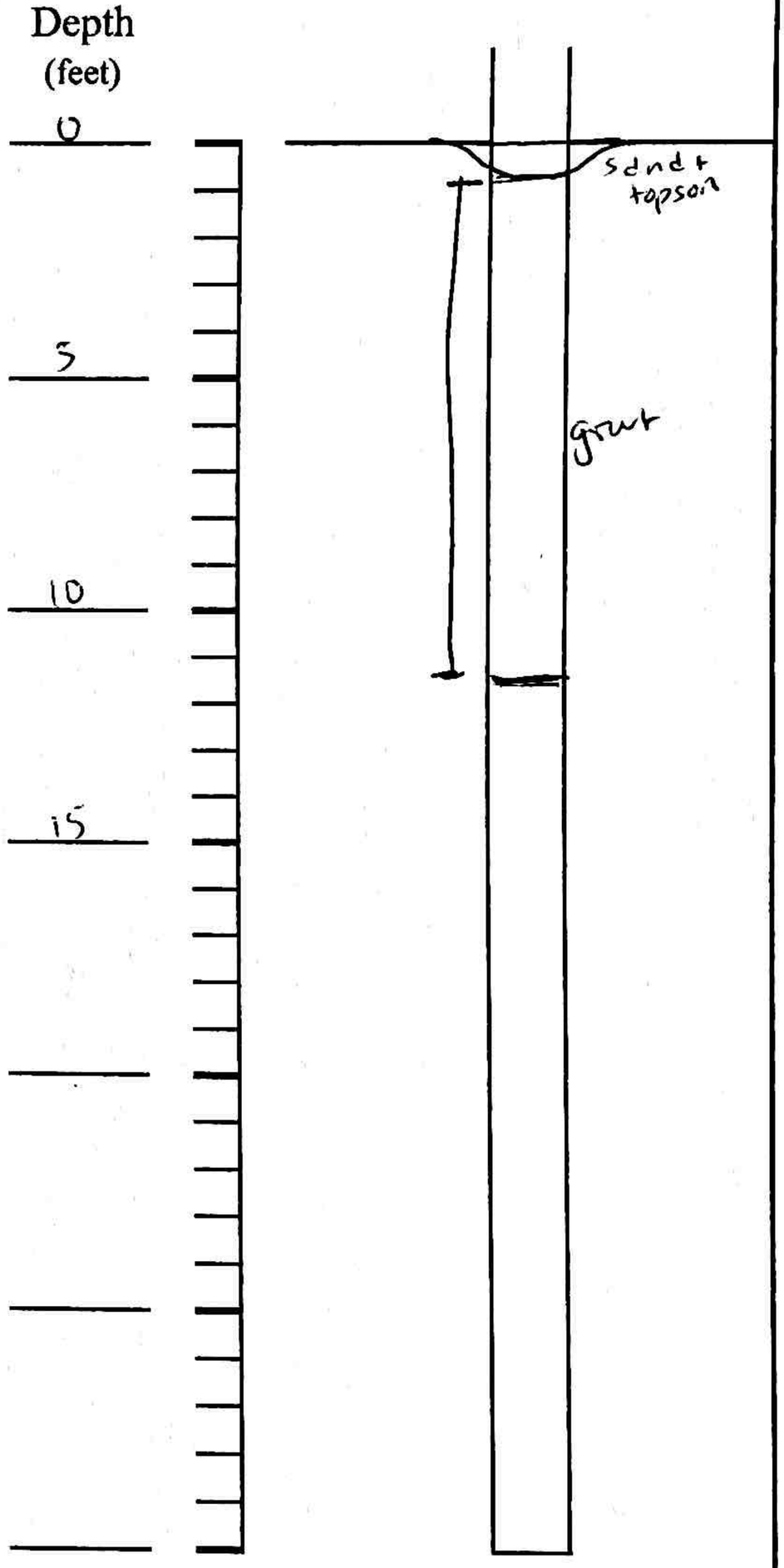
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WWA	Well I.D.: 86EM-SP-5
Site Location: Wahluke, WA	Driller: Jon
Drilling Co.: Cascade	Inspector: RL
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	11.57 - 0
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~20
Quantity of cement used (lbs.)	97
Cement type	Type 1
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~20
Volume of grout used (gal.)	2

WELL SCHEMATIC*



COMMENTS: DTB ~11.57 Ft

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

FIGURE 3

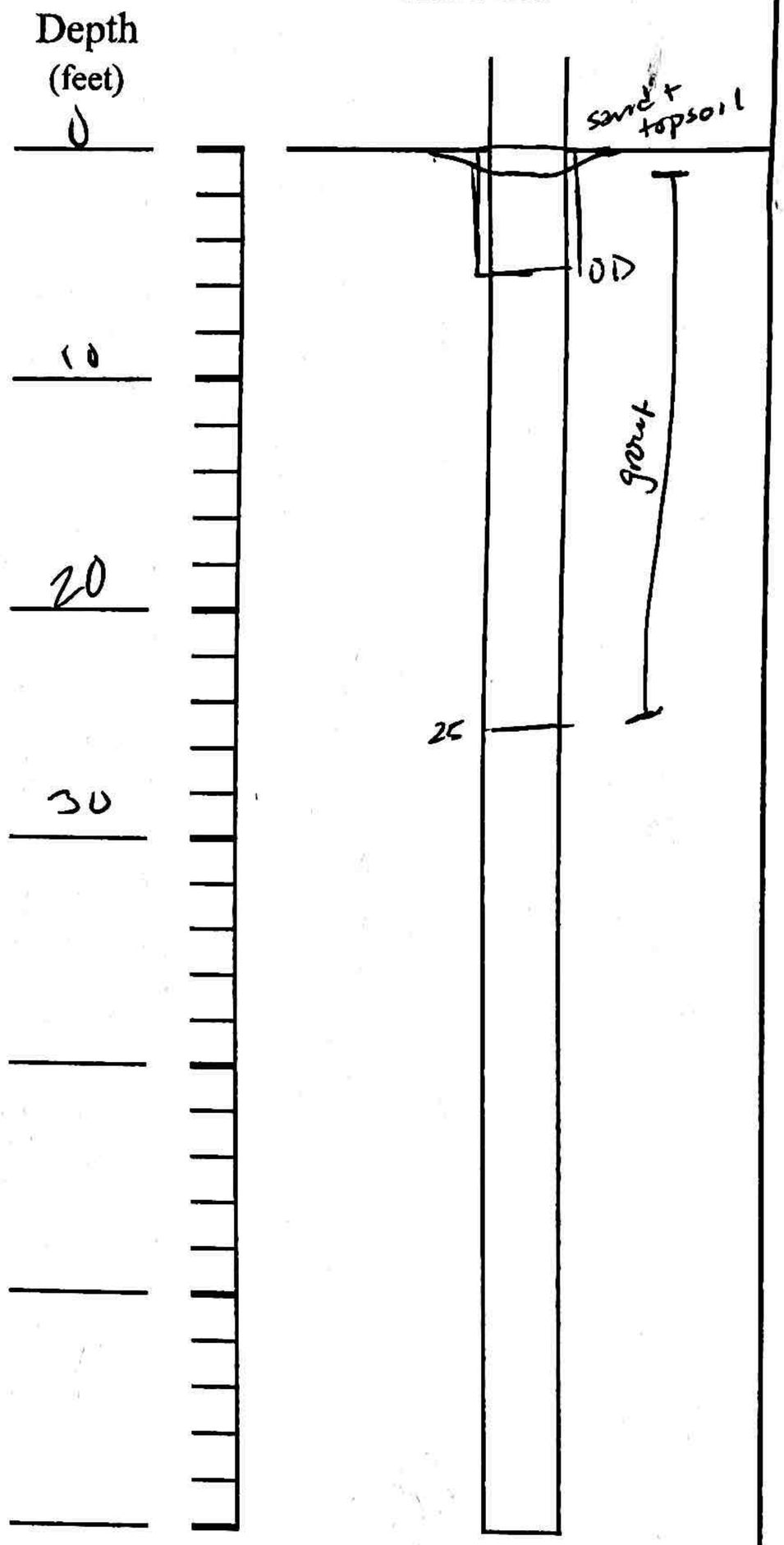
WELL DECOMMISSIONING RECORD

Site Name: WJA	Well I.D.: WJA-AW-MW-22
Site Location: Watervliet, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	25-0
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~12
Quantity of cement used (lbs.)	94
Cement type	Type 1
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	25
Volume of grout used (gal.)	~18

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

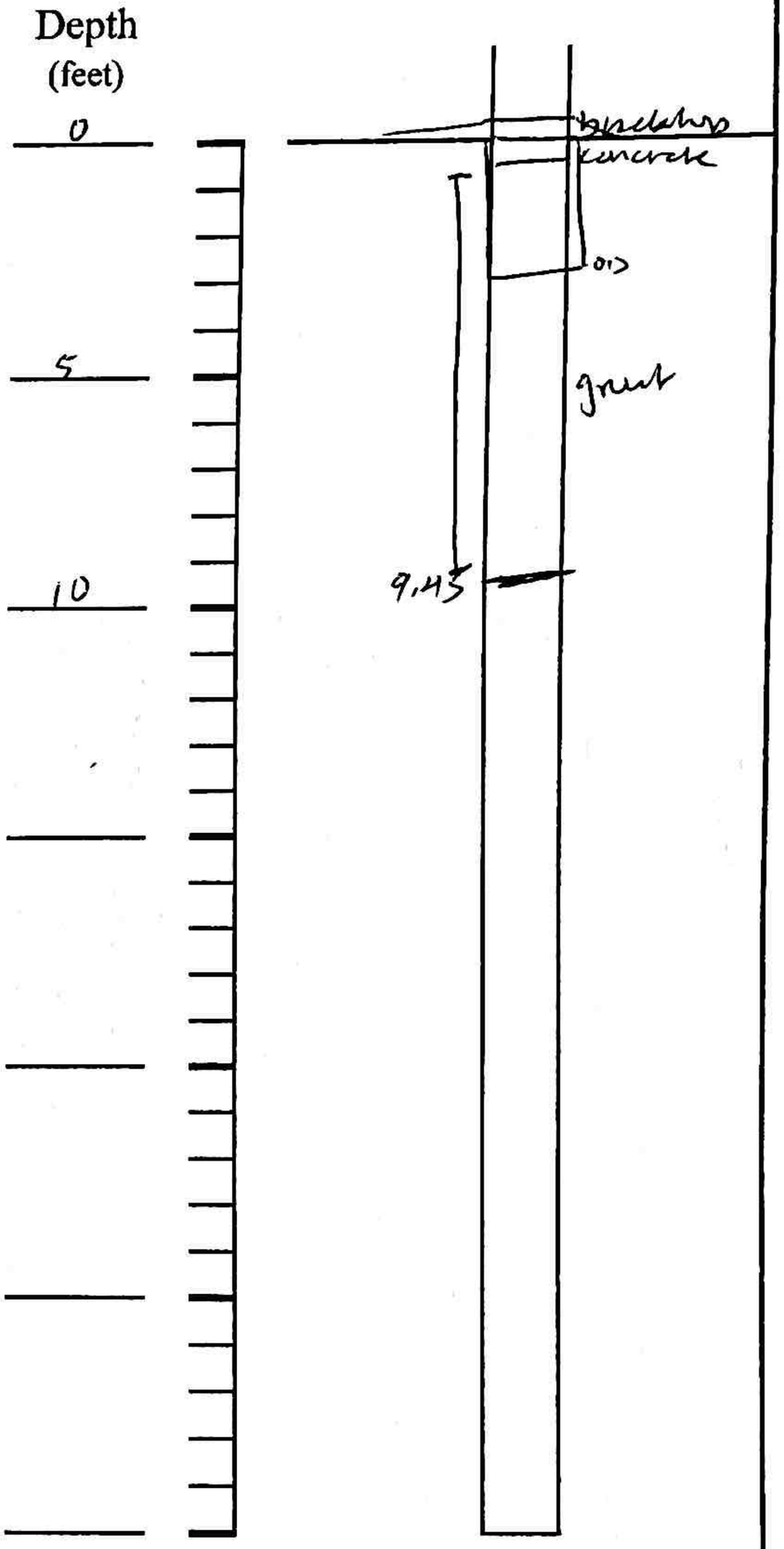
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-ATW-MW-43
Site Location: Waterlet, NM	Driller: Jeff
Drilling Co.: Cascade	Inspector: RZ
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-3
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	9.43
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	-
Quantity of bentonite used (lbs.)	-
Quantity of calcium chloride used (lbs.)	-
Volume of grout prepared (gal.)	-
Volume of grout used (gal.)	~1.6

WELL SCHEMATIC*



COMMENTS: DTB 9.43, same datum as SP-7B

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

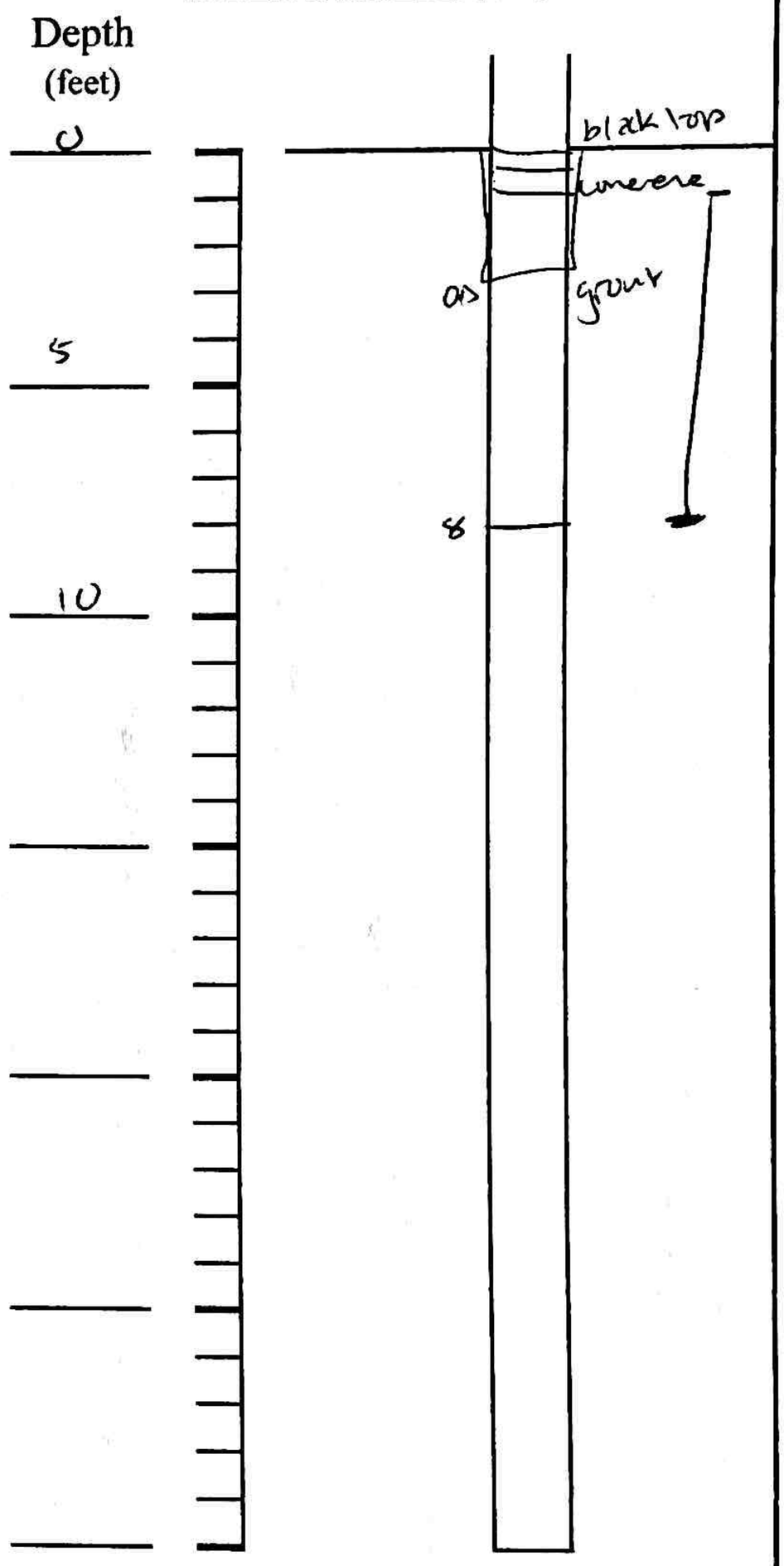
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-AGW-MW-44
Site Location: Waterloo, NM	Driller: Jeff
Drilling Co.: Cascade	Inspector: AC
	Date: 9/26/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-3
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	8-0
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	–
Quantity of cement used (lbs.)	–
Cement type	–
Quantity of bentonite used (lbs.)	–
Quantity of calcium chloride used (lbs.)	–
Volume of grout prepared (gal.)	–
Volume of grout used (gal.)	~1.3

