TPA PARCEL B10 – COKE OVEN AREA ANNUAL INTERIM MEASURES PROGRESS REPORT 2023

TRADEPOINT ATLANTIC SPARROWS POINT, MARYLAND

Prepared for:



TRADEPOINT ATLANTIC

6995 Bethlehem Boulevard, Suite 100 Baltimore, Maryland 21219

Prepared by:



ARM GROUP LLC

9175 Guilford Road Suite 310 Columbia, Maryland 21046

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Respectfully submitted,

Guy Davis Senior Scientist Douglas Hamilton
Senior Geologist/

Senior Project Manager

EXECUTIVE SUMMARY

The Coke Oven Area (COA) Annual Interim Measures (IMs) Progress Report 2023 has been prepared by ARM Group LLC (ARM) on behalf of Tradepoint Atlantic (TPA) and presents operational information for the groundwater remediation systems installed as IMs and a review of groundwater sample testing data for monitoring wells associated with the respective remediation systems through 2023. The COA is otherwise identified as TPA Parcel B10 and is composed of six sub-parcels or "cells", described below.

CELL 1

Cell 1 IMs include the use of an air sparging/soil vapor extraction (AS/SVE) system for the removal of volatile organic compounds (VOCs) from shallow zone groundwater in the Former Benzol Processing Area. The AS/SVE system operated at approximately 80% runtime during 2023. Approximately 68 pounds of VOCs were removed in 2023, compared to 92 pounds of VOCs removed in 2022.

CELL 2

Cell 2 is located in the former Coal Basin Area, and IMs included the use of an AS/SVE system designed to address very shallow groundwater impacts and a groundwater pump and treat (GWPT) system designed for hydraulic control and the removal of VOCs from intermediate zone groundwater. The AS/SVE system ceased operation in early 2019 when groundwater elevations rose above the vapor extraction trench level.

The Cell 2 system did not operate in 2023. During this time, an assessment of the system effectiveness and necessity was undertaken. This assessment included a review of current groundwater contours, site geology, 2019 pore water sampling results, and the influence of the Graving Dock dewatering system. Pumping associated with the Graving Dock heavily influences intermediate groundwater in the vicinity of Cell 2. The influence of Graving Dock pumping extends approximately 600 feet to the southeast and serves a capture and control function for the groundwater in this area. The Graving Dock wastewater treatment system discharges are monitored in accordance with TPA Shipyard's National Pollution Discharge Elimination System (NPDES) Permit MD0001180.

A request to discontinue the use of the Cell 2 IM GWPT system was submitted to the Agencies in the *COA Cell 2 Interim Measure Shutdown Request* (January 10, 2023), Agency comments were received on February 13, 2023, and a comment response letter was submitted on September 27, 2023. A revised request to discontinue the use of the Cell 2 IM GWPT system incorporating groundwater modeling data from Key Environmental was submitted to the Agencies in the *COA Cell 2 Interim Measure Shutdown Request* (Revision 1; October 3, 2023) and is currently awaiting Agency review.

CELL 3

Cell 3 is located at the southern edge of the COA and IMs include the operation of an AS/SVE system for the removal of VOCs from shallow zone groundwater. The AS/SVE system operated at approximately 93% runtime and removed approximately 26 pounds of VOCs during 2023. Approximately 72 pounds of VOCs were removed in 2022. Air sparging and soil vapor extraction were focused on the eastern-third of the 600 foot-long AS/SVE remediation line in response to investigations indicating that the eastern-third of the treatment zone contains a majority of the local VOC-impacted groundwater.

CELL 4

Cell 4 is located in the Turning Basin of the former COA and IMs included the use of pneumatic skimmer pumps to recover high-naphthalene, dense non-aqueous phase liquid (DNAPL) from shallow zone groundwater. The DNAPL recovery pumps were last operated in early January 2023, recovering approximately 18 gallons of DNAPL. All wells and piezometers within the proposed excavation area were then abandoned in accordance with the *DNAPL Excavation Work Plan Area B: Parcel B10 Cell 4* (November 10, 2022 and subsequent comments received November 15, 2022, with a comment response provided December 13, 2022). This Work Plan proposed excavation to remove the bulk of the DNAPL-impacted material within Cell 4. Excavation activities were undertaken between January and June 2023, with backfilling performed in October and November 2023. The excavation was advanced to approximately 22 feet bgs, and 18,165 tons of impacted material (approximately 336,000 pounds of naphthalene) were removed and disposed at Greys Landfill. A summary of the Cell 4 DNAPL source excavation and backfilling activities was submitted to the Agencies in the *DNAPL Excavation Report* (January 31, 2024).

CELL 5

Located approximately 350 feet southeast of Cell 4, the Cell 5 IMs include the use of a dual-phase extraction (DPE) system to extract naphthalene-impacted groundwater from an aligned series of groundwater extraction wells. In March 2023, eight of the original DPE wells were replaced with new extraction wells constructed with deeper screen intervals to more effectively target the removal of naphthalene-impacted groundwater. The DPE system operated at 78% runtime during 2023, and removed approximately 263 pounds of VOCs, compared to 179 pounds removed in 2022. The 2023 recovery volumes were an increase from the 2022 recovery volumes, which can be attributed to the new extraction wells.

CELL 6

Cell 6 is located in the former Benzol Processing Area, approximately 500 feet east of Cell 1 and 1,000 feet southeast of Cell 2. The originally-designed IMs for Cell 6 included the use of a light non-aqueous phase liquid (LNAPL) multi-phase extraction (MPE) system with catalytic oxidizer (CatOx)

and/or carbon off-gas treatment units. While the MPE system has removed 7,643 gallons of LNAPL since startup, recent recovery rates have been diminishing. The Cell 6 MPE system did not operate in 2023 in preparation for conducting a pilot test to evaluate various soil treatment options. However, manual LNAPL recovery continued in 2023 via CO173 and several test pits/recovery sumps located in the general vicinity. In 2023, approximately 815 gallons of LNAPL were recovered from CO173 (compared with 1,400 gallons in 2022). In addition, approximately 812 gallons of LNAPL were recovered from the multiple test pits in the vicinity during 2023. Since mid-2010, approximately 34,603 gallons of LNAPL have been recovered from Cell 6.

The COA Cell 6 Hotspot Excavation Work Plan (December 2022) and the COA Cell 6 Pilot Test Work Plan - Revision 1 (October 2023), and respective comment response letters were submitted to the Agencies, proposing "hotspot" excavation and treatment for the remaining areas with more than 1-foot of LNAPL within the Cell 6 MPE system recovery field. A pilot test was performed in November 2023 to assess the use of sodium persulfate and hydrogen peroxide to reduce the benzene concentrations in LNAPL-impacted soils. A COA Cell 6 Pilot Test Status Update – Revision 1 (January 9, 2024), presented soil treatment test results and recommended an expanded pilot test that is planned to be conducted in the next couple of months.

CORRECTIVE MEASURES STUDY

Development of final remedies for groundwater impacts in the COA pursuant to the *Coke Point Area Groundwater Corrective Measures Study Work Plan – Revision 1* (January 15, 2021); is ongoing. The Cell 1, Cell 3, and Cell 5 IM remediation systems will continue to operate with no expected alterations or modifications while the CMS is being followed with continued evaluation of remedial alternatives and development of a final remedy. As noted, a request to shut down the Cell 2 IM GWPT system was submitted after the system was determined to be redundant and providing no significant remedial environmental benefit. The Cell 4 DNAPL source area was excavated and restored during 2023. Manual LNAPL recovery will continue at Cell 6. In addition, an expanded pilot test has been conducted to address remaining LNAPL-impacted soil within the Cell 6 MPE recovery well field,

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1.0 INTRODUCTION

The Coke Oven Area (COA) Annual Interim Measures (IMs) Progress Report 2023 has been prepared by ARM Group LLC (ARM) on behalf of Tradepoint Atlantic (TPA) and presents operational information for the groundwater remediation systems installed as IMs and a review of groundwater sample testing data for monitoring wells associated with the respective remediation systems through 2023. This report is submitted in accordance with reporting requirements outlined in correspondence received from the United States Environmental Protection Agency (USEPA) on March 26, 2013, November 14 and 16, 2017, and subsequent communications. All reports are submitted to the Maryland Department of the Environment (MDE) and the USEPA (hereafter referred to as the Agencies).

TRADEPOINT ATLANTIC SITE BACKGROUND

The TPA property is located in Baltimore County, Maryland in the southeastern corner of the Baltimore metropolitan area, approximately nine miles from downtown Baltimore City. The location of the property is presented in **Figure 1**. The property encompasses approximately 3,100 acres located on a peninsula situated on the Patapsco River near its confluence with the Chesapeake Bay. From the late 1800s until 2012, the property was used for the production and manufacturing of steel and was the world's largest steel mill by the mid-1900s. Site operations and manufacturing processes included coke, sinter, iron, steel, semi-finished and finished product production and preparation, and raw material handling. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. Under TPA revitalization plans, the property is undergoing transformation with demolition/revitalization of former production parcels and redevelopment of the TPA Sparrows Point Peninsula as a regional light industrial, warehousing and distribution commerce center.

COKE OVEN AREA

The IMs of the COA are located within six smaller sub-parcels designated as Cells 1, 2, 3, 4, 5, and 6. The locations of the cells are presented in **Figure 2.** Sitewide groundwater elevation contours for all shallow COA monitoring wells gauged during the second quarter of 2023 are presented on **Figure 3-1**. For each cell, the IM progress report provides a description of current and former IM efforts, notable operations & maintenance (O&M) activities completed during 2023, discussion of system operational information, and groundwater sample testing results for 2023. Below is a short listing of Cell-specific IMs.

- Cell 1 (former Benzol Processing Area): Air Sparging/Soil Vapor Extraction (AS/SVE) system operated in the shallow groundwater zone (predominantly benzene removal);
- Cell 2 (former Coal Basin Area): Groundwater Pump and Treat (GWPT) system originally designed and formerly operated to address intermediate groundwater zone VOC-impacts;

- Cell 3 (Cove Area): AS/SVE system operated in the shallow groundwater zone (benzene and naphthalene removal);
- Cell 4 (Turning Basin side of former COA): High-naphthalene Dense Non-Aqueous Phase Liquid (DNAPL) recovery system formerly operated in the shallow groundwater zone;
- Cell 5 (Turning Basin side of former COA): Dual-Phase Extraction (DPE) system operated in the shallow groundwater zone (high naphthalene removal); and
- Cell 6 (former Benzol Processing Area): Multi-Phase Extraction (MPE) system originally designed and formerly operated to recover Light Non-Aqueous Phase Liquid (LNAPL) from shallow groundwater; manual LNAPL recovery is ongoing at several test pits/recovery sumps and at well CO173.

2.0 CELL 1

2.1 DESCRIPTION

Cell 1 IMs include the use of an AS/SVE system for the removal of VOCs from shallow zone groundwater in the Former Benzol Processing Area. The AS system consists of a rotary vane air compressor delivering compressed air to as many as 25 sparge wells via an above-ground network of high density polyethylene (HDPE) piping. VOCs stripped from the groundwater and emitted into the vadose zone are removed under vacuum via a site-encompassing horizontal SVE trench that is connected to the SVE system's regenerative blower. Extracted soil vapor is processed through carbon filters. **Figure C1-1** presents the layout of the Cell 1 AS/SVE system.

2.2 OPERATIONS

Cell 1 AS/SVE system operational data is summarized in **Table C1-1**. AS/SVE operations are alternated between the northern and southern halves of the wellfield for 30-day and 14-day periods, respectively. The system operated at approximately 80% runtime during 2023. Any system downtime was a result of electrical power losses, preventative maintenance, and equipment repairs (i.e., replacement of a compressor aftercooler fan). The average daily VOC removal rate during 2023 was approximately 0.185 pound per day, with quarterly average daily VOC removal rates ranging from approximately 0.09 (3Q23) to approximately 0.377 (4Q23) pound per day. Based on the system removal data from **Table C1-1** and as shown on **Figure C1-2**, the Cell 1 AS/SVE system removed approximately 68 pounds of VOCs in 2023, compared to 92 pounds removed in 2022 and 318 pounds removed in 2021. Approximately 16,659 pounds of VOCs have been removed to date. **Table C1-1** includes a cumulative summary of operational performance since system activation in August 2012.

SVE influent (e.g., pre-treatment) system vapor samples are collected monthly to assess hydrocarbon removal rates. The monthly SVE influent system vapor samples were submitted to Maryland Spectral Services for analysis of VOCs per USEPA Method 8260. SVE influent sample testing results are presented in **Table C1-2**.

2.3 GROUNDWATER SAMPLING RESULTS

Groundwater samples are collected from two monitoring wells on a quarterly schedule and from a third monitoring well on an annual schedule to monitor VOC concentrations. **Figure C1-1** presents the monitoring well locations; the monitoring wells are:

- CO93-PZM (former BP-MW-09, upgradient/east of Cell 1, sampled quarterly),
- CO190-MWS (center of northern half of Cell 1, sampled quarterly), and
- CO191-MWS (downgradient/west of Cell 1, sampled annually).

The groundwater samples were submitted to Alpha Analytical for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and naphthalene per USEPA Method 8260. Groundwater

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analytical results are presented in **Table C1-3**. A time-series graph of VOC concentrations is included as **Figure C1-3**.

While SVE VOC recovery rates have been decreasing over time, VOC concentrations in upgradient monitoring well CO93-PZM have not changed appreciably since early-2017 and VOC concentrations in plume-central monitoring well CO190-MWS and downgradient monitoring well CO191-MWS have only shown minor decreases over time (**Figure C1-3**) – recovery has essentially reached equilibrium. Cell 1 is hydraulically downgradient from Cell 6. The petroleum hydrocarbon LNAPL mass in Cell 6 likely contributes to the benzene mass measured in Cell 1, continued mass LNAPL removal at Cell 6 will be part of the final remedy. **Figure C1-4** presents CO190-MWS benzene concentrations vs. depth to groundwater. Monitoring well groundwater elevation gauging data for 2023 is summarized in **Table C1-4**.

SVE influent soil vapor sample and groundwater sample laboratory analytical reports are included in **Appendix A.** Groundwater sampling purge logs are included in **Appendix B**. A chronology of Cell 1 operations during 2023 is included in **Appendix C**. Historical analytical results for all Cell 1 monitoring wells are included in **Appendix D**.;

2.4 SUMMARY AND RECOMMENDATIONS

The Cell 1 AS/SVE system removed approximately 68 pounds of VOCs in 2023. No major adjustments to the current alternating operations (i.e., north/south) are expected for 2024. Cell 6 abatement measures will continue and should facilitate reductions in the benzene mass beneath Cell 1.

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3.0 CELL 2

3.1 DESCRIPTION

Cell 2 is located in the former Coal Basin Area, and IMs included the use of an AS/SVE system designed to address shallow groundwater impacts and a GWPT system designed for hydraulic control and removal of VOCs from intermediate zone groundwater. The AS/SVE system ceased operation early 2019 when groundwater elevations rose above the vapor extraction trench level. The Cell 2 system did not operate in 2023. In 2023 an assessment of the system's effectiveness and necessity was undertaken. This assessment included a review of current groundwater contours, site geology, 2019 pore water sampling results, and the influence of the Graving Dock dewatering system. Pore water samples collected from within the coal slip area downgradient and located to the north of Cell 2 did not identify elevated concentrations of VOCs (e.g., benzene or naphthalene). Pumping associated with the Graving Dock heavily influences intermediate groundwater flow in the vicinity of Cell 2. Based upon recent ground water modeling performed by Key Environmental the influence of Graving Dock pumping extends approximately 600 feet to the southeast and serves a capture and control function for the impacted intermediate groundwater beneath Cell 2. The wastewater produced by the Graving Dock is treated onsite and discharged under TPA Shipyard's NPDES Permit MD0001180.

Figure C2-1 presents the system layout of Cell 2 including the locations of groundwater extraction wells, treated water reinjection wells, AS wells, SVE trench, and monitoring wells. The cumulative hydrocarbon mass removed from the subsurface at Cell 2 since GWPT system start-up is presented graphically on **Figure C2-2**.

A request to discontinue the use of the Cell 2 IM GWPT system was submitted to the Agencies in the *COA Cell 2 Interim Measure Shutdown Request* (January 10, 2023), Agency comments were received on February 13, 2023, and a comment response letter was submitted on September 27, 2023. A revised request to discontinue the use of the Cell 2 IM GWPT system incorporating groundwater modeling data from Key Environmental was submitted to the Agencies in the *COA Cell 2 Interim Measure Shutdown Request* (Revision 1; October 3, 2023) and is currently awaiting Agency review.

3.2 GROUNDWATER SAMPLING RESULTS

Groundwater samples are collected from Cell 2 monitoring wells quarterly to evaluate VOC concentrations in groundwater within the local shallow and intermediate zones. During the first quarter 2023 groundwater sampling event, LNAPL was detected in CO37-PZM003 at a thickness of 0.01 feet, and the well was not sampled. Site redevelopment activities that were initiated during the third quarter 2023 prevented access to several monitoring wells during the third and fourth quarters 2023. **Figure C2-1** presents the monitoring well locations in the Cell 2 study area. Monitoring well construction information is summarized in **Table C2-1** and the monitoring well groundwater elevation gauging data for 2023 is summarized in **Table C2-2**. **Figures C2-3** and **C2-**

4 present groundwater elevation contour maps for the second quarter of 2023. As presented on **Figure C2-3**, groundwater flow in the shallow zone is towards the west-northwest. As presented in **Figure C2-4**, intermediate zone groundwater flow is to the north and under influence of the groundwater pumping operations at the nearby Graving Dock. Note the significant hydraulic gradient (often over 28 feet) between monitoring well GD01-MWI located on the Graving Dock property and the Cell 2 monitoring well network.

Groundwater samples were submitted to Alpha Analytical for analysis of BTEX and naphthalene per USEPA Method 8260. Groundwater sample testing results are presented in **Table C2-3**. **Figures C2-5** through **C2-8** present quarterly benzene concentrations in the shallow zone wells. **Figures C2-9** through **C2-12** present quarterly benzene concentrations in the intermediate zone wells. Time-series graphs of Total VOC concentrations in shallow zone monitoring wells and intermediate zone monitoring wells are presented on **Figures C2-13** and **C2-14**, respectively. During 2023 groundwater elevations in the shallow zone monitoring wells were approximately the same as those observed in 2022. Specific trends in VOC concentrations in Cell 2 monitoring wells are summarized below.

Monitoring Well	Total VOC Concentration Trend				
Shallow Zone					
CO27-PZM012 (center of plume)	Stable since mid-2020 and decreasing over time				
CO28-PZM010 (crossgradient)	Five orders of magnitude decrease over time; sampled five times since				
	installation				
CO36-PZM008 (crossgradient)	Stable but decreasing since mid-2021				
CO37-PZM003 (crossgradient)	Half order of magnitude decrease over time; sampled six times since				
	installation, contained trace to 0.01 feet of NAPL during 2023				
CO38-PZM006 (upgradient)	Half order of magnitude decrease over time; stable since mid-2019				
CO39-PZM007 (upgradient)	Concentrations fluctuating but stable since mid-2019 and decreasing over time				
CO40-PZM008 (upgradient)	Increasing since mid-2019				
CO41-PZM001 (upgradient)	Increasing since early-2021				
CO42-PZM004 (upgradient)	One order of magnitude decrease over time				
CO179-MWS (downgradient)	Concentrations stable; sampled two times since installation				
CO180-MWS (crossgradient)	Concentrations fluctuating but stable; sampled five times since installation				
CO181-MWS (crossgradient)	Concentrations stable; sampled five times since installation				
CO186-MWS (upgradient)	Concentrations decreasing; sampled five times since installation				
CO209-MWS (crossgradient)	Concentrations stable; sampled four times since installation				
Intermediate Zone					
CO27-PZM046 (center of plume)	Order of magnitude decrease; slower reduction since late-2019				
CO28-PZM048 (crossgradient)	Concentrations stable; sampled six times since installation				
CO36-PZM043 (crossgradient)	Concentrations stable				
CO37-PZM038 (crossgradient)	Concentrations stable since late-2017				
CO38-PZM043 (upgradient)	Two orders of magnitude decrease over time				
CO39-PZM042 (upgradient)	Concentrations fluctuating but decreasing over time				
CO41-PZM036 (upgradient)	Concentrations stable				
CO180-MWI (crossgradient)	Concentrations stable; sampled five times since installation				
CO181-MWI (crossgradient)	Concentrations stable; sampled five times since installation				
CO182-MWI (upgradient)	Concentrations decreasing over the last six sampling events				

CO209-MWI (crossgradient)	Concentrations stable; sampled four times since installation
GD01-MWI (downgradient)	Concentrations stable; sampled seven times since installation
GD02-MWI (downgradient)	Concentrations stable; sampled seven times since installation

Groundwater sample laboratory analytical reports are included in **Appendix A.** Groundwater sampling purge logs are included in **Appendix B**. Historical analytical results for all Cell 2 monitoring wells are included in **Appendix D**.

3.3 SUMMARY AND RECOMMENDATIONS

Cell 2, located in the Former Coal Basin Area, included an AS/SVE system that operated from shallow groundwater zone wells into 2019, and a GWPT system that operated from intermediate groundwater zone wells into mid-2022. Both systems are currently offline.

Groundwater and VOC recovery rates decreased each year from 2019 through June 2022. An evaluation of the hydraulic containment provided by groundwater pumping operations at the Graving Dock shows that the Graving Dock serves a capture and control function for the intermediate groundwater beneath Cell 2.

A request to discontinue the use of the Cell 2 IM GWPT system was submitted to the Agencies in the *COA Cell 2 Interim Measure Shutdown Request* (January 10, 2023), Agency comments were received on February 13, 2023, and a comment response letter was submitted on September 27, 2023. A revised request to discontinue the use of the Cell 2 IM GWPT system incorporating groundwater modeling data from Key Environmental was submitted to the Agencies in the *COA Cell 2 Interim Measure Shutdown Request* (Revision 1; October 3, 2023) and is currently awaiting Agency review.

4.0 CELL 3

4.1 **DESCRIPTION**

Cell 3 IMs include the use of an AS/SVE system designed to remove VOCs from shallow zone groundwater with treatment of the extracted soil vapor by carbon filters. The AS system consists of a rotary vane air compressor that delivers compressed air to fifteen vertical sparge wells via aboveground HDPE piping and individually-valved, swingarm hoses connected to each sparge well. The SVE system consists of a regenerative vacuum blower operating on up to five HDPE pipe risers that connect (tee) to a horizontally buried SVE extraction pipe within a 600-foot-long shallow extraction trench. Figure C3-1 presents the layout of the Cell 3 AS/SVE system and the locations of the major system components including the AS and SVE wells, the SVE trench, and monitoring wells. The major AS/SVE system design components are described in the Cell 3 final design report *Coke Oven Area Interim Measures Cell 3 Cove Area Air Sparge/Soil Vapor Extraction System Design* (URS 2011).

Vertical profiling of VOC concentrations in shallow zone groundwater was conducted during previous investigations and indicated that the majority of the benzene mass beneath Cell 3 is located from 15 to 30 feet bgs and the majority of the naphthalene mass is located from 20 to 40 feet bgs (ARM 2019). The AS wells were proposed to be installed to 30 feet bgs with screened intervals from 28-30 feet bgs in order to target the bottom of the benzene-impacted zone and the middle of the naphthalene-impacted zone. However, the AS wells were installed to total depths between approximately 22.2 and 27.4 feet bgs due to refusal encountered with the hollow stem augers during installation. Therefore, the screened intervals are shallower than proposed and target the middle/bottom of the benzene-impacted zone and shallower (upper) portion of the naphthalene-impacted zone. Air sparge well construction information is summarized in **Table C3-1.**

4.2 **OPERATIONS**

The operational performance of the AS/SVE system during 2023 is summarized in **Table C3-2**. The system operated at approximately 93% runtime during 2023. Any system downtime was a result of electrical power losses, preventative maintenance, and minor repairs. Approximately 26 pounds of VOCs were removed during 2023, compared to 72 pounds removed during 2022. An estimated 2,328 pounds of VOCs have been removed to date (**Figure C3-2**). A chronology of Cell 3 operations during 2023 is included in **Appendix C**.

SVE influent (e.g., pre-treatment) system vapor samples are collected monthly to assess hydrocarbon removal rates. The monthly SVE influent system vapor samples were submitted to Maryland Spectral Services for analysis of VOCs per USEPA Method 8260. SVE vapor sample testing results are presented in **Table C3-3**. Based on the system monitoring data and as shown on **Figure C3-2**, AS/SVE system recovery has become asymptotic despite being operated at nearly 100% runtime since mid-April 2022.

4.3 **GROUNDWATER SAMPLING RESULTS**

Groundwater samples were collected from two monitoring wells on a quarterly schedule, four monitoring wells on a semiannual schedule, and from a seventh monitoring well on an annual schedule to monitor VOC concentrations. Figure C3-1 presents the monitoring well locations. Groundwater samples were collected from the following monitoring wells:

- CO30-PZM015 (downgradient),
- CO30-PZM060 (downgradient),
- CO194-MWS (upgradient),
- CO195-MWS (upgradient),

- CO198-MWS (downgradient), and
 CO201-MWS (downgradient).

Groundwater samples were submitted to Alpha Analytical for analysis of BTEX and naphthalene per USEPA Method 8260. Groundwater sample testing results are presented in Table C3-4. Figures C3-3 and C3-4 present benzene concentrations in the shallow zone groundwater monitoring wells during the second and fourth quarters of 2023, respectively. A time-series graph of Total VOC concentrations is included as Figure C3-5. Groundwater sample testing indicates that benzene and naphthalene are the two most prevalent VOC constituents in local shallow zone groundwater. Reductions in Total VOC concentrations are observed in monitoring wells CO194-MWS, CO196-MWS, CO198-MWS and CO30-PZM060. Fluctuating but mostly consistent Total VOC concentrations are observed in monitoring wells CO30-PZM015, CO195-MWS and CO201-MWS.

SVE influent soil vapor sample and groundwater sample laboratory analytical reports are included in Appendix A. Groundwater sampling purge logs are included in Appendix B. Historical analytical results for all Cell 3 monitoring wells are included in **Appendix D**.

4.4 SUMMARY AND RECOMMENDATIONS

The Cell 3 AS/SVE system removed approximately 26 pounds of VOCs in 2023. The Cell 3 AS/SVE system will continue to be operated in 2024.

5.0 CELL 4

5.1 DESCRIPTION

The Cell 4 IM consisted of a DNAPL recovery system operated in the naphthalene source area upgradient of Cell 5. Pneumatic pumps operated from CO123-PZM, CO124-PZM, and CO125-PZM Extraction well CO123-PZM routinely contained the greatest thicknesses of DNAPL. CO169-PZM was originally installed as a DNAPL extraction well, but no DNAPL recovery was performed at this location since prior to 2020 due to low DNAPL recovery. DNAPL recovery pump operations ceased in early January 2023. In mid-January 2023, the Cell 4 extraction and monitoring wells were abandoned. The DNAPL recovery pumps were last operated in early January 2023. All wells and piezometers were then abandoned in accordance with the DNAPL Excavation Work Plan Area B: Parcel B10 Cell 4 (November 10, 2022 and subsequent comments received November 15, 2022, with a comment response provided December 13, 2022). This Work Plan proposed excavation to remove the bulk of the DNAPL impacted material within Cell 4. Excavation activities were undertaken between January and June 2023; refer to Figure C4-1 for the final excavation extents. The excavation was advanced to the water table (an average depth of 11 feet bgs, just above the DNAPL-impacted zone) resulting in the removal of 22,496 tons of unimpacted material from the unsaturated zone that was set aside for reuse. The final excavation was advanced to an average depth of 22 feet bgs, extending until the (unimpacted) confining clayey silt layer was encountered. A total of 18,165 tons of impacted material from the saturated zone was stockpiled and ultimately transported to Greys Landfill for disposal. In June 2023, one soil sample was collected from the impacted material, and analyzed for SVOCs; naphthalene was detected at 8,400 mg/kg. Based on the total volume of impacted material (18,165 tons) and the naphthalene concentration (8,400 mg/kg), approximately 336,000 pounds of naphthalene was removed during the excavation.

Between October and November 2023, backfill activities were conducted at the Cell 4 excavation. The excavation area was backfilled below the water table with approximately 14,736 tons of Blast Furnace #2 stone and 880 tons of steel slag. The excavation area was backfilled above the groundwater table with approximately 22,496 tons of the previously excavated material that was stockpiled for potential reuse (from the unsaturated 0-11 foot zone) due to no evidence of impacts.

A summary of the Cell 4 DNAPL source excavation and backfilling activities was submitted to the Agencies in the *DNAPL Excavation Report* (January 31, 2024).

5.2 **OPERATIONS**

Table C4-1 summarizes the volumes/masses of DNAPL recovered from the three former DNAPL recovery wells. About 18 gallons of DNAPL were recovered from CO123-PZM and CO124-PZM during the final recovery event in early January 2023. A total of approximately 1,604 gallons of DNAPL were recovered from Cell 4 from 2015 to 2023.

5.3 SUMMARY AND RECOMMENDATIONS

Cell 4 IMs included the use of pneumatic skimmer pumps to recover high-naphthalene DNAPL from shallow zone recovery wells, recovering 18 gallons of DNAPL in January 2023 and a cumulative total of approximately 1,604 gallons of DNAPL since 2015. All wells, piezometers, and associated system components were abandoned in January 2023. Excavation activities performed in 2023 included the removal of 18,165 tons of DNAPL-impacted soil and 336,000 lbs. of naphthalene. A summary of the Cell 4 DNAPL source excavation activities was submitted to the Agencies in the *DNAPL Excavation Report* (January 31, 2024).

6.0 CELL 5

6.1 DESCRIPTION

Cell 5 is located approximately 350 feet southeast of Cell 4, and IMs include the use of a DPE system to extract naphthalene-impacted groundwater. In March 2023, eight of the original twelve DPE wells were over-drilled and replaced with new extraction wells constructed with deeper screened sections from 15 to 25 feet bgs to better target deeper-set naphthalene impacts. The DPE system uses a high-vacuum, liquid ring pump (LRP) to extract VOC-impacted groundwater from six of the eight reinstalled extraction wells (CO63-PZM007, CO64-PZM006, CO65-PZM005, CO66-PZM005, CO67-PZM006, and CO68-PZM005), with extracted groundwater treated through a low-profile air stripper and carbon filters. Treated groundwater is discharged into six 6-inch diameter by 15-foot-deep reinjection wells located north of Cell 4. **Figure C5-1** presents the system layout of Cell 5 including the locations of the extraction wells, groundwater reinjection wells, and monitoring wells.

6.2 **OPERATIONS**

During 2023, the DPE system operated at 78% runtime with periods of system downtime caused by the extraction well replacement in March 2023, carbon filter change-outs in June and November 2023, and failure of one of the carbon filter vessels in December 2023 (pitting/perforations in the vessel shell caused by corrosive groundwater and age). During 2023, approximately 4.7 million gallons of naphthalene-impacted groundwater were recovered and effectively treated for onsite discharge, resulting in the removal of approximately 263 pounds of VOCs. The 2023 recovery volumes were an increase from the 2022 recovery volumes (approximately 3.7 million gallons of groundwater resulting in the removal of approximately 179 pounds of VOCs) (**Table C5-1**). The increase in recovery volumes is attributed to the new extraction wells. The cumulative hydrocarbon mass removed since system activation is presented graphically on **Figure C5-2**.

6.3 GROUNDWATER SAMPLING RESULTS

Groundwater samples are collected from Cell 5 monitoring wells quarterly to monitor VOC concentrations within local shallow zone groundwater. **Figure C5-1** presents the monitoring well locations. Monitoring well construction information is summarized in **Table C5-2** and groundwater elevation gauging data is summarized in **Table C5-3**. **Figure C5-3** presents a groundwater elevation contour map for the second quarter of 2023.

Groundwater samples are submitted to Alpha Analytical for analysis of BTEX and naphthalene per USEPA Method 8260. Groundwater sample testing results are presented in **Table C5-4.**

Naphthalene is the most prevalent VOC in groundwater in the vicinity of Cell 5. **Figures C5-4** through **C5-7** present the naphthalene concentrations in the shallow zone groundwater monitoring wells during each quarter of 2023. A time-series graph of Total VOC concentrations in groundwater samples collected from monitoring wells located in the reinjection-area (Cell 4) is

presented on **Figure C5-8**. A time-series graph of Total VOC concentrations in groundwater samples collected from monitoring wells located in the Cell 5 IM area is presented on **Figure C5-9**. A time-series graph of Total VOC concentrations in perimeter monitoring wells is presented on **Figure C5-10**. A summary of Total VOC concentration trends is presented below.

Monitoring Well	Total VOC Concentration Trend
CO23-PZM008 (upgradient/reinjection wellfield)	Stable since early 2020
CO24-PZM007 (upgradient/reinjection wellfield)	Spike in late 2019 but concentrations decreasing over time
CO26-PZM007 (downgradient/eastern perimeter)	Concentrations highly variable with minor decrease in
	concentrations over time
CO55-PZM000 (upgradient)	Concentrations highly variable but decreasing over time
CO56-PZP001 (upgradient)	Concentrations stable with a decrease of a half order of
	magnitude over time
CO57-PZP002 (crossgradient)	Concentrations stable since late 2016
CO58-PZM001 (downgradient/eastern perimeter)	Concentrations decreasing over time
CO59-PZP002 (upgradient)	Concentrations highly variable but decreasing over time
CO60-PZP001 (crossgradient/eastern perimeter)	Concentrations variable but decreasing over time

Groundwater sample laboratory analytical reports are included in **Appendix A.** Groundwater sampling purge logs are included in **Appendix B**. A chronology of Cell 5 operations during 2023 is included in **Appendix C**. Historical analytical results for all Cell 5 monitoring wells are included in **Appendix D**.

6.4 SUMMARY AND RECOMMENDATIONS

The DPE system operated for 78% runtime during 2023 and removed approximately 263 pounds of VOCs from the shallow zone groundwater underlying Cell 5. Cell 5 will continue to be operated in 2024. Cell 4 DNAPL source removal/excavation activities will facilitate reductions in ground water VOC concentrations (e.g., naphthalene) in the vicinity of Cell 5.

7.0 CELL 6

7.1 **DESCRIPTION**

Cell 6 is located in the former Benzol Processing Area, approximately 500 feet east of Cell 1 and approximately 1,000 feet southeast of Cell 2. The locations of the extraction wells, groundwater reinjection wells, and system features are presented on **Figure C6-1**. The originally-designed Cell 6 IMs included the use of an LNAPL MPE system with off-gas treatment by CatOx and/or carbon filtering. The Cell 6 extraction well network includes fifty-three 2-inch diameter by 17-foot-deep wells. A reinjection well network consists of three 6-inch diameter by 20-foot-deep wells located west-northwest of Cell 6. The extraction wells are connected to an above-ground extraction piping network that leads to the MPE vacuum pump system. Extracted liquids were processed through a series of poly tanks equipped with coalescing blocks to facilitate gravity separation of LNAPL from water and downstream baghouse filter equipped with oleophilic filter bags. While the MPE system has removed approximately 7,643 gallons of LNAPL since system startup in October 2016, recent MPE system recovery rates have been diminishing. The Cell 6 MPE system did not operate during 2023 in order to conduct a pilot test to evaluate various treatment options for the LNAPL-impacted soils. However, manual LNAPL recovery continued in 2023 via CO173 and several test pits/recovery sumps.

Cell 6 MPE System recovery rates have been significantly diminishing, with just two isolated areas producing recoverable material: CO92/CO150 and CO99 located within the Cell 6 MPE system recovery field. The COA Cell 6 Hotspot Excavation Work Plan (December 2022) and the COA Cell 6 Pilot Test Work Plan - Revision 1 (October 2023), and respective comment response letters were submitted to the Agencies, proposing "hotspot" excavation and treatment for the remaining areas with more than 1-foot of LNAPL within the Cell 6 MPE system recovery field. A pilot test was conducted in November 2023 to assess the use of sodium persulfate and hydrogen peroxide to reduce the benzene concentrations in LNAPL-impacted soils. The COA Cell 6 Pilot Test Status Update (Revision 1, January 9, 2024), presented soil treatment test results and recommended an expanded pilot test.

Manual pumping operations were conducted in 2023 via CO173 and several test pits/recovery sumps. A pneumatic skimmer pump was used to recover substantial volumes of LNAPL from CO173 (815 gallons were recovered in 2023 and 1,400 gallons were recovered in 2022). In 2022, two test pits (COA-005-TP to the northwest of Cell 6 and COA-007-TP to the southeast of Cell 6) were excavated and utilized for manual LNAPL recovery with double diaphragm pumps. Manual LNAPL recovery continued until August 2023 when LNAPL recovery sumps were installed in COA-005-TP and COA-007-TP, and the excavations were backfilled with clean aggregate. The recovery sumps were constructed of perforated, large-diameter, corrugated pipe. Since the installation of the recovery sumps, LNAPL recharge was minimal (maximum LNAPL thickness of 0.01-feet in July and August) and absorbent socks have been used for LNAPL removal since August 2023. In November 2023, additional test pits were excavated around COA-005-TP and

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COA-007-TP. LNAPL gauging and manual LNAPL recovery via double diaphragm pumps were conducted at these additional test pits through the end of 2023. Approximately 812 gallons of LNAPL were recovered from the test pit excavations during 2023. Since mid-2010, approximately 34,603 gallons of LNAPL have been recovered from Cell 6.

Table C6-1 summarizes cumulative LNAPL volumes recovered in 2023 from CO173 and the test pits, along with pre-2019 hand bailing/skimmer pump operations, and MPE recovery operations from 2016 through 2021. Since mid-2010, an estimated 34,603 gallons of LNAPL have been recovered from Cell 6 (**Figure C6-2**). All recovered LNAPL and LNAPL sorbent materials are temporarily stored in 55-gallon drums and periodically disposed under manifest by an RCRA-licensed waste hauler at a disposal facility.

Weekly groundwater gauging and LNAPL thickness data collected from CO173 during 2023 is presented in **Table C6-2**. **Figure C6-3** presents the average LNAPL thicknesses measured in the extraction well network during the fourth quarter 2023.

7.2 SUMMARY AND RECOMMENDATIONS

The Cell 6 IMs originally consisted of an MPE system to remove LNAPL from a densely-spaced extraction well field. The MPE system did not operate in 2023 in order to conduct a pilot test to evaluate the feasibility of soil treatment by various methods. Manual LNAPL recovery efforts in 2023 included the use of a semi-automated pneumatic skimmer pump in well CO173, the use of double-diaphragm pumps to recover LNAPL from several test pits, and the use of sorbent socks to recover LNAPL from two LNAPL recovery sumps. Two remaining hotspot locations (in the vicinities of extraction wells CO92/CO150 and CO99) are targeted for treatment/removal in the separate *COA Cell 6 Hotspot Excavation Work Plan* (December 12, 2022), *COA Cell 6 Pilot Test Work Plan* (Revision 1, October 25, 2023), and associated comment response letters. An expanded pilot test was proposed in the *COA Cell 6 Pilot Test Status Update* (Revision 1, January 9, 2024). The MPE system will be maintained in operational condition as the Pilot Test Work Plan is implemented and the results are evaluated.

8.0 SUMMARY AND CONCLUSIONS

During 2023, the COA Cell 1, Cell 3, and Cell 5 IMs were operated in accordance with their original designs. The Cell 1 IM AS/SVE system removed approximately 68 pounds of VOCs during 2023 and will continue operation in 2024. The Cell 3 IM AS/SVE system removed approximately 26 pounds of VOCs during 2023 and will continue operation in 2024. The Cell 5 IM DPE system recovered and treated over 4.7 million gallons of groundwater and removed approximately 263 pounds of VOCs during 2023, with similar operations expected for 2024. During the first half of 2023, TPA excavated approximately 18,165 tons of the DNAPL source area from Cell 4, which will facilitate VOC concentration reductions in Cell 5.

The Cell 2 IM GWPT system did not operate in 2023. An evaluation was performed on the Graving Dock pumping operations and associated hydraulic controls which showed that the Cell 2 intermediate zone groundwater is within the capture and containment zone of the Graving Dock pumping operations. A revised request to discontinue the use of the Cell 2 IM GWPT system incorporating groundwater modeling data from Key Environmental was submitted to the Agencies in the *COA Cell 2 Interim Measure Shutdown Request* (Revision 1, October 3, 2023) and is currently awaiting Agency review.

The Cell 6 IM MPE system did not operate in 2023 in order to conduct a pilot test to evaluate soil treatment options. However, approximately 1,627 gallons of LNAPL were recovered from Cell 6 in 2023 with the combined manual LNAPL recovery at well CO173 and several test pits and recovery sumps. The pilot test results indicated that hydrogen peroxide appears to be an effective treatment to reduce the benzene concentrations in LNAPL-impacted soils.

During 2023, a total of approximately:

- 357 pounds of VOCs were removed by the combined Cell 1, Cell 3, and Cell 5 IMs,
- 18 gallons of DNAPL were recovered by the Cell 4 IM,
- 1,627 gallons of LNAPL were recovered by manual recovery operations at Cell 6, and
- 18,165 tons of DNAPL impacted material were removed by excavation in the former Coke Oven Area (approximately 336,000 pounds of naphthalene).

9.0 REFERENCES

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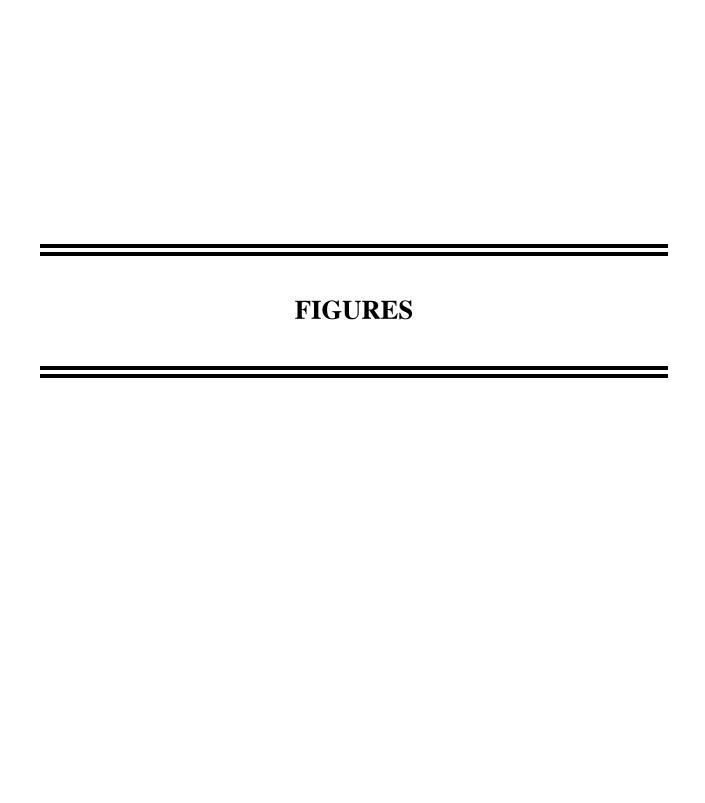
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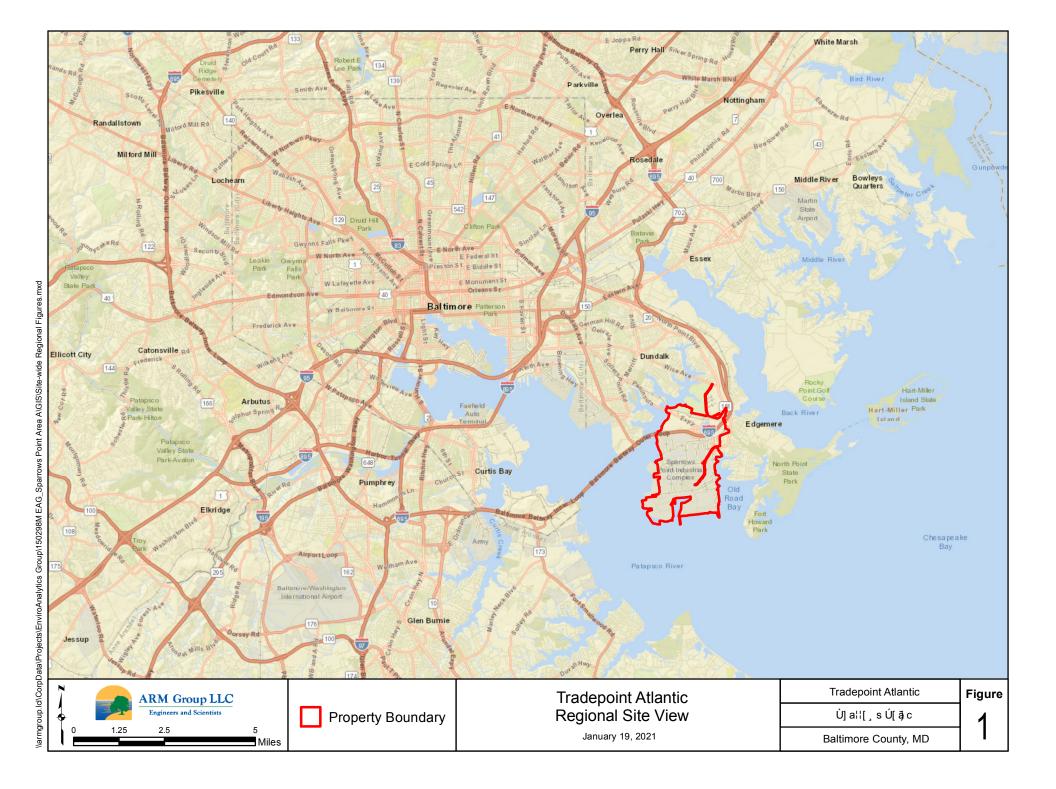
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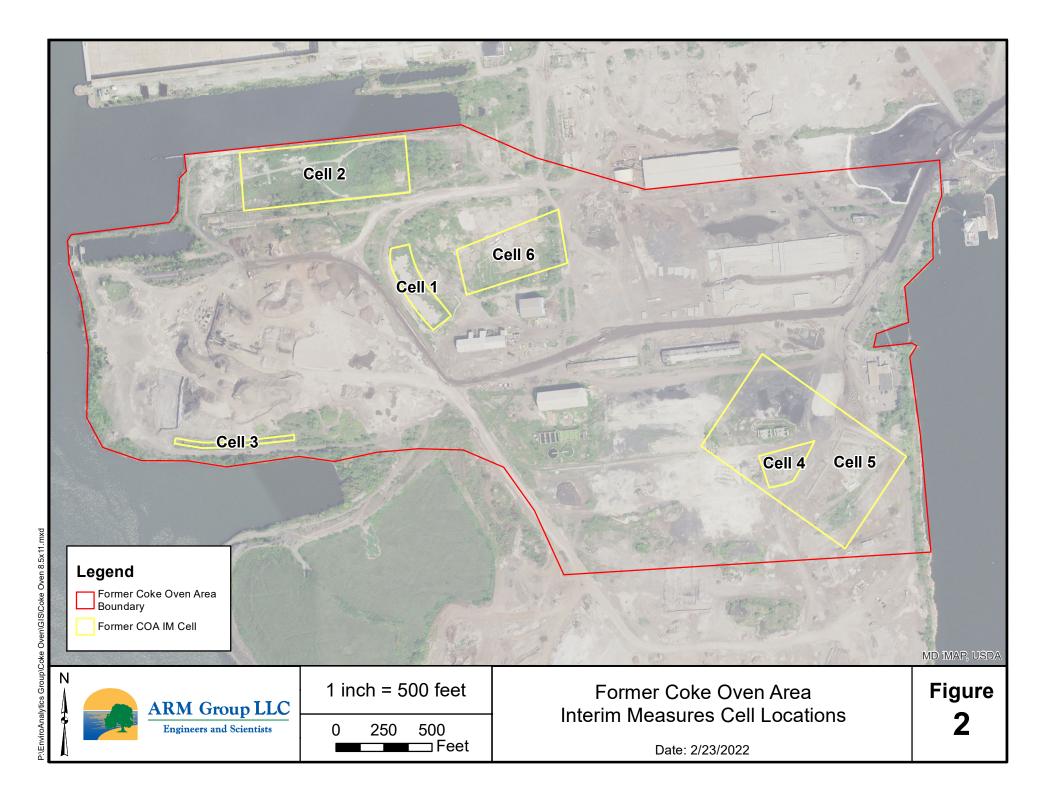
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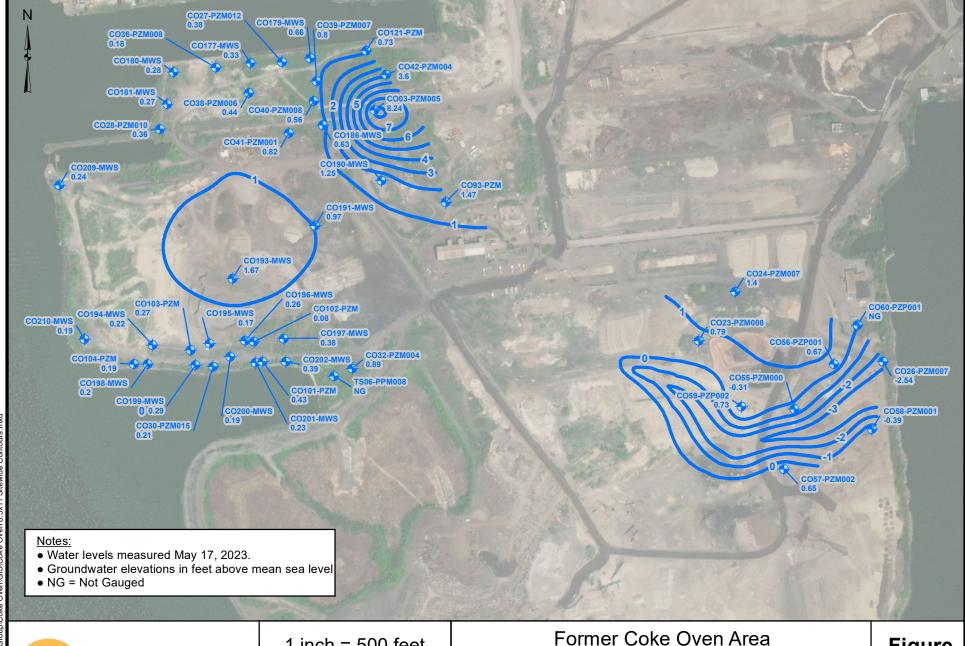
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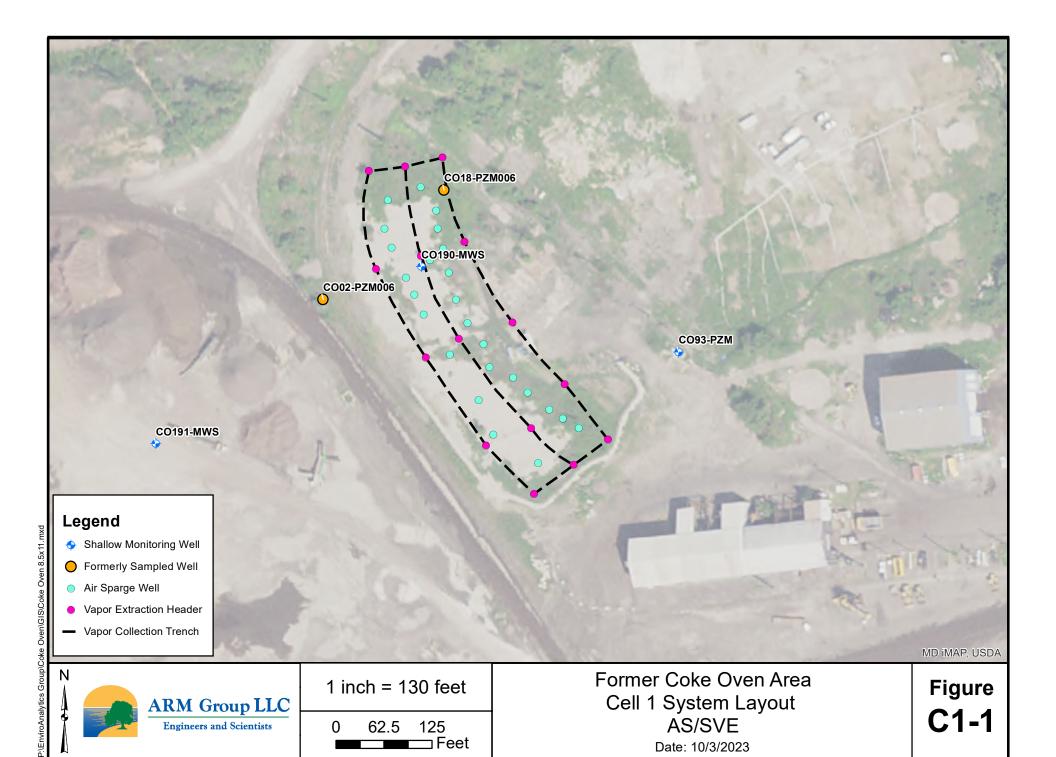


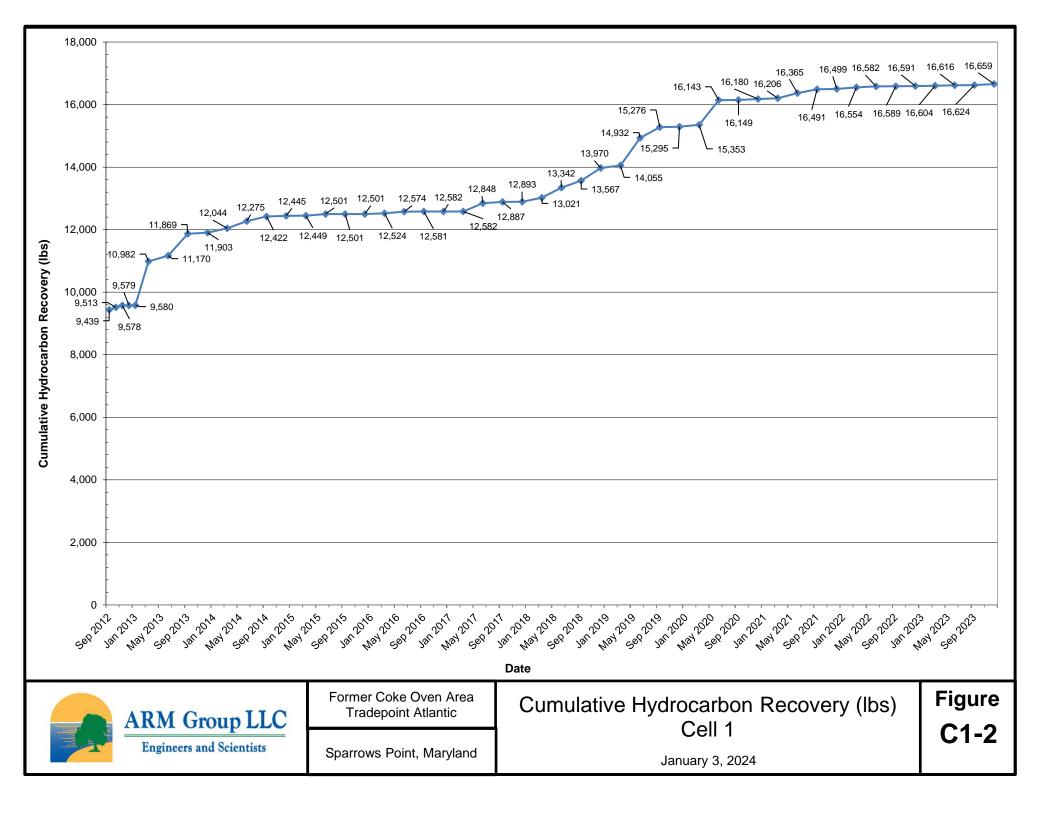
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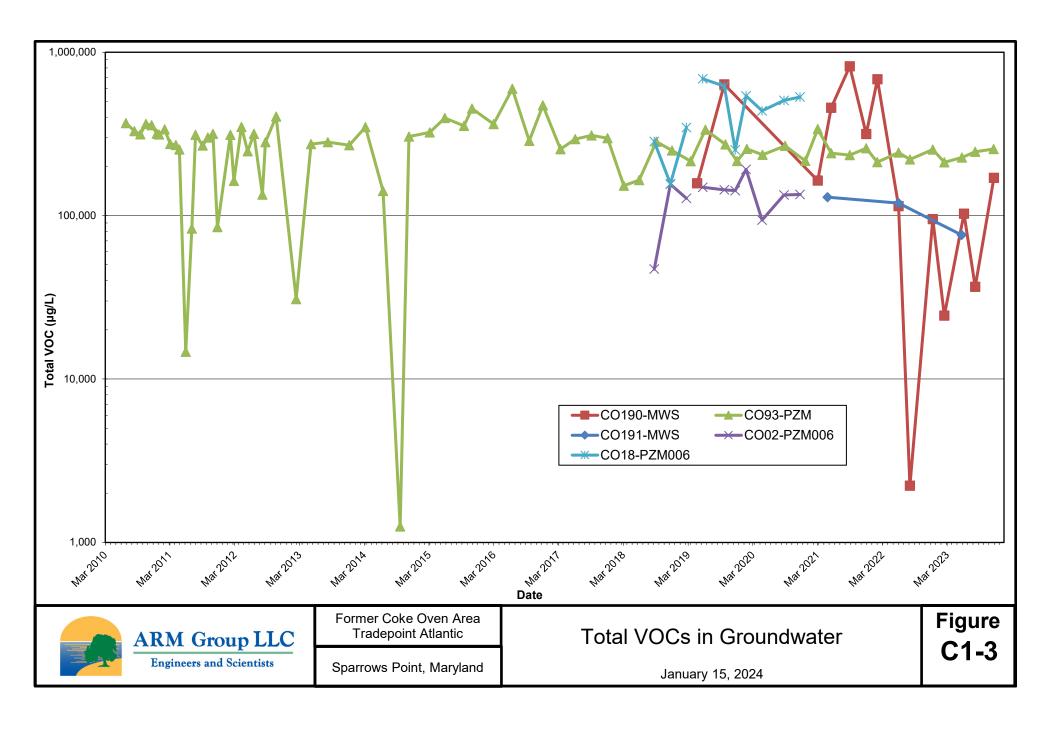
250 500 Sitewide Q2 Groundwater Elevation Contours Shallow Zone

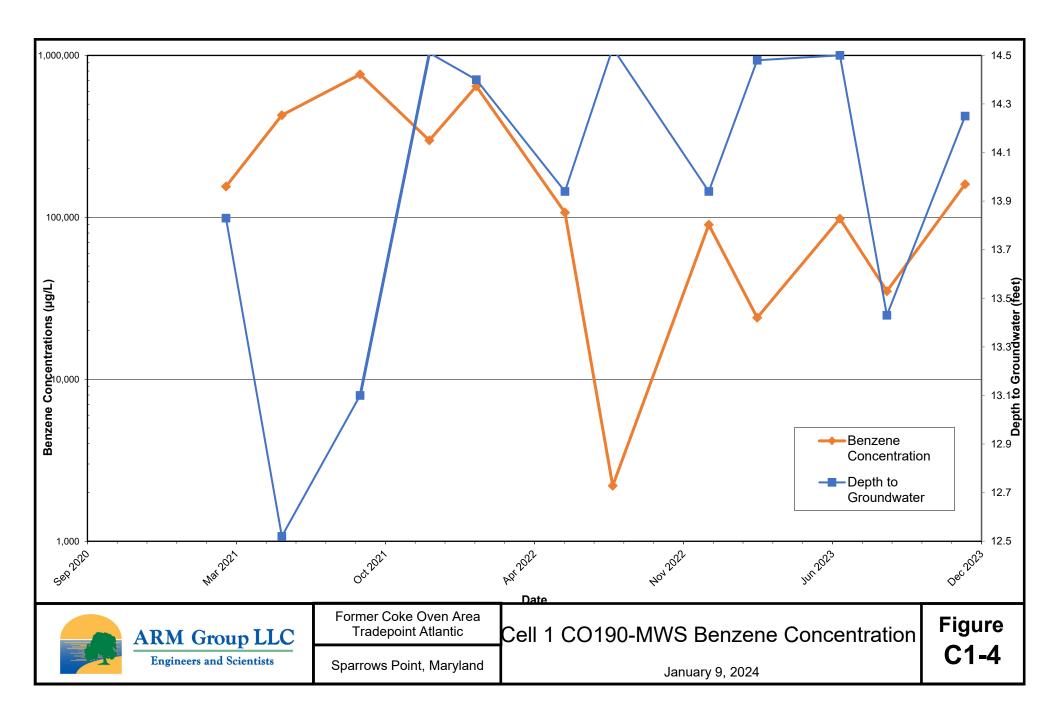
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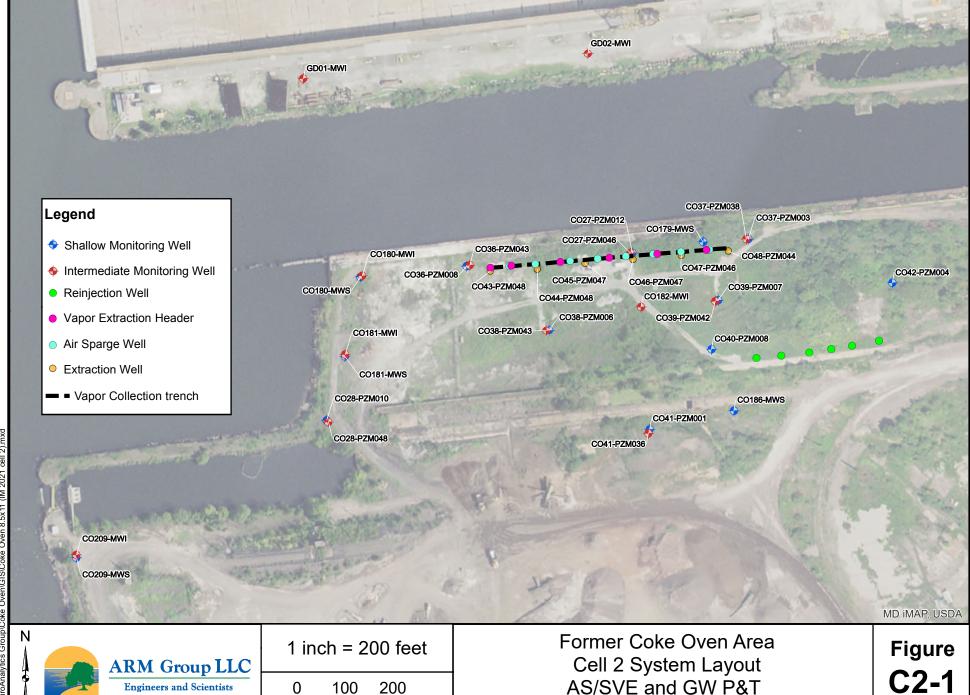
Figure 3-1



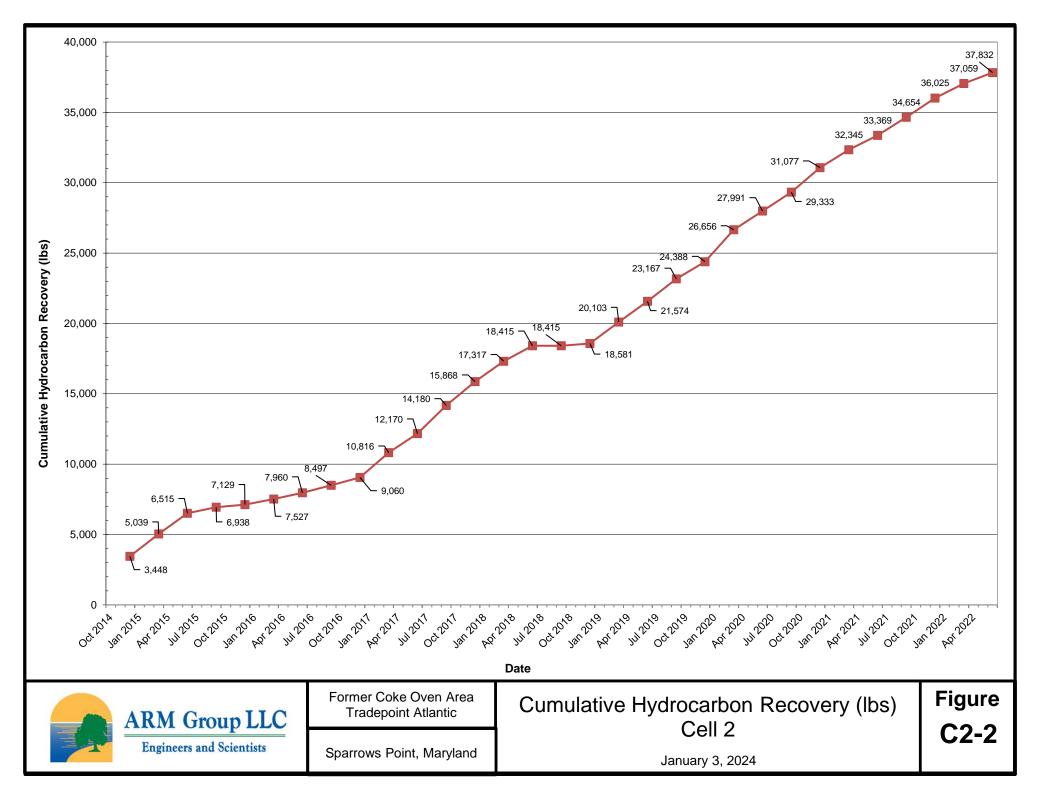








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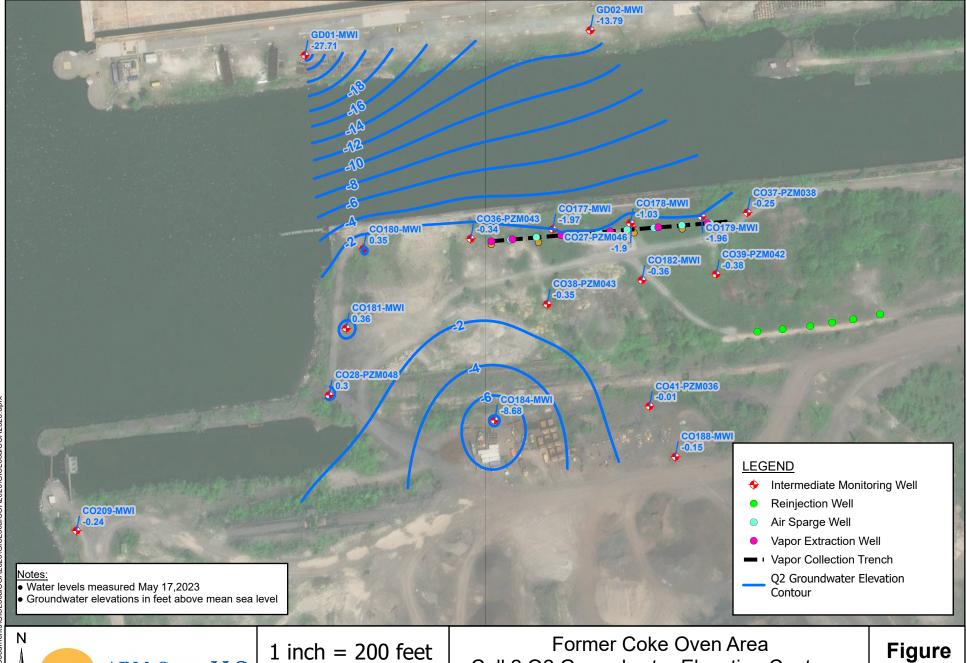
Engineers and Scientists

200 Feet 100

Cell 2 Q2 Groundwater Elevation Contours Shallow Zone

Date: 2/13/2024

C2-3

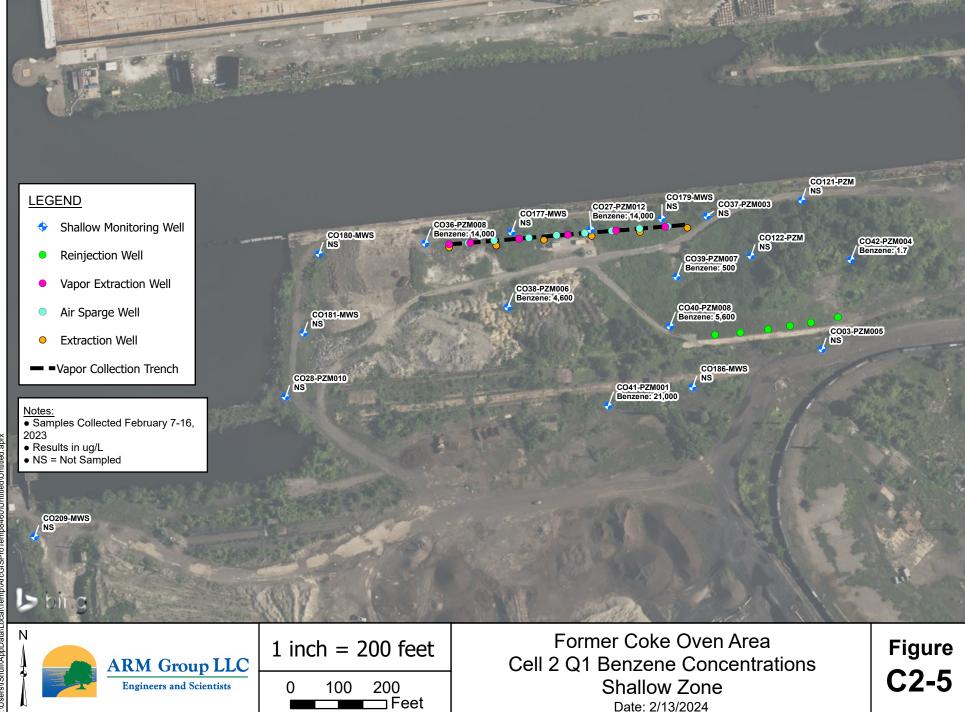


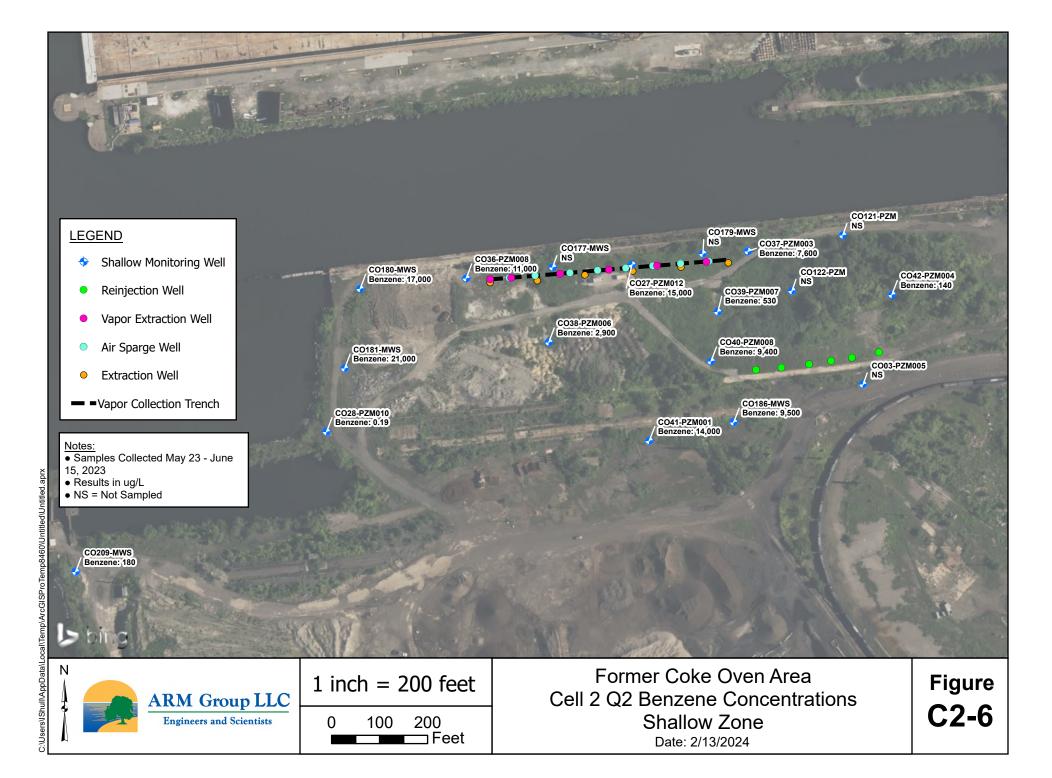
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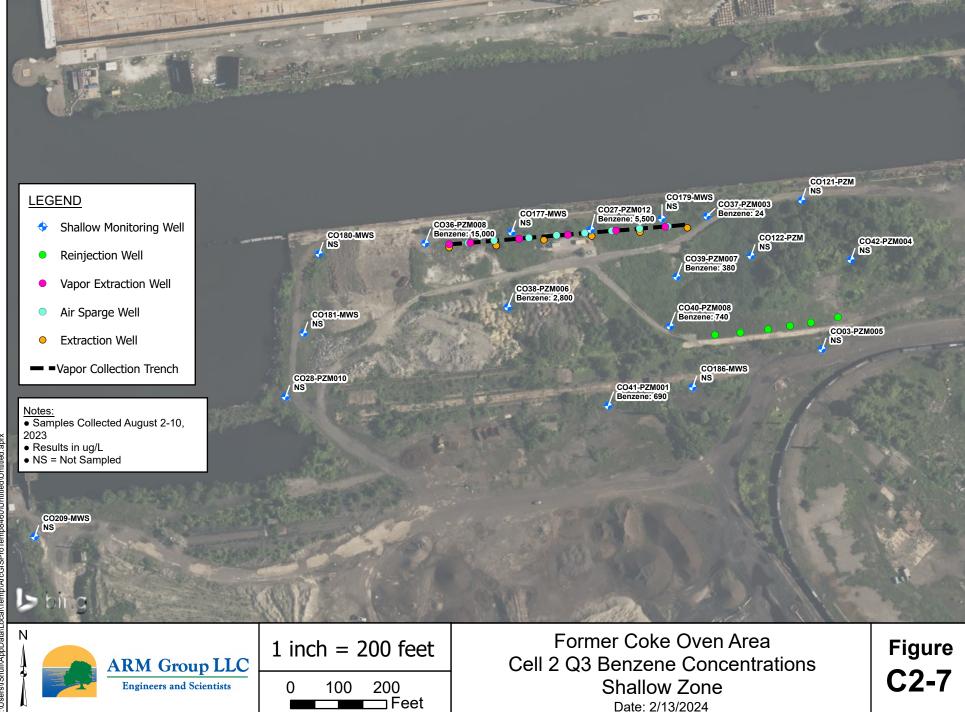
100 200 Feet Cell 2 Q2 Groundwater Elevation Contours Intermediate Zone