WELL SCHEMATIC*



COMMENTS: Some bentonite SP-13

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

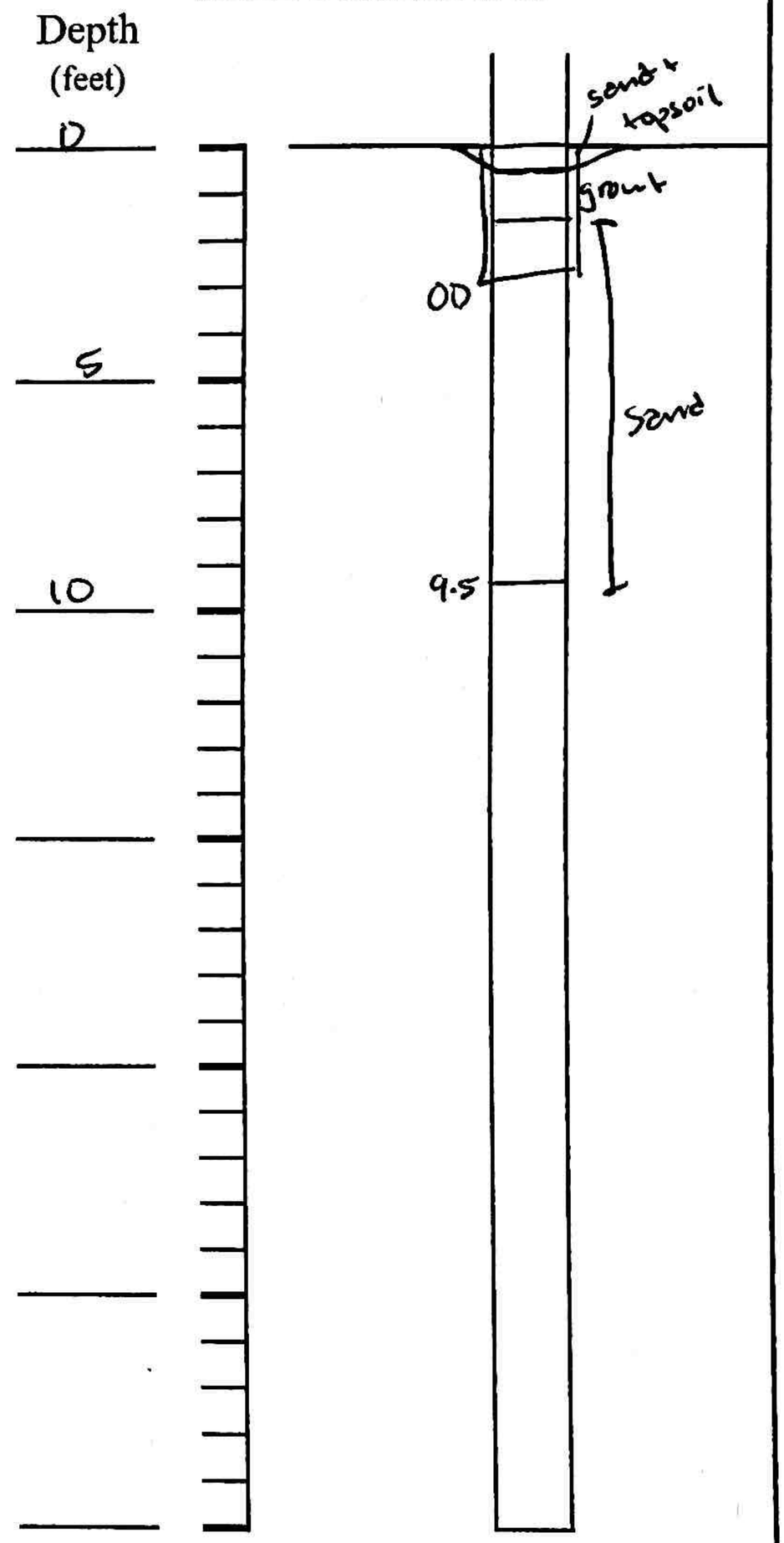
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WUA-SA-MW-47
Site Location: Waterlet, MI	Driller: Jeff
Drilling Co.: CASCADE	Inspector: AC
	Date: 9/27/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-3
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	1.5-0
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~5
Quantity of cement used (lbs.)	~23.5
Cement type	Type 1
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~5
Volume of grout used (gal.)	~1

WELL SCHEMATIC*



COMMENTS: Receive well well

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

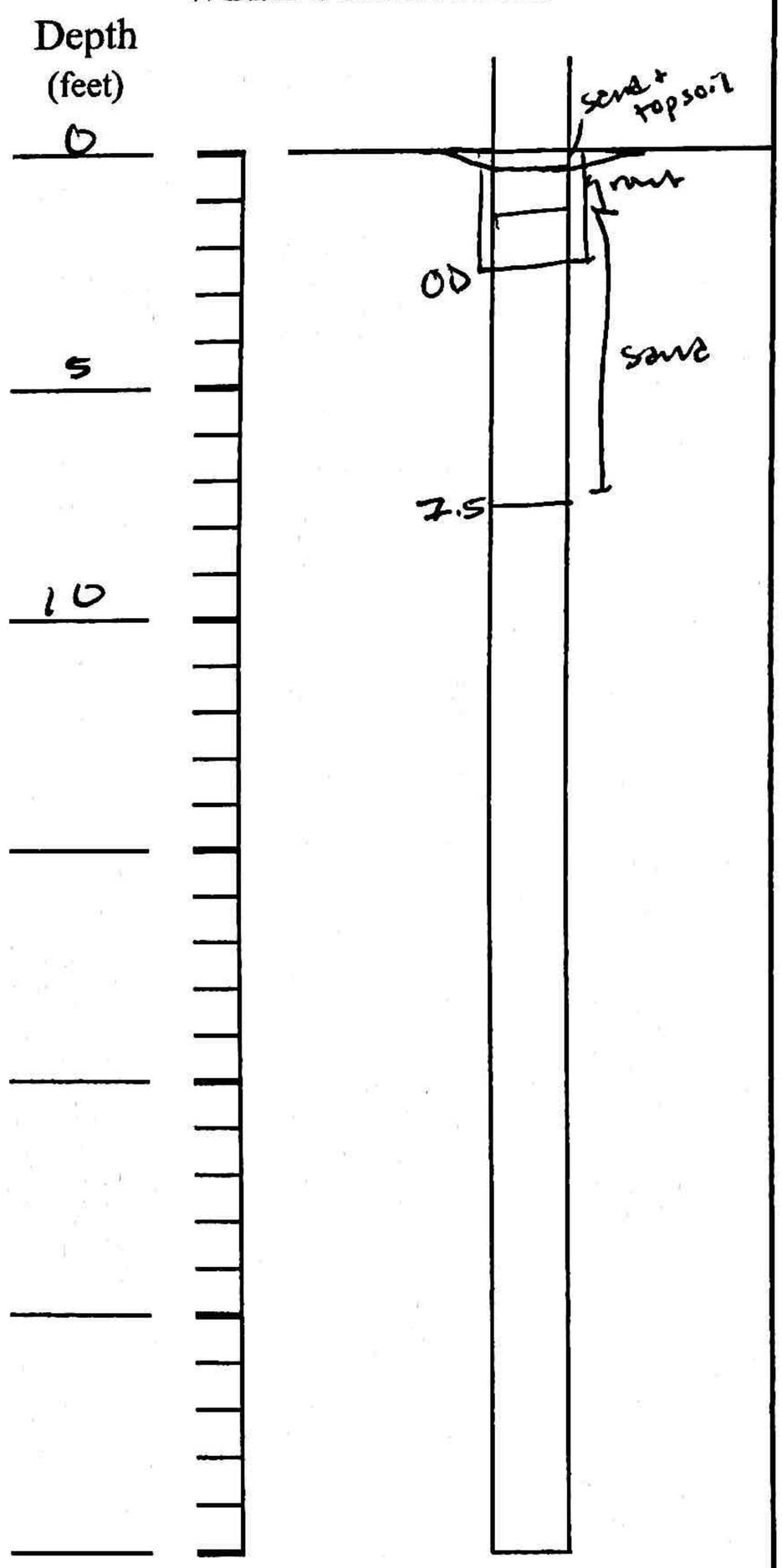
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-52
Site Location: Waterlet, NY	Driller: Jeff
Drilling Co.: CASCADE	Inspector: AC
	Date: 9/27/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-3
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	1.8-0
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	–
Quantity of cement used (lbs.)	–
Cement type	Type 1
Quantity of bentonite used (lbs.)	–
Quantity of calcium chloride used (lbs.)	–
Volume of grout prepared (gal.)	–
Volume of grout used (gal.)	~1.2

WELL SCHEMATIC*



COMMENTS: Reseting WVA well, same grout batch as MW-47

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

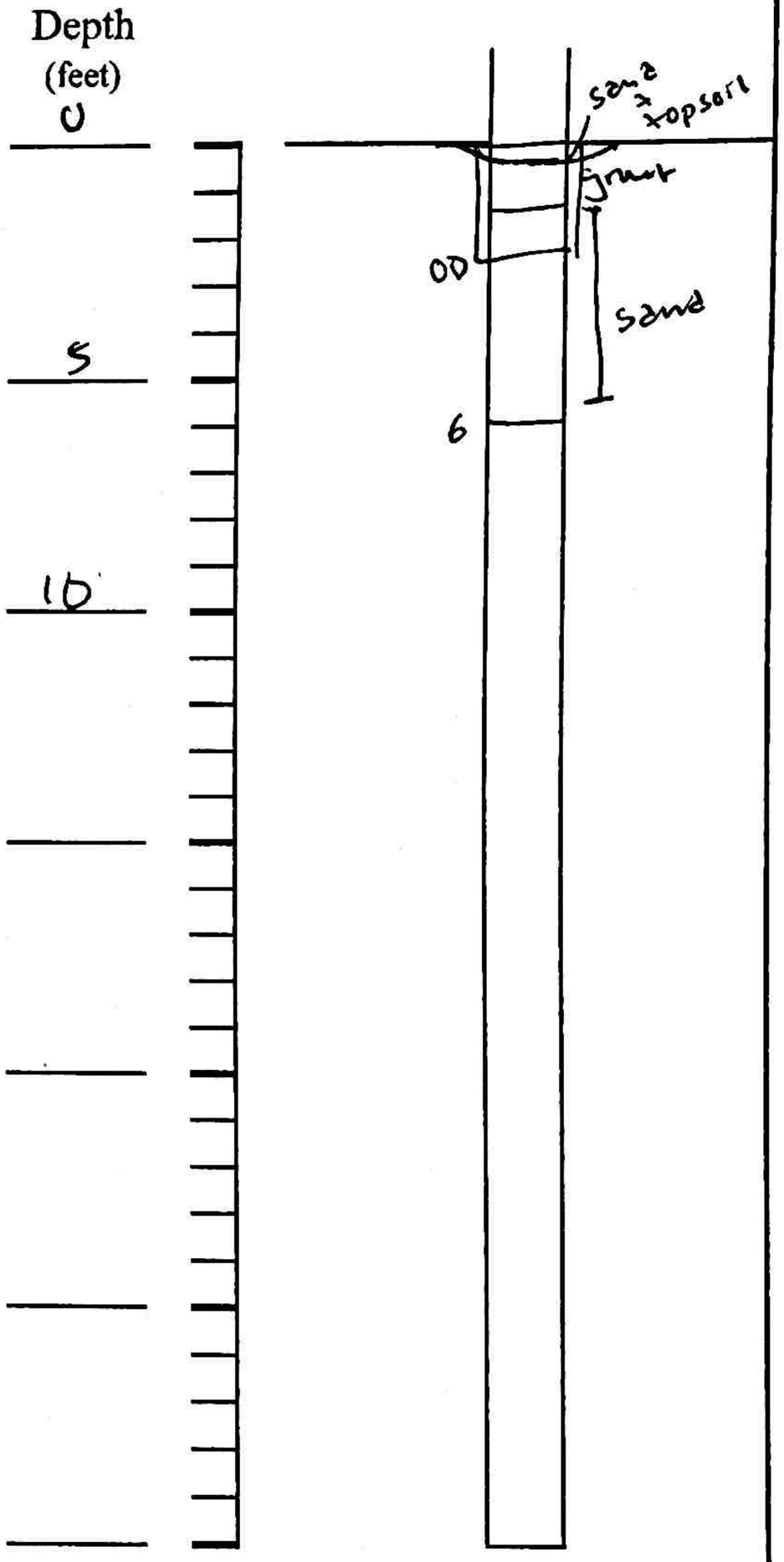
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WUA-SA-MW-57
Site Location: Watervliet NY	Driller: Jeff
Drilling Co.: Cascades	Inspector: RC
	Date: 9/24/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-3
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	1.5-0
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	Type 1
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	-
Volume of grout used (gal.)	-1

WELL SCHEMATIC*



COMMENTS: Reserve Well Well, same grout batch as MW-47

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

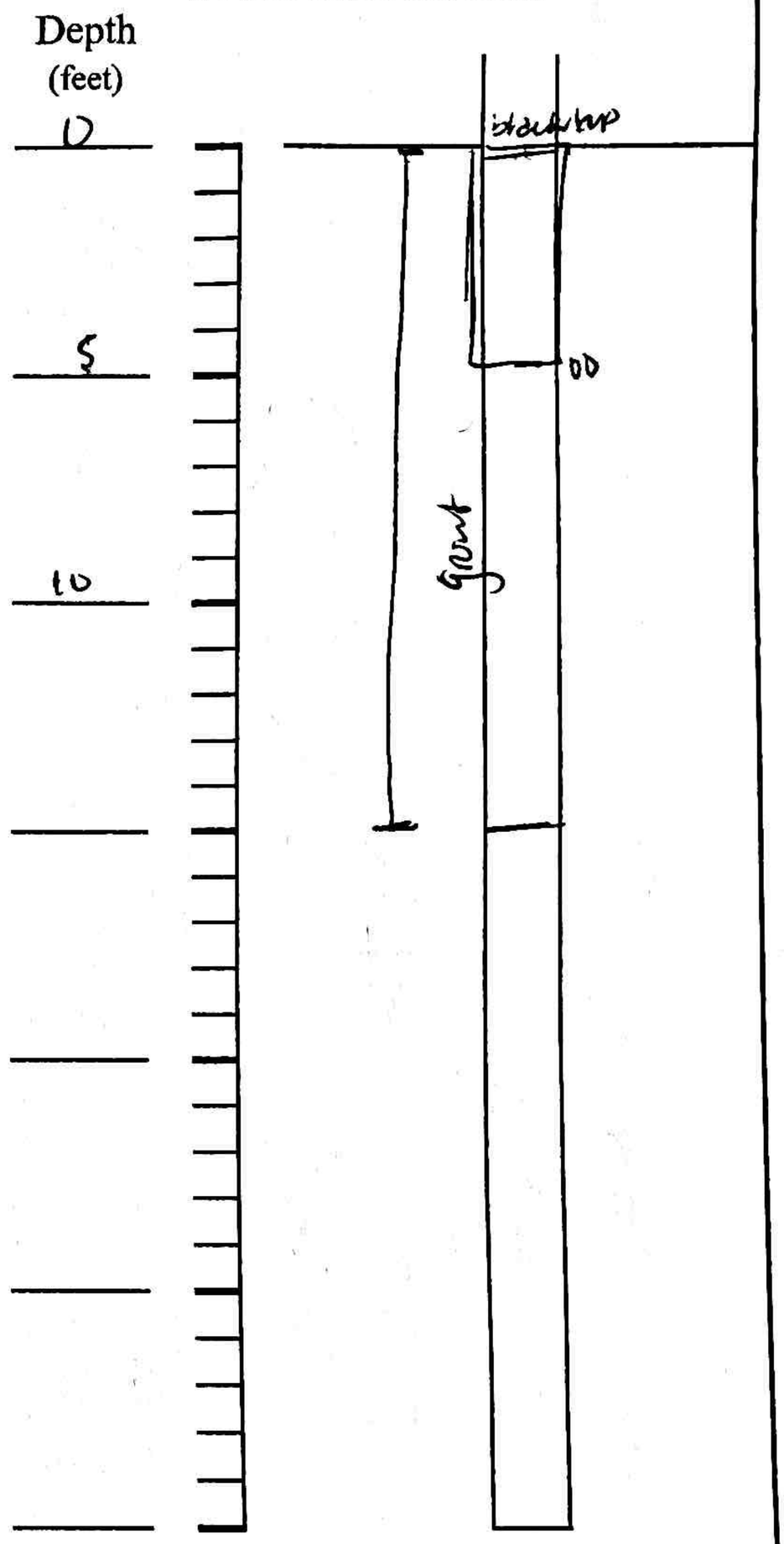
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WJA	Well I.D.: WJA-SA-MW-14R
Site Location: Watervliet, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AC
	Date:

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-[redacted]5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-10
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	6
Quantity of cement used (lbs.)	94
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	3
Volume of grout used (gal.)	1.6

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

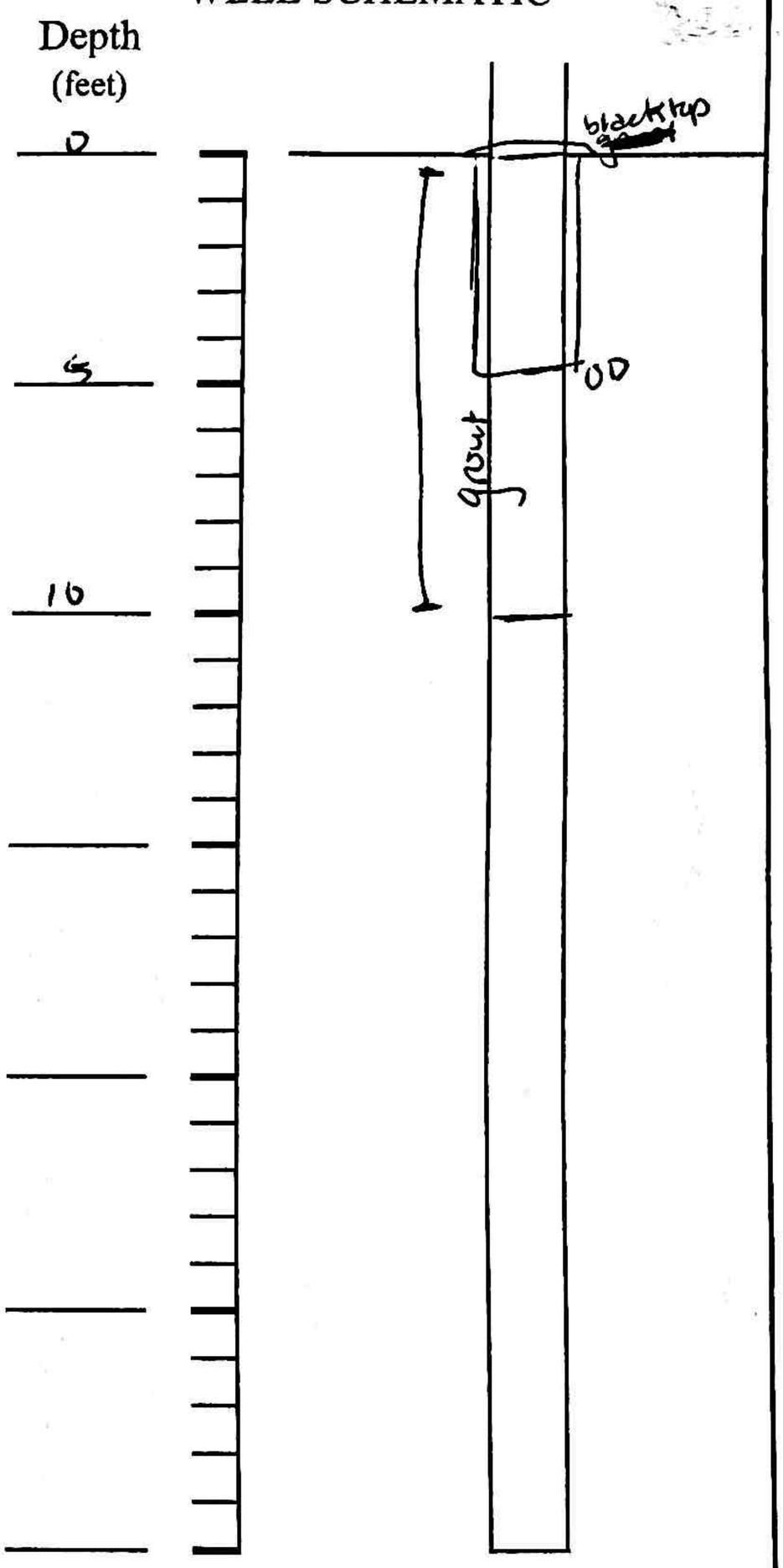
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WJA	Well I.D.: WJA-SA-MW-20
Site Location: Waynesburg	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/23/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-10
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	6
Quantity of cement used (lbs.)	94
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	3
Volume of grout used (gal.)	1.6

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

FIGURE 3

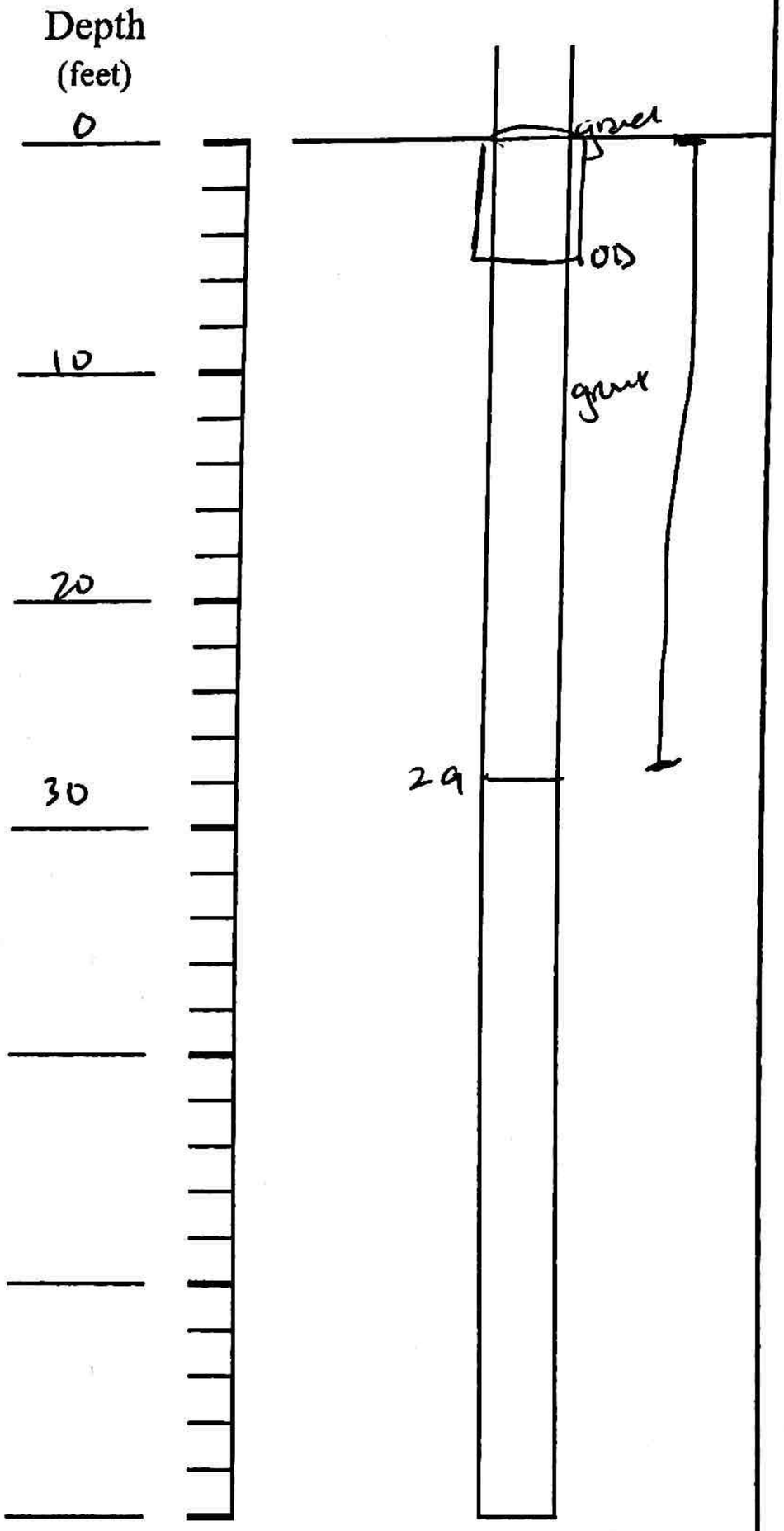
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA MW-23
Site Location: Waterbury, VT	Driller: Jeff
Drilling Co.: Cascade	Inspector: AC
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-29
# of batches prepared	1 3
For each batch record:	
Quantity of water used (gal.)	3
Quantity of cement used (lbs.)	47
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	4
Volume of grout used (gal.)	4

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

FIGURE 3

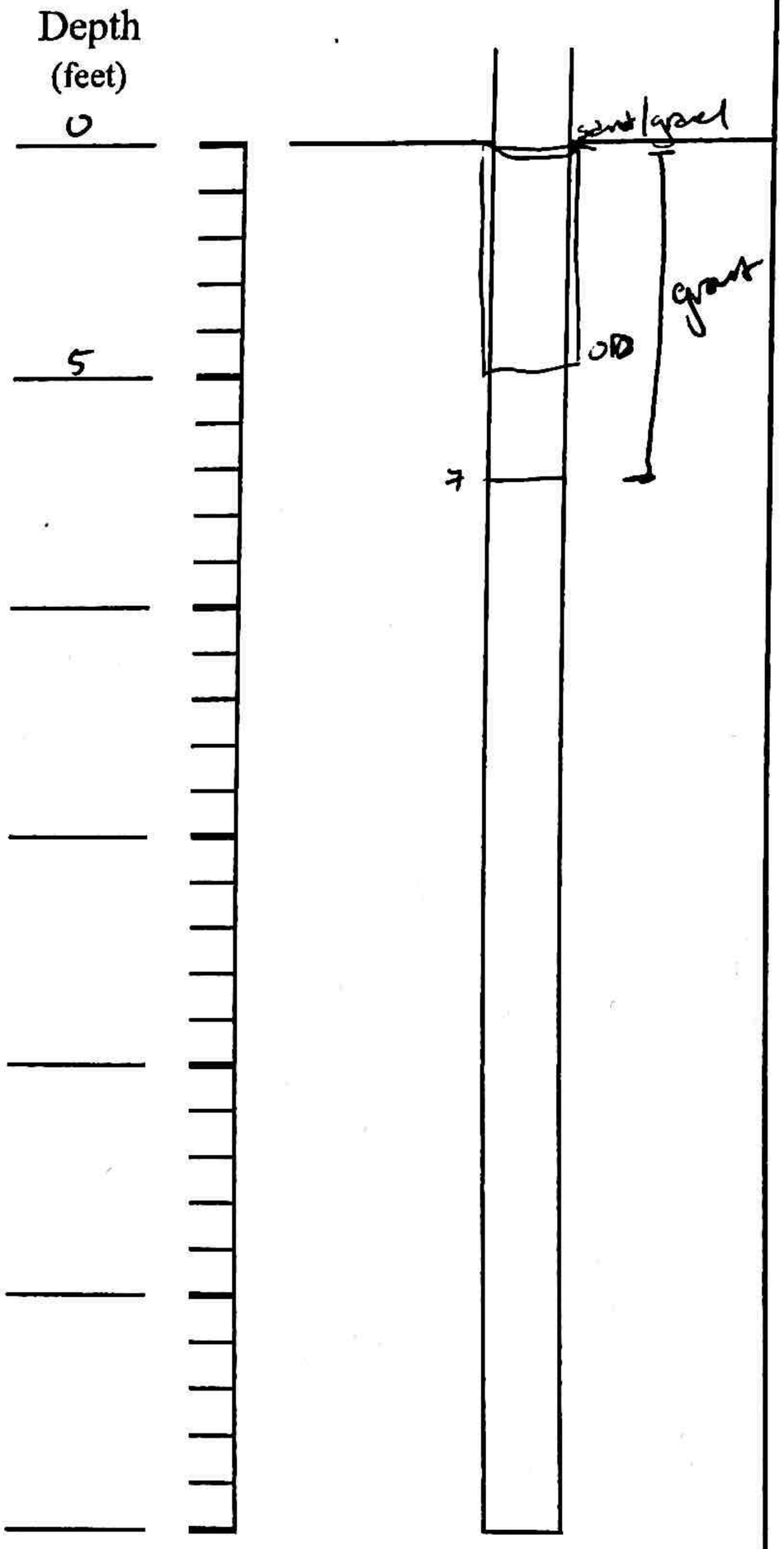
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-32
Site Location: Waterlet, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/24/21

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	7-0
# of batches prepared	0
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	Type 1
Quantity of bentonite used (lbs.)	-
Quantity of calcium chloride used (lbs.)	-
Volume of grout prepared (gal.)	-
Volume of grout used (gal.)	~4.5

WELL SCHEMATIC*



COMMENTS: same batch as MW-41

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

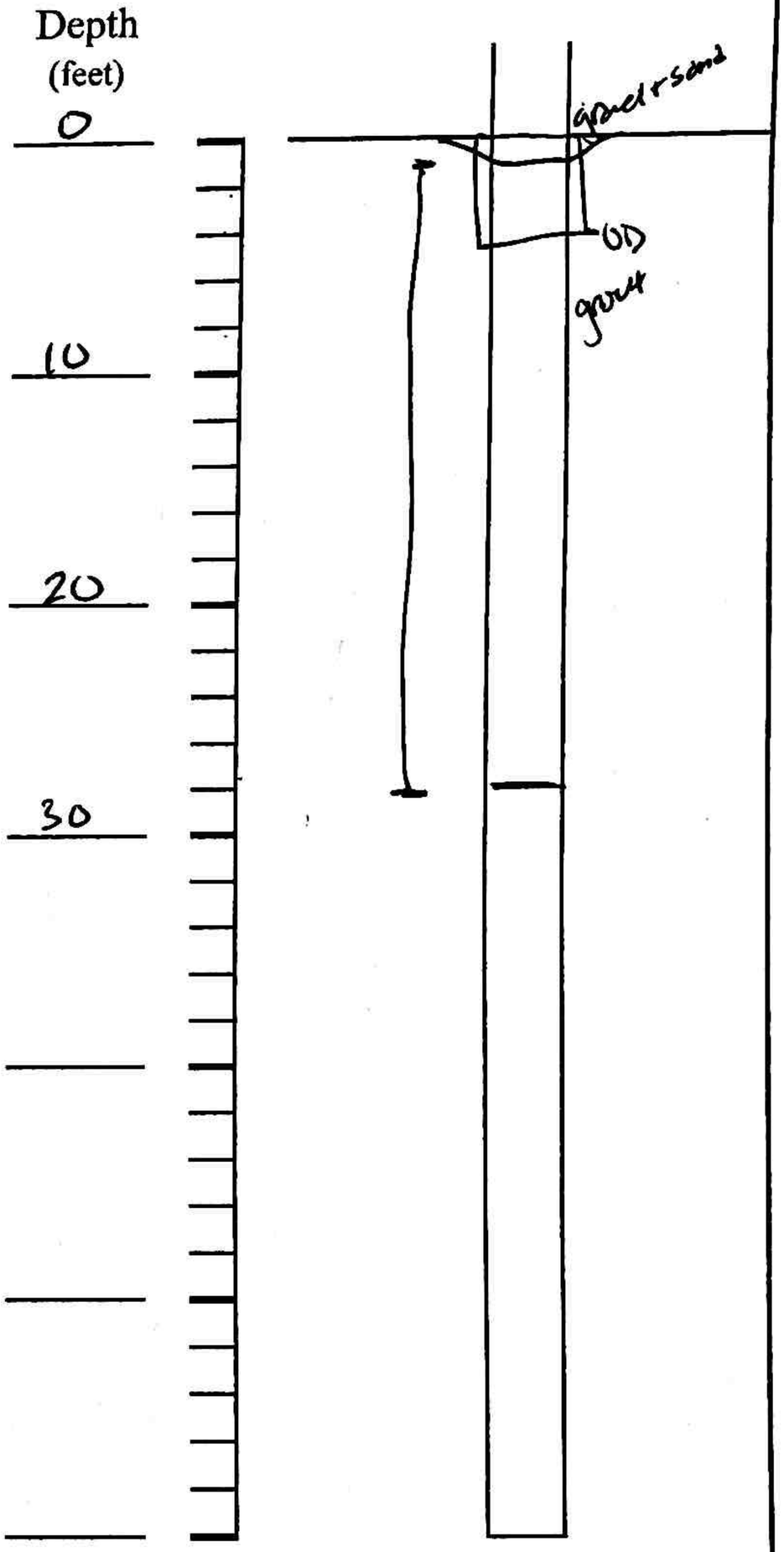
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WJA	Well I.D.: WJA-SA-MW-3~~3~~4
Site Location: Wyatt, IN	Driller: ~~Cascade~~ Jeff
Drilling Co.: Cascade	Inspector: AC
	Date: 9/23/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-2-5
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~30
Quantity of cement used (lbs.)	1~~5~~51
Cement type	Type 1, Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~30
Volume of grout used (gal.)	