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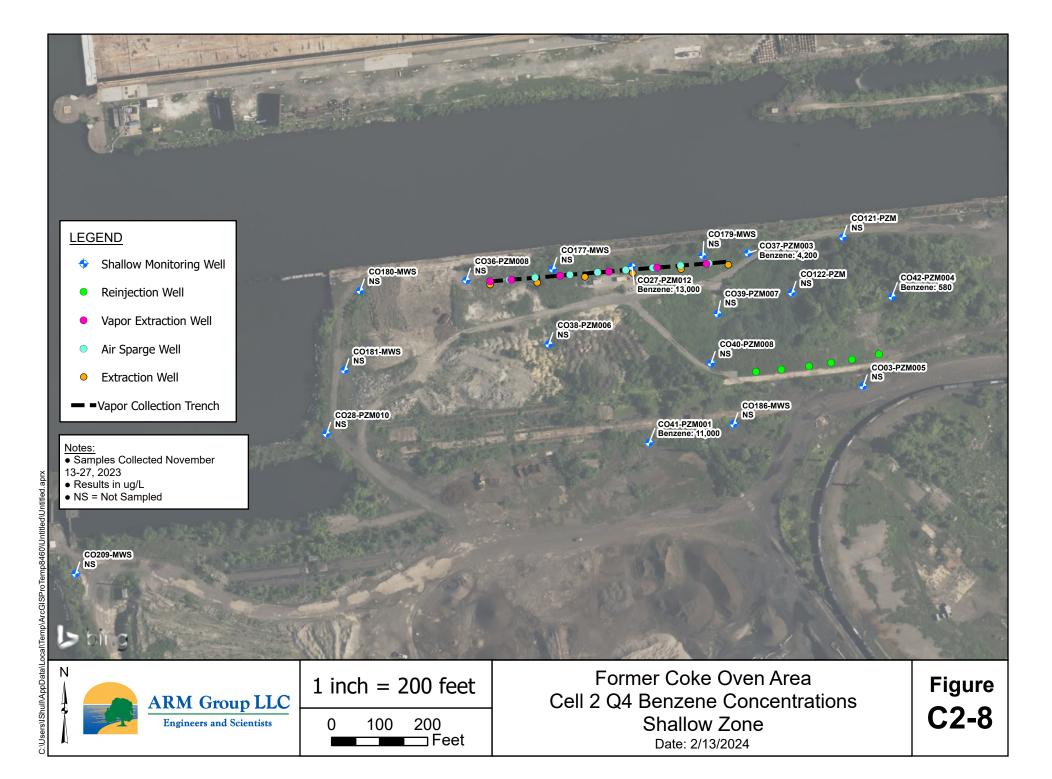
Figure C2-4

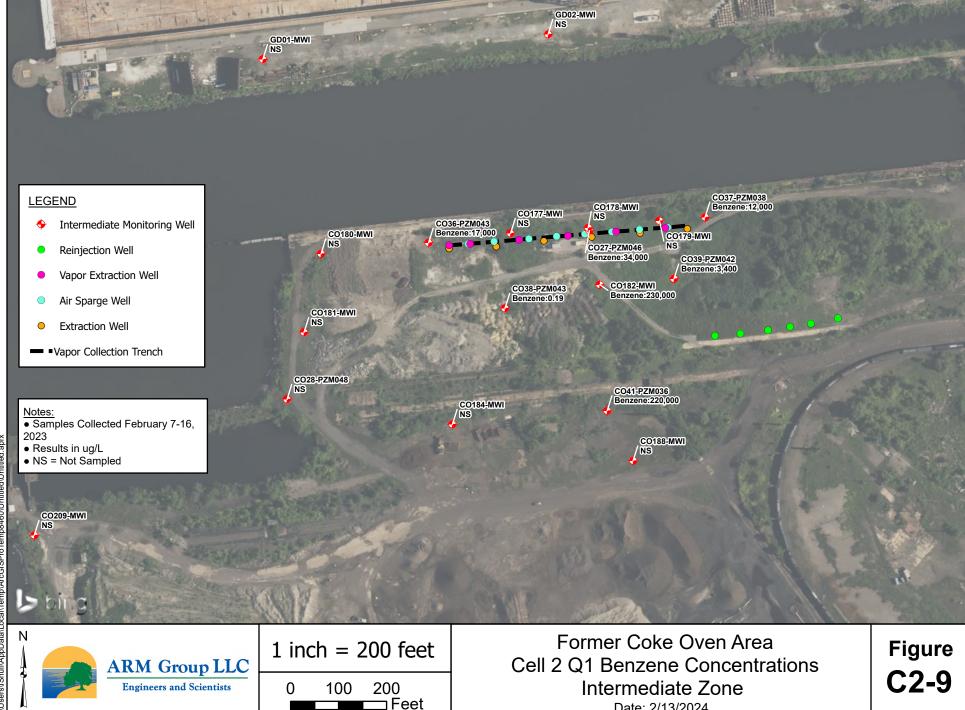




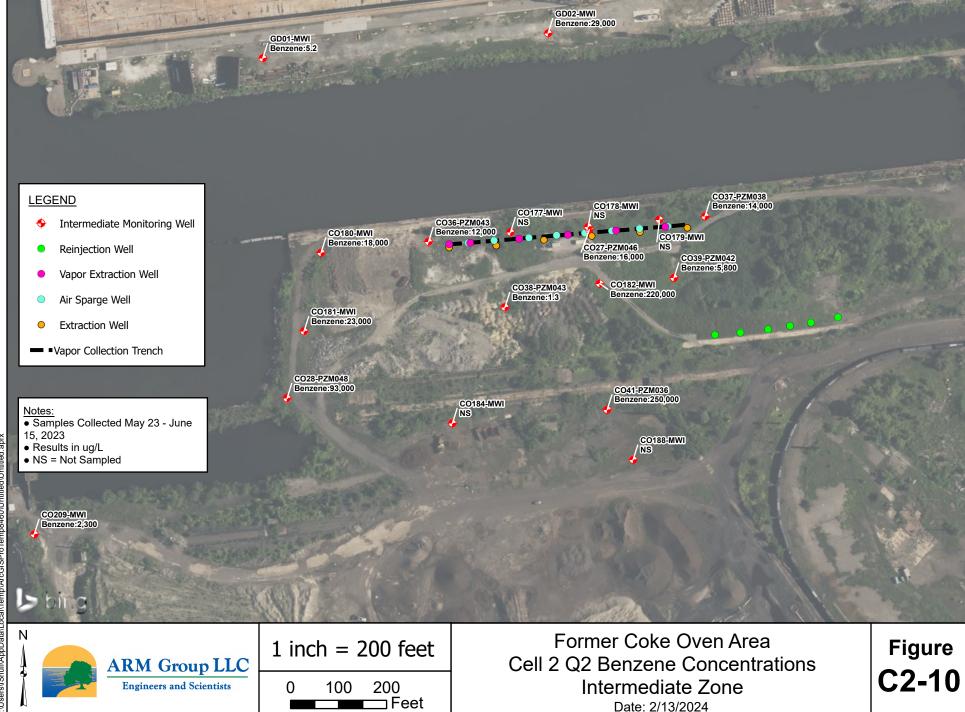


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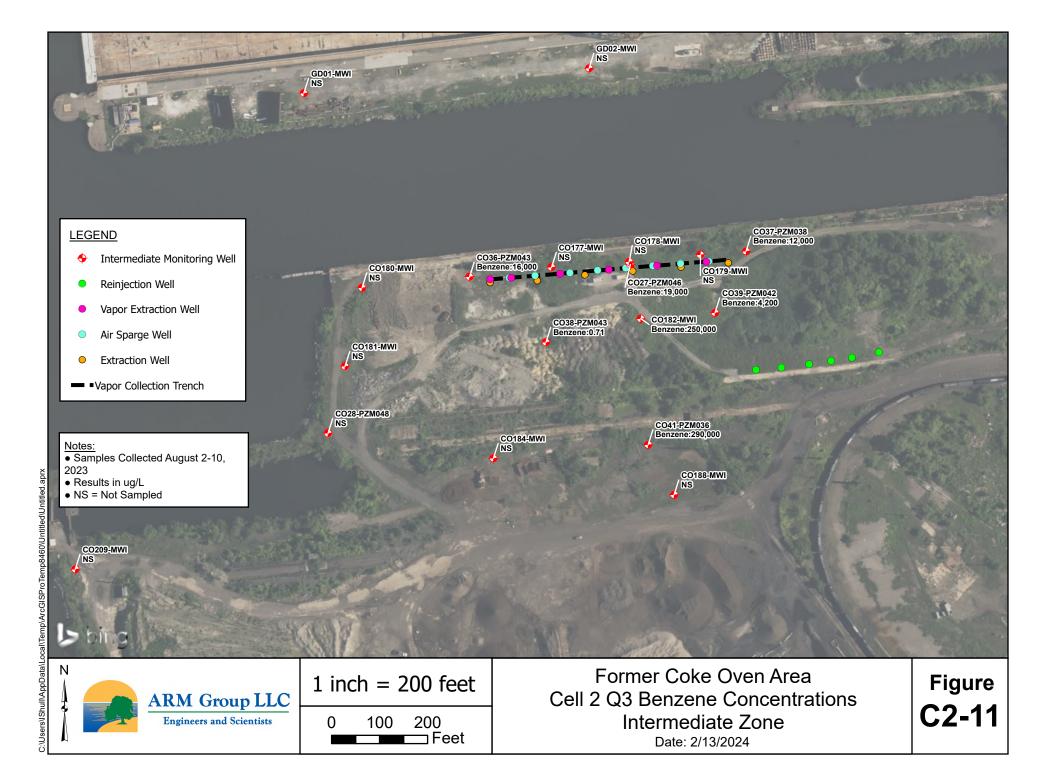


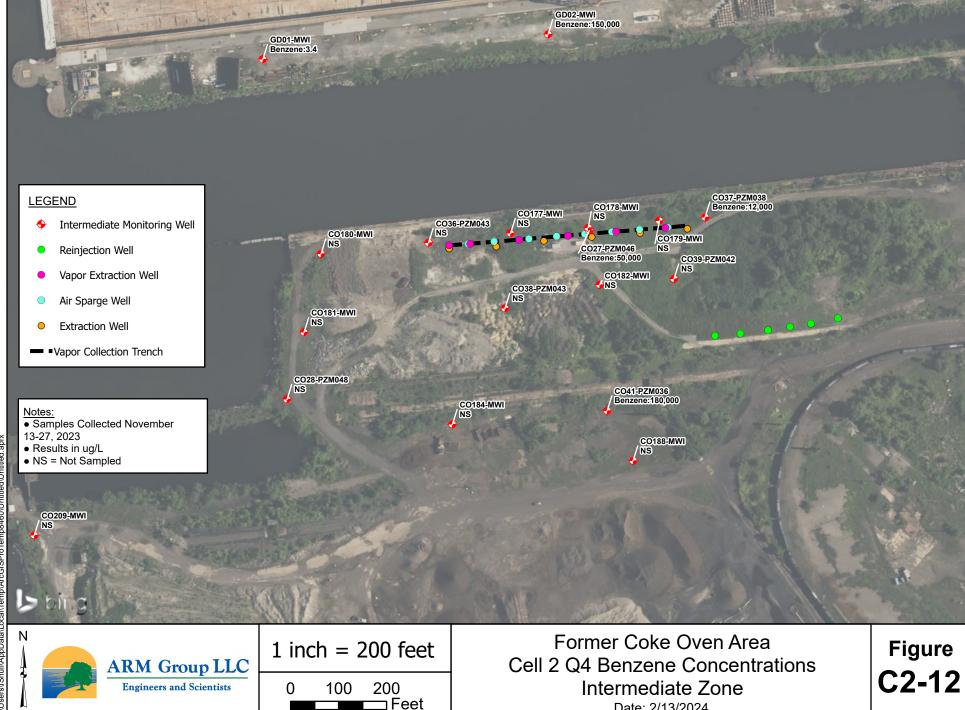


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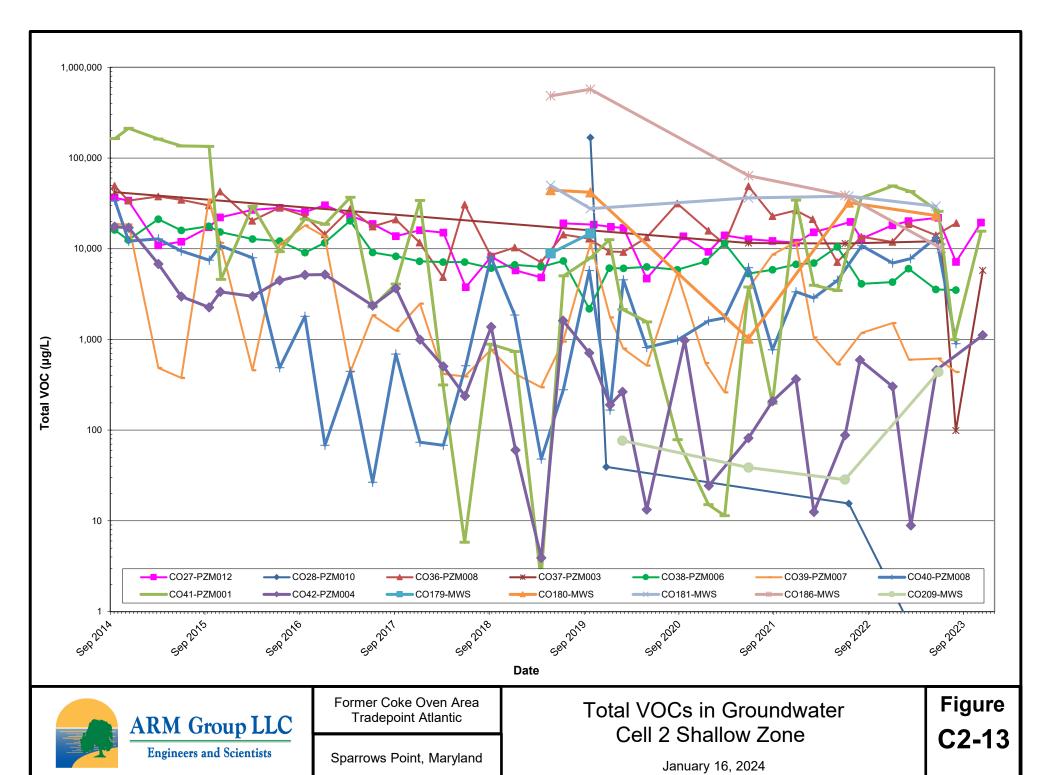


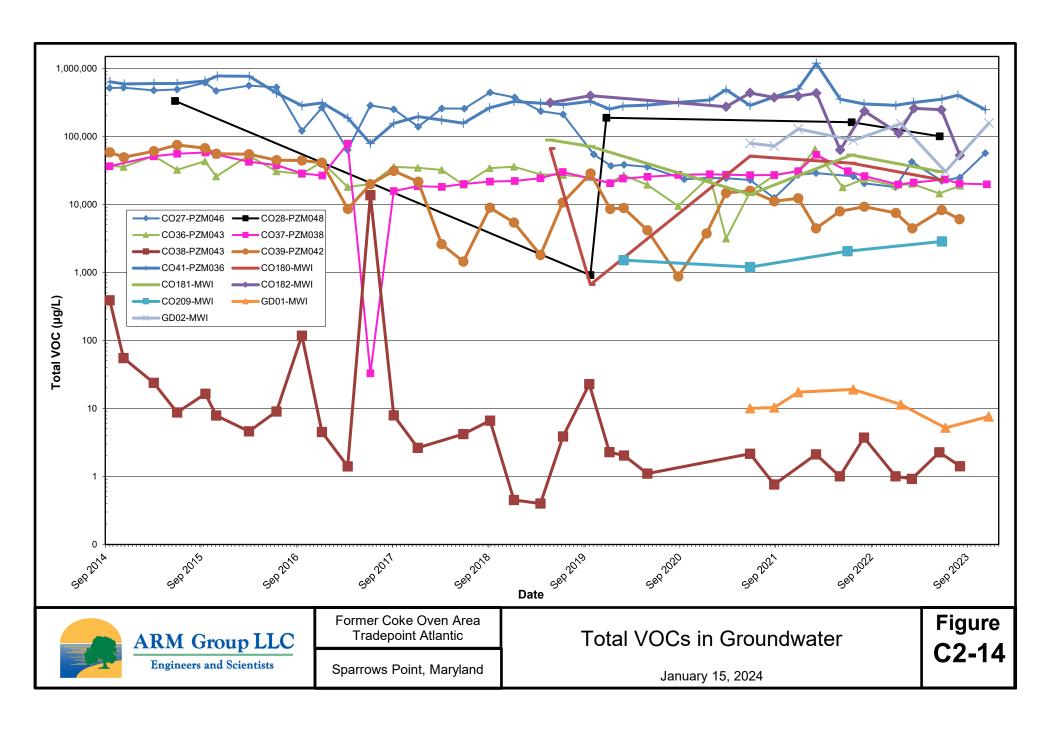
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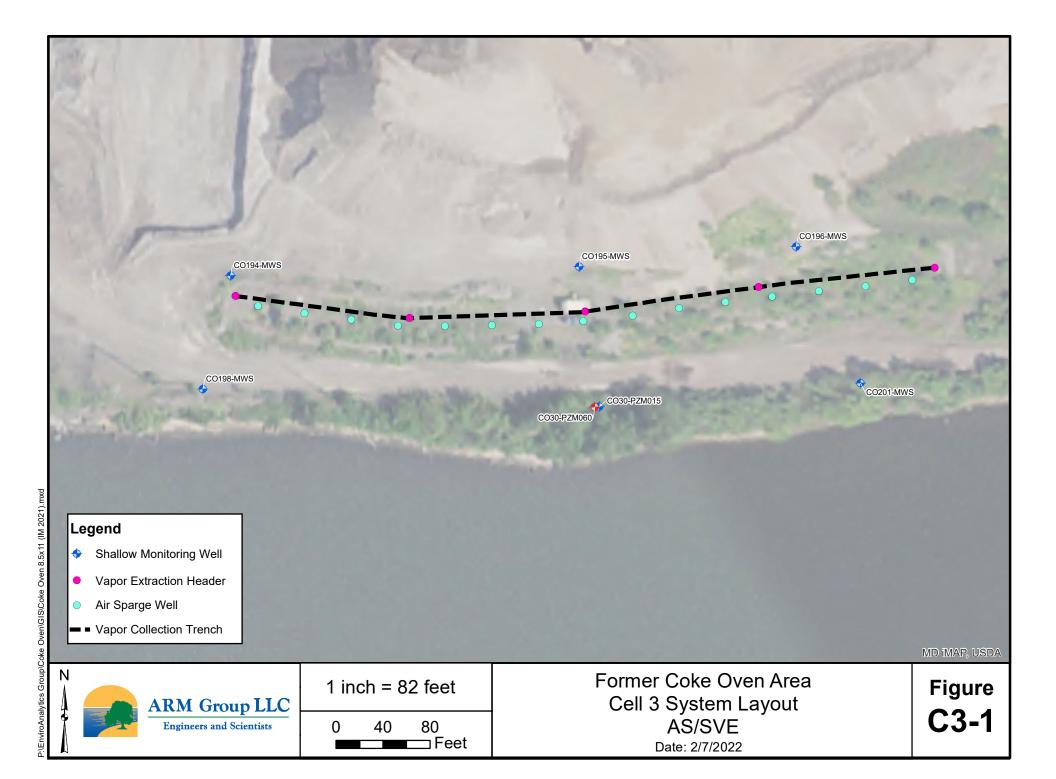


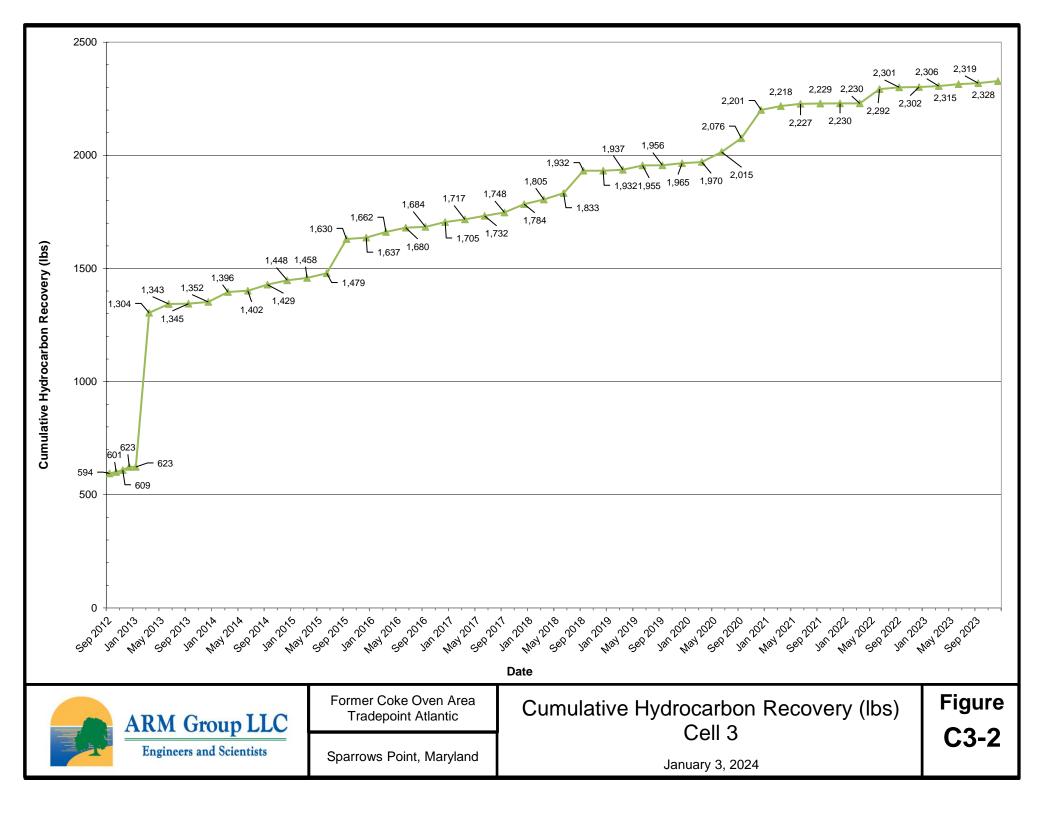


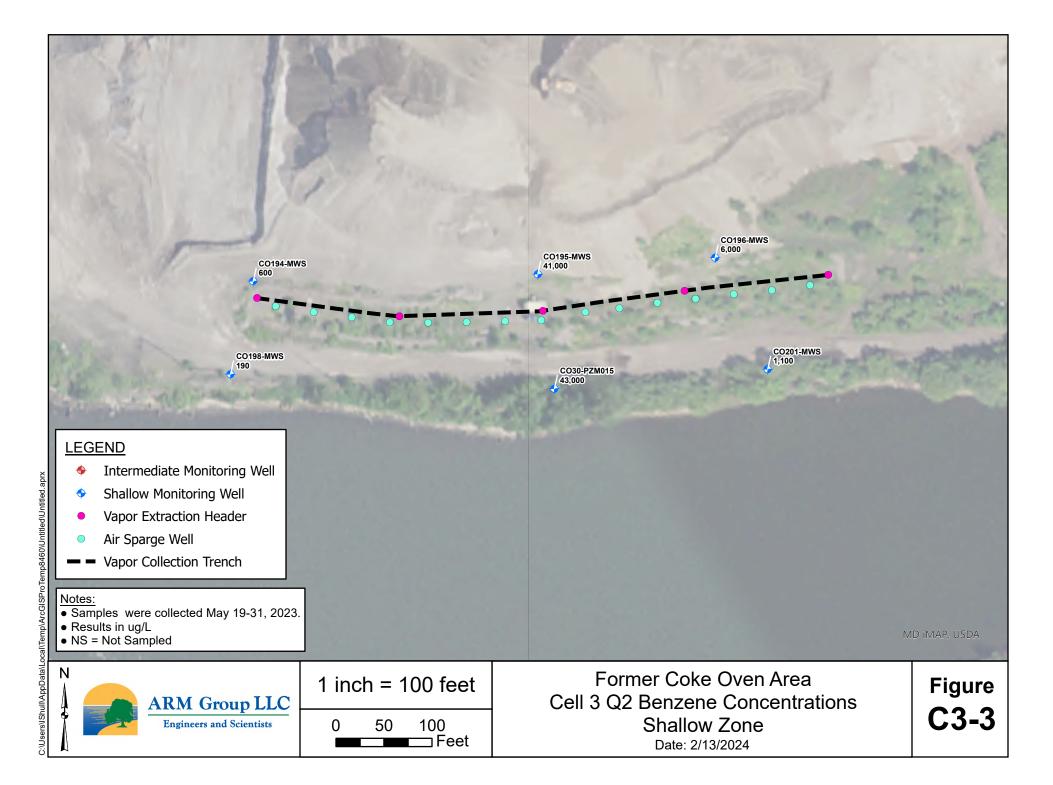
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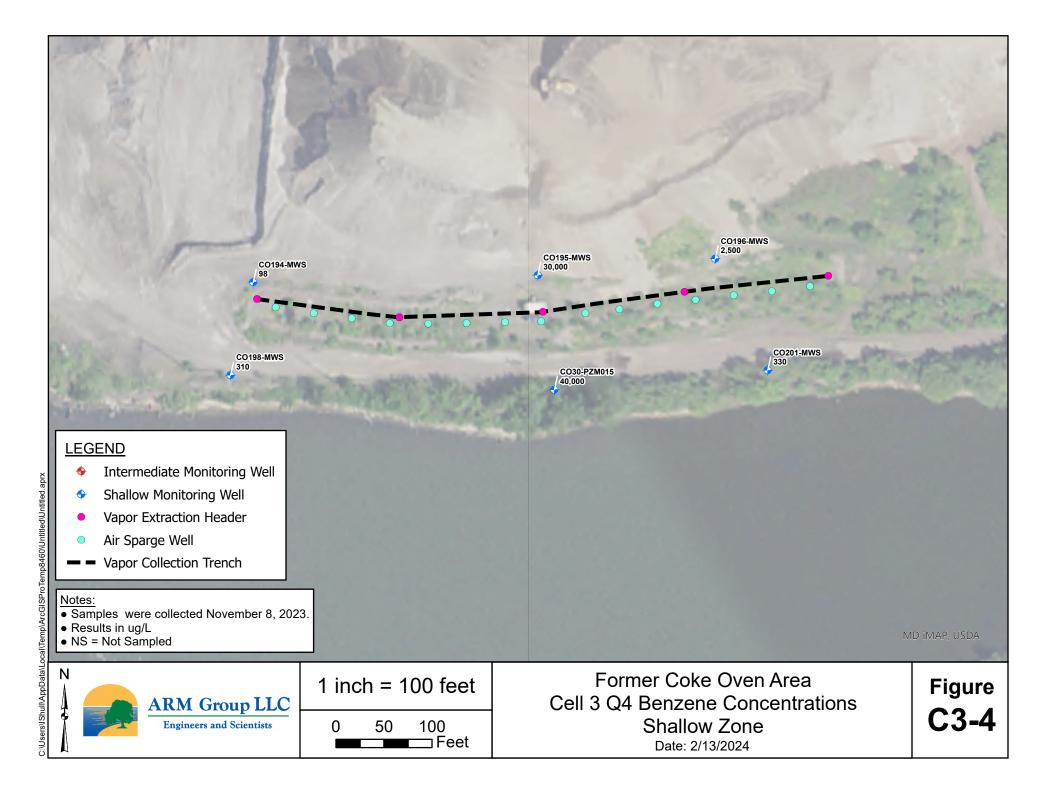


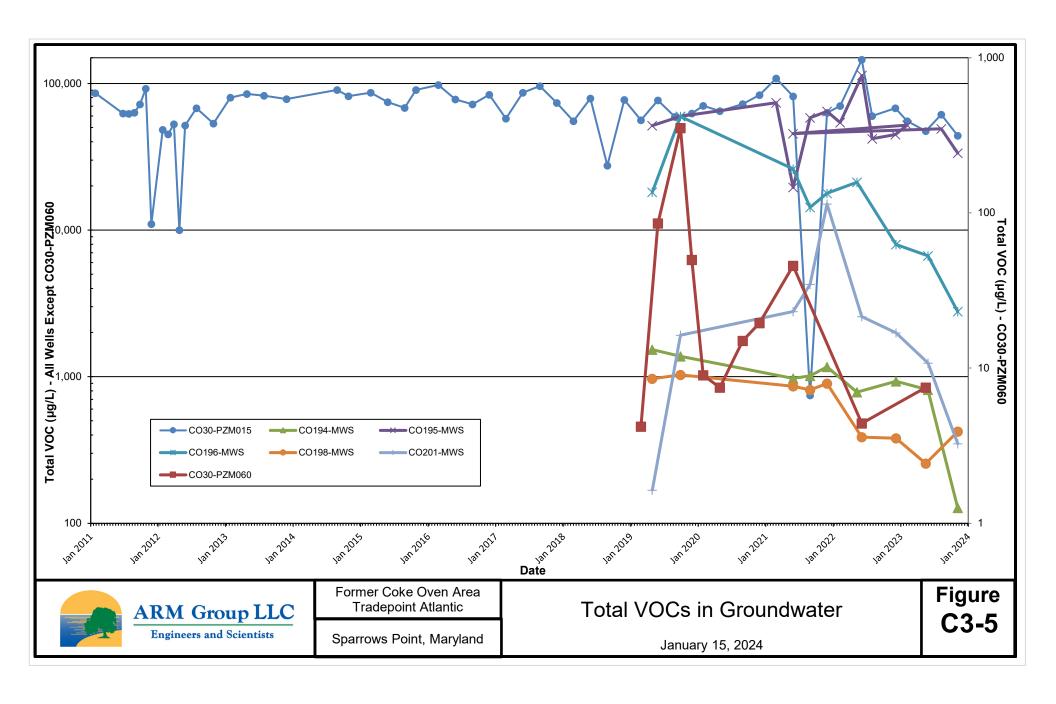




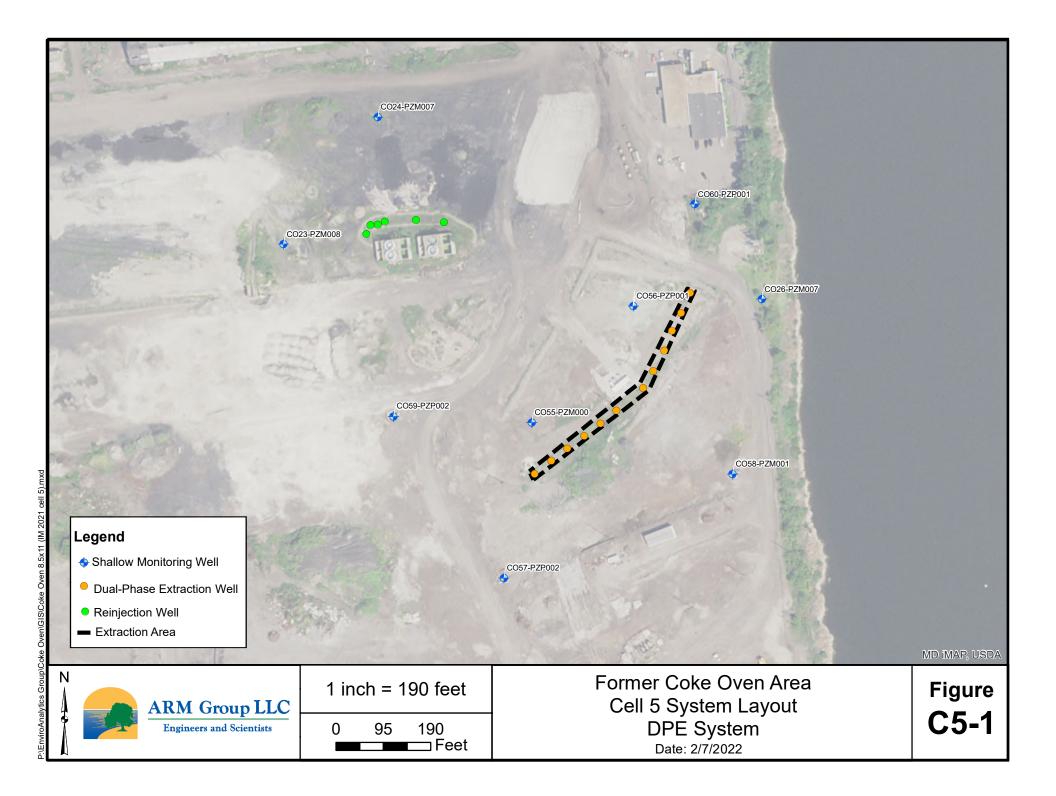


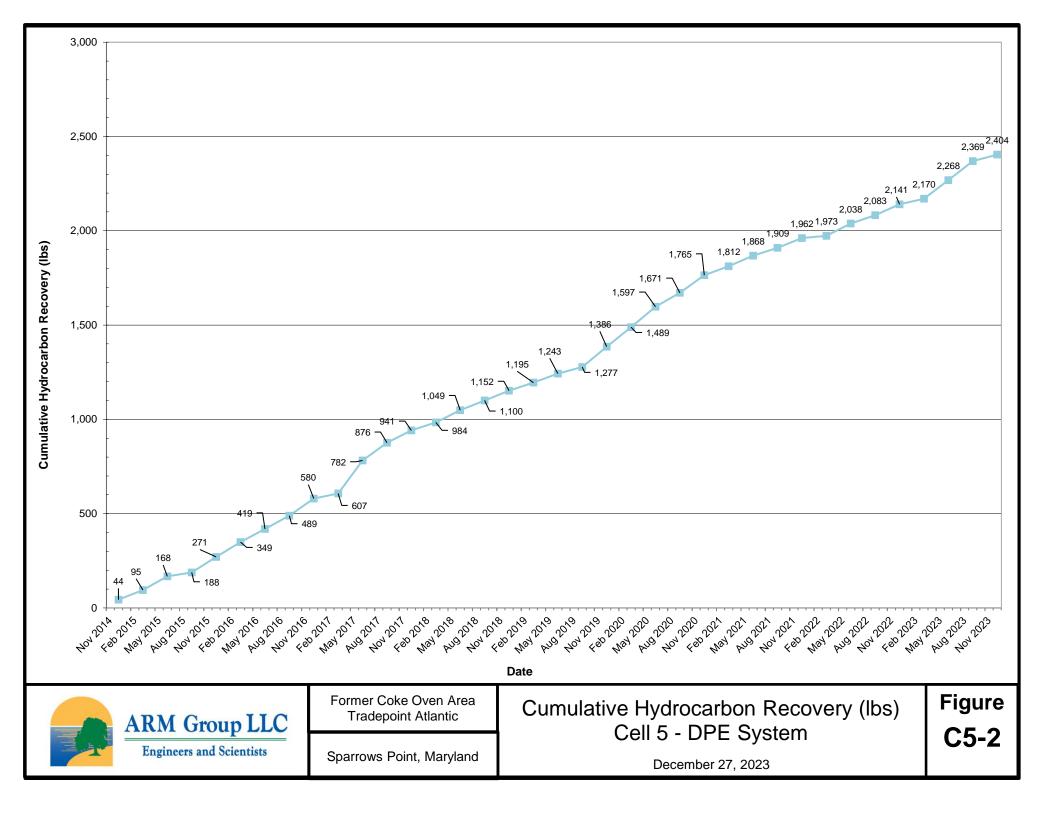


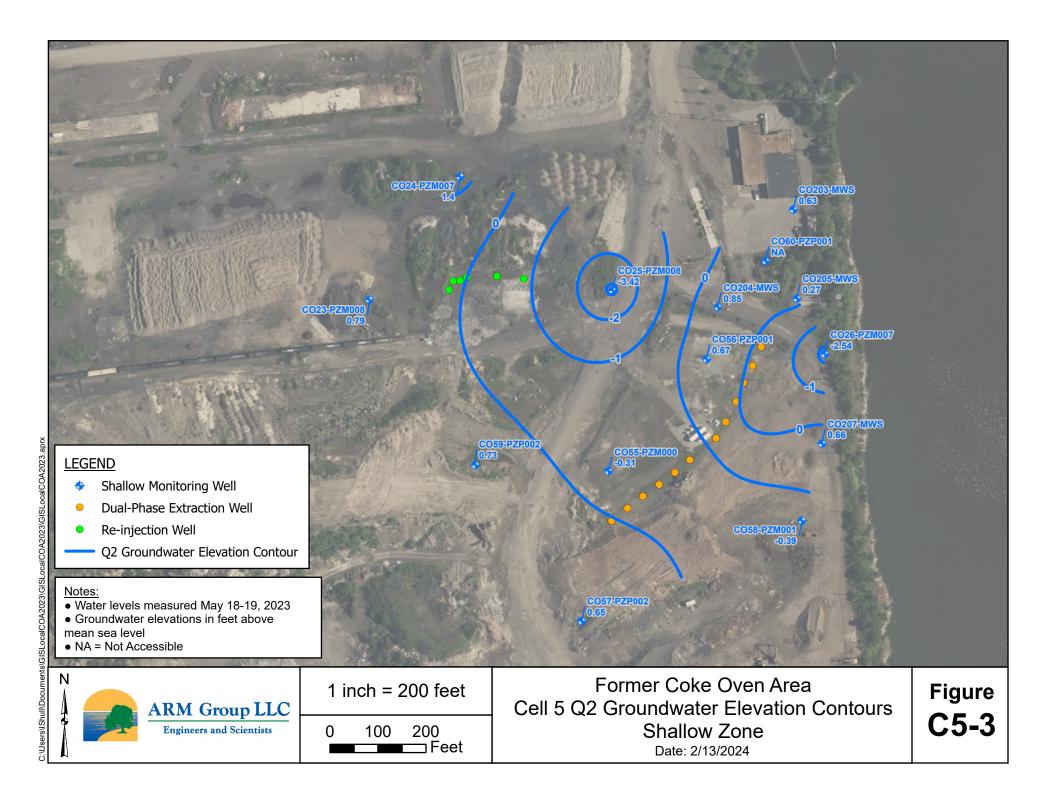


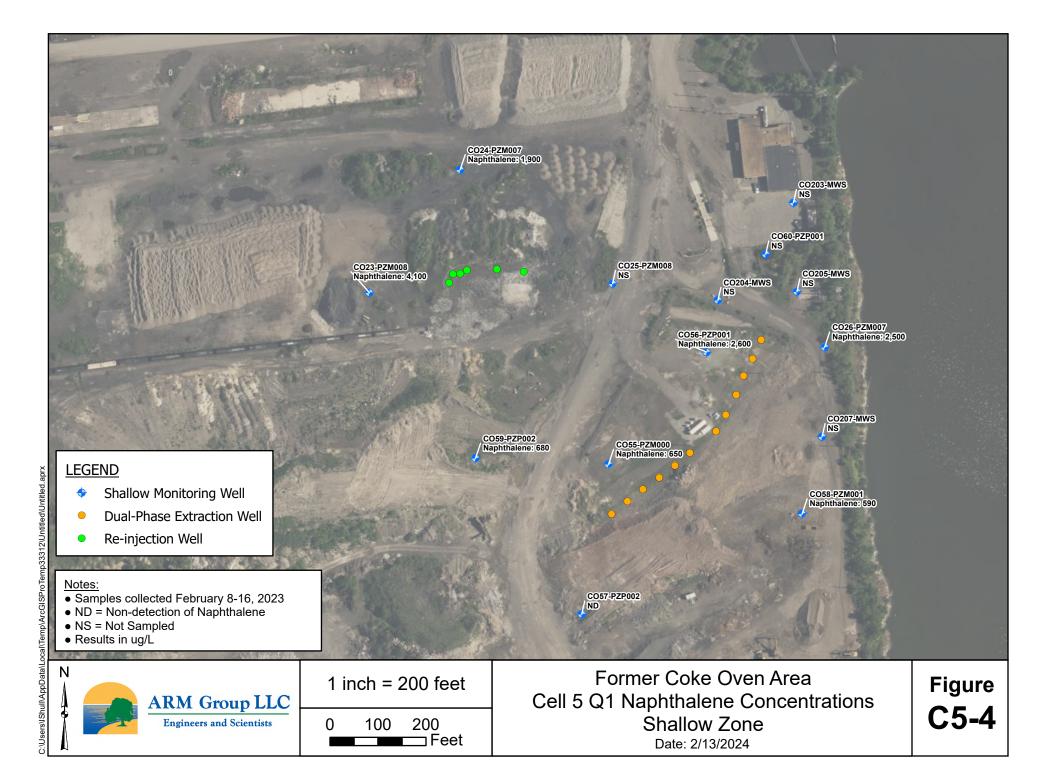


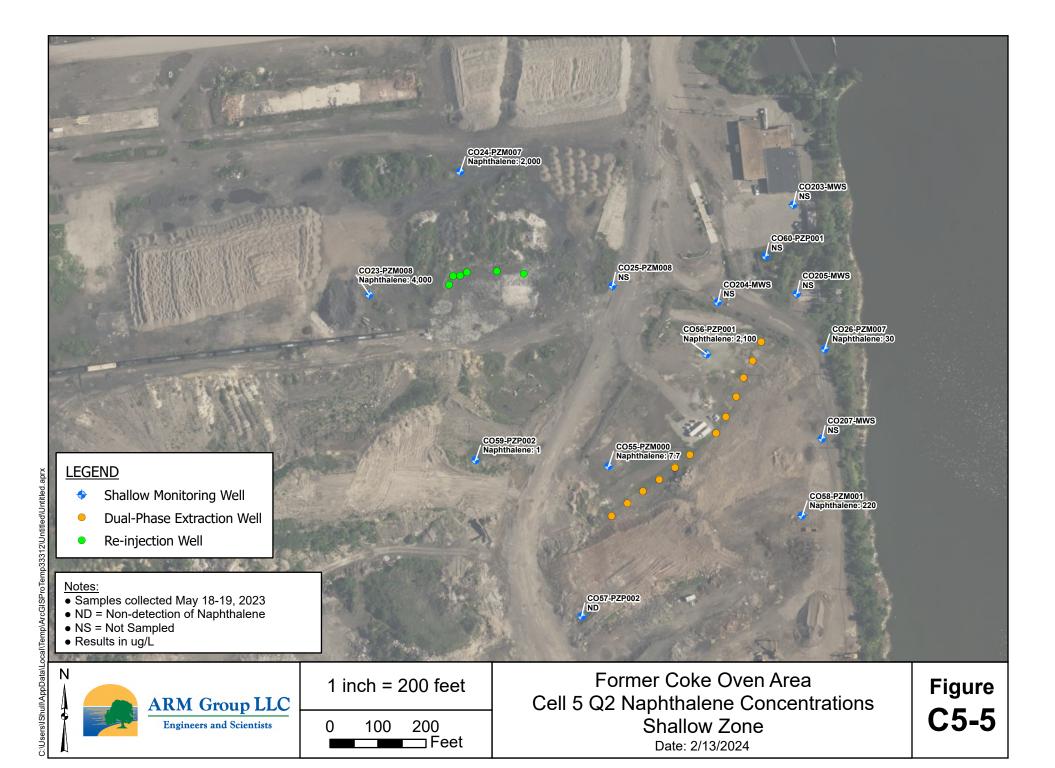


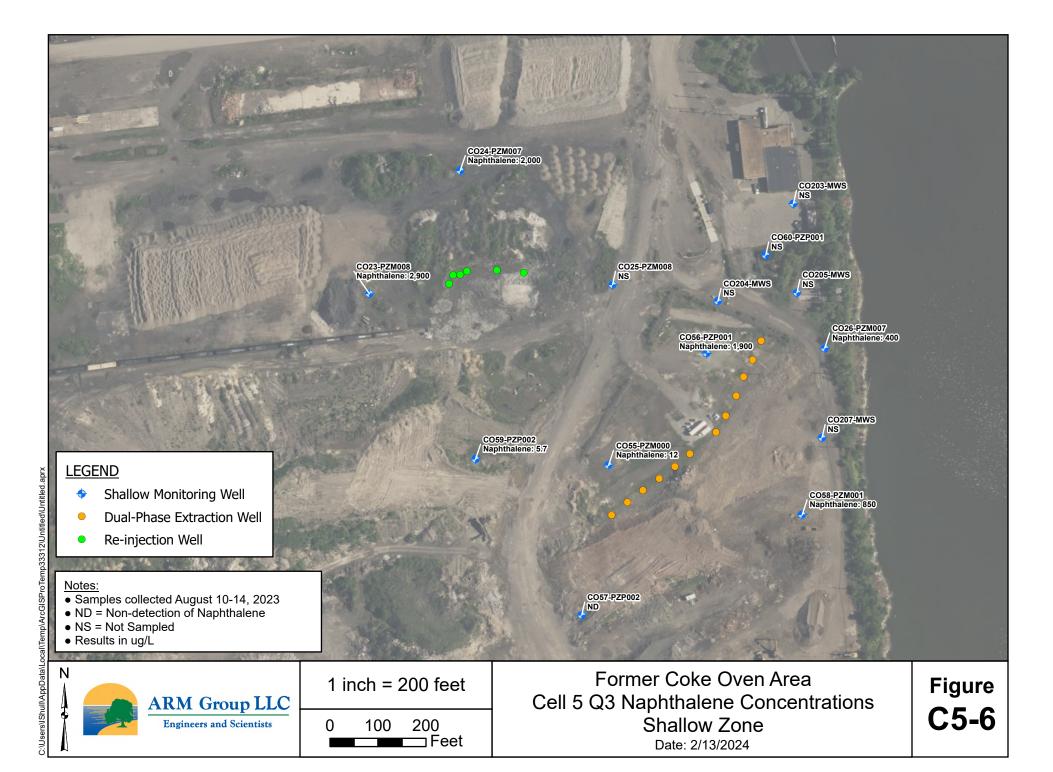


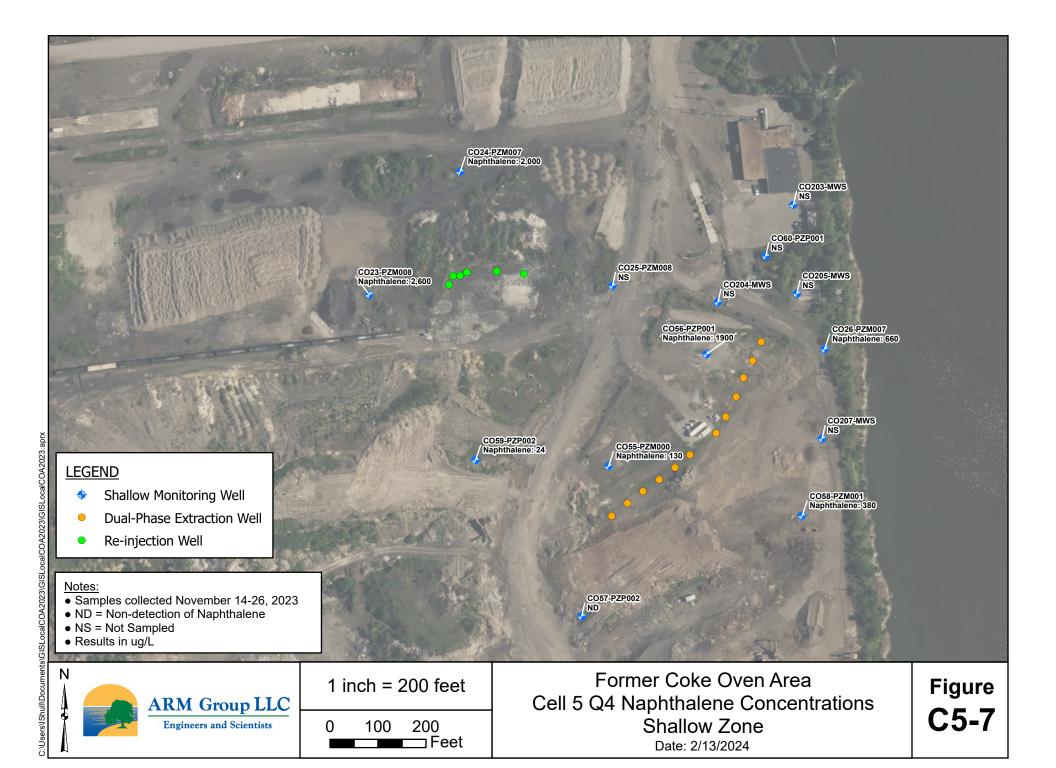


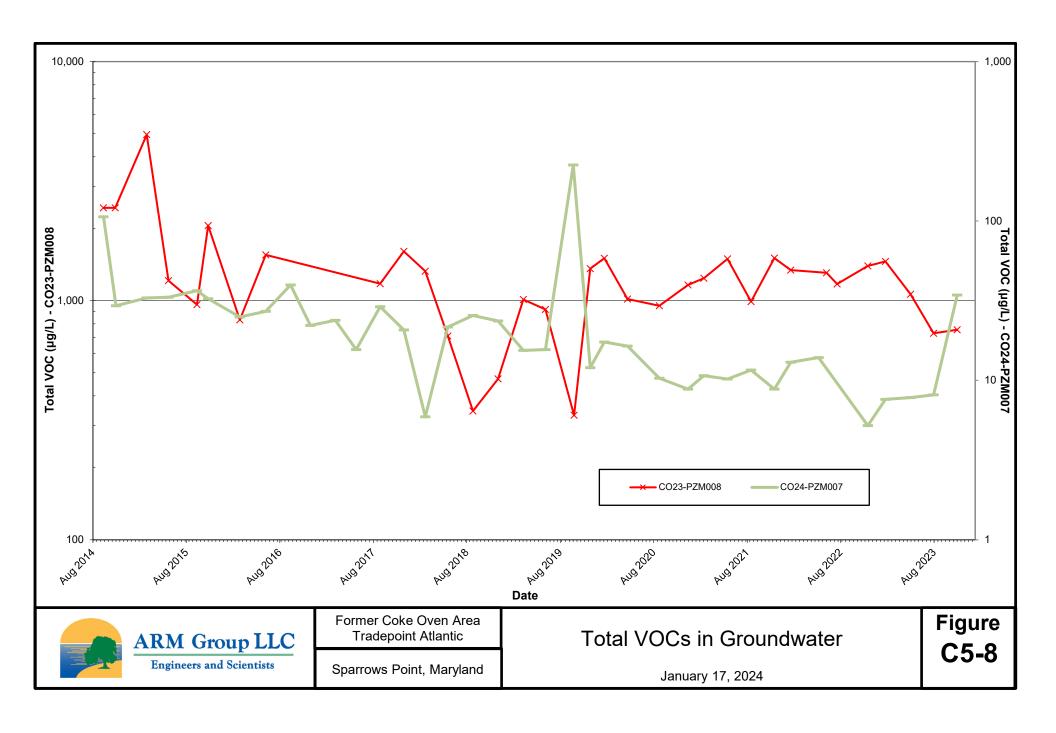


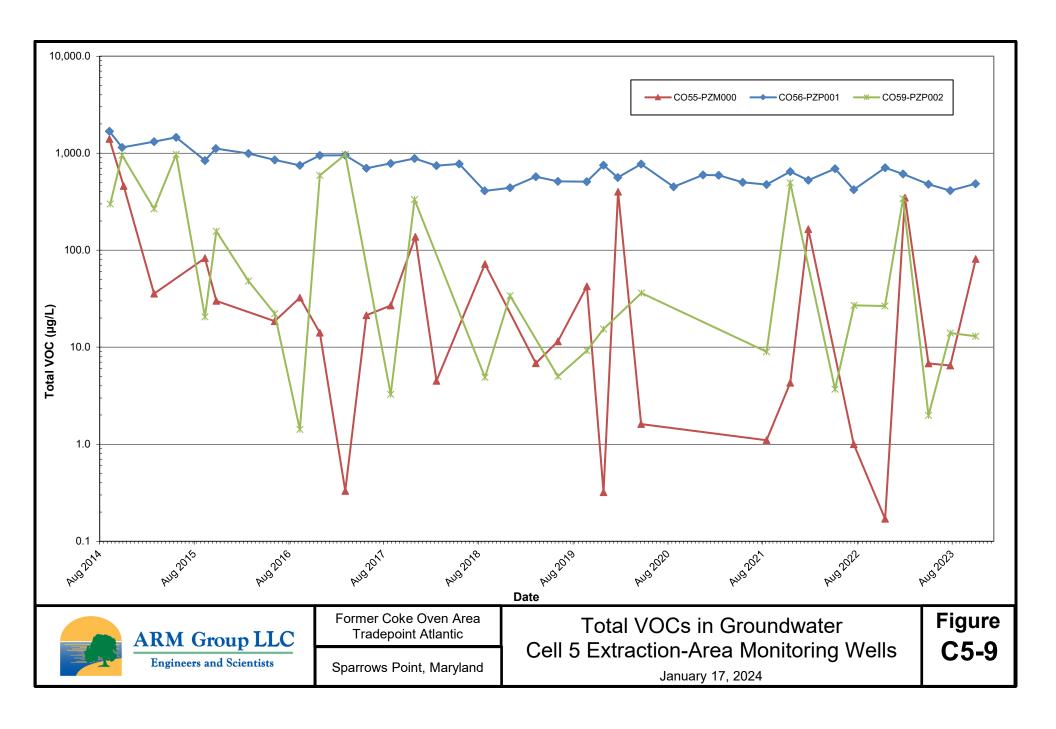


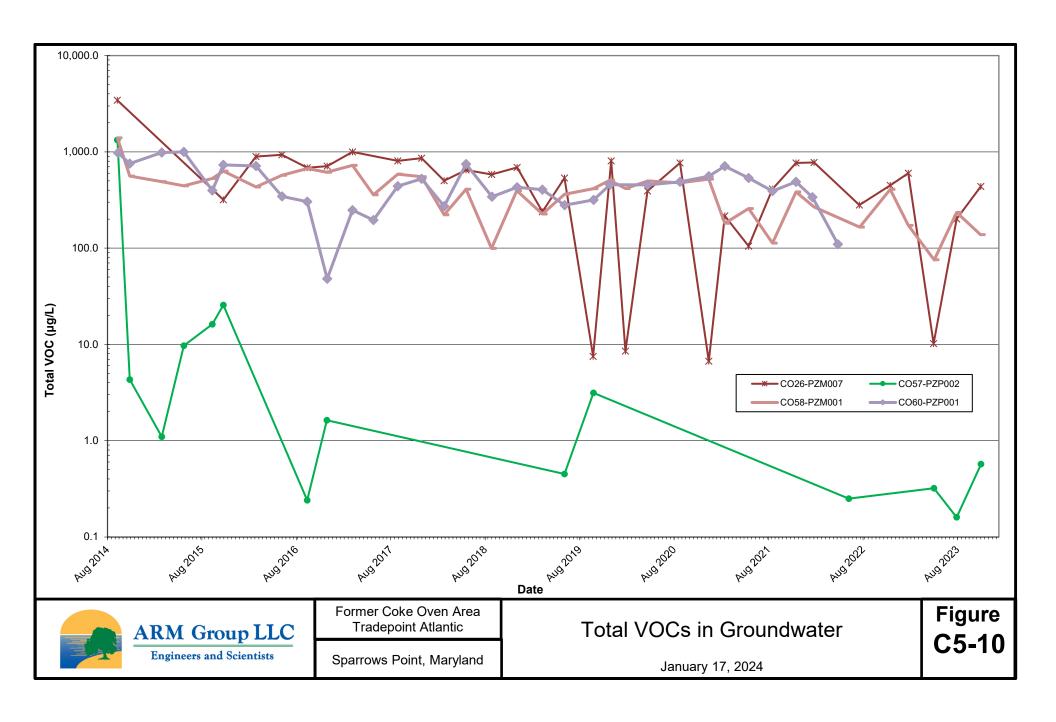


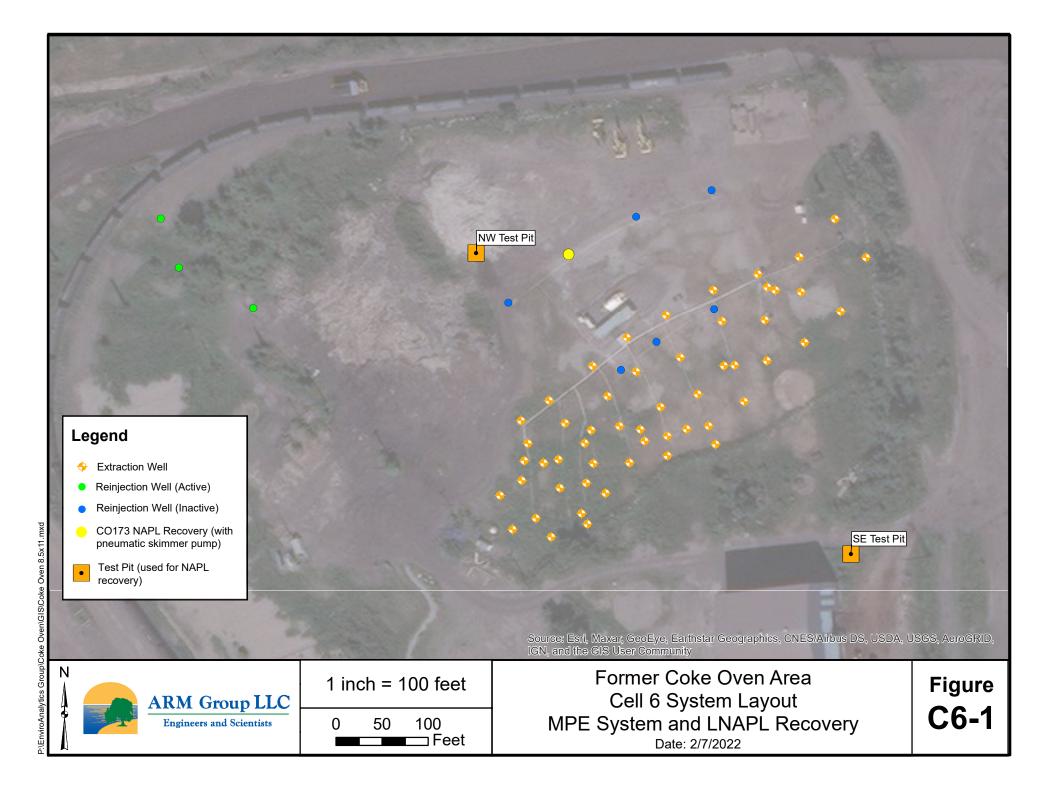


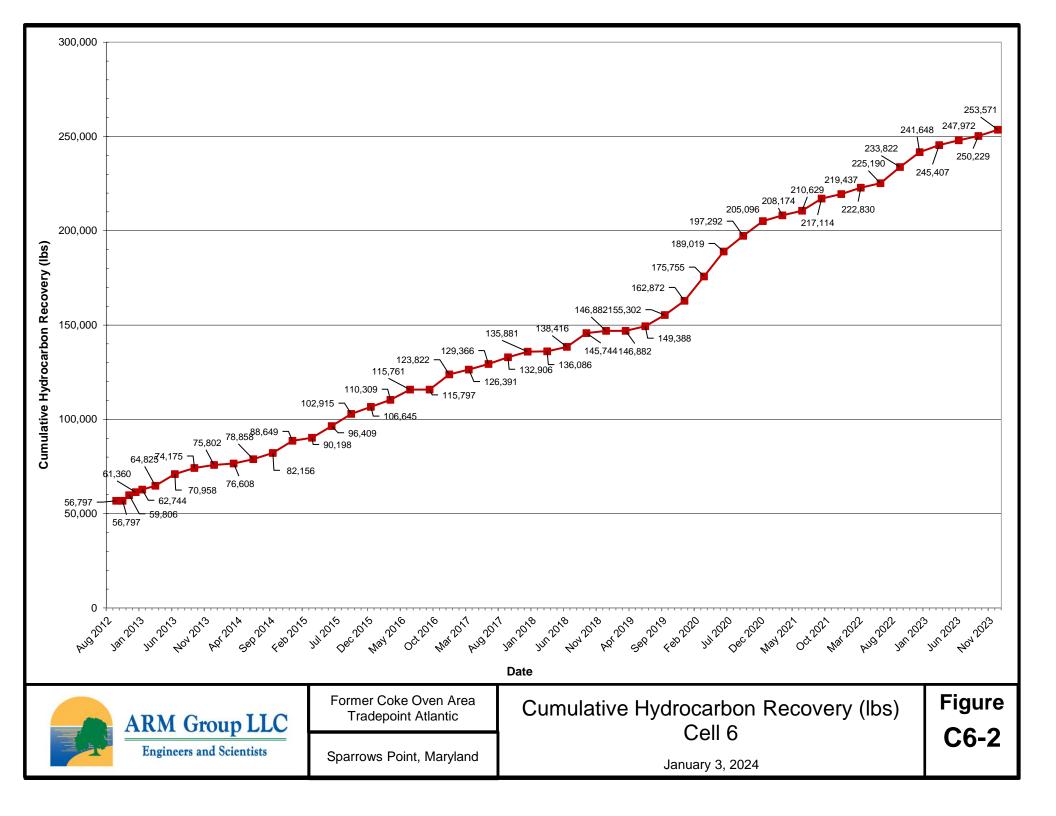














Engineers and Scientists

30 60 0 Feet

Cell 6 Extraction Wells Q4 2023 Average Product Thickness

Date: 2/13/2024

C6-3

TABLES

Table C1-1: Summary of Operation Cell 1: AS/SVE System in Former Benzol Processing Area

Cell 1 2023 Estimated Hydrocarbon Recovery

Parameter	Units	Q1 1/1 - 3/31	Q2 4/1 - 6/30	Q3 7/1 - 9/30	Q4 10/1 - 12/31	Total/Average 1/1 - 12/31
Flow Rate	SCFM	383	375	368	390	379
Average Concentrations	ug/L	5.0	5.4	3.8	11.2	6.4
Estimated Hydrocarbon Destruction/Removal Rate	pounds/hour	0.007	0.008	0.005	0.016	0.009
Total VGAC Operating Time	hours	1,789	1,556	1,577	2,117	7,040
Overall VGAC Operational Time	%	82.8%	71.2%	71.4%	95.9%	80.3%
Estimated Total Hydrocarbons Destroyed/Removed	pounds	12.9	11.8	8.3	34.7	67.7

Cell 1 Cumulative Summary of Estimated Hydrocarbon Recovery

August 3, 2010 - December 31, 2023

Parameter	Units	Quantity
Total VGAC Operating Time	hours	64,261
Overall VGAC Operational Time	%	54.7%
Estimated Total Hydrocarbons Destroyed/Removed	pounds	16,659
Estimated Hydrocarbon Destruction/Removal Rate	pounds/hour	0.2592

Table C1-2 - Cell 1 VGAC Influent Analytical Results

Month		January	February	March	April	May	June	July	August	September	October	November	December
Analyte (8260 Organics)	Units	1/3/2023	2/2/2023	3/6/2023	4/12/2023	5/16/2023	6/1/2023	7/6/2023	8/8/2023	9/6/2023	10/2/2023	11/6/2023	12/12/2023
Benzene	ug/L	6.89	3.06	3.92	8.78	2.03	ND	0.52	10.7	ND	0.26	2.26	25.6
Toluene	ug/L	0.31	0.38	0.55	4.08	0.3	ND	ND	0.18	ND	ND	0.42	4.99
m- & p-Xylenes	ug/L	ND	ND	ND	0.97	ND	ND	ND	ND	ND	ND	0.12	0.29
Total Volatile Organics	ug/L	7.2	3.44	4.47	13.83	2.33	0.00	0.52	10.88	0.00	0.00	2.8	30.88

Notes:

BOLD = Analyte detected

ug/L = micro grams per liter

ND =Non-detect

^{*}Analytes with no detections were not included within this table.

Table C1-3 Cell 1 Groundwater Analytical Results

Sample ID				CO93	3-PZM			CO191-MWS			
Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q2		
Event Date	2/22/2023	6/1/2023	8/15/2023	11/27/2023	2/22/2023	6/13/2023	8/15/2023	11/28/2023	5/30/2023		
Volatile Organic Compound											
Benzene	μg/L	5	150,000	160,000	170,000	180,000	24,000	98,000	35,000	160,000	67,000
Ethylbenzene	μg/L	700	1,400	1,500	1,500	1,400	100 U	500 U	200 U	500 U	220
Toluene	μg/L	1,000	46,000	50,000	58,000	57,000	420	4,600	1,600	10,000	6,700
Xylenes	μg/L	10,000	14,000	15,000	16,000	17,000	200 U	1,000 U	400 U	1,000 U	2,200
Total Volatile Organics	μg/L		211,400	226,500	245,500	255,400	24,420	102,600	36,600	170,000	76,120
Semi-Volatile Organic Compound	Units	PAL									
Naphthalene	μg/L	0.12	2,200	5,400	1,900	2,100	200 U	1,000 U	400 U	330	290

Notes:

Bold = Analyte Detected

Red = Exceedence of groundwater Project Action Limit (PAL)

 μ g/L = micrograms per liter

U = Analyte not detected above reporting limit

Table C1-4
Cell 1 Monitoring Well Groundwater Elevations

Well ID		Aquifer	Well Depth	2/6/	2023	5/17	/2023	8/1/	2023	11/7/2023	
	Top of PVC Elevation (ft)		from Ground	Depth to Groundwater	Groundwater Elevation (ft)						
CO93-PZM	12.12	Shallow	20.00	10.87	1.25	10.65	1.47	9.79	2.33	10.96	1.16
CO190-MWS	15.45	Shallow	20.00	14.49	0.96	14.20	1.25	13.43	2.02	14.42	1.03
CO191-MWS	13.48	Shallow	20.00	12.97	0.51	12.51	0.97	11.70	1.78	12.80	0.68

Table C2-1
Cell 2 Monitoring Well Construction Information

Monitoring Well	Monitoring Well	T A D A STALL	NT 41:	T	Top of Casing	Protection	Well Total	Riser	Screen
Designation	Temporary Identification	Installation Method	Northing	Easting	Elevation	Cover Type	Depth	Length	Length
CO03-PZM005		Hollow Stem Auger	562990.712	1455398.333	13.53	Steel Riser	17.00	7.00	10.00
CO27-PZM012		Hollow Stem Auger	563239.965	1454916.917	5.12	Steel Riser	15.00	5.00	10.00
CO27-PZM046		Hollow Stem Auger	563239.958	1454913.372	5.17	Steel Riser	49.00	39.00	10.00
CO28-PZM010		Unknown	562891.927	1454280.619	12.34	Steel Riser	Unknown	Unknown	Unknown
CO28-PZM048		Hollow Stem Auger	562888.758	1454283.654	12.69	Steel Riser	58.00	48.00	10.00
CO36-PZM008	Cell 2 - MW1 (S)	Hollow Stem Auger	563212.310	1454571.760	6.94	Steel Riser	15.00	5.00	10.00
CO36-PZM043	Cell 2 - MW8 (I)	Hollow Stem Auger	563214.490	1454578.370	6.92	Steel Riser	50.00	30.00	20.00
CO37-PZM003	Cell 2 - MW2 (S)	Hollow Stem Auger	563268.520	1455158.690	12.34	Steel Riser	15.00	5.00	10.00
CO37-PZM038	Cell 2 - MW9 (I)	Hollow Stem Auger	563268.500	1455154.680	12.12	Steel Riser	50.00	30.00	20.00
CO38-PZM006	Cell 2 - MW3 (S)	Hollow Stem Auger	563078.800	1454743.790	6.75	Steel Riser	13.00	3.00	10.00
CO38-PZM043	Cell 2 - MW10 (I)	Hollow Stem Auger	563078.330	1454737.750	6.65	Steel Riser	50.00	30.00	20.00
CO39-PZM007	Cell 2 - MW4 (S)	Hollow Stem Auger	563141.660	1455095.700	7.75	Steel Riser	15.00	5.00	10.00
CO39-PZM042	Cell 2 - MW11 (I)	Hollow Stem Auger	563140.070	1455089.800	7.91	Steel Riser	50.00	30.00	20.00
CO40-PZM008	Cell 2 - MW5 (S)	Hollow Stem Auger	563039.410	1455081.700	7.47	Steel Riser	15.00	5.00	10.00
CO41-PZM001	Cell 2 - MW6 (S)	Hollow Stem Auger	562873.180	1454953.000	13.57	Steel Riser	15.00	5.00	10.00
CO41-PZM036	Cell 2 - MW12 (I)	Hollow Stem Auger	562865.340	1454950.750	13.60	Steel Riser	50.00	30.00	20.00
CO42-PZM004	Cell 2 - MW7 (S)	Hollow Stem Auger	563177.720	1455458.510	10.83	Steel Riser	15.00	5.00	10.00
CO121-PZM	CO121-SB075	Unknown	563301.930	1455356.120	11.87	Steel Riser	14.00	Unknown	Unknown
CO177-MWS	COK-MWS	Hollow Stem Auger	563234.958	1454751.722	6.62	Steel Riser	15.00	5.00	10.00
CO177-MWI	COK-MWI	Hollow Stem Auger	563234.629	1454749.248	6.83	Steel Riser	50.00	30.00	20.00
CO178-MWI	COL-MWI	Hollow Stem Auger	563246.333	1454911.001	7.56	Steel Riser	50.00	30.00	20.00
CO179-MWS	COM-MWS	Hollow Stem Auger	563262.590	1455064.510	8.11	Steel Riser	15.00	5.00	10.00
CO179-MWI	COM-MWI	Hollow Stem Auger	563247.848	1454916.386	7.43	Steel Riser	50.00	30.00	20.00
CO180-MWS	CON-MWS	Hollow Stem Auger	563190.140	1454350.590	12.01	Steel Riser	15.00	5.00	10.00
CO180-MWI	CON-MWI	Hollow Stem Auger	563192.150	1454354.470	11.99	Steel Riser	50.00	30.00	20.00
CO181-MWS	COO-MWS	Hollow Stem Auger	563024.250	1454318.340	12.70	Steel Riser	15.00	5.00	10.00
CO181-MWI	COO-MWI	Hollow Stem Auger	563028.380	1454319.030	12.68	Steel Riser	50.00	30.00	20.00
CO182-MWI	COP-MWI	Hollow Stem Auger	563127.660	1454935.030	7.53	Steel Riser	50.00	30.00	20.00
CO184-MWI	COR-MWI	Hollow Stem Auger	562836.854	1454628.124	11.65	Steel Riser	37.00	22.00	15.00
CO186-MWS	COT-MWS	Hollow Stem Auger	562911.800	1455128.850	11.74	Steel Riser	20.00	5.00	15.00
CO188-MWI	COV-MWI	Hollow Stem Auger	562760.829	1455004.678	12.20	Steel Riser	50.00	30.00	20.00
CO209-MWS		Hollow Stem Auger	562600.385	1453757.934	10.70	Steel Riser	25.00	15.00	10.00
CO209-MWI		Hollow Stem Auger	562605.794	1453757.191	10.43	Steel Riser	50.00	40.00	10.00
GD01-MWI		Hollow Stem Auger	563597.259	1454233.229	7.30	Steel Riser	50.00	40.00	10.00
GD02-MWI		Hollow Stem Auger	563649.399	1454827.562	8.89	Steel Riser	50.00	40.00	10.00

Table C2-2
Cell 2 Monitoring Well Groundwater Elevations

			Well Depth		2/6/2023			5/17/2023			8/1/2023			11/7/2023	
Well ID	Top of PVC Elevation (ft)	Aquifer	from Ground Surface (ft)		Groundwater Elevation (ft)	NAPL Thickness (ft)	Depth to Groundwater	Groundwater Elevation (ft)	NAPL Thickness (ft)	Depth to Groundwater	Groundwater Elevation (ft)	NAPL Thickness (ft)	Depth to Groundwater	Groundwater Elevation (ft)	NAPL Thickness (ft)
CO03-PZM005	13.53	S	17.00	4.79	8.74		5.29	8.24		NG	NG		NG	NG	
CO27-PZM012	5.12	S	17.00	5.35	-0.23		4.74	0.38		4.48	0.64		3.71	1.41	
CO27-PZM046	5.17	I	50.00	8.11	-2.94		7.07	-1.9		6.58	-1.41		6.23	-1.06	
CO28-PZM010	12.34	S	22.00	12.77	-0.43		11.98	0.36		11.49	0.85		11.19	1.15	
CO28-PZM048	12.69	I	56.00	13.38	-0.69		12.39	0.30		12.04	0.65		11.81	0.88	
CO36-PZM008	6.94	S	15.00	7.47	-0.53		6.76	0.18		6.29	0.65		NG	NG	
CO36-PZM043	6.92	I	50.00	8.10	-1.18		7.26	-0.34		6.81	0.11		NG	NG	
CO37-PZM003	12.34	S	15.00	11.81	0.53	0.01	11.30	1.04		11.22	1.12	TRACE	NG	NG	
CO37-PZM038	12.12	I	50.00	13.03	-0.91		12.37	-0.25		11.29	0.83		11.94	0.18	
CO38-PZM006	6.75	S	13.00	6.98	-0.23		6.31	0.44		5.75	1.00		NG	NG	
CO38-PZM043	6.65	I	50.00	7.73	-1.08		7.00	-0.35		6.41	0.24		NG	NG	
CO39-PZM007	7.75	S	15.00	7.23	0.52		6.95	0.8		5.64	2.11		NG	NG	
CO39-PZM042	7.91	I	50.00	8.93	-1.02		8.29	-0.38		7.52	0.39		NG	NG	
CO40-PZM008	7.47	S	15.00	7.50	-0.03		6.91	0.56		6.09	1.38		NG	NG	
CO41-PZM001	13.57	S	15.00	13.19	0.38		12.75	0.82		11.79	1.78		13.10	0.47	
CO41-PZM036	13.60	I	50.00	14.34	-0.74		13.61	-0.01		12.90	0.70		12.89	0.71	
CO42-PZM004	10.83	S	15.00	7.32	3.51		7.23	3.6		5.02	5.81		8.37	2.46	
CO121-PZM	11.87	S	14.00	11.79	0.08		11.14	0.73		10.17	1.70		10.99	0.88	
CO122-PZM	19.42	S	22.00	6.11	13.31		NG	NG		NG	NG		NG	NG	
CO177-MWS	6.62	S	15.00	6.94	-0.32		6.29	0.33		NG	NG		5.11	1.51	
CO177-MWI	6.83	I	50.00	9.85	-3.02		8.80	-1.97		6.81	0.02		7.74	-0.91	
CO178-MWI	7.56	I	50.00	9.45	-1.89		8.59	-1.03		8.02	-0.46		7.82	-0.26	
CO179-MWS	8.11	S	15.00	10.34	-2.23		7.45	0.66		NG	NG		NG	NG	
CO179-MWI	7.43	I	50.00	7.82	-0.39		9.39	-1.96		8.85	-1.42		NG	NG	
CO180-MWS	12.01	S	15.00	12.83	-0.82		11.73	0.28		11.50	0.51		10.78	1.23	
CO180-MWI	11.99	I	50.00	12.53	-0.54	-	11.64	0.35		11.27	0.72		10.74	1.25	
CO181-MWS	12.70	S	15.00	13.39	-0.69		12.43	0.27		12.04	0.66		11.55	1.15	
CO181-MWI	12.68	I	50.00	13.19	-0.51	-	12.32	0.36	-	11.95	0.73		11.43	1.25	
CO182-MWI	7.53	I	50.00	8.62	-1.09	-	7.89	-0.36		7.23	0.30		NG	NG	
CO184-MWI	11.65	I	37.00	12.08	-0.43	TRACE	20.33	-8.68	TRACE	NG	NG		NG	NG	
CO186-MWS	11.74	S	20.00	11.64	0.10	-	11.11	0.63	-	10.03	1.71		11.00	0.74	
CO188-MWI	12.20	I	50.00	12.98	-0.78		12.35	-0.15	-	11.54	0.66		11.73	0.47	
CO209-MWS	10.70	S	25.00	11.34	-0.64		10.46	0.24		10.06	0.64		9.86	0.84	
CO209-MWI	10.43	I	50.00	11.72	-1.29		10.67	-0.24		10.35	0.08		9.22	1.21	
GD01-MWI	7.30	I	50.00	35.11	-27.81	-	35.01	-27.71	-	34.78	-27.48		NG	NG	
GD02-MWI	8.89	I	50.00	23.00	-14.11		22.68	-13.79		19.17	-10.28		NG	NG	
Notes:	•														

Notes:

I = Intermediate zone well

S = Water table well

NAPL = Non-aqueous phase liquid

-- = NAPL not observed

NG = Well not gauged due to site development activities.

Table C2-3 Cell 2 Groundwater Analytical Results

Sample ID				CO27-I	PZM012		CO28-PZM010		CO37-PZM003	
Quarter			Q1	Q2	Q3	Q4	Q2	Q2	Q3	Q4
Event Date			2/7/2023	6/1/2023	8/9/2023	11/13/2023	5/24/2023	6/13/2023	8/8/2023	11/20/2023
Volatile Organic Compound	Units	PAL								
Benzene	μg/L	5	14,000	15,000	5,500	13,000	0.19	7,600	24	4,200
Ethylbenzene	μg/L	700	170	180	64	170	0.5 U	110	2.9	25
Toluene	μg/L	1,000	4,500	5,200	1,100	4,900	0.75 U	3,100	42	1,200
Xylenes	μg/L	10,000	1,500	1,600	480	1,400	IU	1,300	30	340
Total Volatile Organics	μg/L		20,170	21,980	7,144	19,470	0.19	12,110	99	5,765
Semi-Volatile Organic Compound	Units	PAL								
Naphthalene	μg/L	0.12	1,100	1,200	470	1,100	IU	730	9.1	200

Sample ID				CO27-I	PZM046		CO37-PZM038				
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Event Date			2/7/2023	6/1/2023	8/9/2023	11/14/2023	2/14/2023	6/13/2023	8/8/2023	11/20/2023	
Volatile Organic Compound	Units	PAL									
Benzene	μg/L	5	34,000	16,000	19,000	50,000	12,000	14,000	12,000	12,000	
Ethylbenzene	μg/L	700	260	180	180	260	220	220	210	180	
Toluene	μg/L	1,000	5,800	4,600	4,200	5,000	6,800	7,000	6,300	6,000	
Xylenes	μg/L	10,000	2,000	1,400	1,400	1,600	1,900	2,000	1,800	1,500	
Total Volatile Organics	μg/L		42,060	22,180	24,780	56,860	20,920	23,220	20,310	19,680	
Semi-Volatile Organic Compound	Units	PAL									
Naphthalene	μg/L	0.12	1,100	1,000	910	1,000	1,400	1,100	1,500	1,100	

Notes:

Bold = Analyte Detected
Red = Exceedance of groundwater Project Action Limit (PAL)

μg/L = micrograms per liter

U = Analyte not detected above reporting limit

Table C2-3 Cell 2 Groundwater Analytical Results

Sample ID				CO36-I	PZM008			CO38-I	PZM006			CO39-I	PZM007	
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Event Date			2/7/2023	5/23/2023	8/10/2023	NS	2/7/2023	5/23/2023	8/8/2023	NS	2/9/2023	6/1/2023	8/8/2023	NS
Volatile Organic Compound	Units	PAL												
Benzene	μg/L	5	14,000	11,000	15,000	NS	4,600	2,900	2,800	NS	500	530	380	NS
Ethylbenzene	μg/L	700	66	48	60	NS	56	34	29	NS	3.3	2.7	2.2	NS
Toluene	μg/L	1,000	3,300	2,300	3,200	NS	920	390	470	NS	66	65	43	NS
Xylenes	μg/L	10,000	1,300	780	970	NS	450	240	200	NS	30	18	12	NS
Total Volatile Organics	μg/L		18,666	14,128	19,230	NS	6,026	3,564	3,499	NS	599.3	615.7	437.2	NS
Semi-Volatile Organic Compound	Units	PAL												
Naphthalene	μg/L	0.12	700	410	530	NS	1,200	730	590	NS	280	190	240	NS

Sample ID				CO36-I	PZM043			CO38-I	ZM043			CO39-1	PZM042	
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Event Date			2/7/2023	5/23/2023	8/10/2023	NS	2/7/2023	5/23/2023	8/8/2023	NS	2/9/2023	6/1/2023	8/8/2023	NS
Volatile Organic Compound	Units	PAL												
Benzene	μg/L	5	17,000	12,000	16,000	NS	0.19	1.3	0.71	NS	3,400	5,800	4,200	NS
Ethylbenzene	μg/L	700	58	39	46	NS	0.5 U	0.5 U	0.5 U	NS	25	62	49	NS
Toluene	μg/L	1,000	2,200	1,900	2,100	NS	0.75 U	0.75 U	0.75 U	NS	810	1,900	1,400	NS
Xylenes	μg/L	10,000	810	580	660	NS	0.73	0.96	0.7	NS	210	500	390	NS
Total Volatile Organics	μg/L		20,068	14,519	18,806	NS	0.92	2.26	1.41	NS	4,445	8,262	6,039	NS
Semi-Volatile Organic Compound	Units	PAL					l							
Naphthalene	μg/L	0.12	640	630	550	NS	0.28	IU	1 U	NS	790	1,000	870	NS

Notes:

Bold = Analyte Detected

Red = Exceedance of groundwater Project Action Limit (PAL)

μg/L = micrograms per liter

U = Analyte not detected above reporting limit

Table C2-3 Cell 2 Groundwater Analytical Results

Sample ID				CO41-I	PZM001			CO40-I	PZM008			CO182	2-MWI	
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Event Date			2/14/2023	6/2/2023	8/2/2023	11/14/2023	2/14/2023	5/25/2023	8/9/2023	NS	2/16/2023	5/31/2023	8/9/2023	NS
Volatile Organic Compound	Units	PAL												
Benzene	μg/L	5	21,000	14,000	690	11,000	5,600	9,400	740	NS	230,000	220,000	250,000	NS
Ethylbenzene	μg/L	700	710	360	14	130	55	110	5.6	NS	980	1,000	1,100	NS
Toluene	μg/L	1,000	14,000	8,100	180	3,200	1,700	3,100	110	NS	18,000	16,000	17,000	NS
Xylenes	μg/L	10,000	7,000	3,400	110	1,300	400	700	44	NS	9,200	8,900	9,500	NS
Total Volatile Organics	μg/L		42,710	25,860	994	15,630	7,755	13,310	900	NS	258,180	245,900	277,600	NS
Semi-Volatile Organic Compound	Units	PAL												
Naphthalene	μg/L	0.12	320	130	11	49	1,400	1,100	150	NS	380	2,000 U	220	NS

Sample ID				CO41-I	PZM036			CO42-F	ZM004		GD01	-MWI	GD02	2-MWI
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q2	Q4	Q2	Q4
Event Date			2/14/2023	6/2/2023	8/2/2023	11/14/2023	2/16/2023	5/25/2023	NS	11/20/2023	6/15/2023	11/27/2023	6/15/2023	11/28/2023
Volatile Organic Compound	Units	PAL												
Benzene	μg/L	5	220,000	250,000	290,000	180,000	1.7	140	NS	580	5.2	3.4	29,000	150,000
Ethylbenzene	μg/L	700	800	800	990	520	0.3	19	NS	56	0.5 U	0.5 U	60	320
Toluene	μg/L	1,000	78,000	87,000	94,000	57,000	4.1	160	NS	190	0.75 U	2.9	890	5,400
Xylenes	μg/L	10,000	15,000	14,000	18,000	10,000	2.8	140	NS	290	IU	1.3	320	1,400
Total Volatile Organics	μg/L		313,800	351,800	402,990	247,520	8.9	459	NS	1,116	5.2	7.6	30,270	157,120
Semi-Volatile Organic Compound	Units	PAL								· ·				
Naphthalene	μg/L	0.12	2,000 U	1,000 U	770	390	0.7	65	NS	170	0.39	0.25	79	660

Notes:

Bold = Analyte Detected

Red = Exceedance of groundwater Project Action Limit (PAL)

μg/L = micrograms per liter

U = Analyte not detected above reporting limit

Table C2-3 Cell 2 Groundwater Analytical Results

Sample ID			CO180-MWS	CO181-MWS	CO186-MWS	CO209-MWS
Quarter			Q2	Q2	Q2	Q2
Event Date			5/23/2023	5/24/2023	6/13/2023	6/2/2023
Volatile Organic Compound	Units	PAL				
Benzene	μg/L	5	17,000	21,000	9,500	180
Ethylbenzene	μg/L	700	86	130	22	5.7
Toluene	μg/L	1,000	4,700	6,300	460	170
Xylenes	μg/L	10,000	1,500	2,000	150	82
Total Volatile Organics	μg/L		23,286	29,430	10,132	437.7
Semi-Volatile Organic Compound	Units	PAL				
Naphthalene	μg/L	0.12	1,200	1,700	100 U	2,400

Sample ID			CO180-MWI	CO181-MWI	CO209-MWI	CO28-PZM048
Quarter			Q2	Q2	Q2	Q2
Event Date			5/23/2023	5/24/2023	6/2/2023	5/24/2023
Volatile Organic Compound	Units	PAL				
Benzene	μg/L	5	18,000	23,000	2,300	93,000
Ethylbenzene	μg/L	700	78	120	71	260
Toluene	μg/L	1,000	3,900	5,500	340	1,900
Xylenes	μg/L	10,000	1,200	1,800	140	4,800
Total Volatile Organics	μg/L		23,178	30,420	2,851	99,960
Semi-Volatile Organic Compound	Units	PAL				
Naphthalene	μg/L	0.12	880	1,800	13,000	1,600

Notes:

Bold = Analyte Detected
Red = Exceedance of groundwater Project Action Limit (PAL)

μg/L = micrograms per liter

U = Analyte not detected above reporting limit

Table C3-1
Cell 3 Air Sparge Well Construction Information

Air Sparge Well Designation	Installation Method	Northing	Easting	Well Depth (ft bgs)	Screen Interval (ft bgs)	Riser Length
AS-1	Hollow Stem Auger	561764.53	1454822.67	25.8	23.8-25.8	24.2
AS-2	Hollow Stem Auger	561759.86	1454785.04	25.8	23.8-25.8	24.7
AS-3	Hollow Stem Auger	561756.68	1454743.04	25.7	23.7-25.7	24.2
AS-4	Hollow Stem Auger	561753.05	1454705.40	26.9	24.9-26.9	25.6
AS-5	Hollow Stem Auger	561746.83	1454670.55	24.6	22.6-24.6	22.9
AS-6	Hollow Stem Auger	561739.92	1454627.92	25.8	23.8-25.8	24.7
AS-7	Hollow Stem Auger	561735.75	1454592.11	27.0	25-27	25.7
AS-8	Hollow Stem Auger	561730.50	1454551.31	26.5	24.5-26.5	25.3
AS-9	Hollow Stem Auger	561727.96	1454509.48	26.2	24.2-26.2	24.9
AS-10	Hollow Stem Auger	561726.26	1454468.55	26.8	24.8-26.8	25.4
AS-11	Hollow Stem Auger	561724.23	1454429.15	22.2	20.2-22.2	20.8
AS-12	Hollow Stem Auger	561724.31	1454388.28	24.5	22.5-24.5	23.2
AS-13	Hollow Stem Auger	561729.46	1454349.75	27.4	25.4-27.4	25.8
AS-14	Hollow Stem Auger	561735.14	1454312.14	23.5	21.5-25.5	22.0
AS-15	Hollow Stem Auger	561740.06	1454271.58	27.4	25.4-27.4	25.9

Table C3-2: Summary of Operation Cell 3: AS/SVE System in Cove Area

Cell 3 2023 Estimated Hydrocarbon Recovery

Parameter	Units	Q1 1/1 - 3/31	Q2 4/1 - 6/30	Q3 7/1 - 9/30	Q4 10/1 - 12/31	Total/Average 1/1 - 12/31
Flow Rate ¹	SCFM	340	307	281	324	313
Average Concentrations	ug/L	1.7	4.2	1.9	3.5	2.79
Estimated Hydrocarbon Destruction/Removal Rate	pounds/hour	0.002	0.005	0.002	0.004	0.003
Total VGAC Operating Time	hours	1,996	1,819	2,112	2,199	8,124
Overall VGAC Operational Time	%	92.4%	83.3%	95.6%	99.6%	92.7%
Estimated Total Hydrocarbons Destroyed/Removed	pounds	4.3	8.7	4.1	9.2	26.3

¹Flow rates are calculated using the recorded SVE flow temperature.

Cell 3 Cumulative Summary of Estimated Hydrocarbon Recovery

June 24, 2011 - December 31, 2023

Parameter	Units	Quantity
Total VGAC Operating Time	hours	62,076
Overall VGAC Operational Time	%	56.5%
Estimated Total Hydrocarbons Destroyed/Removed	pounds	2,328
Estimated Hydrocarbon Destruction/Removal Rate	pounds/hour	0.0375

Table C3-3 - Cell 3 VGAC Influent Analytical Results

Month		January	February	March	April	May	June	July	August	September	October	November	December
Analyte (8260 Organics)	Units	1/3/2023	2/2/2023	3/6/2023	4/12/2023	5/15/2023	6/1/2023	7/6/2023	8/8/2023	9/6/2023	10/2/2023	11/6/2023	12/12/2023
Acetone	ug/L	1.23	ND	ND	1.76	ND	ND	1.1	ND	ND	ND	ND	ND
Benzene	ug/L	1.94	1.29	0.33	4.21	1.02	0.39	0.38	0.71	ND	ND	ND	7.69
Chloroethane	ug/L	ND	ND	ND	1.54	1.39	1.29	1.39	ND	1.65	0.61	0.68	0.94
1,1-Dichloroethane	ug/L	ND	ND	ND	0.15	0.17	0.19	0.22	ND	0.13	ND	ND	ND
Toluene	ug/L	0.13	0.11	ND	0.35	ND	ND	ND	ND	ND	ND	ND	0.44
Total Volatile Organics	ug/L	3.3	1.4	0.33	8.01	2.58	1.87	3.09	0.71	1.78	0.61	0.68	9.07

Notes:

BOLD = Analyte detected

ug/L = micro grams per liter

ND = Analyte not detected above reporting limit.
*Analytes with no detections were not

included within this table.

Table C3-4 Cell 3 Groundwater Analytical Results

Sample ID				CO30-I	PZM015			CO195	-MWS	
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Event Date			2/8/2023	5/19/2023	8/11/2023	11/8/2023	2/8/2023	5/31/2023	8/11/2023	11/8/2023
Volatile Organic Compounds	Units	PAL								
Benzene	μg/L	5	50,000	43,000	56,000	40,000	47,000	41,000	45,000	30,000
Ethylbenzene	μg/L	700	110	87	110	72	96	250 U	73	55
Toluene	μg/L	1,000	3,900	3,200	4,000	3,000	3,800	3,400	3,100	2,700
Xylenes	μg/L	10,000	1,400	1,100	1,300	920	1,100	1,100	830	700
Total Volatile Organics	μg/L		55,410	47,387	61,410	43,992	51,996	45,500	49,003	33,455
Semi-Volatile Organic Compounds	Units	PAL		•		•			•	
Naphthalene	μg/L	0.12	2,600	2,000	2,300	2,000	2,300	2,200	1,600	2,000

Notes:

Bold = Analyte Detected

Red = Exceedence of groundwater Project Action Limit (PAL)

NS = Not Sampled

 μ g/L = Micrograms per liter U = Analyte not detected

Table C3-4 Cell 3 Groundwater Analytical Results

Sample ID			CO194	-MWS	CO196	5-MWS	CO19	8-MWS	CO201	I-MWS	CO30-PZM060
Quarter			Q2	Q4	Q2	Q4	Q2	Q4	Q2	Q4	Q2
Event Date			5/30/2023	11/8/2023	5/31/2023	11/8/2023	5/19/2023	11/8/2023	5/31/2023	11/8/2023	5/19/2023
Volatile Organic Compounds	Units	PAL									
Benzene	μg/L	5	600	98	6,000	2,500	190	310	1,100	330	7.5
Ethylbenzene	μg/L	700	6.3	0.79	14	6.1	1.7	10 U	3.9	0.94	0.5 U
Toluene	μg/L	1,000	130	19	490	200	42	79	79	6.9	0.75 U
Xylenes	μg/L	10,000	78	9.6	160	74	22	34	56	11	1 U
Total Volatile Organics	μg/L		814.3	127.39	6,664	2,780	255.7	423	1,238.9	348.84	7.5
Semi-Volatile Organic Compounds	Units	PAL									
Naphthalene	μg/L	0.12	1,900	470	600	320	1,300	1,900	180	44	1 U

Notes:

Bold = Analyte Detected

Red = Exceedence of groundwater Project Action Limit (PAL)

NS = Not Sampled

 μ g/L = Micrograms per liter U = Analyte not detected

Table C4-1: Summary of Operation
Cell 4: DNAPL Occurrence and Recovery in Former Coke Oven Area

Well ID		DNAPL ery Period	Pre-	2023		d DNAPL red 2023		ive Total Recovered
	Begin	End	(gal)	(lbs) ¹	(gal)	(lbs)1	(gal)	(lbs)1
CO123	1-Jan-16	18-Jan-23 ²	661	6,344	13	120	674	6,464
CO124	1-Jan-16	18-Jan-23 ²	634	6,085	5	50	639	6,135
CO125	1-Jan-16	17-Jan-23 ²	241	2,313	0	0	241	2,313
CO169	1-Jan-16	Pre-2020	50	480	0	0	50	480
	Tot	tal Recovery:	1,586	15,221	18	170	1,604	15,392

Notes:

¹ Weight is calculated based on oil density of 1.15 grams per cubic centimeter.

² All Cell 4 wells abandoned 1/17-18/23. Final DNAPL recovery was performed at CO123 and CO124 on 1/4/23 and 1/16/23 prior to well abandonments.

Table C5-1: Summary of Operation Cell 5: DPE System in Former Coke Oven Area

Parameter	Units	Q1 1/1 - 3/31	Q2 4/1 - 6/30	Q3 7/1 - 9/30	Q4 10/1 - 12/31	Total 1/1 - 12/31
Total Discharge	gallons	551,395	1,516,400	2,002,305	671,975	4,742,075
Total Operating Time	hours	1,711	1,380	2,204	1,575	6,870
Overall Operational Time	%	79.2%	63.2%	99.8%	71.3%	78.4%
Extracted Total Concentrations	lbs/gal	5.34E-05	6.49E-05	5.04E-05	5.16E-05	2.20E-04
Effluent Total Concentrations	lbs/gal	0.0	0.0	0.0	0.0	0.0
Extracted Hydrocarbons	lbs	29.4	98.4	100.9	34.7	263
Effluent Hydrocarbons	lbs	0.0	0.1	0.0	0.0	0.1
Total Hydrocarbons Removed	lbs	29.4	98.3	100.9	34.7	263

Table C5-2
Cell 5 Monitoring Well Construction Information

Monitoring Well Designation	Monitoring Well Temporary Identification	Installation Method	Northing	Easting	Top of Casing Elevation	Protection Cover Type	Well Total Depth	Riser Length	Screen Length
CO23-PZM008		Hollow Stem Auger	561783.979	1457095.859	11.17	Flush Mount	19	9	10
CO24-PZM007		Hollow Stem Auger	562048.175	1457276.816	12.02	Flush Mount	19	9	10
CO26-PZM007		Hollow Stem Auger	561682.425	1458048.048	12.76	Flush Mount	20	10	10
CO55-PZM000	Cell 5 - MW1 (S)	Hollow Stem Auger	561434.420	1457585.900	15.10	Steel Riser	15	5	10
CO56-PZP001	Cell 5 - MW2 (S)	Hollow Stem Auger	561668.410	1457790.050	15.92	Steel Riser	15	5	10
CO57-PZP002	Cell 5 - MW3 (S)	Hollow Stem Auger	561122.520	1457530.000	16.59	Steel Riser	15	5	10
CO58-PZM001	Cell 5 - MW4 (S)	Hollow Stem Auger	561331.310	1457989.130	14.31	Steel Riser	15	5	10
CO59-PZP002	Cell 5 - MW5 (S)	Hollow Stem Auger	561446.980	1457308.790	16.75	Steel Riser	15	5	10
CO60-PZP001	Cell 5 - MW6 (S)	Hollow Stem Auger	561872.550	1457913.360	15.83	Steel Riser	15	5	10

Table C5-3
Cell 5 Monitoring Well Groundwater Elevations

				Well Depth	2/6/	2023	5/17	7/2023	8/1/	2023	11/7	7/2023
Well ID	Temporary Well ID	Top of PVC Elevation (ft)	Aquifer	from Ground	Depth to Groundwater	Groundwater Elevation (ft)						
CO23-PZM008		15.74	Shallow	19.00	15.37	0.37	14.95	0.79	13.31	2.43	14.87	0.87
CO24-PZM007		15.95	Shallow	19.00	15.00	0.95	14.55	1.40	13.39	2.56	14.55	1.40
CO25-PZM008		12.03	Shallow	20.00	15.82	-3.79	15.45	-3.42	14.21	-2.18	15.25	-3.22
CO26-PZM007		12.76	Shallow	20.00	15.89	-3.13	15.30	-2.54	14.21	-1.45	15.23	-2.47
CO55-PZM000	Cell 5 - MW1 (S)	15.10	Shallow	15.00	14.75	0.35	15.41	-0.31	13.24	1.86	14.26	0.84
CO56-PZP001	Cell 5 - MW2 (S)	15.92	Shallow	15.00	14.96	0.96	15.25	0.67	14.28	1.64	15.07	0.85
CO57-PZP002	Cell 5 - MW3 (S)	16.59	Shallow	15.00	16.43	0.16	15.94	0.65	14.78	1.81	15.79	0.80
CO58-PZM001	Cell 5 - MW4 (S)	14.31	Shallow	15.00	14.22	0.09	14.70	-0.39	12.67	1.64	13.44	0.87
CO59-PZP002	Cell 5 - MW5 (S)	16.75	Shallow	15.00	16.45	0.30	16.02	0.73	14.80	1.95	15.83	0.92
CO60-PZP001	Cell 5 - MW6 (S)	15.83	Shallow	15.00	*	*	*	*	*	*	*	*
CO203-MWS		10.65	Shallow	25.00	10.51	0.14	10.02	0.63	9.11	1.54	9.80	0.85
CO204-MWS		16.27	Shallow	25.00	15.92	0.35	15.42	0.85	14.28	1.99	15.24	1.03
CO205-MWS		15.55	Shallow	25.00	15.76	-0.21	15.28	0.27	14.13	1.42	15.06	0.49
CO207-MWS		14.78	Shallow	25.00	14.62	0.16	14.12	0.66	12.97	1.81	13.87	0.91

Note:

^{* =} No water, well obstructed

Table C5-4 Cell 5 Groundwater Analytical Results

Sample ID				CO23-F	ZM008			CO24-I	PZM007			CO26-I	ZM007	
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Event Date			2/8/2023	5/17/2023	8/15/2023	11/15/2023	2/8/2023	5/17/2023	8/15/2023	11/15/2023	2/8/2023	5/17/2023	8/14/2023	11/15/2023
Volatile Organic Compounds	Units	PAL												
Benzene	μg/L	5	580	410	320	320	4.3	2.9	3.9	7.7	260	4.7	120	240
Ethylbenzene	μg/L	700	30	24	20	16	3.3	2.7	4.2	7	9.5	0.18	1.8	4.4
Toluene	μg/L	1000	330	240	70	150	15 U	2.2	15 U	5.6	120	2.3	41	100
Xylenes	μg/L	10000	520	390	320	270	20 U	10 U	20 U	14	210	3	38	93
Total Volatile Organics	μg/L		1,460	1,064	730	756	7.6	7.8	8.1	34.3	599.5	10.18	200.8	437.4
Semi-Volatile Organic Compounds	Units	PAL												
Naphthalene	μg/L	0.12	4,100	4,000	2,900	2,600	1,900	2,000	2,000	2,000	2,500	30	400	660

Sample ID				CO55-I	PZM000			CO56-	PZP001			CO57-	PZP002	
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Event Date			2/16/2023	5/18/2023	8/10/2023	11/16/2023	2/9/2023	5/18/2023	8/10/2023	11/15/2023	2/8/2023	5/18/2023	8/14/2023	11/16/2023
Volatile Organic Compounds	Units	PAL												
Benzene	μg/L	5	170	2.4	2.8	48	310	210	160	230	0.5 U	0.5 U	0.16	0.32
Ethylbenzene	μg/L	700	5.8	0.3	0.17	1.1	8.9	8.4	8	7.5	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	μg/L	1000	76	1.2	1.6	16	72	70	73	76	0.75 U	0.32	0.75 U	0.25
Xylenes	μg/L	10000	96	2.9	1.9	16	220	190	170	170	1 U	1 U	1 U	1 U
Total Volatile Organics	μg/L		347.8	6.8	6.47	81.1	610.9	478.4	411	483.5	0	0.32	0.16	0.57
Semi-Volatile Organic Compounds	Units	PAL												
Naphthalene	μg/L	0.12	650	7.7	12	130	2,600	2,100	1,900	1,900	1 U	1 U	1 U	1 U

Sample ID				CO58-I	ZM001			CO59-	PZP002	
Quarter			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Event Date			2/8/2023	5/19/2023	8/14/2023	11/14/2023	2/9/2023	5/18/2023	8/10/2024	11/16/2023
Volatile Organic Compounds										
Benzene	μg/L	5	82	39	110	70	150	0.27	2.5	5.9
Ethylbenzene	μg/L	700	4.2	1.6	5.4	2.8	7.4	0.26	1.3	0.46
Toluene	μg/L	1000	21	10	36	21	52	0.35	2.8	1.2
Xylenes	μg/L	10000	65	25	84	44	130	1.1	7.4	5.4
Total Volatile Organics	μg/L		172.2	75.6	235.4	137.8	339.4	1.98	14.0	12.96
Semi-Volatile Organic Compounds	Units	PAL								
Naphthalene	μg/L	0.12	590	220	850	380	680	1	5.7	24

Notes:

Bold = Analyte Detected

Red = Exceedance of groundwater Project Action Limit (PAL)

NS = Not Sampled

 $\mu g/L = Micrograms per liter$

U = Analyte not detected above reporting limit

Table C6-1 Summary of Operation Cell 6: LNAPL Recovery in Former Benzol Processing Area

Method	Recovery Period		Pre-2023		LNA Recove			APL ered Q2	LNA Recove			APL ered Q4		LNAPL red 2023	Cumulative Total LNAPL Recovered	
	Begin	End	(gal)	(lbs) ¹	(gal)	(lbs)1	(gal)	(lbs) ¹	(gal)	(lbs) ¹	(gal)	(lbs) ¹	(gal)	(lbs) ¹	(gal)	(lbs) ¹
Manual Skimming and Bailing	7/23/2010	2019	16,162	118,435	0	0	0	0	0	0	0	0	0	0	16,162	118,435
CO173 Pneumatic Skimmer Pump	12/17/2019	On-going	7,540	55,253	214	1,568	191	1,400	221	1,619	189	1,385	815	5,972	8,355	61,225
Test Pit Double Diaphragm Pump	9/6/2022	On-going	1,631	11,952	299	2,191	159	1,165	87	638	267	1,957	812	5,950	2,443	17,902
MPE System	10/1/2016	2021	7,643	56,008	0	0	0	0	0	0	0	0	0	0	7,643	56,008
	Tota	al Recovery	32,976	241,648	513	3,759	350	2,565	308	2,257	456	3,342	1,627	11,923	34,603	253,571

Notes:

¹ Weight is calculated based on average BP-MW-05 and BP-MW-08 oil density of 0.878 grams per cubic centimeter, measured by EA (2009) by ASTM Method D1481.

Table C6-2 Cell 6 2023 CO173 Groundwater Gauging and LNAPL Thickness Data

Date:	Depth to Product:	Depth to Groundwater:	LNAPL Thickness (ft):
1/3/23	15.07	19.12	4.05
1/10/23	15.33	18.76	3.43
1/17/23	15.53	18.70	3.17
1/24/23	15.85	18.72	2.87
2/2/23	15.80	18.88	3.08
2/7/23	16.05	18.89	2.84
2/14/23	16.13	18.85	2.72
2/21/23	15.73	18.68	2.95
3/1/23	15.82	18.74	2.92
3/7/23	15.73	18.75	3.02
3/21/23	16.18	18.91	2.73
4/4/23	16.27	18.70	2.43
4/11/23	16.34	18.77	2.43
4/18/23	16.36	18.89	2.53
4/25/23	16.46	18.76	2.30
5/2/23	15.24	18.55	3.31
5/9/23	15.46	18.75	3.29
5/16/23	15.68	18.78	3.10
5/23/23	15.96	18.69	2.73
6/1/23	16.04	18.70	2.66
6/7/23	16.10	18.88	2.78
6/13/23	16.10	18.88	2.78
6/20/23	16.25	19.10	2.85
6/27/23	16.17	18.67	2.50
7/7/23	15.97	18.88	2.91
7/11/23	15.82	18.88	3.06
7/18/23	15.93	18.83	2.90
7/25/23	14.84	18.25	3.41
7/31/23	13.88	18.68	4.80
8/8/23	14.14	18.22	4.08
8/16/23	14.61	18.88	4.27
8/22/23	15.00	18.78	3.78
8/30/23	15.23	18.78	3.55
9/5/23	15.50	18.88	3.38
9/12/23	15.62	18.54	2.92
9/20/23	15.72	18.65	2.93
9/26/23	15.33	18.50	3.17
10/3/23	15.40	18.59	3.19
10/10/23	15.64	18.68	3.04
10/17/23	15.79	18.64	2.85
10/24/23	16.05	18.70	2.65
10/31/23	16.12	18.70	2.58
11/7/23	16.09	18.61	2.52
11/14/23	16.30	18.67	2.37
11/21/23	16.38	18.62	2.24
11/28/23	15.83	18.60	2.77
12/6/23	15.80	18.82	3.02
12/12/23	15.10	18.31	3.21
12/20/23	14.08	18.13	4.05
12/27/23	14.63	18.76	4.13

APPENDIX A 2023 Laboratory Analytical Reports



ANALYTICAL REPORT

Lab Number: L2306536

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA-GW
Project Number: 2001210
Report Date: 02/10/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: COA-GW **Project Number:** 2001210

 Lab Number:
 L2306536

 Report Date:
 02/10/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2306536-01	CO36-PZM043	WATER	Not Specified	02/07/23 09:15	02/07/23
L2306536-02	CO36-PZM008	WATER	Not Specified	02/07/23 09:55	02/07/23
L2306536-03	CO38-PZM043	WATER	Not Specified	02/07/23 10:50	02/07/23
L2306536-04	CO38-PZM006	WATER	Not Specified	02/07/23 11:35	02/07/23
L2306536-05	CO27-PZM046	WATER	Not Specified	02/07/23 12:25	02/07/23
L2306536-06	CO27-PZM012	WATER	Not Specified	02/07/23 13:00	02/07/23
L2306536-07	TB-WT-01	WATER	Not Specified	02/07/23 00:00	02/07/23



Project Name:COA-GWLab Number:L2306536Project Number:2001210Report Date:02/10/23

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:COA-GWLab Number:L2306536Project Number:2001210Report Date:02/10/23

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.

Cattlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 02/10/23



ORGANICS



VOLATILES



Project Name: COA-GW Lab Number: L2306536

Project Number: 2001210 Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306536-01 D Date Collected: 02/07/23 09:15

Client ID: CO36-PZM043 Date Received: 02/07/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/09/23 01:37

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS -	Volatile Organics by GC/MS - Westborough Lab								
Benzene	17000	ug/l	50	16.	100				
Toluene	2200	ug/l	75	20.	100				
Ethylbenzene	58	ug/l	50	17.	100				
p/m-Xylene	580	ug/l	100	33.	100				
o-Xylene	230	ug/l	100	39.	100				
Xylenes, Total	810	ug/l	100	33.	100				
Naphthalene	640	ug/l	100	22.	100				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	81	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA-GW Lab Number: L2306536

Project Number: 2001210 Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306536-02 D Date Collected: 02/07/23 09:55

Client ID: CO36-PZM008 Date Received: 02/07/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/09/23 01:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS	- Westborough Lab					
Benzene	14000		ug/l	50	16.	100
Toluene	3300		ug/l	75	20.	100
Ethylbenzene	66		ug/l	50	17.	100
p/m-Xylene	960		ug/l	100	33.	100
o-Xylene	320		ug/l	100	39.	100
Xylenes, Total	1300		ug/l	100	33.	100
Naphthalene	700		ug/l	100	22.	100

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	80	70-130	
Toluene-d8	94	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	93	70-130	



Project Name: COA-GW Lab Number: L2306536

Project Number: 2001210 Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306536-03 Date Collected: 02/07/23 10:50

Client ID: CO38-PZM043 Date Received: 02/07/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/09/23 02:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	0.19	J	ug/l	0.50	0.16	1		
Toluene	ND		ug/l	0.75	0.20	1		
Ethylbenzene	ND		ug/l	0.50	0.17	1		
p/m-Xylene	0.73	J	ug/l	1.0	0.33	1		
o-Xylene	ND		ug/l	1.0	0.39	1		
Xylenes, Total	0.73	J	ug/l	1.0	0.33	1		
Naphthalene	0.28	J	ug/l	1.0	0.22	1		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	88	70-130	
Toluene-d8	94	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA-GW Lab Number: L2306536

Project Number: 2001210 Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306536-04 D Date Collected: 02/07/23 11:35

Client ID: CO38-PZM006 Date Received: 02/07/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/09/23 02:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - W	Volatile Organics by GC/MS - Westborough Lab								
Benzene	4600		ug/l	12	4.0	25			
Toluene	920		ug/l	19	5.1	25			
Ethylbenzene	56		ug/l	12	4.2	25			
p/m-Xylene	310		ug/l	25	8.3	25			
o-Xylene	140		ug/l	25	9.8	25			
Xylenes, Total	450		ug/l	25	8.3	25			
Naphthalene	1200		ug/l	25	5.4	25			

Surrogate	% Recovery		eptance riteria	
1,2-Dichloroethane-d4	81	7	70-130	
Toluene-d8	92	7	70-130	
4-Bromofluorobenzene	93	7	70-130	
Dibromofluoromethane	93	ī	70-130	



Project Name: COA-GW Lab Number: L2306536

Project Number: 2001210 Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306536-05 D Date Collected: 02/07/23 12:25

Client ID: CO27-PZM046 Date Received: 02/07/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/09/23 02:58

Parameter	Result	Qualifier Ur	its RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab								
Benzene	34000	uç	g/l 120	40.	250			
Toluene	5800	uç	g/l 190	51.	250			
Ethylbenzene	260	uç	g/l 120	42.	250			
p/m-Xylene	1400	uç	g/l 250	83.	250			
o-Xylene	640	uç	g/l 250	98.	250			
Xylenes, Total	2000	uç	g/l 250	83.	250			
Naphthalene	1100	uç	g/l 250	54.	250			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	85	70-130	
Toluene-d8	94	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA-GW Lab Number: L2306536

Project Number: 2001210 Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306536-06 D Date Collected: 02/07/23 13:00

Client ID: CO27-PZM012 Date Received: 02/07/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/09/23 03:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	14000		ug/l	50	16.	100		
Toluene	4500		ug/l	75	20.	100		
Ethylbenzene	170		ug/l	50	17.	100		
p/m-Xylene	1000		ug/l	100	33.	100		
o-Xylene	470		ug/l	100	39.	100		
Xylenes, Total	1500		ug/l	100	33.	100		
Naphthalene	1100		ug/l	100	22.	100		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	82	70-130	
Toluene-d8	90	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	94	70-130	



Project Name: COA-GW Lab Number: L2306536

Project Number: 2001210 Report Date: 02/10/23

SAMPLE RESULTS

Lab ID: L2306536-07 Date Collected: 02/07/23 00:00

Client ID: TB-WT-01 Date Received: 02/07/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/08/23 20:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	ND		ug/l	0.50	0.16	1		
Toluene	ND		ug/l	0.75	0.20	1		
Ethylbenzene	ND		ug/l	0.50	0.17	1		
p/m-Xylene	ND		ug/l	1.0	0.33	1		
o-Xylene	ND		ug/l	1.0	0.39	1		
Xylenes, Total	ND		ug/l	1.0	0.33	1		
Naphthalene	ND		ug/l	1.0	0.22	1		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	90	70-130	
Toluene-d8	94	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	100	70-130	



Project Name:COA-GWLab Number:L2306536

Project Number: 2001210 Report Date: 02/10/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/08/23 20:31

Analyst: KJD

Parameter	Result Qual	ifier Units	RL	MDL
olatile Organics by GC/MS -	Westborough Lab for s	ample(s): 01-07	Batch:	WG1742617-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance			
Surrogate	%Recovery Qualif	ier Criteria	_		
1,2-Dichloroethane-d4	88	70-130			
Toluene-d8	95	70-130			
4-Bromofluorobenzene	95	70-130			
Dibromofluoromethane	101	70-130			



Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 2001210

Lab Number: L2306536

Report Date: 02/10/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	RPD imits
Volatile Organics by GC/MS - Westborough L	•	sample(s):	01-07 Batch:	WG1742617-3	WG1742617-4		
Benzene	92		96		70-130	4	20
Toluene	94		94		70-130	0	20
Ethylbenzene	98		96		70-130	2	20
p/m-Xylene	100		100		70-130	0	20
o-Xylene	100		100		70-130	0	20
Naphthalene	90		90		70-130	0	20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	86	87	70-130
Toluene-d8	96	94	70-130
4-Bromofluorobenzene	98	98	70-130
Dibromofluoromethane	95	103	70-130

Project Name: COA-GW Lab Number: L2306536 Project Number: 2001210

Report Date: 02/10/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent В Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2306536-01A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-01B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-01C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-02A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-02B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-02C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-03A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-03B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-03C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-04A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-04B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-04C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-05A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-05B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-05C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-06A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-06B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-06C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-07A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-07B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-07C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2306536-07D	Vial HCI preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)



Lab Number: L2306536

Report Date: 02/10/23

Container Information Initial Final Temp Frozen

Container ID Container Type Cooler pH pH deg C Pres Seal Date/Time Analysis(*)



Project Name:

Project Number: 2001210

COA-GW

Project Name: Lab Number: L2306536 COA-GW **Project Number:** 2001210 **Report Date:** 02/10/23

GLOSSARY

Acronyms

EDL

EMPC

LOQ

MS

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.)

- 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).

- 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**

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.

Environmental Protection Agency.

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.)

- 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

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

MDI - 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.

- 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.

TEO - 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:COA-GWLab Number:L2306536Project Number:2001210Report Date:02/10/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_equation} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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.)



Serial_No:02102310:22

Project Name:COA-GWLab Number:L2306536Project Number:2001210Report Date:02/10/23

REFERENCES

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.



Serial_No:02102310:22

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 19

Page 1 of 1

Published Date: 4/2/2021 1:14:23 PM

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

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ANALYTICAL REPORT

Lab Number: L2306926

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA-GW
Project Number: 2001210
Report Date: 02/15/23

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-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: COA-GW **Project Number:** 2001210

 Lab Number:
 L2306926

 Report Date:
 02/15/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2306926-01	CO57-PZP002	WATER	COA	02/08/23 15:10	02/08/23
L2306926-02	CO195-MWS	WATER	COA	02/08/23 09:45	02/08/23
L2306926-03	CO30-PZM015	WATER	COA	02/08/23 10:30	02/08/23
L2306926-04	CO26-PZM007	WATER	COA	02/08/23 15:30	02/08/23
L2306926-05	CO58-PZM001	WATER	COA	02/08/23 13:00	02/08/23
L2306926-06	CO24-PZM007	WATER	COA	02/08/23 14:00	02/08/23
L2306926-07	CO23-PZM008	WATER	COA	02/08/23 15:00	02/08/23
L2306926-08	TB-WT-01	WATER	COA	02/08/23 00:00	02/08/23



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.	



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

L2306926-02: The collection date and time on the chain of custody was 08-FEB-23 09:00; however, the collection date/time on the container label was 08-FEB-23 09:45. At the client's request, the collection date/time is reported as 08-FEB-23 09:45.

L2306926-03: The collection date and time on the chain of custody was 08-FEB-23 09:55; however, the collection date/time on the container label was 08-FEB-23 10:30. At the client's request, the collection date/time is reported as 08-FEB-23 10:30.

L2306926-05: The collection date and time on the chain of custody was 08-FEB-23 12:25; however, the collection date/time on the container label was 08-FEB-23 13:00. At the client's request, the collection date/time is reported as 08-FEB-23 13:00.

L2306926-06: The collection date and time on the chain of custody was 08-FEB-23 13:15; however, the collection date/time on the container label was 08-FEB-23 14:00. At the client's request, the collection date/time is reported as 08-FEB-23 14:00.

L2306926-07: The collection date and time on the chain of custody was 08-FEB-23 14:20; however, the collection date/time on the container label was 08-FEB-23 15:00. At the client's request, the collection date/time is reported as 08-FEB-23 15:00.

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:

Title: Technical Director/Representative Date: 02/15/23

Melissa Sturgis Melissa Sturgis

ALPHA

ORGANICS



VOLATILES



Project Name: COA-GW Lab Number: L2306926

Project Number: 2001210 Report Date: 02/15/23

SAMPLE RESULTS

Lab ID: L2306926-01 Date Collected: 02/08/23 15:10

Client ID: CO57-PZP002 Date Received: 02/08/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/10/23 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westb	orough Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ua/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	104	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	103	70-130	



Project Name: COA-GW Lab Number: L2306926

Project Number: 2001210 Report Date: 02/15/23

SAMPLE RESULTS

Lab ID: L2306926-02 D Date Collected: 02/08/23 09:45

Client ID: CO195-MWS Date Received: 02/08/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/10/23 07:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westb	orough Lab						
Benzene	47000		ug/l	250	80.	500	
Toluene	3800		ug/l	380	100	500	
Ethylbenzene	96	J	ug/l	250	84.	500	
p/m-Xylene	780		ug/l	500	170	500	
o-Xylene	320	J	ug/l	500	200	500	
Xylenes, Total	1100	J	ug/l	500	170	500	
Naphthalene	2300		ug/l	500	110	500	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	102	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA-GW Lab Number: L2306926

Project Number: 2001210 Report Date: 02/15/23

SAMPLE RESULTS

Lab ID: L2306926-03 D Date Collected: 02/08/23 10:30

Client ID: CO30-PZM015 Date Received: 02/08/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/10/23 07:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbo	rough Lab						
Benzene	50000		ug/l	250	80.	500	
Toluene	3900		ug/l	380	100	500	
Ethylbenzene	110	J	ug/l	250	84.	500	
p/m-Xylene	920		ug/l	500	170	500	
o-Xylene	440	J	ug/l	500	200	500	
Xylenes, Total	1400	J	ug/l	500	170	500	
Naphthalene	2600		ug/l	500	110	500	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	103		70-130	
Toluene-d8	99		70-130	
4-Bromofluorobenzene	103		70-130	
Dibromofluoromethane	99		70-130	



Project Name: COA-GW Lab Number: L2306926

Project Number: 2001210 Report Date: 02/15/23

SAMPLE RESULTS

Lab ID: L2306926-04 D Date Collected: 02/08/23 15:30

Client ID: CO26-PZM007 Date Received: 02/08/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 16:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	260		ug/l	12	4.0	25	
Toluene	120		ug/l	19	5.1	25	
Ethylbenzene	9.5	J	ug/l	12	4.2	25	
p/m-Xylene	150		ug/l	25	8.3	25	
o-Xylene	56		ug/l	25	9.8	25	
Xylenes, Total	210		ug/l	25	8.3	25	
Naphthalene	2500		ua/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	88	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	105	70-130	



Project Name: COA-GW Lab Number: L2306926

Project Number: 2001210 Report Date: 02/15/23

SAMPLE RESULTS

Lab ID: L2306926-05 D Date Collected: 02/08/23 13:00

Client ID: CO58-PZM001 Date Received: 02/08/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/13/23 15:46

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westk	oorough Lab						
Benzene	82		ug/l	2.5	0.80	5	
Toluene	21		ug/l	3.8	1.0	5	
Ethylbenzene	4.2		ug/l	2.5	0.84	5	
p/m-Xylene	46		ug/l	5.0	1.7	5	
o-Xylene	19		ug/l	5.0	2.0	5	
Xylenes, Total	65		ug/l	5.0	1.7	5	
Naphthalene	590		ug/l	5.0	1.1	5	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	90		70-130	
Toluene-d8	94		70-130	
4-Bromofluorobenzene	94		70-130	
Dibromofluoromethane	93		70-130	



Project Name: Lab Number: COA-GW L2306926

Project Number: Report Date: 2001210 02/15/23

SAMPLE RESULTS

Lab ID: D Date Collected: 02/08/23 14:00 L2306926-06

Client ID: Date Received: 02/08/23 CO24-PZM007

Sample Location: Field Prep: COA Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 02/13/23 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westb	orough Lab						
Benzene	4.3	J	ug/l	10	3.2	20	
Toluene	ND		ug/l	15	4.1	20	
Ethylbenzene	3.3	J	ug/l	10	3.3	20	
p/m-Xylene	ND		ug/l	20	6.6	20	
o-Xylene	ND		ug/l	20	7.8	20	
Xylenes, Total	ND		ug/l	20	6.6	20	
Naphthalene	1900		ug/l	20	4.3	20	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	89	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	91	70-130	
Dibromofluoromethane	94	70-130	



Project Name: COA-GW Lab Number: L2306926

Project Number: 2001210 Report Date: 02/15/23

SAMPLE RESULTS

Lab ID: L2306926-07 D Date Collected: 02/08/23 15:00

Client ID: CO23-PZM008 Date Received: 02/08/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/10/23 08:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	580		ug/l	12	4.0	25	
Toluene	330		ug/l	19	5.1	25	
Ethylbenzene	30		ug/l	12	4.2	25	
p/m-Xylene	370		ug/l	25	8.3	25	
o-Xylene	150		ug/l	25	9.8	25	
Xylenes, Total	520		ug/l	25	8.3	25	
Naphthalene	4100		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	104	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA-GW Lab Number: L2306926

Project Number: 2001210 Report Date: 02/15/23

SAMPLE RESULTS

Lab ID: L2306926-08 Date Collected: 02/08/23 00:00

Client ID: TB-WT-01 Date Received: 02/08/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/10/23 06:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbo	rough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	104	70-130	
Dibromofluoromethane	106	70-130	



Project Name:COA-GWLab Number:L2306926

Project Number: 2001210 Report Date: 02/15/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/10/23 06:31

Parameter	Result	Qualifier Units	s RL	MDL
Volatile Organics by GC/MS - West	borough Lab	for sample(s):	01-03,07-08	Batch: WG1743195-5
Benzene	ND	ug/	0.50	0.16
Toluene	ND	ug/	0.75	0.20
Ethylbenzene	ND	ug/	0.50	0.17
p/m-Xylene	ND	ug/	1.0	0.33
o-Xylene	ND	ug/	1.0	0.39
Xylenes, Total	ND	ug/	1.0	0.33
Naphthalene	ND	ug/	1.0	0.22

	Acceptance				
Surrogate	%Recovery Qualit	ier Criteria	_		
1,2-Dichloroethane-d4	109	70-130			
Toluene-d8	99	70-130			
4-Bromofluorobenzene	101	70-130			
Dibromofluoromethane	105	70-130			



Project Name:COA-GWLab Number:L2306926

Project Number: 2001210 Report Date: 02/15/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/13/23 09:30

Analyst: PID

arameter	Result Q	ualifier Units	RL	MDL	
olatile Organics by GC/N	1S - Westborough Lab fo	r sample(s): 04	-06 Batch:	WG1744213-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance	
Surrogate	%Recovery Qualit	ier Criteria	
1,2-Dichloroethane-d4	89	70-130	
Toluene-d8	91	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	99	70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 2001210

Lab Number: L2306926

Report Date: 02/15/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	01-03,07-08 Bat	ch: WG17	43195-3 WG1743	195-4		
Benzene	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	110		105		70-130	5		20
o-Xylene	110		105		70-130	5		20
Naphthalene	97		98		70-130	1		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98	97	70-130
Toluene-d8	100	97	70-130
4-Bromofluorobenzene	99	97	70-130
Dibromofluoromethane	99	99	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 2001210

Lab Number: L2306926

Report Date:

02/15/23

Parameter	LCS %Recovery	Qual	LCSD %Recover		%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough L	·	sample(s):	04-06 Batch	: WG1744213-3	WG1744213-4			
Benzene	99		100		70-130	1		20
Toluene	99		99		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	110		110		70-130	0		20
Naphthalene	92		97		70-130	5		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	83	86	70-130
Toluene-d8	96	95	70-130
4-Bromofluorobenzene	99	99	70-130
Dibromofluoromethane	102	98	70-130

Project Name: COA-GW **Lab Number:** L2306926 Project Number: 2001210 **Report Date:** 02/15/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	rmation			Final	Temp			Frozen		
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L2306926-01A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-01B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-01C	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-02A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-02B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-02C	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-03A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-03B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-03C	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-04A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-04B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-04C	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-05A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-05B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-05C	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-06A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-06B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-06C	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-07A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-07B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-07C	Vial HCI preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-08A	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	
L2306926-08B	Vial HCl preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)	



Lab Number: L2306926

Report Date: 02/15/23

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2306926-08C	Vial HCI preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)
L2306926-08D	Vial HCI preserved	Α	NA		3.9	Υ	Absent		PA-8260(14)



Project Name:

Project Number: 2001210

COA-GW

GLOSSARY

Acronyms

EDL

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.)

- 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

analyte when the ions meet all of the identificat 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.



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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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



Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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:COA-GWLab Number:L2306926Project Number:2001210Report Date:02/15/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 19

Page 1 of 1

Published Date: 4/2/2021 1:14:23 PM

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193 TEL: 508-822-3288 Project Information Project Name: OA - GW FAX EMAIL Same as Client Information Add't Deliverables Add't Deliverables Add't Deliverables Add't Deliverables Client Information Add't Deliverables Client Information CoA CoA	rmation
TEL: 508-898-9220 TEL: 508-822-9300 Project Name:	AND THE REAL PROPERTY OF THE PARTY OF THE PA
FAX: 508-898-9220 TEL: 508-892-9300 Project Name: OA - GW D FAX D EMAIL D Same as Client Information Project Location: OA D ADEX ADEX Add'I Deliverables	AND THE REAL PROPERTY OF THE PARTY OF THE PA
Client Information Project Location:	CIR IIIO TOW.
()A	
Client: Regulatory Requirements/Report Limits	
State Feed Program College	
Address: Project Manager: 308 Criteria	
ALPHA Quote #:	
Phone: Turn-Around Time	
Fax:	
Email: Standard	
These samples have been previously analyzed by Alpha	SAMPLE HANDLING Filtration
Other Project Specific Requirements/Comments/Detection Limits:	/ Filtration □ Done
SAMPLIA 7 10 02 pH See comuts \$187 / / / / /	☐ Not needed
	☐ Lab to do Preservation
ALPHA Lab ID Collection Sample Consoler	☐ Lab to do
(Lab Use Only) Sample ID Sample ID	(Please specify below) ample Specific Comments
06926-61 C057-PZPQQZ 2873 1510 GW +18 X	2H 7 10 . 3
-02 CO 195-MWS. 1 0900 1 1 8 0	H710.
-03 CO 3Q-PZNO15 0955 8	11/10
	1710.
-04 COZG - PZMDQ7 1530 TTS 108	+1216. 3
-05 (058-PZMA)&1- 1225	712.
-06 COZ4-PZMOO7- 1 1315	710
	3
CO 23 12/1008 1/2 17CO 1/2 10	170. 3
-08 TB-W+-01	4
Container Type \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	se print clearly, legibly and com-
Preservative 12 pletel	ly. Samples can not be logged
In and	d turnaround time clock will not until any ambiguities are resolve
6 2 Allan P18133 11 Neth / Super hall sa	amples submitted are subject to
DRM NO: 01-01 (rev. 14-OCT-07) A1 2/8/23 /800 See r	a's Terms and Conditions. reverse side.
Page 26 of 26 2/5/23 2105 Upd 2/5/23 2100	



ANALYTICAL REPORT

Lab Number: L2307229

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 02/15/23

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



Project Name: COA GW **Project Number:** 20010210

Lab Number: L2307229 **Report Date:** 02/15/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2307229-01	CO56-PZP001	WATER	COA	02/09/23 10:55	02/09/23
L2307229-02	CO59-PZP002	WATER	COA	02/09/23 12:00	02/09/23
L2307229-03	CO39-PZM007	WATER	COA	02/09/23 14:40	02/09/23
L2307229-04	CO39-PZM042	WATER	COA	02/09/23 15:20	02/09/23
L2307229-05	TB-WT-1	WATER	COA	02/09/23 00:00	02/09/23



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:COA GWLab Number:L2307229Project Number:20010210Report Date:02/15/23

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.

Cattlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 02/15/23

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2307229

Project Number: 20010210 **Report Date:** 02/15/23

SAMPLE RESULTS

Lab ID: L2307229-01 D Date Collected: 02/09/23 10:55

Client ID: CO56-PZP001 Date Received: 02/09/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/14/23 14:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	- Westborough Lab						
Benzene	310		ug/l	10	3.2	20	
Toluene	72		ug/l	15	4.1	20	
Ethylbenzene	8.9	J	ug/l	10	3.3	20	
p/m-Xylene	160		ug/l	20	6.6	20	
o-Xylene	62		ug/l	20	7.8	20	
Xylenes, Total	220		ug/l	20	6.6	20	
Naphthalene	2600		ua/l	20	4.3	20	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	89	70-130	
Toluene-d8	94	70-130	
4-Bromofluorobenzene	93	70-130	
Dibromofluoromethane	106	70-130	



Project Name: COA GW Lab Number: L2307229

Project Number: 20010210 **Report Date:** 02/15/23

SAMPLE RESULTS

Lab ID: L2307229-02 D Date Collected: 02/09/23 12:00

Client ID: CO59-PZP002 Date Received: 02/09/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/14/23 14:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - W	Volatile Organics by GC/MS - Westborough Lab							
Benzene	150		ug/l	2.5	0.80	5		
Toluene	52		ug/l	3.8	1.0	5		
Ethylbenzene	7.4		ug/l	2.5	0.84	5		
p/m-Xylene	88		ug/l	5.0	1.7	5		
o-Xylene	41		ug/l	5.0	2.0	5		
Xylenes, Total	130		ug/l	5.0	1.7	5		
Naphthalene	680		ug/l	5.0	1.1	5		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	85	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	93	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Lab Number: L2307229

Project Number: 20010210 **Report Date:** 02/15/23

SAMPLE RESULTS

Lab ID: L2307229-03 D Date Collected: 02/09/23 14:40

Client ID: CO39-PZM007 Date Received: 02/09/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/14/23 14:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	500		ug/l	2.5	0.80	5	
Toluene	66		ug/l	3.8	1.0	5	
Ethylbenzene	3.3		ug/l	2.5	0.84	5	
p/m-Xylene	19		ug/l	5.0	1.7	5	
o-Xylene	11		ug/l	5.0	2.0	5	
Xylenes, Total	30		ug/l	5.0	1.7	5	
Naphthalene	280		ug/l	5.0	1.1	5	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	82	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	94	70-130	
Dibromofluoromethane	96	70-130	



Project Name: COA GW Lab Number: L2307229

Project Number: 20010210 **Report Date:** 02/15/23

SAMPLE RESULTS

Lab ID: L2307229-04 D Date Collected: 02/09/23 15:20

Client ID: CO39-PZM042 Date Received: 02/09/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/14/23 13:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS	- Westborough Lab					
Benzene	3400		ug/l	20	6.4	40
Toluene	810		ug/l	30	8.1	40
Ethylbenzene	25		ug/l	20	6.7	40
p/m-Xylene	140		ug/l	40	13.	40
o-Xylene	68		ug/l	40	16.	40
Xylenes, Total	210		ug/l	40	13.	40
Naphthalene	790		ua/l	40	8.6	40

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	82	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Lab Number: L2307229

Project Number: 20010210 **Report Date:** 02/15/23

SAMPLE RESULTS

Lab ID: L2307229-05 Date Collected: 02/09/23 00:00

Client ID: TB-WT-1 Date Received: 02/09/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/14/23 09:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westbo	Volatile Organics by GC/MS - Westborough Lab							
Benzene	ND		ug/l	0.50	0.16	1		
Toluene	ND		ug/l	0.75	0.20	1		
Ethylbenzene	ND		ug/l	0.50	0.17	1		
p/m-Xylene	ND		ug/l	1.0	0.33	1		
o-Xylene	ND		ug/l	1.0	0.39	1		
Xylenes, Total	ND		ug/l	1.0	0.33	1		
Naphthalene	ND		ug/l	1.0	0.22	1		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	104	70-130	
Dibromofluoromethane	109	70-130	



Project Name:COA GWLab Number:L2307229

Project Number: 20010210 **Report Date:** 02/15/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/14/23 08:59

Analyst: PID

Parameter	Result	Qualifier Units	RL	MDL
Volatile Organics by GC/MS - Westl	oorough Lat	o for sample(s): 05	Batch:	WG1744663-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	107	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	110	70-130	



Project Name:COA GWLab Number:L2307229

Project Number: 20010210 **Report Date:** 02/15/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/14/23 08:00

Analyst: PID

Parameter	Result	Qualifier Units	RL	MDL	
Volatile Organics by GC/MS - West	borough Lat	o for sample(s): 0°	1-04 Batch:	WG1744749-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	101	70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Project Number: 20010210 Lab Number:

L2307229

Report Date: 02/15/23

Parameter		LCS %Recovery	Qual	LCSD %Recover	'y Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Orga	anics by GC/MS - Westborough La	ab Associated	sample(s): 05	Batch: V	VG1744663-3	WG1744663-4				
Benzene		100		100		70-130	0		20	
Toluene		100		110		70-130	10		20	
Ethylbenze	ene	100		110		70-130	10		20	
p/m-Xylene	9	105		110		70-130	5		20	
o-Xylene		110		110		70-130	0		20	
Naphthaler	ne	99		96		70-130	3		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97	98	70-130
Toluene-d8	96	97	70-130
4-Bromofluorobenzene	97	93	70-130
Dibromofluoromethane	99	100	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2307229

Report Date: 02/15/23

Parameter	LCS %Recovery	Qual	LCSD %Recove		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-04 Batch	: WG1744749-3	WG1744749-4				
Benzene	100		100		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		110		70-130	10		20	
p/m-Xylene	110		110		70-130	0		20	
o-Xylene	110		115		70-130	4		20	
Naphthalene	94		97		70-130	3		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	77	84	70-130
Toluene-d8	97	94	70-130
4-Bromofluorobenzene	99	96	70-130
Dibromofluoromethane	103	100	70-130

Project Name: COA GW Lab Number: L2307229 Project Number: 20010210

Report Date: 02/15/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2307229-01A	Vial HCI preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-01B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-01C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-02A	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-02B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-02C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-03A	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-03B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-03C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-04A	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-04B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-04C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-05A	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-05B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-05C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2307229-05D	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)



Project Name:COA GWLab Number:L2307229Project Number:20010210Report Date:02/15/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RL

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.)

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.)

- 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.

 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.

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.



Project Name: COA GW Lab Number: L2307229
Project Number: 20010210 Report Date: 02/15/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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



Project Name:COA GWLab Number:L2307229Project Number:20010210Report Date:02/15/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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:
 COA GW
 Lab Number:
 L2307229

 Project Number:
 20010210
 Report Date:
 02/15/23

REFERENCES

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.



Alpha Analytical, Inc.
Facility: Company-wide
Department: Quality Assurance

Department: Quality Assurance

Title: Certificate/Approval Program Summary

Serial_No:02152317:55

ID No.:**17873** Revision 19

Published Date: 4/2/2021 1:14:23 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

ALPHA	CHAIN O	F CUSTODY	PAGEOF	Date Rec'd in L	ab: 00/10/03	COLCUMN THE	HA Job#: L2307229
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193 Client Informatio	MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288	Project Information Project Name:	CW	Report Inform	nation - Data Deliver □ EMAIL □ Add'I Deliverables	□ San	ng Information ne as Client info PO#:
Client: Address:	PA	Project #: 200 021 Project Manager: 3087 ALPHA Quote #:	0	Regulatory Re State /Fed Progr	quirements/Report L am Criter		
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Email:		Standard RUSH (00)	confirmed if pre-approved!)		7 / / /	7 7 7 7	/ / /
☐ These samples hav	ve been previously analyzed by Alpha	Date Due:	Time:	ANALYSIS Mithelia	//////	///	SAMPLE HANDLING
	pecific Requirements/Comr	ments/Detection Limits:		FF	/ / / / /	1///	Filtration
ALPHA Lab ID	SAMPLES PM	710	1	100	/////	////,	□ Not needed □ Lab to do Preservation □ Lab to do
(Lab Use Only)	Sample ID	Collection Date Time	Sample Sampler's Initials	W / /		////	(Please specify below) Sample Specific Comments
10-96610	C056- PEPC	00 2923 1055	Gh Hg	8			7
-03	0030-8-10	7 1440	TOP INC	8			7All Som Pers -
	COST ICA	0+ 1140	408				
-04	C039-1200	42 1, 1520	AH	\$			J P1 7 10
-05	TB-W1-01	V ~		8			
			Container Type	4			Please print clearly, legibly and com- pletely. Samples can not be logged
		D. A.	Preservative	15			in and turnaround time clock will no
Page 22 of 27	(7-07)	Relinquished By	2917 54 9/23 800		www. AAL 21	Date/Time	start until any ambiguities are resolution. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



ANALYTICAL REPORT

Lab Number: L2307900

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA-GW
Project Number: 20010210
Report Date: 02/20/23

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-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: COA-GW Project Number:

20010210

Lab Number: L2307900 Report Date: 02/20/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2307900-01	CO37-PZM038	WATER	COA	02/14/23 11:00	02/14/23
L2307900-02	CO40-PZM008	WATER	COA	02/14/23 11:45	02/14/23
L2307900-03	CO41-PZM036	WATER	COA	02/14/23 12:45	02/14/23
L2307900-04	CO41-PZM001	WATER	COA	02/14/23 13:25	02/14/23
L2307900-05	TB-WT-01	WATER	COA	02/14/23 00:00	02/14/23



Project Name:COA-GWLab Number:L2307900Project Number:20010210Report Date:02/20/23

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:COA-GWLab Number:L2307900Project Number:20010210Report Date:02/20/23

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

L2307900-02: The sample identified as "CO37-PZM008" on the chain of custody was identified as "CO40-PZM008" on the container label. At the client's request, the sample is reported as "CO40-PZM008". L2307900-02: The collection date on the chain of custody was 14-FEB-23; however, the collection date on the container label was 13-FEB-23. At the client's request, the collection date is reported as 14-FEB-23. L2307900-03: The sample identified as "CO41-PZM036" on the chain of custody was identified as "CO41-PZM038" on the container label. At the client's request, the sample is reported as "CO41-PZM036".

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:

Title: Technical Director/Representative Date: 02/20/23

Melissa Sturgis Melissa Sturgis

ORGANICS



VOLATILES



Project Name: COA-GW Lab Number: L2307900

Project Number: 20010210 **Report Date:** 02/20/23

SAMPLE RESULTS

Lab ID: L2307900-01 D Date Collected: 02/14/23 11:00

Client ID: CO37-PZM038 Date Received: 02/14/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/16/23 19:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	12000		ug/l	50	16.	100	
Toluene	6800		ug/l	75	20.	100	
Ethylbenzene	220		ug/l	50	17.	100	
p/m-Xylene	1400		ug/l	100	33.	100	
o-Xylene	460		ug/l	100	39.	100	
Xylenes, Total	1900		ug/l	100	33.	100	
Naphthalene	1400		ua/l	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	113	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA-GW Lab Number: L2307900

Project Number: 20010210 **Report Date:** 02/20/23

SAMPLE RESULTS

Lab ID: L2307900-02 D Date Collected: 02/14/23 11:45

Client ID: CO40-PZM008 Date Received: 02/14/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/16/23 19:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	5600		ug/l	25	8.0	50	
Toluene	1700		ug/l	38	10.	50	
Ethylbenzene	55		ug/l	25	8.4	50	
p/m-Xylene	280		ug/l	50	17.	50	
o-Xylene	120		ug/l	50	20.	50	
Xylenes, Total	400		ug/l	50	17.	50	
Naphthalene	1400		ug/l	50	11.	50	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	113	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA-GW Lab Number: L2307900

Project Number: 20010210 **Report Date:** 02/20/23

SAMPLE RESULTS

Lab ID: L2307900-03 D Date Collected: 02/14/23 12:45

Client ID: CO41-PZM036 Date Received: 02/14/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/16/23 18:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	220000		ug/l	1000	320	2000	
Toluene	78000		ug/l	1500	410	2000	
Ethylbenzene	800	J	ug/l	1000	330	2000	
p/m-Xylene	12000		ug/l	2000	660	2000	
o-Xylene	3400		ug/l	2000	780	2000	
Xylenes, Total	15000		ug/l	2000	660	2000	
Naphthalene	ND		ug/l	2000	430	2000	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	102		70-130	
Toluene-d8	102		70-130	
4-Bromofluorobenzene	113		70-130	
Dibromofluoromethane	100		70-130	



Project Name: COA-GW Lab Number: L2307900

Project Number: 20010210 **Report Date:** 02/20/23

SAMPLE RESULTS

Lab ID: L2307900-04 D Date Collected: 02/14/23 13:25

Client ID: CO41-PZM001 Date Received: 02/14/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/16/23 18:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	21000		ug/l	100	32.	200	
Toluene	14000		ug/l	150	41.	200	
Ethylbenzene	710		ug/l	100	33.	200	
p/m-Xylene	5900		ug/l	200	66.	200	
o-Xylene	1100		ug/l	200	78.	200	
Xylenes, Total	7000		ug/l	200	66.	200	
Naphthalene	320		ug/l	200	43.	200	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	102		70-130	
Toluene-d8	103		70-130	
4-Bromofluorobenzene	111		70-130	
Dibromofluoromethane	99		70-130	



Project Name: COA-GW Lab Number: L2307900

Project Number: 20010210 **Report Date:** 02/20/23

SAMPLE RESULTS

Lab ID: L2307900-05 Date Collected: 02/14/23 00:00

Client ID: TB-WT-01 Date Received: 02/14/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/15/23 20:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	125	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	111	70-130	
Dibromofluoromethane	125	70-130	



Project Name: COA-GW Lab Number: L2307900

Project Number: 20010210 **Report Date:** 02/20/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/15/23 13:11

Analyst: PID

arameter	Result Qua	lifier Units	RL	MDL	
olatile Organics by GC/MS - \	Westborough Lab for	sample(s): 05	Batch:	WG1745208-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptan				
Surrogate	%Recovery Qualif	ier Criteria			
1,2-Dichloroethane-d4	105	70-130			
Toluene-d8	101	70-130			
4-Bromofluorobenzene	109	70-130			
Dibromofluoromethane	115	70-130			



Project Name:COA-GWLab Number:L2307900

Project Number: 20010210 **Report Date:** 02/20/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/16/23 10:18

Analyst: PID

MDL
n: WG1745728-5
0.16
0.20
0.17
0.33
0.39
0.33
0.22

	Accept				
Surrogate	%Recovery Qualif	ier Criteria			
1,2-Dichloroethane-d4	102	70-130			
Toluene-d8	103	70-130			
4-Bromofluorobenzene	112	70-130			
Dibromofluoromethane	103	70-130			



Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 20010210

Lab Number: L2307900

Report Date: 02/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 05	Batch: WG	1745208-3	WG1745208-4				
Benzene	100		100		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	105		105		70-130	0		20	
o-Xylene	105		105		70-130	0		20	
Naphthalene	96		99		70-130	3		20	

	LCS	LCSD	Acceptance	
Surrogate	%Recovery Qual	%Recovery Qual	Criteria	_
1,2-Dichloroethane-d4	103	105	70-130	
Toluene-d8	100	101	70-130	
4-Bromofluorobenzene	106	106	70-130	
Dibromofluoromethane	109	109	70-130	

Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 20010210

Lab Number: L2307900

Report Date: 02/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-04 Batch:	WG1745728-3	WG1745728-4		
Benzene	97		97		70-130	0	20
Toluene	100		100		70-130	0	20
Ethylbenzene	100		100		70-130	0	20
p/m-Xylene	100		100		70-130	0	20
o-Xylene	100		100		70-130	0	20
Naphthalene	100		110		70-130	10	20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103	101	70-130
Toluene-d8	101	102	70-130
4-Bromofluorobenzene	108	109	70-130
Dibromofluoromethane	103	102	70-130

 Project Name:
 COA-GW

 Project Number:
 20010210

 Report Date:
 02/20/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Information			Initial	Final	Temp			Frozen		
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L2307900-01A	Vial HCI preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-01B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-01C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-02A	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-02B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-02C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-03A	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-03B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-03C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-04A	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-04B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-04C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-05A	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-05B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-05C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2307900-05D	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	



Project Name: Lab Number: L2307900 COA-GW **Project Number:** 20010210 **Report Date:** 02/20/23

GLOSSARY

Acronyms

LOQ

MS

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.)

- 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

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

MDI - 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.

- 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.

TEO - 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.



Project Name:COA-GWLab Number:L2307900Project Number:20010210Report Date:02/20/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA-GWLab Number:L2307900Project Number:20010210Report Date:02/20/23

Data Qualifiers

Identified Compounds (TICs).

- $\begin{tabular}{ll} M & -Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte. \end{tabular}$
- 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.
- ${f P}$ 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.
- 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:
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 Lab Number:
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 Project Number:
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 Report Date:
 02/20/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

Serial_No:02202317:32

ID No.:17873 Revision 19

Published Date: 4/2/2021 1:14:23 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2308570

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA-GW
Project Number: 20010210
Report Date: 02/23/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: COA-GW **Project Number:** 20010210

 Lab Number:
 L2308570

 Report Date:
 02/23/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2308570-01	CO42-PZM004	WATER	COA	02/16/23 10:40	02/16/23
L2308570-02	CO182-MWI	WATER	COA	02/16/23 11:40	02/16/23
L2308570-03	CO55-PZM000	WATER	COA	02/16/23 12:05	02/16/23
L2308570-04	TB-WT-01	WATER	COA	02/16/23 00:00	02/16/23



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:
 COA-GW
 Lab Number:
 L2308570

 Project Number:
 20010210
 Report Date:
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Case Narrative (continued)

Report Submission

February 23, 2023: This final report includes the results of all requested analyses.

February 23, 2023: This is a preliminary report.

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

Volatile Organics

L2308570-02D2: The analysis was performed utilizing a compromised vial.

L2308570-03D: The pH was greater than two; however, the sample was analyzed within the method required holding time.

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.

(attlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 02/23/23



ORGANICS



VOLATILES



Project Name: COA-GW Lab Number: L2308570

Project Number: 20010210 **Report Date:** 02/23/23

SAMPLE RESULTS

Lab ID: L2308570-01 Date Collected: 02/16/23 10:40

Client ID: CO42-PZM004 Date Received: 02/16/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/21/23 01:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	estborough Lab						
Benzene	1.7		ug/l	0.50	0.16	1	
Toluene	4.1		ug/l	0.75	0.20	1	
Ethylbenzene	0.30	J	ug/l	0.50	0.17	1	
p/m-Xylene	1.9		ug/l	1.0	0.33	1	
o-Xylene	0.92	J	ug/l	1.0	0.39	1	
Xylenes, Total	2.8	J	ug/l	1.0	0.33	1	
Naphthalene	0.70	J	ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	113	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	109	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA-GW Lab Number: L2308570

Project Number: 20010210 **Report Date:** 02/23/23

SAMPLE RESULTS

Lab ID: L2308570-02 D2 Date Collected: 02/16/23 11:40

Client ID: CO182-MWI Date Received: 02/16/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/22/23 00:50

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborou	ıgh Lab					
Benzene	230000		ug/l	1200	400	2500
Surrogate			% Recovery	Qualifier		eptance riteria

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	82		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	93		70-130



Project Name: COA-GW Lab Number: L2308570

Project Number: 20010210 **Report Date:** 02/23/23

SAMPLE RESULTS

Lab ID: L2308570-02 D Date Collected: 02/16/23 11:40

Client ID: CO182-MWI Date Received: 02/16/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/21/23 02:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	stborough Lab						
Benzene	290000	E	ug/l	250	80.	500	
Toluene	18000		ug/l	380	100	500	
Ethylbenzene	980		ug/l	250	84.	500	
p/m-Xylene	6700		ug/l	500	170	500	
o-Xylene	2500		ug/l	500	200	500	
Xylenes, Total	9200		ug/l	500	170	500	
Naphthalene	380	J	ug/l	500	110	500	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	103		70-130	
Toluene-d8	100		70-130	
4-Bromofluorobenzene	109		70-130	
Dibromofluoromethane	86		70-130	



Project Name: COA-GW Lab Number: L2308570

Project Number: 20010210 **Report Date:** 02/23/23

SAMPLE RESULTS

Lab ID: L2308570-03 D Date Collected: 02/16/23 12:05

Client ID: CO55-PZM000 Date Received: 02/16/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/21/23 02:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - West	borough Lab						
Benzene	170		ug/l	5.0	1.6	10	
Toluene	76		ug/l	7.5	2.0	10	
Ethylbenzene	5.8		ug/l	5.0	1.7	10	
p/m-Xylene	65		ug/l	10	3.3	10	
o-Xylene	31		ug/l	10	3.9	10	
Xylenes, Total	96		ug/l	10	3.3	10	
Naphthalene	650		ug/l	10	2.2	10	

Surrogate	% Recovery	ceptance Criteria	
1,2-Dichloroethane-d4	114	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	110	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA-GW Lab Number: L2308570

Project Number: 20010210 **Report Date:** 02/23/23

SAMPLE RESULTS

Lab ID: L2308570-04 Date Collected: 02/16/23 00:00

Client ID: TB-WT-01 Date Received: 02/16/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/20/23 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbo	rough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	90	70-130	
Dibromofluoromethane	113	70-130	



Project Number: 20010210 **Report Date:** 02/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/20/23 08:23

Parameter	Result Qual	ifier Units	RL	MDL	
olatile Organics by GC/MS - We	stborough Lab for s	ample(s): 04	Batch:	WG1746985-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	94	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	112	70-130	



Project Number: 20010210 Report Date: 02/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/20/23 19:24

Analyst: KJD

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 01-03	Batch:	WG1746993-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptar					
Surrogate	%Recovery Quality	ier Criteria				
1,2-Dichloroethane-d4	111	70-130				
Toluene-d8	99	70-130				
4-Bromofluorobenzene	106	70-130				
Dibromofluoromethane	100	70-130				



Project Number: 20010210 **Report Date:** 02/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/21/23 17:58

Analyst: TMS

Parameter	Result	Qualifier Units	RL	MDL
Volatile Organics by GC/MS - West	borough Lab	for sample(s): 02	Batch:	WG1747393-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualifi	er Criteria				
40.8:11	2.4	70.400				
1,2-Dichloroethane-d4	94	70-130				
Toluene-d8	92	70-130				
4-Bromofluorobenzene	95	70-130				
Dibromofluoromethane	109	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 20010210

Lab Number: L2308570

Report Date:

02/23/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough I	Lab Associated	sample(s): 04	Batch: WG	1746985-3	WG1746985-4				
Benzene	94		99		70-130	5		20	
Toluene	94		97		70-130	3		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	100		105		70-130	5		20	
o-Xylene	105		110		70-130	5		20	
Naphthalene	86		98		70-130	13		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	87	91	70-130
Toluene-d8	96	98	70-130
4-Bromofluorobenzene	95	100	70-130
Dibromofluoromethane	99	105	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 20010210

Lab Number: L2308570

Report Date:

02/23/23

Parameter	LCS %Recovery	Qual		.CSD ecovery		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-03	Batch:	WG1746993-3	WG1746993-4				
Benzene	100			100		70-130	0		20	
Toluene	100			100		70-130	0		20	
Ethylbenzene	100			100		70-130	0		20	
p/m-Xylene	105			105		70-130	0		20	
o-Xylene	100			105		70-130	5		20	
Naphthalene	100			98		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104	104	70-130
Toluene-d8	98	98	70-130
4-Bromofluorobenzene	99	95	70-130
Dibromofluoromethane	93	93	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA-GW
Project Number: 20010210

Lab Number: L2308570

Report Date: 02/23/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 02	Batch: WG	1747393-3	WG1747393-4			
Benzene	99		98		70-130	1		20
Toluene	97		93		70-130	4		20
Ethylbenzene	98		100		70-130	2		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	110		105		70-130	5		20
Naphthalene	86		92		70-130	7		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93	93	70-130
Toluene-d8	95	93	70-130
4-Bromofluorobenzene	94	99	70-130
Dibromofluoromethane	101	117	70-130

Project Name:COA-GWLab NoProject Number:20010210Report

Lab Number: L2308570 **Report Date:** 02/23/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent B Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2308570-01A	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-01B	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-01C	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-02A	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-02B	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-02C	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-03A	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-03B	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-03C	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-03D	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-03E	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-04A	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-04B	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-04C	Vial HCI preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)
L2308570-04D	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)



GLOSSARY

Acronyms

EDL

LOQ

MS

RPD

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.)

- 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.)

 - 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.

 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.

- 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



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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



 Project Name:
 COA-GW
 Lab Number:
 L2308570

 Project Number:
 20010210
 Report Date:
 02/23/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 19

Published Date: 4/2/2021 1:14:23 PM

Pre-Qualtrax Document ID: 08-113

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2309552

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA-GW
Project Number: 20010210
Report Date: 02/28/23

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-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: COA-GW **Project Number:** 20010210

 Lab Number:
 L2309552

 Report Date:
 02/28/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2309552-01	TB-WT-01	WATER	COA	02/22/23 00:00	02/22/23
L2309552-02	CO93-PZM	WATER	COA	02/22/23 12:30	02/22/23
L2309552-03	CO190-MWS	WATER	COA	02/22/23 13:25	02/22/23



 Project Name:
 COA-GW
 Lab Number:
 L2309552

 Project Number:
 20010210
 Report Date:
 02/28/23

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:
 COA-GW
 Lab Number:
 L2309552

 Project Number:
 20010210
 Report Date:
 02/28/23

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:

Title: Technical Director/Representative Date: 02/28/23

Jufani Morrissey-Tiffani Morrissey

ANALYTICAL

ORGANICS



VOLATILES



Project Name: COA-GW Lab Number: L2309552

Project Number: 20010210 **Report Date:** 02/28/23

SAMPLE RESULTS

Lab ID: L2309552-01 Date Collected: 02/22/23 00:00

Client ID: TB-WT-01 Date Received: 02/22/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/24/23 09:41

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbor	ough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	104	70-130	



Project Name: COA-GW Lab Number: L2309552

Project Number: 20010210 **Report Date:** 02/28/23

SAMPLE RESULTS

Lab ID: L2309552-02 D Date Collected: 02/22/23 12:30

Client ID: CO93-PZM Date Received: 02/22/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/24/23 10:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - We	Volatile Organics by GC/MS - Westborough Lab							
Benzene	150000		ug/l	1000	320	2000		
Toluene	46000		ug/l	1500	410	2000		
Ethylbenzene	1400		ug/l	1000	330	2000		
p/m-Xylene	11000		ug/l	2000	660	2000		
o-Xylene	3400		ug/l	2000	780	2000		
Xylenes, Total	14000		ug/l	2000	660	2000		
Naphthalene	2200		ug/l	2000	430	2000		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA-GW Lab Number: L2309552

Project Number: 20010210 **Report Date:** 02/28/23

SAMPLE RESULTS

Lab ID: L2309552-03 D Date Collected: 02/22/23 13:25

Client ID: CO190-MWS Date Received: 02/22/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 02/24/23 10:26

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - V	Volatile Organics by GC/MS - Westborough Lab							
Benzene	24000		ug/l	100	32.	200		
Toluene	420		ug/l	150	41.	200		
Ethylbenzene	ND		ug/l	100	33.	200		
p/m-Xylene	ND		ug/l	200	66.	200		
o-Xylene	ND		ug/l	200	78.	200		
Xylenes, Total	ND		ug/l	200	66.	200		
Naphthalene	ND		ug/l	200	43.	200		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	100	70-130	



Project Number: 20010210 Report Date: 02/28/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 02/24/23 08:11

Analyst: MJV

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for s	sample(s): 01-03	Batch:	WG1749139-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

Surrogate	Acceptance	
	%Recovery Qu	
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	102	70-130
Dibromofluoromethane	105	70-130



Project Name: COA-GW Project Number: 20010210

L2309552

Report Date:

Lab Number:

02/28/23

Pai	ameter	LCS %Recovery	Qual	LCSD %Recove		%Recovery Limits	RPD	Qual	RPD Limits	
Vol	atile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-03 Batch	n: WG1749139-3	WG1749139-4				
	Benzene	96		89		70-130	8		20	
	Toluene	99		88		70-130	12		20	
	Ethylbenzene	97		88		70-130	10		20	
	p/m-Xylene	95		90		70-130	5		20	
	o-Xylene	95		85		70-130	11		20	
	Naphthalene	78		82		70-130	5		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92	102	70-130
Toluene-d8	103	101	70-130
4-Bromofluorobenzene	100	100	70-130
Dibromofluoromethane	98	103	70-130

Serial_No:02282318:49

Project Name: COA-GW *Lab Number:* L2309552 Project Number: 20010210

Report Date: 02/28/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

ainer Info	rmation		Initial	Final	Temp			Frozen	
ainer ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
52-01A	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-01B	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-01C	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-01D	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-02A	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-02B	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-02C	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-03A	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-03B	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
52-03C	Vial HCl preserved	Α	NA		2.9	Υ	Absent		PA-8260(14)
	ainer Info ainer ID 52-01A 52-01B 52-01C 52-01D 52-02A 52-02B 52-02C 52-03A 52-03B	Vial HCl preserved	ainer ID Container Type Cooler i52-01A Vial HCl preserved A i52-01B Vial HCl preserved A i52-01C Vial HCl preserved A i52-01D Vial HCl preserved A i52-02A Vial HCl preserved A i52-02B Vial HCl preserved A i52-02C Vial HCl preserved A i52-03A Vial HCl preserved A i52-03B Vial HCl preserved A	ainer ID Container Type Cooler pH i52-01A Vial HCl preserved A NA i52-01B Vial HCl preserved A NA i52-01C Vial HCl preserved A NA i52-01D Vial HCl preserved A NA i52-02A Vial HCl preserved A NA i52-02B Vial HCl preserved A NA i52-03C Vial HCl preserved A NA i52-03B Vial HCl preserved A NA	ainer ID Container Type Cooler PH PH SE2-01A Vial HCl preserved A NA SE2-01B Vial HCl preserved A NA SE2-01C Vial HCl preserved A NA SE2-01D Vial HCl preserved A NA SE2-02A Vial HCl preserved A NA SE2-02B Vial HCl preserved A NA SE2-02C Vial HCl preserved A NA SE2-03A Vial HCl preserved A NA SE2-03B Vial HCl preserved A NA SE2-03B Vial HCl preserved A NA SE2-03B Vial HCl preserved A NA	ainer ID Container Type Cooler pH rintal PH deg C i52-01A Vial HCl preserved A NA 2.9 i52-01B Vial HCl preserved A NA 2.9 i52-01C Vial HCl preserved A NA 2.9 i52-01D Vial HCl preserved A NA 2.9 i52-02A Vial HCl preserved A NA 2.9 i52-02B Vial HCl preserved A NA 2.9 i52-03C Vial HCl preserved A NA 2.9 i52-03B Vial HCl preserved A NA 2.9	ainer ID Container Type Cooler pH rinal PH remp i52-01A Vial HCl preserved A NA 2.9 Y i52-01B Vial HCl preserved A NA 2.9 Y i52-01C Vial HCl preserved A NA 2.9 Y i52-01D Vial HCl preserved A NA 2.9 Y i52-02A Vial HCl preserved A NA 2.9 Y i52-02B Vial HCl preserved A NA 2.9 Y i52-03C Vial HCl preserved A NA 2.9 Y i52-03B Vial HCl preserved A NA 2.9 Y	ainer ID Container Type Cooler pH pH deg C Pres Seal 52-01A Vial HCl preserved A NA 2.9 Y Absent 52-01B Vial HCl preserved A NA 2.9 Y Absent 52-01C Vial HCl preserved A NA 2.9 Y Absent 52-01D Vial HCl preserved A NA 2.9 Y Absent 52-02A Vial HCl preserved A NA 2.9 Y Absent 52-02B Vial HCl preserved A NA 2.9 Y Absent 52-02C Vial HCl preserved A NA 2.9 Y Absent 52-03A Vial HCl preserved A NA 2.9 Y Absent 52-03B Vial HCl preserved A NA 2.9 Y Absent 52-03B Vial HCl preserved A NA 2.9 Y Absent 52-03B Vial HCl preserved A NA 2.9 Y Absent	A NA 2.9 Y Absent S2-01D Vial HCl preserved A NA 2.9 Y Absent S2-02A Vial HCl preserved A NA 2.9 Y Absent S2-02B Vial HCl preserved A NA 2.9 Y Absent S2-02C Vial HCl preserved A NA 2.9 Y Absent S2-03B Vial HCl preserved A NA 2.9 Y Absent A NA 2.9 Y Absent



Project Name:COA-GWLab Number:L2309552Project Number:20010210Report Date:02/28/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RL

RPD

SRM

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.)

 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.)

- 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.

 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.

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.

- 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.

- 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.



Project Name:COA-GWLab Number:L2309552Project Number:20010210Report Date:02/28/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA-GWLab Number:L2309552Project Number:20010210Report Date:02/28/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_main_model} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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.)



Serial_No:02282318:49

Project Name: COA-GW Lab Number: L2309552
Project Number: 20010210 Report Date: 02/28/23

REFERENCES

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.



Serial_No:02282318:49

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 19 Published Date: 4/2/2021 1:14:23 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2322991

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: CO25-PZM008 SAMPLING

Project Number: 20010210

Report Date: 05/04/23

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-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: CO25-PZM008 SAMPLING

Project Number: 20010210

Lab Number:

L2322991

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2322991-01	CO25-PZM008	WATER	COKE OVEN AREA	04/27/23 09:20	04/27/23
L2322991-02	TB-WT-01	WATER	COKE OVEN AREA	04/27/23 00:00	04/27/23



Project Name: CO25-PZM008 SAMPLING Lab Number: L2322991

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:CO25-PZM008 SAMPLINGLab Number:L2322991Project Number:20010210Report Date:05/04/23

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.

Volatile Organics by SIM

L2322991-01D: The sample has an elevated detection limit due to the dilution required by the elevated concentrations of non-target compounds in the sample.

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.

Leley Welf Kelly O'Neill

Authorized Signature:

Title: Technical Director/Representative

Date: 05/04/23

ORGANICS



VOLATILES



L2322991

04/27/23 09:20

Not Specified

04/27/23

Project Name: CO25-PZM008 SAMPLING

Project Number: 20010210

Report Date: 05/04/23

Lab Number:

Date Collected:

Date Received:

Field Prep:

SAMPLE RESULTS

Lab ID: L2322991-01 D

Client ID: CO25-PZM008 Sample Location: COKE OVEN AREA

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 05/03/23 11:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westb	orough Lab						
Dichlorodifluoromethane	ND		ug/l	500	24.	100	
Chloromethane	ND		ug/l	250	20.	100	
Vinyl chloride	ND		ug/l	100	7.1	100	
Bromomethane	ND		ug/l	100	26.	100	
Chloroethane	ND		ug/l	100	13.	100	
Trichlorofluoromethane	ND		ug/l	250	16.	100	
1,1-Dichloroethene	ND		ug/l	50	17.	100	
Carbon disulfide	ND		ug/l	500	30.	100	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	250	15.	100	
Methylene chloride	ND		ug/l	250	68.	100	
Acetone	ND		ug/l	500	150	100	
trans-1,2-Dichloroethene	ND		ug/l	75	16.	100	
Methyl Acetate	ND		ug/l	200	23.	100	
Methyl tert butyl ether	ND		ug/l	100	17.	100	
1,1-Dichloroethane	ND		ug/l	75	21.	100	
cis-1,2-Dichloroethene	ND		ug/l	50	19.	100	
Cyclohexane	ND		ug/l	1000	27.	100	
Chloroform	ND		ug/l	75	22.	100	
Carbon tetrachloride	ND		ug/l	50	13.	100	
1,1,1-Trichloroethane	ND		ug/l	50	16.	100	
2-Butanone	ND		ug/l	500	190	100	
Benzene	1800		ug/l	50	16.	100	
1,2-Dichloroethane	ND		ug/l	50	13.	100	
Trichloroethene	ND		ug/l	50	18.	100	
1,2-Dichloropropane	ND		ug/l	100	14.	100	
Bromodichloromethane	ND		ug/l	50	19.	100	
cis-1,3-Dichloropropene	ND		ug/l	50	14.	100	
Toluene	1600		ug/l	75	20.	100	



Project Name: CO25-PZM008 SAMPLING Lab Number: L2322991

Project Number: 20010210 **Report Date:** 05/04/23

SAMPLE RESULTS

Lab ID: L2322991-01 D Date Collected: 04/27/23 09:20

Client ID: CO25-PZM008 Date Received: 04/27/23 Sample Location: COKE OVEN AREA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westboroug	gh Lab					
Tetrachloroethene	ND		ug/l	50	18.	100
4-Methyl-2-pentanone	ND		ug/l	500	42.	100
trans-1,3-Dichloropropene	ND		ug/l	50	16.	100
1,3-Dichloropropene, Total	ND		ug/l	50	14.	100
1,1,2-Trichloroethane	ND		ug/l	75	14.	100
Dibromochloromethane	ND		ug/l	50	15.	100
1,2-Dibromoethane	ND		ug/l	200	19.	100
2-Hexanone	ND		ug/l	500	52.	100
Chlorobenzene	ND		ug/l	50	18.	100
Ethylbenzene	44	J	ug/l	50	17.	100
p/m-Xylene	840		ug/l	100	33.	100
o-Xylene	300		ug/l	100	39.	100
Xylenes, Total	1100		ug/l	100	33.	100
Styrene	500		ug/l	100	36.	100
Bromoform	ND		ug/l	200	25.	100
Isopropylbenzene	ND		ug/l	50	19.	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	17.	100
1,3-Dichlorobenzene	ND		ug/l	250	19.	100
1,4-Dichlorobenzene	ND		ug/l	250	19.	100
1,2-Dichlorobenzene	ND		ug/l	250	18.	100
1,2-Dibromo-3-chloropropane	ND		ug/l	250	35.	100
1,2,4-Trichlorobenzene	ND		ug/l	250	22.	100
Naphthalene	14000		ug/l	100	22.	100
1,2,3-Trichlorobenzene	ND		ug/l	250	23.	100

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	89	70-130	
Dibromofluoromethane	111	70-130	



Project Name: CO25-PZM008 SAMPLING Lab Number: L2322991

Project Number: 20010210 **Report Date:** 05/04/23

SAMPLE RESULTS

Lab ID: L2322991-01 D Date Collected: 04/27/23 09:20

Client ID: CO25-PZM008 Date Received: 04/27/23 Sample Location: COKE OVEN AREA Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8260D-SIM(M) Analytical Date: 05/03/23 08:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM -	Westborough Lab					
1,1,2,2-Tetrachloroethane	ND		ug/l	5.00	0.570	100
Surrogate			% Recovery	Qualifier		eptance iteria
1,2-Dichloroethane-d4			100		7	70-130
4-Bromofluorobenzene			99		7	70-130



L2322991

05/04/23

Project Name: CO25-PZM008 SAMPLING

L2322991-02

COKE OVEN AREA

TB-WT-01

Project Number: 20010210

SAMPLE RESULTS

Lab Number:

Report Date:

Date Collected: 04/27/23 00:00

Date Received: 04/27/23
Field Prep: Not Specified

Sample Depth:

Sample Location:

Lab ID:

Client ID:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/03/23 06:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westb	orough Lab					
Dichlorodifluoromethane	ND		ug/l	5.0	0.24	1
Chloromethane	ND		ug/l	2.5	0.20	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Bromomethane	ND		ug/l	1.0	0.26	1
Chloroethane	ND		ug/l	1.0	0.13	1
Trichlorofluoromethane	ND		ug/l	2.5	0.16	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
Carbon disulfide	ND		ug/l	5.0	0.30	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.5	0.15	1
Methylene chloride	ND		ug/l	2.5	0.68	1
Acetone	ND		ug/l	5.0	1.5	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Methyl tert butyl ether	ND		ug/l	1.0	0.17	1
1,1-Dichloroethane	ND		ug/l	0.75	0.21	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
Cyclohexane	ND		ug/l	10	0.27	1
Chloroform	ND		ug/l	0.75	0.22	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
2-Butanone	ND		ug/l	5.0	1.9	1
Benzene	ND		ug/l	0.50	0.16	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Toluene	ND		ug/l	0.75	0.20	1



Project Name: Lab Number: CO25-PZM008 SAMPLING L2322991

Project Number: Report Date: 20010210 05/04/23

SAMPLE RESULTS

Lab ID: Date Collected: 04/27/23 00:00 L2322991-02

Client ID: Date Received: 04/27/23 TB-WT-01 Sample Location: COKE OVEN AREA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Wes	tborough Lab					
Tetrachloroethene	ND		ug/l	0.50	0.18	1
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,2-Dibromoethane	ND		ug/l	2.0	0.19	1
2-Hexanone	ND		ug/l	5.0	0.52	1
Chlorobenzene	ND		ug/l	0.50	0.18	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Styrene	ND		ug/l	1.0	0.36	1
Bromoform	ND		ug/l	2.0	0.25	1
Isopropylbenzene	ND		ug/l	0.50	0.19	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22	1
Naphthalene	ND		ug/l	1.0	0.22	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	92	70-130	
Dibromofluoromethane	105	70-130	



Project Name: CO25-PZM008 SAMPLING Lab Number: L2322991

Project Number: 20010210 **Report Date:** 05/04/23

SAMPLE RESULTS

Lab ID: L2322991-02 Date Collected: 04/27/23 00:00

Client ID: TB-WT-01 Date Received: 04/27/23
Sample Location: COKE OVEN AREA Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8260D-SIM(M) Analytical Date: 05/03/23 07:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM	- Westborough Lab					
1,1,2,2-Tetrachloroethane	ND		ug/l	0.050	0.006	1
Surrogate			% Recovery	Qualifier		eptance riteria

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	104		70-130	
4-Bromofluorobenzene	93		70-130	



L2322991

Project Name: CO25-PZM008 SAMPLING Lab Number:

Project Number: 20010210 **Report Date:** 05/04/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D-SIM(M) Analytical Date: 05/03/23 06:45

Parameter	Result	Qualifier	Units	RL		MDL	
Volatile Organics by GC/MS-SIM -	Westborough	Lab for s	ample(s):	01-02	Batch:	WG1774196-5	
1,1,2,2-Tetrachloroethane	ND		ug/l	0.050		0.006	

		Acceptance			
Surrogate	%Recovery	Qualifier Cri	teria		
1,2-Dichloroethane-d4	111	70-1	130		
4-Bromofluorobenzene	100	70-1	130		



L2322991

Project Name: CO25-PZM008 SAMPLING Lab Number:

Project Number: 20010210 **Report Date:** 05/04/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/03/23 06:04

arameter	Result	Qualifier Unit	s RL	MDL
olatile Organics by GC/MS - Wes	stborough Lab	for sample(s):	01-02 Batch:	WG1774213-5
Dichlorodifluoromethane	ND	ug/	T 5.0	0.24
Chloromethane	ND	ug/	1 2.5	0.20
Vinyl chloride	ND	ug/	1.0	0.07
Bromomethane	ND	ug/	1.0	0.26
Chloroethane	ND	ug/	1.0	0.13
Trichlorofluoromethane	ND	ug/	1 2.5	0.16
1,1-Dichloroethene	ND	ug/	l 0.50	0.17
Carbon disulfide	ND	ug/	T 5.0	0.30
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/	1 2.5	0.15
Methylene chloride	ND	ug/	1 2.5	0.68
Acetone	ND	ug/	T 5.0	1.5
trans-1,2-Dichloroethene	ND	ug/	l 0.75	0.16
Methyl Acetate	ND	ug/	1 2.0	0.23
Methyl tert butyl ether	ND	ug/	T 1.0	0.17
1,1-Dichloroethane	ND	ug/	l 0.75	0.21
cis-1,2-Dichloroethene	ND	ug/	1 0.50	0.19
Cyclohexane	ND	ug/	T 10	0.27
Chloroform	ND	ug/	l 0.75	0.22
Carbon tetrachloride	ND	ug/	1 0.50	0.13
1,1,1-Trichloroethane	ND	ug/	1 0.50	0.16
2-Butanone	ND	ug/	1 5.0	1.9
Benzene	ND	ug/	1 0.50	0.16
1,2-Dichloroethane	ND	ug/	1 0.50	0.13
Trichloroethene	ND	ug/	1 0.50	0.18
1,2-Dichloropropane	ND	ug/	1.0	0.14
Bromodichloromethane	ND	ug/	1 0.50	0.19
cis-1,3-Dichloropropene	ND	ug/	l 0.50	0.14
Toluene	ND	ug/	l 0.75	0.20
Tetrachloroethene	ND	ug/	1 0.50	0.18



L2322991

Project Name: CO25-PZM008 SAMPLING Lab Number:

Project Number: 20010210 **Report Date:** 05/04/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/03/23 06:04

Parameter	Result	Qualifier Units	RL	MDL
Volatile Organics by GC/MS - Wes	tborough Lab	for sample(s): 01-02	Batch:	WG1774213-5
4-Methyl-2-pentanone	ND	ug/l	5.0	0.42
trans-1,3-Dichloropropene	ND	ug/l	0.50	0.16
1,3-Dichloropropene, Total	ND	ug/l	0.50	0.14
1,1,2-Trichloroethane	ND	ug/l	0.75	0.14
Dibromochloromethane	ND	ug/l	0.50	0.15
1,2-Dibromoethane	ND	ug/l	2.0	0.19
2-Hexanone	ND	ug/l	5.0	0.52
Chlorobenzene	ND	ug/l	0.50	0.18
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Styrene	ND	ug/l	1.0	0.36
Bromoform	ND	ug/l	2.0	0.25
Isopropylbenzene	ND	ug/l	0.50	0.19
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	0.17
1,3-Dichlorobenzene	ND	ug/l	2.5	0.19
1,4-Dichlorobenzene	ND	ug/l	2.5	0.19
1,2-Dichlorobenzene	ND	ug/l	2.5	0.18
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5	0.35
1,2,4-Trichlorobenzene	ND	ug/l	2.5	0.22
Naphthalene	ND	ug/l	1.0	0.22
1,2,3-Trichlorobenzene	ND	ug/l	2.5	0.23



Project Name: CO25-PZM008 SAMPLING Lab Number: L2322991

Project Number: 20010210 **Report Date:** 05/04/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/03/23 06:04

Analyst: MCM

Parameter Result Qualifier Units RL MDL

Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1774213-5

		Acceptance			
Surrogate	%Recovery	Qualifier Criteri	а		
1,2-Dichloroethane-d4	94	70-130			
Toluene-d8	97	70-130			
4-Bromofluorobenzene	90	70-130			
Dibromofluoromethane	110	70-130			



Project Name: CO25-PZM008 SAMPLING

Lab Number:

L2322991

Project Number: 20010210

Parameter	LCS %Recovery	Qual	LCSD %Recovery	%Recovery Qual Limits	RPD	RPD Qual Limits
Volatile Organics by GC/MS-SIM - Westboro	ugh Lab Associat	ed sample(s)	: 01-02 Batch:	WG1774196-3 WG17741	96-4	
1,1,2,2-Tetrachloroethane	89		94	70-130	5	25

Surrogate	LCS	LCSD	Acceptance
	%Recovery Q	ual %Recovery	Qual Criteria
1,2-Dichloroethane-d4	99	100	70-130
4-Bromofluorobenzene	101	101	70-130



Project Name: CO25-PZM008 SAMPLING

Project Number: 20010210

Lab Number: L2322991

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Qual Limits	
/olatile Organics by GC/MS - Westborough	Lab Associated	sample(s):	01-02 Batch:	WG1774213-3	WG1774213-4			
Dichlorodifluoromethane	99		100		36-147	1	20	
Chloromethane	88		91		64-130	3	20	
Vinyl chloride	93		98		55-140	5	20	
Bromomethane	87		94		39-139	8	20	
Chloroethane	98		100		55-138	2	20	
Trichlorofluoromethane	110		120		62-150	9	20	
1,1-Dichloroethene	110		110		61-145	0	20	
Carbon disulfide	100		110		51-130	10	20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		120		70-130	9	20	
Methylene chloride	99		100		70-130	1	20	
Acetone	97		100		58-148	3	20	
trans-1,2-Dichloroethene	110		110		70-130	0	20	
Methyl Acetate	82		88		70-130	7	20	
Methyl tert butyl ether	92		96		63-130	4	20	
1,1-Dichloroethane	99		100		70-130	1	20	
cis-1,2-Dichloroethene	100		110		70-130	10	20	
Cyclohexane	96		100		70-130	4	20	
Chloroform	100		100		70-130	0	20	
Carbon tetrachloride	110		110		63-132	0	20	
1,1,1-Trichloroethane	100		110		67-130	10	20	
2-Butanone	72		73		63-138	1	20	
Benzene	100		100		70-130	0	20	
1,2-Dichloroethane	97		100		70-130	3	20	



Project Name: CO25-PZM008 SAMPLING

Project Number: 20010210

Lab Number: L2322991

arameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	RPD Qual Limits	
/olatile Organics by GC/MS - Westborough	Lab Associated	sample(s):	01-02 Batch:	WG1774213-3	WG1774213-4			
Trichloroethene	100		100		70-130	0	20	
1,2-Dichloropropane	98		93		70-130	5	20	
Bromodichloromethane	100		100		67-130	0	20	
cis-1,3-Dichloropropene	96		96		70-130	0	20	
Toluene	99		98		70-130	1	20	
Tetrachloroethene	110		110		70-130	0	20	
4-Methyl-2-pentanone	80		87		59-130	8	20	
trans-1,3-Dichloropropene	97		87		70-130	11	20	
1,1,2-Trichloroethane	98		88		70-130	11	20	
Dibromochloromethane	99		94		63-130	5	20	
1,2-Dibromoethane	99		91		70-130	8	20	
2-Hexanone	73		76		57-130	4	20	
Chlorobenzene	100		100		75-130	0	20	
Ethylbenzene	100		100		70-130	0	20	
p/m-Xylene	100		100		70-130	0	20	
o-Xylene	105		105		70-130	0	20	
Styrene	105		105		70-130	0	20	
Bromoform	95		90		54-136	5	20	
Isopropylbenzene	93		94		70-130	1	20	
1,1,2,2-Tetrachloroethane	91		90		67-130	1	20	
1,3-Dichlorobenzene	100		100		70-130	0	20	
1,4-Dichlorobenzene	100		100		70-130	0	20	
1,2-Dichlorobenzene	100		100		70-130	0	20	



Project Name: CO25-PZM008 SAMPLING

Project Number: 20010210

Lab Number: L232

L2322991

Parameter	LCS %Recovery	Qual	LCSD %Recovery	/ Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-02 Batch:	WG1774213-3	WG1774213-4				
1,2-Dibromo-3-chloropropane	100		94		41-144	6		20	
1,2,4-Trichlorobenzene	110		110		70-130	0		20	
Naphthalene	100		96		70-130	4		20	
1,2,3-Trichlorobenzene	110		100		70-130	10		20	

	LCS	LCSD	Acceptance	
Surrogate	%Recovery Qual	%Recovery Qual	Criteria	
1,2-Dichloroethane-d4	101	102	70-130	
Toluene-d8	98	94	70-130	
4-Bromofluorobenzene	91	92	70-130	
Dibromofluoromethane	104	108	70-130	



CO25-PZM008 SAMPLING Lab Number: L2322991

Project Number: 20010210 **Report Date:** 05/04/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Project Name:

Cooler Custody Seal

A Absent

Container Information					Final	Temp			Frozen	
	Container ID	Container Type	Cooler	рH	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
	L2322991-01A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260-SIM(14),PA-8260(14)
	L2322991-01B	Vial HCI preserved	Α	NA		3.3	Υ	Absent		PA-8260-SIM(14),PA-8260(14)
	L2322991-01C	Vial HCI preserved	Α	NA		3.3	Υ	Absent		PA-8260-SIM(14),PA-8260(14)
	L2322991-02A	Vial HCI preserved	Α	NA		3.3	Υ	Absent		PA-8260-SIM(14),PA-8260(14)
	L2322991-02B	Vial HCI preserved	Α	NA		3.3	Υ	Absent		PA-8260-SIM(14),PA-8260(14)
	L2322991-02C	Vial HCI preserved	Α	NA		3.3	Υ	Absent		PA-8260-SIM(14),PA-8260(14)
	L2322991-02D	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260-SIM(14),PA-8260(14)



Project Name: Lab Number: CO25-PZM008 SAMPLING L2322991 **Report Date: Project Number:** 20010210 05/04/23

GLOSSARY

Acronyms

LOQ

MS

RPD

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**

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.

Environmental Protection Agency.

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.)

- 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

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

MDI - 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.

> - 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.

- 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.

TEO - 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.



Project Name:CO25-PZM008 SAMPLINGLab Number:L2322991Project Number:20010210Report Date:05/04/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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



Project Name:CO25-PZM008 SAMPLINGLab Number:L2322991Project Number:20010210Report Date:05/04/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_equation} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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:CO25-PZM008 SAMPLINGLab Number:L2322991Project Number:20010210Report Date:05/04/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 19

Page 1 of 1

Published Date: 4/2/2021 1:14:23 PM

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

ALPHA	CHAIN O	F CUSTO	DDY	PAGE_	of	Date	Rec'd in	Lab:	412	281	23	ALPH	1A Job#: L23229	91
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193 Client Information	MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288	Project Information Project Name: Or Project Location:	025-PZN	8 800v	emptino		oort Infor FAX ADEx		- Data [EMAIL dd'l Deliv			Billin	g Information e as Client info PO #:	
Address: 6995 Sparrows Phone: Fax: Email: Shabis Uguille These samples ha	Point Atlantic Bethknen Blvd Point, MD Danngroup.net Danngroup.net we been previously analyzed by Alpha specific Requirements/Comm	Project #: 200 Project Manager: ALPHA Quote #: Turn-Around Standard Date Due:	Time	0.170		State	\$ /	gram	nents/R	Criter			SAMPLE HANDLING Filtration Done Not needed Lab to do Preservation	T O T A L # B O T
ALPHA Lab ID (Lab Use Only)	Sample ID	Date	ollection	Sample Matrix	Sampler's Initials	8	7 / ,	//	//		//	//	Lab to do (Please specify below) Sample Specific Comments	T L E S
22991-01	CO25-PZMO08 TB-W+-01	4/27/2	3 0920	w+	-	X							PH above 10	3
	9													
	4/25/23 0145 8/23 0145 Earan 1	Relinquished By:	ARM	Pre	iner Type eservative	V B	Reco	eived By		VB .	Date 1-2	/Time // (60 2) 1820	Please print clearly, legibly and pletely. Samples can not be log in and turnaround time clock will start until any ambiguities are regardly samples submitted are subject Alpha's Terms and Conditions. See reverse side.	ged Il not esolved



ANALYTICAL REPORT

Lab Number: L2327446

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 06/01/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

Lab Number: Report Date: L2327446

port Date: 06/01/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2327446-01	CO23-PZM008	WATER	COKE OVEN	05/17/23 13:05	05/17/23
L2327446-02	CO24-PZM007	WATER	COKE OVEN	05/17/23 14:05	05/17/23
L2327446-03	CO26-PZM007	WATER	COKE OVEN	05/17/23 15:30	05/17/23
L2327446-04	TB-WT-01	WATER	COKE OVEN	05/17/23 00:00	05/17/23



Project Name:COA GWLab Number:L2327446Project Number:20010210Report Date:06/01/23

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:COA GWLab Number:L2327446Project Number:20010210Report Date:06/01/23

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:

Title: Technical Director/Representative Date: 06/01/23

Jufani Morrissey-Tiffani Morrissey

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2327446

Project Number: 20010210 **Report Date:** 06/01/23

SAMPLE RESULTS

Lab ID: L2327446-01 D Date Collected: 05/17/23 13:05

Client ID: CO23-PZM008 Date Received: 05/17/23 Sample Location: COKE OVEN Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 16:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	410		ug/l	12	4.0	25	
Toluene	240		ug/l	19	5.1	25	
Ethylbenzene	24		ug/l	12	4.2	25	
p/m-Xylene	280		ug/l	25	8.3	25	
o-Xylene	110		ug/l	25	9.8	25	
Xylenes, Total	390		ug/l	25	8.3	25	
Naphthalene	4000		ug/l	25	5.4	25	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	102		70-130	
Toluene-d8	103		70-130	
4-Bromofluorobenzene	108		70-130	
Dibromofluoromethane	107		70-130	



Project Name: COA GW Lab Number: L2327446

Project Number: 20010210 **Report Date:** 06/01/23

SAMPLE RESULTS

Lab ID: L2327446-02 D Date Collected: 05/17/23 14:05

Client ID: CO24-PZM007 Date Received: 05/17/23 Sample Location: COKE OVEN Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 15:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	2.9	J	ug/l	5.0	1.6	10	
Toluene	2.2	J	ug/l	7.5	2.0	10	
Ethylbenzene	2.7	J	ug/l	5.0	1.7	10	
p/m-Xylene	ND		ug/l	10	3.3	10	
o-Xylene	ND		ug/l	10	3.9	10	
Xylenes, Total	ND		ug/l	10	3.3	10	
Naphthalene	2000		ug/l	10	2.2	10	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	103		70-130	
Toluene-d8	100		70-130	
4-Bromofluorobenzene	103		70-130	
Dibromofluoromethane	99		70-130	



Project Name: COA GW Lab Number: L2327446

Project Number: 20010210 **Report Date:** 06/01/23

SAMPLE RESULTS

Lab ID: L2327446-03 Date Collected: 05/17/23 15:30

Client ID: CO26-PZM007 Date Received: 05/17/23
Sample Location: COKE OVEN Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 15:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	4.7		ug/l	0.50	0.16	1
Toluene	2.3		ug/l	0.75	0.20	1
Ethylbenzene	0.18	J	ug/l	0.50	0.17	1
p/m-Xylene	2.1		ug/l	1.0	0.33	1
o-Xylene	0.91	J	ug/l	1.0	0.39	1
Xylenes, Total	3.0	J	ug/l	1.0	0.33	1
Naphthalene	30		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptan Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-13	0
Toluene-d8	104	70-13	0
4-Bromofluorobenzene	104	70-13	0
Dibromofluoromethane	107	70-13	0



Project Name: COA GW Lab Number: L2327446

Project Number: 20010210 **Report Date:** 06/01/23

SAMPLE RESULTS

Lab ID: L2327446-04 Date Collected: 05/17/23 00:00

Client ID: TB-WT-01 Date Received: 05/17/23
Sample Location: COKE OVEN Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 14:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbor	Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	105	70-130	



Project Name: COA GW **Lab Number:** L2327446

Project Number: 20010210 **Report Date:** 06/01/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/30/23 08:31

Analyst: PID

arameter	Result Qu	alifier Units	RL	MDL
olatile Organics by GC/N	MS - Westborough Lab for	sample(s): 01-04	4 Batch:	WG1785420-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance				
Surrogate	%Recovery Qualific	er Criteria			
1.2-Dichloroethane-d4	113	70-130			
Toluene-d8	107	70-130			
4-Bromofluorobenzene	107	70-130			
Dibromofluoromethane	107	70-130			



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2327446

Report Date: 06/01/23

Pa	rameter	LCS %Recovery	Qual		.CSD ecovery		%Recovery Limits	RPD	Qual	RPD Limits	
	atile Organics by GC/MS - Westborough La	•		01-04	Batch:	WG1785420-3	WG1785420-4				
П	Benzene	99			100		70-130	1		20	
	Toluene	100			100		70-130	0		20	
	Ethylbenzene	99			100		70-130	1		20	
	p/m-Xylene	95			95		70-130	0		20	
	o-Xylene	95			100		70-130	5		20	
	Naphthalene	88			89		70-130	1		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97	101	70-130
Toluene-d8	104	103	70-130
4-Bromofluorobenzene	103	103	70-130
Dibromofluoromethane	108	113	70-130

Lab Number: L2327446

Report Date: 06/01/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Project Name:

Cooler Custody Seal

COA GW

A Absent

Project Number: 20010210

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2327446-01A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-01B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-01C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-02A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-02B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-02C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-03A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-03B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-03C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-04A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-04B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-04C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327446-04D	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)



Project Name: Lab Number: COA GW L2327446 **Project Number:** 20010210 **Report Date:** 06/01/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RPD

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.)

- 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.)

- 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

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

MDI - 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.

- 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.

- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

- 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.

TEO - 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:COA GWLab Number:L2327446Project Number:20010210Report Date:06/01/23

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, Benza(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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:COA GWLab Number:L2327446Project Number:20010210Report Date:06/01/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name:COA GWLab Number:L2327446Project Number:20010210Report Date:06/01/23

REFERENCES

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.



Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 19

Page 1 of 1

Published Date: 4/2/2021 1:14:23 PM

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 1,2,4,5-Tetramethylbenzene; 1,2,4,

4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

ALPHA	CHAIN	OF CUSTODY	PAGEOF	Date Rec'd in	Lab: 5/18/23	ALPHA JOB#: 12327446
WESTBORO, MA	MANSFIELD, MA	Project Information		Report Infor	mation - Data Deliverables	Billing Information
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:	A Cold	□ FAX	□ EMAIL	☐ Same as Client info PO#:
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27446-01	(1) 93-P2-	= /-1	05 (alw +2)			PH 7 10 3
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-02	CUCT- PZ	~ 007) 1º	700	N .		DH / IO
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Page 19 of 19 oct-	07)	Min July	AL 1800	0 10	m = 1/1	123 7200



ANALYTICAL REPORT

Lab Number: L2327922

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 05/25/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2327922

 Report Date:
 05/25/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2327922-01	CO56-PZP001	WATER	Not Specified	05/18/23 11:30	05/18/23
L2327922-02	CO55-PZM000	WATER	Not Specified	05/18/23 15:30	05/18/23
L2327922-03	CO57-PZP002	WATER	Not Specified	05/18/23 15:00	05/18/23
L2327922-04	CO59-PZP002	WATER	Not Specified	05/18/23 13:20	05/18/23
L2327922-05	CO25-PZM008	WATER	Not Specified	05/18/23 14:10	05/18/23
L2327922-06	CO204-MWS	WATER	Not Specified	05/18/23 14:40	05/18/23
L2327922-07	TB-WT-01	WATER	Not Specified	05/18/23 00:00	05/18/23



Project Name:COA GWLab Number:L2327922Project Number:20010210Report Date:05/25/23

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:
 COA GW
 Lab Number:
 L2327922

 Project Number:
 20010210
 Report Date:
 05/25/23

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.

Volatile Organics

L2327922-02: The pH was greater than two; however, the sample was analyzed within the method required holding time.

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:

Title: Technical Director/Representative Date: 05/25/23

600, Shandow Kelly Stenstrom

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2327922

Project Number: 20010210 **Report Date:** 05/25/23

SAMPLE RESULTS

Lab ID: L2327922-01 D Date Collected: 05/18/23 11:30

Client ID: CO56-PZP001 Date Received: 05/18/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 04:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - \	Westborough Lab						
Benzene	210		ug/l	10	3.2	20	
Toluene	70		ug/l	15	4.1	20	
Ethylbenzene	8.4	J	ug/l	10	3.3	20	
p/m-Xylene	140		ug/l	20	6.6	20	
o-Xylene	48		ug/l	20	7.8	20	
Xylenes, Total	190		ug/l	20	6.6	20	
Naphthalene	2100		ug/l	20	4.3	20	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	89	70-130	
4-Bromofluorobenzene	78	70-130	
Dibromofluoromethane	107	70-130	



Project Name: COA GW Lab Number: L2327922

Project Number: 20010210 **Report Date:** 05/25/23

SAMPLE RESULTS

Lab ID: L2327922-02 Date Collected: 05/18/23 15:30

Client ID: CO55-PZM000 Date Received: 05/18/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 03:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - V	Westborough Lab						
Benzene	2.4		ug/l	0.50	0.16	1	
Toluene	1.2		ug/l	0.75	0.20	1	
Ethylbenzene	0.30	J	ug/l	0.50	0.17	1	
p/m-Xylene	1.8		ug/l	1.0	0.33	1	
o-Xylene	1.1		ug/l	1.0	0.39	1	
Xylenes, Total	2.9		ug/l	1.0	0.33	1	
Naphthalene	7.7		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	91	70-130	
Toluene-d8	91	70-130	
4-Bromofluorobenzene	77	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Lab Number: L2327922

Project Number: 20010210 **Report Date:** 05/25/23

SAMPLE RESULTS

Lab ID: L2327922-03 Date Collected: 05/18/23 15:00

Client ID: CO57-PZP002 Date Received: 05/18/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 03:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Wes	stborough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	0.32	J	ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	95	70-130	
Toluene-d8	90	70-130	
4-Bromofluorobenzene	86	70-130	
Dibromofluoromethane	115	70-130	



Project Name: COA GW Lab Number: L2327922

Project Number: 20010210 **Report Date:** 05/25/23

SAMPLE RESULTS

Lab ID: L2327922-04 Date Collected: 05/18/23 13:20

Client ID: CO59-PZP002 Date Received: 05/18/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 02:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	0.27	J	ug/l	0.50	0.16	1				
Toluene	0.35	J	ug/l	0.75	0.20	1				
Ethylbenzene	0.26	J	ug/l	0.50	0.17	1				
p/m-Xylene	0.42	J	ug/l	1.0	0.33	1				
o-Xylene	0.71	J	ug/l	1.0	0.39	1				
Xylenes, Total	1.1	J	ug/l	1.0	0.33	1				
Naphthalene	1.0		ug/l	1.0	0.22	1				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	91	70-130	
4-Bromofluorobenzene	84	70-130	
Dibromofluoromethane	111	70-130	



Project Name: COA GW Lab Number: L2327922

Project Number: 20010210 **Report Date:** 05/25/23

SAMPLE RESULTS

Lab ID: L2327922-05 D Date Collected: 05/18/23 14:10

Client ID: CO25-PZM008 Date Received: 05/18/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 04:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	1400		ug/l	50	16.	100				
Toluene	1100		ug/l	75	20.	100				
Ethylbenzene	32	J	ug/l	50	17.	100				
p/m-Xylene	610		ug/l	100	33.	100				
o-Xylene	220		ug/l	100	39.	100				
Xylenes, Total	830		ug/l	100	33.	100				
Naphthalene	15000		ug/l	100	22.	100				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	103	70-130	
Toluene-d8	92	70-130	
4-Bromofluorobenzene	79	70-130	
Dibromofluoromethane	111	70-130	



Project Name: COA GW Lab Number: L2327922

Project Number: 20010210 **Report Date:** 05/25/23

SAMPLE RESULTS

Lab ID: L2327922-06 D Date Collected: 05/18/23 14:40

Client ID: CO204-MWS Date Received: 05/18/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 04:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	· Westborough Lab						
Benzene	760		ug/l	25	8.0	50	
Toluene	460		ug/l	38	10.	50	
Ethylbenzene	17	J	ug/l	25	8.4	50	
p/m-Xylene	320		ug/l	50	17.	50	
o-Xylene	120		ug/l	50	20.	50	
Xylenes, Total	440		ug/l	50	17.	50	
Naphthalene	6900		ua/l	50	11.	50	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	90	70-130	
4-Bromofluorobenzene	78	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA GW Lab Number: L2327922

Project Number: 20010210 **Report Date:** 05/25/23

SAMPLE RESULTS

Lab ID: L2327922-07 Date Collected: 05/18/23 00:00

Client ID: TB-WT-01 Date Received: 05/18/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 02:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbo	rough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	104	70-130	
Toluene-d8	92	70-130	
4-Bromofluorobenzene	81	70-130	
Dibromofluoromethane	102	70-130	



Project Name:COA GWLab Number:L2327922

Project Number: 20010210 **Report Date:** 05/25/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/23/23 22:42

Parameter	Result Qua	lifier Units	RL	MDL	
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 01-07	Batch:	WG1782805-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	_
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	_
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptance					
Surrogate	%Recovery Qualit	ier Criteria				
1,2-Dichloroethane-d4	99	70-130				
Toluene-d8	92	70-130				
4-Bromofluorobenzene	84	70-130				
Dibromofluoromethane	107	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2327922

Report Date: 05/25/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits
/olatile Organics by GC/MS - Westborough L	ab Associated s	sample(s):	01-07 Batch:	WG1782805-3	WG1782805-4			
Benzene	98		99		70-130	1		20
Toluene	93		90		70-130	3		20
Ethylbenzene	97		94		70-130	3		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
Naphthalene	87		89		70-130	2		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	86	91	70-130
Toluene-d8	92	89	70-130
4-Bromofluorobenzene	81	79	70-130
Dibromofluoromethane	99	104	70-130

Lab Number: L2327922

Report Date: 05/25/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Project Name:

Cooler Custody Seal

COA GW

A Absent

Project Number: 20010210

Container Information				Final	Temp			Frozen	
Container ID	Container Type	Cooler	Initial pH	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2327922-01A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-01B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-01C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-02A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-02B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-02C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-03A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-03B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-03C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-04A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-04B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-04C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-05A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-05B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-05C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-06A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-06B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-06C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-07A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-07B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-07C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
L2327922-07D	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)



Project Name:COA GWLab Number:L2327922Project Number:20010210Report Date:05/25/23

GLOSSARY

Acronyms

EDL

EMPC

LOQ

MS

RL

SRM

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.)

- 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).

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.)

- 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.

 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.

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.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:COA GWLab Number:L2327922Project Number:20010210Report Date:05/25/23

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GWLab Number:L2327922Project Number:20010210Report Date:05/25/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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.)



Serial_No:05252313:15

 Project Name:
 COA GW
 Lab Number:
 L2327922

 Project Number:
 20010210
 Report Date:
 05/25/23

REFERENCES

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.



Serial_No:05252313:15

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 19 Published Date: 4/2/2021 1:14:23 PM

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

CH ALPHA	IAIN OF CUSTO	DDY PAGE	OF Date Rec	'd in Lab: 05/1	9/23	ALPHA Job #: 12327 6	122
WESTBORO, MA MANSFIELD, MA	Project Inform	nation	Report	Information - Data	Deliverables	Billing Information	- N P A
TEL: 508-898-9220 TEL: 508-822-9300 FAX: 508-898-9193 FAX: 508-822-3288	Project Name:	:OA G	□ FAX	☐ EMAIL		☐ Same as Client info PO#:	
Client Information	Project Location:	-011 61	□ ADEx		iverables	SOUTH AND THE SO	
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nouress.	Project Manager:	1505					
Dhees:	ALPHA Quote #:						
Phone:	Turn-Around	Time					
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Email:	Date Due:	Time:	1	60			T O
 These samples have been previously a 	nalyzed by Alpha	EWHENE.	ANALYSIS	82.60	/ / / /	SAMPLE HANDLING	A L
Other Project Specific Require	ments/Comments/Detection	Limits:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 / /		/ / Filtration	,
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1111 DANGES	1 > 10		100 T	5///	1111	/ / Preservation	o T
ALPHA Lab ID		ollection Sample	Sampler's	7///	/////	Lab to do (Please specify below)	Ţ
(Lab Use Only)	Sample ID \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Time Matrix	Initials			Sample Specific Comments	E 5
27922-01 C05	6-PZP0015TAZ	3 1130 COW	1/6×				3
12 0055	PZMANA	1530	1				3
-03 CD57	270000	1500	9			H N N	
1 500	727002	1300	X		+	- CPIII "	3
-04 C 059-	121007	1520	18				3
-05 (025-	PZMQQ8 1	1410 1	1 X				3
06 CA2 N	4-MWS	1240	W S				3
07 TB-W+-	21	F1-10 V	100	++++	++++		4
C1	01		-0	-	++++		1
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502535/19/28	Santo V		eservative 13			pletely. Samples can not be lo	gged
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	Sta AR	7 -5/18/23	1/200	K	17 C-18-	All samples submitted are subj Alpha's Terms and Conditions.	ect to
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ANALYTICAL REPORT

Lab Number: L2328274

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q2

Project Number: 20010210

Report Date: 06/05/23

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



Project Name: COA GW Q2 **Project Number:** 20010210

Lab Number: Report Date: L2328274

port Date: 06/05/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2328274-01	CO58-PZM001	WATER	Not Specified	05/19/23 10:05	05/19/23
L2328274-02	CO198-MWS	WATER	Not Specified	05/19/23 11:10	05/19/23
L2328274-03	CO30-PZM015	WATER	Not Specified	05/19/23 12:25	05/19/23
L2328274-04	CO30-PZM060	WATER	Not Specified	05/19/23 13:40	05/19/23
L2328274-05	TB-WT-01	WATER	Not Specified	05/19/23 00:00	05/19/23



Project Name:COA GW Q2Lab Number:L2328274Project Number:20010210Report Date:06/05/23

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:COA GW Q2Lab Number:L2328274Project Number:20010210Report Date:06/05/23

Case Narrative (continued)

Report Submission

June 05, 2023: This final report includes the results of all requested analyses.

May 26, 2023: This is a preliminary report.

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

Sample Receipt

L2328274-02: The collection date and time on the chain of custody was 19-MAY-23 11:10; however, the collection date/time on the container label was 19-MAY-23 11:20. At the client's request, the collection date/time is reported as 19-MAY-23 11:10.

Volatile Organics

L2328274-02D: The pH was greater than two; however, the sample was analyzed within the method required holding time.

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.

Whalle M. Morris

Authorized Signature:

Title: Technical Director/Representative

Date: 06/05/23



ORGANICS



VOLATILES



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

SAMPLE RESULTS

Lab ID: L2328274-01 D Date Collected: 05/19/23 10:05

Client ID: CO58-PZM001 Date Received: 05/19/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 16:05

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	39		ug/l	1.0	0.32	2	
Toluene	10		ug/l	1.5	0.41	2	
Ethylbenzene	1.6		ug/l	1.0	0.33	2	
p/m-Xylene	18		ug/l	2.0	0.66	2	
o-Xylene	7.3		ug/l	2.0	0.78	2	
Xylenes, Total	25		ug/l	2.0	0.66	2	
Naphthalene	220		ug/l	2.0	0.43	2	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	83	70-130	
Toluene-d8	81	70-130	
4-Bromofluorobenzene	86	70-130	
Dibromofluoromethane	84	70-130	



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

SAMPLE RESULTS

Lab ID: L2328274-02 D Date Collected: 05/19/23 11:10

Client ID: CO198-MWS Date Received: 05/19/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 05:05

Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - West	borough Lab						
Benzene	190		ug/l	5.0	1.6	10	
Toluene	42		ug/l	7.5	2.0	10	
Ethylbenzene	1.7	J	ug/l	5.0	1.7	10	
p/m-Xylene	15		ug/l	10	3.3	10	
o-Xylene	7.4	J	ug/l	10	3.9	10	
Xylenes, Total	22	J	ug/l	10	3.3	10	
Naphthalene	1300		ug/l	10	2.2	10	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	94	70-130	
Toluene-d8	90	70-130	
4-Bromofluorobenzene	79	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

SAMPLE RESULTS

Lab ID: L2328274-03 D Date Collected: 05/19/23 12:25

Client ID: CO30-PZM015 Date Received: 05/19/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/25/23 16:15

Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westbo	Volatile Organics by GC/MS - Westborough Lab								
Benzene	43000		ug/l	200	64.	400			
Toluene	3200		ug/l	300	81.	400			
Ethylbenzene	87	J	ug/l	200	67.	400			
p/m-Xylene	810		ug/l	400	130	400			
o-Xylene	330	J	ug/l	400	160	400			
Xylenes, Total	1100	J	ug/l	400	130	400			
Naphthalene	2000		ug/l	400	86.	400			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	85	70-130	
Toluene-d8	84	70-130	
4-Bromofluorobenzene	83	70-130	
Dibromofluoromethane	86	70-130	



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

SAMPLE RESULTS

Lab ID: L2328274-04 Date Collected: 05/19/23 13:40

Client ID: CO30-PZM060 Date Received: 05/19/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 15:41

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbo	orough Lab						
Benzene	7.5		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	84	70-130	
Toluene-d8	81	70-130	
4-Bromofluorobenzene	83	70-130	
Dibromofluoromethane	84	70-130	



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

SAMPLE RESULTS

Lab ID: L2328274-05 Date Collected: 05/19/23 00:00

Client ID: TB-WT-01 Date Received: 05/19/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/24/23 02:16

Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - \	Volatile Organics by GC/MS - Westborough Lab								
Benzene	ND		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	A Qualifier	cceptance Criteria	
1,2-Dichloroethane-d4	113		70-130	
Toluene-d8	89		70-130	
4-Bromofluorobenzene	81		70-130	
Dibromofluoromethane	124		70-130	



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/23/23 22:42

Analyst: MKS

Parameter	Result Qual	ifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 02,05	Batch:	WG1782805-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	92	70-130	
4-Bromofluorobenzene	84	70-130	
Dibromofluoromethane	107	70-130	



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/25/23 15:01

Analyst: KJD

Result Qua	alifier Units	RL	MDL
stborough Lab for	sample(s): 03	Batch:	WG1783885-5
ND	ug/l	0.50	0.16
ND	ug/l	0.75	0.20
ND	ug/l	0.50	0.17
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.39
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.22
	Stborough Lab for ND ND ND ND ND ND ND ND ND N	ND ug/l	stborough Lab for sample(s): 03 Batch: ND ug/l 0.50 ND ug/l 0.75 ND ug/l 1.0 ND ug/l 1.0

		Acceptance	
Surrogate	%Recovery Qualifi	ier Criteria	
1,2-Dichloroethane-d4	91	70-130	
Toluene-d8	82	70-130	
4-Bromofluorobenzene	82	70-130	
Dibromofluoromethane	93	70-130	



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 **Report Date:** 06/05/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/30/23 09:42

Analyst: PID

arameter	Result Qual	ifier Units	RL	MDL	
olatile Organics by GC/MS - Wes	stborough Lab for s	ample(s): 01,04	Batch:	WG1785376-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Accepta					
Surrogate	%Recovery Qualifi	er Criteria				
1,2-Dichloroethane-d4	83	70-130				
Toluene-d8	85	70-130				
4-Bromofluorobenzene	87	70-130				
Dibromofluoromethane	84	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2
Project Number: 20010210

Lab Number: L23

L2328274

Report Date:

06/05/23

Parameter		LCS %Recovery	Qual	_	SD covery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC	/MS - Westborough La	ab Associated	sample(s):	02,05 B	Batch:	WG1782805-3	WG1782805-4				
Benzene		98			99		70-130	1		20	
Toluene		93			90		70-130	3		20	
Ethylbenzene		97			94		70-130	3		20	
p/m-Xylene		100			95		70-130	5		20	
o-Xylene		95			95		70-130	0		20	
Naphthalene		87			89		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	86	91	70-130
Toluene-d8	92	89	70-130
4-Bromofluorobenzene	81	79	70-130
Dibromofluoromethane	99	104	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2

Project Number: 20010210

Lab Number:

L2328274 06/05/23

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westbord	•				WG1783885-4	7.0 2			
Benzene	96		96		70-130	0		20	
Toluene	86		88		70-130	2		20	
Ethylbenzene	86		86		70-130	0		20	
p/m-Xylene	85		90		70-130	6		20	
o-Xylene	85		85		70-130	0		20	
Naphthalene	76		73		70-130	4		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89	88	70-130
Toluene-d8	83	83	70-130
4-Bromofluorobenzene	81	82	70-130
Dibromofluoromethane	88	89	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2

Lab Number:

L2328274

Project Number: 20010210

Report Date:

06/05/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	01,04 Batch:	WG1785376-3	WG1785376-4				
Benzene	110		110		70-130	0		20	
Toluene	98		98		70-130	0		20	
Ethylbenzene	94		94		70-130	0		20	
p/m-Xylene	95		95		70-130	0		20	
o-Xylene	90		95		70-130	5		20	
Naphthalene	78		86		70-130	10		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90	89	70-130
Toluene-d8	83	83	70-130
4-Bromofluorobenzene	87	87	70-130
Dibromofluoromethane	84	85	70-130

Project Name: COA GW Q2 Lab Number: L2328274 Project Number: 20010210

Report Date: 06/05/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2328274-01A	Vial HCI preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-01B	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-01C	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-02A	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-02B	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-02C	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-03A	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-03B	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-03C	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-04A	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-04B	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-04C	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-05A	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-05B	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-05C	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)
L2328274-05D	Vial HCl preserved	Α	NA		2.5	Υ	Absent		PA-8260(14)



Project Name: COA GW Q2 Lab Number: L2328274

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GLOSSARY

Acronyms

EDL

EPA

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.)

- 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.

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.

Environmental Protection Agency.

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.



Project Name: COA GW Q2 Lab Number: L2328274

Project Number: 20010210 Report Date: 06/05/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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



Project Name:COA GW Q2Lab Number:L2328274Project Number:20010210Report Date:06/05/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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:
 COA GW Q2
 Lab Number:
 L2328274

 Project Number:
 20010210
 Report Date:
 06/05/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 19

Page 1 of 1

Published Date: 4/2/2021 1:14:23 PM

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2328901

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q2
Project Number: 20010210
Report Date: 06/06/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q2 **Project Number:** 20010210

 Lab Number:
 L2328901

 Report Date:
 06/06/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2328901-01	CO36-PZM008	WATER	Not Specified	05/23/23 10:50	05/23/23
L2328901-02	CO36-PZM043	WATER	Not Specified	05/23/23 11:30	05/23/23
L2328901-03	CO38-PZM006	WATER	Not Specified	05/23/23 12:30	05/23/23
L2328901-04	CO38-PZM043	WATER	Not Specified	05/23/23 13:20	05/23/23
L2328901-05	CO180-MWS	WATER	Not Specified	05/23/23 14:00	05/23/23
L2328901-06	CO180-MWI	WATER	Not Specified	05/23/23 14:35	05/23/23
L2328901-07	TB-WT-01	WATER	Not Specified	05/23/23 00:00	05/23/23



Project Name:COA GW Q2Lab Number:L2328901Project Number:20010210Report Date:06/06/23

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:
 COA GW Q2
 Lab Number:
 L2328901

 Project Number:
 20010210
 Report Date:
 06/06/23

Case Narrative (continued)

Report Submission

June 06, 2023: This final report includes the results of all requested analyses.

May 31, 2023: This is a preliminary report.

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

Sample Receipt

L2328901-01C: The container for PA Volatile Organics - EPA 8260D was received broken; however, there was adequate sample remaining to perform the requested analysis.

L2328901-01: The collection date and time on the chain of custody was 23-MAY-23 10:50; however, the collection date/time on the container label was 23-MAY-23 10:40. At the client's request, the collection date/time is reported as 23-MAY-23 10:50.

L2328901-05: The collection date and time on the chain of custody was 23-MAY-23 14:20; however, the collection date/time on the container label was 23-MAY-23 14:00. At the client's request, the collection date/time is reported as 23-MAY-23 14:00.

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.

Leley Well Kelly O'Neill

Authorized Signature:

Title: Technical Director/Representative

Date: 06/06/23



ORGANICS



VOLATILES



Serial_No:06062319:38

Project Name: COA GW Q2 Lab Number: L2328901

Project Number: 20010210 **Report Date:** 06/06/23

SAMPLE RESULTS

Lab ID: L2328901-01 D Date Collected: 05/23/23 10:50

Client ID: CO36-PZM008 Date Received: 05/23/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 12:53

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - \	Volatile Organics by GC/MS - Westborough Lab								
Benzene	11000		ug/l	50	16.	100			
Toluene	2300		ug/l	75	20.	100			
Ethylbenzene	48	J	ug/l	50	17.	100			
p/m-Xylene	580		ug/l	100	33.	100			
o-Xylene	200		ug/l	100	39.	100			
Xylenes, Total	780		ug/l	100	33.	100			
Naphthalene	410		ug/l	100	22.	100			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	82	70-130	
Toluene-d8	82	70-130	
4-Bromofluorobenzene	88	70-130	
Dibromofluoromethane	85	70-130	



Serial_No:06062319:38

Project Name: COA GW Q2 Lab Number: L2328901

Project Number: 20010210 **Report Date:** 06/06/23

SAMPLE RESULTS

Lab ID: L2328901-02 D Date Collected: 05/23/23 11:30

Client ID: CO36-PZM043 Date Received: 05/23/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/31/23 14:32

Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	12000		ug/l	50	16.	100	
Toluene	1900		ug/l	75	20.	100	
Ethylbenzene	39	J	ug/l	50	17.	100	
p/m-Xylene	420		ug/l	100	33.	100	
o-Xylene	160		ug/l	100	39.	100	
Xylenes, Total	580		ug/l	100	33.	100	
Naphthalene	630		ug/l	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	91	70-130	
Toluene-d8	106	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	93	70-130	



Project Name: COA GW Q2 Lab Number: L2328901

Project Number: 20010210 **Report Date:** 06/06/23

SAMPLE RESULTS

Lab ID: L2328901-03 D Date Collected: 05/23/23 12:30

Client ID: CO38-PZM006 Date Received: 05/23/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/03/23 06:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	2900		ug/l	12	4.0	25			
Toluene	390		ug/l	19	5.1	25			
Ethylbenzene	34		ug/l	12	4.2	25			
p/m-Xylene	170		ug/l	25	8.3	25			
o-Xylene	69		ug/l	25	9.8	25			
Xylenes, Total	240		ug/l	25	8.3	25			
Naphthalene	730		ug/l	25	5.4	25			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	94	70-130	
Toluene-d8	96	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	95	70-130	



Project Name: COA GW Q2 Lab Number: L2328901

Project Number: 20010210 **Report Date:** 06/06/23

SAMPLE RESULTS

Lab ID: L2328901-04 Date Collected: 05/23/23 13:20

Client ID: CO38-PZM043 Date Received: 05/23/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/03/23 06:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	1.3		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	0.96	J	ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	0.96	J	ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	105	70-130	



Project Name: COA GW Q2 Lab Number: L2328901

Project Number: 20010210 **Report Date:** 06/06/23

SAMPLE RESULTS

Lab ID: L2328901-05 D Date Collected: 05/23/23 14:00

Client ID: CO180-MWS Date Received: 05/23/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/31/23 14:06

Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	17000		ug/l	50	16.	100			
Toluene	4700		ug/l	75	20.	100			
Ethylbenzene	86		ug/l	50	17.	100			
p/m-Xylene	1100		ug/l	100	33.	100			
o-Xylene	400		ug/l	100	39.	100			
Xylenes, Total	1500		ug/l	100	33.	100			
Naphthalene	1200		ug/l	100	22.	100			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	91	70-130	
Toluene-d8	107	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	93	70-130	



Project Name: COA GW Q2 Lab Number: L2328901

Project Number: 20010210 **Report Date:** 06/06/23

SAMPLE RESULTS

Lab ID: L2328901-06 D Date Collected: 05/23/23 14:35

Client ID: CO180-MWI Date Received: 05/23/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 14:05

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	18000		ug/l	100	32.	200			
Toluene	3900		ug/l	150	41.	200			
Ethylbenzene	78	J	ug/l	100	33.	200			
p/m-Xylene	850		ug/l	200	66.	200			
o-Xylene	320		ug/l	200	78.	200			
Xylenes, Total	1200		ug/l	200	66.	200			
Naphthalene	880		ug/l	200	43.	200			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	81	70-130	
Toluene-d8	81	70-130	
4-Bromofluorobenzene	85	70-130	
Dibromofluoromethane	83	70-130	



Project Name: COA GW Q2 Lab Number: L2328901

Project Number: 20010210 **Report Date:** 06/06/23

SAMPLE RESULTS

Lab ID: L2328901-07 Date Collected: 05/23/23 00:00

Client ID: TB-WT-01 Date Received: 05/23/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/30/23 14:36

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	ND		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	93	70-130	
Toluene-d8	105	70-130	
4-Bromofluorobenzene	106	70-130	
Dibromofluoromethane	93	70-130	



Project Number: 20010210 **Report Date:** 06/06/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/30/23 09:42

Parameter	Result Quali	fier Units	RL	MDL	
Volatile Organics by GC/MS - We	estborough Lab for sa	ample(s): 01,06	Batch:	WG1785376-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	_
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	_
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptance				
Surrogate	%Recovery Qualif	ier Criteria			
1,2-Dichloroethane-d4	83	70-130			
Toluene-d8	85	70-130			
4-Bromofluorobenzene	87	70-130			
Dibromofluoromethane	84	70-130			



Project Number: 20010210 **Report Date:** 06/06/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/30/23 08:31

Parameter	Result Qu	alifier Units	RL	MDL	
Volatile Organics by GC/MS - W	estborough Lab for	sample(s): 07	Batch:	WG1785420-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance
Surrogate	%Recovery Quali	fier Criteria
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	107	70-130
Dibromofluoromethane	107	70-130



Project Number: 20010210 **Report Date:** 06/06/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/31/23 12:46

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 02,05	Batch:	WG1785519-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance						
Surrogate	%Recovery Quali	fier Criteria					
1,2-Dichloroethane-d4	91	70-130					
Toluene-d8	107	70-130					
4-Bromofluorobenzene	102	70-130					
Dibromofluoromethane	95	70-130					



Project Number: 20010210 **Report Date:** 06/06/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/02/23 21:54

Analyst: TMS

Parameter	Result Qual	ifier Units	RL	MDL	
Volatile Organics by GC/MS - W	estborough Lab for s	ample(s): 03-04	Batch:	WG1787236-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptance						
Surrogate	%Recovery Qualifi	er Criteria					
1,2-Dichloroethane-d4	100	70-130					
Toluene-d8	97	70-130					
4-Bromofluorobenzene	99	70-130					
Dibromofluoromethane	104	70-130					



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2

Lab Number:

L2328901

Project Number: 20010210

Report Date:

06/06/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough	Lab Associated	sample(s):	01,06 Batch:	WG1785376-3	WG1785376-4			
Benzene	110		110		70-130	0		20
Toluene	98		98		70-130	0		20
Ethylbenzene	94		94		70-130	0		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	90		95		70-130	5		20
Naphthalene	78		86		70-130	10		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90	89	70-130
Toluene-d8	83	83	70-130
4-Bromofluorobenzene	87	87	70-130
Dibromofluoromethane	84	85	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2 Project Number: 20010210

Lab Number:

L2328901

Report Date:

06/06/23

Parameter	LCS %Recovery	Qual	LCSD %Recover	y Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 0	7 Batch: V	VG1785420-3	WG1785420-4				
Benzene	99		100		70-130	1		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	99		100		70-130	1		20	
p/m-Xylene	95		95		70-130	0		20	
o-Xylene	95		100		70-130	5		20	
Naphthalene	88		89		70-130	1		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97	101	70-130
Toluene-d8	104	103	70-130
4-Bromofluorobenzene	103	103	70-130
Dibromofluoromethane	108	113	70-130

06/06/23

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2
Project Number: 20010210

Lab Number: L2328901

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough I	_ab Associated sa	ample(s):	02,05 Batch:	WG1785519-3	WG1785519-4			
Benzene	93		95		70-130	2		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
Naphthalene	98		100		70-130	2		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93	92	70-130
Toluene-d8	105	106	70-130
4-Bromofluorobenzene	102	101	70-130
Dibromofluoromethane	96	95	70-130

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Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2
Project Number: 20010210

Lab Number: L2328901

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recover	y Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	03-04 Batch	: WG1787236-3	WG1787236-4				
Benzene	100		100		70-130	0		20	
Toluene	97		98		70-130	1		20	
Ethylbenzene	97		100		70-130	3		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	95		100		70-130	5		20	
Naphthalene	82		84		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99	99	70-130
Toluene-d8	97	97	70-130
4-Bromofluorobenzene	95	97	70-130
Dibromofluoromethane	104	103	70-130

Project Name: COA GW Q2 Lab Number: L2328901 Project Number: 20010210

Report Date: 06/06/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2328901-01A	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-01B	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-01C	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-02A	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-02B	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-02C	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-03A	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-03B	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-03C	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-04A	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-04B	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-04C	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-05A	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-05B	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-05C	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-06A	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-06B	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-06C	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-07A	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-07B	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-07C	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)
L2328901-07D	Vial HCl preserved	Α	NA		2.7	Υ	Absent		PA-8260(14)



Project Name:COA GW Q2Lab Number:L2328901Project Number:20010210Report Date:06/06/23

GLOSSARY

Acronyms

EPA

LCSD

LOQ

MS

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)

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 applyte when the ions most all of the identification griteria avecant the ion shundance ratio griteria. An EMPC is a warnt open

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.

- 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.

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.)

- 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

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.

- 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



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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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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

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Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_equation} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



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REFERENCES

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.



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Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

CHAIN	OF CUSTODY ,	PAGEOF	Date Rec'd in Lab: \$ 2	4/23 ALP	HAJ864:28901
WESTBORO, MA MANSFIELD, MA TEL: 508-898-9220 TEL: 508-822-9300 FAX: 508-898-9193 FAX: 508-822-3288	Project Information Project Name:	6h/	Report Information - Dat	A SUPPLIED THE WAS A SUPPLIED TO SUPPLIED	ng Information ne as Client info PO#:
Client Information	Project Location:	9V		Peliverables	
Client:	Project #: 200102	10	Regulatory Requirements	T-P-STRANDON STRANDON	
Address:	Project Manager:	27	State /Fed Program	Criteria	
	ALPHA Quote #:	> //			
Phone:	Turn-Around Time				
Fax:					
Email:	PROVIDED OF THE SECTION OF THE SECTI	confirmed if pre-approved()	2/3///	///////	/ / / 0
☐ These samples have been previously analyzed by	Alpha Date Due:	Time:	1 Sissis		SAMPLE HANDLING Filtration
Other Project Specific Requirements/0		S12	82 CO MALYSIS	//////	Done Done Lab to do Preservation Lab to do (Please specify below)
ALPHA Lab ID (Lab Use Only) Sample ID	Collection Date Time	Sample Sampler's Initials			Sample Specific Comments
28901-01 CO 36-121	1008 52323 1050	CM th	\mathbb{Z}		PH = 9.7 3
-02 < 0.36 - YEA	1043 1130		(X)		PH > 10 3
-03 CD38-PZM	1006 1230		X		3
-04 CD38-P7	n 043 1320		Ĭ		3
-05 CD180-M	IWS 11 1420	0 (1. 1.)	8		PH 710 3
-06 CO180-1	MINT 1435	7 4	X		PH 7 10 3
-07-18-WT-01			X		9
0. 12 - 14			0		
5/24/a3 03/5		Container Type	V		Please print clearly, legibly and com-
5/24/23 03/5		Preservative	B		pletely. Samples can not be logged in and turnaround time clock will not
	Relinquished 89:	Date/Time	Received By:	Date/Time	start until any ambiguities are resolved All samples submitted are subject to
*ORage 2810fv28-0cT-07)	oram dinte ma	573 /800		m \$23/630 N 5/23/8/80	See reverse side.



ANALYTICAL REPORT

Lab Number: L2329226

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 06/07/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

Lab Number: Report Date: L2329226

ort Date: 06/07/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2329226-01	CO181-MWS	WATER	Not Specified	05/24/23 11:55	05/24/23
L2329226-02	CO181-MWI	WATER	Not Specified	05/24/23 12:50	05/24/23
L2329226-03	CO28-PZM010	WATER	Not Specified	05/24/23 14:00	05/24/23
L2329226-04	CO28-PZM048	WATER	Not Specified	05/24/23 14:55	05/24/23
L2329226-05	TB-WT-01	WATER	Not Specified	05/24/23 00:00	05/24/23



Project Name:COA GWLab Number:L2329226Project Number:20010210Report Date:06/07/23

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:
 COA GW
 Lab Number:
 L2329226

 Project Number:
 20010210
 Report Date:
 06/07/23

Case Narrative (continued)

Report Submission

June 07, 2023: This final report includes the results of all requested analyses.

June 01, 2023: This is a preliminary report.