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

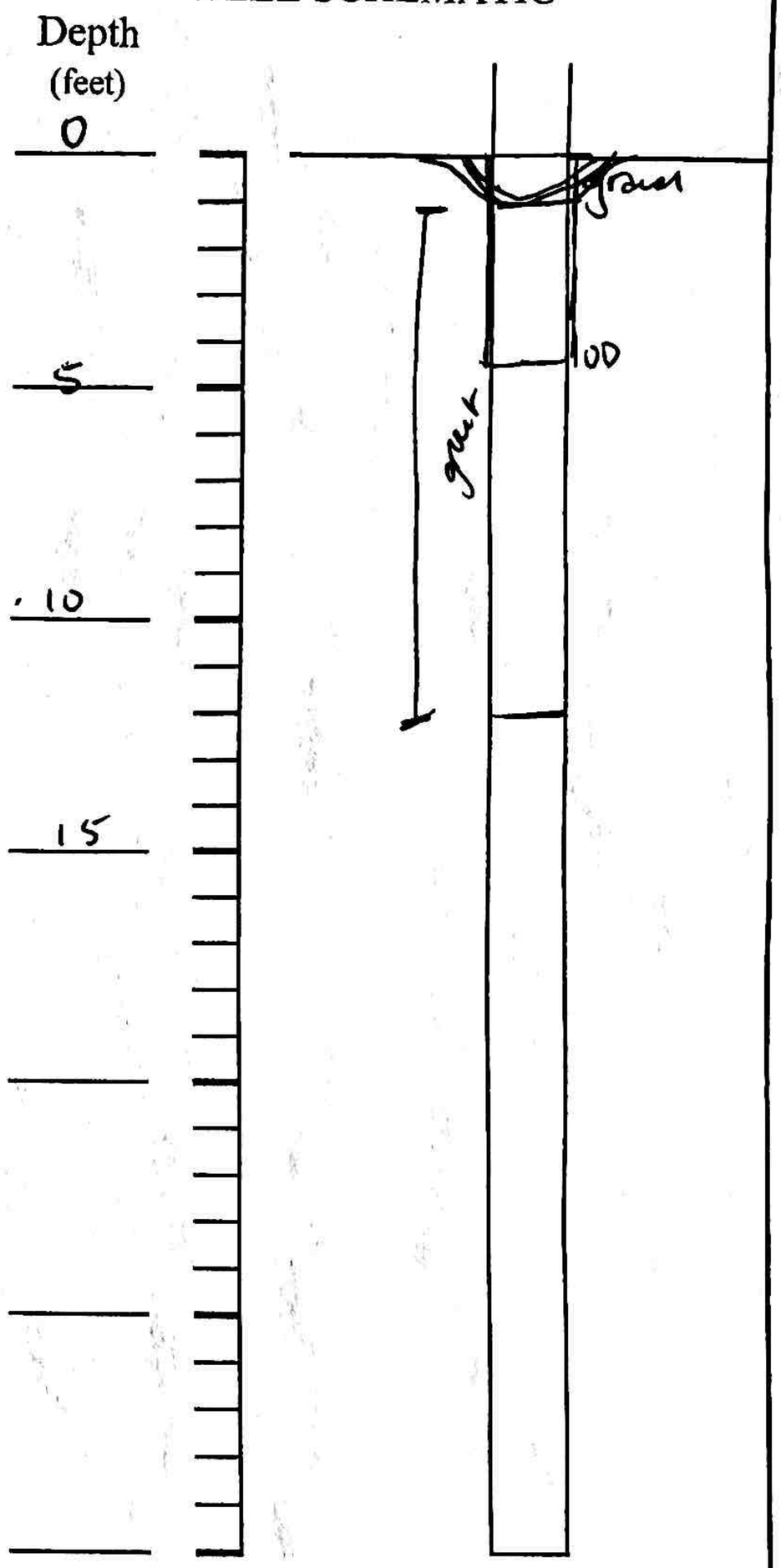
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-38
Site Location: Waterford, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AZ
	Date: 9/23/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-12
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~30
Quantity of cement used (lbs.)	151
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~30
Volume of grout used (gal.)	

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

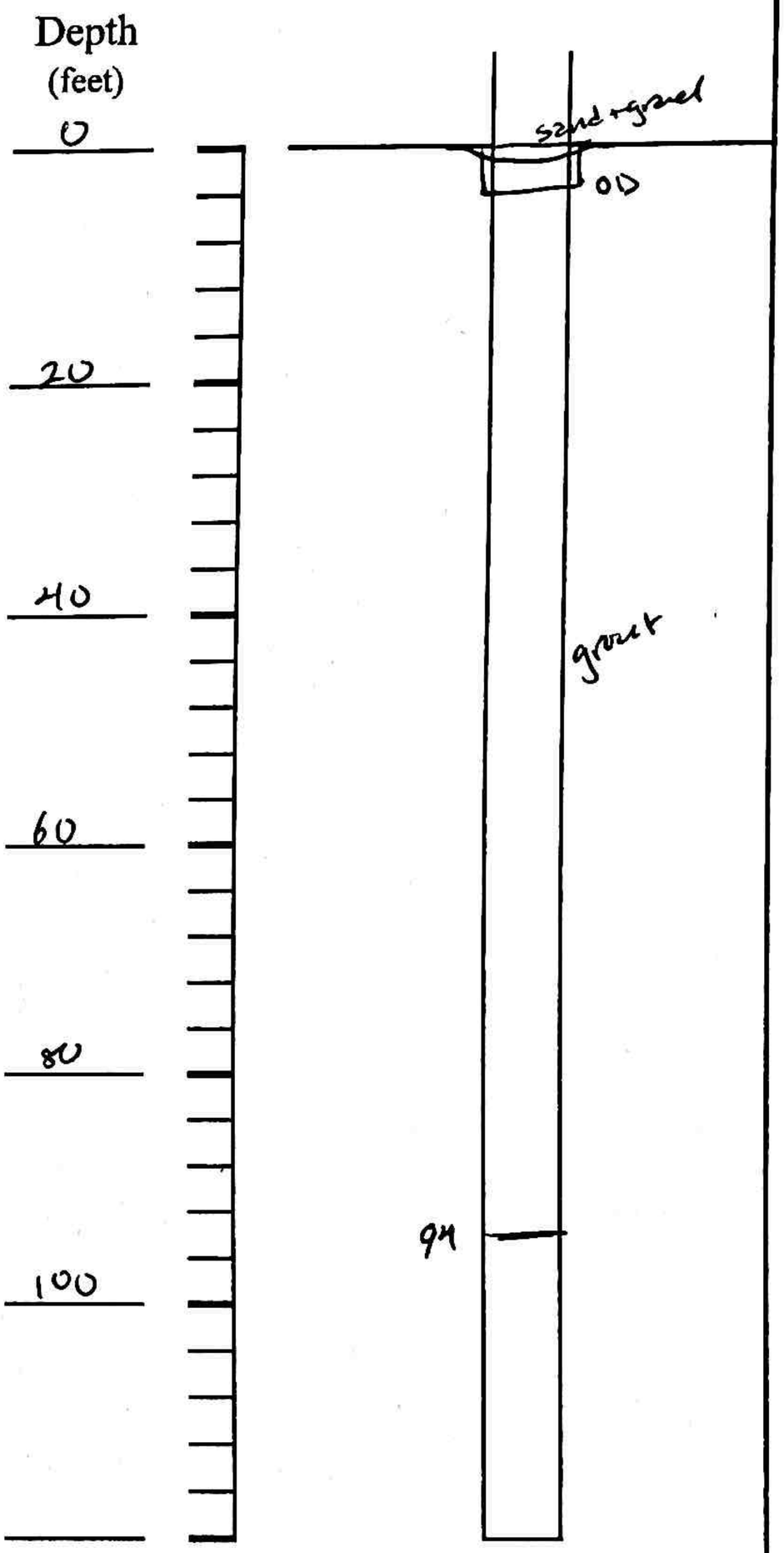
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVH-SA-MLS-M1
Site Location: Watervliet, MI	Driller: Jeff
Drilling Co.: Cascade	Inspector: HZ
	Date: 9/27/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-94
# of batches prepared	2
For each batch record:	
Quantity of water used (gal.)	30
Quantity of cement used (lbs.)	~~188~~
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~60
Volume of grout used (gal.)	~60

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

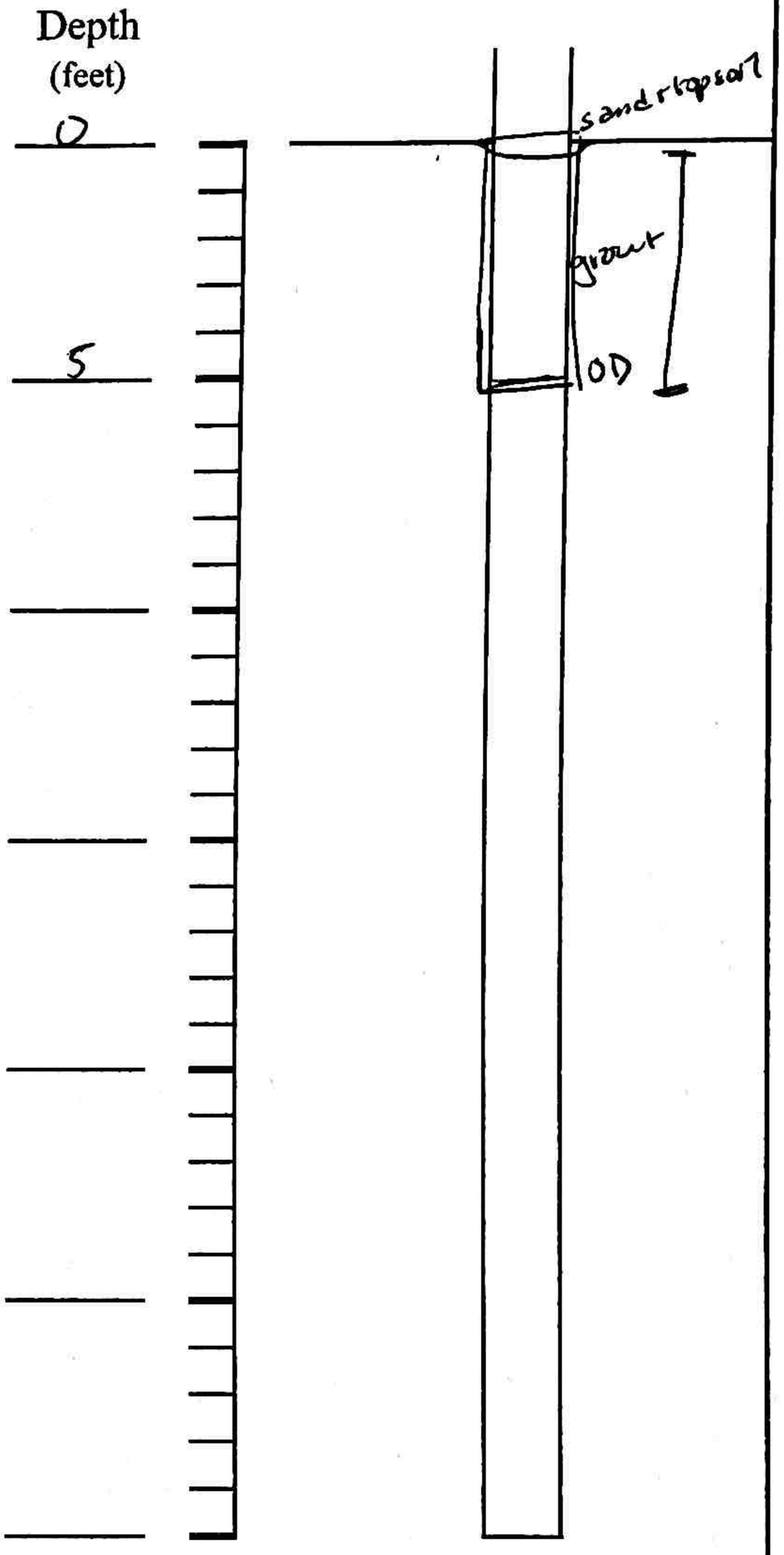
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-[redacted]SA-MW-51
Site Location: Waterviet, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: KL
	Date: 9/24/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-[redacted]3
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-5
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~[redacted]4
Quantity of cement used (lbs.)	47
Cement type	Type 1
Quantity of bentonite used (lbs.)	0.0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	6
Volume of grout used (gal.)	~3.5