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:

Title: Technical Director/Representative Date: 06/07/23

Jufani Morrissey-Tiffani Morrissey

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2329226

Project Number: 20010210 **Report Date:** 06/07/23

SAMPLE RESULTS

Lab ID: L2329226-01 D Date Collected: 05/24/23 11:55

Client ID: CO181-MWS Date Received: 05/24/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 05/31/23 04:18

Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS -	· Westborough Lab					
Benzene	21000		ug/l	120	40.	250
Toluene	6300		ug/l	190	51.	250
Ethylbenzene	130		ug/l	120	42.	250
p/m-Xylene	1500		ug/l	250	83.	250
o-Xylene	530		ug/l	250	98.	250
Xylenes, Total	2000		ug/l	250	83.	250
Naphthalene	1700		ug/l	250	54.	250

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	90	70-130	
Toluene-d8	108	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	93	70-130	



Project Name: COA GW Lab Number: L2329226

Project Number: 20010210 **Report Date:** 06/07/23

SAMPLE RESULTS

Lab ID: L2329226-02 D Date Collected: 05/24/23 12:50

Client ID: CO181-MWI Date Received: 05/24/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/01/23 10:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - V	Westborough Lab					
Benzene	23000		ug/l	100	32.	200
Toluene	5500		ug/l	150	41.	200
Ethylbenzene	120		ug/l	100	33.	200
p/m-Xylene	1300		ug/l	200	66.	200
o-Xylene	450		ug/l	200	78.	200
Xylenes, Total	1800		ug/l	200	66.	200
Naphthalene	1800		ug/l	200	43.	200

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	82	70-130	
Toluene-d8	80	70-130	
4-Bromofluorobenzene	83	70-130	
Dibromofluoromethane	84	70-130	



Project Name: COA GW Lab Number: L2329226

Project Number: 20010210 **Report Date:** 06/07/23

SAMPLE RESULTS

Lab ID: L2329226-03 Date Collected: 05/24/23 14:00

Client ID: CO28-PZM010 Date Received: 05/24/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/04/23 13:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	0.19	J	ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	106	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	107	70-130	



Project Name: COA GW Lab Number: L2329226

Project Number: 20010210 **Report Date:** 06/07/23

SAMPLE RESULTS

Lab ID: L2329226-04 D Date Collected: 05/24/23 14:55

Client ID: CO28-PZM048 Date Received: 05/24/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/04/23 14:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	93000		ug/l	500	160	1000			
Toluene	1900		ug/l	750	200	1000			
Ethylbenzene	260	J	ug/l	500	170	1000			
p/m-Xylene	3600		ug/l	1000	330	1000			
o-Xylene	1200		ug/l	1000	390	1000			
Xylenes, Total	4800		ug/l	1000	330	1000			
Naphthalene	1600		ug/l	1000	220	1000			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	92	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA GW Lab Number: L2329226

Project Number: 20010210 **Report Date:** 06/07/23

SAMPLE RESULTS

Lab ID: L2329226-05 Date Collected: 05/24/23 00:00

Client ID: TB-WT-01 Date Received: 05/24/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/04/23 13:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	ND		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	92	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	109	70-130	



Project Number: 20010210 **Report Date:** 06/07/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 05/30/23 23:26

Analyst: KJD

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - Wes	stborough Lab for	sample(s): 01	Batch:	WG1785788-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	106	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	94	70-130	



Project Number: 20010210 **Report Date:** 06/07/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/01/23 10:02

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for	sample(s): 02	Batch:	WG1785979-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance				
Surrogate	%Recovery Qualifi	er Criteria			
1,2-Dichloroethane-d4	81	70-130			
Toluene-d8	79	70-130			
4-Bromofluorobenzene	85	70-130			
Dibromofluoromethane	82	70-130			



Project Number: 20010210 **Report Date:** 06/07/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/04/23 07:05

Analyst: MJV

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for s	sample(s): 03-05	Batch:	WG1787351-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualific	er Criteria				
1,2-Dichloroethane-d4	105	70-130				
Toluene-d8	100	70-130				
4-Bromofluorobenzene	97	70-130				
Dibromofluoromethane	107	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2329226

Report Date: 06/07/23

<u>Parameter</u>	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough	Lab Associated s	sample(s): 01	Batch: WG	1785788-3	WG1785788-4				
Benzene	91		91		70-130	0		20	
Toluene	99		99		70-130	0		20	
Ethylbenzene	100		99		70-130	1		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	99		100		70-130	1		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93	92	70-130
Toluene-d8	106	105	70-130
4-Bromofluorobenzene	101	102	70-130
Dibromofluoromethane	96	95	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2329226

Report Date: 06/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 02	Batch: WG	G1785979-3	WG1785979-4			
Benzene	110		120		70-130	9		20
Toluene	99		100		70-130	1		20
Ethylbenzene	97		100		70-130	3		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	95		100		70-130	5		20
Naphthalene	94		89		70-130	5		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	85	78	70-130
Toluene-d8	81	82	70-130
4-Bromofluorobenzene	84	84	70-130
Dibromofluoromethane	87	85	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number:

L2329226

Report Date:

06/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recov		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	03-05 Bato	h: WG1787351-3	3 WG1787351-4				
Benzene	110		110		70-130	0		20	
Toluene	100		110		70-130	10		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	85		82		70-130	4		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100	102	70-130
Toluene-d8	98	101	70-130
4-Bromofluorobenzene	95	96	70-130
Dibromofluoromethane	102	103	70-130

Serial_No:06072318:50

Lab Number: L2329226

Report Date: 06/07/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Project Name:

Cooler Custody Seal

COA GW

A Absent

Project Number: 20010210

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2329226-01A	Vial HCI preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-01B	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-01C	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-02A	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-02B	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-02C	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-03A	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-03B	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-03C	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-04A	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-04B	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-04C	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-05A	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-05B	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-05C	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)
L2329226-05D	Vial HCl preserved	Α	NA		2.6	Υ	Absent		PA-8260(14)



Project Name: Lab Number: COA GW L2329226 **Project Number:** 20010210 **Report Date:** 06/07/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RPD

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.)

- 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.)

- 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

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

MDI - 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.

- 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.

- 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.

TEO - 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.



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, Benza(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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.)



Serial_No:06072318:50

Project Name: COA GW Lab Number: L2329226
Project Number: 20010210 Report Date: 06/07/23

REFERENCES

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.



Serial_No:06072318:50

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 19 Published Date: 4/2/2021 1:14:23 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2329535

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 06/09/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2329535

 Report Date:
 06/09/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2329535-01	CO42-PZM004	WATER	Not Specified	05/25/23 13:15	05/25/23
L2329535-02	CO40-PZM008	WATER	Not Specified	05/25/23 14:45	05/25/23
L2329535-03	TB-WT-01	WATER	Not Specified	02/06/23 00:00	05/25/23



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:COA GWLab Number:L2329535Project Number:20010210Report Date:06/09/23

Case Narrative (continued)

Report Submission

June 09, 2023: This final report includes the results of all requested analyses.

June 02, 2023: This is a preliminary report.

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:

Title: Technical Director/Representative Date: 06/09/23

Custen Walker Cristin Walker

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2329535

Project Number: 20010210 **Report Date:** 06/09/23

SAMPLE RESULTS

Lab ID: L2329535-01 D Date Collected: 05/25/23 13:15

Client ID: CO42-PZM004 Date Received: 05/25/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/07/23 11:35

Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - \	Westborough Lab					
Benzene	140		ug/l	1.0	0.32	2
Toluene	160		ug/l	1.5	0.41	2
Ethylbenzene	19		ug/l	1.0	0.33	2
p/m-Xylene	87		ug/l	2.0	0.66	2
o-Xylene	48		ug/l	2.0	0.78	2
Xylenes, Total	140		ug/l	2.0	0.66	2
Naphthalene	65		ug/l	2.0	0.43	2

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	106	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	105	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Lab Number: L2329535

Project Number: 20010210 **Report Date:** 06/09/23

SAMPLE RESULTS

Lab ID: L2329535-02 D Date Collected: 05/25/23 14:45

Client ID: CO40-PZM008 Date Received: 05/25/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/01/23 17:52

Analyst: MJV

Parameter	Result	Qualifier (Jnits	RL	MDL	Dilution Factor
Volatile Organics by GC/MS -	Westborough Lab					
Benzene	9400		ug/l	100	32.	200
Toluene	3100		ug/l	150	41.	200
Ethylbenzene	110		ug/l	100	33.	200
p/m-Xylene	490		ug/l	200	66.	200
o-Xylene	210		ug/l	200	78.	200
Xylenes, Total	700		ug/l	200	66.	200
Naphthalene	1100		ug/l	200	43.	200

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	104	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	94	70-130	



Project Name: COA GW Lab Number: L2329535

Project Number: 20010210 **Report Date:** 06/09/23

SAMPLE RESULTS

Lab ID: L2329535-03 Date Collected: 02/06/23 00:00

Client ID: TB-WT-01 Date Received: 05/25/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/08/23 21:17

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbor	ough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	108		70-130	
Toluene-d8	100		70-130	
4-Bromofluorobenzene	99		70-130	
Dibromofluoromethane	103		70-130	



Project Name:COA GWLab Number:L2329535

Project Number: 20010210 **Report Date:** 06/09/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/01/23 08:33

Analyst: PID

Result Qu	alifier Units	RL	MDL
Vestborough Lab for	sample(s): 02	Batch:	WG1786305-5
ND	ug/l	0.50	0.16
ND	ug/l	0.75	0.20
ND	ug/l	0.50	0.17
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.39
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.22
	Vestborough Lab for ND ND ND ND ND ND ND ND ND N	ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0

		Acceptance	
Surrogate	%Recovery Quali	fier Criteria	
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	107	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	95	70-130	



Project Name:COA GWLab Number:L2329535

Project Number: 20010210 **Report Date:** 06/09/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/07/23 08:28

Analyst: MJV

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - Wes	stborough Lab for	sample(s): 01	Batch:	WG1788286-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Quali	fier Criteria
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	109	70-130
Dibromofluoromethane	115	70-130



Project Name: COA GW Lab Number: L2329535

Project Number: 20010210 **Report Date:** 06/09/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/08/23 19:05

Analyst: KJD

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for s	sample(s): 03	Batch:	WG1789148-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Quali	fier Criteria
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130
Dibromofluoromethane	100	70-130



Project Name: COA GW
Project Number: 20010210

Lab Number:

L2329535

Report Date:

06/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	•		Batch: WG	1786305-3	WG1786305-4	=			
Benzene	93		93		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	93		96		70-130	3		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92	92	70-130
Toluene-d8	106	105	70-130
4-Bromofluorobenzene	103	103	70-130
Dibromofluoromethane	96	95	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L232

L2329535 06/09/23

20

Report Date:

3

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	01 Batch: W	G1788286-3	WG1788286-4			
Benzene	110		110		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		105		70-130	0		20

85

88

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109	108	70-130
Toluene-d8	97	97	70-130
4-Bromofluorobenzene	103	104	70-130
Dibromofluoromethane	105	100	70-130

70-130

Naphthalene

Project Name: COA GW
Project Number: 20010210

Lab Number: L2329535

Report Date: 06/09/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough	-		Batch: WG		WG1789148-4	2			
Benzene	100		100		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	90		91		70-130	1		20	

	LCS	LCSD	Acceptance	
Surrogate	%Recovery Qual	%Recovery Qual	Criteria	_
1,2-Dichloroethane-d4	99	103	70-130	
Toluene-d8	101	101	70-130	
4-Bromofluorobenzene	101	100	70-130	
Dibromofluoromethane	101	99	70-130	

Lab Number: L2329535

Report Date: 06/09/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Project Name:

Cooler Custody Seal

COA GW

A Absent

Project Number: 20010210

Container Information			Initial	Final	Temp			Frozen		
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L2329535-01A	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-01B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-01C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-02A	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-02B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-02C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-03A	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-03B	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-03C	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	
L2329535-03D	Vial HCl preserved	Α	NA		3.5	Υ	Absent		PA-8260(14)	



GLOSSARY

Acronyms

LOD

LOQ

MS

RPD

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.)

from dilutions, concentrations of 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 Microsystection (SPME)

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.

 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.)

- 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.

 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

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

- 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.



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, Benza(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Data Qualifiers

Identified Compounds (TICs).

- $\begin{tabular}{ll} M & -Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte. \end{tabular}$
- 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.
- ${f P}$ 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.
- 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: COA GW Lab Number: L2329535

Project Number: 20010210 Report Date: 06/09/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 19

Published Date: 4/2/2021 1:14:23 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

ALPHA	CHAIN	OF CUST	ODY PAGE	OF	Date Rec'd in	Lab: 5 1268	23	ALPHA	Job#: L2829535
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193 Client Information	MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288	Project Information Project Name: Project Location	COA	W	Report Info	rmation - Data D EMAIL Add'l Delive	650	The same of the same	oformation Client info PO #:
Client: Address:	A	Project Location Project #: Z C Project Manager ALPHA Quote #:	010210		Regulatory R State /Fed Pro	tequirements/Re gram	port Limits Criteria		
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(Lab Use Only)	Sample ID	\Date	Collection Samp Time Matri		母		///	///	Sample Specific Comments
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J-5/24	23 0345	Relinquished By:		Preservative late/Time		eived By:	Date/	Time s	eletely. Samples can not be logged in and turnaround time clock will not tart until any ambiguities are resolve till samples submitted are subject to
Page 22 of 22 oct-	07)	Mary Mr.	de 5/2	5/23 /800	721	In/M	5/25/2	-3 1690A	All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



ANALYTICAL REPORT

Lab Number: L2330034

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q2

Project Number: 20010210

Report Date: 06/12/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q2 **Project Number:** 20010210

 Lab Number:
 L2330034

 Report Date:
 06/12/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2330034-01	CO191-MWS	WATER	Not Specified	05/30/23 14:45	05/30/23
L2330034-02	CO194-MWS	WATER	Not Specified	05/30/23 15:40	05/30/23
L2330034-03	TB-WT-01	WATER	Not Specified	05/30/23 00:00	05/30/23



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.							



Serial_No:06122315:04

Project Name:COA GW Q2Lab Number:L2330034Project Number:20010210Report Date:06/12/23

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.

Volatile Organics

L2330034-02D: The sample was received in the proper acid-preserved containers; however, upon analysis, the pH was determined to be greater than 2, and thus the method required holding time was exceeded.

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:

Title: Technical Director/Representative Date: 06/12/23

Jufani Morrissey-Tiffani Morrissey

ORGANICS



VOLATILES



Project Name: COA GW Q2 Lab Number: L2330034

Project Number: 20010210 **Report Date:** 06/12/23

SAMPLE RESULTS

Lab ID: L2330034-01 D Date Collected: 05/30/23 14:45

Client ID: CO191-MWS Date Received: 05/30/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/09/23 01:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - West	Volatile Organics by GC/MS - Westborough Lab						
Benzene	67000		ug/l	250	80.	500	
Toluene	6700		ug/l	380	100	500	
Ethylbenzene	220	J	ug/l	250	84.	500	
p/m-Xylene	1600		ug/l	500	170	500	
o-Xylene	610		ug/l	500	200	500	
Xylenes, Total	2200		ug/l	500	170	500	
Naphthalene	290	J	ug/l	500	110	500	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q2 Lab Number: L2330034

Project Number: 20010210 **Report Date:** 06/12/23

SAMPLE RESULTS

Lab ID: L2330034-02 D Date Collected: 05/30/23 15:40

Client ID: CO194-MWS Date Received: 05/30/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/09/23 02:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - \	Westborough Lab						
Benzene	600		ug/l	10	3.2	20	
Toluene	130		ug/l	15	4.1	20	
Ethylbenzene	6.3	J	ug/l	10	3.3	20	
p/m-Xylene	55		ug/l	20	6.6	20	
o-Xylene	23		ug/l	20	7.8	20	
Xylenes, Total	78		ug/l	20	6.6	20	
Naphthalene	1900		ug/l	20	4.3	20	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q2 Lab Number: L2330034

Project Number: 20010210 **Report Date:** 06/12/23

SAMPLE RESULTS

Lab ID: L2330034-03 Date Collected: 05/30/23 00:00

Client ID: TB-WT-01 Date Received: 05/30/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/08/23 20:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbor	ough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA GW Q2 Lab Number: L2330034

Project Number: 20010210 **Report Date:** 06/12/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/08/23 19:41

Analyst: KJD

Parameter	Result Qualifier Units		RL	MDL
Volatile Organics by GC/MS - Wes	stborough Lab for s	sample(s): 01-03	Batch:	WG1789462-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualifi	er Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	96	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	102	70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2
Project Number: 20010210

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arameter	LCS %Recovery Q	ual %	LCSD Recovery		%Recovery Limits	RPD	Qual	RPD Limits	
olatile Organics by GC/MS - Westbo	rough Lab Associated samp	ole(s): 01-03	Batch:	WG1789462-3	WG1789462-4				
Benzene	97		96		70-130	1		20	
Toluene	99		100		70-130	1		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	100		105		70-130	5		20	
o-Xylene	100		105		70-130	5		20	
Naphthalene	79		84		70-130	6		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104	102	70-130
Toluene-d8	99	100	70-130
4-Bromofluorobenzene	97	99	70-130
Dibromofluoromethane	101	101	70-130

Project Name: COA GW Q2 Lab Number: L2330034 Project Number: 20010210

Report Date: 06/12/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2330034-01A	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-01B	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-01C	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-02A	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-02B	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-02C	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-03A	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-03B	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-03C	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)
L2330034-03D	Vial HCl preserved	Α	NA		2.0	Υ	Absent		PA-8260(14)



Project Name: Lab Number: COA GW Q2 L2330034 20010210 **Report Date: Project Number:** 06/12/23

GLOSSARY

Acronyms

LOQ

MS

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.)

- 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

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

MDI - 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.

- 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.

TEO - 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.



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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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GW Q2Lab Number:L2330034Project Number:20010210Report Date:06/12/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_equation} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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.)



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REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 19

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Published Date: 4/2/2021 1:14:23 PM

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

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ANALYTICAL REPORT

Lab Number: L2330304

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q2

Project Number: 20010210

Report Date: 06/13/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q2 **Project Number:** 20010210

Lab Number:

L2330304

Report Date: 06/13/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2330304-01	CO201-MWS	WATER	Not Specified	05/31/23 10:50	05/31/23
L2330304-02	CO196-MWS	WATER	Not Specified	05/31/23 12:50	05/31/23
L2330304-03	CO195-MWS	WATER	Not Specified	05/31/23 12:00	05/31/23
L2330304-04	CO182-MWI	WATER	Not Specified	05/31/23 14:40	05/31/23
L2330304-05	TB-WT-01	WATER	Not Specified	05/31/23 00:00	05/31/23



Project Name:COA GW Q2Lab Number:L2330304Project Number:20010210Report Date:06/13/23

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:
 COA GW Q2
 Lab Number:
 L2330304

 Project Number:
 20010210
 Report Date:
 06/13/23

Case Narrative (continued)

Report Submission

June 13, 2023: This final report includes the results of all requested analyses.

June 07, 2023: This is a preliminary report.

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

Sample Receipt

L2330304-02: The sample identified as "CO198-MWS" on the chain of custody was identified as "CO196-MWS" on the container label. At the client's request, the sample is reported as "CO196-MWS".

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:

Title: Technical Director/Representative Date: 06/13/23

600, Sew on Kelly Stenstrom

ANALYTICAL

ORGANICS



VOLATILES



Project Name: COA GW Q2 Lab Number: L2330304

Project Number: 20010210 **Report Date:** 06/13/23

SAMPLE RESULTS

Lab ID: L2330304-01 D Date Collected: 05/31/23 10:50

Client ID: CO201-MWS Date Received: 05/31/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/09/23 02:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - W	estborough Lab						
Benzene	1100		ug/l	5.0	1.6	10	
Toluene	79		ug/l	7.5	2.0	10	
Ethylbenzene	3.9	J	ug/l	5.0	1.7	10	
p/m-Xylene	38		ug/l	10	3.3	10	
o-Xylene	18		ug/l	10	3.9	10	
Xylenes, Total	56		ug/l	10	3.3	10	
Naphthalene	180		ug/l	10	2.2	10	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q2 Lab Number: L2330304

Project Number: 20010210 **Report Date:** 06/13/23

SAMPLE RESULTS

Lab ID: L2330304-02 D Date Collected: 05/31/23 12:50

Client ID: CO196-MWS Date Received: 05/31/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/09/23 03:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - W	estborough Lab						
Benzene	6000		ug/l	25	8.0	50	
Toluene	490		ug/l	38	10.	50	
Ethylbenzene	14	J	ug/l	25	8.4	50	
p/m-Xylene	110		ug/l	50	17.	50	
o-Xylene	46	J	ug/l	50	20.	50	
Xylenes, Total	160	J	ug/l	50	17.	50	
Naphthalene	600		ug/l	50	11.	50	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q2 Lab Number: L2330304

Project Number: 20010210 **Report Date:** 06/13/23

SAMPLE RESULTS

Lab ID: L2330304-03 D Date Collected: 05/31/23 12:00

Client ID: CO195-MWS Date Received: 05/31/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/09/23 03:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	41000		ug/l	250	80.	500	
Toluene	3400		ug/l	380	100	500	
Ethylbenzene	ND		ug/l	250	84.	500	
p/m-Xylene	740		ug/l	500	170	500	
o-Xylene	320	J	ug/l	500	200	500	
Xylenes, Total	1100	J	ug/l	500	170	500	
Naphthalene	2200		ug/l	500	110	500	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA GW Q2 Lab Number: L2330304

Project Number: 20010210 **Report Date:** 06/13/23

SAMPLE RESULTS

Lab ID: L2330304-04 D Date Collected: 05/31/23 14:40

Client ID: CO182-MWI Date Received: 05/31/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/06/23 15:51

Analyst: KJD

Parameter	Result	Qualifier Ur	nits R	_ MDL	Dilution Factor
Volatile Organics by GC/MS	- Westborough Lab				
Benzene	220000	u	g/l 10	00 320	2000
Toluene	16000	u	g/l 15	00 410	2000
Ethylbenzene	1000	u	g/l 10	00 330	2000
p/m-Xylene	6500	u	g/l 20	00 660	2000
o-Xylene	2400	u	g/l 20	00 780	2000
Xylenes, Total	8900	u	g/l 20	00 660	2000
Naphthalene	ND	u	g/l 20	00 430	2000

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q2 Lab Number: L2330304

Project Number: 20010210 **Report Date:** 06/13/23

SAMPLE RESULTS

Lab ID: L2330304-05 Date Collected: 05/31/23 00:00

Client ID: TB-WT-01 Date Received: 05/31/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/08/23 20:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbor	ough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA GW Q2 Lab Number: L2330304

Project Number: 20010210 **Report Date:** 06/13/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/06/23 08:02

Analyst: KJD

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for	sample(s): 04	Batch:	WG1787995-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualifi	er Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA GW Q2 Lab Number: L2330304

Project Number: 20010210 **Report Date:** 06/13/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/08/23 19:41

Analyst: KJD

Parameter	Result	Qualifier Units	RL	MDL
Volatile Organics by GC/MS - Wes	tborough Lab f	for sample(s):	01-03,05 Batch:	WG1789462-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance			
Surrogate	%Recovery		Criteria		
1,2-Dichloroethane-d4	99		70-130		
Toluene-d8	96		70-130		
4-Bromofluorobenzene	96		70-130		
Dibromofluoromethane	102		70-130		



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2
Project Number: 20010210

Lab Number: L2330304

Report Date:

06/13/23

arameter	LCS %Recover	y Qual	LCSE %Recov		%Recovery Limits	RPD	Qual	RPD Limits	
olatile Organics by GC/MS - V	Vestborough Lab Associat	ed sample(s):	04 Batch:	WG1787995-3	WG1787995-4				
Benzene	98		100		70-130	2		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	105		105		70-130	0		20	
o-Xylene	100		105		70-130	5		20	
Naphthalene	86		94		70-130	9		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102	104	70-130
Toluene-d8	101	101	70-130
4-Bromofluorobenzene	99	98	70-130
Dibromofluoromethane	100	101	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2
Project Number: 20010210

Lab Number: L2330304

Report Date:

06/13/23

arameter er	LCS %Recovery	Qual	LCSD %Recovery	%Recovery Qual Limits	RPD	RPD Qual Limits	
olatile Organics by GC/MS - Westborough L	ab Associated s	sample(s):	01-03,05 Batch:	WG1789462-3 WG1789	462-4		
Benzene	97		96	70-130	1	20	
Toluene	99		100	70-130	1	20	
Ethylbenzene	100		100	70-130	0	20	
p/m-Xylene	100		105	70-130	5	20	
o-Xylene	100		105	70-130	5	20	
Naphthalene	79		84	70-130	6	20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104	102	70-130
Toluene-d8	99	100	70-130
4-Bromofluorobenzene	97	99	70-130
Dibromofluoromethane	101	101	70-130

Project Name: COA GW Q2 Lab Number: L2330304 Project Number: 20010210

Report Date: 06/13/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2330304-01A	Vial HCI preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-01B	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-01C	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-02A	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-02B	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-02C	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-03A	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-03B	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-03C	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-04A	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-04B	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-04C	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-05A	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-05B	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-05C	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)
L2330304-05D	Vial HCl preserved	Α	NA		2.3	Υ	Absent		PA-8260(14)



Project Name: COA GW Q2 Lab Number: L2330304
Project Number: 20010210 Report Date: 06/13/23

GLOSSARY

Acronyms

EDL

LOQ

MS

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.)

- 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.)

- 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.

 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.



Project Name: COA GW Q2 Lab Number: L2330304
Project Number: 20010210 Report Date: 06/13/23

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, Benza(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



 Project Name:
 COA GW Q2
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 L2330304

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 20010210
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Data Qualifiers

Identified Compounds (TICs).

- $\begin{tabular}{ll} M & -Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte. \end{tabular}$
- 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.
- ${f P}$ 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.
- 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:
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REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 19

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

Phone: Fax: Email: Mgo He Shab:	CHAIN OI MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288 TO Bethlenen Blyd Point MD 21219 Carmgroup.net Te been previously analyzed by Alpha pecific Requirements/Comm	Project Information Project Name: OProject Location: Project #: 200 Project Manager: ALPHA Quote #: Turn-Around Total Standard Date Due:	ime	T.		Reg	& Naplitu-	forma / Requ	tion - DEM Add	Data IAIL I'l Deli	verable	erable		Billi	ng Informa		T O T A L
ALPHA Lab ID (Lab Use Only)	Sample ID	Date	lection Time	Sample Matrix	Sampler's Initials	1/8		//		//	1/	\angle	7	//	Samp	Preservation Lab to do (Please specify below) le Specific Comments	B O T T L E S
30304-01	CO201-MW8		1050	wt	SHL	X				_	-	-			-		3
-02	3 WM - 891 00	9/31/2	31250	wt	SML	×			Ш			-		4			3
-04	CO195-MW8		3 1200		SHL	X		_			4						3
-04	C0182-MW1	6/3V2	3 1440	wt	SKL	X							Ш	4	PH>	10	3
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Page 22 of 224 oc	123 0210 Saran	Relinquished By Low July The St	hu	Pro	eservative e/Time	VB V	1	Receive 29/10	M.	100		5/	Date/ 31	Time 23.	pletely. in and to start uni All samp Alpha's	print clearly, legibly and Samples can not be lo urnaround time clock will any ambiguities are roles submitted are subjects and Conditions. erse side.	gged rill not resolved.



ANALYTICAL REPORT

Lab Number: L2330778

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q2

 Project Number:
 20010210

 Report Date:
 06/15/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q2 **Project Number:** 20010210

Lab Number: Report Date: L2330778

te: 06/15/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2330778-01	CO39-PZM042	WATER	Not Specified	06/01/23 11:00	06/01/23
L2330778-02	CO39-PZM007	WATER	Not Specified	06/01/23 11:50	06/01/23
L2330778-03	CO27-PZM012	WATER	Not Specified	06/01/23 13:15	06/01/23
L2330778-04	CO27-PZM046	WATER	Not Specified	06/01/23 14:15	06/01/23
L2330778-05	CO93-PZM	WATER	Not Specified	06/01/23 15:25	06/01/23
L2330778-06	TB-WT-01	WATER	Not Specified	06/01/23 00:00	06/01/23



Project Name:COA GW Q2Lab Number:L2330778Project Number:20010210Report Date:06/15/23

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:COA GW Q2Lab Number:L2330778Project Number:20010210Report Date:06/15/23

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:

Title: Technical Director/Representative Date: 06/15/23

Jufani Morrissey-Tiffani Morrissey

ORGANICS



VOLATILES



Project Name: COA GW Q2 Lab Number: L2330778

Project Number: 20010210 **Report Date:** 06/15/23

SAMPLE RESULTS

Lab ID: L2330778-01 D Date Collected: 06/01/23 11:00

Client ID: CO39-PZM042 Date Received: 06/01/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/10/23 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS	- Westborough Lab						
Benzene	5800		ug/l	25	8.0	50	
Toluene	1900		ug/l	38	10.	50	
Ethylbenzene	62		ug/l	25	8.4	50	
p/m-Xylene	350		ug/l	50	17.	50	
o-Xylene	150		ug/l	50	20.	50	
Xylenes, Total	500		ug/l	50	17.	50	
Naphthalene	1000		ua/l	50	11.	50	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Q2 Lab Number: L2330778

Project Number: 20010210 **Report Date:** 06/15/23

SAMPLE RESULTS

Lab ID: L2330778-02 D Date Collected: 06/01/23 11:50

Client ID: CO39-PZM007 Date Received: 06/01/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/10/23 16:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - W	Volatile Organics by GC/MS - Westborough Lab								
Benzene	530		ug/l	2.5	0.80	5			
Toluene	65		ug/l	3.8	1.0	5			
Ethylbenzene	2.7		ug/l	2.5	0.84	5			
p/m-Xylene	12		ug/l	5.0	1.7	5			
o-Xylene	5.7		ug/l	5.0	2.0	5			
Xylenes, Total	18		ug/l	5.0	1.7	5			
Naphthalene	190		ug/l	5.0	1.1	5			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Q2 Lab Number: L2330778

Project Number: 20010210 **Report Date:** 06/15/23

SAMPLE RESULTS

Lab ID: L2330778-03 D Date Collected: 06/01/23 13:15

Client ID: CO27-PZM012 Date Received: 06/01/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/10/23 15:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - We	Volatile Organics by GC/MS - Westborough Lab								
Benzene	15000		ug/l	100	32.	200			
Toluene	5200		ug/l	150	41.	200			
Ethylbenzene	180		ug/l	100	33.	200			
p/m-Xylene	1100		ug/l	200	66.	200			
o-Xylene	490		ug/l	200	78.	200			
Xylenes, Total	1600		ug/l	200	66.	200			
Naphthalene	1200		ug/l	200	43.	200			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Q2 Lab Number: L2330778

Project Number: 20010210 **Report Date:** 06/15/23

SAMPLE RESULTS

Lab ID: L2330778-04 D Date Collected: 06/01/23 14:15

Client ID: CO27-PZM046 Date Received: 06/01/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/10/23 15:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - We	Volatile Organics by GC/MS - Westborough Lab								
Benzene	16000		ug/l	100	32.	200			
Toluene	4600		ug/l	150	41.	200			
Ethylbenzene	180		ug/l	100	33.	200			
p/m-Xylene	1000		ug/l	200	66.	200			
o-Xylene	430		ug/l	200	78.	200			
Xylenes, Total	1400		ug/l	200	66.	200			
Naphthalene	1000		ug/l	200	43.	200			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Q2 Lab Number: L2330778

Project Number: 20010210 **Report Date:** 06/15/23

SAMPLE RESULTS

Lab ID: L2330778-05 D Date Collected: 06/01/23 15:25

Client ID: CO93-PZM Date Received: 06/01/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/10/23 15:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS -	Volatile Organics by GC/MS - Westborough Lab								
Benzene	160000		ug/l	1000	320	2000			
Toluene	50000		ug/l	1500	410	2000			
Ethylbenzene	1500		ug/l	1000	330	2000			
p/m-Xylene	11000		ug/l	2000	660	2000			
o-Xylene	3700		ug/l	2000	780	2000			
Xylenes, Total	15000		ug/l	2000	660	2000			
Naphthalene	5400		ug/l	2000	430	2000			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q2 Lab Number: L2330778

Project Number: 20010210 **Report Date:** 06/15/23

SAMPLE RESULTS

Lab ID: L2330778-06 Date Collected: 06/01/23 00:00

Client ID: TB-WT-01 Date Received: 06/01/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/10/23 13:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - \	Volatile Organics by GC/MS - Westborough Lab								
Benzene	ND		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	100		70-130	
Toluene-d8	97		70-130	
4-Bromofluorobenzene	99		70-130	
Dibromofluoromethane	103		70-130	



Project Name: COA GW Q2 Lab Number: L2330778

Project Number: 20010210 **Report Date:** 06/15/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/10/23 11:02

Parameter	Result Quali	fier Units	RL	MDL
olatile Organics by GC/MS - \	Westborough Lab for sa	ample(s): 01-06	Batch:	WG1790185-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualifi	er Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	99	70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2
Project Number: 20010210

Lab Number:

L2330778

Report Date:

06/15/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	•		01-06 Batch:	 	7.0.2			
Benzene	98		100	70-130	2		20	
Toluene	96		97	70-130	1		20	
Ethylbenzene	98		98	70-130	0		20	
p/m-Xylene	100		100	70-130	0		20	
o-Xylene	100		100	70-130	0		20	
Naphthalene	79		98	70-130	21	Q	20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103	105	70-130
Toluene-d8	100	100	70-130
4-Bromofluorobenzene	101	100	70-130
Dibromofluoromethane	102	102	70-130

Project Name:COA GW Q2Project Number:20010210R

Lab Number: L2330778 **Report Date:** 06/15/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent B Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2330778-01A	Vial HCI preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-01B	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-01C	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-02A	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-02B	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-02C	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-03A	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-03B	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-03C	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-04A	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-04B	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-04C	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-05A	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-05B	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-05C	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-06A	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-06B	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-06C	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)
L2330778-06D	Vial HCl preserved	В	NA		3.6	Υ	Absent		PA-8260(14)



Project Name: Lab Number: COA GW Q2 L2330778 **Project Number:** 20010210 **Report Date:** 06/15/23

GLOSSARY

Acronyms

EMPC

LOQ

MS

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).

- 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.)

- 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

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

MDI - 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.

- 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.

TEO - 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.

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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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



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Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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.)

Report Format: DU Report with 'J' Qualifiers



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 COA GW Q2
 Lab Number:
 L2330778

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 20010210
 Report Date:
 06/15/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 19

Published Date: 4/2/2021 1:14:23 PM Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form

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02	C039-PZMC	Q(2-(5095)	6/1/23		wt	SMC	41.00										3
03	CO27-PZM		6/1/23	1315	ω÷	516			П								3
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ANALYTICAL REPORT

Lab Number: L2331046

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q2

Project Number: 20010210

Report Date: 06/16/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q2
Project Number: 20010210

 Lab Number:
 L2331046

 Report Date:
 06/16/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2331046-01	CO41-PZM001	WATER	Not Specified	06/02/23 11:25	06/02/23
L2331046-02	CO41-PZM036	WATER	Not Specified	06/02/23 12:30	06/02/23
L2331046-03	CO209-MW1	WATER	Not Specified	06/02/23 14:05	06/02/23
L2331046-04	CO209-MW8	WATER	Not Specified	06/02/23 14:50	06/02/23
L2331046-05	TB-WT-01	WATER	Not Specified	06/02/23 00:00	06/02/23



Project Name:COA GW Q2Lab Number:L2331046Project Number:20010210Report Date:06/16/23

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:
 COA GW Q2
 Lab Number:
 L2331046

 Project Number:
 20010210
 Report Date:
 06/16/23

Case Narrative (continued)

Report Submission

June 16, 2023: This final report includes the results of all requested analyses.

June 09, 2023: This is a preliminary report.

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:

Title: Technical Director/Representative Date: 06/16/23

600, Shawor Kelly Stenstrom

ORGANICS



VOLATILES



Project Name: COA GW Q2 Lab Number: L2331046

Project Number: 20010210 **Report Date:** 06/16/23

SAMPLE RESULTS

Lab ID: L2331046-01 D Date Collected: 06/02/23 11:25

Client ID: CO41-PZM001 Date Received: 06/02/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/11/23 19:40

Parameter	Result	Qualifier Uni	s RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - W	estborough Lab					
Benzene	14000	ug/	50	16.	100	
Toluene	8100	ug/	75	20.	100	
Ethylbenzene	360	ug/	50	17.	100	
p/m-Xylene	2800	ug/	100	33.	100	
o-Xylene	550	ug/	100	39.	100	
Xylenes, Total	3400	ug/	100	33.	100	
Naphthalene	130	ug/	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	104	70-130	
Dibromofluoromethane	91	70-130	



Project Name: COA GW Q2 Lab Number: L2331046

Project Number: 20010210 **Report Date:** 06/16/23

SAMPLE RESULTS

Lab ID: L2331046-02 D2 Date Collected: 06/02/23 12:30

Client ID: CO41-PZM036 Date Received: 06/02/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/09/23 08:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - We	estborough Lab					
Benzene	250000		ug/l	2500	800	5000
Surrogate			% Recovery	Qualifier		eptance riteria
1,2-Dichloroethane-d4			103			70-130
Toluene-d8			98			70-130
4-Bromofluorobenzene			100			70-130
Dibromofluoromethane			98			70-130



Project Name: COA GW Q2 Lab Number: L2331046

Project Number: 20010210 **Report Date:** 06/16/23

SAMPLE RESULTS

Lab ID: L2331046-02 D Date Collected: 06/02/23 12:30

Client ID: CO41-PZM036 Date Received: 06/02/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/08/23 18:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS	- Westborough Lab						
Benzene	280000	E	ug/l	500	160	1000	
Toluene	87000		ug/l	750	200	1000	
Ethylbenzene	800		ug/l	500	170	1000	
p/m-Xylene	11000		ug/l	1000	330	1000	
o-Xylene	3400		ug/l	1000	390	1000	
Xylenes, Total	14000		ug/l	1000	330	1000	
Naphthalene	ND		ug/l	1000	220	1000	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	105	70-130	
Dibromofluoromethane	88	70-130	



Project Name: COA GW Q2 Lab Number: L2331046

Project Number: 20010210 **Report Date:** 06/16/23

SAMPLE RESULTS

Lab ID: L2331046-03 D Date Collected: 06/02/23 14:05

Client ID: CO209-MW1 Date Received: 06/02/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/08/23 18:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	2300		ug/l	50	16.	100	
Toluene	340		ug/l	75	20.	100	
Ethylbenzene	71		ug/l	50	17.	100	
p/m-Xylene	100		ug/l	100	33.	100	
o-Xylene	40	J	ug/l	100	39.	100	
Xylenes, Total	140	J	ug/l	100	33.	100	
Naphthalene	13000		ug/l	100	22.	100	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	114		70-130	
Toluene-d8	96		70-130	
4-Bromofluorobenzene	104		70-130	
Dibromofluoromethane	104		70-130	



Project Name: COA GW Q2 Lab Number: L2331046

Project Number: 20010210 **Report Date:** 06/16/23

SAMPLE RESULTS

Lab ID: L2331046-04 D Date Collected: 06/02/23 14:50

Client ID: CO209-MW8 Date Received: 06/02/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/08/23 18:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	180		ug/l	10	3.2	20	
Toluene	170		ug/l	15	4.1	20	
Ethylbenzene	5.7	J	ug/l	10	3.3	20	
p/m-Xylene	64		ug/l	20	6.6	20	
o-Xylene	18	J	ug/l	20	7.8	20	
Xylenes, Total	82	J	ug/l	20	6.6	20	
Naphthalene	2400		ug/l	20	4.3	20	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	112	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA GW Q2 Lab Number: L2331046

Project Number: 20010210 **Report Date:** 06/16/23

SAMPLE RESULTS

Lab ID: L2331046-05 Date Collected: 06/02/23 00:00

Client ID: TB-WT-01 Date Received: 06/02/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/14/23 11:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	112	70-130	



Project Name: COA GW Q2 Lab Number: L2331046

Project Number: 20010210 **Report Date:** 06/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/08/23 11:23

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - W	estborough Lab for s	sample(s): 02-04	Batch:	WG1789135-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qual	ifier Criteria				
1,2-Dichloroethane-d4	110	70-130				
Toluene-d8	97	70-130				
4-Bromofluorobenzene	104	70-130				
Dibromofluoromethane	103	70-130				



Project Name:COA GW Q2Lab Number:L2331046

Project Number: 20010210 **Report Date:** 06/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/09/23 08:21

arameter	Result Q	ualifier Units	RL	MDL	
olatile Organics by GC/M	IS - Westborough Lab fo	or sample(s): 02	Batch:	WG1789266-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	102	70-130	
Toluene-d8	96	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	110	70-130	



Project Name:COA GW Q2Lab Number:L2331046

Project Number: 20010210 **Report Date:** 06/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/11/23 11:33

Result Qua	lifier Units	RL	MDL	
stborough Lab for	sample(s): 01	Batch:	WG1790260-5	
ND	ug/l	0.50	0.16	
ND	ug/l	0.75	0.20	
ND	ug/l	0.50	0.17	
ND	ug/l	1.0	0.33	
ND	ug/l	1.0	0.39	
ND	ug/l	1.0	0.33	
ND	ug/l	1.0	0.22	
	stborough Lab for s ND ND ND ND ND ND ND ND ND N	Stborough Lab for sample(s): 01 ND ug/l ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0	ND ug/l 0.50 0.16 ND ug/l 0.75 0.20 ND ug/l 0.50 0.17 ND ug/l 0.50 0.17 ND ug/l 1.0 0.33 ND ug/l 1.0 0.39 ND ug/l 1.0 0.33

	Acceptance					
Surrogate	%Recovery Quality	fier Criteria				
1,2-Dichloroethane-d4	109	70-130				
Toluene-d8	96	70-130				
4-Bromofluorobenzene	102	70-130				
Dibromofluoromethane	102	70-130				



Project Name:COA GW Q2Lab Number:L2331046

Project Number: 20010210 **Report Date:** 06/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/14/23 08:20

Analyst: TMH

Parameter	Result Qu	ıalifier Units	RL	MDL
Volatile Organics by GC/MS - W	estborough Lab for	sample(s): 05	Batch:	WG1791631-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualif	ier Criteria				
1,2-Dichloroethane-d4	101	70-130				
Toluene-d8	105	70-130				
4-Bromofluorobenzene	102	70-130				
Dibromofluoromethane	111	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q2

20010210

Project Number:

Lab Number: L2331046

Report Date:

06/16/23

Parameter	LCS %Recovery	Qual	_	CSD covery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough I	Lab Associated	sample(s):	02-04 E	Batch:	WG1789135-3	WG1789135-4				
Benzene	100			110		70-130	10		20	
Toluene	99			100		70-130	1		20	
Ethylbenzene	99			100		70-130	1		20	
p/m-Xylene	100			100		70-130	0		20	
o-Xylene	100			100		70-130	0		20	
Naphthalene	92			89		70-130	3		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108	106	70-130
Toluene-d8	97	96	70-130
4-Bromofluorobenzene	101	103	70-130
Dibromofluoromethane	101	95	70-130

Project Name: COA GW Q2
Project Number: 20010210

Lab Number:

L2331046

Report Date:

06/16/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 02	Batch: WG	G1789266-3	WG1789266-4				
Benzene	100		100		70-130	0		20	
Toluene	97		98		70-130	1		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	84		87		70-130	4		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94	98	70-130
Toluene-d8	101	99	70-130
4-Bromofluorobenzene	101	100	70-130
Dibromofluoromethane	99	100	70-130

Project Name: COA GW Q2
Project Number: 20010210

Lab Number:

L2331046

Report Date:

06/16/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 01	Batch: WG	1790260-3	WG1790260-4			
Benzene	110		110		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
Naphthalene	80		85		70-130	6		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110	107	70-130
Toluene-d8	96	98	70-130
4-Bromofluorobenzene	103	99	70-130
Dibromofluoromethane	103	96	70-130

Project Name: COA GW Q2
Project Number: 20010210

Lab Number:

L2331046 06/16/23

0 Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westbord	ough Lab Associated sa	ample(s): 05	5 Batch: WG	1791631-3	WG1791631-4				
Benzene	99		100		70-130	1		20	
Toluene	100		110		70-130	10		20	
Ethylbenzene	110		110		70-130	0		20	
p/m-Xylene	110		115		70-130	4		20	
o-Xylene	110		110		70-130	0		20	
Naphthalene	83		93		70-130	11		20	

	LCS	LCSD	Acceptance	
Surrogate	%Recovery Qual	%Recovery Qual	Criteria	
1,2-Dichloroethane-d4	106	108	70-130	
Toluene-d8	108	107	70-130	
4-Bromofluorobenzene	103	103	70-130	
Dibromofluoromethane	109	110	70-130	

Serial_No:06162314:18

Project Name: COA GW Q2 Lab Number: L2331046 Project Number: 20010210

Report Date: 06/16/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2331046-01A	Vial HCI preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-01B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-01C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-02A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-02B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-02C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-03A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-03B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-03C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-04A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-04B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-04C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-05A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-05B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-05C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2331046-05D	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)



Project Name: Lab Number: COA GW Q2 L2331046 **Project Number:** 20010210 **Report Date:** 06/16/23

GLOSSARY

Acronyms

EDL

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.)

- 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

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

MDI - 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.

> - 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.

MS

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.

- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile NR

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.

TEO - 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:COA GW Q2Lab Number:L2331046Project Number:20010210Report Date:06/16/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GW Q2Lab Number:L2331046Project Number:20010210Report Date:06/16/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_eq} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.)
- 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.)

Report Format: DU Report with 'J' Qualifiers



Serial_No:06162314:18

 Project Name:
 COA GW Q2
 Lab Number:
 L2331046

 Project Number:
 20010210
 Report Date:
 06/16/23

REFERENCES

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.



Serial_No:06162314:18

Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873**

Revision 19

Published Date: 4/2/2021 1:14:23 PM Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

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.

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, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; 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 II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

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31046-01	C041-PZM00	1 6	12/23	1125	wt	SIL	4									3
-02	0041-PZMO	36 9	12/23	1230	wt	SHL	X								PH > 10	3
-03	C0209- MW1	6,	12/23	1405	wt	SIL	4					T			PH >10	3
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Page 2710fv27-ост	-07)	1-1	MC	10	70/25	2150	in	10	/		V /	10%	2 0	100	See reverse side.	



ANALYTICAL REPORT

Lab Number: L2333494

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 06/27/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2333494

 Report Date:
 06/27/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time Ro	eceive Date
L2333494-01	CO190-MWS	WATER	COA	06/13/23 10:10 06	6/13/23
L2333494-02	CO186-MWS	WATER	COA	06/13/23 11:10 06	6/13/23
L2333494-03	CO37-PZM038	WATER	COA	06/13/23 13:20 06	6/13/23
L2333494-04	CO37-PZM003	WATER	COA	06/13/23 14:50 06	6/13/23
L2333494-05	CO179-MWS	WATER	COA	06/13/23 14:05 06	6/13/23
L2333494-06	TB-WT-01	WATER	COA	06/13/23 00:00 06	6/13/23



Project Name:COA GWLab Number:L2333494Project Number:20010210Report Date:06/27/23

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:COA GWLab Number:L2333494Project Number:20010210Report Date:06/27/23

Case Narrative (continued)

Report Submission

June 27, 2023: This final report includes the results of all requested analyses.

June 20, 2023: This is a preliminary report.

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

Volatile Organics

L2333494-04D and -05D: The pH was greater than two; however, the sample was analyzed within the method required holding time.

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.

Jufani Morrissey-Tiffani Morrissey

Authorized Signature:

Title: Technical Director/Representative

ALPHA

Date: 06/27/23

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2333494

Project Number: 20010210 **Report Date:** 06/27/23

SAMPLE RESULTS

Lab ID: L2333494-01 D Date Collected: 06/13/23 10:10

Client ID: CO190-MWS Date Received: 06/13/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/22/23 17:59

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - W	estborough Lab						
Benzene	98000		ug/l	500	160	1000	
Toluene	4600		ug/l	750	200	1000	
Ethylbenzene	ND		ug/l	500	170	1000	
p/m-Xylene	ND		ug/l	1000	330	1000	
o-Xylene	ND		ug/l	1000	390	1000	
Xylenes, Total	ND		ug/l	1000	330	1000	
Naphthalene	ND		ug/l	1000	220	1000	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	88	70-130	
Toluene-d8	92	70-130	
4-Bromofluorobenzene	91	70-130	
Dibromofluoromethane	95	70-130	



Project Name: COA GW Lab Number: L2333494

Project Number: 20010210 **Report Date:** 06/27/23

SAMPLE RESULTS

Lab ID: L2333494-02 D Date Collected: 06/13/23 11:10

Client ID: CO186-MWS Date Received: 06/13/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/22/23 18:20

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	9500		ug/l	50	16.	100	
Toluene	460		ug/l	75	20.	100	
Ethylbenzene	22	J	ug/l	50	17.	100	
p/m-Xylene	86	J	ug/l	100	33.	100	
o-Xylene	65	J	ug/l	100	39.	100	
Xylenes, Total	150	J	ug/l	100	33.	100	
Naphthalene	ND		ug/l	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	89	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	92	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Lab Number: L2333494

Project Number: 20010210 **Report Date:** 06/27/23

SAMPLE RESULTS

Lab ID: L2333494-03 D Date Collected: 06/13/23 13:20

Client ID: CO37-PZM038 Date Received: 06/13/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/19/23 18:59

Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Wes	Volatile Organics by GC/MS - Westborough Lab							
Benzene	14000		ug/l	50	16.	100		
Toluene	7000		ug/l	75	20.	100		
Ethylbenzene	220		ug/l	50	17.	100		
p/m-Xylene	1500		ug/l	100	33.	100		
o-Xylene	510		ug/l	100	39.	100		
Xylenes, Total	2000		ug/l	100	33.	100		
Naphthalene	1100		ug/l	100	22.	100		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	118	70-130	
Dibromofluoromethane	91	70-130	



Project Name: Lab Number: COA GW L2333494

Project Number: Report Date: 20010210 06/27/23

SAMPLE RESULTS

Lab ID: D Date Collected: 06/13/23 14:50 L2333494-04

Client ID: Date Received: CO37-PZM003

06/13/23 Sample Location: Field Prep: Not Specified COA

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 06/19/23 19:24

Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS -	Volatile Organics by GC/MS - Westborough Lab							
Benzene	7600		ug/l	50	16.	100		
Toluene	3100		ug/l	75	20.	100		
Ethylbenzene	110		ug/l	50	17.	100		
p/m-Xylene	900		ug/l	100	33.	100		
o-Xylene	420		ug/l	100	39.	100		
Xylenes, Total	1300		ug/l	100	33.	100		
Naphthalene	730		ug/l	100	22.	100		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	106	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	88	70-130	
Dibromofluoromethane	96	70-130	



Project Name: COA GW Lab Number: L2333494

Project Number: 20010210 **Report Date:** 06/27/23

SAMPLE RESULTS

Lab ID: L2333494-05 D Date Collected: 06/13/23 14:05

Client ID: CO179-MWS Date Received: 06/13/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/19/23 19:48

Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS -	Volatile Organics by GC/MS - Westborough Lab							
Benzene	4700		ug/l	20	6.4	40		
Toluene	2800		ug/l	30	8.1	40		
Ethylbenzene	230		ug/l	20	6.7	40		
p/m-Xylene	1600		ug/l	40	13.	40		
o-Xylene	700		ug/l	40	16.	40		
Xylenes, Total	2300		ug/l	40	13.	40		
Naphthalene	1200		ug/l	40	8.6	40		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	103	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	105	70-130	
Dibromofluoromethane	94	70-130	



Project Name: COA GW Lab Number: L2333494

Project Number: 20010210 **Report Date:** 06/27/23

SAMPLE RESULTS

Lab ID: L2333494-06 Date Collected: 06/13/23 00:00

Client ID: TB-WT-01 Date Received: 06/13/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/22/23 12:16

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - \	Volatile Organics by GC/MS - Westborough Lab							
Benzene	ND		ug/l	0.50	0.16	1		
Toluene	ND		ug/l	0.75	0.20	1		
Ethylbenzene	ND		ug/l	0.50	0.17	1		
p/m-Xylene	ND		ug/l	1.0	0.33	1		
o-Xylene	ND		ug/l	1.0	0.39	1		
Xylenes, Total	ND		ug/l	1.0	0.33	1		
Naphthalene	ND		ug/l	1.0	0.22	1		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	92	70-130	
Dibromofluoromethane	111	70-130	



Project Name:COA GWLab Number:L2333494

Project Number: 20010210 **Report Date:** 06/27/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/19/23 12:00

Analyst: PID

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for s	sample(s): 03-05	Batch:	WG1793519-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	108	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	104	70-130	



Project Name:COA GWLab Number:L2333494

Project Number: 20010210 **Report Date:** 06/27/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/22/23 11:33

Analyst: PID

Parameter	Result C	ualifier Units	RL	MDL
Volatile Organics by GC/MS - West	borough Lab fo	or sample(s):	01-02,06 Batch:	WG1795312-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance						
Surrogate	%Recovery Qualif	ier Criteria	_				
1,2-Dichloroethane-d4	98	70-130					
Toluene-d8	93	70-130					
4-Bromofluorobenzene	92	70-130					
Dibromofluoromethane	100	70-130					



Project Name: COA GW
Project Number: 20010210

Lab Number: L2333494

Report Date: 06/27/23

Parameter	LCS %Recovery	Qual	LCS %Reco		Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	03-05 Ba	atch: \	WG1793519-3	WG1793519-4				
Benzene	110		11	0		70-130	0		20	
Toluene	110		10	00		70-130	10		20	
Ethylbenzene	100		10	00		70-130	0		20	
p/m-Xylene	105		10	00		70-130	5		20	
o-Xylene	100		10	00		70-130	0		20	
Naphthalene	83		82	2		70-130	1		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108	109	70-130
Toluene-d8	100	99	70-130
4-Bromofluorobenzene	86	103	70-130
Dibromofluoromethane	99	101	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L2333494

Report Date: 06/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-02,06 Batch:	WG179531	2-3 WG1795312	2-4		
Benzene	100		97		70-130	3		20
Toluene	98		95		70-130	3		20
Ethylbenzene	99		96		70-130	3		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
Naphthalene	85		85		70-130	0		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	85	93	70-130
Toluene-d8	99	98	70-130
4-Bromofluorobenzene	95	93	70-130
Dibromofluoromethane	93	97	70-130

Project Name: COA GW **Lab Number:** L2333494 Project Number: 20010210

Report Date: 06/27/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	ormation			Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2333494-01A	Vial HCI preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-01B	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-01C	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-02A	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-02B	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-02C	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-03A	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-03B	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-03C	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-04A	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-04B	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-04C	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-05A	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-05B	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-05C	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-06A	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-06B	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-06C	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
L2333494-06D	Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)



Project Name: COA GW Lab Number: L2333494
Project Number: 20010210 Report Date: 06/27/23

GLOSSARY

Acronyms

EDL

EMPC

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.)

- 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).

- 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.

- 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



SRM

Project Name:COA GWLab Number:L2333494Project Number:20010210Report Date:06/27/23

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, Benza(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GWLab Number:L2333494Project Number:20010210Report Date:06/27/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_equation} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name:COA GWLab Number:L2333494Project Number:20010210Report Date:06/27/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

Page 1 of 1

Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

ALPHA	CHAIN	OF CUST	TODY	PAGE_	OF_	Date Rec	d in Lab:	6/14/	23	ALPH	A Job#: LZ3 334	94
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-02	CO 1810-	MWS	1110	661	1	X						3
-03	CO 37-PIN	1038	1320	1.1		X					PL IN	3
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ANALYTICAL REPORT

Lab Number: L2334320

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 06/29/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2334320

 Report Date:
 06/29/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2334320-01	GD-01	WATER	COA	06/15/23 15:05	06/15/23
L2334320-02	GD-02	WATER	COA	06/15/23 16:00	06/15/23
L2334320-03	TB-WT-01	WATER	COA	06/15/23 00:00	06/15/23



Project Name:COA GWLab Number:L2334320Project Number:20010210Report Date:06/29/23

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:COA GWLab Number:L2334320Project Number:20010210Report Date:06/29/23

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:

Title: Technical Director/Representative Date: 06/29/23

Jufani Morrissey-Tiffani Morrissey

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2334320

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2334320-01 Date Collected: 06/15/23 15:05

Client ID: GD-01 Date Received: 06/15/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/25/23 11:14

Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	5.2		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	0.39	J	ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	94	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA GW Lab Number: L2334320

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2334320-02 D Date Collected: 06/15/23 16:00

Client ID: GD-02 Date Received: 06/15/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/25/23 11:36

Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	29000		ug/l	100	32.	200			
Toluene	890		ug/l	150	41.	200			
Ethylbenzene	60	J	ug/l	100	33.	200			
p/m-Xylene	180	J	ug/l	200	66.	200			
o-Xylene	140	J	ug/l	200	78.	200			
Xylenes, Total	320	J	ug/l	200	66.	200			
Naphthalene	79	J	ug/l	200	43.	200			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	84	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	94	70-130	
Dibromofluoromethane	91	70-130	



Project Name: COA GW Lab Number: L2334320

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2334320-03 Date Collected: 06/15/23 00:00

Client ID: TB-WT-01 Date Received: 06/15/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/25/23 01:52

Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	ND		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	84	70-130	
Toluene-d8	107	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	92	70-130	



Project Name:COA GWLab Number:L2334320

Project Number: 20010210 **Report Date:** 06/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/25/23 08:43

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for	sample(s): 01-02	Batch:	WG1796712-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance				
Surrogate	%Recovery Qualif	ier Criteria	_		
1,2-Dichloroethane-d4	93	70-130			
Toluene-d8	96	70-130			
4-Bromofluorobenzene	94	70-130			
Dibromofluoromethane	110	70-130			



Project Name:COA GWLab Number:L2334320

Project Number: 20010210 **Report Date:** 06/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/24/23 18:24

Analyst: PID

Parameter	Result Q	ualifier Units	RL	MDL
olatile Organics by GC/MS - We	estborough Lab fo	r sample(s): 03	Batch:	WG1796817-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualific	er Criteria				
1,2-Dichloroethane-d4	84	70-130				
Toluene-d8	107	70-130				
4-Bromofluorobenzene	103	70-130				
Dibromofluoromethane	91	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2334320

Report Date: 06/29/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	RPE Qual Limi	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-02 Batch:	WG1796712-3	WG1796712-4			
Benzene	110		100		70-130	10	20	
Toluene	100		99		70-130	1	20	
Ethylbenzene	100		100		70-130	0	20	
p/m-Xylene	105		100		70-130	5	20	
o-Xylene	105		100		70-130	5	20	
Naphthalene	80		82		70-130	2	20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	88	86	70-130
Toluene-d8	100	98	70-130
4-Bromofluorobenzene	98	98	70-130
Dibromofluoromethane	96	105	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2334320

Report Date: 06/29/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated s	sample(s): 03	Batch: WG	1796817-3	WG1796817-4				
Benzene	90		91		70-130	1		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	100		105		70-130	5		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	87		93		70-130	7		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	83	84	70-130
Toluene-d8	107	106	70-130
4-Bromofluorobenzene	100	99	70-130
Dibromofluoromethane	93	93	70-130

Project Name: COA GW **Lab Number:** L2334320 Project Number: 20010210

Report Date: 06/29/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

ormation		Initial	Final	Temp			Frozen	
Container Type	Cooler	рН	рН	•	Pres	Seal	Date/Time	Analysis(*)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
	Container Type Vial HCl preserved Vial HCl preserved	Container Type Vial HCl preserved Vial HCl preserved A Vial HCl preserved A	Container Type Vial HCl preserved A NA Vial HCl preserved A NA	Container Type Vial HCl preserved A NA NA	Container Type Cooler pH rintal pH remp deg C Vial HCl preserved A NA 3.0 Vial HCl preserved A NA 3.0	Container Type Cooler pH riminal pH riminal remp deg C Pres Vial HCl preserved A NA 3.0 Y Vial HCl preserved A NA 3.0 Y	Container Type Cooler pH pH deg C Pres Seal Vial HCl preserved A NA 3.0 Y Absent Vial HCl preserved A NA 3.0 Y Absent	Container Type Cooler pH pH deg C Pres Seal Vial HCl preserved A NA 3.0 Y Absent Vial HCl preserved A NA 3.0 Y Absent



Project Name:COA GWLab Number:L2334320Project Number:20010210Report Date:06/29/23

GLOSSARY

Acronyms

EDL

LOQ

MS

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.)

- 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.)

 - 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.

 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.

- 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



SRM

Project Name:COA GWLab Number:L2334320Project Number:20010210Report Date:06/29/23

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, Benzo(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GWLab Number:L2334320Project Number:20010210Report Date:06/29/23

Data Qualifiers

Identified Compounds (TICs).

- $\begin{tabular}{ll} M & -Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte. \end{tabular}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name: COA GW Lab Number: L2334320
Project Number: 20010210 Report Date: 06/29/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

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Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

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ANALYTICAL REPORT

Lab Number: L2335993

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA CELL 5
Project Number: 20010210

Report Date: 06/29/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA CELL 5
Project Number: 20010210

 Lab Number:
 L2335993

 Report Date:
 06/29/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2335993-01	CO61-PZM007	WATER	Not Specified	06/22/23 08:00	06/22/23
L2335993-02	CO62-PZM007	WATER	Not Specified	06/22/23 09:00	06/22/23
L2335993-03	CO63-PZM007	WATER	Not Specified	06/22/23 09:45	06/22/23
L2335993-04	CO64-PZM006	WATER	Not Specified	06/22/23 10:30	06/22/23
L2335993-05	CO65-PZM005	WATER	Not Specified	06/22/23 11:15	06/22/23
L2335993-06	CO66-PZM005	WATER	Not Specified	06/22/23 12:00	06/22/23
L2335993-07	CO67-PZM006	WATER	Not Specified	06/22/23 12:45	06/22/23
L2335993-08	CO68-PZM005	WATER	Not Specified	06/22/23 13:30	06/22/23
L2335993-09	CO69-PZM005	WATER	Not Specified	06/22/23 13:45	06/22/23
L2335993-10	CO70-PZM005	WATER	Not Specified	06/22/23 15:10	06/22/23
L2335993-11	CO71-PZM006	WATER	Not Specified	06/22/23 15:30	06/22/23
L2335993-12	CO72-PZM005	WATER	Not Specified	06/22/23 15:50	06/22/23
L2335993-13	TB-WT-01	WATER	Not Specified	06/22/23 00:00	06/22/23



Project Name:COA CELL 5Lab Number:L2335993Project Number:20010210Report Date:06/29/23

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:COA CELL 5Lab Number:L2335993Project Number:20010210Report Date:06/29/23

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

L2335993-09: The collection date and time on the chain of custody was 22-JUN-23 13:45; however, the collection date/time on the container label was 22-JUN-23 14:45. At the client's request, the collection date/time is reported as 22-JUN-23 13:45.

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:

Title: Technical Director/Representative Date: 06/29/23

Jufani Morrissey-Tiffani Morrissey

ANALYTICAL

ORGANICS



VOLATILES



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-01 D Date Collected: 06/22/23 08:00

Client ID: CO61-PZM007 Date Received: 06/22/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/27/23 14:20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - V	Vestborough Lab						
Benzene	380		ug/l	50	16.	100	
Toluene	440		ug/l	75	20.	100	
Ethylbenzene	28	J	ug/l	50	17.	100	
p/m-Xylene	540		ug/l	100	33.	100	
o-Xylene	190		ug/l	100	39.	100	
Xylenes, Total	730		ug/l	100	33.	100	
Naphthalene	12000		ug/l	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	89	70-130	
Toluene-d8	88	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	103	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-02 D Date Collected: 06/22/23 09:00

Client ID: CO62-PZM007 Date Received: 06/22/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS -	Westborough Lab					
Benzene	200		ug/l	10	3.2	20
Toluene	90		ug/l	15	4.1	20
Ethylbenzene	10		ug/l	10	3.3	20
p/m-Xylene	120		ug/l	20	6.6	20
o-Xylene	46		ug/l	20	7.8	20
Xylenes, Total	170		ug/l	20	6.6	20
Naphthalene	2100		ug/l	20	4.3	20

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	106	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	104	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-03 D Date Collected: 06/22/23 09:45

Client ID: CO63-PZM007 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 01:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	stborough Lab						
Benzene	260		ug/l	12	4.0	25	
Toluene	160		ug/l	19	5.1	25	
Ethylbenzene	13		ug/l	12	4.2	25	
p/m-Xylene	190		ug/l	25	8.3	25	
o-Xylene	71		ug/l	25	9.8	25	
Xylenes, Total	260		ug/l	25	8.3	25	
Naphthalene	3200		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	108	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	106	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-04 D Date Collected: 06/22/23 10:30

Client ID: CO64-PZM006 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 01:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	stborough Lab						
Benzene	260		ug/l	12	4.0	25	
Toluene	160		ug/l	19	5.1	25	
Ethylbenzene	12		ug/l	12	4.2	25	
p/m-Xylene	180		ug/l	25	8.3	25	
o-Xylene	66		ug/l	25	9.8	25	
Xylenes, Total	250		ug/l	25	8.3	25	
Naphthalene	2900		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	104	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-05 D Date Collected: 06/22/23 11:15

Client ID: CO65-PZM005 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 01:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	estborough Lab						
Benzene	250		ug/l	12	4.0	25	
Toluene	150		ug/l	19	5.1	25	
Ethylbenzene	12		ug/l	12	4.2	25	
p/m-Xylene	180		ug/l	25	8.3	25	
o-Xylene	64		ug/l	25	9.8	25	
Xylenes, Total	240		ug/l	25	8.3	25	
Naphthalene	2900		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	106	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	105	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-06 D Date Collected: 06/22/23 12:00

Client ID: CO66-PZM005 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 02:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	estborough Lab						
Benzene	250		ug/l	12	4.0	25	
Toluene	150		ug/l	19	5.1	25	
Ethylbenzene	12		ug/l	12	4.2	25	
p/m-Xylene	190		ug/l	25	8.3	25	
o-Xylene	69		ug/l	25	9.8	25	
Xylenes, Total	260		ug/l	25	8.3	25	
Naphthalene	3400		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	106	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	106	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-07 D Date Collected: 06/22/23 12:45

Client ID: CO67-PZM006 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 02:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	· Westborough Lab						
Benzene	250		ug/l	12	4.0	25	
Toluene	140		ug/l	19	5.1	25	
Ethylbenzene	10	J	ug/l	12	4.2	25	
p/m-Xylene	180		ug/l	25	8.3	25	
o-Xylene	66		ug/l	25	9.8	25	
Xylenes, Total	250		ug/l	25	8.3	25	
Naphthalene	3400		ua/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	96	70-130	
4-Bromofluorobenzene	108	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-08 D Date Collected: 06/22/23 13:30

Client ID: CO68-PZM005 Date Received: 06/22/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/29/23 04:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	120		ug/l	2.5	0.80	5	
Toluene	58		ug/l	3.8	1.0	5	
Ethylbenzene	4.7		ug/l	2.5	0.84	5	
p/m-Xylene	72		ug/l	5.0	1.7	5	
o-Xylene	35		ug/l	5.0	2.0	5	
Xylenes, Total	110		ug/l	5.0	1.7	5	
Naphthalene	810		ug/l	5.0	1.1	5	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	98	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-09 D2 Date Collected: 06/22/23 13:45

Client ID: CO69-PZM005 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/29/23 03:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough	n Lab						
Naphthalene	1500		ug/l	25	5.4	25	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	97		70-130



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-09 D Date Collected: 06/22/23 13:45

Client ID: CO69-PZM005 Date Received: 06/22/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 03:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	220		ug/l	2.5	0.80	5	
Toluene	88		ug/l	3.8	1.0	5	
Ethylbenzene	8.1		ug/l	2.5	0.84	5	
p/m-Xylene	120		ug/l	5.0	1.7	5	
o-Xylene	46		ug/l	5.0	2.0	5	
Xylenes, Total	170		ug/l	5.0	1.7	5	
Naphthalene	1400	Е	ug/l	5.0	1.1	5	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	104	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	104	70-130	
Dibromofluoromethane	96	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-10 Date Collected: 06/22/23 15:10

Client ID: CO70-PZM005 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/27/23 13:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - West	borough Lab						
Benzene	0.76		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	1.0		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	93		70-130	
Toluene-d8	94		70-130	
4-Bromofluorobenzene	94		70-130	
Dibromofluoromethane	107		70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-11 Date Collected: 06/22/23 15:30

Client ID: CO71-PZM006 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/27/23 13:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbor	ough Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	106	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-12 D Date Collected: 06/22/23 15:50

Client ID: CO72-PZM005 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/28/23 03:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - V	Westborough Lab						
Benzene	300		ug/l	12	4.0	25	
Toluene	130		ug/l	19	5.1	25	
Ethylbenzene	10	J	ug/l	12	4.2	25	
p/m-Xylene	170		ug/l	25	8.3	25	
o-Xylene	63		ug/l	25	9.8	25	
Xylenes, Total	230		ug/l	25	8.3	25	
Naphthalene	2900		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	107	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	106	70-130	
Dibromofluoromethane	98	70-130	



Serial_No:06292313:51

Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

SAMPLE RESULTS

Lab ID: L2335993-13 Date Collected: 06/22/23 00:00

Client ID: TB-WT-01 Date Received: 06/22/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/27/23 20:12

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbo	rough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	102	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	107	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/27/23 09:50

Parameter	Result Q	ualifier Units	RL	MDL
Volatile Organics by GC/MS - Wes	stborough Lab fo	r sample(s): 01	1,10-11 Batch:	WG1797201-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualif	er Criteria	
1,2-Dichloroethane-d4	87	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	92	70-130	
Dibromofluoromethane	105	70-130	



Project Name: COA CELL 5 Lab Number: L2335993

Project Number: 20010210 **Report Date:** 06/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/27/23 19:47

Analyst: KJD

Parameter	Result Q	ualifier Units	RL	MDL	
olatile Organics by GC/MS -	· Westborough Lab fo	or sample(s):	02-07,09,12-13	Batch: W	/G1797220-5
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptan					
Surrogate	%Recovery Qualit	ier Criteria				
1,2-Dichloroethane-d4	107	70-130				
Toluene-d8	98	70-130				
4-Bromofluorobenzene	109	70-130				
Dibromofluoromethane	100	70-130				



Project Name:COA CELL 5Lab Number:L2335993

Project Number: 20010210 **Report Date:** 06/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 06/28/23 20:17

Analyst: KJD

Parameter	Result Qual	ifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for s	ample(s): 08-09	Batch:	WG1797624-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance						
Surrogate	%Recovery Qualif	er Criteria					
1,2-Dichloroethane-d4	98	70-130					
Toluene-d8	97	70-130					
4-Bromofluorobenzene	101	70-130					
Dibromofluoromethane	95	70-130					



Project Name: COA CELL 5

Batch Quality Contro

Project Number: 20010210

Lab Number: L2335993

Report Date: 06/29/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough L	ab Associated s	sample(s): (01,10-11 Batch:	WG179720	01-3 WG1797201	l-4		
Benzene	92		92		70-130	0		20
Toluene	92		93		70-130	1		20
Ethylbenzene	90		92		70-130	2		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	90		90		70-130	0		20
Naphthalene	74		74		70-130	0		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	85	85	70-130
Toluene-d8	94	94	70-130
4-Bromofluorobenzene	91	91	70-130
Dibromofluoromethane	100	102	70-130

Project Name: COA CELL 5
Project Number: 20010210

Lab Number:

L2335993

Report Date:

06/29/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recover	ry RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	02-07,09,12-13	Batch: V	VG1797220-3	WG1797220-4			
Benzene	98		99		70-130	1		20	
Toluene	98		98		70-130	0		20	
Ethylbenzene	97		100		70-130	3		20	
p/m-Xylene	95		100		70-130	5		20	
o-Xylene	95		95		70-130	0		20	
Naphthalene	89		83		70-130	7		20	

Surrogate	LCS %Recovery Qual	LCSD I %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102	104	70-130
Toluene-d8	99	99	70-130
4-Bromofluorobenzene	106	109	70-130
Dibromofluoromethane	98	98	70-130

Project Name: COA CELL 5

Project Number: 20010210

Lab Number: L2335993

Report Date: 06/29/23

Parameter	LCS %Recovery	Qual	LCSE %Recov		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	08-09 Bato	ch: WG1797624-3	3 WG1797624-4				
Benzene	100		100		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	105		105		70-130	0		20	
o-Xylene	105		105		70-130	0		20	
Naphthalene	95		100		70-130	5		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103	103	70-130
Toluene-d8	98	98	70-130
4-Bromofluorobenzene	99	99	70-130
Dibromofluoromethane	100	100	70-130

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 Project Name:
 COA CELL 5

 Project Number:
 20010210

 Report Date:
 06/29/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Container Information

Cooler Custody Seal

A Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2335993-01A	Vial HCl preserved	А	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-01B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-01C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-02A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-02B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-02C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-03A	Vial HCI preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-03B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-03C	Vial HCI preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-04A	Vial HCI preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-04B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-04C	Vial HCI preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-05A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-05B	Vial HCI preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-05C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-06A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-06B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-06C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-07A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-07B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-07C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-08A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-08B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)



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Lab Number: L2335993

Report Date: 06/29/23

Project Name: COA CELL 5Project Number: 20010210

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рH	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2335993-08C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-09A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-09B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-09C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-10A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-10B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-10C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-11A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-11B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-11C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-12A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-12B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-12C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-13A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-13B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-13C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2335993-13D	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)



Project Name:COA CELL 5Lab Number:L2335993Project Number:20010210Report Date:06/29/23

GLOSSARY

Acronyms

EDL

LOQ

MS

MSD

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.)

 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.

Limit of Dataction: This value represents the level to which a target analyte can reliably be det

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.)

- 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.

- 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.

- 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.



Project Name:COA CELL 5Lab Number:L2335993Project Number:20010210Report Date:06/29/23

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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA CELL 5Lab Number:L2335993Project Number:20010210Report Date:06/29/23

Data Qualifiers

Identified Compounds (TICs).

- $\label{eq:main_main_model} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- 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.
- ${f P}$ 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.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- 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.)



Serial_No:06292313:51

 Project Name:
 COA CELL 5
 Lab Number:
 L2335993

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 Report Date:
 06/29/23

REFERENCES

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.



Serial_No:06292313:51

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

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- 05 CO GB- PLMO	65	1336		X					
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ANALYTICAL REPORT

Lab Number: L2342840

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: CPLF GW SAMPLING

Project Number: 20010212

Report Date: 08/01/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: CPLF GW SAMPLING

Project Number: 20010212

 Lab Number:
 L2342840

 Report Date:
 08/01/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2342840-01	CO203-MWS	WATER	CPLF	07/25/23 10:35	07/25/23
L2342840-02	CO205-MWS	WATER	CPLF	07/25/23 11:35	07/25/23
L2342840-03	TB-WT-01	WATER	CPLF	07/25/23 00:00	07/25/23



Project Name: CPLF GW SAMPLING Lab Number: L2342840

Project Number: 20010212 Report Date: 08/01/23

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: CPLF GW SAMPLING Lab Number: L2342840

Project Number: 20010212 **Report Date:** 08/01/23

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.

Selly Mary Ashaley Moynihan

Authorized Signature:

Title: Technical Director/Representative

ALPHA

Date: 08/01/23

ORGANICS



VOLATILES



L2342840

Project Name: Lab Number: **CPLF GW SAMPLING**

Project Number: Report Date: 20010212 08/01/23

SAMPLE RESULTS

Lab ID: L2342840-01 D Date Collected: 07/25/23 10:35

Client ID: Date Received: 07/25/23 CO203-MWS Sample Location: Field Prep: **CPLF** Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 07/28/23 11:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	stborough Lab						
Benzene	380		ug/l	12	4.0	25	
Toluene	99		ug/l	19	5.1	25	
Ethylbenzene	9.8	J	ug/l	12	4.2	25	
p/m-Xylene	160		ug/l	25	8.3	25	
o-Xylene	54		ug/l	25	9.8	25	
Xylenes, Total	210		ug/l	25	8.3	25	
Naphthalene	4600		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	117	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	116	70-130	



Project Name: CPLF GW SAMPLING

Project Number: 20010212

Lab Number: L2342840

Report Date: 08/01/23

SAMPLE RESULTS

Lab ID: L2342840-02 D2

Client ID: CO205-MWS Date Received: Field Prep:

Date Collected:

07/25/23 11:35

Sample Location: **CPLF**

07/25/23 Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date:

Analyst:

07/31/23 16:44

MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - V	Westborough Lab						
Naphthalene	2400		ug/l	200	43.	200	
					Acc	entance	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	108		70-130



Project Name: Lab Number: **CPLF GW SAMPLING** L2342840

Project Number: Report Date: 20010212 08/01/23

SAMPLE RESULTS

Lab ID: L2342840-02 D Date Collected: 07/25/23 11:35

Client ID: Date Received: 07/25/23 CO205-MWS Sample Location: Field Prep: **CPLF** Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 07/28/23 11:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	380		ug/l	10	3.2	20				
Toluene	110		ug/l	15	4.1	20				
Ethylbenzene	10		ug/l	10	3.3	20				
p/m-Xylene	170		ug/l	20	6.6	20				
o-Xylene	60		ug/l	20	7.8	20				
Xylenes, Total	230		ug/l	20	6.6	20				
Naphthalene	4300	Е	ug/l	20	4.3	20				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	124	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	94	70-130	
Dibromofluoromethane	119	70-130	



Project Name: CPLF GW SAMPLING

Project Number: 20010212

SAMPLE RESULTS

Lab Number: L2342840

Report Date: 08/01/23

Lab ID: L2342840-03

Client ID: TB-WT-01 Sample Location: **CPLF**

Date Collected: 07/25/23 00:00 Date Received: 07/25/23 Field Prep: Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 07/28/23 11:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westboroug	h Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	113	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	114	70-130	



L2342840

Lab Number:

Project Name: CPLF GW SAMPLING

Project Number: Report Date:

20010212 08/01/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 07/28/23 10:41

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 01-03	Batch:	WG1809791-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qual	ifier Criteria				
1,2-Dichloroethane-d4	117	70-130				
Toluene-d8	99	70-130				
4-Bromofluorobenzene	98	70-130				
Dibromofluoromethane	118	70-130				



L2342840

Project Name: CPLF GW SAMPLING Lab Number:

> Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 07/31/23 09:44

Parameter	Result Qualif	ier Units	RL	MDL	
Volatile Organics by GC/MS	- Westborough Lab for sa	imple(s): 02	Batch:	WG1810237-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance
Surrogate	%Recovery Qualif	ier Criteria
40.8:11		70.400
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	102	70-130
Dibromofluoromethane	106	70-130



Project Name: CPLF GW SAMPLING

Project Number: 20010212

Lab Number: L2

L2342840

Report Date:

08/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-03 Batch:	WG1809791-3	WG1809791-4			
Benzene	120		110		70-130	9		20
Toluene	100		99		70-130	1		20
Ethylbenzene	100		97		70-130	3		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		95		70-130	5		20
Naphthalene	94		96		70-130	2		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108	114	70-130
Toluene-d8	100	99	70-130
4-Bromofluorobenzene	91	92	70-130
Dibromofluoromethane	107	110	70-130

Project Name: CPLF GW SAMPLING

Project Number: 20010212

Lab Number: L2342840

Report Date: 08/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s): 02	Batch: W	G1810237-3	WG1810237-4				
Benzene	110		110		70-130	0		20	
Toluene	110		110		70-130	0		20	
Ethylbenzene	110		110		70-130	0		20	
p/m-Xylene	110		110		70-130	0		20	
o-Xylene	110		110		70-130	0		20	
Naphthalene	87		86		70-130	1		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	112	112	70-130
Toluene-d8	105	106	70-130
4-Bromofluorobenzene	103	101	70-130
Dibromofluoromethane	104	105	70-130

Project Name: CPLF GW SAMPLING

Lab Number: L2342840

Project Number: 20010212 **Report Date:** 08/01/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Information			Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рH	рН	deg C P	Pres	Seal	Date/Time	Analysis(*)
L2342840-01A	Vial HCI preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-01B	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-01C	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-02A	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-02B	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-02C	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-03A	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-03B	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-03C	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)
L2342840-03D	Vial HCl preserved	Α	NA		5.3	Υ	Absent		PA-8260(14)



Project Name: CPLF GW SAMPLING Lab Number: L2342840

Project Number: 20010212 Report Date: 08/01/23

GLOSSARY

Acronyms

EDL

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.)

- 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.

 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.

MS

RPD

STLP

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.

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.

- 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.

- 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.



Project Name:CPLF GW SAMPLINGLab Number:L2342840Project Number:20010212Report Date:08/01/23

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:CPLF GW SAMPLINGLab Number:L2342840Project Number:20010212Report Date:08/01/23

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.
- 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:CPLF GW SAMPLINGLab Number:L2342840Project Number:20010212Report Date:08/01/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

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Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Document Type: Form

Serial No:08012312:29

CHAIN C	F CUSTODY PAGE_	OF Date Rec'd in La	b: 7/26/23	ALPHA Job #: L 2342840
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193 FAX: 508-822-3288 Client Information Client: Address:	Project Information Project Name: OA G Project Location: COA - Cc Project #: ZOO OZIZ Project Manager: BoB ALPHA Quote #:	I A DEX	□ Add'l Deliverables uirements/Report Limits	Billing Information Same as Client info PO #:
Phone:	Turn-Around Time			
Fax: Email: These samples have been previously analyzed by Alph Other Project Specific Requirements/Cor SMPIES COZO3-MU COZ	nments/Detection Limits	ANALYSIS STEES		SAMPLE HANDLING Filtration Done Not needed Lab to do Preservation Lab to do
ALPHA Lab ID (Lab Use Only) 12840 - 01 C 0 Z 03 - M W 03 C 0 Z 05 - M W 03 TB- Wt- 01	Collection Sample Matrix Date Time Matrix 75 725 23 10 35 G W	e Sampler's		Sample Specific Comments PH 7 10 3 PH 7 10
7/26/23 0245 7/26/23 0245 7/26/23 0245	A P	Preservative S Receive S R	Ped By: Date/T PASC 7/25/3 WW 7/25/3 7/25/3	Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



ANALYTICAL REPORT

Lab Number: L2343607

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA-CELL 4
Project Number: 20010210

Report Date: 08/03/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA-CELL 4
Project Number: 20010210

 Lab Number:
 L2343607

 Report Date:
 08/03/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2343607-01	CO207-MWS	WATER	Not Specified	07/26/23 11:45	07/27/23
L2343607-02	CO35-PZM013	WATER	Not Specified	07/26/23 11:55	07/27/23
L2343607-03	TB-WT-01	WATER	Not Specified	07/26/23 00:00	07/27/23



 Project Name:
 COA-CELL 4
 Lab Number:
 L2343607

 Project Number:
 20010210
 Report Date:
 08/03/23

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:
 COA-CELL 4
 Lab Number:
 L2343607

 Project Number:
 20010210
 Report Date:
 08/03/23

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:

Title: Technical Director/Representative Date: 08/03/23

600, Shandow Kelly Stenstrom

ORGANICS



VOLATILES



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 **Report Date:** 08/03/23

SAMPLE RESULTS

Lab ID: L2343607-01 Date Collected: 07/26/23 11:45

Client ID: CO207-MWS Date Received: 07/27/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/31/23 22:24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - V	Volatile Organics by GC/MS - Westborough Lab								
Benzene	200		ug/l	0.50	0.16	1			
Toluene	93		ug/l	0.75	0.20	1			
Ethylbenzene	9.7		ug/l	0.50	0.17	1			
p/m-Xylene	130		ug/l	1.0	0.33	1			
o-Xylene	54		ug/l	1.0	0.39	1			
Xylenes, Total	180		ug/l	1.0	0.33	1			
Naphthalene	1100	E	ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	95	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 **Report Date:** 08/03/23

SAMPLE RESULTS

Lab ID: L2343607-01 D Date Collected: 07/26/23 11:45

Client ID: CO207-MWS Date Received: 07/27/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/02/23 00:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Naphthalene	1600		ug/l	20	4.3	20	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	120		70-130



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 **Report Date:** 08/03/23

SAMPLE RESULTS

Lab ID: L2343607-02 D2 Date Collected: 07/26/23 11:55

Client ID: CO35-PZM013 Date Received: 07/27/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/02/23 00:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Naphthalene	420		ug/l	10	2.2	10	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	120		70-130



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 **Report Date:** 08/03/23

SAMPLE RESULTS

Lab ID: L2343607-02 D Date Collected: 07/26/23 11:55

Client ID: CO35-PZM013 Date Received: 07/27/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/31/23 22:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	110		ug/l	1.0	0.32	2		
Toluene	21		ug/l	1.5	0.41	2		
Ethylbenzene	2.8		ug/l	1.0	0.33	2		
p/m-Xylene	24		ug/l	2.0	0.66	2		
o-Xylene	14		ug/l	2.0	0.78	2		
Xylenes, Total	38		ug/l	2.0	0.66	2		
Naphthalene	470	Е	ug/l	2.0	0.43	2		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	107	70-130	



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 **Report Date:** 08/03/23

SAMPLE RESULTS

Lab ID: L2343607-03 Date Collected: 07/26/23 00:00

Client ID: TB-WT-01 Date Received: 07/27/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/31/23 22:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - \	Volatile Organics by GC/MS - Westborough Lab								
Benzene	ND		ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	112	70-130	



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 **Report Date:** 08/03/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 07/31/23 20:47

Result Qu	ualifier Units	RL	MDL	
stborough Lab for	sample(s): 01	-03 Batch:	WG1810491-5	
ND	ug/l	0.50	0.16	
ND	ug/l	0.75	0.20	
ND	ug/l	0.50	0.17	
ND	ug/l	1.0	0.33	-
ND	ug/l	1.0	0.39	
ND	ug/l	1.0	0.33	
ND	ug/l	1.0	0.22	
	ND	ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0	ND ug/l 0.50 0.16 ND ug/l 0.75 0.20 ND ug/l 0.50 0.17 ND ug/l 0.50 0.17 ND ug/l 1.0 0.33 ND ug/l 1.0 0.39 ND ug/l 1.0 0.33

	Accepta						
Surrogate	%Recovery Qualif	ier Criteria					
1,2-Dichloroethane-d4	100	70-130					
Toluene-d8	99	70-130					
4-Bromofluorobenzene	100	70-130					
Dibromofluoromethane	110	70-130					



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 **Report Date:** 08/03/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/01/23 18:39

Parameter	Result Qua	lifier Units	RL	MDL	
Volatile Organics by GC/MS - We	estborough Lab for s	sample(s): 01-02	Batch:	WG1811035-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Accep					
Surrogate	%Recovery Qualif	ier Criteria				
1,2-Dichloroethane-d4	106	70-130				
Toluene-d8	96	70-130				
4-Bromofluorobenzene	95	70-130				
Dibromofluoromethane	119	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA-CELL 4

Project Number: 20010210

Lab Number: L2343607

Report Date: 08/03/23

Parameter	LCS %Recovery	Qual	LCSI %Reco		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough	Lab Associated s	sample(s):	01-03 Bat	ch: WG1810491-	3 WG1810491-4				
Benzene	110		110		70-130	0		20	
Toluene	110		110		70-130	0		20	
Ethylbenzene	110		110		70-130	0		20	
p/m-Xylene	110		115		70-130	4		20	
o-Xylene	110		110		70-130	0		20	
Naphthalene	96		98		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98	98	70-130
Toluene-d8	99	99	70-130
4-Bromofluorobenzene	101	104	70-130
Dibromofluoromethane	106	104	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA-CELL 4

Project Number: 20010210

Lab Number: L2343607

Report Date: 08/03/23

Parameter	LCS %Recovery	Qual	LCSD %Recove		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough I	ab Associated	sample(s):	01-02 Batch	: WG1811035-3	WG1811035-4				
Benzene	110		110		70-130	0		20	
Toluene	100		97		70-130	3		20	
Ethylbenzene	98		94		70-130	4		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		95		70-130	5		20	
Naphthalene	82		82		70-130	0		20	

Surrogate	LCS %Recovery Qual	LCSD Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99	102	70-130
Toluene-d8	98	96	70-130
4-Bromofluorobenzene	91	88	70-130
Dibromofluoromethane	112	115	70-130

 Project Name:
 COA-CELL 4

 Project Number:
 20010210

 Report Date:
 08/03/23

Sample Receipt and Container Information

Cooler Information

Cooler Custody Seal

Were project specific reporting limits specified?

A Absent

Container Information				Final	Temp			Frozen		
Container ID	Container Type	Cooler	Initial pH	pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L2343607-01A	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-01B	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-01C	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-02A	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-02B	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-02C	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-03A	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-03B	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-03C	Vial HCl preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	
L2343607-03D	Vial HCI preserved	Α	NA		3.1	Υ	Absent		PA-8260(14)	

YES



Project Name: COA-CELL 4 Lab Number: L2343607

Project Number: 20010210 Report Date: 08/03/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RPD

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.)

- 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.)

 - 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.

 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.

- 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.



Project Name:COA-CELL 4Lab Number:L2343607Project Number:20010210Report Date:08/03/23

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 buts

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA-CELL 4Lab Number:L2343607Project Number:20010210Report Date:08/03/23

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.
- 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:
 COA-CELL 4
 Lab Number:
 L2343607

 Project Number:
 20010210
 Report Date:
 08/03/23

REFERENCES

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.



ID No.:17873

Revision 20

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Published Date: 6/16/2023 4:52:28 PM Title: Certificate/Approval Program Summary

Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

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ANALYTICAL REPORT

Lab Number: L2343666

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: CELL 4

Project Number: Not Specified Report Date: 08/02/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: CELL 4

Project Number: Not Specified

 Lab Number:
 L2343666

 Report Date:
 08/02/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2343666-01	CELL 4-NORTH	WATER	CELL 4	07/28/23 10:30	07/28/23
L2343666-02	CELL 4-SOUTH	WATER	CELL 4	07/28/23 10:40	07/28/23



Project Name:CELL 4Lab Number:L2343666Project Number:Not SpecifiedReport Date:08/02/23

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.	



Serial_No:08022318:36

Project Name:CELL 4Lab Number:L2343666Project Number:Not SpecifiedReport Date:08/02/23

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:

Title: Technical Director/Representative Date: 08/02/23

Jufani Morrissey-Tiffani Morrissey

ALPHA

ORGANICS



VOLATILES



Serial_No:08022318:36

Project Name: CELL 4 Lab Number: L2343666

Project Number: Not Specified Report Date: 08/02/23

SAMPLE RESULTS

Lab ID: L2343666-01 Date Collected: 07/28/23 10:30

Client ID: CELL 4-NORTH Date Received: 07/28/23
Sample Location: CELL 4 Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/31/23 21:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	36		ug/l	0.50	0.16	1				
Toluene	36		ug/l	0.75	0.20	1				
Ethylbenzene	2.0		ug/l	0.50	0.17	1				
p/m-Xylene	33		ug/l	1.0	0.33	1				
o-Xylene	13		ug/l	1.0	0.39	1				
Xylenes, Total	46		ug/l	1.0	0.33	1				
Naphthalene	0.42	J	ug/l	1.0	0.22	1				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	105	70-130	



Serial_No:08022318:36

Project Name: Lab Number: CELL 4 L2343666

Project Number: Report Date: Not Specified 08/02/23

SAMPLE RESULTS

Lab ID: L2343666-02 Date Collected: 07/28/23 10:40

Client ID: **CELL 4-SOUTH** Date Received: 07/28/23

Sample Location: Field Prep: CELL 4 Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 07/31/23 21:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	33		ug/l	0.50	0.16	1			
Toluene	34		ug/l	0.75	0.20	1			
Ethylbenzene	1.9		ug/l	0.50	0.17	1			
p/m-Xylene	32		ug/l	1.0	0.33	1			
o-Xylene	12		ug/l	1.0	0.39	1			
Xylenes, Total	44		ug/l	1.0	0.33	1			
Naphthalene	1.9		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	104	70-130	



Project Name: CELL 4 Lab Number: L2343666

Project Number: Not Specified Report Date: 08/02/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 07/31/23 20:47

ameter	Result Qu	alifier Units	RL	MDL	
tile Organics by GC/MS - We	stborough Lab for	sample(s): 01-02	2 Batch:	WG1810491-5	
enzene	ND	ug/l	0.50	0.16	
luene	ND	ug/l	0.75	0.20	
hylbenzene	ND	ug/l	0.50	0.17	
m-Xylene	ND	ug/l	1.0	0.33	
Xylene	ND	ug/l	1.0	0.39	
lenes, Total	ND	ug/l	1.0	0.33	
phthalene	ND	ug/l	1.0	0.22	
Xylene rlenes, Total	ND ND	ug/l ug/l	1.0	0.39	

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	110	70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: CELL 4

Project Number: Not Specified

Lab Number:

L2343666

Report Date:

08/02/23

Parameter	LCS %Recovery	Qual	LCSD %Recove		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-02 Batch	: WG1810491-3	WG1810491-4				
Benzene	110		110		70-130	0		20	
Toluene	110		110		70-130	0		20	
Ethylbenzene	110		110		70-130	0		20	
p/m-Xylene	110		115		70-130	4		20	
o-Xylene	110		110		70-130	0		20	
Naphthalene	96		98		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98	98	70-130
Toluene-d8	99	99	70-130
4-Bromofluorobenzene	101	104	70-130
Dibromofluoromethane	106	104	70-130

Serial_No:08022318:36

Project Name: CELL 4

Project Number: Not Specified Report Date: 08/02/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Info	ormation Initial F			Final	Temp			Frozen		
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L2343666-01A	Vial HCl preserved	Α	NA		4.4	Υ	Absent		PA-8260(14)	
L2343666-01B	Vial HCl preserved	А	NA		4.4	Υ	Absent		PA-8260(14)	
L2343666-01C	Vial HCl preserved	А	NA		4.4	Υ	Absent		PA-8260(14)	
L2343666-02A	Vial HCl preserved	А	NA		4.4	Υ	Absent		PA-8260(14)	
L2343666-02B	Vial HCl preserved	А	NA		4.4	Υ	Absent		PA-8260(14)	
L2343666-02C	Vial HCl preserved	Α	NA		4.4	Υ	Absent		PA-8260(14)	



Project Name:CELL 4Lab Number:L2343666Project Number:Not SpecifiedReport Date:08/02/23

GLOSSARY

Acronyms

LOD

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)

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.

- 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

oniy.)

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.



Project Name:CELL 4Lab Number:L2343666Project Number:Not SpecifiedReport Date:08/02/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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



Project Name:CELL 4Lab Number:L2343666Project Number:Not SpecifiedReport Date:08/02/23

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.
- 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.)



Serial_No:08022318:36

Project Name:CELL 4Lab Number:L2343666Project Number:Not SpecifiedReport Date:08/02/23

REFERENCES

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.



Serial_No:08022318:36

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193 Client Information Client: Address:	9300 Project Name	ormation Cell 4 on:Cen 4 er: Bob Je	Date Rec'd in Lab: 7(29 Report Information - Data D FAX	Deliverables Billing Same verables	IA Job #.L.2343666 g Information e as Client info PO#:
Phone:	Turn-Arour		Real School of Confession		
Fax:	D Clarket	s Delieu			
Email;	☐ Standard	SEUSH (only confirmed if pre-approved!)	(2) 3	11111	/ / /
☐ These samples have been previous	sly analyzed by Alpha	> ///f/ Time:	ANALYSIS	/ / / / / / /	SAMPLE HANDLING Filtration
ALPHA Lab ID (Lab Use Only)	Sample ID Pa	Collection Sample Sample step Time Matrix Initia	er's D		Not needed Lab to do Preservation Lab to do (Please specify below) Sample Specific Comments
13666. 01 Cell	4-NO(34 72	173 1030 SW N	PATITION		04710 3
oz Cen	4. South 14	1040 SW HOP			1 PH 2 16 3
Jay 7/29(23 1/29/23 0	0245	Container Typ	100		Please print clearly, legibly and completely. Samples can not be logged
Page 17/0f-174-007-07)	Relinquished I		735 Received By: JAAN 26 Allow of 44	Date/Time 1/25/23 12.3 10 7.25-23 15.25 10 JUL 2 8 2023	in and turnaround time clock will not start until any ambiguities are resolved All samples submitted are subject to Alphais Terms and Conditions. See refers site.



ANALYTICAL REPORT

Lab Number: L2343995

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: CELL 6 SOIL BORING

Project Number: 21010210

Report Date: 08/07/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: CELL 6 SOIL BORING

Project Number: 21010210

 Lab Number:
 L2343995

 Report Date:
 08/07/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2343995-01	CELL 6-004-SB-9	SOIL	CELL 6	07/31/23 10:00	07/31/23
L2343995-02	TRIP BLANK	WATER	CELL 6	07/31/23 00:00	07/31/23



Project Name: CELL 6 SOIL BORING Lab Number: L2343995

Project Number: 21010210 Report Date: 08/07/23

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: CELL 6 SOIL BORING Lab Number: L2343995

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

L2343995-02: Headspace was noted in the sample containers submitted for PA Volatile Organics - EPA 8260D. The analysis was performed at the client's request.

Volatile Organics

L2343995-02: Headspace was noted in the sample container utilized for analysis.

Semivolatile Organics

L2343995-01D: The sample has an elevated detection limit due to the limited sample volume utilized during extraction, as required by the sample matrix, and due to the analytical dilution required by the elevated concentration of target compound in the sample.

L2343995-01D: The surrogate recoveries are below the acceptance criteria for nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Reextraction was not required; therefore, the results of the original analysis are reported.

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.

Willelle M. Morris

Authorized Signature:

Title: Technical Director/Representative

ALPHA

Date: 08/07/23

ORGANICS



VOLATILES



L2343995

Project Name: CELL 6 SOIL BORING Lab Number:

Project Number: 21010210 **Report Date:** 08/07/23

SAMPLE RESULTS

Lab ID: L2343995-01 D Date Collected: 07/31/23 10:00

Client ID: CELL 6-004-SB-9 Date Received: 07/31/23

Sample Location: CELL 6 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 08/01/23 23:28

Analyst: KJD Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by EPA 5035 High - We	estborough Lab						
Benzene	13000		mg/kg	53	18.	1000	
					Δα	entance	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	99		70-130



L2343995

07/31/23 00:00

Project Name: CELL 6 SOIL BORING

Project Number: 21010210

Report Date: 08/07/23

Lab Number:

Date Collected:

SAMPLE RESULTS

Lab ID: L2343995-02

Client ID: TRIP BLANK Sample Location: CELL 6

Date Received: 07/31/23 Field Prep: Not Specified

70-130

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 08/02/23 08:56

Analyst: **TMS**

Dibromofluoromethane

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough	n Lab					
Benzene	ND		ug/l	0.50	0.16	1
Surrogate			% Recovery	Qualifier	Accepta Crite	
1,2-Dichloroethane-d4			97		70-	130
Toluene-d8			99		70-	130
4-Bromofluorobenzene			100		70-	130

106

L2343995

Project Name: CELL 6 SOIL BORING Lab Number:

Project Number: 21010210 **Report Date:** 08/07/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/01/23 17:34

Analyst: LAC

Parameter	Result	Qualifier	Units	RL		MDL
Volatile Organics by EPA 5035 High	- Westboro	ugh Lab fo	r sample(s):	01	Batch:	WG1811495-5
Benzene	ND		mg/kg	0.025		0.0083

		A	cceptance	
Surrogate	%Recovery	Qualifier	Criteria	
1,2-Dichloroethane-d4	116		70-130	
Toluene-d8	105		70-130	
4-Bromofluorobenzene	104		70-130	
Dibromofluoromethane	105		70-130	



Project Name: CELL 6 SOIL BORING Lab Number: L2343995

Project Number: 21010210 **Report Date:** 08/07/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/02/23 08:31

Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	
Volatile Organics by GC/MS - West	borough Lab	for sample	e(s): 02	Batch: \	WG1811981-5	
Benzene	ND		ug/l	0.50	0.16	

		Α	cceptance	
Surrogate	%Recovery	Qualifier	Criteria	
1,2-Dichloroethane-d4	103		70-130	
Toluene-d8	97		70-130	
4-Bromofluorobenzene	98		70-130	
Dibromofluoromethane	109		70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: CELL 6 SOIL BORING

Lab Number:

L2343995

Project Number: 21010210

Report Date: 08/07/23

Parameter	LCS %Recovery	_	SD overy Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westbo	orough Lab Associa	ated sample(s): 0	1 Batch: WG18	311495-3 WG181149	5-4		
Benzene	93	1	06	70-130	13	1	30

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108	109	70-130
Toluene-d8	105	106	70-130
4-Bromofluorobenzene	106	105	70-130
Dibromofluoromethane	101	100	70-130



Lab Control Sample Analysis Batch Quality Control

Project Name: CELL 6 SOIL BORING

Project Number: 21010210

Lab Number:

L2343995

Report Date:

08/07/23

Parameter	LCS %Recovery	Qual		CSD covery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	02 Bat	ch: WG	1811981-3	WG1811981-4				
Benzene	100			100		70-130	0		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103	103	70-130
Toluene-d8	99	97	70-130
4-Bromofluorobenzene	100	101	70-130
Dibromofluoromethane	108	105	70-130



SEMIVOLATILES



Project Name: Lab Number: **CELL 6 SOIL BORING** L2343995

Project Number: Report Date: 21010210 08/07/23

SAMPLE RESULTS

Lab ID: L2343995-01 D Date Collected: 07/31/23 10:00

Date Received: Client ID: CELL 6-004-SB-9 07/31/23

Sample Location: Field Prep: CELL 6 Not Specified

Sample Depth:

Extraction Method: EPA 3546 Matrix: Soil **Extraction Date:** 08/02/23 09:40 Analytical Method: 1,8270E

Analytical Date: 08/07/23 04:01

Analyst: CMM 71% Percent Solids:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Semivolatile Organics by GC/MS - West	borough Lab						
Naphthalene	2600		mg/kg	26	16.	200	
Surrogate			% Recovery	Qualifier	Accepta Crite		
Nitrobenzene-d5			0	Q	23-1	120	
2-Fluorobiphenyl			0	Q	30-1	120	
4-Terphenyl-d14			0	Q	18-1	120	



L2343995

Project Name: CELL 6 SOIL BORING Lab Number:

Project Number: 21010210 **Report Date:** 08/07/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E Extraction Method: EPA 3546

Analytical Date: 08/02/23 14:44 Extraction Date: 08/02/23 09:40 Analyst: JG

 Parameter
 Result
 Qualifier
 Units
 RL
 MDL

 Semivolatile Organics by GC/MS - Westborough Lab for sample(s):
 01
 Batch:
 WG1810840-1

 Naphthalene
 ND
 mg/kg
 0.033
 0.020

		Acceptance
Surrogate	%Recovery	Qualifier Criteria
Nitrobenzene-d5	55	23-120
2-Fluorobiphenyl	52	30-120
4-Terphenyl-d14	55	18-120



Lab Control Sample Analysis Batch Quality Control

Project Name: CELL 6 SOIL BORING

Lab Number:

L2343995

Project Number: 21010210

Report Date: 08/07/23

Parameter	LCS %Recovery	Qual	LCSD %Recover		%Recovery Limits	RPD	Qual	RPD Limits	
Semivolatile Organics by GC/MS - Westboroo	ugh Lab Associate	ed sample(s):	01 Batcl	n: WG1810840-	2 WG1810840-3				
Naphthalene	65		65		40-140	0		50	

Surrogate	LCS %Recovery Qual	LCSD I %Recovery Qual	Acceptance Criteria
Nitrobenzene-d5	65	66	23-120
2-Fluorobiphenyl	56	56	30-120
4-Terphenyl-d14	55	55	18-120



INORGANICS & MISCELLANEOUS



Project Name: CELL 6 SOIL BORING Lab Number: L2343995

SAMPLE RESULTS

Lab ID: L2343995-01 Date Collected: 07/31/23 10:00

Client ID: CELL 6-004-SB-9 Date Received: 07/31/23
Sample Location: CELL 6 Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab									
Solids, Total	70.6		%	0.100	NA	1	-	08/01/23 06:46	121,2540G	ROI



Lab Duplicate Analysis

Batch Quality Control

Lab Number: **Project Name:** CELL 6 SOIL BORING L2343995

Project Number: 21010210 Report Date: 08/07/23

Parameter	Native Sample	Duplicate Sam	ple Units	RPD	Qual RPD Limit	s
General Chemistry - Westborough Lab Associated sa	ample(s): 01 QC Batch ID:	WG1810147-1	QC Sample: L2342	2308-17 C	Client ID: DUP Sample	
Solids, Total	79.9	77.3	%	3	20	



Project Name: CELL 6 SOIL BORING

Lab Number: L2343995

Project Number: 21010210 **Report Date:** 08/07/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Info	Container Information				Temp			Frozen	
Container ID	Container Type	Cooler	cooler pH pH deg C p		Pres	Seal	Date/Time	Analysis(*)	
L2343995-01A	Vial MeOH preserved	Α	NA		2.7	Υ	Absent		PA-8260HLW-BTEX(14)
L2343995-01B	Vial water preserved	Α	NA		2.7	Υ	Absent	01-AUG-23 05:12	PA-8260HLW-BTEX(14)
L2343995-01C	Vial water preserved	Α	NA		2.7	Υ	Absent	01-AUG-23 05:12	PA-8260HLW-BTEX(14)
L2343995-01D	Glass 120ml/4oz unpreserved	Α	NA		2.7	Υ	Absent		TS(7),PA-8270(14)
L2343995-02A	Vial HCI preserved	Α	NA		2.7	Υ	Absent		PA-8260-BTEX(14)
L2343995-02B	Vial HCI preserved	Α	NA		2.7	Υ	Absent		PA-8260-BTEX(14)
L2343995-02C	Vial HCI preserved	Α	NA		2.7	Υ	Absent		PA-8260-BTEX(14)
L2343995-02D	Vial HCI preserved	Α	NA		2.7	Υ	Absent		PA-8260-BTEX(14)



Project Name: CELL 6 SOIL BORING Lab Number: L2343995

Project Number: 21010210 Report Date: 08/07/23

GLOSSARY

Acronyms

EDL

LOD

LOQ

MS

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.)

from allutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- 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 Microsystraction (SPME)

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.

 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.)

- 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

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.

- 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.



Project Name:CELL 6 SOIL BORINGLab Number:L2343995Project Number:21010210Report Date:08/07/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:CELL 6 SOIL BORINGLab Number:L2343995Project Number:21010210Report Date:08/07/23

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.
- 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:CELL 6 SOIL BORINGLab Number:L2343995Project Number:21010210Report Date:08/07/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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Page 26 of 26	(T-07)	Okolina	m 7/	RM That	7/3/	23 1200	3	Int	ho	Z nel	e	JAI		7/	1/3	3/2	023	Alpha's Terms and Conditions.



ANALYTICAL REPORT

Lab Number: L2344528

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/14/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Project Number:

20010210

Lab Number: L2344528 Report Date: 08/14/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2344528-01	GD01-MWI	WATER	COA SHIPPING	08/02/23 12:45	08/02/23
L2344528-02	GD02-MWI	WATER	COA SHIPPING	08/02/23 13:50	08/02/23



Project Name:COA GWLab Number:L2344528Project Number:20010210Report Date:08/14/23

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:COA GWLab Number:L2344528Project Number:20010210Report Date:08/14/23

Case Narrative (continued)

Report Submission

August 14, 2023: This final report includes the results of all requested analyses.

August 04, 2023: This is a preliminary report.

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

The analyses of Total and Available Cyanide were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

L2344528-01 and -02: The Client ID was specified by the client.

Cyanide, Physiologically Available

The WG1811455-4 MS recovery, performed on L2344528-01, is outside the acceptance criteria for cyanide, physiologically available (69%); however, the associated LCS recovery is within criteria. No further action was taken.

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.

Jufani Morrissey-Tiffani Morrissey

Authorized Signature:

Title: Technical Director/Representative

Date: 08/14/23

INORGANICS & MISCELLANEOUS



Serial_No:08142313:50

Project Name: Lab Number: COA GW L2344528 Project Number: 20010210

Report Date: 08/14/23

SAMPLE RESULTS

Lab ID: Date Collected: L2344528-01 08/02/23 12:45 Client ID: GD01-MWI Date Received: 08/02/23 Not Specified Sample Location: COA SHIPPING Field Prep:

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - We	stborough Lal)								
Cyanide, Free	ND		ug/l	10.0	3.50	1	-	08/03/23 08:00	121,4500CN-	MRM
Cyanide, Physiologically Available	24.7		ug/l	5.00	1.70	1	08/03/23 13:50	08/03/23 15:24	E(M) 64,9014(M)	JER



Project Name: Lab Number: COA GW L2344528 Project Number: 20010210

Report Date: 08/14/23

SAMPLE RESULTS

Lab ID: Date Collected: L2344528-02 08/02/23 13:50 Client ID: GD02-MWI Date Received: 08/02/23 Not Specified Sample Location: COA SHIPPING Field Prep:

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - We	stborough La	b								
Cyanide, Free	ND		ug/l	10.0	3.50	1	-	08/03/23 08:00	121,4500CN-	MRM
Cyanide, Physiologically Available	ND		ug/l	5.00	1.70	1	08/03/23 13:50	08/03/23 15:27	E(M) 64,9014(M)	JER



Project Name: Lab Number: COA GW L2344528 Project Number: 20010210

Report Date: 08/14/23

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method /	Analyst
General Chemistry - West	borough Lab for sam	nple(s): 01	-02 Bat	tch: W0	G1811240-	1			
Cyanide, Free	ND	ug/l	10.0	3.50	1	-	08/03/23 08:00	121,4500CN-E(M) MRM
General Chemistry - West	borough Lab for sam	nple(s): 01	-02 Bat	tch: W0	G1811455-	1			
Cyanide, Physiologically Available	ND	ug/l	5.00	1.70	1	08/03/23 13:50	08/03/23 15:20	64.9014(M)	JER



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW **Project Number:** 20010210

Lab Number:

L2344528

Report Date:

08/14/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab As	sociated sample(s):	: 01-02	Batch: WG1811	240-2				
Cyanide, Free	106		-		90-110	-		
General Chemistry - Westborough Lab As	sociated sample(s):	: 01-02	Batch: WG1811	455-2				
Cyanide, Physiologically Available	86		-		80-120	-		
General Chemistry - Westborough Lab As	sociated sample(s):	: 01-02	Batch: WG1811	455-3				
Cyanide, Physiologically Available	1		-		0-10	-		

Matrix Spike Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number:

L2344528

Report Date:

08/14/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery (Recove Qual Limits	•	RPD Qual Limits
General Chemistry - Westborou	ugh Lab Asso	ciated samp	ole(s): 01-02	QC Batch II	D: WG18 ⁻	11240-4	QC Sample: L2	2344528-02	Client ID:	GD02-MWI
Cyanide, Free	ND	250	273	109		-	-	80-120	-	20
General Chemistry - Westborou	ugh Lab Asso	ciated samp	ole(s): 01-02	QC Batch II	D: WG18	11455-4	QC Sample: L2	2344528-01	Client ID:	GD01-MWI
Cyanide, Physiologically Available	24.7	200	163	69	Q	-	-	75-125	-	20



Lab Duplicate Analysis Batch Quality Control

Project Name: COA GW **Project Number:** 20010210

Lab Number:

L2344528

Report Date:

08/14/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Assoc	iated sample(s): 01-02 QC E	Batch ID: WG1811240-3	QC Sample:	L2344528-01	Client ID:	GD01-MWI
Cyanide, Free	ND	ND	ug/l	NC		20
General Chemistry - Westborough Lab Assoc	iated sample(s): 01-02 QC E	Batch ID: WG1811455-5	QC Sample:	L2344528-01	Client ID:	GD01-MWI
Cyanide, Physiologically Available	24.7	27.5	ug/l	11		20



Lab Number: L2344528

Report Date: 08/14/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Project Name:

Cooler Custody Seal

COA GW

A Absent

Project Number: 20010210

Container Info	ormation	Initial		Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2344528-01A	Plastic 120ml unpreserved	Α	7	7	4.9	Υ	Absent		FCN-PPB(1)
L2344528-01B	Plastic 250ml NaOH preserved	Α	>12	>12	4.9	Υ	Absent		PACN-PPB(14)
L2344528-01C	Plastic 250ml NaOH preserved	Α	>12	>12	4.9	Υ	Absent		SUB-TCN(14),SUB-ACN(14)
L2344528-02A	Plastic 120ml unpreserved	Α	7	7	4.9	Υ	Absent		FCN-PPB(1)
L2344528-02B	Plastic 250ml NaOH preserved	Α	>12	>12	4.9	Υ	Absent		PACN-PPB(14)
L2344528-02C	Plastic 250ml NaOH preserved	Α	>12	>12	4.9	Υ	Absent		SUB-TCN(14),SUB-ACN(14)



Project Name:COA GWLab Number:L2344528Project Number:20010210Report Date:08/14/23

GLOSSARY

Acronyms

EDL

EMPC

LOQ

MS

RPD

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.)

 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).

- 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.)

 - 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.

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.

- 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:COA GWLab Number:L2344528Project Number:20010210Report Date:08/14/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GWLab Number:L2344528Project Number:20010210Report Date:08/14/23

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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name: COA GW Lab Number: L2344528
Project Number: 20010210 Report Date: 08/14/23

REFERENCES

Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

ALPHA	CH	IAIN OF C	USTODY	PAGEOF	Date	Rec'd in L	ab: 8/3/20			A Job#: L 2344528	
WESTBORO, MA	MANSFIELD, MA	1000000	ect Information		Rep	ort Inforn	nation - Data Del	iverables		Information	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Proje	ct Name:	64		AX	☐ EMAIL		☐ Same	as Client info PO #:	
Client Informati			ct Location: COA	- Sh./1/	14	DEx	☐ Add'l Delivera				
Client:	00	Proje	ct#: 7001 02	10 300	Regu	latory Re	quirements/Repo	ort Limits	Y LIGHT		
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☐ These samples ha	ive been previously a	nalyzed by Alpha	Due: 2DATAJAY	7 Time:	8	2/2/2	3 3 1	//	///	SAMPLE HANDLING	OTAL
	pecine require	ements/Comments	Detection Elimits.		ANALYSIS	10 Jan 12	14.5 P. 14.5 P		///	☐ Done ☐ Not needed ☐ Lab to do Preservation ☐ Lab to do	# B O T T
ALPHA Lab ID (Lab Use Only)	,	Sample ID	Collection Date Time		pler's	44	. 1 / / ,	/ / /	//	(Please specify below) Sample Specific Comments	L E S
44528-01	6:2-1	79 - MILL	MZ 27 124	4 GL/7	RX	XX	VI I I				3
	991	27 - W1/7	9 136	0/2/1	00	VV	X .				3
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											_
508	13/23 030	o M 8	/3/13 6300	Container 1		PRY				Please print clearly, legibly and co pletely. Samples can not be logge in and turnaround time clock will n	ed
		Relin	quished/By/	Date/Time	Contract to the contract of th		ived By:	Dat	e/Time	start until any ambiguities are reso	lve
Page 18 of 32°	CT-07)	3510	AAL	7 2 23 S	200	20	y Green	UG 0 2 20		All samples submitted are subject Alpha's Terms and Conditions. See reverse side.	10



Subcontract Chain of Custody

Envirotest

WOIIS SIATE	TIGAL	31 Ne	315 Fullerton Avenue Newburgh, NY 12550						
	Client Information	POLICE IN SECUL	Project In	nformation	Regulatory Re	quirements/Report Limits			
2000.61	Analytical Labs Walkup Drive porough, MA 01581-1019		ound & Deliv	strowski verables Informat	State/Federal Program Regulatory Criteria:				
Email: mostr	44.4115 owski@alphalab.com	Due Date Deliverables							
25X275=111	THE LOCAL PROPERTY OF THE	HAMMOOOM HEALTH DA GOOD ON LIST	Project Specific Requirements and/or Report Requirements						
Additional Cor	Reference following Alpha Joi mments: Send all results/reports				Report to include Method Bla	nk, LCS/LCSD:			
Additional Col	mineria. Gena ali resalia reporti	s to subreports@aiprian	ab.com . Neec	3 O dg/E INE					
Lab ID	Client ID	Collection Date/Time	Sample Matrix		Analysis	Batch			
	GD-01-MW2 GD-02-MW2	08-02-23 12:45 08-02-23 13:50	WATER	Amenable Cyanide SM Amenable Cyanide SM	M 4500; Total Cyanide EPA 4500 M 4500; Total Cyanide EPA 4500				
	Relinquish	ed By J		Date/Time:	Received By:	Date/Time:			
orm No: AL_su	ubcoc								



August 11, 2023

Subcontract Reports NB-Alpha Analytical 8 Walkup Drive Westborough, MA 01581

Project Location:

Project Number: Alpha Analytical

Laboratory Work Order Number: 23H0740

Beréem. Cusack

Enclosed are results of analyses for samples received by the laboratory on August 4, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

riojeci ivianagei



NB-Alpha Analytical 8 Walkup Drive Westborough, MA 01581 ATTN: Subcontract Reports

REPORT DATE: 8/11/2023

ANALYTICAL SUMMARY

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GD01-MWI	23H0740-01	Water		SM4500-CN E-2016	
				SM4500-CN G-2016	
GD02-MWI	23H0740-02	Water		SM4500-CN E-2016	
				SM4500-CN G-2016	



CASE NARRATIVE SUMMARY

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

The results of analyses reported only relate to samples submitted to the Pace Analytical Services, LLC - Newburgh for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Renee Cusack

Beréem. Cusack

PM



Project Location: Sample Description: Work Order: 23H0740

Date Received: 8/4/2023
Field Sample #: GD01-MWI

Sampled: 8/2/2023 12:45

Sample ID: 23H0740-01
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

								Date	Date/Time	
	Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide (total)		0.045	0.0050	mg/I	1		SM4500-CN E-2016	8/8/23	8/8/23 17:29	ICS



Project Location: Sample Description: Work Order: 23H0740

Date Received: 8/4/2023

Field Sample #: GD01-MWI

Sampled: 8/2/2023 12:45

Sample ID: 23H0740-01
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Amenable)

							Date	Date/Time	
Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide, Amenable	0.045	0.015	mg/L	1		SM4500-CN G-2016	8/8/23	8/8/23 17:29	JCS



Project Location: Sample Description: Work Order: 23H0740

Date Received: 8/4/2023

Field Sample #: GD02-MWI

Sampled: 8/2/2023 13:50

Sample ID: 23H0740-02
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

								Date	Date/Time	
	Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide (total)		ND	0.0050	mg/I	1		SM4500-CN E-2016	8/8/23	8/8/23 17:32	ICS



Project Location: Sample Description: Work Order: 23H0740

Date Received: 8/4/2023

Field Sample #: GD02-MWI

Sampled: 8/2/2023 13:50

Sample ID: 23H0740-02
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Amenable)

							Date	Date/Time	
Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide, Amenable	ND	0.015	mg/L	1		SM4500-CN G-2016	8/8/23	8/8/23 17:32	JCS



Sample Extraction Data

Prep Method: NB SM4500CN C Analytical Method: SM4500-CN E-2016

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
23H0740-01 [GD01-MWI]	B348591	50.0	50.0	08/08/23
23H0740-02 [GD02-MWI]	B348591	50.0	50.0	08/08/23

Prep Method: [CALC] Analytical Method: SM4500-CN G-2016

Lab Number [Field ID]	Batch	Initial []	Date
23H0740-01 [GD01-MWI]	[CALC]		08/08/23
23H0740-02 [GD02-MWI]	[CALC]		08/08/23



QUALITY CONTROL

$Conventional\ Chemistry\ Parameters\ by\ EPA/APHA/SW-846\ Methods\ (Total)-Quality\ Control$

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B348591 - NB SM4500CN C										
Blank (B348591-BLK1)				Prepared & A	Analyzed: 08	/08/23				
Cyanide (total)	ND	0.0050	mg/L							
LCS (B348591-BS1)				Prepared & A	Analyzed: 08	/08/23				
Cyanide (total)	0.0980	0.0050	mg/L	0.100		98.0	64.7-134.6			
MRL Check (B348591-MRL1)				Prepared & A	Analyzed: 08	/08/23				
Cyanide (total)	0.00500	0.0050	mg/L	0.00500		100	80-120			



FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.



CERTIFICATIONS

Certified Analyses included in this Report

Analyte Certifications

SM4500-CN E-2016 in Water

Cyanide (total) NB-CT,NB-NJ,NB-NY

Pace Analytical	Services, LCC operates under the following certifications and account of the control of the cont	creditations:	
Code	Description	Number	Expires
NB-CT	Connecticut Department of Public Health	PH-0823	09/30/2024
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2023
NB-NY	New York State Department of Health	10142 NELAP	04/1/2024

Page 30 of 32 Page 11 of 13

7								00.	al_No:08	71720	710.00
Form No: AL_subcoc			99	Lab ID	-	Reference following Alpha Job Number on final report/deliverables: L234452: Additional Comments: Send all results/reports to subreports@alphalab.com : Need 5 ug/L RL		Phone: 508.844.4115 Email: mostrowski@alphalab.com	Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019	Client In	World Class Chamistry
	Relinquished		GD-01-MW2 GD-02-MW2	Client ID		Reference following Alpha Job Number on final report/deliverables: L2344528 nents: Send all results/reports to subreports@alphalab.com : Need 5 ug/L RL		halab.com	Labs ive IA 01581-1019	Client Information	
Themusefor	B		08-02-23 12:45 08-02-23 13:50	Collection Date/Time	- - -	umber on final report/c	Project Specific Requirements and/or Re	Due Date: Deliverables:	Project Location: MD Project Manager: Mitchell Ostrowski Turnaround & Deliverable		Envi 315 New
			WATER	Sample Matrix		leliverables:	Requirem		MD Mitchell Os nd & Deliv	Project In	Subcontract C Envirotest 315 Fullerton Avenue Newburgh, NY 12550
8/3/23	Date/Time:		Amenable Cyanide SM 4500; Tota Amenable Cyanide SM 4500; Tota	Analysis		8	ents and/or Report Requirements		t Location: MD t Manager: Mitchell Ostrowski Turnaround & Deliverables Information	Project Information	Subcontract Chain of Custody irotest Fullerton Avenue wburgh, NY 12550
Minnie	Received By:	23	SM 4500; Total Cyanide EPA 4500 SM 4500; Total Cyanide EPA 4500	S		Report to include Method Blank, LCS/LCSD:	iirements		State/Federal Program: Regulatory Criteria:	Regula	
Cases)	0740				thod Blank, Lo			Program: iteria:	tory Require	
h/8	Dațe/Time:					CS/LCSD:				Regulatory Requirements/Report Limits	Alpha Job Number 12 of 13

DC#_Title: ENV-FRM-NEWB-0002 Sample Condition Upon Receipt Form Effective Date: 7/21/2022

Sample Condition Upon Receipt Form (SCUR)

Project # 23 H 0	74	0		Date and Initials of person:
Client:	10)	10		Examining contents:
	11-1	19		Label: EC Deliver to location: EC
				pH:
Thermometer Used: <u>IRC4</u>	Date	: 8,	/ <u>/</u> Time: <u>9:5</u>	Initials: EC
State of Origin:				
Cooler #1 Temp. °C Z (Visual) 2 (Correcti	on Factor)	(Actual)	Samples on ice, cooling process has begun
Courier: Fed Ex DUPS DUSPS		Client C	ommercial Pace	□ Other
Shipping Method: ☐ First Overnight ☐ Priority C				
□ Other				
Tracking # 12 & 3	0	65 L	101992	0 0806
Custody Seal on Cooler/Box Present: Yes] No	Seals i	ntact: Yes No	Ice: (Wet Blue Melted None
Packing Material: Bubble Wrap Bubble Bag				
Samples were collected by Pace employee	□ Y	es · □	No □ N/A	
			Comments:	
Chain of Custody Present	⊠Yes	·□ No □ N/A		
Chain of Custody Filled Out	-	□ No □ N/A		
Relinquished Signature on COC		□ No □ N/A		
Sampler Name and Signature on COC	,	□ No □ N/A		
Samples Arrived within Hold Time	/	□ No □ N/A		
Rush TAT requested on COC		□ No □ N/A		
Sufficient Volume		□ No □ N/A		
Correct Containers Used	-	□ No □ N/A		
Containers Intact		□ No □ N/A		
Sample Labels match COC (sample IDs & date/time of	-			
collection) All containers needing acid/base preservation have	₽Yes	□ No □ N/A	December 1-ferred 1-	
been checked.	□Yes	□ No □ N/A	Preservation Information: Preservative:	
All Containers needing preservation are found to be in compliance with EPA recommendation:		□ No □ N/A	Lot #/Trace #:	
Exceptions: Vials, Microbiology, O&G, M		□ No □ N/A	Date: Tin	ne:
Headspace in VOA Vials? (>6mm):		□ No □N/A		
Trip Blank Present:	□Yes	□ No □N/A		
Additional Login Comments:				
Client notification/ Resolution				
Person Contacted:			Date/Time:	
Comments/Resolution:			Dato Inflo	



ANALYTICAL REPORT

Lab Number: L2344529

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/16/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2344529

 Report Date:
 08/16/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2344529-01	CO41-PZM001	WATER	COA	08/02/23 15:05	08/02/23
L2344529-02	CO41-PZM036	WATER	COA	08/02/23 15:35	08/02/23
L2344529-03	TB-WT-01	WATER	COA	08/02/23 00:00	08/02/23



Project Name:COA GWLab Number:L2344529Project Number:20010210Report Date:08/16/23

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:COA GWLab Number:L2344529Project Number:20010210Report Date:08/16/23

Case Narrative (continued)

Report Submission

August 16, 2023: This final report includes the results of all requested analyses.

August 09, 2023: This is a preliminary report.

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:

Title: Technical Director/Representative Date: 08/16/23

600, Shawow Kelly Stenstrom

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2344529

Project Number: 20010210 **Report Date:** 08/16/23

SAMPLE RESULTS

Lab ID: L2344529-01 D Date Collected: 08/02/23 15:05

Client ID: CO41-PZM001 Date Received: 08/02/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/10/23 02:21

Analyst: SLS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	stborough Lab						
Benzene	690		ug/l	5.0	1.6	10	
Toluene	180		ug/l	7.5	2.0	10	
Ethylbenzene	14		ug/l	5.0	1.7	10	
p/m-Xylene	93		ug/l	10	3.3	10	
o-Xylene	16		ug/l	10	3.9	10	
Xylenes, Total	110		ug/l	10	3.3	10	
Naphthalene	11		ug/l	10	2.2	10	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	124	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	110	70-130	



Project Name: COA GW Lab Number: L2344529

Project Number: 20010210 **Report Date:** 08/16/23

SAMPLE RESULTS

Lab ID: L2344529-02 D Date Collected: 08/02/23 15:35

Client ID: CO41-PZM036 Date Received: 08/02/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/08/23 13:57

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	290000		ug/l	1000	320	2000	
Toluene	94000		ug/l	1500	410	2000	
Ethylbenzene	990	J	ug/l	1000	330	2000	
p/m-Xylene	14000		ug/l	2000	660	2000	
o-Xylene	4000		ug/l	2000	780	2000	
Xylenes, Total	18000		ug/l	2000	660	2000	
Naphthalene	770	J	ug/l	2000	430	2000	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	84	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	89	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA GW Lab Number: L2344529

Project Number: 20010210 **Report Date:** 08/16/23

SAMPLE RESULTS

Lab ID: L2344529-03 Date Collected: 08/02/23 00:00

Client ID: TB-WT-01 Date Received: 08/02/23 Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/10/23 02:00

Analyst: SLS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	127		70-130	
Toluene-d8	101		70-130	
4-Bromofluorobenzene	102		70-130	
Dibromofluoromethane	115		70-130	



Project Name:COA GWLab Number:L2344529

Project Number: 20010210 **Report Date:** 08/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/08/23 08:54

Analyst: PID

Parameter	Result Qu	alifier Units	RL	MDL	
olatile Organics by GC/MS	- Westborough Lab for	sample(s): 02	Batch:	WG1813619-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance		
Surrogate	%Recovery Quali	fier Criteria		
1,2-Dichloroethane-d4	91	70-130		
Toluene-d8	102	70-130		
4-Bromofluorobenzene	90	70-130		
Dibromofluoromethane	101	70-130		



Project Name:COA GWLab Number:L2344529

Project Number: 20010210 **Report Date:** 08/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/09/23 21:16

Analyst: LAC

Parameter	Result Qual	ifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for s	ample(s): 01,03	Batch:	WG1815282-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Qualif	ier Criteria
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	103	70-130
Dibromofluoromethane	113	70-130



08/16/23

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2344529

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	' Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s): 02	Batch: W	G1813619-3	WG1813619-4				
Benzene	100		100		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	105		100		70-130	5		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	93		90		70-130	3		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90	95	70-130
Toluene-d8	103	105	70-130
4-Bromofluorobenzene	90	89	70-130
Dibromofluoromethane	101	100	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number:

L2344529

Report Date:

08/16/23

Paramet	ter	LCS %Recovery	Qual		.CSD ecovery		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile C	Organics by GC/MS - Westborough La	ab Associated	sample(s):	01,03	Batch:	WG1815282-3	WG1815282-4				
Benze	ene	110			130		70-130	17		20	
Toluer	ne	100			110		70-130	10		20	
Ethylb	enzene	100			110		70-130	10		20	
p/m-X	ylene	100			110		70-130	10		20	
o-Xyle	ene	95			105		70-130	10		20	
Naphtl	halene	84			92		70-130	9		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114	117	70-130
Toluene-d8	103	101	70-130
4-Bromofluorobenzene	98	98	70-130
Dibromofluoromethane	104	107	70-130

Project Name:COA GWLab Number:L2344529Project Number:20010210Report Date:08/16/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

ormation		Initial	Final	Temp			Frozen	
Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
Vial HCI preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
Vial HCl preserved	Α	NA		4.9	Υ	Absent		PA-8260(14)
	Container Type Vial HCl preserved Vial HCl preserved	Container Type Vial HCl preserved A Vial HCl preserved A	Container Type Vial HCl preserved A NA NA	Container Type Vial HCl preserved A NA Vial HCl preserved A NA	Container Type Cooler pH rimital pH rimital per pH remp deg C Vial HCl preserved A NA 4.9 Vial HCl preserved A NA 4.9	Container Type Cooler pH Head Temp deg C Pres Vial HCl preserved A NA 4.9 Y Vial HCl preserved A NA 4.9 Y	Container Type Cooler pH pH deg C Pres Seal Vial HCl preserved A NA 4.9 Y Absent Vial HCl preserved A NA 4.9 Y Absent	Container Type Cooler pH pH deg C Pres Seal Vial HCl preserved A NA 4.9 Y Absent Vial HCl preserved A NA 4.9 Y Absent



Project Name:COA GWLab Number:L2344529Project Number:20010210Report Date:08/16/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RPD

SRM

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.)

- 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 Microsystaction (SPME)

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.)

 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.

 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.

- 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.

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.



Project Name:COA GWLab Number:L2344529Project Number:20010210Report Date:08/16/23

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GWLab Number:L2344529Project Number:20010210Report Date:08/16/23

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:COA GWLab Number:L2344529Project Number:20010210Report Date:08/16/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ALPHA	CHAIN	00310	DY PAG	E——0	<u> </u>	Date Re	c'd in Lab	: 8/3,	123	100	ALPHA	A Job#: L 2344529	
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	508-822-9300 508-822-3288	Project Name:	OA	(5)	W	□ FAX		☐ EMAIL			☐ Same	as Client info PO #:	
Client Information		Project Location:	COV	10%		D ADE		□ Add'l De		2002			
Client:		Project #: ZOC	10716	1				iirements/					
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Fax:							1				83		
Email:			RUSH (only cont	Nimed if pre-appro	wed!)	300	1	/ / /	777	7	7.7		T
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	c Requirements/Comr					CY J WALKSIS	7//	///			///	Filtration Done Not needed Lab to do Preservation Lab to do	# B O T T L
ALPHA Lab ID (Lab Use Only)	Sample ID	Col		Sample S Matrix	Sampler's Initials	N	//	///	///	/ /	//	(Please specify below) Sample Specific Comments	E S
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ANALYTICAL REPORT

Lab Number: L2344906

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA-CELL 4

 Project Number:
 20010210

 Report Date:
 08/16/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA-CELL 4
Project Number: 20010210

 Lab Number:
 L2344906

 Report Date:
 08/16/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2344906-01	CELL 4- NORTH	WATER	Not Specified	08/03/23 14:10	08/03/23
L2344906-02	CELL 4- SOUTH	WATER	Not Specified	08/03/23 14:20	08/03/23
L2344906-03	TB-WT-01	WATER	Not Specified	08/03/23 00:00	08/03/23



Project Name:COA-CELL 4Lab Number:L2344906Project Number:20010210Report Date:08/16/23

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:
 COA-CELL 4
 Lab Number:
 L2344906

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Case Narrative (continued)

Report Submission

August 16, 2023: This final report includes the results of all requested analyses.

August 10, 2023: This is a preliminary report.

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:

Title: Technical Director/Representative Date: 08/16/23

Jufani Morrissey-Tiffani Morrissey

ALPHA

ORGANICS



VOLATILES



Project Name: COA-CELL 4 Lab Number: L2344906

Project Number: 20010210 **Report Date:** 08/16/23

SAMPLE RESULTS

Lab ID: L2344906-01 Date Collected: 08/03/23 14:10

Client ID: CELL 4- NORTH Date Received: 08/03/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/08/23 13:06

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbo	orough Lab						
Benzene	44		ug/l	0.50	0.16	1	
Toluene	33		ug/l	0.75	0.20	1	
Ethylbenzene	3.2		ug/l	0.50	0.17	1	
p/m-Xylene	26		ug/l	1.0	0.33	1	
o-Xylene	18		ug/l	1.0	0.39	1	
Xylenes, Total	44		ug/l	1.0	0.33	1	
Naphthalene	38		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	88		70-130	
Toluene-d8	103		70-130	
4-Bromofluorobenzene	84		70-130	
Dibromofluoromethane	101		70-130	



Project Name: COA-CELL 4 Lab Number: L2344906

Project Number: 20010210 **Report Date:** 08/16/23

SAMPLE RESULTS

Lab ID: L2344906-02 Date Collected: 08/03/23 14:20

Client ID: CELL 4- SOUTH Date Received: 08/03/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/08/23 13:31

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	48		ug/l	0.50	0.16	1				
Toluene	36		ug/l	0.75	0.20	1				
Ethylbenzene	3.5		ug/l	0.50	0.17	1				
p/m-Xylene	28		ug/l	1.0	0.33	1				
o-Xylene	19		ug/l	1.0	0.39	1				
Xylenes, Total	47		ug/l	1.0	0.33	1				
Naphthalene	45		ug/l	1.0	0.22	1				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	88	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	87	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA-CELL 4 Lab Number: L2344906

Project Number: 20010210 **Report Date:** 08/16/23

SAMPLE RESULTS

Lab ID: L2344906-03 Date Collected: 08/03/23 00:00

Client ID: TB-WT-01 Date Received: 08/03/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/10/23 01:38

Analyst: SLS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	ND		ug/l	0.50	0.16	1				
Toluene	ND		ug/l	0.75	0.20	1				
Ethylbenzene	ND		ug/l	0.50	0.17	1				
p/m-Xylene	ND		ug/l	1.0	0.33	1				
o-Xylene	ND		ug/l	1.0	0.39	1				
Xylenes, Total	ND		ug/l	1.0	0.33	1				
Naphthalene	ND		ug/l	1.0	0.22	1				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	121	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	114	70-130	



Project Name: COA-CELL 4 Lab Number: L2344906

Project Number: 20010210 **Report Date:** 08/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/08/23 08:54

Analyst: PID

Parameter	Result Qua	lifier Units	RL	MDL
olatile Organics by GC/MS - V	Vestborough Lab for s	sample(s): 01-02	Batch:	WG1813619-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Quali	<u>-</u>	_
1,2-Dichloroethane-d4	91	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	90	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA-CELL 4 Lab Number: L2344906

Project Number: 20010210 **Report Date:** 08/16/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/09/23 21:16

Analyst: LAC

Parameter	Result Qu	alifier Units	RL	MDL	
Volatile Organics by GC/MS - W	estborough Lab for	sample(s): 03	Batch:	WG1815282-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	A					
Surrogate	%Recovery Qualif	ier Criteria				
1,2-Dichloroethane-d4	116	70-130				
Toluene-d8	101	70-130				
4-Bromofluorobenzene	103	70-130				
Dibromofluoromethane	113	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA-CELL 4

Project Number: 20010210

Lab Number: L2344906

Report Date: 08/16/23

Parameter	LCS %Recovery	Qual	LCSD %Recover		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough	Lab Associated	sample(s):	01-02 Batch	: WG1813619-3	WG1813619-4				
Benzene	100		100		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	105		100		70-130	5		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	93		90		70-130	3		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90	95	70-130
Toluene-d8	103	105	70-130
4-Bromofluorobenzene	90	89	70-130
Dibromofluoromethane	101	100	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA-CELL 4

Project Number: 20010210

Lab Number: L2344906

Report Date: 08/16/23

Parameter	LCS %Recovery	Qual	LCSD %Recove	ry Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough	Lab Associated	sample(s): 03	Batch: \	WG1815282-3	WG1815282-4			
Benzene	110		130		70-130	17		20
Toluene	100		110		70-130	10		20
Ethylbenzene	100		110		70-130	10		20
p/m-Xylene	100		110		70-130	10		20
o-Xylene	95		105		70-130	10		20
Naphthalene	84		92		70-130	9		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114	117	70-130
Toluene-d8	103	101	70-130
4-Bromofluorobenzene	98	98	70-130
Dibromofluoromethane	104	107	70-130

Project Name: COA-CELL 4 **Lab Number:** L2344906 Project Number: 20010210

Report Date: 08/16/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Information				Initial	Final	Temp			Frozen		
	Container ID	Container Type	Cooler		pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
	L2344906-01A	Vial HCI preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-01B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-01C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-02A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-02B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-02C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-03A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-03B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-03C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	
	L2344906-03D	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)	



Project Name: Lab Number: COA-CELL 4 L2344906 20010210 **Report Date: Project Number:** 08/16/23

GLOSSARY

Acronyms

EDL

MDI

MS

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.)

- 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**

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.

Environmental Protection Agency.

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

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

- 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.

- 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.

- 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.

TEO - 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



SRM

Project Name: COA-CELL 4 Lab Number: L2344906
Project Number: 20010210 Report Date: 08/16/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA-CELL 4Lab Number:L2344906Project Number:20010210Report Date:08/16/23

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.
- 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:
 COA-CELL 4
 Lab Number:
 L2344906

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REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

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Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

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Дцена	CHAIN	OF CUSTOD	Y PAGEOF	Date Rec'd i	in Lab: 8 [4]	23	ALPHA	A JOB#: 12344906			
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193	MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288	Project Information	on)A - Cell 4	□ FAX	ormation - Data		Septimes.	Information as Client info PO#:			
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	A	The AV	1 - 71717		hisad	1 10000000	1520	All samples submitted are subject to Alpha's Terms and Conditions.			
Page 20 of 20	7.07)	STONESTAN	8:3.63 60	120	1/1	106 8/3/5	7/800	See reverse side.			



ANALYTICAL REPORT

Lab Number: L2345763

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/21/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2345763

 Report Date:
 08/21/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2345763-01	CO38-PZM006	WATER	COA	08/08/23 11:15	08/08/23
L2345763-02	CO38-PZM043	WATER	COA	08/08/23 11:40	08/08/23
L2345763-03	CO39-PZM042	WATER	COA	08/08/23 12:50	08/08/23
L2345763-04	CO39-PZM008	WATER	COA	08/08/23 13:30	08/08/23
L2345763-05	CO37-PZM038	WATER	COA	08/08/23 14:30	08/08/23
L2345763-06	CO37-PZM003	WATER	COA	08/08/23 15:10	08/08/23
L2345763-07	TB-WT-01	WATER	COA	08/08/23 00:00	08/08/23



Project Name:COA GWLab Number:L2345763Project Number:20010210Report Date:08/21/23

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:COA GWLab Number:L2345763Project Number:20010210Report Date:08/21/23

Case Narrative (continued)

Report Submission

August 21, 2023: This final report includes the results of all requested analyses.

August 15, 2023: This is a preliminary report.

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

Volatile Organics

L2345763-06: The pH was greater than two; however, the sample was analyzed within the method required holding time.

L2345763-06: The surrogate recovery is below the acceptance criteria for dibromofluoromethane (63%), possibly due to the matrix effect caused by the high pH of the sample (>10).

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.

Jufani Morrissey-Tiffani Morrissey

Authorized Signature:

Title: Technical Director/Representative

ANALYTICAL

Date: 08/21/23

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2345763

Project Number: 20010210 **Report Date:** 08/21/23

SAMPLE RESULTS

Lab ID: L2345763-01 D Date Collected: 08/08/23 11:15

Client ID: CO38-PZM006 Date Received: 08/08/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/15/23 14:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westb	orough Lab						
Benzene	2800		ug/l	20	6.4	40	
Toluene	470		ug/l	30	8.1	40	
Ethylbenzene	29		ug/l	20	6.7	40	
p/m-Xylene	140		ug/l	40	13.	40	
o-Xylene	57		ug/l	40	16.	40	
Xylenes, Total	200		ug/l	40	13.	40	
Naphthalene	590		ug/l	40	8.6	40	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	86	70-130	
Dibromofluoromethane	105	70-130	



Project Name: Lab Number: COA GW L2345763

Project Number: Report Date: 20010210 08/21/23

SAMPLE RESULTS

Lab ID: L2345763-02 Date Collected: 08/08/23 11:40

Client ID: CO38-PZM043

Date Received: 08/08/23 Sample Location: Field Prep: COA Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 08/15/23 14:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	0.71		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	0.70	J	ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	0.70	J	ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	95	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	84	70-130	
Dibromofluoromethane	110	70-130	



Project Name: COA GW Lab Number: L2345763

Project Number: 20010210 **Report Date:** 08/21/23

SAMPLE RESULTS

Lab ID: L2345763-03 D Date Collected: 08/08/23 12:50

Client ID: CO39-PZM042 Date Received: 08/08/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/11/23 16:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS -	Westborough Lab					
Benzene	4200		ug/l	20	6.4	40
Toluene	1400		ug/l	30	8.1	40
Ethylbenzene	49		ug/l	20	6.7	40
p/m-Xylene	280		ug/l	40	13.	40
o-Xylene	110		ug/l	40	16.	40
Xylenes, Total	390		ug/l	40	13.	40
Naphthalene	870		ug/l	40	8.6	40

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Lab Number: L2345763

Project Number: 20010210 **Report Date:** 08/21/23

SAMPLE RESULTS

Lab ID: L2345763-04 D Date Collected: 08/08/23 13:30

Client ID: CO39-PZM008 Date Received: 08/08/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/11/23 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - V	Vestborough Lab						
Benzene	380		ug/l	1.2	0.40	2.5	
Toluene	43		ug/l	1.9	0.51	2.5	
Ethylbenzene	2.2		ug/l	1.2	0.42	2.5	
p/m-Xylene	7.9		ug/l	2.5	0.83	2.5	
o-Xylene	4.0		ug/l	2.5	0.98	2.5	
Xylenes, Total	12		ug/l	2.5	0.83	2.5	
Naphthalene	240		ua/l	2.5	0.54	2.5	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Lab Number: L2345763

Project Number: 20010210 **Report Date:** 08/21/23

SAMPLE RESULTS

Lab ID: L2345763-05 D Date Collected: 08/08/23 14:30

Client ID: CO37-PZM038 Date Received: 08/08/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/11/23 16:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	12000		ug/l	50	16.	100	
Toluene	6300		ug/l	75	20.	100	
Ethylbenzene	210		ug/l	50	17.	100	
p/m-Xylene	1300		ug/l	100	33.	100	
o-Xylene	460		ug/l	100	39.	100	
Xylenes, Total	1800		ug/l	100	33.	100	
Naphthalene	1500		ua/l	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Lab Number: L2345763

Project Number: 20010210 **Report Date:** 08/21/23

SAMPLE RESULTS

Lab ID: L2345763-06 Date Collected: 08/08/23 15:10

Client ID: CO37-PZM003 Date Received: 08/08/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/11/23 15:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	24		ug/l	0.50	0.16	1	
Toluene	42		ug/l	0.75	0.20	1	
Ethylbenzene	2.9		ug/l	0.50	0.17	1	
p/m-Xylene	20		ug/l	1.0	0.33	1	
o-Xylene	9.6		ug/l	1.0	0.39	1	
Xylenes, Total	30		ug/l	1.0	0.33	1	
Naphthalene	9.1		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	99		70-130	
Toluene-d8	101		70-130	
4-Bromofluorobenzene	98		70-130	
Dibromofluoromethane	63	Q	70-130	



Project Name: COA GW Lab Number: L2345763

Project Number: 20010210 **Report Date:** 08/21/23

SAMPLE RESULTS

Lab ID: L2345763-07 Date Collected: 08/08/23 00:00

Client ID: TB-WT-01 Date Received: 08/08/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/15/23 15:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	ND		ug/l	0.50	0.16	1		
Toluene	ND		ug/l	0.75	0.20	1		
Ethylbenzene	ND		ug/l	0.50	0.17	1		
p/m-Xylene	ND		ug/l	1.0	0.33	1		
o-Xylene	ND		ug/l	1.0	0.39	1		
Xylenes, Total	ND		ug/l	1.0	0.33	1		
Naphthalene	ND		ug/l	1.0	0.22	1		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	86	70-130	
Dibromofluoromethane	110	70-130	



Project Name:COA GWLab Number:L2345763

Project Number: 20010210 **Report Date:** 08/21/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/11/23 07:50

stborough Lab for	r sample(s): 03-06	Batch:	WG1815367-5
ND	ug/l	0.50	0.16
ND	ug/l	0.75	0.20
ND	ug/l	0.50	0.17
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.39
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.22
	ND ND ND ND ND	ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	99	70-130	



Project Name:COA GWLab Number:L2345763

Project Number: 20010210 **Report Date:** 08/21/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/15/23 08:43

Parameter	Result Qualifier Units		RL	MDL	
Volatile Organics by GC/MS - Wes	stborough Lab f	for sample(s):	01-02,07 Batch:	WG1816525-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance
Surrogate	%Recovery Qual	ifier Criteria
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	88	70-130
Dibromofluoromethane	111	70-130



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2345763

Report Date: 08/21/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	03-06 Batch:	WG1815367-3	WG1815367-4			
Benzene	91		92		70-130	1		20
Toluene	91		91		70-130	0		20
Ethylbenzene	91		91		70-130	0		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		95		70-130	5		20
Naphthalene	89		92		70-130	3		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99	101	70-130
Toluene-d8	100	101	70-130
4-Bromofluorobenzene	95	97	70-130
Dibromofluoromethane	99	99	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2345763

Report Date:

08/21/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	01-02,07 Batch:	WG181652	25-3 WG1816525	5-4			
Benzene	110		110		70-130	0		20	
Toluene	110		100		70-130	10		20	
Ethylbenzene	110		100		70-130	10		20	
p/m-Xylene	110		105		70-130	5		20	
o-Xylene	105		100		70-130	5		20	
Naphthalene	82		85		70-130	4		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98	91	70-130
Toluene-d8	105	103	70-130
4-Bromofluorobenzene	88	87	70-130
Dibromofluoromethane	103	105	70-130

Project Name: COA GW Project Number: 20010210

Lab Number: L2345763 **Report Date:** 08/21/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Information			Initial	Final	Temp			Frozen		
Container ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L2345763-01A	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-01B	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-01C	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-02A	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-02B	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-02C	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-03A	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-03B	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-03C	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-04A	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-04B	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-04C	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-05A	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-05B	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-05C	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-06A	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-06B	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-06C	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-07A	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-07B	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-07C	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	
L2345763-07D	Vial HCl preserved	Α	NA		4.8	Υ	Absent		PA-8260(14)	



Project Name: Lab Number: COA GW L2345763 **Project Number:** 20010210 **Report Date:** 08/21/23

GLOSSARY

Acronyms

EPA

LOD

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.

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.

Environmental Protection Agency.

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.

- 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

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

MDI - 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.