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

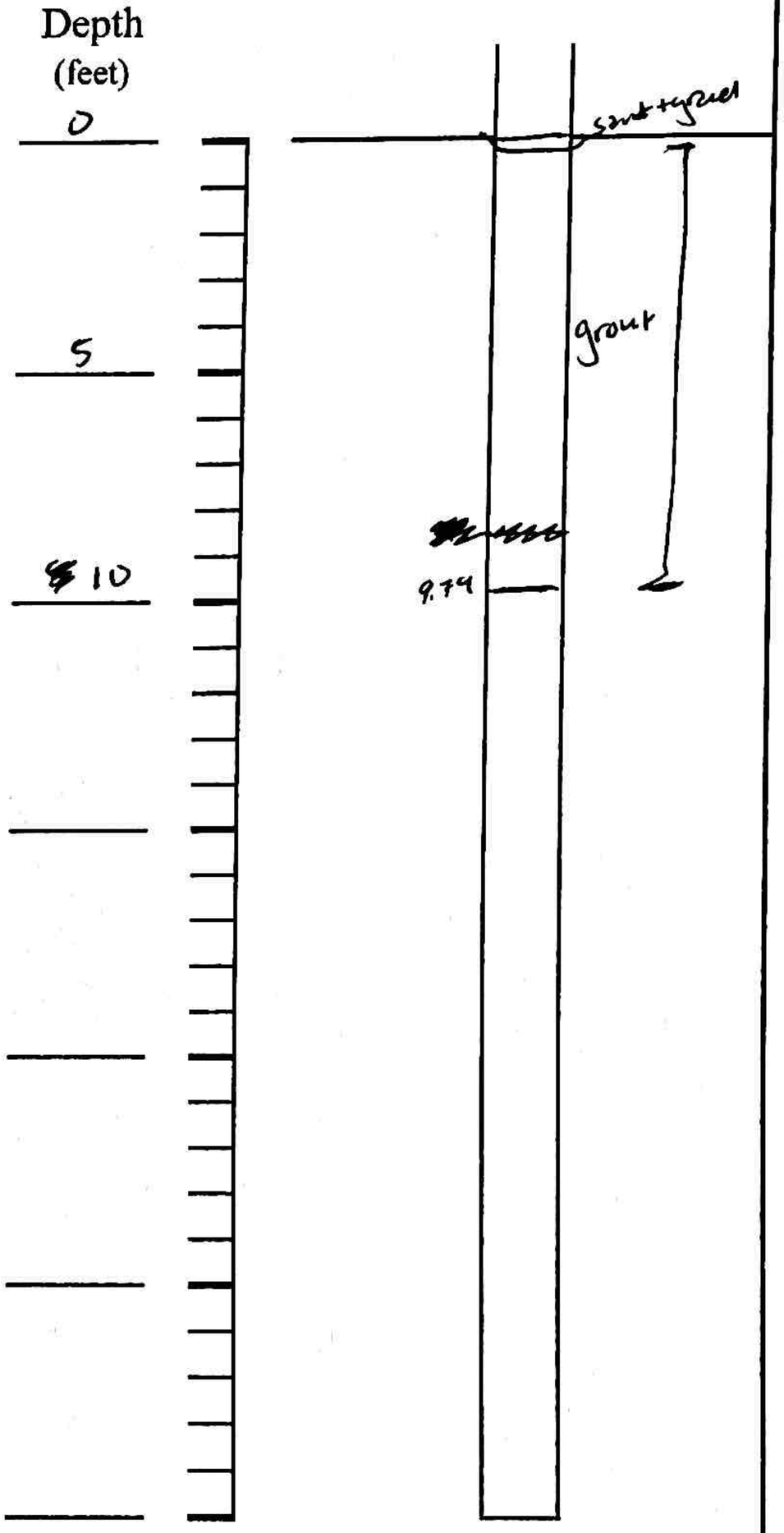
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WUA	Well I.D.: WVA-SA-MW-EA-6
Site Location: Waterlier, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: MZ
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-9.79
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~6
Quantity of cement used (lbs.)	~~83~~ 47
Cement type	Type 1
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~Hgal
Volume of grout used (gal.)	~2

WELL SCHEMATIC*



COMMENTS: total depth listed as 8.5 on table, but measures ~9.79 → confirmed correct well
grouted 9/25, could not get bollards out/stickup out, left for later

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

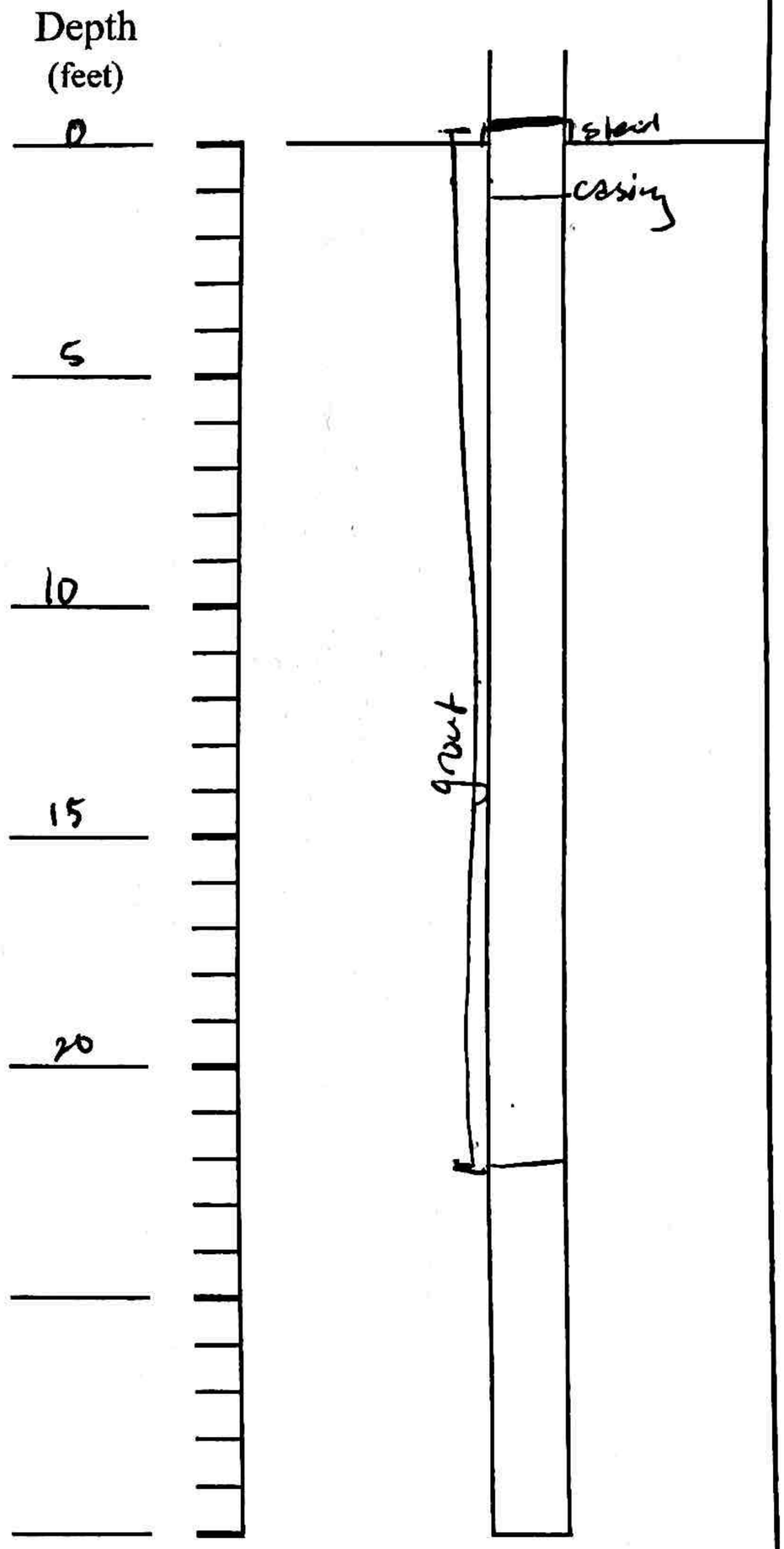
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-ESE-6
Site Location: Wahpeton, ND	Driller: JCK
Drilling Co.: Cascade	Inspector: AE
	Date: 9/23/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-22
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	12
Quantity of cement used (lbs.)	94
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	

WELL SCHEMATIC*



COMMENTS: Rig not able to reach well. Steel casing cut left 2 in above grade, grouted to 2" above grade. Casing broken down to ~1' bgs.

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

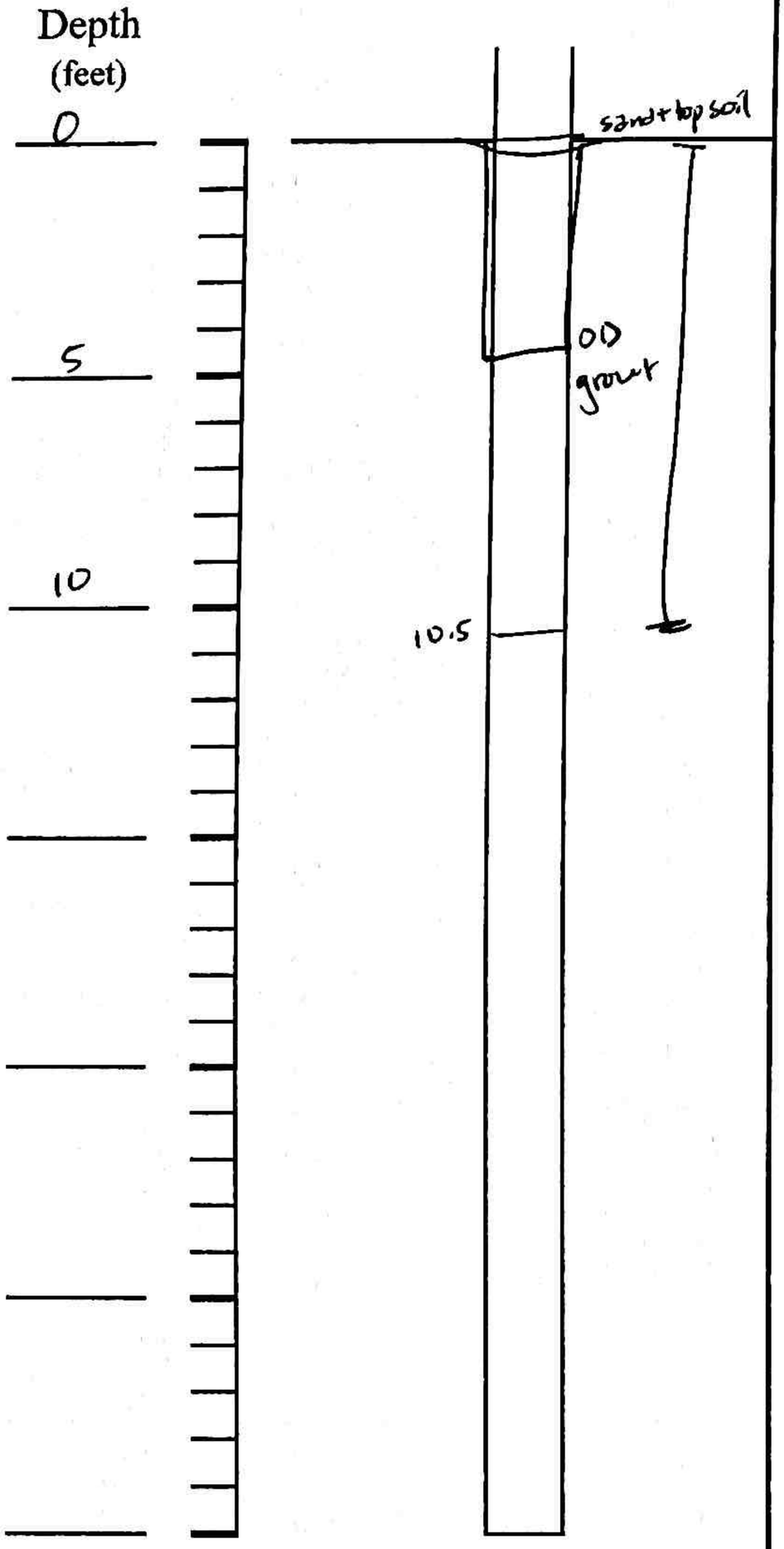
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WUA	Well I.D.: WVA-SA-MW-60
Site Location: Wayneset, WV	Driller: Jeff
Drilling Co.: Cascade	Inspector: RL
	Date: 9/24/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	10.5-0
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~8
Quantity of cement used (lbs.)	94
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	9
Volume of grout used (gal.)	7

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

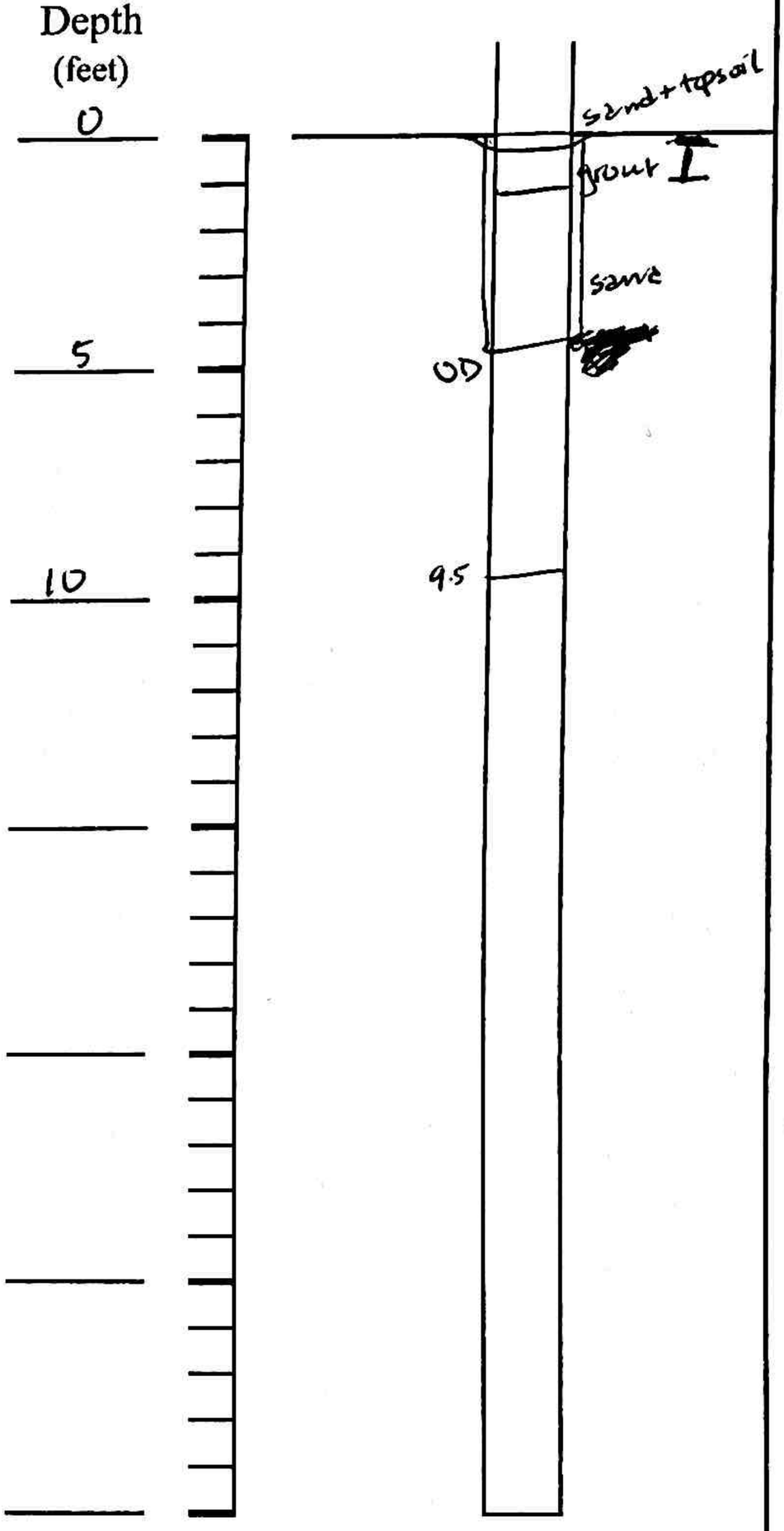
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-62
Site Location: Waterlet, NM	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/24/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-1.5
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~3
Quantity of cement used (lbs.)	47
Cement type	Type 1 Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~6
Volume of grout used (gal.)	~1