TEO - 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:COA GWLab Number:L2345763Project Number:20010210Report Date:08/21/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GWLab Number:L2345763Project Number:20010210Report Date:08/21/23

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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name: COA GW Lab Number: L2345763

Project Number: 20010210 Report Date: 08/21/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

4	CHAIN O	F CUSTO	DY PAGE	OF	Date Rec'd in	Lab: 8 9	23	ALPHA .	Job#: L234576	3
WESTBORO, MA TEL: 508-898-9220 FAX: 508-896-9193 Client Information	MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288	Project Information: Project Name: Project Location:	COA C	ξW.	□ FAX □ ADEx	mation - Data I EMAIL Add'l Delivequirements/R	verables	Billing In	oformation Client info PO#:	
Client: Address:	PA	Project #: 200 Project Manager: ALPHA Quote #:	300 T		State /Fed Pro		Criteria			
	ve been previously analyzed by Alpha pecific Requirements/Com	Date Due:	RUSH (only confiv	vmed if pre-approved!) me:	ANALYSIS JAPA JAMEN BEO				SAMPLE HANDLING Filtration Done Not needed Lab to do Preservation Lab to do	TOTAL # BOTTLES
ALPHA Lab ID (Lab Use Only) 15763-01 02 03 04 05 06	Sample ID C038-P2NOS C039-P2NO C039-P2NO C037-P2NO C037-P2NO TB-WT-01	43 42 108 138		Sample Sampler's Initials	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				Places specify below) Sample Specific Comments PH > 10 PH > 10 PH > 10 PH > 10	33334
Page 24 of 24	(133 0300 /23 0300	Relinquished By:	82	Container Type Preservative Date/Time	Re	eceived By:		e/Time /5-25 23 /8%	Please print clearly, legibly and pletely. Samples can not be lo in and turnaround time clock w start until any ambiguities are r All samples submitted are subj Alpha's Terms and Conditions. See reverse side.	gged ill not resolved ject to



ANALYTICAL REPORT

Lab Number: L2346128

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/23/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2346128

 Report Date:
 08/23/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2346128-01	CO40-PZM008	WATER	Not Specified	08/09/23 10:35	08/09/23
L2346128-02	CO182-MWI	WATER	Not Specified	08/09/23 11:40	08/09/23
L2346128-03	CO27-PZM012	WATER	Not Specified	08/09/23 13:15	08/09/23
L2346128-04	CO27-PZM046	WATER	Not Specified	08/09/23 14:35	08/09/23
L2346128-05	TB-WT-01	WATER	Not Specified	08/09/23 00:00	08/09/23



Project Name:COA GWLab Number:L2346128Project Number:20010210Report Date:08/23/23

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:COA GWLab Number:L2346128Project Number:20010210Report Date:08/23/23

Case Narrative (continued)

Report Submission

August 23, 2023: This final report includes the results of all requested analyses.

August 16, 2023: This is a preliminary report.

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

Sample Receipt

L2346128-03: At the client's request, the sample is reported as "CO27-PZM012".

L2346128-04: The sample identified as "CO38-PZM043" on the chain of custody was identified as "CO43-

PZM043" on the container label. At the client's request, the sample is reported as "CO27-PZM046".

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:

Title: Technical Director/Representative Date: 08/23/23

600, Sew on Kelly Stenstrom

ANALYTICAL

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2346128

Project Number: 20010210 **Report Date:** 08/23/23

SAMPLE RESULTS

Lab ID: L2346128-01 D Date Collected: 08/09/23 10:35

Client ID: CO40-PZM008 Date Received: 08/09/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 18:27

Analyst: SLS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Wes	Volatile Organics by GC/MS - Westborough Lab							
Benzene	740		ug/l	2.5	0.80	5		
Toluene	110		ug/l	3.8	1.0	5		
Ethylbenzene	5.6		ug/l	2.5	0.84	5		
p/m-Xylene	28		ug/l	5.0	1.7	5		
o-Xylene	16		ug/l	5.0	2.0	5		
Xylenes, Total	44		ug/l	5.0	1.7	5		
Naphthalene	150		ug/l	5.0	1.1	5		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	86	70-130	
Toluene-d8	104	70-130	
4-Bromofluorobenzene	89	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA GW Lab Number: L2346128

Project Number: 20010210 **Report Date:** 08/23/23

SAMPLE RESULTS

Lab ID: L2346128-02 D2 Date Collected: 08/09/23 11:40

Client ID: CO182-MWI Date Received: 08/09/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/22/23 21:32

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	250000		ug/l	2000	640	4000
Surrogate			% Recovery	Qualifier		otance teria

Surrogate	% Recovery	Acceptance Qualifier Criteria
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	85	70-130
Dibromofluoromethane	106	70-130



Project Name: COA GW Lab Number: L2346128

Project Number: 20010210 **Report Date:** 08/23/23

SAMPLE RESULTS

Lab ID: L2346128-02 D Date Collected: 08/09/23 11:40

Client ID: CO182-MWI Date Received: 08/09/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/17/23 17:44

Analyst: SLS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - We	Volatile Organics by GC/MS - Westborough Lab							
Benzene	270000	E	ug/l	500	160	1000		
Toluene	17000		ug/l	750	200	1000		
Ethylbenzene	1100		ug/l	500	170	1000		
p/m-Xylene	7000		ug/l	1000	330	1000		
o-Xylene	2500		ug/l	1000	390	1000		
Xylenes, Total	9500		ug/l	1000	330	1000		
Naphthalene	220	J	ug/l	1000	220	1000		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	102	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA GW Lab Number: L2346128

Project Number: 20010210 **Report Date:** 08/23/23

SAMPLE RESULTS

Lab ID: L2346128-03 D Date Collected: 08/09/23 13:15

Client ID: CO27-PZM012 Date Received: 08/09/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/14/23 13:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS	- Westborough Lab						
Benzene	5500		ug/l	25	8.0	50	
Toluene	1100		ug/l	38	10.	50	
Ethylbenzene	64		ug/l	25	8.4	50	
p/m-Xylene	340		ug/l	50	17.	50	
o-Xylene	140		ug/l	50	20.	50	
Xylenes, Total	480		ug/l	50	17.	50	
Naphthalene	470		ua/l	50	11.	50	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	94	70-130	
Toluene-d8	95	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	99	70-130	



Project Name: COA GW Lab Number: L2346128

Project Number: 20010210 **Report Date:** 08/23/23

SAMPLE RESULTS

Lab ID: L2346128-04 D Date Collected: 08/09/23 14:35

Client ID: CO27-PZM046 Date Received: 08/09/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/14/23 14:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - We	estborough Lab					
Benzene	19000		ug/l	100	32.	200
Toluene	4200		ug/l	150	41.	200
Ethylbenzene	180		ug/l	100	33.	200
p/m-Xylene	970		ug/l	200	66.	200
o-Xylene	410		ug/l	200	78.	200
Xylenes, Total	1400		ug/l	200	66.	200
Naphthalene	910		ug/l	200	43.	200

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	95	70-130	
Toluene-d8	94	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Lab Number: L2346128

Project Number: 20010210 **Report Date:** 08/23/23

SAMPLE RESULTS

Lab ID: L2346128-05 Date Collected: 08/09/23 00:00

Client ID: TB-WT-01 Date Received: 08/09/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 14:16

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbo	rough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA GW **Lab Number:** L2346128

Project Number: 20010210 **Report Date:** 08/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/14/23 09:13

MDL
1815960-5
0.16
0.20
0.17
0.33
0.39
0.33
0.22
C

	Accept				
Surrogate	%Recovery Qualif	ier Criteria			
1,2-Dichloroethane-d4	91	70-130			
Toluene-d8	94	70-130			
4-Bromofluorobenzene	101	70-130			
Dibromofluoromethane	101	70-130			



Project Name:COA GWLab Number:L2346128

Project Number: 20010210 **Report Date:** 08/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/16/23 08:43

Parameter	Result Qu	alifier Units	RL	MDL	
olatile Organics by GC/MS -	Westborough Lab for	sample(s): 05	Batch:	WG1816839-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptan				
Surrogate	%Recovery Quali	fier Criteria			
1,2-Dichloroethane-d4	99	70-130			
Toluene-d8	101	70-130			
4-Bromofluorobenzene	101	70-130			
Dibromofluoromethane	100	70-130			



Project Name: COA GW **Lab Number:** L2346128

Project Number: 20010210 **Report Date:** 08/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/16/23 10:18

Result Qu	alifier Units	RL	MDL	
Vestborough Lab for	sample(s): 01	Batch:	WG1817132-5	
ND	ug/l	0.50	0.16	
ND	ug/l	0.75	0.20	
ND	ug/l	0.50	0.17	
ND	ug/l	1.0	0.33	
ND	ug/l	1.0	0.39	
ND	ug/l	1.0	0.33	
ND	ug/l	1.0	0.22	
	Westborough Lab for ND ND ND ND ND ND ND ND ND N	ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0	ND ug/l 0.50 0.16 ND ug/l 0.75 0.20 ND ug/l 0.50 0.17 ND ug/l 0.50 0.17 ND ug/l 1.0 0.33 ND ug/l 1.0 0.39 ND ug/l 1.0 0.33

	Acceptance				
Surrogate	%Recovery Qualifi	er Criteria			
1,2-Dichloroethane-d4	94	70-130			
Toluene-d8	102	70-130			
4-Bromofluorobenzene	88	70-130			
Dibromofluoromethane	109	70-130			



Project Name: COA GW **Lab Number:** L2346128

Project Number: 20010210 **Report Date:** 08/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/17/23 09:33

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for	sample(s): 02	Batch:	WG1818695-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Accepta				
Surrogate	%Recovery Qualif	ier Criteria			
1,2-Dichloroethane-d4	101	70-130			
Toluene-d8	99	70-130			
4-Bromofluorobenzene	103	70-130			
Dibromofluoromethane	110	70-130			



Project Name:COA GWLab Number:L2346128

Project Number: 20010210 **Report Date:** 08/23/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/22/23 20:18

Analyst: MAG

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for	sample(s): 02	Batch:	WG1819056-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Accepta				
Surrogate	%Recovery Qualif	ier Criteria			
1,2-Dichloroethane-d4	100	70-130			
Toluene-d8	103	70-130			
4-Bromofluorobenzene	88	70-130			
Dibromofluoromethane	110	70-130			



08/23/23

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346128

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	03-04 Batch:	WG1815960-3	WG1815960-4			
Benzene	110		110		70-130	0		20
Toluene	110		100		70-130	10		20
Ethylbenzene	110		100		70-130	10		20
p/m-Xylene	110		100		70-130	10		20
o-Xylene	105		100		70-130	5		20
Naphthalene	84		82		70-130	2		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92	91	70-130
Toluene-d8	96	95	70-130
4-Bromofluorobenzene	101	101	70-130
Dibromofluoromethane	102	101	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346128

Report Date: 08/23/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westbord	ough Lab Associated sa		5 Batch: WG	1816839-3	WG1816839-4				
Benzene	93		98		70-130	5		20	
Toluene	93		97		70-130	4		20	
Ethylbenzene	93		98		70-130	5		20	
p/m-Xylene	95		100		70-130	5		20	
o-Xylene	95		100		70-130	5		20	
Naphthalene	87		89		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95	96	70-130
Toluene-d8	101	100	70-130
4-Bromofluorobenzene	97	96	70-130
Dibromofluoromethane	99	100	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346128

Report Date: 08/23/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s): 01	Batch: WG	1817132-3	WG1817132-4				
Benzene	110		110		70-130	0		20	
Toluene	110		100		70-130	10		20	
Ethylbenzene	110		100		70-130	10		20	
p/m-Xylene	110		105		70-130	5		20	
o-Xylene	105		105		70-130	0		20	
Naphthalene	79		81		70-130	3		20	

Surrogate	LCS	LCSD	Acceptance
	%Recovery Qual	%Recovery Qual	Criteria
1,2-Dichloroethane-d4	92	90	70-130
Toluene-d8	104	104	70-130
4-Bromofluorobenzene Dibromofluoromethane	85	85	70-130
	102	107	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346128

Report Date: 08/23/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	/ Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 02	Batch: W	/G1818695-3	WG1818695-4				
Benzene	110		110		70-130	0		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	110		110		70-130	0		20	
p/m-Xylene	110		110		70-130	0		20	
o-Xylene	110		110		70-130	0		20	
Naphthalene	90		97		70-130	7		20	

Surrogate	LCS	LCSD	Acceptance
	%Recovery Qual	I %Recovery Qual	Criteria
1,2-Dichloroethane-d4	97	99	70-130
Toluene-d8	101	102	70-130
4-Bromofluorobenzene Dibromofluoromethane	104	106	70-130
	106	105	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346128

Report Date:

08/23/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	•		Batch: W0		WG1819056-4	2			
Benzene	110		100		70-130	10		20	
Toluene	110		100		70-130	10		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	105		100		70-130	5		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	80		84		70-130	5		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91	93	70-130
Toluene-d8	106	104	70-130
4-Bromofluorobenzene	84	85	70-130
Dibromofluoromethane	103	105	70-130

Serial_No:08232312:56

Project Name: COA GW **Lab Number:** L2346128 Project Number: 20010210

Report Date: 08/23/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Info	rmation			Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2346128-01A	Vial HCI preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-01B	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-01C	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-02A	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-02B	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-02C	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-03A	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-03B	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-03C	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-04A	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-04B	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-04C	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-05A	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-05B	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-05C	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)
L2346128-05D	Vial HCl preserved	Α	NA		4.5	Υ	Absent		PA-8260(14)



Project Name:COA GWLab Number:L2346128Project Number:20010210Report Date:08/23/23

GLOSSARY

Acronyms

EDL

EPA

LOQ

MS

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.)

from unutions, concentrations of moisture content, where applicable. (Dod feport formats only.)

- 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 Microsystaction (SPME)

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.

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.

Environmental Protection Agency.

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.)

- 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.

- 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.



Project Name:COA GWLab Number:L2346128Project Number:20010210Report Date:08/23/23

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GWLab Number:L2346128Project Number:20010210Report Date:08/23/23

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.
- 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.)



Serial_No:08232312:56

 Project Name:
 COA GW
 Lab Number:
 L2346128

 Project Number:
 20010210
 Report Date:
 08/23/23

REFERENCES

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.



Serial_No:08232312:56

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Pre-Qualtrax Document ID: 08-113

Revision 20

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Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

CHAIN (OF CUSTODY PAGE_	OF Date Rec'd in	Lab: 8 10 23	ALPHA Job #: (23461 28
WESTBORO, MA MANSFIELD, MA TEL: 508-898-9220 TEL: 508-822-9300 FAX: 508-898-9193 FAX: 508-822-3288	Project Information Project Name: OA GI	Report Info	rmation - Data Deliverables EMAIL Add'I Deliverables	Billing Information Same as Client info PO #:
Client Information Client: Address:	Project Location: Project #: 200 02 0 Project Manager: Bob		Requirements/Report Limits	
Phone: Fax:	Turn-Around Time	18 pre-approved?		
Email: These samples have been previously analyzed by Alp Other Project Specific Requirements/Co	Date Due: Time	- / /		SAMPLE HANDLING Filtration Done Not needed Lab to do Preservation Lab to do (Please specify below)
ALPHA Lab ID (Lab Use Only) 46128-01 CO 40-PZM -02 CO 182-M -03 CO 38-PZM -04 CO 38-PZM -05 TB-W+-01	Collection Sam Mat	The second secon		PH > 10 3
8/10/23 0220	Relinquished By:	Container Type Preservative Date/Time Re	cceived By: Date	Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved.
FCPage 2910f-/29-0CT-07)	APM 8	9 23 500 L) WAR	ong Green AU	start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side. 0 9 2023 2100



ANALYTICAL REPORT

Lab Number: L2346473

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/17/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

Lab Number: L2346473 **Report Date:** 08/17/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2346473-01	CO36-PZM008	WATER	Not Specified	08/10/23 11:50	08/10/23
L2346473-02	CO36-PZM043	WATER	Not Specified	08/10/23 10:50	08/10/23
L2346473-03	CO56-PZP001	WATER	Not Specified	08/10/23 13:00	08/10/23
L2346473-04	CO55-PZM000	WATER	Not Specified	08/10/23 13:40	08/10/23
L2346473-05	CO59-PZP002	WATER	Not Specified	08/10/23 14:20	08/10/23
L2346473-06	TB-WT-01	WATER	Not Specified	08/10/23 00:00	08/10/23



Project Name:COA GWLab Number:L2346473Project Number:20010210Report Date:08/17/23

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:COA GWLab Number:L2346473Project Number:20010210Report Date:08/17/23

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.

Volatile Organics

L2346473-01D2: The analysis was performed utilizing a compromised vial.

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.

Nachelle M. Myrrig Michelle M. Morris

Authorized Signature:

Title: Technical Director/Representative

ANALYTICA

Date: 08/17/23

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2346473

Project Number: 20010210 **Report Date:** 08/17/23

SAMPLE RESULTS

Lab ID: L2346473-01 D2 Date Collected: 08/10/23 11:50

Client ID: CO36-PZM008 Date Received: 08/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/17/23 09:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	15000		ug/l	100	32.	200

Surrogate	% Recovery	Acceptance Qualifier Criteria
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130
Dibromofluoromethane	98	70-130



Project Name: COA GW Lab Number: L2346473

Project Number: 20010210 **Report Date:** 08/17/23

SAMPLE RESULTS

Lab ID: L2346473-01 D Date Collected: 08/10/23 11:50

Client ID: CO36-PZM008 Date Received: 08/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 15:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	15000	E	ug/l	25	8.0	50	
Toluene	3200		ug/l	38	10.	50	
Ethylbenzene	60		ug/l	25	8.4	50	
p/m-Xylene	720		ug/l	50	17.	50	
o-Xylene	250		ug/l	50	20.	50	
Xylenes, Total	970		ug/l	50	17.	50	
Naphthalene	530		ug/l	50	11.	50	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	97	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Lab Number: L2346473

Project Number: 20010210 **Report Date:** 08/17/23

SAMPLE RESULTS

Lab ID: L2346473-02 D Date Collected: 08/10/23 10:50

Client ID: CO36-PZM043 Date Received: 08/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 15:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbo	rough Lab						
Benzene	16000		ug/l	50	16.	100	
Toluene	2100		ug/l	75	20.	100	
Ethylbenzene	46	J	ug/l	50	17.	100	
p/m-Xylene	480		ug/l	100	33.	100	
o-Xylene	180		ug/l	100	39.	100	
Xylenes, Total	660		ug/l	100	33.	100	
Naphthalene	550		ug/l	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Lab Number: L2346473

Project Number: 20010210 **Report Date:** 08/17/23

SAMPLE RESULTS

Lab ID: L2346473-03 D Date Collected: 08/10/23 13:00

Client ID: CO56-PZP001 Date Received: 08/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/14/23 18:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	stborough Lab						
Benzene	160		ug/l	5.0	1.6	10	
Toluene	73		ug/l	7.5	2.0	10	
Ethylbenzene	8.0		ug/l	5.0	1.7	10	
p/m-Xylene	120		ug/l	10	3.3	10	
o-Xylene	46		ug/l	10	3.9	10	
Xylenes, Total	170		ug/l	10	3.3	10	
Naphthalene	1900		ug/l	10	2.2	10	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	108	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	105	70-130	
Dibromofluoromethane	106	70-130	



Project Name: COA GW Lab Number: L2346473

Project Number: 20010210 **Report Date:** 08/17/23

SAMPLE RESULTS

Lab ID: L2346473-04 Date Collected: 08/10/23 13:40

Client ID: CO55-PZM000 Date Received: 08/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 14:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - V	Westborough Lab						
Benzene	2.8		ug/l	0.50	0.16	1	
Toluene	1.6		ug/l	0.75	0.20	1	
Ethylbenzene	0.17	J	ug/l	0.50	0.17	1	
p/m-Xylene	1.3		ug/l	1.0	0.33	1	
o-Xylene	0.64	J	ug/l	1.0	0.39	1	
Xylenes, Total	1.9	J	ug/l	1.0	0.33	1	
Naphthalene	12		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	103	70-130	



Project Name: COA GW Lab Number: L2346473

Project Number: 20010210 **Report Date:** 08/17/23

SAMPLE RESULTS

Lab ID: L2346473-05 Date Collected: 08/10/23 14:20

Client ID: CO59-PZP002 Date Received: 08/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/15/23 13:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westh	orough Lab						
Benzene	2.5		ug/l	0.50	0.16	1	
Toluene	2.8		ug/l	0.75	0.20	1	
Ethylbenzene	1.3		ug/l	0.50	0.17	1	
p/m-Xylene	2.2		ug/l	1.0	0.33	1	
o-Xylene	5.2		ug/l	1.0	0.39	1	
Xylenes, Total	7.4		ug/l	1.0	0.33	1	
Naphthalene	5.7		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	94	70-130	
Toluene-d8	93	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	103	70-130	



Project Name: COA GW Lab Number: L2346473

Project Number: 20010210 **Report Date:** 08/17/23

SAMPLE RESULTS

Lab ID: L2346473-06 Date Collected: 08/10/23 00:00

Client ID: TB-WT-01 Date Received: 08/10/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/14/23 17:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbor	ough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	108	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	103	70-130	
Dibromofluoromethane	109	70-130	



Project Name:COA GWLab Number:L2346473

Project Number: 20010210 **Report Date:** 08/17/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/15/23 12:07

Result Qual	ifier Units	RL	MDL
Vestborough Lab for s	ample(s): 05	Batch:	WG1816635-5
ND	ug/l	0.50	0.16
ND	ug/l	0.75	0.20
ND	ug/l	0.50	0.17
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.39
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.22
	Vestborough Lab for s ND ND ND ND ND ND ND ND ND N	ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0

		Acceptance	
Surrogate	%Recovery Qualit	ier Criteria	
1,2-Dichloroethane-d4	93	70-130	
Toluene-d8	94	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	102	70-130	



Project Name:COA GWLab Number:L2346473

Project Number: 20010210 **Report Date:** 08/17/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/14/23 10:08

Parameter	Result Qual	ifier Units	RL	MDL
Volatile Organics by GC/MS -	Westborough Lab for s	ample(s): 03,06	Batch:	WG1816650-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	_
1,2-Dichloroethane-d4	103	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	107	70-130	



Project Name: COA GW **Lab Number:** L2346473

Project Number: 20010210 **Report Date:** 08/17/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/16/23 08:43

Result Qua	alifier Units	RL	MDL
tborough Lab for	sample(s): 01-	02,04 Batch:	WG1816839-5
ND	ug/l	0.50	0.16
ND	ug/l	0.75	0.20
ND	ug/l	0.50	0.17
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.39
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.22
	ND	ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0

		Acceptance	
Surrogate	%Recovery Qualifi	er Criteria	
1,2-Dichloroethane-d4	99	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	100	70-130	



Project Name:COA GWLab Number:L2346473

Project Number: 20010210 **Report Date:** 08/17/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/17/23 08:40

Result Qua	lifier Units	RL	MDL
estborough Lab for	sample(s): 01	Batch:	WG1817032-5
ND	ug/l	0.50	0.16
ND	ug/l	0.75	0.20
ND	ug/l	0.50	0.17
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.39
ND	ug/l	1.0	0.33
ND	ug/l	1.0	0.22
	estborough Lab for some ND	ND ug/l	ND ug/l 0.50 ND ug/l 0.75 ND ug/l 0.75 ND ug/l 0.50 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0 ND ug/l 1.0

		Acceptance	
Surrogate	%Recovery Qualifi	er Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	99	70-130	



L2346473

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number:

Report Date: 08/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s): 05	Batch: WG	1816635-3	WG1816635-4				
Benzene	110		110		70-130	0		20	
Toluene	99		99		70-130	0		20	
Ethylbenzene	100		98		70-130	2		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		100		70-130	0		20	
Naphthalene	78		80		70-130	3		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93	91	70-130
Toluene-d8	94	94	70-130
4-Bromofluorobenzene	100	101	70-130
Dibromofluoromethane	102	102	70-130

Project Name: COA GW Project Number: 20010210

Lab Number:

L2346473

Report Date:

08/17/23

Para	ameter	LCS %Recovery	Qual	LCS %Reco	_	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Vola	atile Organics by GC/MS - Westborough La	ab Associated	sample(s):	03,06 Ba	atch: \	WG1816650-3	WG1816650-4				
	Benzene	110		11	10		70-130	0		20	
	Toluene	110		11	10		70-130	0		20	
	Ethylbenzene	110		11	10		70-130	0		20	
	p/m-Xylene	110		10	05		70-130	5		20	
	o-Xylene	110		10	05		70-130	5		20	
	Naphthalene	96		9	8		70-130	2		20	

	LCS	LCSD	Acceptance
Surrogate	%Recovery Quai	l %Recovery Qual	Criteria
1,2-Dichloroethane-d4	100	100	70-130
Toluene-d8	100	102	70-130
4-Bromofluorobenzene	103	105	70-130
Dibromofluoromethane	106	101	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346473

Report Date: 08/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-02,04 Batch:	WG181683	9-3 WG1816839	-4		
Benzene	93		98		70-130	5		20
Toluene	93		97		70-130	4		20
Ethylbenzene	93		98		70-130	5		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
Naphthalene	87		89		70-130	2		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95	96	70-130
Toluene-d8	101	100	70-130
4-Bromofluorobenzene	97	96	70-130
Dibromofluoromethane	99	100	70-130

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346473

Report Date:

08/17/23

Par	ameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Vol	atile Organics by GC/MS - Westborough La	ab Associated	sample(s): 01	Batch: WG	1817032-3	WG1817032-4				
	Benzene	100		100		70-130	0		20	
	Toluene	100		100		70-130	0		20	
	Ethylbenzene	100		100		70-130	0		20	
	p/m-Xylene	105		100		70-130	5		20	
	o-Xylene	105		100		70-130	5		20	
	Naphthalene	91		90		70-130	1		20	

	LCS	LCSD	Acceptance
Surrogate	%Recovery Qua	l %Recovery Qual	Criteria
1,2-Dichloroethane-d4	102	103	70-130
Toluene-d8	100	101	70-130
4-Bromofluorobenzene	98	99	70-130
Dibromofluoromethane	100	102	70-130

Project Name: COA GW

Project Number: 20010210

Re

Lab Number: L2346473 **Report Date:** 08/17/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Container Information

Cooler Custody Seal

A Absent

Container into	rmation			Final	al Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2346473-01A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-01B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-01C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-02A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-02B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-02C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-03A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-03B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-03C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-04A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-04B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-04C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-05A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-05B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-05C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-06A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-06B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-06C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2346473-06D	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)



Project Name: Lab Number: COA GW L2346473 **Project Number:** 20010210 **Report Date:** 08/17/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RL

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.)

- 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.)

- 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

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

MDI - 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.

- 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.

- 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.

TEO - 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.



Project Name:COA GWLab Number:L2346473Project Number:20010210Report Date:08/17/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GWLab Number:L2346473Project Number:20010210Report Date:08/17/23

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: COA GW Lab Number: L2346473
Project Number: 20010210 Report Date: 08/17/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Дена	CHAIN OF C	USTODY	PAGEOF	Date Rec'd in	Lab: 6/11/73	ALPHA	A JOB #: LJ346473
WESTBORO, MA MANSFIE	.D. MA Proj	ect Information		Report Info	ormation - Data Deliver	ALC: UNKNOWN THE PARTY OF PERSONS	Information
TEL: 508-898-9220 TEL: 508- FAX: 508-898-9193 FAX: 508-	Proje	ct Name:	GIJ	□ FAX	□ EMAIL	☐ Same	as Client info PO#:
Client Information	The second secon	ct Location:	- Spor	☐ ADEx	☐ Add'l Deliverables		
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-02 (0	36-P2M D43	1 1050	1 1	X			1 10 3
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	3h	ARA	8/10/23 /50		703	5-10 1630	All samples submitted are subject to Alpha's Terms and Conditions.
Page 28 of 28 oct-07)		RIS	8:10 1800		16 MC	8/18/13 1800 AUC 4 C 2007	See reverse side.
	1000	NI	0/1900 20	CAMUNO	ny Freen	AUG 1 D 2023 3	



ANALYTICAL REPORT

Lab Number: L2346714

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/18/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2346714

 Report Date:
 08/18/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2346714-01	CO30-PZM015	WATER	Not Specified	08/11/23 08:25	08/11/23
L2346714-02	CO195-MWS	WATER	Not Specified	08/11/23 14:20	08/11/23
L2346714-03	TB-WT-01	WATER	Not Specified	08/11/23 00:00	08/11/23



Project Name:COA GWLab Number:L2346714Project Number:20010210Report Date:08/18/23

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:COA GWLab Number:L2346714Project Number:20010210Report Date:08/18/23

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:

Title: Technical Director/Representative Date: 08/18/23

(609 Show Kelly Stenstrom

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2346714

Project Number: 20010210 **Report Date:** 08/18/23

SAMPLE RESULTS

Lab ID: L2346714-01 D Date Collected: 08/11/23 08:25

Client ID: CO30-PZM015 Date Received: 08/11/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/14/23 23:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbo	rough Lab						
Benzene	56000		ug/l	200	64.	400	
Toluene	4000		ug/l	300	81.	400	
Ethylbenzene	110	J	ug/l	200	67.	400	
p/m-Xylene	940		ug/l	400	130	400	
o-Xylene	380	J	ug/l	400	160	400	
Xylenes, Total	1300	J	ug/l	400	130	400	
Naphthalene	2300		ug/l	400	86.	400	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	119	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	108	70-130	



Project Name: COA GW Lab Number: L2346714

Project Number: 20010210 **Report Date:** 08/18/23

SAMPLE RESULTS

Lab ID: L2346714-02 D Date Collected: 08/11/23 14:20

Client ID: CO195-MWS Date Received: 08/11/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/14/23 23:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	estborough Lab						
Benzene	45000		ug/l	120	40.	250	
Toluene	3100		ug/l	190	51.	250	
Ethylbenzene	73	J	ug/l	120	42.	250	
p/m-Xylene	590		ug/l	250	83.	250	
o-Xylene	240	J	ug/l	250	98.	250	
Xylenes, Total	830	J	ug/l	250	83.	250	
Naphthalene	1600		ug/l	250	54.	250	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	118	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	108	70-130	



Project Name: COA GW Lab Number: L2346714

Project Number: 20010210 **Report Date:** 08/18/23

SAMPLE RESULTS

Lab ID: L2346714-03 Date Collected: 08/11/23 00:00

Client ID: TB-WT-01 Date Received: 08/11/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/14/23 23:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - \	Westborough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	125	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	104	70-130	
Dibromofluoromethane	114	70-130	



Project Number: 20010210 **Report Date:** 08/18/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/14/23 17:53

Parameter	Result Qua	lifier Units	RL	MDL	
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 01-03	Batch:	WG1816908-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	_
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Accept				
Surrogate	%Recovery Qualit	ier Criteria			
1,2-Dichloroethane-d4	127	70-130			
Toluene-d8	100	70-130			
4-Bromofluorobenzene	101	70-130			
Dibromofluoromethane	114	70-130			



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346714

Report Date: 08/18/23

Parameter	LCS %Recovery Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Qual Limits	
	Westborough Lab Associated sample(s	s): 01-03 Batch:	WG1816908-3		2		
Benzene	120	110		70-130	9	20	
Toluene	100	94		70-130	6	20	
Ethylbenzene	100	94		70-130	6	20	
p/m-Xylene	100	90		70-130	11	20	
o-Xylene	95	90		70-130	5	20	
Naphthalene	85	86		70-130	1	20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	115	121	70-130
Toluene-d8	102	101	70-130
4-Bromofluorobenzene	100	100	70-130
Dibromofluoromethane	105	108	70-130

Project Name: COA GW **Lab Number:** L2346714 Project Number: 20010210

Report Date: 08/18/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Contail	ner Info	rmation		Initial	Final	Temp			Frozen	
Contail	ner ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2346714	-01A	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-01B	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-01C	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-02A	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-02B	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-02C	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-03A	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-03B	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-03C	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)
L2346714	-03D	Vial HCI preserved	Α	NA		3.0	Υ	Absent		PA-8260(14)



Project Name: COA GW Lab Number: L2346714
Project Number: 20010210 Report Date: 08/18/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RPD

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.)

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.)

- 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.

 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.

- 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:COA GWLab Number:L2346714Project Number:20010210Report Date:08/18/23

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GWLab Number:L2346714Project Number:20010210Report Date:08/18/23

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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name:COA GWLab Number:L2346714Project Number:20010210Report Date:08/18/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

Serial_No:08182313:47 C 8/13 CHAIN OF CUSTODY Date Rec'd in Lab: 8/12/23 ALPHA Job#: 434 **Billing Information Project Information** Report Information - Data Deliverables MANSFIELD, MA WESTBORO, MA TEL: 508-898-9220 TEL: 508-822-9300 Project Name: COA ☐ Same as Client info PO #: □ EMAIL ☐ FAX FAX: 508-898-9193 FAX: 508-822-3288 ☐ ADEx ☐ Add'l Deliverables Client Information Project Location: Regulatory Requirements/Report Limits Client: Project #: State /Fed Program Address: Project Manager: ALPHA Quote #: Phone: **Turn-Around Time** Fax: □ Standard RUSH (axiy confirmed if pre-approved) Email: ANALYSIS Date Due: Time: SAMPLE HANDLING These samples have been previously analyzed by Alpha Filtration Other Project Specific Requirements/Comments/Detection Limits: □ Done □ Not needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below) ALPHA Lab ID Collection Sample Sampler's Sample ID (Lab Use Only) Sample Specific Comments Matrix Date Time Initials Container Type Please print clearly, legibly and completely. Samples can not be logged Preservative in and turnaround time clock will not start until any ambiguities are resolved. Date/Time Relinquished By: Date/Time Received By: All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



ANALYTICAL REPORT

Lab Number: L2346939

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/28/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



L2346939

08/28/23

Project Name: COA GW **Project Number:** 20010210

Report Date:

Collection

Lab Number:

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2346939-01	CO26-PZM007	WATER	Not Specified	08/14/23 12:15	08/14/23
L2346939-02	CO60-PZP001	WATER	Not Specified	08/14/23 12:35	08/14/23
L2346939-03	CO57-PZP002	WATER	Not Specified	08/14/23 13:30	08/14/23
L2346939-04	CO58-PZM001	WATER	Not Specified	08/14/23 15:35	08/14/23
L2346939-05	TB-WT-01	WATER	Not Specified	08/14/23 00:00	08/14/23



Project Name:COA GWLab Number:L2346939Project Number:20010210Report Date:08/28/23

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:
 COA GW
 Lab Number:
 L2346939

 Project Number:
 20010210
 Report Date:
 08/28/23

Case Narrative (continued)

Report Submission

August 28, 2023: This final report includes the results of all requested analyses.

August 21, 2023: This is a preliminary report.

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:

Title: Technical Director/Representative Date: 08/28/23

Melissa Sturgis Melissa Sturgis

ORGANICS



VOLATILES



Project Name: COA GW Lab Number: L2346939

Project Number: 20010210 **Report Date:** 08/28/23

SAMPLE RESULTS

Lab ID: L2346939-01 D Date Collected: 08/14/23 12:15

Client ID: CO26-PZM007 Date Received: 08/14/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 16:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	120		ug/l	1.0	0.32	2			
Toluene	41		ug/l	1.5	0.41	2			
Ethylbenzene	1.8		ug/l	1.0	0.33	2			
p/m-Xylene	26		ug/l	2.0	0.66	2			
o-Xylene	12		ug/l	2.0	0.78	2			
Xylenes, Total	38		ug/l	2.0	0.66	2			
Naphthalene	400		ug/l	2.0	0.43	2			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	100	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Lab Number: L2346939

Project Number: 20010210 **Report Date:** 08/28/23

SAMPLE RESULTS

Lab ID: L2346939-03 Date Collected: 08/14/23 13:30

Client ID: CO57-PZP002 Date Received: 08/14/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	0.16	J	ug/l	0.50	0.16	1			
Toluene	ND		ug/l	0.75	0.20	1			
Ethylbenzene	ND		ug/l	0.50	0.17	1			
p/m-Xylene	ND		ug/l	1.0	0.33	1			
o-Xylene	ND		ug/l	1.0	0.39	1			
Xylenes, Total	ND		ug/l	1.0	0.33	1			
Naphthalene	ND		ug/l	1.0	0.22	1			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA GW Lab Number: L2346939

Project Number: 20010210 **Report Date:** 08/28/23

SAMPLE RESULTS

Lab ID: L2346939-04 D2 Date Collected: 08/14/23 15:35

Client ID: CO58-PZM001 Date Received: 08/14/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/17/23 10:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough L	₋ab					
Naphthalene	850		ug/l	50	11.	50
Surrogate			% Recovery	Qualifier		ptance iteria

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	100		70-130



Project Name: COA GW Lab Number: L2346939

Project Number: 20010210 **Report Date:** 08/28/23

SAMPLE RESULTS

Lab ID: L2346939-04 D Date Collected: 08/14/23 15:35

Client ID: CO58-PZM001 Date Received: 08/14/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 16:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	110		ug/l	2.5	0.80	5			
Toluene	36		ug/l	3.8	1.0	5			
Ethylbenzene	5.4		ug/l	2.5	0.84	5			
p/m-Xylene	59		ug/l	5.0	1.7	5			
o-Xylene	25		ug/l	5.0	2.0	5			
Xylenes, Total	84		ug/l	5.0	1.7	5			
Naphthalene	1800	Е	ug/l	5.0	1.1	5			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	120	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Lab Number: L2346939

Project Number: 20010210 **Report Date:** 08/28/23

SAMPLE RESULTS

Lab ID: L2346939-05 Date Collected: 08/14/23 00:00

Client ID: TB-WT-01 Date Received: 08/14/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/16/23 14:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbo	rough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery		ptance iteria
1,2-Dichloroethane-d4	109	7	'0-130
Toluene-d8	100	7	'0-130
4-Bromofluorobenzene	101	7	' 0-130
Dibromofluoromethane	111	7	' 0-130



Project Number: 20010210 **Report Date:** 08/28/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/16/23 08:43

Parameter	Result	Qualifier Units	RL	MDL
Volatile Organics by GC/MS - \	Westborough Lab	for sample(s):	01,03-04 Batch:	WG1816839-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Accept					
Surrogate	%Recovery Quality	ier Criteria				
1,2-Dichloroethane-d4	99	70-130				
Toluene-d8	101	70-130				
4-Bromofluorobenzene	101	70-130				
Dibromofluoromethane	100	70-130				



Project Number: 20010210 **Report Date:** 08/28/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/17/23 08:40

Parameter	Result Qu	alifier Units	RL	MDL	
olatile Organics by GC/MS	· Westborough Lab for	sample(s): 04	Batch:	WG1817032-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptance Acceptance					
Surrogate	%Recovery Qualif	ier Criteria				
40.8:11	00	70.400				
1,2-Dichloroethane-d4	96	70-130				
Toluene-d8	100	70-130				
4-Bromofluorobenzene	96	70-130				
Dibromofluoromethane	99	70-130				



Project Number: 20010210 **Report Date:** 08/28/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/16/23 10:10

Parameter	Result Qua	alifier Units	RL	MDL
olatile Organics by GC/MS - V	Vestborough Lab for	sample(s): 05	Batch:	WG1817060-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualif	ier Criteria				
1,2-Dichloroethane-d4	102	70-130				
Toluene-d8	100	70-130				
4-Bromofluorobenzene	104	70-130				
Dibromofluoromethane	110	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346939

Report Date: 08/28/23

<u>Parameter</u>	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01,03-04 Batch:	WG181683	39-3 WG1816839	-4		
Benzene	93		98		70-130	5		20
Toluene	93		97		70-130	4		20
Ethylbenzene	93		98		70-130	5		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
Naphthalene	87		89		70-130	2		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95	96	70-130
Toluene-d8	101	100	70-130
4-Bromofluorobenzene	97	96	70-130
Dibromofluoromethane	99	100	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346939

Report Date: 08/28/23

Parameter		CS covery G	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by	GC/MS - Westborough Lab Ass	sociated sam	ple(s): 04	Batch: WG	1817032-3	WG1817032-4				
Benzene		100		100		70-130	0		20	
Toluene		100		100		70-130	0		20	
Ethylbenzene		100		100		70-130	0		20	
p/m-Xylene		105		100		70-130	5		20	
o-Xylene		105		100		70-130	5		20	
Naphthalene		91		90		70-130	1		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102	103	70-130
Toluene-d8	100	101	70-130
4-Bromofluorobenzene	98	99	70-130
Dibromofluoromethane	100	102	70-130

08/28/23

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2346939

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Qual Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s): 05	Batch: WG	1817060-3	WG1817060-4			
Benzene	100		100		70-130	0	20	
Toluene	100		100		70-130	0	20	
Ethylbenzene	110		110		70-130	0	20	
p/m-Xylene	110		105		70-130	5	20	
o-Xylene	105		105		70-130	0	20	
Naphthalene	90		93		70-130	3	20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98	100	70-130
Toluene-d8	101	101	70-130
4-Bromofluorobenzene	105	107	70-130
Dibromofluoromethane	108	102	70-130

Serial_No:08282308:44

Project Name:COA GWLab Number:L2346939Project Number:20010210Report Date:08/28/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2346939-01A	Vial HCI preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-01B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-01C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-02A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		HOLD-8260(14)
L2346939-02B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		HOLD-8260(14)
L2346939-02C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		HOLD-8260(14)
L2346939-03A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-03B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-03C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-04A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-04B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-04C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-05A	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-05B	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-05C	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)
L2346939-05D	Vial HCl preserved	Α	NA		3.6	Υ	Absent		PA-8260(14)



Project Name:COA GWLab Number:L2346939Project Number:20010210Report Date:08/28/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RL

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.)

- 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.)

- 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.

 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.

- 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

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.



Project Name:COA GWLab Number:L2346939Project Number:20010210Report Date:08/28/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GWLab Number:L2346939Project Number:20010210Report Date:08/28/23

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.
- 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.)



Serial_No:08282308:44

 Project Name:
 COA GW
 Lab Number:
 L2346939

 Project Number:
 20010210
 Report Date:
 08/28/23

REFERENCES

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.



Serial_No:08282308:44

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

Published Date: 6/16/2023 4:52:28 PM

Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

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46939 - 01 -02 -03	CO26-PZMOD7 COCO-PZPOO1 COS7-PZPOOZ		08/14/23 08/14/23 08/14/23	1235	GW	LEP LEP	x x x								pH 210 A pH unknown, Hold PH 710	333
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ANALYTICAL REPORT

Lab Number: L2347171

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q3

 Project Number:
 20010210

 Report Date:
 08/29/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q3 **Project Number:** 20010210

 Lab Number:
 L2347171

 Report Date:
 08/29/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2347171-01	CO24-PZM007	WATER	Not Specified	08/15/23 10:55	08/15/23
L2347171-02	CO23-PZM008	WATER	Not Specified	08/15/23 11:55	08/15/23
L2347171-03	CO190-MWS	WATER	Not Specified	08/15/23 13:35	08/15/23
L2347171-04	CO93-PZM	WATER	Not Specified	08/15/23 15:05	08/15/23
L2347171-05	TB-WT-01	WATER	Not Specified	08/15/23 00:00	08/15/23



Project Name:COA GW Q3Lab Number:L2347171Project Number:20010210Report Date:08/29/23

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:COA GW Q3Lab Number:L2347171Project Number:20010210Report Date:08/29/23

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:

Title: Technical Director/Representative Date: 08/29/23

Melissa Sturgis Melissa Sturgis

ANALYTICAL

ORGANICS



VOLATILES



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

SAMPLE RESULTS

Lab ID: L2347171-01 D Date Collected: 08/15/23 10:55

Client ID: CO24-PZM007 Date Received: 08/15/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/23/23 04:32

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westk	oorough Lab						
Benzene	3.9	J	ug/l	10	3.2	20	
Toluene	ND		ug/l	15	4.1	20	
Ethylbenzene	4.2	J	ug/l	10	3.3	20	
p/m-Xylene	ND		ug/l	20	6.6	20	
o-Xylene	ND		ug/l	20	7.8	20	
Xylenes, Total	ND		ug/l	20	6.6	20	
Naphthalene	2000		ug/l	20	4.3	20	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	90	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

SAMPLE RESULTS

Lab ID: L2347171-02 D Date Collected: 08/15/23 11:55

Client ID: CO23-PZM008 Date Received: 08/15/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/23/23 04:57

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	320		ug/l	12	4.0	25	
Toluene	70		ug/l	19	5.1	25	
Ethylbenzene	20		ug/l	12	4.2	25	
p/m-Xylene	230		ug/l	25	8.3	25	
o-Xylene	87		ug/l	25	9.8	25	
Xylenes, Total	320		ug/l	25	8.3	25	
Naphthalene	2900		ug/l	25	5.4	25	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	93	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	91	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

SAMPLE RESULTS

Lab ID: L2347171-03 D Date Collected: 08/15/23 13:35

Client ID: CO190-MWS Date Received: 08/15/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/28/23 16:55

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Wes	Volatile Organics by GC/MS - Westborough Lab							
Benzene	35000		ug/l	200	64.	400		
Toluene	1600		ug/l	300	81.	400		
Ethylbenzene	ND		ug/l	200	67.	400		
p/m-Xylene	ND		ug/l	400	130	400		
o-Xylene	ND		ug/l	400	160	400		
Xylenes, Total	ND		ug/l	400	130	400		
Naphthalene	ND		ug/l	400	86.	400		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	93	70-130	
Toluene-d8	105	70-130	
4-Bromofluorobenzene	88	70-130	
Dibromofluoromethane	103	70-130	



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

SAMPLE RESULTS

Lab ID: L2347171-04 D Date Collected: 08/15/23 15:05

Client ID: CO93-PZM Date Received: 08/15/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/21/23 04:12

Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westl	oorough Lab						
Benzene	170000		ug/l	1000	320	2000	
Toluene	58000		ug/l	1500	410	2000	
Ethylbenzene	1500		ug/l	1000	330	2000	
p/m-Xylene	12000		ug/l	2000	660	2000	
o-Xylene	3800		ug/l	2000	780	2000	
Xylenes, Total	16000		ug/l	2000	660	2000	
Naphthalene	1900	J	ug/l	2000	430	2000	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	124	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	110	70-130	



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

SAMPLE RESULTS

Lab ID: L2347171-05 Date Collected: 08/15/23 00:00

Client ID: TB-WT-01 Date Received: 08/15/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 08/21/23 02:33

Analyst: MCM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	133	Q	70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	126		70-130



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/20/23 20:00

Analyst: MCM

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for	sample(s): 04-05	Batch:	WG1818632-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance				
Surrogate	%Recovery Qualif	ier Criteria			
1,2-Dichloroethane-d4	116	70-130			
Toluene-d8	100	70-130			
4-Bromofluorobenzene	98	70-130			
Dibromofluoromethane	116	70-130			



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/22/23 20:56

Analyst: TMS

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 01-02	Batch:	WG1819133-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance				
Surrogate	%Recovery Qualif	ier Criteria	_		
1,2-Dichloroethane-d4	103	70-130			
Toluene-d8	101	70-130			
4-Bromofluorobenzene	89	70-130			
Dibromofluoromethane	105	70-130			



Project Name: COA GW Q3 Lab Number: L2347171

Project Number: 20010210 **Report Date:** 08/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 08/28/23 10:00

Analyst: PID

Parameter	Result	Qualifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab	for sample(s): 03	Batch:	WG1821369-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Quality	ier Criteria	_			
1,2-Dichloroethane-d4	99	70-130				
Toluene-d8	103	70-130				
4-Bromofluorobenzene	88	70-130				
Dibromofluoromethane	112	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q3

Project Number: 20010210

Lab Number: L2347171

Report Date: 08/29/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough	Lab Associated s		04-05 Batch:	WG1818632-3	WG1818632-4			
Benzene	99		98		70-130	1		20
Toluene	97		97		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
p/m-Xylene	100		105		70-130	5		20
o-Xylene	100		100		70-130	0		20
Naphthalene	89		91		70-130	2		20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114	113	70-130
Toluene-d8	100	101	70-130
4-Bromofluorobenzene	100	104	70-130
Dibromofluoromethane	115	109	70-130

L2347171

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q3
Project Number: 20010210

Lab Number:

Report Date: 08/29/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough	·		01-02 Batch:	WG1819133-4	- 11 -			
Benzene	110		110	70-130	0		20	
Toluene	100		100	70-130	0		20	
Ethylbenzene	100		100	70-130	0		20	
p/m-Xylene	105		105	70-130	0		20	
o-Xylene	100		100	70-130	0		20	
Naphthalene	83		87	70-130	5		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108	107	70-130
Toluene-d8	101	101	70-130
4-Bromofluorobenzene	92	95	70-130
Dibromofluoromethane	106	105	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q3

Lab Number:

L2347171 08/29/23

Project Number: 20010210

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Qual Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s): 03	Batch: WG	1821369-3	WG1821369-4			
Benzene	100		100		70-130	0	20	
Toluene	100		100		70-130	0	20	
Ethylbenzene	97		99		70-130	2	20	
p/m-Xylene	95		100		70-130	5	20	
o-Xylene	95		100		70-130	5	20	
Naphthalene	74		76		70-130	3	20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95	104	70-130
Toluene-d8	104	105	70-130
4-Bromofluorobenzene	85	82	70-130
Dibromofluoromethane	104	108	70-130

Project Name: COA GW Q3 **Lab Number:** L2347171 Project Number: 20010210

Report Date: 08/29/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Information		rmation		Initial	Final	Temp			Frozen	
	Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
	L2347171-01A	Vial HCI preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-01B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-01C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-02A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-02B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-02C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-03A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-03B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-03C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-04A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-04B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-04C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-05A	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-05B	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-05C	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)
	L2347171-05D	Vial HCl preserved	Α	NA		3.7	Υ	Absent		PA-8260(14)



Project Name:COA GW Q3Lab Number:L2347171Project Number:20010210Report Date:08/29/23

GLOSSARY

Acronyms

EDL

LOD

LOQ

MS

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.)

 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.

 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.)
- 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

omy.)

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.

- 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.



Project Name:COA GW Q3Lab Number:L2347171Project Number:20010210Report Date:08/29/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name: COA GW Q3 Lab Number: L2347171

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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.
- 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:
 COA GW Q3
 Lab Number:
 L2347171

 Project Number:
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 Report Date:
 08/29/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

Alaka	CHAIN O	F CU	STOE	Y P	AGE	or	Date	Rec'd i	n Lab:	8/10	2	3		-	ALPH	IA Job#:L 2347171
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193 Client Informatio		Project No. Project Lo Project #: Project M ALPHA C	anager:	atore	200	03	Rep	FAX ADEX ulatory	ormat Requi	ion - D ⊠ EMA □ Add'I remen	ata Da IL Delive	elivera	imits		NI SENTAN	g Information e as Client info PO #:
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Email:		© Standa		RUSH (only a		pprovedl)		_/	7 /	7	/	/ /		7	1	7 0
☐ These samples hav	ve been previously analyzed by Alpha	Date Due	9:		Time:		10.	3	/	/	/ /			/	//	SAMPLE HANDLING
	pecific Requirements/Comr	ments/De	-/		No.		ANALYSIS	A Medificales	//	///	//	//	/	//	//	Done Done Not needed Lab to do Preservation Lab to do
ALPHA Lab ID (Lab Use Only)	Sample ID		Colle Date	ction Time	Sample Matrix	Sampler's Initials	18							//		Sample Specific Comments
47171-01	C024-PZM007		08/15/23	1055	GW	LEP	×									3
02	CO23-PZMODE		18/15/13	1155	GW	LEP	X									3
03	0190-MWS	- (8/5/23	1335	GW	CEP	V									3
04	C093-PZM		15/23			LEYP	b									3
05	TB-WT-01		08/15/23				X									4
													1	+		
30	8/16/23 0240				0-9-1809/1909	ainer Type eservative	7						-			Please print clearly, legibly and com- pletely. Samples can not be logged in and turnaround time clock will not
○Rage 24 of 245	Negar Com	Relinquis Ph Juny		ren E 5	08/15/-	e/Time 23 1525 1800	(C)		eceive	d By:	M	8	8/18	7	1525	start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.



ANALYTICAL REPORT

Lab Number: L2347519

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW
Project Number: 20010210
Report Date: 08/23/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW **Project Number:** 20010210

 Lab Number:
 L2347519

 Report Date:
 08/23/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2347519-01	GD01-MWI	WATER	Not Specified	08/16/23 13:35	08/16/23
L2347519-02	GD02-MWI	WATER	Not Specified	08/16/23 12:05	08/16/23



Project Name:COA GWLab Number:L2347519Project Number:20010210Report Date:08/23/23

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:COA GWLab Number:L2347519Project Number:20010210Report Date:08/23/23

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.

The analyses of Total Cyanide and Amenable Cyanide were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Cyanide, Free

The WG1816904-4 MS recovery, performed on L2347519-01, is outside the acceptance criteria for cyanide, free (37%); however, the associated LCS recovery is within criteria. No further action was taken.

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.

Jufani Morrissey-Tiffani Morrissey

Authorized Signature:

Title: Technical Director/Representative

Date: 08/23/23



INORGANICS & MISCELLANEOUS



Project Name: Lab Number: COA GW L2347519 Project Number: 20010210

Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: Date Collected: L2347519-01 08/16/23 13:35 Client ID: GD01-MWI Date Received: 08/16/23 Not Specified Sample Location: Not Specified Field Prep:

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Wes	stborough Lab)								
Solids, Total Dissolved	9200000		ug/l	10000	3100	1	-	08/18/23 10:37	121,2540C	SMD
Solids, Total Suspended	ND		ug/l	5000	NA	1	-	08/18/23 10:19	121,2540D	CVN
Cyanide, Free	ND		ug/l	10.0	3.50	1	-	08/17/23 07:45	121,4500CN- E(M)	KAF
Cyanide, Physiologically Available	23.4		ug/l	5.00	1.70	1	08/17/23 09:30	08/17/23 12:01	64,9014(M)	KEP
Chloride	5200000		ug/l	100000	89000	100	-	08/21/23 23:17	121,4500CL-E	TLH



Project Name: Lab Number: COA GW L2347519 Project Number: 20010210

Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: Date Collected: L2347519-02 08/16/23 12:05 Client ID: GD02-MWI Date Received: 08/16/23 Not Specified Sample Location: Not Specified Field Prep:

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Wes	stborough Lab)								
Solids, Total Dissolved	3600000		ug/l	10000	3100	1	-	08/18/23 10:37	121,2540C	SMD
Solids, Total Suspended	ND		ug/l	5000	NA	1	-	08/18/23 10:19	121,2540D	CVN
Cyanide, Free	30.0		ug/l	10.0	3.50	1	-	08/17/23 07:45	121,4500CN- E(M)	KAF
Cyanide, Physiologically Available	12.0		ug/l	5.00	1.70	1	08/17/23 09:30	08/17/23 12:04	64,9014(M)	KEP
Chloride	1900000		ug/l	100000	89000	100	-	08/21/23 23:19	121,4500CL-E	TLH



 Project Name:
 COA GW
 Lab Number:
 L2347519

 Project Number:
 20010210
 Report Date:
 08/23/23

Method Blank Analysis Batch Quality Control

Parameter	Result Q	ualifier	Units	F	RL.	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westbo	orough Lab	for sam	ple(s):	01-02	Ba	tch: W0	G1816904-	1			
Cyanide, Free	ND		ug/l		10.0	3.50	1	-	08/17/23 07:45	121,4500CN-E(N	Л) KAF
General Chemistry - Westbo	orough Lab	for sam	ple(s):	01-02	Ba	tch: W0	G1816906-	1			
Cyanide, Physiologically Available	ND		ug/l		5.00	1.70	1	08/17/23 09:30	08/17/23 11:57	64,9014(M)	KEP
General Chemistry - Westbo	orough Lab	for sam	ple(s):	01-02	Ba	tch: W0	G1817435-	1			
Solids, Total Dissolved	ND		ug/l	1	0000	3100	1	-	08/18/23 10:37	121,2540C	SMD
General Chemistry - Westbo	orough Lab	for sam	ple(s):	01-02	Ba	tch: W0	G1817457-	1			
Solids, Total Suspended	ND		ug/l	5	5000	NA	1	-	08/18/23 10:19	121,2540D	CVN
General Chemistry - Westbo	orough Lab	for sam	ple(s):	01-02	Ba	tch: W0	G1818404-	1			
Chloride	ND		ug/l	1	000	890	1	-	08/21/23 21:15	121,4500CL-E	TLH



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number: L2347519

Report Date:

08/23/23

Parameter	LCS %Recovery Qual	LCSD %Recovery <u>Qual</u>	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-02	Batch: WG1816904-2				
Cyanide, Free	100	-	90-110	-		
General Chemistry - Westborough Lab	Associated sample(s): 01-02	2 Batch: WG1816906-2				
Cyanide, Physiologically Available	85	-	80-120	-		
General Chemistry - Westborough Lab	Associated sample(s): 01-02	2 Batch: WG1816906-3				
Cyanide, Physiologically Available	0	-	0-10	-		
General Chemistry - Westborough Lab	Associated sample(s): 01-02	2 Batch: WG1817435-2				
Solids, Total Dissolved	96	-	80-120	-		
General Chemistry - Westborough Lab	Associated sample(s): 01-02	Patch: WG1817457-2				
Solids, Total Suspended	89	-	80-120	-		
General Chemistry - Westborough Lab	Associated sample(s): 01-02	Patch: WG1818404-2				
Chloride	93	-	90-110	-		



Matrix Spike Analysis Batch Quality Control

Project Name: COA GW
Project Number: 20010210

Lab Number:

L2347519

Report Date: 08/23/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery	Recove Qual Limits	•	RPD Qual Limits
General Chemistry - Westborou	gh Lab Asso	ciated samp	ole(s): 01-02	QC Batch II	D: WG1816904-4	QC Sample: L	.2347519-01	Client ID:	GD01-MWI
Cyanide, Free	ND	250	92.0	37	Q -	-	80-120	-	20
General Chemistry - Westborou	gh Lab Asso	ciated samp	ole(s): 01-02	QC Batch II	D: WG1816906-4	QC Sample: L	.2347519-01	Client ID:	GD01-MWI
Cyanide, Physiologically Available	23.4	200	210	93	-	-	75-125	-	20
General Chemistry - Westborou	gh Lab Asso	ciated samp	ole(s): 01-02	QC Batch II	D: WG1818404-4	QC Sample: L	.2347578-03	Client ID:	MS Sample
Chloride	340000	20000	340000	0	Q -	-	58-140	-	7

Lab Duplicate Analysis Batch Quality Control

Project Name: COA GW Project Number: 20010210 Lab Number: L2347519 08/23/23

Report Date:

Parameter	Native San	nple I	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-02	QC Batch ID	: WG1816904-3	QC Sample:	L2347519-01	Client ID:	GD01-MWI
Cyanide, Free	ND		ND	ug/l	NC		20
General Chemistry - Westborough Lab	Associated sample(s): 01-02	QC Batch ID	: WG1816906-5	QC Sample:	L2347519-01	Client ID:	GD01-MWI
Cyanide, Physiologically Available	23.4		19.1	ug/l	20		20
General Chemistry - Westborough Lab	Associated sample(s): 01-02	QC Batch ID	: WG1817435-3	QC Sample:	L2347519-01	Client ID:	GD01-MWI
Solids, Total Dissolved	9200000		9200000	ug/l	0		10
General Chemistry - Westborough Lab	Associated sample(s): 01-02	QC Batch ID	: WG1817457-4	QC Sample:	L2347370-02	Client ID:	DUP Sample
Solids, Total Suspended	140000		250000	ug/l	56	Q	32
General Chemistry - Westborough Lab	Associated sample(s): 01-02	QC Batch ID	: WG1818404-3	QC Sample:	L2347578-03	Client ID:	DUP Sample
Chloride	340000		340000	ug/l	0		7



Lab Number: L2347519

Report Date: 08/23/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Project Name:

Cooler Custody Seal

COA GW

A Absent

Project Number: 20010210

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2347519-01A	Plastic 250ml NaOH preserved	Α	>12	>12	2.2	Υ	Absent		SUB-TCN(14),SUB-ACN(14)
L2347519-01B	Plastic 250ml NaOH preserved	Α	>12	>12	2.2	Υ	Absent		PACN-PPB(14)
L2347519-01C	Plastic 500ml unpreserved	Α	7	7	2.2	Υ	Absent		FCN-PPB(1),CL-4500-PPB(28),TDS-2540- PPB(7)
L2347519-01D	Plastic 950ml unpreserved	Α	7	7	2.2	Υ	Absent		TSS-2540-PPB(7)
L2347519-02A	Plastic 250ml NaOH preserved	Α	>12	>12	2.2	Υ	Absent		SUB-TCN(14),SUB-ACN(14)
L2347519-02B	Plastic 250ml NaOH preserved	Α	>12	>12	2.2	Υ	Absent		PACN-PPB(14)
L2347519-02C	Plastic 500ml unpreserved	Α	7	7	2.2	Υ	Absent		FCN-PPB(1),TDS-2540-PPB(7),CL-4500- PPB(28)
L2347519-02D	Plastic 950ml unpreserved	Α	7	7	2.2	Υ	Absent		TSS-2540-PPB(7)



Project Name: COA GW Lab Number: L2347519
Project Number: 20010210 Report Date: 08/23/23

GLOSSARY

Acronyms

EDL

LOD

MS

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.)

 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.

 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.

- 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:COA GWLab Number:L2347519Project Number:20010210Report Date:08/23/23

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, Benzo(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA GWLab Number:L2347519Project Number:20010210Report Date:08/23/23

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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name: COA GW Lab Number: L2347519
Project Number: 20010210 Report Date: 08/23/23

REFERENCES

Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

ALPHA	CH	AIN OF (CUSTO	DY ,	AGE	or	D	ate Re	ec'd ir	n Lat):	8	117	12	3	Al	_PH	A Job#: L234751	9
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193	MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288		oject Informa oject Name:	tion OA GL	N		-	Repor □ FAX	10	orma		- Dat	a Deliv	rerab	les			g Information as Scient info PO#:	
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		AL	PHA Quote #:									1							
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ALPHA Lab ID (Lab Use Only)	Sar	mple ID	Date	Time	Sample Matrix	Sampler's	L	913	4	4	8/10	1/12	0	/		/		(Please specify below) Sample Specific Comments	-
17519-01	GDOI-N	IWI	08/14/23	1335	GW	LEP	X	X	X	×	X	X	久		Г				ч
-02	GD02-1	MWI	08/16/23	1205	Gw	LEP	X	X	X	X	X	X	X						ч
															10				+
30	3/7/23 0245	0245			Conta	iner Type	P	P	P	_	P	P	P					Please print clearly, legibly and	
1_8	11/123 0245	W	est temperature du la company		_	eservative	A	E	E	Ε	A	A	A				Ц	pletely. Samples can not be log in and turnaround time clock wil	II not
		du P	nquished By:	1	08/16/1	7Time 3 1520	2	اناس	Re	Seive S	d By:		,	8	Date	Time 23	15:	start until any ambiguities are re All samples submitted are subje Alpha's Terms and Conditions.	esolve ect to
Page 18 of 30 ct	-07)	Marthan	Disconti	NOC	8/16/	23 200	d	Ini	tho	ny	e	ree	MAU	6 1	202	3 2	100	See reverse side.	



August 23, 2023

Subcontract Reports NB-Alpha Analytical 8 Walkup Drive Westborough, MA 01581

Project Location: L2347519

Project Number: Alpha Analytical - L2347519 Laboratory Work Order Number: 23H2750

Boreem. Cusack

Enclosed are results of analyses for samples received by the laboratory on August 18, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Page 19 of 30



NB-Alpha Analytical 8 Walkup Drive Westborough, MA 01581 ATTN: Subcontract Reports

REPORT DATE: 8/23/2023

ANALYTICAL SUMMARY

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GD01-MWI	23H2750-01	Water		SM4500-CN E-2016	
				SM4500-CN G-2016	
GD02-MWI	23H2750-02	Water		SM4500-CN E-2016	
				SM4500-CN G-2016	



CASE NARRATIVE SUMMARY

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

The results of analyses reported only relate to samples submitted to the Pace Analytical Services, LLC - Newburgh for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Meredith Ruthven

Meredith Ruthven

PM



Project Location: L2347519 Sample Description: Work Order: 23H2750

Date Received: 8/18/2023
Field Sample #: GD01-MWI

Sampled: 8/16/2023 13:35

Sample ID: 23H2750-01
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

								Date	Date/Time	
	Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide (total)		0.047	0.0050	mg/I	1		SM4500-CN E-2016	8/22/23	8/23/23 12:37	ΔR3



Project Location: L2347519 Sample Description: Work Order: 23H2750

Date Received: 8/18/2023

Field Sample #: GD01-MWI

Sampled: 8/16/2023 13:35

Sample ID: 23H2750-01
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Amenable)

							Date	Date/Time	
Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide, Amenable	0.034	0.0050	mg/L	1		SM4500-CN G-2016	8/22/23	8/23/23 12:37	AR3



Project Location: L2347519 Sample Description: Work Order: 23H2750

Date Received: 8/18/2023
Field Sample #: GD02-MWI

Sampled: 8/16/2023 12:05

Sample ID: 23H2750-02
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

								Date	Date/Time	
	Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide (total)		0.070	0.0050	mg/I	1		SM4500-CN E-2016	8/22/23	8/23/23 12:37	ΔR3



Project Location: L2347519 Sample Description: Work Order: 23H2750

Date Received: 8/18/2023

Field Sample #: GD02-MWI

Sampled: 8/16/2023 12:05

Sample ID: 23H2750-02
Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Amenable)

							Date	Date/Time	
Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Cyanide, Amenable	0.060	0.0050	mg/L	1		SM4500-CN G-2016	8/22/23	8/23/23 12:37	AR3



Sample Extraction Data

Prep Method: NB SM4500CN C Analytical Method: SM4500-CN E-2016

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
23H2750-01RE1 [GD01-MWI]	B349872	50.0	50.0	08/22/23
23H2750-02RE1 [GD02-MWI]	B349872	50.0	50.0	08/22/23

Prep Method: [CALC] Analytical Method: SM4500-CN G-2016

Lab Number [Field ID]	Batch	Initial []	Date
23H2750-01 [GD01-MWI]	[CALC]		08/22/23
23H2750-02 [GD02-MWI]	[CALC]		08/22/23



FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.



CERTIFICATIONS

Certified Analyses included in this Report

Analyte Certifications

SM4500-CN E-2016 in Water

Cyanide (total) NB-CT,NB-NJ,NB-NY

Pace Analytical	Pace Analytical Services, LCC operates under the following certifications and accreditations:				
Code	Description	Number	Expires		
NB-CT	Connecticut Department of Public Health	PH-0823	09/30/2024		
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2023		
NB-NY	New York State Department of Health	10142 NELAP	04/1/2024		

Page 28 of 30 Page 10 of 12

					3	ена	I_INO:U823	231	5.56
Form No: AL_subcoc			Lab ID	Refere Additional Comments:	Elliali. Hyakos@aiprik	Phone: 201.812.9037	Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019	Client I	MOTIO Class Chamistry
Relinquished By:		GD01-MWI GD02-MWI	Client ID	Reference following Alpha Job Number on final report/deliverables: L2347519 Additional Comments: Send all results/reports to subreports@alphalab.com : Need 5 ug/L RL		alah com	al Labs Drive MA 01581-1019	Client Information	
By:		08-16-23 13:35 08-16-23 12:05	Collection Date/Time	umber on final report/de subreports@alphalab.c	Project Specific Requirements and/or R	Due Date: 08/23/23 (RUSH)	Project Location: MD Project Manager: Nadine Yakes Turnaround & Deliver		Su Enviro 315 Fu Newbu
A A		WATER	Sample Matrix	om : Need	Requirem	/23/23 (RU	ID Vadine Yak d & Deliv	roject Inf	Subcontract Cl Envirotest 315 Fullerton Avenue Newburgh, NY 12550
Date/Time: 8/17/23 8/17/25 2/240		Amenable Cyanide SM 4500; Total Cyanide EPA 4500 Amenable Cyanide SM 4500; Total Cyanide EPA 4500	Analysis		ents and/or Report Requirements	ISH)	t Location: MD t Manager: Nadine Yakes Turnaround & Deliverables Information	Project Information	Subcontract Chain of Custody irotest Fullerton Avenue wburgh, NY 12550
Received By:		anide EPA 4500 anide EPA 4500		rt to include	nents		State/Federal Program	Regu	
The state of the s	3 H 2 7 5 0	<i>B</i> ²		Report to include Method Blank, LCS/LCSD:			State/Federal Program: Regulatory Criteria:	Regulatory Requirements/Report Limits	23H2150
Date/Time: 8/1/2 17/3			Batch QC	CSD:				its/Report Limits	Alpha Job Numb L2347519 Page 11 of 12
Page 29 of 30			Cch				4		Page 11 of 12

DC#_Title: ENV-FRM-NEWB-0002 Sample Condition Upon Receipt Form

Effective Date: 7/21/2022

Sample Condition Upon Receipt Form (SCUR)

Project # 2	3H2750	Date a	and Initials of person:
Client: AIPh	1a Analytical		ning contents: AR
	14 11/4/2 (100)	Label:_	186
		Deliver	to location: PK
	1. ~	рп	
Thermometer Used: 1894	_ Date: 8 / / 8	Time:	Initials: <u>M</u>
State of Origin:			
Cooler #1 Temp.°C 1.2 (Visual)	2 (Correction Eactor)	(Actual) Ven	nples on ice, cooling process has begun
Courier:	USPS Client Comm	ercial □Pace □ Othe	
Shipping Method: ☐ First Overnight ☐ I	Priority Overnight Standard Ove	rnight Ground	
□ Other			
Tracking #			
Custody Seal on Cooler/Box Present:	Yes No Seals intact	: Yes No Ice: (W	Blue Melted None
Packing Material: Bubble Wrap Bul	oble Bags	ner	
Samples were collected by Pace employee	☐ Yes ☐ No	□ N/A	
	Con	nments:	
Chain of Custody Present	ØYes □ No □ N/A		
Chain of Custody Filled Out			
Relinquished Signature on COC	ØYes □ No □ N/A		
Sampler Name and Signature on COC	ØYes □ No □ N/A		
Samples Arrived within Hold Time	r Yes □ No □ N/A		
Rush TAT requested on COC	✓Yes □ No □ N/A		
Sufficient Volume			
Correct Containers Used	ØÝes □ No □ N/A		
Containers Intact	ØYes □ No □ N/A		
Sample Labels match COC (sample IDs & date	e/time of		
collection) All containers needing acid/base preservation	Yes No N/A	ervation Information:	
been checked.	✓Yes □ No □ N/A Pres	ervative:	
All Containers needing preservation are found compliance with EPA recommendation:		*/Trace #: Time:	
Exceptions: Vials, Microbiology	Later and the second se		
Headspace in VOA Vials? (>6mm):	□Yes □ No □N/A		
Trip Blank Present:	□Yes □ No □N/A		
Additional Login Comments:			
Client notification/ Resolution			
Person Contacted:		Date/Time:	
Comments/Resolution:			



ANALYTICAL REPORT

Lab Number: L2350456

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: CELL 4

Project Number: 20010210

Report Date: 09/07/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: CELL 4
Project Number: 20010210

Lab Number: L2350456 **Report Date:** 09/07/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2350456-01	CELL 4-NORTH	WATER	Not Specified	08/29/23 14:30	08/30/23
L2350456-02	CELL 4-SOUTH	WATER	Not Specified	08/29/23 14:45	08/30/23
L2350456-03	TB-WT-01	WATER	Not Specified	08/29/23 00:00	08/30/23



 Project Name:
 CELL 4
 Lab Number:
 L2350456

 Project Number:
 20010210
 Report Date:
 09/07/23

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:
 CELL 4
 Lab Number:
 L2350456

 Project Number:
 20010210
 Report Date:
 09/07/23

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.

Volatile Organics

L2350456-01D: The sample has elevated detection limits due to the dilution required by the sample matrix (foam).

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:

Title: Technical Director/Representative Date: 09/07/23

Melissa Sturgis Melissa Sturgis

ORGANICS



VOLATILES



Project Name: CELL 4 Lab Number: L2350456

Project Number: 20010210 **Report Date:** 09/07/23

SAMPLE RESULTS

Lab ID: L2350456-01 D Date Collected: 08/29/23 14:30

Client ID: CELL 4-NORTH Date Received: 08/30/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/06/23 17:23

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westk	oorough Lab						
Benzene	7.4		ug/l	2.0	0.64	4	
Toluene	4.3		ug/l	3.0	0.81	4	
Ethylbenzene	0.76	J	ug/l	2.0	0.67	4	
p/m-Xylene	2.1	J	ug/l	4.0	1.3	4	
o-Xylene	2.5	J	ug/l	4.0	1.6	4	
Xylenes, Total	4.6	J	ug/l	4.0	1.3	4	
Naphthalene	ND		ug/l	4.0	0.86	4	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	117	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	110	70-130	



Project Name: CELL 4 Lab Number: L2350456

Project Number: 20010210 **Report Date:** 09/07/23

SAMPLE RESULTS

Lab ID: L2350456-02 Date Collected: 08/29/23 14:45

Client ID: CELL 4-SOUTH Date Received: 08/30/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/06/23 16:58

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Wes	stborough Lab					
Benzene	6.6		ug/l	0.50	0.16	1
Toluene	4.0		ug/l	0.75	0.20	1
Ethylbenzene	0.68		ug/l	0.50	0.17	1
p/m-Xylene	2.2		ug/l	1.0	0.33	1
o-Xylene	2.4		ug/l	1.0	0.39	1
Xylenes, Total	4.6		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	117	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	108	70-130	



Project Name: CELL 4 Lab Number: L2350456

Project Number: 20010210 **Report Date:** 09/07/23

SAMPLE RESULTS

Lab ID: L2350456-03 Date Collected: 08/29/23 00:00

Client ID: TB-WT-01 Date Received: 08/30/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 09/06/23 16:33

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	ND		ug/l	0.50	0.16	1		
Toluene	ND		ug/l	0.75	0.20	1		
Ethylbenzene	ND		ug/l	0.50	0.17	1		
p/m-Xylene	ND		ug/l	1.0	0.33	1		
o-Xylene	ND		ug/l	1.0	0.39	1		
Xylenes, Total	ND		ug/l	1.0	0.33	1		
Naphthalene	ND		ug/l	1.0	0.22	1		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	119	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	112	70-130	



Project Name: CELL 4 Lab Number: L2350456

Project Number: 20010210 **Report Date:** 09/07/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 09/06/23 08:29

Analyst: PID

Parameter	Result Qual	ifier Units	RL	MDL
Volatile Organics by GC/MS - W	estborough Lab for s	ample(s): 01-03	Batch:	WG1824503-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Qual	ifier Criteria
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	98	70-130
Dibromofluoromethane	108	70-130



Lab Control Sample Analysis Batch Quality Control

Project Name: CELL 4
Project Number: 200102

Lab Number:

L2350456

20010210

Report Date: 09/07/23

Parameter	LCS %Recovery	Qual		.CSD ecovery		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	01-03	Batch:	WG1824503-3	WG1824503-4				
Benzene	110			110		70-130	0		20	
Toluene	110			110		70-130	0		20	
Ethylbenzene	110			110		70-130	0		20	
p/m-Xylene	110			110		70-130	0		20	
o-Xylene	110			110		70-130	0		20	
Naphthalene	85			89		70-130	5		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108	108	70-130
Toluene-d8	104	104	70-130
4-Bromofluorobenzene	100	101	70-130
Dibromofluoromethane	101	100	70-130

Serial_No:09072310:28

Project Name: CELL 4 *Lab Number:* L2350456 Project Number: 20010210

Report Date: 09/07/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

me Δnalvsis/*)
me Analysis(*)
PA-8260(14)



Project Name:CELL 4Lab Number:L2350456Project Number:20010210Report Date:09/07/23

GLOSSARY

Acronyms

EDL

LOQ

MS

RPD

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.)

- 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.)

 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.

 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.

- 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.



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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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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



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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.
- 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.)



Serial_No:09072310:28

 Project Name:
 CELL 4
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 Report Date:
 09/07/23

REFERENCES

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.