WELL SCHEMATIC*



COMMENTS: Restore Wall well

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

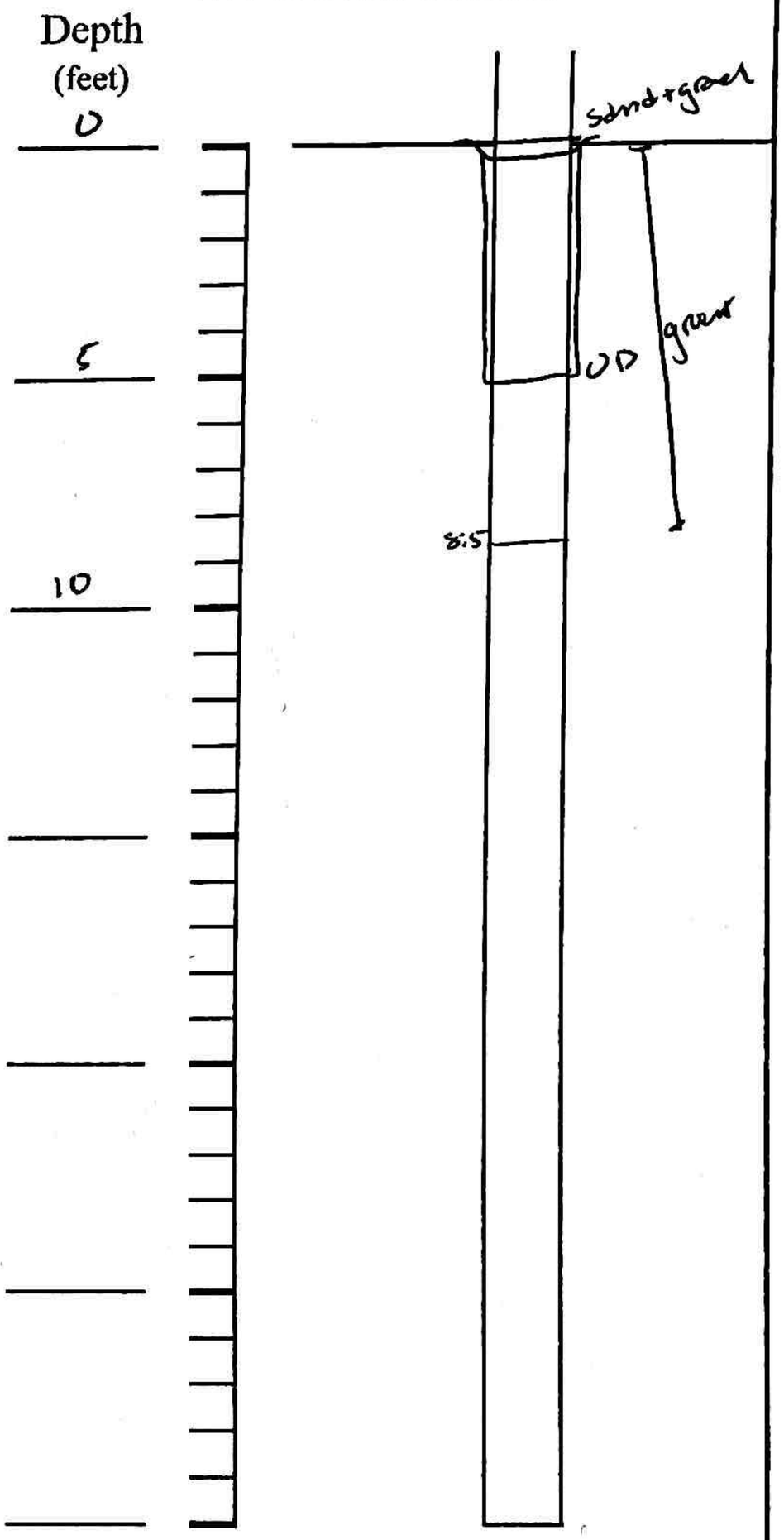
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-66
Site Location: Watershed M	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/24/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-8.5
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~1
Quantity of cement used (lbs.)	~60
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~10
Volume of grout used (gal.)	~5.6

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

FIGURE 3

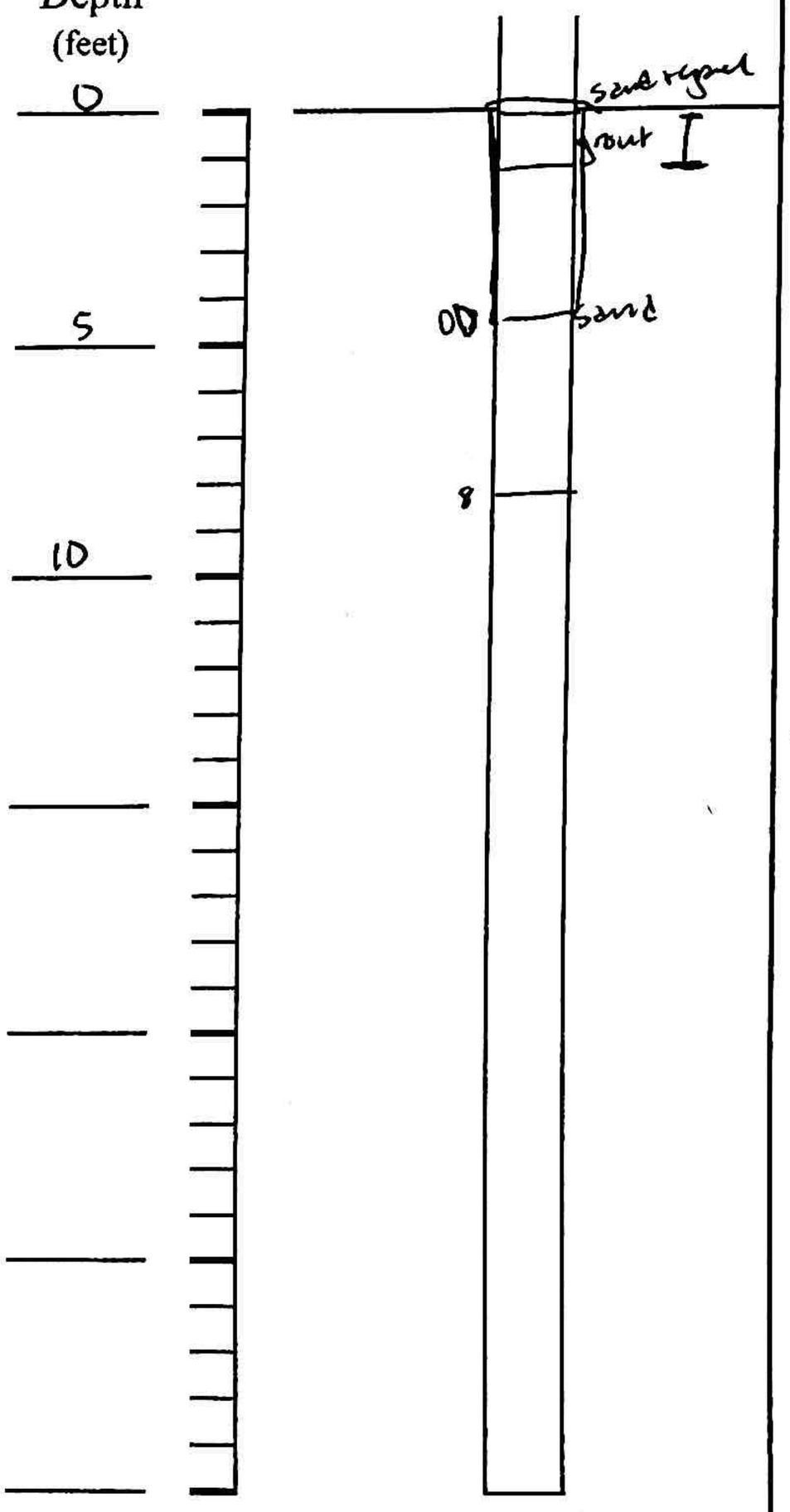
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-67
Site Location: Waterlet, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/24/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-1.5
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~2
Quantity of cement used (lbs.)	~23
Cement type	Type 1
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~3 2.5 gal
Volume of grout used (gal.)	1 gal

WELL SCHEMATIC*



COMMENTS: Reserve Wall well

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

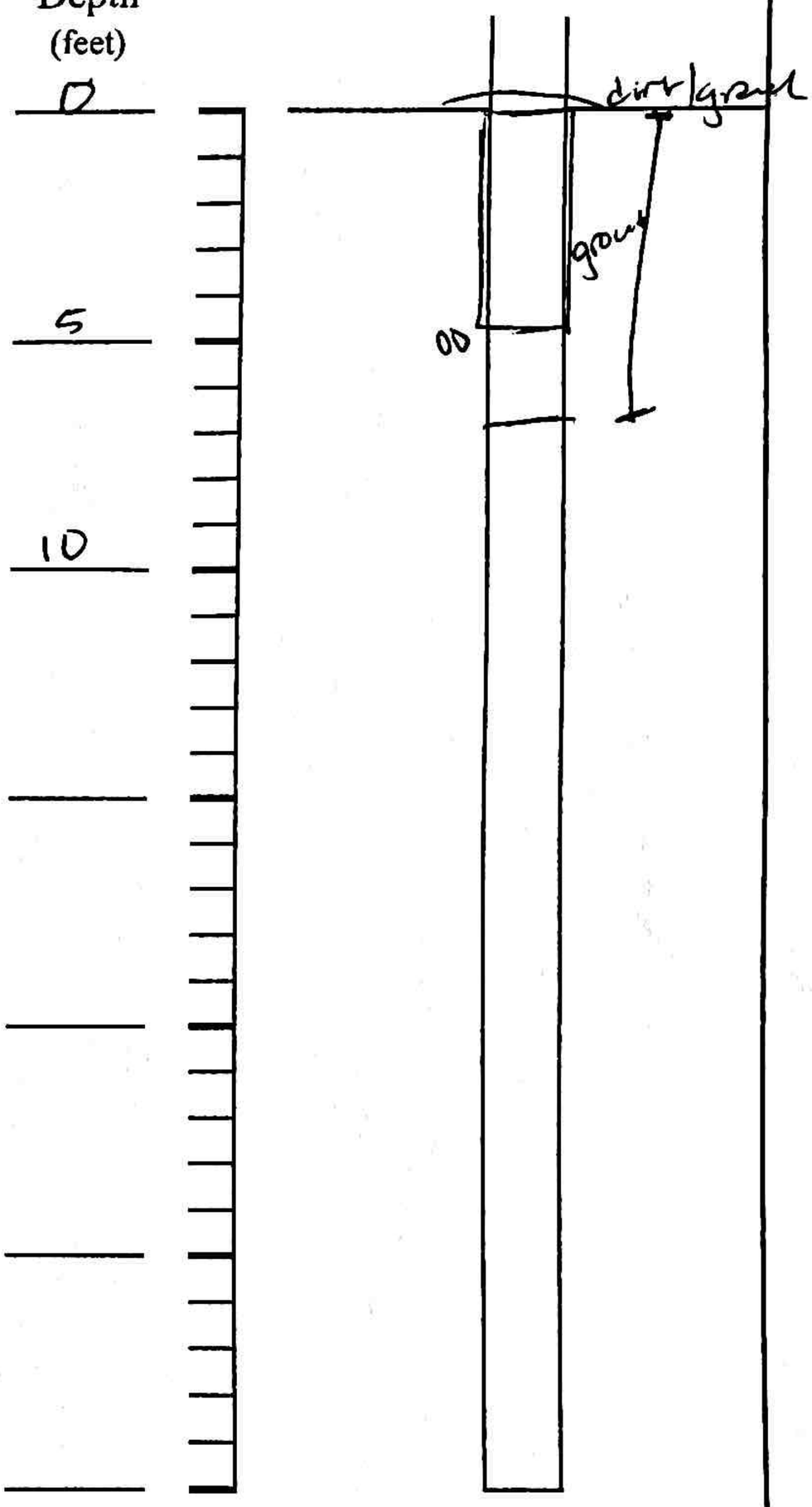
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-70
Site Location: Wamsutter, WY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AC
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-7
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	6
Quantity of cement used (lbs.)	47
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	6
Volume of grout used (gal.)	5.3

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

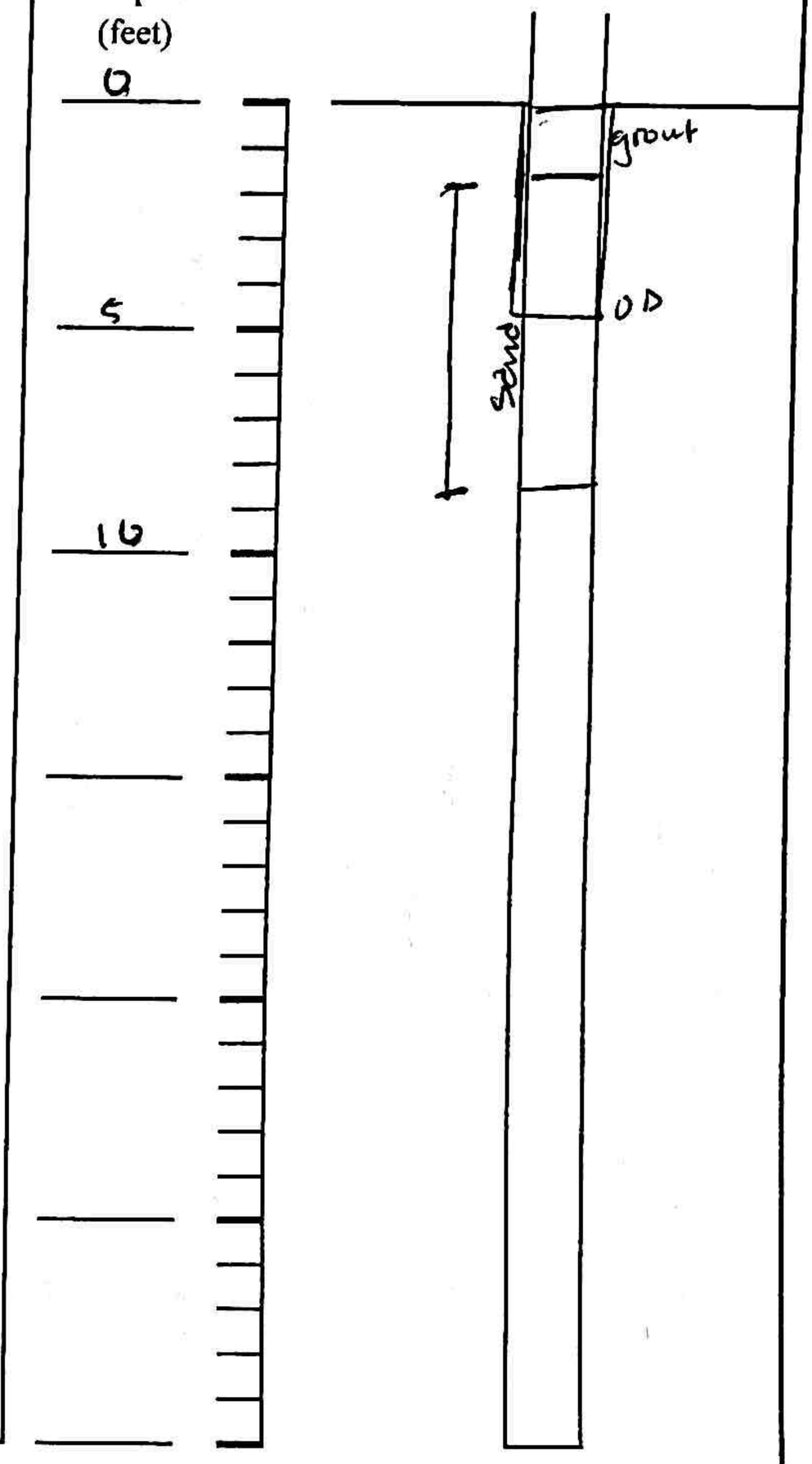
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-12
Site Location: Walnut, WV	Driller: Tetra
Drilling Co.: Cascade	Inspector: AL
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-1.5
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	6
Quantity of cement used (lbs.)	47
Cement type	Type 1 Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	6
Volume of grout used (gal.)	~0.5

WELL SCHEMATIC*



COMMENTS: Decative [redacted] Well Well

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

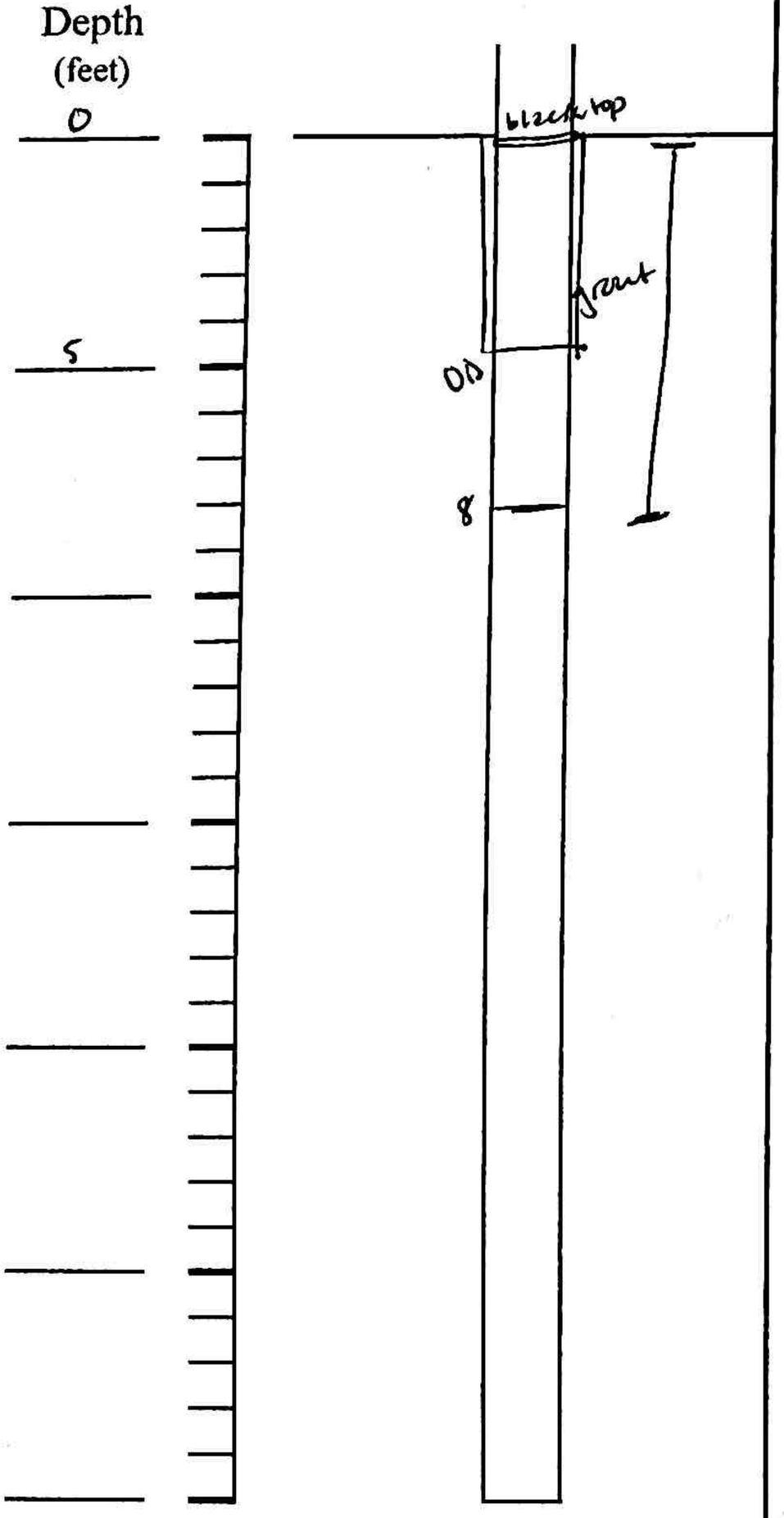
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-7#6
Site Location: Waterbet, NJ	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/23/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-8
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	5
Quantity of cement used (lbs.)	~60
Cement type	Type 1 Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~15
Volume of grout used (gal.)	5.28

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

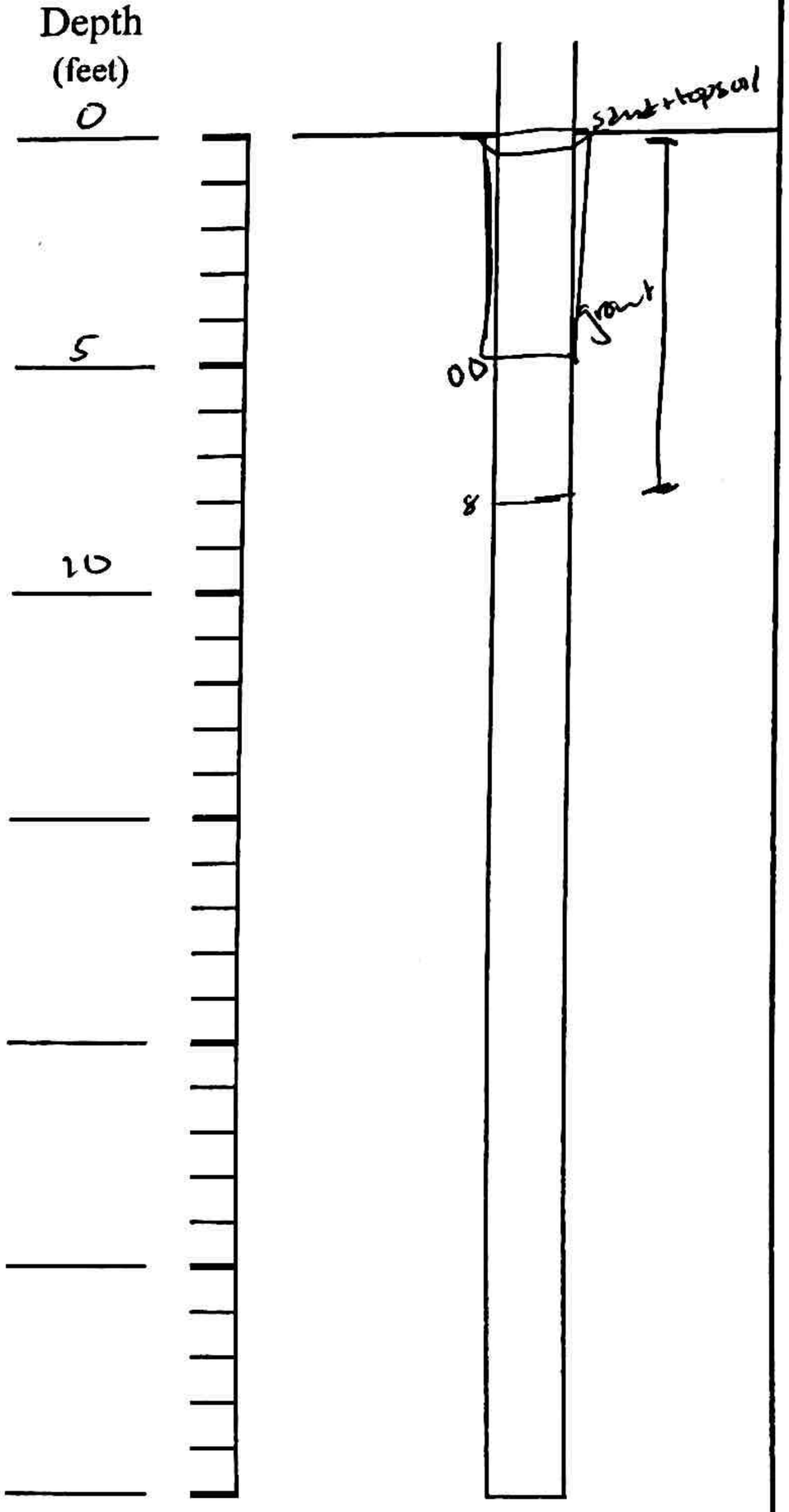
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-77
Site Location: Watervliet, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/23/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-8
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	6
Quantity of cement used (lbs.)	~60
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~15
Volume of grout used (gal.)	5.3

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

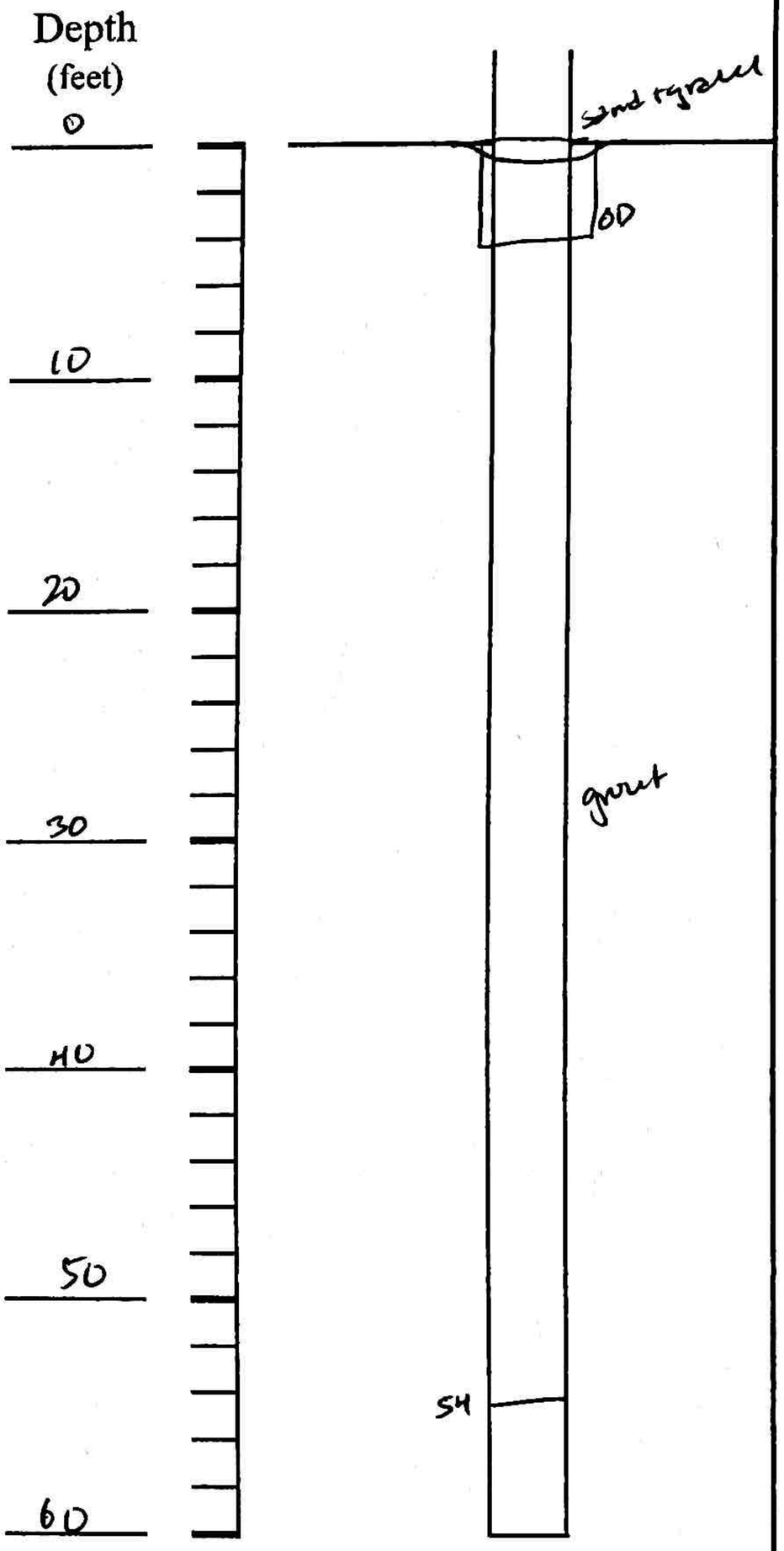
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-74
Site Location: Waterlet, MI	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 8/24/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-54
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~30
Quantity of cement used (lbs.)	~188
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~40
Volume of grout used (gal.)	~35

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

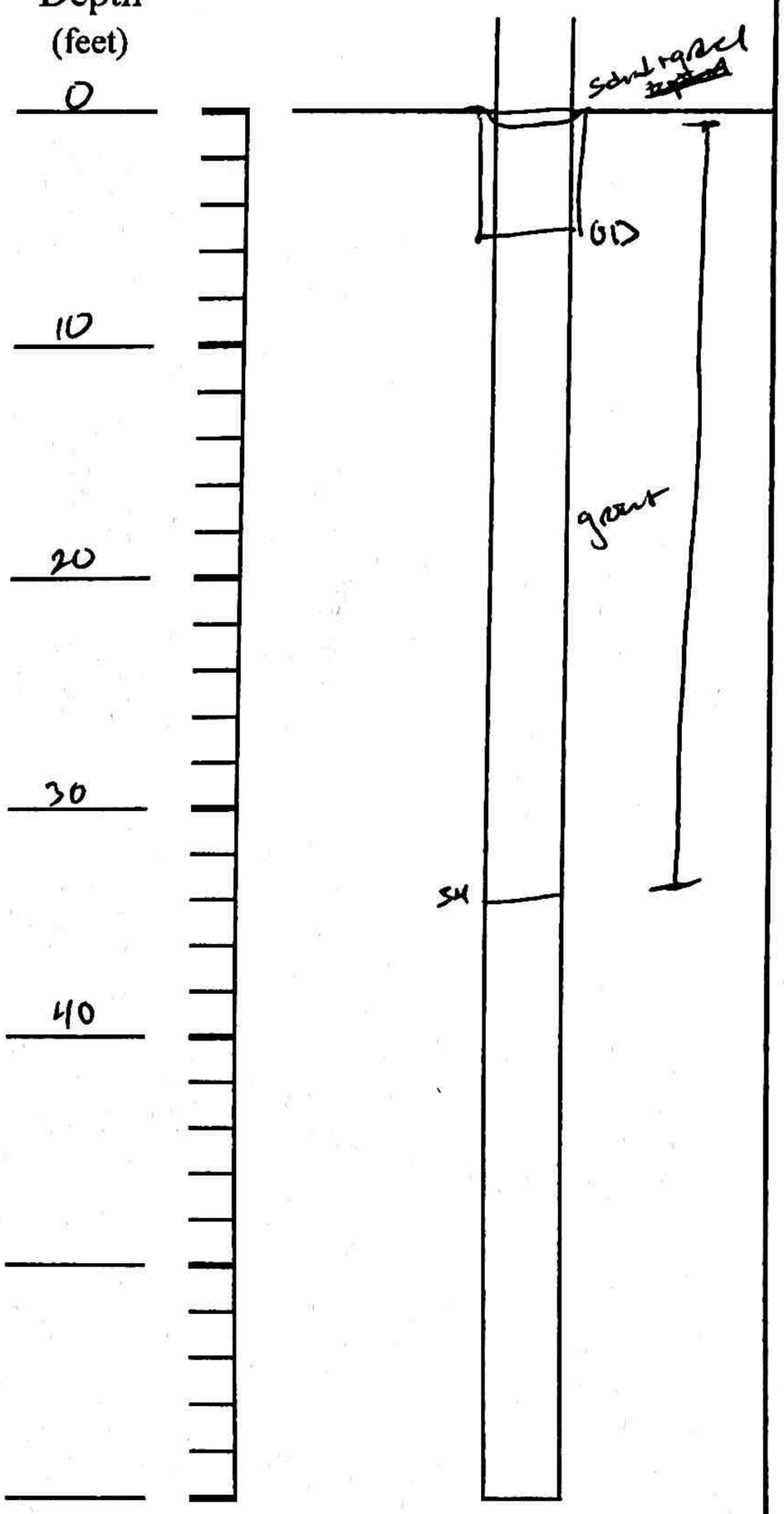
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WV4-SA-MW-8D
Site Location: Waterbury, VT	Driller: Jeff
Drilling Co.: Cascade	Inspector: AL
	Date: 9/24/21

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-3H
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~20
Quantity of cement used (lbs.)	~188
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	~20
Volume of grout used (gal.)	~30

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

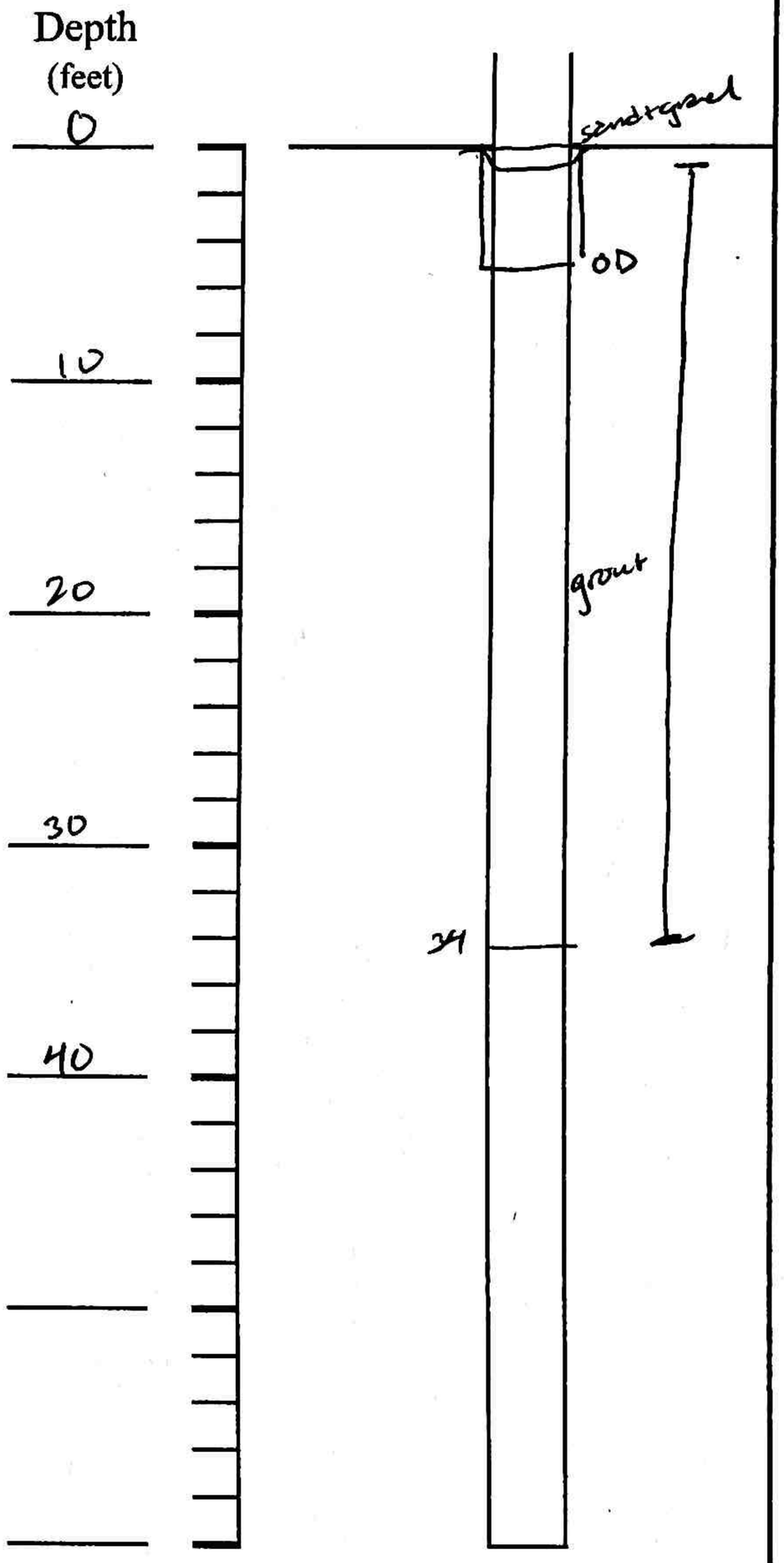
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WV4	Well I.D.: WV4-SA-MW-52
Site Location: Waterhen, MI	Driller: Jeff
Drilling Co.: Cascade	Inspector: KL
	Date: 9/24/21

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	DP
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-34
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	~20
Quantity of cement used (lbs.)	151
Cement type	Type I
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	30
Volume of grout used (gal.)	~30

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

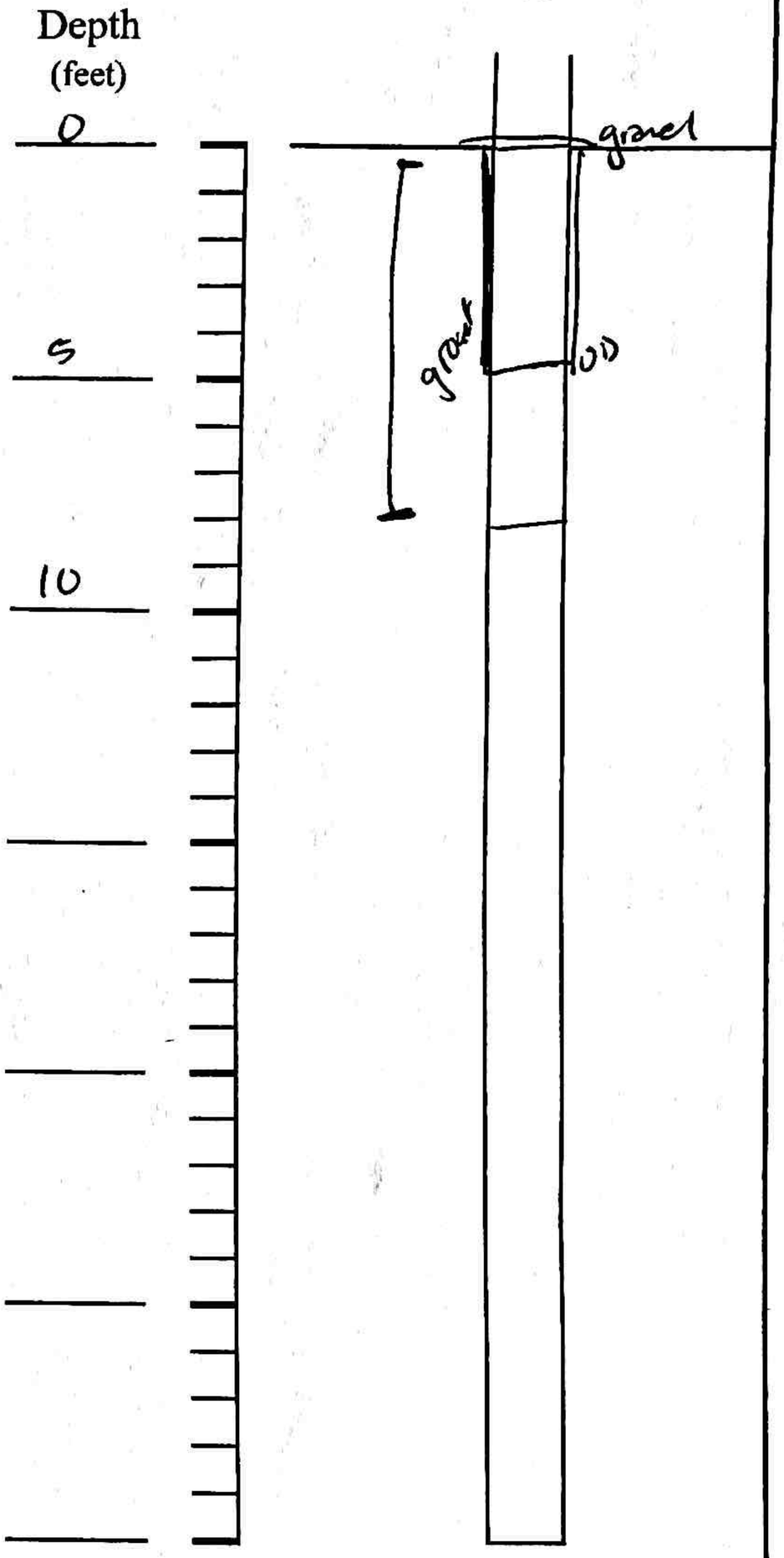
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: WVA	Well I.D.: WVA-SA-MW-85
Site Location: Waterloo, NY	Driller: Jeff
Drilling Co.: Cascade	Inspector: RZ
	Date: 9/25/24

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	0-5
Drilling Method(s)	Direct Push
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-8
# of batches prepared	0, letter from 10/1/24
For each batch record:	
Quantity of water used (gal.)	-
Quantity of cement used (lbs.)	-
Cement type	Type I Portland
Quantity of bentonite used (lbs.)	0
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	0
Volume of grout used (gal.)	~1.3

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

MW-26

New York State Department of Environmental Conservation
Division of Water, Bureau of Water Resources Management
625 Broadway, Albany, NY 12233-3508
518-402-8086

Water Well Abandonment and Decommissioning Report

The form below is for use in notifying DEC of a potable water well that is no longer active, servicable, or has been decommissioned. This can include wells that are still in place but no longer used or it can include wells that no longer exist. Please provide the following information so that DEC can update its records. For more information on this topic please see DEC's Water Well Decommissioning webpage. Hover your cursor over a box for information on how to fill out any particular field.

1. Facility Information

Facility Name: Watervliet Arsonal
NYS DEC Water Withdrawal Permit Number, if applicable: —
Address: 1 Buffington Ave
Town: Watervliet
County: Albany
Facility Contact Name: Kevin - VMJR Companies
Telephone: 518-321-2315

2. Well Information – Provide the following information for the well no longer in service

Well Name	Bedrock or Unconsolidated	Well Depth, ft	Max Rate in gpm	Year of installation	Last known year of active service
NONE	bedrock	8	—	unknown	unknown

3. Location

a. Site description: Watervliet Arsonal

b. Please attach a large scale map showing precise location

c. If accurate coordinates are known, enter them here:
Latitude: N 42° 43.284 Longitude: W073° 42.635'

4. Decommissioning Procedure Used

	YES	NO	Completion Date
a. The well has been formerly decommissioned as per NYS DEC Water Well Decommissioning Procedures (http://www.dec.ny.gov/lands/36955.html)	☒	○	4/25/25
If response to 4.a. was "yes", please move ahead to Section 5.			
b. The well has been decommissioned using a different method than DEC Water Well Decommissioning Procedures.	○	○	
If response to 4.b. was "yes", describe the procedure used and go to Section 6.			

5. Existing but Inactive Well (skip this section if well has been decommissioned)

	YES	NO
a. The well is no longer in use, remains in place and could be made operational	○	○
b. The well is no longer in use, remains in place but is not serviceable	○	○
c. The pump and associated piping/electrical has been removed	○	○
d. Top of well has a locking cap with functioning lock	○	○
e. Top of well is covered with a steel plate welded to the casing	○	○
f. Top of well is open or is covered with a non-locking cover	○	○

6. NYS Registered Water Well Driller: David W Rosick - Rosick Drilling — NYRD No: 1011

7. Form submitted by: David Rosick NSCWA# 198458 — Date: 4/29/25

Clear Form | Submit Form via Email | Or fill out form, then print and mail to the address at top of form.

MW-26

FIGURE 1

SITE NAME:

SITE ID.:
INSPECTOR:
DATE/TIME: 1/25/25
WELL ID.:

MONITORING WELL FIELD INSPECTION LOG
NYSDEC WELL DECOMMISSIONING PROGRAM

	YES	NO
WELL VISIBLE? (If not, provide directions below)	X	
WELL I.D. VISIBLE?		X
WELL LOCATION MATCH SITE MAP? (if not, sketch actual location on back) N43° 43.254' W073° 42.635'		
WELL I.D. AS IT APPEARS ON PROTECTIVE CASING OR WELL: NONE		

	YES	NO
SURFACE SEAL PRESENT?		X
SURFACE SEAL COMPETENT? (If cracked, heaved etc., describe below)	X	
PROTECTIVE CASING IN GOOD CONDITION? (If damaged, describe below) NONE		X

HEADSPACE READING (ppm) AND INSTRUMENT USED	~~NOT TAKEN~~ NONE
TYPE OF PROTECTIVE CASING AND HEIGHT OF STICKUP IN FEET (If applicable)	PVC NONE
PROTECTIVE CASING MATERIAL TYPE:	NONE
MEASURE PROTECTIVE CASING INSIDE DIAMETER (Inches):	

	YES	NO
LOCK PRESENT?		X
LOCK FUNCTIONAL?		X
DID YOU REPLACE THE LOCK?		X
IS THERE EVIDENCE THAT THE WELL IS DOUBLE CASED? (If yes,describe below)		X
WELL MEASURING POINT VISIBLE?		X

MEASURE WELL DEPTH FROM MEASURING POINT (Feet):	8' bgs
MEASURE DEPTH TO WATER FROM MEASURING POINT (Feet):	NONE
MEASURE WELL DIAMETER (Inches):	4"
WELL CASING MATERIAL:	PVC
PHYSICAL CONDITION OF VISIBLE WELL CASING:	good
ATTACH ID MARKER (if well ID is confirmed) and IDENTIFY MARKER TYPE	NONE
PROXIMITY TO UNDERGROUND OR OVERHEAD UTILITIES	NONE

DESCRIBE ACCESS TO WELL: (Include accessibility to truck mounted rig, natural obstructions, overhead power lines, proximity to permanent structures, etc.); ADD SKETCH OF LOCATION ON BACK, IF NECESSARY.

open site

DESCRIBE WELL SETTING (For example, located in a field, in a playground, on pavement, in a garden, etc.) AND ASSESS THE TYPE OF RESTORATION REQUIRED.

Under roadway

IDENTIFY ANY NEARBY POTENTIAL SOURCES OF CONTAMINATION, IF PRESENT (e.g. Gas station, salt pile, etc.):

NONE

REMARKS:

PVC Pipe as identified as a monitor well - as I inspected it ~~[illegible] it~~ it is filled previously to 8' below grade - Filled with bentonite to 4' below grade & capped.

FIGURE 3

WELL DECOMMISSIONING RECORD

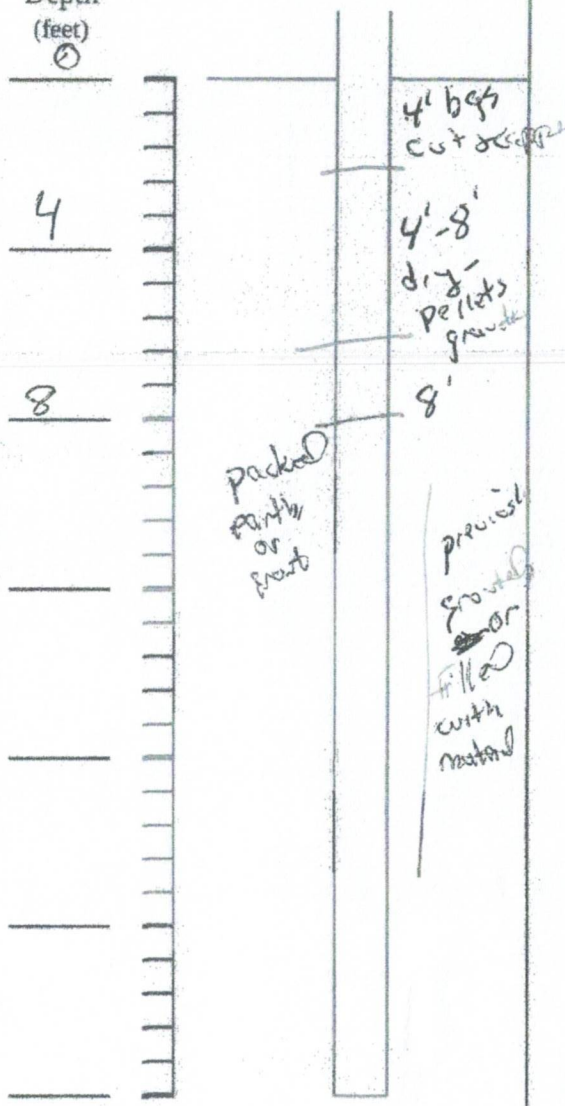
MW-26

Site Name: Watervliet Arsenal	Well I.D.:-
Site Location: 1 Buffington Ave - Watervliet	Driller: —
Drilling Co.: Rosick Well Drilling	Inspector: David Rosick
	Date: 4/25/25

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	4"
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	PVC
Method of installing	Grout
CASING PULLING	
Method employed	/
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	/
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	8' to 4'
# of batches prepared	/
For each batch record:	
Quantity of water used (gal.)	/
Quantity of cement used (lbs.)	/
Cement type	/
Quantity of bentonite used (lbs.)	50
Quantity of calcium chloride used (lbs.)	/
Volume of grout prepared (gal.)	5
Volume of grout used (gal.)	5

WELL SCHEMATIC*



COMMENTS: Monitor well - checked with copper hollow pipe - appears to have been filled or previously grouted - used Baroid grout in pelleths from 8' to 4' below ground surface

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Rosick Well Drilling
Drilling Contractor

Department Representative