Serial_No:09072310:28

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

Pre-Qualtrax Document ID: 08-113

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Document Type: Form

ALPHA	CHAIN O	F CUSTODY	PAGEOE	Date Rec'd in L	ab: 8/30/23	ALPHA	A Job#: 123504576
WESTBORO, MA	MANSFIELD, MA	Project Information		Report Inform	nation - Data Deliverable	s Billing	Information
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300	Project Name:		□ FAX	□ EMAIL	☐ Same	as Client info PO#:
Client Informatio	FAX: 508-822-3288	Project Location:		□ ADEx	☐ Add'l Deliverables		
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ANALYTICAL REPORT

Lab Number: L2366542

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q4

Project Number: 20010210

Report Date: 11/15/23

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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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q4
Project Number: 20010210

Lab Number: L2366542 **Report Date:** 11/15/23

Alpha Sample I	D Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2366542	2-01 CO30-PZM015	WATER	Not Specified	11/08/23 10:30	11/08/23
L2366542	2-02 CO196-MWS	WATER	Not Specified	11/08/23 11:25	11/08/23
L2366542	2-03 CO195-MWS	WATER	Not Specified	11/08/23 12:25	11/08/23
L2366542	2-04 CO194-MWS	WATER	Not Specified	11/08/23 13:10	11/08/23
L2366542	2-05 CO198-MWS	WATER	Not Specified	11/08/23 14:10	11/08/23
L2366542	2-06 CO201-MWS	WATER	Not Specified	11/08/23 15:15	11/08/23
L2366542	2-07 TB-WT-01	WATER	Not Specified	11/08/23 00:00	11/08/23



Project Name:COA GW Q4Lab Number:L2366542Project Number:20010210Report Date:11/15/23

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:COA GW Q4Lab Number:L2366542Project Number:20010210Report Date:11/15/23

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.

Volatile Organics

L2366542-04D and -05D: The pH was greater than two; however, the sample was analyzed within the method required holding time.

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.

Cattlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 11/15/23

ORGANICS



VOLATILES



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

SAMPLE RESULTS

Lab ID: L2366542-01 D Date Collected: 11/08/23 10:30

Client ID: CO30-PZM015 Date Received: 11/08/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/13/23 01:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	40000		ug/l	120	40.	250	
Toluene	3000		ug/l	190	51.	250	
Ethylbenzene	72	J	ug/l	120	42.	250	
p/m-Xylene	640		ug/l	250	83.	250	
o-Xylene	280		ug/l	250	98.	250	
Xylenes, Total	920		ug/l	250	83.	250	
Naphthalene	2000		ug/l	250	54.	250	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	107	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	98	70-130	
Dibromofluoromethane	110	70-130	



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

SAMPLE RESULTS

Lab ID: L2366542-02 D Date Collected: 11/08/23 11:25

Client ID: CO196-MWS Date Received: 11/08/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/13/23 01:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	2500		ug/l	10	3.2	20	
Toluene	200		ug/l	15	4.1	20	
Ethylbenzene	6.1	J	ug/l	10	3.3	20	
p/m-Xylene	53		ug/l	20	6.6	20	
o-Xylene	21		ug/l	20	7.8	20	
Xylenes, Total	74		ug/l	20	6.6	20	
Naphthalene	320		ug/l	20	4.3	20	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	96	70-130	



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

SAMPLE RESULTS

Lab ID: L2366542-03 D Date Collected: 11/08/23 12:25

Client ID: CO195-MWS Date Received: 11/08/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/12/23 14:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	30000		ug/l	120	40.	250	
Toluene	2700		ug/l	190	51.	250	
Ethylbenzene	55	J	ug/l	120	42.	250	
p/m-Xylene	500		ug/l	250	83.	250	
o-Xylene	200	J	ug/l	250	98.	250	
Xylenes, Total	700	J	ug/l	250	83.	250	
Naphthalene	2000		ug/l	250	54.	250	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	95	70-130	



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

SAMPLE RESULTS

Lab ID: L2366542-04 D Date Collected: 11/08/23 13:10

Client ID: CO194-MWS Date Received: 11/08/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/12/23 13:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	98		ug/l	1.2	0.40	2.5		
Toluene	19		ug/l	1.9	0.51	2.5		
Ethylbenzene	0.79	J	ug/l	1.2	0.42	2.5		
p/m-Xylene	6.5		ug/l	2.5	0.83	2.5		
o-Xylene	3.1		ug/l	2.5	0.98	2.5		
Xylenes, Total	9.6		ug/l	2.5	0.83	2.5		
Naphthalene	470		ug/l	2.5	0.54	2.5		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	109	70-130	



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

SAMPLE RESULTS

Lab ID: L2366542-05 D Date Collected: 11/08/23 14:10

Client ID: CO198-MWS Date Received: 11/08/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/12/23 14:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	310		ug/l	10	3.2	20		
Toluene	79		ug/l	15	4.1	20		
Ethylbenzene	ND		ug/l	10	3.3	20		
p/m-Xylene	23		ug/l	20	6.6	20		
o-Xylene	11	J	ug/l	20	7.8	20		
Xylenes, Total	34	J	ug/l	20	6.6	20		
Naphthalene	1900		ug/l	20	4.3	20		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	95	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

SAMPLE RESULTS

Lab ID: L2366542-06 D Date Collected: 11/08/23 15:15

Client ID: CO201-MWS Date Received: 11/08/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/12/23 13:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	330		ug/l	2.0	0.64	4	
Toluene	6.9		ug/l	3.0	0.81	4	
Ethylbenzene	0.94	J	ug/l	2.0	0.67	4	
p/m-Xylene	7.6		ug/l	4.0	1.3	4	
o-Xylene	3.6	J	ug/l	4.0	1.6	4	
Xylenes, Total	11	J	ug/l	4.0	1.3	4	
Naphthalene	44		ug/l	4.0	0.86	4	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	92	70-130	
Toluene-d8	105	70-130	
4-Bromofluorobenzene	93	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

SAMPLE RESULTS

Lab ID: L2366542-07 Date Collected: 11/08/23 00:00

Client ID: TB-WT-01 Date Received: 11/08/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/12/23 13:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westborough Lab							
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	89	70-130	
Toluene-d8	98	70-130	
4-Bromofluorobenzene	110	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 11/12/23 07:09

Analyst: PID

Parameter	Result Qu	alifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for	sample(s): 03-07	Batch:	WG1852343-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualifi	er Criteria				
1,2-Dichloroethane-d4	90	70-130				
Toluene-d8	100	70-130				
4-Bromofluorobenzene	102	70-130				
Dibromofluoromethane	97	70-130				



Project Name: COA GW Q4 Lab Number: L2366542

Project Number: 20010210 **Report Date:** 11/15/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 11/12/23 17:59

Parameter	Result Q	ualifier Units	RL	MDL	
olatile Organics by Go	C/MS - Westborough Lab fo	or sample(s):	01-02 Batch:	WG1852507-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

		Acceptance	
Surrogate	%Recovery Qualit	ier Criteria	
1,2-Dichloroethane-d4	93	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	98	70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number: 20010210

Lab Number:

L2366542

Report Date:

11/15/23

Parameter	LCS %Recovery	Qual	LCSD %Recove		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	03-07 Batcl	n: WG1852343-3	3 WG1852343-4				
Benzene	100		95		70-130	5		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		100		70-130	0		20	
p/m-Xylene	95		100		70-130	5		20	
o-Xylene	95		100		70-130	5		20	
Naphthalene	100		100		70-130	0		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101	91	70-130
Toluene-d8	93	102	70-130
4-Bromofluorobenzene	97	99	70-130
Dibromofluoromethane	114	95	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number:

20010210

Lab Number:

L2366542

Report Date:

11/15/23

Parameter	LCS %Recovery	Qual	LCSD %Recove		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough I	•	sample(s):	01-02 Batch	n: WG1852507-3	WG1852507-4				
Benzene	95		92		70-130	3		20	
Toluene	100		100		70-130	0		20	
Ethylbenzene	100		97		70-130	3		20	
p/m-Xylene	100		100		70-130	0		20	
o-Xylene	100		95		70-130	5		20	
Naphthalene	100		98		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91	92	70-130
Toluene-d8	101	101	70-130
4-Bromofluorobenzene	105	98	70-130
Dibromofluoromethane	94	94	70-130

 Project Name:
 COA GW Q4

 Project Number:
 20010210

 Report Date:
 11/15/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2366542-01A	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-01B	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-01C	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-02A	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-02B	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-02C	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-03A	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-03B	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-03C	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-04A	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-04B	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-04C	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-05A	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-05B	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-05C	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-06A	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-06B	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-06C	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-07A	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-07B	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-07C	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)
L2366542-07D	Vial HCl preserved	Α	NA		3.2	Υ	Absent		PA-8260(14)



Project Name: COA GW Q4 Lab Number: L2366542
Project Number: 20010210 Report Date: 11/15/23

GLOSSARY

Acronyms

LOQ

MS

RL

RPD

SRM

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.)

 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.

 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.

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.

- 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.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.



Project Name:COA GW Q4Lab Number:L2366542Project Number:20010210Report Date:11/15/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GW Q4Lab Number:L2366542Project Number:20010210Report Date:11/15/23

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.
- 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:COA GW Q4Lab Number:L2366542Project Number:20010210Report Date:11/15/23

REFERENCES

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.



Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 20

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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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

Ethyltoluene

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 II, Endosulfan III, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

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ANALYTICAL REPORT

Lab Number: L2367423

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q4

Project Number: 20010210

Report Date: 11/20/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q4 **Project Number:** 20010210

Lab Number: L2367423 **Report Date:** 11/20/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2367423-01	C027-PZM012	WATER	Not Specified	11/13/23 14:50	11/13/23
L2367423-02	TB-WT-001	WATER	Not Specified	11/13/23 00:00	11/13/23



Serial No:11202311:33

Project Name:COA GW Q4Lab Number:L2367423Project Number:20010210Report Date:11/20/23

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:
 COA GW Q4
 Lab Number:
 L2367423

 Project Number:
 20010210
 Report Date:
 11/20/23

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.

Cattlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 11/20/23

ORGANICS



VOLATILES



Project Name: COA GW Q4 Lab Number: L2367423

Project Number: 20010210 **Report Date:** 11/20/23

SAMPLE RESULTS

Lab ID: L2367423-01 D Date Collected: 11/13/23 14:50

Client ID: C027-PZM012 Date Received: 11/13/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/18/23 02:30

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - V	Westborough Lab					
Benzene	13000	ug/l	50	16.	100	
Toluene	4900	ug/l	75	20.	100	
Ethylbenzene	170	ug/l	50	17.	100	
p/m-Xylene	1000	ug/l	100	33.	100	
o-Xylene	420	ug/l	100	39.	100	
Xylenes, Total	1400	ug/l	100	33.	100	
Naphthalene	1100	ug/l	100	22.	100	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	94	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	94	70-130	



Project Name: COA GW Q4 Lab Number: L2367423

Project Number: 20010210 **Report Date:** 11/20/23

SAMPLE RESULTS

Lab ID: L2367423-02 Date Collected: 11/13/23 00:00

Client ID: TB-WT-001 Date Received: 11/13/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/18/23 02:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbor	ough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	96	70-130	



Project Name: COA GW Q4 Lab Number: L2367423

Project Number: 20010210 **Report Date:** 11/20/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 1,8260D 11/17/23 21:16

Analyst: TMS

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for s	sample(s): 01-02	Batch:	WG1854568-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance							
Surrogate	%Recovery Qualit	ier Criteria	_					
1,2-Dichloroethane-d4	92	70-130						
Toluene-d8	100	70-130						
4-Bromofluorobenzene	101	70-130						
Dibromofluoromethane	95	70-130						



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number:

20010210

Lab Number: L2367423

Report Date:

11/20/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	RPD imits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-02 Batch:	WG1854568-3	WG1854568-4		
Benzene	95		95		70-130	0	20
Toluene	100		100		70-130	0	20
Ethylbenzene	100		100		70-130	0	20
p/m-Xylene	100		100		70-130	0	20
o-Xylene	100		95		70-130	5	20
Naphthalene	100		100		70-130	0	20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91	93	70-130
Toluene-d8	103	102	70-130
4-Bromofluorobenzene	101	100	70-130
Dibromofluoromethane	92	93	70-130

Lab Number: L2367423

Report Date: 11/20/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

COA GW Q4

Cooler Information

Project Name:

Cooler Custody Seal

A Absent

Project Number: 20010210

Container Info	Container Information				Temp			Frozen			
Container ID	Container Type		pН	pН	deg C Pres		Seal	Date/Time	Analysis(*)		
L2367423-01A	Vial HCl preserved	Α	NA		2.8	Υ	Absent		PA-8260(14)		
L2367423-01B	Vial HCl preserved	Α	NA		2.8	Υ	Absent		PA-8260(14)		
L2367423-01C	Vial HCl preserved	Α	NA		2.8	Υ	Absent		PA-8260(14)		
L2367423-02A	Vial HCl preserved	Α	NA		2.8	Υ	Absent		PA-8260(14)		
L2367423-02B	Vial HCl preserved	Α	NA		2.8	Υ	Absent		PA-8260(14)		
L2367423-02C	Vial HCl preserved	Α	NA		2.8	Υ	Absent		PA-8260(14)		
L2367423-02D	Vial HCl preserved	Α	NA		2.8	Υ	Absent		PA-8260(14)		



Project Name: COA GW Q4 Lab Number: L2367423
Project Number: 20010210 Report Date: 11/20/23

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.)

from dilutions, concentrations of 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.



Project Name:COA GW Q4Lab Number:L2367423Project Number:20010210Report Date:11/20/23

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 buts

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, Benzo(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GW Q4Lab Number:L2367423Project Number:20010210Report Date:11/20/23

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.
- 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:COA GW Q4Lab Number:L2367423Project Number:20010210Report Date:11/20/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

Page 1 of 1

Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2367720

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q4

Project Number: 20010210

Report Date: 11/27/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



 Project Name:
 COA GW Q4
 Lab Number:
 L2367720

 Project Number:
 20010210
 Report Date:
 11/27/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2367720-01	C027-PZM046	WATER	Not Specified	11/14/23 10:20	11/14/23
L2367720-02	C041-PZM036	WATER	Not Specified	11/14/23 11:25	11/14/23
L2367720-03	C041-PZM001	WATER	Not Specified	11/14/23 12:05	11/14/23
L2367720-04	C058-PZM001	WATER	Not Specified	11/14/23 13:05	11/14/23
L2367720-05	TB-WT-01	WATER	Not Specified	11/14/23 00:00	11/14/23



Project Name:COA GW Q4Lab Number:L2367720Project Number:20010210Report Date:11/27/23

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:COA GW Q4Lab Number:L2367720Project Number:20010210Report Date:11/27/23

Case Narrative (continued)

Report Submission

November 27, 2023: This final report includes the results of all requested analyses.

November 21, 2023: This is a preliminary report.

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:

Title: Technical Director/Representative Date: 11/27/23

Custen Walker Cristin Walker

ORGANICS



VOLATILES



Project Name: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2367720-01 D Date Collected: 11/14/23 10:20

Client ID: C027-PZM046 Date Received: 11/14/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/19/23 20:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	50000		ug/l	250	80.	500			
Toluene	5000		ug/l	380	100	500			
Ethylbenzene	260		ug/l	250	84.	500			
p/m-Xylene	1100		ug/l	500	170	500			
o-Xylene	520		ug/l	500	200	500			
Xylenes, Total	1600		ug/l	500	170	500			
Naphthalene	1000		ug/l	500	110	500			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	89	70-130	
4-Bromofluorobenzene	93	70-130	
Dibromofluoromethane	94	70-130	



Project Name: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2367720-02 D Date Collected: 11/14/23 11:25

Client ID: C041-PZM036 Date Received: 11/14/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/19/23 20:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	180000		ug/l	500	160	1000			
Toluene	57000		ug/l	750	200	1000			
Ethylbenzene	520		ug/l	500	170	1000			
p/m-Xylene	7700		ug/l	1000	330	1000			
o-Xylene	2300		ug/l	1000	390	1000			
Xylenes, Total	10000		ug/l	1000	330	1000			
Naphthalene	390	J	ua/l	1000	220	1000			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	88	70-130	
4-Bromofluorobenzene	93	70-130	
Dibromofluoromethane	92	70-130	



Project Name: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2367720-03 D Date Collected: 11/14/23 12:05

Client ID: C041-PZM001 Date Received: 11/14/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/22/23 17:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Westborough Lab									
Benzene	11000		ug/l	50	16.	100			
Toluene	3200		ug/l	75	20.	100			
Ethylbenzene	130		ug/l	50	17.	100			
p/m-Xylene	1100		ug/l	100	33.	100			
o-Xylene	160		ug/l	100	39.	100			
Xylenes, Total	1300		ug/l	100	33.	100			
Naphthalene	49	J	ug/l	100	22.	100			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	89	70-130	
4-Bromofluorobenzene	110	70-130	
Dibromofluoromethane	91	70-130	



Project Name: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2367720-04 D Date Collected: 11/14/23 13:05

Client ID: C058-PZM001 Date Received: 11/14/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/19/23 19:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	70		ug/l	2.5	0.80	5	
Toluene	21		ug/l	3.8	1.0	5	
Ethylbenzene	2.8		ug/l	2.5	0.84	5	
p/m-Xylene	31		ug/l	5.0	1.7	5	
o-Xylene	13		ug/l	5.0	2.0	5	
Xylenes, Total	44		ug/l	5.0	1.7	5	
Naphthalene	380		ug/l	5.0	1.1	5	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	109	70-130	
Toluene-d8	88	70-130	
4-Bromofluorobenzene	90	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2367720-05 Date Collected: 11/14/23 00:00

Client ID: TB-WT-01 Date Received: 11/14/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/22/23 17:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Volatile Organics by GC/MS - Westborough Lab								
Benzene	ND		ug/l	0.50	0.16	1		
Toluene	ND		ug/l	0.75	0.20	1		
Ethylbenzene	ND		ug/l	0.50	0.17	1		
p/m-Xylene	ND		ug/l	1.0	0.33	1		
o-Xylene	ND		ug/l	1.0	0.39	1		
Xylenes, Total	ND		ug/l	1.0	0.33	1		
Naphthalene	0.33	J	ug/l	1.0	0.22	1		

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	115	70-130	
Toluene-d8	90	70-130	
4-Bromofluorobenzene	111	70-130	
Dibromofluoromethane	103	70-130	



Project Name: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 **Report Date:** 11/27/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 1,8260D 11/19/23 12:24

Analyst: MJV

arameter	Result Qu	alifier Units	RL	MDL
olatile Organics by GC/MS - Wes	tborough Lab for	sample(s): 01	-02,04 Batch:	WG1855042-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualif	ier Criteria				
1,2-Dichloroethane-d4	110	70-130				
Toluene-d8	88	70-130				
4-Bromofluorobenzene	91	70-130				
Dibromofluoromethane	99	70-130				



Project Name: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 **Report Date:** 11/27/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 11/22/23 08:44

arameter	Result Qual	ifier Units	RL	MDL
olatile Organics by GC/M	1S - Westborough Lab for s	ample(s): 03,05	Batch:	WG1856160-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Quali	fier Criteria
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	89	70-130
4-Bromofluorobenzene	111	70-130
Dibromofluoromethane	104	70-130



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number: 20010210

Lab Number: L2367720

Report Date: 11/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Limits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-02,04 Batch:	WG1855042	2-3 WG1855042	-4	
Benzene	87		85		70-130	2	20
Toluene	87		84		70-130	4	20
Ethylbenzene	86		84		70-130	2	20
p/m-Xylene	80		80		70-130	0	20
o-Xylene	85		80	70-130		6	20
Naphthalene	71		72		70-130	1	20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104	107	70-130
Toluene-d8	89	90	70-130
4-Bromofluorobenzene	91	93	70-130
Dibromofluoromethane	95	94	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4 **Project Number:**

20010210

Lab Number: L2367720

Report Date:

11/27/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery		%Recovery Limits	RPD	Qual	RPD Limits	
olatile Organics by GC/MS - Westborough	h Lab Associated sar	mple(s):	03,05 Batch:	WG1856160-3	WG1856160-4				
Benzene	100		100		70-130	0		20	
Toluene	87		88		70-130	1		20	
Ethylbenzene	88		88		70-130	0		20	
p/m-Xylene	80		80		70-130	0		20	
o-Xylene	80		80		70-130	0		20	
Naphthalene	73		73		70-130	0		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114	114	70-130
Toluene-d8	91	91	70-130
4-Bromofluorobenzene	96	98	70-130
Dibromofluoromethane	96	97	70-130

Lab Number: L2367720

Report Date: 11/27/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

COA GW Q4

Cooler Information

Project Name:

Cooler Custody Seal

A Absent

Project Number: 20010210

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2367720-01A	Vial HCI preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-01B	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-01C	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-02A	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-02B	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-02C	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-03A	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-03B	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-03C	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-04A	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-04B	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-04C	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-05A	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-05B	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-05C	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)
L2367720-05D	Vial HCl preserved	Α	NA		4.7	Υ	Absent		PA-8260(14)



Project Name:COA GW Q4Lab Number:L2367720Project Number:20010210Report Date:11/27/23

GLOSSARY

Acronyms

LCSD

LOD

LOQ

MS

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)

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).

Laboratory Control Sample Duplicate: Refer to LCS.

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.

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.

 - 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.)

 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.

- 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.



Project Name:COA GW Q4Lab Number:L2367720Project Number:20010210Report Date:11/27/23

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

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GW Q4Lab Number:L2367720Project Number:20010210Report Date:11/27/23

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.
- 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: COA GW Q4 Lab Number: L2367720

Project Number: 20010210 Report Date: 11/27/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

Serial_No:11272315:51

ID No.:17873 Revision 20

Published Date: 6/16/2023 4:52:28 PM

Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2367983

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q4

Project Number: 20010210

Report Date: 11/22/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q4
Project Number: 20010210

Lab Number: L2367983 **Report Date:** 11/22/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2367983-01	C056-PZP001	WATER	Not Specified	11/15/23 11:00	11/15/23
L2367983-02	C026-PZM007	WATER	Not Specified	11/15/23 12:05	11/15/23
L2367983-03	C023-PZM008	WATER	Not Specified	11/15/23 13:25	11/15/23
L2367983-04	C024-PZM007	WATER	Not Specified	11/15/23 14:50	11/15/23
L2367983-05	TB-WT-01	WATER	Not Specified	11/15/23 00:00	11/15/23



Project Name:COA GW Q4Lab Number:L2367983Project Number:20010210Report Date:11/22/23

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:
 COA GW Q4
 Lab Number:
 L2367983

 Project Number:
 20010210
 Report Date:
 11/22/23

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 project information was specified by the client.

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:

Title: Technical Director/Representative Date: 11/22/23

Melissa Sturgis Melissa Sturgis

ORGANICS



VOLATILES



Project Name: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 **Report Date:** 11/22/23

SAMPLE RESULTS

Lab ID: L2367983-01 D Date Collected: 11/15/23 11:00

Client ID: C056-PZP001 Date Received: 11/15/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/19/23 17:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - W	estborough Lab						
Benzene	230		ug/l	10	3.2	20	
Toluene	76		ug/l	15	4.1	20	
Ethylbenzene	7.5	J	ug/l	10	3.3	20	
p/m-Xylene	120		ug/l	20	6.6	20	
o-Xylene	45		ug/l	20	7.8	20	
Xylenes, Total	170		ug/l	20	6.6	20	
Naphthalene	1900		ug/l	20	4.3	20	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	110		70-130	
Toluene-d8	88		70-130	
4-Bromofluorobenzene	88		70-130	
Dibromofluoromethane	97		70-130	



Project Name: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 **Report Date:** 11/22/23

SAMPLE RESULTS

Lab ID: L2367983-02 D Date Collected: 11/15/23 12:05

Client ID: C026-PZM007 Date Received: 11/15/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/19/23 18:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS -	Westborough Lab					
Benzene	240		ug/l	2.5	0.80	5
Toluene	100		ug/l	3.8	1.0	5
Ethylbenzene	4.4		ug/l	2.5	0.84	5
p/m-Xylene	65		ug/l	5.0	1.7	5
o-Xylene	28		ug/l	5.0	2.0	5
Xylenes, Total	93		ug/l	5.0	1.7	5
Naphthalene	660		ug/l	5.0	1.1	5

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	107	70-130	
Toluene-d8	88	70-130	
4-Bromofluorobenzene	87	70-130	
Dibromofluoromethane	93	70-130	



Project Name: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 **Report Date:** 11/22/23

SAMPLE RESULTS

Lab ID: L2367983-03 D Date Collected: 11/15/23 13:25

Client ID: C023-PZM008 Date Received: 11/15/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/19/23 18:09

Parameter	Result	Qualifier Ur	its RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Wes	Volatile Organics by GC/MS - Westborough Lab							
Benzene	320	uç	g/l 10	3.2	20			
Toluene	150	uç	g/l 15	4.1	20			
Ethylbenzene	16	uç	g/l 10	3.3	20			
p/m-Xylene	190	uç	g/l 20	6.6	20			
o-Xylene	75	uç	g/l 20	7.8	20			
Xylenes, Total	270	uç	g/l 20	6.6	20			
Naphthalene	2600	uç	g/l 20	4.3	20			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	111	70-130	
Toluene-d8	88	70-130	
4-Bromofluorobenzene	90	70-130	
Dibromofluoromethane	97	70-130	



Project Name: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 **Report Date:** 11/22/23

SAMPLE RESULTS

Lab ID: L2367983-04 D Date Collected: 11/15/23 14:50

Client ID: C024-PZM007 Date Received: 11/15/23 Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/21/23 10:26

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	stborough Lab						
Benzene	7.7		ug/l	5.0	1.6	10	
Toluene	5.6	J	ug/l	7.5	2.0	10	
Ethylbenzene	7.0		ug/l	5.0	1.7	10	
p/m-Xylene	14		ug/l	10	3.3	10	
o-Xylene	ND		ug/l	10	3.9	10	
Xylenes, Total	14		ug/l	10	3.3	10	
Naphthalene	2000		ug/l	10	2.2	10	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	96	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	101	70-130	
Dibromofluoromethane	106	70-130	



Project Name: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 **Report Date:** 11/22/23

SAMPLE RESULTS

Lab ID: L2367983-05 Date Collected: 11/15/23 00:00

Client ID: TB-WT-01 Date Received: 11/15/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/19/23 16:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbo	orough Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	110	70-130	
Toluene-d8	87	70-130	
4-Bromofluorobenzene	91	70-130	
Dibromofluoromethane	98	70-130	



Project Name: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 **Report Date:** 11/22/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 1,8260D 11/19/23 12:24

Analyst: MJV

Parameter	Result Q	ualifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab fo	r sample(s):	01-03,05 Batch:	WG1855042-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Qual	ifier Criteria
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	88	70-130
4-Bromofluorobenzene	91	70-130
Dibromofluoromethane	99	70-130



Project Name: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 **Report Date:** 11/22/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 11/21/23 08:15

Parameter	Result Qua	lifier Units	RL	MDL	
olatile Organics by GC/MS -	Westborough Lab for s	sample(s): 04	Batch:	WG1855188-5	
Benzene	ND	ug/l	0.50	0.16	
Toluene	ND	ug/l	0.75	0.20	
Ethylbenzene	ND	ug/l	0.50	0.17	
p/m-Xylene	ND	ug/l	1.0	0.33	
o-Xylene	ND	ug/l	1.0	0.39	
Xylenes, Total	ND	ug/l	1.0	0.33	
Naphthalene	ND	ug/l	1.0	0.22	

	Acceptance						
Surrogate	%Recovery Quali	fier Criteria					
1,2-Dichloroethane-d4	99	70-130					
Toluene-d8	97	70-130					
4-Bromofluorobenzene	103	70-130					
Dibromofluoromethane	106	70-130					



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number: 20010210

Lab Number:

L2367983

Report Date:

11/22/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD .imits
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-03,05 Batch:	WG1855042	2-3 WG1855042	-4	
Benzene	87		85		70-130	2	20
Toluene	87		84		70-130	4	20
Ethylbenzene	86		84		70-130	2	20
p/m-Xylene	80		80		70-130	0	20
o-Xylene	85		80		70-130	6	20
Naphthalene	71		72		70-130	1	20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104	107	70-130
Toluene-d8	89	90	70-130
4-Bromofluorobenzene	91	93	70-130
Dibromofluoromethane	95	94	70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Lab Number:

L2367983

Project Number: 20010210

Report Date:

1	1	/22/	23

<u>Par</u>	ameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Vol	atile Organics by GC/MS - Westborough La	ab Associated	sample(s): 04	Batch: WG	1855188-3	WG1855188-4				
	Benzene	100		100		70-130	0		20	
	Toluene	100		100		70-130	0		20	
	Ethylbenzene	100		100		70-130	0		20	
	p/m-Xylene	105		105		70-130	0		20	
	o-Xylene	105		105		70-130	0		20	
	Naphthalene	85		90		70-130	6		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria	
	70110001019 4444	, or too every quar		_
1,2-Dichloroethane-d4	95	94	70-130	
Toluene-d8	102	100	70-130	
4-Bromofluorobenzene	102	102	70-130	
Dibromofluoromethane	100	101	70-130	

Lab Number: L2367983

Report Date: 11/22/23

Project Name: COA GW Q4 **Project Number:** 20010210

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2367983-01A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-01B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-01C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-02A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-02B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-02C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-03A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-03B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-03C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-04A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-04B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-04C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-05A	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-05B	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-05C	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)
L2367983-05D	Vial HCl preserved	Α	NA		3.3	Υ	Absent		PA-8260(14)



Project Name:COA GW Q4Lab Number:L2367983Project Number:20010210Report Date:11/22/23

GLOSSARY

Acronyms

LOQ

MS

RPD

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)

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 Microsystection (SPME)

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.)

- 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.

 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.

- 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.



Project Name:COA GW Q4Lab Number:L2367983Project Number:20010210Report Date:11/22/23

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GW Q4Lab Number:L2367983Project Number:20010210Report Date:11/22/23

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.
- 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: COA GW Q4 Lab Number: L2367983

Project Number: 20010210 Report Date: 11/22/23

REFERENCES

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.



Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

_ ID No.:**17873** Revision 20

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Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

Ethyltoluene

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 II, 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, SM9221E, 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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

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ANALYTICAL REPORT

Lab Number: L2368449

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q4

Project Number: 20010210

Report Date: 11/27/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q4
Project Number: 20010210

Lab Number: L2368449 **Report Date:** 11/27/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2368449-01	C055-PZM000	WATER	Not Specified	11/16/23 14:50	11/16/23
L2368449-02	CO59-PZP002	WATER	Not Specified	11/16/23 13:25	11/16/23
L2368449-03	C057-PZP002	WATER	Not Specified	11/16/23 14:25	11/16/23
L2368449-04	TB-WT-01	WATER	Not Specified	11/16/23 00:00	11/16/23



Project Name:COA GW Q4Lab Number:L2368449Project Number:20010210Report Date:11/27/23

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:
 COA GW Q4
 Lab Number:
 L2368449

 Project Number:
 20010210
 Report Date:
 11/27/23

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.

Volatile Organics

L2368449-01: The pH was greater than two; however, the sample was analyzed within the method required holding time.

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.

Jufani Morrissey-Tiffani Morrissey

Authorized Signature:

Title: Technical Director/Representative Date: 11/27/23

ORGANICS



VOLATILES



Project Name: COA GW Q4 Lab Number: L2368449

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2368449-01 Date Collected: 11/16/23 14:50

Client ID: C055-PZM000 Date Received: 11/16/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/22/23 17:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westl	oorough Lab						
Benzene	48		ug/l	0.50	0.16	1	
Toluene	16		ug/l	0.75	0.20	1	
Ethylbenzene	1.1		ug/l	0.50	0.17	1	
p/m-Xylene	11		ug/l	1.0	0.33	1	
o-Xylene	5.4		ug/l	1.0	0.39	1	
Xylenes, Total	16		ug/l	1.0	0.33	1	
Naphthalene	130		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	109	70-130	
Toluene-d8	89	70-130	
4-Bromofluorobenzene	104	70-130	
Dibromofluoromethane	96	70-130	



Project Name: Lab Number: COA GW Q4 L2368449

Project Number: Report Date: 20010210 11/27/23

SAMPLE RESULTS

Date Collected: 11/16/23 13:25

Lab ID: L2368449-02 Client ID: Date Received: 11/16/23 CO59-PZP002 Field Prep: Sample Location: Not Specified Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 11/22/23 16:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - West	borough Lab						
Benzene	5.9		ug/l	0.50	0.16	1	
Toluene	1.2		ug/l	0.75	0.20	1	
Ethylbenzene	0.46	J	ug/l	0.50	0.17	1	
p/m-Xylene	3.4		ug/l	1.0	0.33	1	
o-Xylene	2.0		ug/l	1.0	0.39	1	
Xylenes, Total	5.4		ug/l	1.0	0.33	1	
Naphthalene	24		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	114	70-130	
Toluene-d8	89	70-130	
4-Bromofluorobenzene	106	70-130	
Dibromofluoromethane	102	70-130	



Project Name: COA GW Q4 Lab Number: L2368449

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2368449-03 Date Collected: 11/16/23 14:25

Client ID: C057-PZP002 Date Received: 11/16/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/22/23 16:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - West	borough Lab						
Benzene	0.32	J	ug/l	0.50	0.16	1	
Toluene	0.25	J	ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	115	70-130	
Toluene-d8	87	70-130	
4-Bromofluorobenzene	109	70-130	
Dibromofluoromethane	104	70-130	



Project Name: COA GW Q4 Lab Number: L2368449

Project Number: 20010210 **Report Date:** 11/27/23

SAMPLE RESULTS

Lab ID: L2368449-04 Date Collected: 11/16/23 00:00

Client ID: TB-WT-01 Date Received: 11/16/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/22/23 15:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	tborough Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ug/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	114	70-130	
Toluene-d8	90	70-130	
4-Bromofluorobenzene	111	70-130	
Dibromofluoromethane	103	70-130	



Project Name: COA GW Q4 Lab Number: L2368449

Project Number: 20010210 **Report Date:** 11/27/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 11/22/23 08:44

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - W	estborough Lab for s	sample(s): 01-04	Batch:	WG1856160-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

	Acceptance					
Surrogate	%Recovery Qualit	ier Criteria				
1,2-Dichloroethane-d4	111	70-130				
Toluene-d8	89	70-130				
4-Bromofluorobenzene	111	70-130				
Dibromofluoromethane	104	70-130				



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number: 20010210

Lab Number:

L2368449

Report Date:

11/27/23

Parameter	LCS %Recovery	Qual	LCSI %Reco		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough La	ab Associated	sample(s):	01-04 Bat	ch: WG18561	60-3 WG1856160-4				
Benzene	100		100		70-130	0		20	
Toluene	87		88		70-130	1		20	
Ethylbenzene	88		88		70-130	0		20	
p/m-Xylene	80		80		70-130	0		20	
o-Xylene	80		80		70-130	0		20	
Naphthalene	73		73		70-130	0		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114	114	70-130
Toluene-d8	91	91	70-130
4-Bromofluorobenzene	96	98	70-130
Dibromofluoromethane	96	97	70-130

Lab Number: L2368449

Report Date: 11/27/23

Sample Receipt and Container Information

Were project specific reporting limits specified?

COA GW Q4

Cooler Information

Project Name:

Cooler Custody Seal

A Absent

Project Number: 20010210

Container Information			Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2368449-01A	Vial HCI preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-01B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-01C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-02A	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-02B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-02C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-03A	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-03B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-03C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-04A	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-04B	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-04C	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)
L2368449-04D	Vial HCl preserved	Α	NA		4.2	Υ	Absent		PA-8260(14)



Project Name: COA GW Q4 Lab Number: L2368449

Project Number: 20010210 Report Date: 11/27/23

GLOSSARY

Acronyms

EDL

EMPC

LOQ

MS

RPD

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.)

- 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).

 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.)

- 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.

 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.

- 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.



Project Name:COA GW Q4Lab Number:L2368449Project Number:20010210Report Date:11/27/23

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

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, Benza(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Serial_No:11272315:13

Project Name:COA GW Q4Lab Number:L2368449Project Number:20010210Report Date:11/27/23

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.)

Report Format: DU Report with 'J' Qualifiers



Serial_No:11272315:13

Project Name: COA GW Q4 Lab Number: L2368449
Project Number: 20010210 Report Date: 11/27/23

REFERENCES

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.



Serial_No:11272315:13

Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Page 1 of 1

Revision 20 Published Date: 6/16/2023 4:52:28 PM

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

Ethyltoluene

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 II, Endosulfan III, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

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ANALYTICAL REPORT

Lab Number: L2369061

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA Q4 GW 2023

Project Number: Not Specified 11/29/23

Report Date:

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA Q4 GW 2023

Project Number: Not Specified

Lab Number: L2369061 **Report Date:** 11/29/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2369061-01	C042-PZM004	WATER	Not Specified	11/20/23 12:25	11/20/23
L2369061-02	C037-PZM003	WATER	Not Specified	11/20/23 13:20	11/20/23
L2369061-03	C037-PZM038	WATER	Not Specified	11/20/23 14:35	11/20/23
L2369061-04	TB-WT-01	WATER	Not Specified	11/20/23 00:00	11/20/23



Project Name:COA Q4 GW 2023Lab Number:L2369061Project Number:Not SpecifiedReport Date:11/29/23

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:COA Q4 GW 2023Lab Number:L2369061Project Number:Not SpecifiedReport Date:11/29/23

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.

Volatile Organics

L2369061-02D: The pH was greater than two; however, the sample was analyzed within the method required holding time.

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.

Cattlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 11/29/23

ORGANICS



VOLATILES



L2369061

Project Name: COA Q4 GW 2023

Project Number: Not Specified

SAMPLE RESULTS

Report Date: 11/29/23

Lab Number:

Lab ID: L2369061-01 D

Client ID: C042-PZM004 Sample Location: Not Specified

Date Collected: 11/20/23 12:25

Date Received: 11/20/23 Field Prep: Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 11/27/23 18:35

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - \	Westborough Lab						
Benzene	580		ug/l	2.5	0.80	5	
Toluene	190		ug/l	3.8	1.0	5	
Ethylbenzene	56		ug/l	2.5	0.84	5	
p/m-Xylene	140		ug/l	5.0	1.7	5	
o-Xylene	150		ug/l	5.0	2.0	5	
Xylenes, Total	290		ug/l	5.0	1.7	5	
Naphthalene	170		ug/l	5.0	1.1	5	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	95	70-130	



L2369061

Project Name: COA Q4 GW 2023 Lab Number:

Project Number: Not Specified Report Date: 11/29/23

SAMPLE RESULTS

Lab ID: L2369061-02 D Date Collected: 11/20/23 13:20

Client ID: C037-PZM003 Date Received: 11/20/23
Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/27/23 19:01

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - V	Vestborough Lab					
Benzene	4200		ug/l	20	6.4	40
Toluene	1200		ug/l	30	8.1	40
Ethylbenzene	25		ug/l	20	6.7	40
p/m-Xylene	230		ug/l	40	13.	40
o-Xylene	110		ug/l	40	16.	40
Xylenes, Total	340		ug/l	40	13.	40
Naphthalene	200		ug/l	40	8.6	40

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	99	70-130	
Dibromofluoromethane	96	70-130	



L2369061

Project Name: Lab Number: COA Q4 GW 2023

Project Number: Report Date: Not Specified 11/29/23

SAMPLE RESULTS

Lab ID: L2369061-03 D Date Collected: 11/20/23 14:35

Client ID: C037-PZM038 Date Received: 11/20/23 Field Prep: Sample Location: Not Specified Not Specified

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 11/27/23 19:27

Analyst: MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - We	estborough Lab						
Benzene	12000		ug/l	100	32.	200	
Toluene	6000		ug/l	150	41.	200	
Ethylbenzene	180		ug/l	100	33.	200	
p/m-Xylene	1100		ug/l	200	66.	200	
o-Xylene	350		ug/l	200	78.	200	
Xylenes, Total	1500		ug/l	200	66.	200	
Naphthalene	1100		ug/l	200	43.	200	

Surrogate	% Recovery	Acceptanc Qualifier Criteria	e
1,2-Dichloroethane-d4	102	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	102	70-130	
Dibromofluoromethane	95	70-130	



L2369061

Project Name: COA Q4 GW 2023

Project Number: Not Specified

SAMPLE RESULTS

Date Collected: 11/20/23 00:00

Report Date: 11/29/23

Lab Number:

1.0

0.22

1

Lab ID: L2369061-04 Client ID: TB-WT-01 Sample Location: Not Specified

Date Received: 11/20/23 Field Prep: Not Specified

Sample Depth:

Analyst:

Naphthalene

Matrix: Water Analytical Method: 1,8260D Analytical Date:

11/27/23 18:09

MJV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough	n Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1

J

ug/l

0.34

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	107	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	101	70-130	



Project Name: COA Q4 GW 2023 Lab Number: L2369061

Project Number: Not Specified Report Date: 11/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 11/27/23 10:44

arameter	Result Qu	alifier Units	RL	MDL
olatile Organics by GC/M	S - Westborough Lab for	sample(s): 01-04	Batch:	WG1857099-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance	
Surrogate	%Recovery Qualif	ier Criteria	
1,2-Dichloroethane-d4	103	70-130	
Toluene-d8	99	70-130	
4-Bromofluorobenzene	100	70-130	
Dibromofluoromethane	100	70-130	



Lab Control Sample Analysis Batch Quality Control

Project Name: COA Q4 GW 2023

Project Number: Not Specified

Lab Number:

L2369061

Report Date:

11/29/23

Parameter	LCS %Recovery	Qual		CSD ecovery		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	01-04	Batch:	WG1857099-3	WG1857099-4				
Benzene	110			110		70-130	0		20	
Toluene	100			100		70-130	0		20	
Ethylbenzene	100			100		70-130	0		20	
p/m-Xylene	100			100		70-130	0		20	
o-Xylene	100			100		70-130	0		20	
Naphthalene	82			84		70-130	2		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101	101	70-130
Toluene-d8	100	100	70-130
4-Bromofluorobenzene	98	98	70-130
Dibromofluoromethane	99	99	70-130

Project Name: COA Q4 GW 2023 Lab Number: L2369061 Project Number: Not Specified

Report Date: 11/29/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent В Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2369061-01A	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-01B	Vial HCI preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-01C	Vial HCI preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-02A	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-02B	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-02C	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-03A	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-03B	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-03C	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-04A	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-04B	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-04C	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)
L2369061-04D	Vial HCl preserved	В	NA		2.2	Υ	Absent		PA-8260(14)



Project Name: Lab Number: COA Q4 GW 2023 L2369061 **Report Date: Project Number:** Not Specified 11/29/23

GLOSSARY

Acronyms

EDL

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.)

- 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

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

MDI - 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.

TEO - 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:COA Q4 GW 2023Lab Number:L2369061Project Number:Not SpecifiedReport Date:11/29/23

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, Benza(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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:COA Q4 GW 2023Lab Number:L2369061Project Number:Not SpecifiedReport Date:11/29/23

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.
- 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name:COA Q4 GW 2023Lab Number:L2369061Project Number:Not SpecifiedReport Date:11/29/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

Published Date: 6/16/2023 4:52:28 PM

ID No.:17873

Revision 20

Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

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ANALYTICAL REPORT

Lab Number: L2369809

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q4

 Project Number:
 21010210

 Report Date:
 12/01/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q4
Project Number: 21010210

Lab Number: L2369809 **Report Date:** 12/01/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2369809-01	CO93-PZM	WATER	COA	11/27/23 13:30	11/27/23
L2369809-02	GD01-MWI	WATER	COA	11/27/23 14:50	11/27/23
L2369809-03	TB-WT-01	WATER	COA	11/27/23 00:00	11/27/23



Project Name:COA GW Q4Lab Number:L2369809Project Number:21010210Report Date:12/01/23

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:
 COA GW Q4
 Lab Number:
 L2369809

 Project Number:
 21010210
 Report Date:
 12/01/23

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.

Cattlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 12/01/23

ORGANICS



VOLATILES



Project Name: COA GW Q4 Lab Number: L2369809

Project Number: 21010210 **Report Date:** 12/01/23

SAMPLE RESULTS

Lab ID: L2369809-01 D Date Collected: 11/27/23 13:30

Client ID: CO93-PZM Date Received: 11/27/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/30/23 11:59

Parameter	Result	Qualifier U	Jnits	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	180000		ug/l	500	160	1000				
Toluene	57000	ı	ug/l	750	200	1000				
Ethylbenzene	1400	ı	ug/l	500	170	1000				
p/m-Xylene	13000	ı	ug/l	1000	330	1000				
o-Xylene	4300	ı	ug/l	1000	390	1000				
Xylenes, Total	17000	ı	ug/l	1000	330	1000				
Naphthalene	2100	ı	ug/l	1000	220	1000				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	96	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	100	70-130	



Project Name: COA GW Q4 Lab Number: L2369809

Project Number: 21010210 **Report Date:** 12/01/23

SAMPLE RESULTS

Lab ID: L2369809-02 Date Collected: 11/27/23 14:50

Client ID: GD01-MWI Date Received: 11/27/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/30/23 11:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor				
Volatile Organics by GC/MS - Westborough Lab										
Benzene	3.4		ug/l	0.50	0.16	1				
Toluene	2.9		ug/l	0.75	0.20	1				
Ethylbenzene	ND		ug/l	0.50	0.17	1				
p/m-Xylene	1.3		ug/l	1.0	0.33	1				
o-Xylene	ND		ug/l	1.0	0.39	1				
Xylenes, Total	1.3		ug/l	1.0	0.33	1				
Naphthalene	0.25	J	ug/l	1.0	0.22	1				

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	114	70-130	
Toluene-d8	97	70-130	
4-Bromofluorobenzene	97	70-130	
Dibromofluoromethane	109	70-130	



Project Name: COA GW Q4 Lab Number: L2369809

Project Number: 21010210 **Report Date:** 12/01/23

SAMPLE RESULTS

Lab ID: L2369809-03 Date Collected: 11/27/23 00:00

Client ID: TB-WT-01 Date Received: 11/27/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/30/23 11:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS -	Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1	
Toluene	ND		ug/l	0.75	0.20	1	
Ethylbenzene	ND		ug/l	0.50	0.17	1	
p/m-Xylene	ND		ug/l	1.0	0.33	1	
o-Xylene	ND		ug/l	1.0	0.39	1	
Xylenes, Total	ND		ug/l	1.0	0.33	1	
Naphthalene	ND		ua/l	1.0	0.22	1	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	108	70-130	
Toluene-d8	96	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	106	70-130	



Project Name: COA GW Q4 Lab Number: L2369809

Project Number: 21010210 **Report Date:** 12/01/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 11/30/23 09:07

Parameter	Result Qua	alifier Units	RL	MDL
Volatile Organics by GC/MS - We	stborough Lab for	sample(s): 01-03	Batch:	WG1858642-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Quali	ifier Criteria
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	97	70-130
Dibromofluoromethane	108	70-130



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number: 21010210

Lab Number: L2369809

Report Date: 12/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recover		%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough	n Lab Associated sa	ample(s):	01-03 Batch	WG1858642-3	WG1858642-4				
Benzene	120		120		70-130	0		20	
Toluene	110		110		70-130	0		20	
Ethylbenzene	110		120		70-130	9		20	
p/m-Xylene	120		120		70-130	0		20	
o-Xylene	115		115		70-130	0		20	
Naphthalene	99		100		70-130	1		20	

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107	108	70-130
Toluene-d8	99	98	70-130
4-Bromofluorobenzene	98	99	70-130
Dibromofluoromethane	101	104	70-130

Project Name: COA GW Q4 **Lab Number:** L2369809 Project Number: 21010210

Report Date: 12/01/23

Sample Receipt and Container Information

YES Were project specific reporting limits specified?

Cooler Information

Custody Seal Cooler

Α Absent

Container Information		Initial	Final	Temp			Frozen		
Container ID	Container Type	Cooler	рH	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2369809-01A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-01B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-01C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-02A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-02B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-02C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-03A	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-03B	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-03C	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)
L2369809-03D	Vial HCl preserved	Α	NA		4.0	Υ	Absent		PA-8260(14)



Project Name:COA GW Q4Lab Number:L2369809Project Number:21010210Report Date:12/01/23

GLOSSARY

Acronyms

EDL

EMPC

LOQ

MS

RPD

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.)

 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).

- 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.)

 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.

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.

- 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.



Project Name:COA GW Q4Lab Number:L2369809Project Number:21010210Report Date:12/01/23

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 but

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, Benza(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.
- 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 concentrations of the analyte at less than ten times (10x) the 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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.
- 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



Project Name:COA GW Q4Lab Number:L2369809Project Number:21010210Report Date:12/01/23

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.
- 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: COA GW Q4 Lab Number: L2369809
Project Number: 21010210 Report Date: 12/01/23

REFERENCES

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.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

Published Date: 6/16/2023 4:52:28 PM Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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 Kieldahl-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 II, 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, SM9221E, 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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

AlPhia	CHAIN O	F CUSTODY	PAGEOF	Date Rec'd in Lab: 11 28 23 ALPHA Job #: L23698	509
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193	MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288		SW Q4	Report Information - Data Deliverables Billing Information FAX	
Client Information Client: Address:	PA	Project Location: COA Project #: 2 0 0 2 0 Project Manager: So.B ALPHA Quote #:) T.	Regulatory Requirements/Report Limits State /Fed Program Criteria	
Phone: Fax:		Turn-Around Time			
☐ These samples have	been previously analyzed by Alpha ecific Requirements/Com	Date Due:	ly confirmed if pre-approvedi) Time:	SAMPLE HANDLING Filtration Done Not needed Lab to do Preservation Lab to do	A L B O T
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date Time	Sample Sampler's Initials	- 1.~ 1 1 1 1 1 1 1 1 1 1	T L E S
69809-01 02 03	CO 93-PZM FDQ1-MWI TB-Wt-O1	11/27/23 1330	GW TP	8 8 8 10 8 8	3 3 4
FORM NO: 01-01 (rev. 14-0CT-0 Page 18 of 18	(28/23 6205	Relinquished By:	Container Type Preservative Date/Time 11 7 7 2 3	Please print clearly, legibly and pletely. Samples can not be log in and turnaround time clock wistart until any ambiguities are in All samples submitted are subject to the plant of the p	gged rill not resolved ject to



ANALYTICAL REPORT

Lab Number: L2370089

Client: Tradepoint Atlantic

1600 Sparrows Point Boulevard

Baltimore, MD 21219

ATTN: Robert Tworkowski Phone: (443) 649-5073

Project Name: COA GW Q4

Project Number: 21010210

Report Date: 12/05/23

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), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: COA GW Q4
Project Number: 21010210

Lab Number: Report Date: L2370089

port Date: 12/05/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2370089-01	CO190-MWS	WATER	COA	11/28/23 12:10	11/28/23
L2370089-02	CO25-PZM008	WATER	COA	11/28/23 13:10	11/28/23
L2370089-03	GD02-MWI	WATER	COA	11/28/23 14:20	11/28/23
L2370089-04	TB-WT-01	WATER	COA	11/28/23 00:00	11/28/23



Project Name:COA GW Q4Lab Number:L2370089Project Number:21010210Report Date:12/05/23

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:
 COA GW Q4
 Lab Number:
 L2370089

 Project Number:
 21010210
 Report Date:
 12/05/23

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:

Title: Technical Director/Representative Date: 12/05/23

Melissa Sturgis Melissa Sturgis

ORGANICS



VOLATILES



Project Name: COA GW Q4 Lab Number: L2370089

Project Number: Report Date: 21010210 12/05/23

SAMPLE RESULTS

Lab ID: L2370089-01 D Date Collected: 11/28/23 12:10

Client ID: Date Received: 11/28/23 CO190-MWS Field Prep: Not Specified

Sample Location: COA

Sample Depth:

Matrix: Water Analytical Method: 1,8260D Analytical Date: 12/01/23 18:04

Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS	- Westborough Lab						
Benzene	160000		ug/l	500	160	1000	
Toluene	10000		ug/l	750	200	1000	
Ethylbenzene	ND		ug/l	500	170	1000	
p/m-Xylene	ND		ug/l	1000	330	1000	
o-Xylene	ND		ug/l	1000	390	1000	
Xylenes, Total	ND		ug/l	1000	330	1000	
Naphthalene	330	J	ug/l	1000	220	1000	

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	108	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	94	70-130	
Dibromofluoromethane	95	70-130	



Project Name: COA GW Q4 Lab Number: L2370089

Project Number: 21010210 **Report Date:** 12/05/23

SAMPLE RESULTS

Lab ID: L2370089-02 D Date Collected: 11/28/23 13:10

Client ID: CO25-PZM008 Date Received: 11/28/23

Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/01/23 18:57

Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - Wes	Volatile Organics by GC/MS - Westborough Lab								
Benzene	1000		ug/l	50	16.	100			
Toluene	940		ug/l	75	20.	100			
Ethylbenzene	25	J	ug/l	50	17.	100			
p/m-Xylene	480		ug/l	100	33.	100			
o-Xylene	160		ug/l	100	39.	100			
Xylenes, Total	640		ug/l	100	33.	100			
Naphthalene	14000		ug/l	100	22.	100			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	111	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	96	70-130	
Dibromofluoromethane	106	70-130	



Project Name: COA GW Q4 Lab Number: L2370089

Project Number: 21010210 **Report Date:** 12/05/23

SAMPLE RESULTS

Lab ID: L2370089-03 D Date Collected: 11/28/23 14:20

Client ID: GD02-MWI Date Received: 11/28/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/01/23 18:31

Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Volatile Organics by GC/MS - West	Volatile Organics by GC/MS - Westborough Lab								
Benzene	150000		ug/l	500	160	1000			
Toluene	5400		ug/l	750	200	1000			
Ethylbenzene	320	J	ug/l	500	170	1000			
p/m-Xylene	800	J	ug/l	1000	330	1000			
o-Xylene	640	J	ug/l	1000	390	1000			
Xylenes, Total	1400	J	ug/l	1000	330	1000			
Naphthalene	660	J	ug/l	1000	220	1000			

Surrogate	% Recovery	Acceptance Qualifier Criteria	
1,2-Dichloroethane-d4	108	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	95	70-130	
Dibromofluoromethane	96	70-130	



Project Name: COA GW Q4 Lab Number: L2370089

Project Number: 21010210 **Report Date:** 12/05/23

SAMPLE RESULTS

Lab ID: L2370089-04 Date Collected: 11/28/23 00:00

Client ID: TB-WT-01 Date Received: 11/28/23
Sample Location: COA Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 12/01/23 17:38

Analyst: MAG

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westbo	rough Lab					
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	0.75	0.20	1
Ethylbenzene	ND		ug/l	0.50	0.17	1
p/m-Xylene	ND		ug/l	1.0	0.33	1
o-Xylene	ND		ug/l	1.0	0.39	1
Xylenes, Total	ND		ug/l	1.0	0.33	1
Naphthalene	ND		ug/l	1.0	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichloroethane-d4	115		70-130	
Toluene-d8	104		70-130	
4-Bromofluorobenzene	94		70-130	
Dibromofluoromethane	106		70-130	



Project Name: COA GW Q4 Lab Number: L2370089

Project Number: 21010210 **Report Date:** 12/05/23

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D Analytical Date: 1,8260D 12/01/23 10:13

Analyst: PID

Parameter	Result Qua	lifier Units	RL	MDL
Volatile Organics by GC/MS - We	estborough Lab for	sample(s): 01-04	Batch:	WG1859249-5
Benzene	ND	ug/l	0.50	0.16
Toluene	ND	ug/l	0.75	0.20
Ethylbenzene	ND	ug/l	0.50	0.17
p/m-Xylene	ND	ug/l	1.0	0.33
o-Xylene	ND	ug/l	1.0	0.39
Xylenes, Total	ND	ug/l	1.0	0.33
Naphthalene	ND	ug/l	1.0	0.22

		Acceptance
Surrogate	%Recovery Quali	fier Criteria
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	99	70-130
Dibromofluoromethane	105	70-130



Lab Control Sample Analysis Batch Quality Control

Project Name: COA GW Q4

Project Number: 21010210

Lab Number:

L2370089 12/05/23

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recove	ry Qual	%Recovery Limits	RPD	RPD imits
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	01-04 Batch	n: WG1859249-3	WG1859249-4		
Benzene	100		100		70-130	0	20
Toluene	100		100		70-130	0	20
Ethylbenzene	100		100		70-130	0	20
p/m-Xylene	105		105		70-130	0	20
o-Xylene	100		110		70-130	10	20
Naphthalene	80		86		70-130	7	20

Surrogate	LCS %Recovery Qual	LCSD %Recovery Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108	106	70-130
Toluene-d8	103	102	70-130
4-Bromofluorobenzene	98	98	70-130
Dibromofluoromethane	99	99	70-130

Lab Number: L2370089

Report Date: 12/05/23

Project Name: COA GW Q4 **Project Number:** 21010210

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2370089-01A	Vial HCI preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-01B	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-01C	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-02A	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-02B	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-02C	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-03A	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-03B	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-03C	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-04A	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-04B	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-04C	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)
L2370089-04D	Vial HCl preserved	Α	NA		5.0	Υ	Absent		PA-8260(14)



Project Name: COA GW Q4 Lab Number: L2370089
Project Number: 21010210 Report Date: 12/05/23

GLOSSARY

Acronyms

LOD

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)

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.

- 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.



Project Name:COA GW Q4Lab Number:L2370089Project Number:21010210Report Date:12/05/23

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, Benzo(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.
- 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).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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



Project Name: COA GW Q4 Lab Number: L2370089
Project Number: 21010210 Report Date: 12/05/23

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.
- 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:
 COA GW Q4
 Lab Number:
 L2370089

 Project Number:
 21010210
 Report Date:
 12/05/23

REFERENCES

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.



Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873

Revision 20

Published Date: 6/16/2023 4:52:28 PM Page 1 of 1

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, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Az

Ethyltoluene

EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility SM 2540D: TSS.

5W 2540D. 155.

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.

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, SM4500CI-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 II, Endosulfan III, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, 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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

Дена	CHAIN	OF CUST	ODY	PAGE_	_OF	Date R	ec'd in Lab:	11/20	9/23	ALP	HA Job#: L	237008	39
WESTBORO, MA	MANSFIELD, MA	Project Info	rmation		Title I	Repo	rt Informat	ion - Data I	Deliverable	s Billi	ng Information		
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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

09 January 2023

Bob Tworkowski
Tradepoint Atlantic
6995 Bethlehem BLVD
Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 01/03/23 07:37.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Who Beigh

President





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 3 SVE INF		3010302-01	Vapor	01/03/23 06:25	01/03/23 07:37
CELL 1 SVE INF		3010302-02	Vapor	01/03/23 06:45	01/03/23 07:37

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willeburghen



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3010302-01 (Vapor) Sample Date: 01/03/23

_			Sample Date. 0.	., 00, 20				
			Reporting	Detection				
Analyte	Result Note:	s Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prepare	ed by GCMS-	VAPOR-VOLAT	TILES				
Acetone	1.23	ug/L	1.00	1.00	0.1	01/03/23	01/03/23 15:28	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	01/03/23	01/03/23 15:28	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Benzene	1.94	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	01/03/23	01/03/23 15:28	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	01/03/23	01/03/23 15:28	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	01/03/23	01/03/23 15:28	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	01/03/23	01/03/23 15:28	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	01/03/23	01/03/23 15:28	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
-,	1.2	Ü	0.20	0.10				

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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3010302-01 (Vapor) Sample Date: 01/03/23

				Sample Date. 01	., 00, 20				
				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepar	ed by GCM	S-VAPOI	R-VOLATILES (co	ontinued)				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	01/03/23	01/03/23 15:28	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	01/03/23	01/03/23 15:28	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	01/03/23	01/03/23 15:28	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Styrene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Toluene	0.13	J	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
,									

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Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3010302-01 (Vapor) Sample Date: 01/03/23

			Re	eporting	Detection				
Analyte	Result	Notes U	nits Lim	nit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-V	APOR-VOL	ATILES (c	continued)				
1,2,3-Trichloropropane	ND	u	g/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,2,4-Trimethylbenzene	ND	u	g/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
1,3,5-Trimethylbenzene	ND	u	g/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Vinyl chloride	ND	u	g/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
o-Xylene	ND	u	g/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
m- & p-Xylenes	ND	u	g/L	0.20	0.10	0.1	01/03/23	01/03/23 15:28	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	1	08 %	01/03/2	3	01/03/23 15:28		
Surrogate: Toluene-d8		75-120	1	00 %	01/03/2	3	01/03/23 15:28		
Surrogate: 4-Bromofluorobenzene		65-120)	95 %	01/03/2	3	01/03/23 15:28		

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Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3010302-02 (Vapor) Sample Date: 01/03/23

			Sample Date. 0					
			Reporting	Detection				
Analyte		otes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B								
Acetone	ND	ug/L	1.00	1.00	0.1	01/03/23	01/03/23 14:14	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	01/03/23	01/03/23 14:14	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Benzene	6.89	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	01/03/23	01/03/23 14:14	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	01/03/23	01/03/23 14:14	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	01/03/23	01/03/23 14:14	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	01/03/23	01/03/23 14:14	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	01/03/23	01/03/23 14:14	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2 Diemoroculane	1112	6	0.20	0.10	*			

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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3010302-02 (Vapor) Sample Date: 01/03/23

			Sample Date. 0	1,00,20				
			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepar	ed by GCMS-VAPOI	R-VOLATILES (c	ontinued)				
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	01/03/23	01/03/23 14:14	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	01/03/23	01/03/23 14:14	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	01/03/23	01/03/23 14:14	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Styrene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Toluene	0.31	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Trichloroethene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
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Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3010302-02 (Vapor) Sample Date: 01/03/23

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	GC/MS) Prepar	ed by GCMS-VAP	OR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	01/03/23	01/03/23 14:14	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	106 %	01/03/2	3	01/03/23 14:14	4	
Surrogate: Toluene-d8		75-120	97 %	01/03/2	3	01/03/23 14:14	4	
Surrogate: 4-Bromofluorobenzene		65-120	92 %	01/03/2	3	01/03/23 14:14	4	

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Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600

Reported: 01/09/23 11:06

www.mdspectral.com

Analytical Results

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

 $\underline{\underline{Matrix}}$, $\underline{\underline{Method}}$, $\underline{\underline{Analyte}}$

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

Vapor | 8260 (Full List) | Vinyl chloride Vapor | 8260 (Full List) | m- & p-Xylenes

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 01/09/23 11:06

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Company Name:		Compar	-		61					-	Analy	sis R	equ	estec	d		CHAIN	I-OF-	CUST	ODY RECORD
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Project Name: Sparrows Point IM		Project I Bob Twe	Vlanage	r:			73		3 +								410-	Balti: 247–76	more, N 800 • Fa	r Drive, Suite G //D 21227 x 410–247–7602
Sampler(s): Guy Davis/ARM Group (443) 610-0211		Attentio ap@trac			ic.co	m		Containers	SUITE VOCs + ITHALENE 826									NW (n	on-pota	spectral.com able water), DW (drinking
Field Sample	ID	Date	Time	MO	Water	Soil	SV	No. of Co	FULL SUITE VOCs + NAPHTHALENE 8260								Preservative	Fi	eld otes	MSS Lab ID
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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

13 February 2023

Bob Tworkowski
Tradepoint Atlantic
6995 Bethlehem BLVD
Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 02/02/23 12:25.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President





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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 1 SVE INF		3020204-01	Vapor	02/02/23 10:35	02/02/23 12:25
CELL 3 SVE INF		3020204-02	Vapor	02/02/23 10:50	02/02/23 12:25

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willsburghen



nelad

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3020204-01 (Vapor) Sample Date: 02/02/23

			Sample Date. 0.					
			Reporting	Detection				
Analyte		Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B		pared by GCMS-	VAPOR-VOLAT	TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:18	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	02/03/23	02/03/23 13:18	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Benzene	3.06	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	02/03/23	02/03/23 13:18	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	02/03/23	02/03/23 13:18	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:18	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	02/03/23	02/03/23 13:18	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	02/03/23	02/03/23 13:18	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
-,	1.2	J	0.23	0.10				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterester



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3020204-01 (Vapor) Sample Date: 02/02/23

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepare	ed by GCN	MS-VAPOI	R-VOLATILES (co	ontinued)				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:18	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:18	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:18	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Styrene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Toluene	0.38		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL

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Willesseyle



1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600

www.mdspectral.com Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3020204-01 (Vapor) Sample Date: 02/02/23

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAl	POR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:18	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	98 %	02/03/	23	02/03/23 13:1	8	
Surrogate: Toluene-d8		75-120	96 %	02/03/	23	02/03/23 13:1	8	
Surrogate: 4-Bromofluorobenzene		65-120	96 %	02/03/	23	02/03/23 13:1	8	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



inelao :

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3020204-02 (Vapor) Sample Date: 02/02/23

			Sample Date. 0.					
			Reporting	Detection				
Analyte		Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B		ared by GCMS-		TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:42	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	02/03/23	02/03/23 13:42	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Benzene	1.29	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	02/03/23	02/03/23 13:42	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	02/03/23	02/03/23 13:42	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:42	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	02/03/23	02/03/23 13:42	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	02/03/23	02/03/23 13:42	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
*		=						

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



* nelac

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3020204-02 (Vapor) Sample Date: 02/02/23

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepared	by GCMS	S-VAPOI	R-VOLATILES (co	ontinued)				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:42	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:42	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	02/03/23	02/03/23 13:42	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Styrene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Toluene	0.11	J	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



1500 Caton Center Dr Suite G Baltimore MD 21227

Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3020204-02 (Vapor) Sample Date: 02/02/23

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAF	OR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	02/03/23	02/03/23 13:42	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	96 %	02/03/2	3	02/03/23 13:4	2	
Surrogate: Toluene-d8		75-120	99 %	02/03/2	3	02/03/23 13:4	2	
Surrogate: 4-Bromofluorobenzene		65-120	94 %	02/03/2	3	02/03/23 13:4	2	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Millebengten



1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600

www.mdspectral.com Reported:

02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix, Method, Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willester







1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 02/13/23 07:43

Analytical Results

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix, Method, Analyte

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

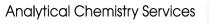
Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

 $Vapor \mid 8260 \; (Full \; List) \mid Vinyl \; chloride$ $Vapor \mid 8260 \; (Full \; List) \mid m\text{-}\& \; p\text{-}Xylenes$

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willistenden





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Reported: 02/13/23 07:43

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright

Company Name:	Company Address:	Addres	. SS:	7.7					Anal)	sis R	Analysis Requested	sted			CHAII	N-OF-C	USTO	CHAIN-OF-CUSTODY RECORD	
radepoint Atlantic	Sparrows Point, MD 21219	Point,	MD 2	1219					<u> </u>						Ma	ryland Sp	sectral §	Maryland Spectral Services, Inc.	
Project Name: Sparrows Point IM	Project Manager: Bob Tworkowski (443) 649-	nager: owski	(443)	649-	5073			no:							150 410	0 Caton C Baltimo -247–7600	Caton Center Drive, St Baltimore, MD 21227 47–7600 • Fax 410–247	1500 Caton Center Drive, Suite G Baltimore, MD 21227 410–247–7600 • Fax 410–247–7602	
Sampler(s):	Attention/Invoice:	nvoice				ıets	soo.	 7Ω ⊐!							•	eporting(@mdsb	reporting@mdspectral.com	
Guy Davis/ARM Group (443) 610-0211	ap@tradepointatlantic.com	ointat	lantic	com		l Jontair	V atic	//37\\\L						Ma wal	Matrix Codes: NW (noi water), SV (soil vapor)	NW (non il vapor)	-potabl	Matrix Codes: NW (non-potable water), DW (drinking water), SV (soil vapor)	inking
Field Sample ID	Date	Time	DM	Water 1102	lios VS	No. of C	FULL SI	ITH9AN						<u> </u>	Preservative	Field Notes		MSS Lab ID	
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hed	Date/Time 2/2/23	Re	Received	Dy La		Carry Control			m Ar	puno	Turn Around Time:	l iii -		_ Fa_	Lab Use: Temp:C	٠,٠			
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Method:	Special Instructions/QC Requirements & Please report to:	Requi	reme	ints &	Con	Comments:	ts:	<u> </u>	3 day Rush	3 day Rush (2 day)	ay)			Sar	Sample Disposal:	sal:			
	Š č	btworkowski@tradepointatlantic.com GDavis@armgroup.net DHamilton@armgroup.net	orkowski@tradepointatlantic.c GDavis@armgroup.net DHamilton@armgroup.net	trade armgi n@ar	pointa Oup. Mgrc	atlant net sup.n	c.com	000	Next D Other: Specifi	Next Day Other: Specific E	Next Day Other:Specific Due Date:	ate: _		<u> </u>	Return to Client Disposal by lab Archive for	1	days		
a Other:								\dashv						_					





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

14 March 2023

Bob Tworkowski
Tradepoint Atlantic
6995 Bethlehem Blvd.
Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 03/06/23 07:50.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600

Reported: 03/14/23 15:33

www.mdspectral.com

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 3 SVE INF		3030602-01	Vapor	03/06/23 06:50	03/06/23 07:50
CELL 1 SVE INF		3030602-02	Vapor	03/06/23 07:10	03/06/23 07:50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willeburghen



Center Dr Suite (

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3030602-01 (Vapor) Sample Date: 03/06/23

			Sample Date. 0.					
			Reporting	Detection				
Analyte		Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prep	pared by GCMS-		TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:13	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	03/06/23	03/06/23 12:13	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Benzene	0.33	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	03/06/23	03/06/23 12:13	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	03/06/23	03/06/23 12:13	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:13	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	03/06/23	03/06/23 12:13	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	03/06/23	03/06/23 12:13	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
-,			0.23	0.10				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterester



nelao

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3030602-01 (Vapor) Sample Date: 03/06/23

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/M	IS) Prepar	ed by GC	MS-VAPOF	R-VOLATILES (co	ontinued)				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:13	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:13	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:13	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Styrene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Toluene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



nelao

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3030602-01 (Vapor) Sample Date: 03/06/23

			Reporting	Detection						
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst		
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)										
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL		
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL		
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL		
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL		
o-Xylene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL		
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:13	LL		
Surrogate: 1,2-Dichloroethane-d4		70-130	107 %	03/06/2	3	03/06/23 12:13	3			
Surrogate: Toluene-d8		75-120	104 %	03/06/2	3	03/06/23 12:13	3			
Surrogate: 4-Bromofluorobenzene		65-120	100 %	03/06/2	3	03/06/23 12:13	3			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



nelad Center Dr Suite (

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3030602-02 (Vapor) Sample Date: 03/06/23

			Sample Date. 0.					
			Reporting	Detection				
Analyte	Result No		Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B		red by GCMS-	VAPOR-VOLAT	TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:38	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	03/06/23	03/06/23 12:38	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Benzene	3.92	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	03/06/23	03/06/23 12:38	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	03/06/23	03/06/23 12:38	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:38	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	03/06/23	03/06/23 12:38	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	03/06/23	03/06/23 12:38	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2 Diemoroculane	110	6	0.20	0.10	*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterender



e nelac :

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3030602-02 (Vapor) Sample Date: 03/06/23

			Reporting	Detection				
Analyte	Result Note	es Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepared by	GCMS-VAPOI	R-VOLATILES (c	ontinued)				
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:38	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:38	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	03/06/23	03/06/23 12:38	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Styrene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Toluene	0.55	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Trichloroethene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



e nelad

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3030602-02 (Vapor) Sample Date: 03/06/23

			Reporting	Detection						
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst		
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)										
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL		
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL		
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL		
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL		
o-Xylene	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL		
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	03/06/23	03/06/23 12:38	LL		
Surrogate: 1,2-Dichloroethane-d4		70-130	107 %	03/06/2	3	03/06/23 12:30	8			
Surrogate: Toluene-d8		75-120	101 %	03/06/2	3	03/06/23 12:3	8			
Surrogate: 4-Bromofluorobenzene		65-120	98 %	03/06/2	3	03/06/23 12:3	8			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Millebengten



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Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

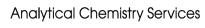
Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
$Vapor \mid 8260 \ (Full \ List) \mid Dichlorodifluoromethane$	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
$Vapor \mid 8260 \ (Full \ List) \mid 1,1,1,2\text{-}Tetrachloroethane$	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Millebright





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600

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Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

 $\underline{\underline{Matrix}}$, $\underline{\underline{Method}}$, $\underline{\underline{Analyte}}$

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

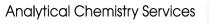
Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

 $Vapor \mid 8260 \; (Full \; List) \mid Vinyl \; chloride$ $Vapor \mid 8260 \; (Full \; List) \mid m\text{-} \; \& \; p\text{-}Xylenes$

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





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Reported: 03/14/23 15:33

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright

Company Name:	•	Compar	-	ress: Point Blvd						Analysis Requested					СН	CHAIN-OF-CUSTODY RECORD					
Tradepoint Atlantic		Sparrow																Maryla	nd Spec	tral S	ervices, Inc.
Project Name: Sparrows Point IM		Project I Bob Two	Manage	r:			73		+									Ва	altimore	, MD	ive, Suite G 21227 10–247–7602
Sampler(s):		Attentio	n/Invoic	e:				ers	OCs E 8%							1		repoi	rting@m	ndspe	ctral.com
Guy Davis/ARM Group (443) 610-0211		ap@trac	<u>lepointa</u>	tlant	ic.co	<u>m</u>		Containers	SUITE VOCs +								Matrix Cod water), SV			otable	water), DW (drinkin
Field Sample	ID	Date	Time	MO	Water	Soil	SV	No. of C	FULL SUITE VOCs +								Preservati	ve	Field Notes		MSS Lab ID
CELL 3 SVE	INF	3/6/23	0650				X	1	\times										_		3030602-01 A
CEU 1 SUE		3/6/23		1			X	١	> <												- 02

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Relinquished by: (Signature)	•	Date/Tin	ne R	eceive						Tur	n Ar	ound	Tim	ne:			Lab Use:				
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Delivery Method: Courier Client UPS FREEEX	Please rep Bob Tw Guy Da	ort to: orkowski vis	DC Requi btworks GDa	Requirements & Commer workowski@tradepointatlant GDavis@armgroup.net			nenti antic	s:													
USPS Other:	Doug H	amuton	nilton <u>DHamilton@armgroup</u>				p.ne	et Specific Due Date:				□ Archive for days									





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

20 April 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 04/12/23 11:05.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President





1500 Caton Center Dr Suite G

Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 3 SVE INF		3041205-01	Vapor	04/12/23 07:05	04/12/23 11:05
CELL 1 SVE INF		3041205-02	Vapor	04/12/23 07:20	04/12/23 11:05

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3041205-01 (Vapor) Sampled on: 04/12/23 07:05

			Reporting	Detection				
Analyte	Result N	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prep	ared by GCMS-	VAPOR-VOLAT	TILES				
Acetone	1.76	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:12	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	04/12/23	04/12/23 12:12	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Benzene	4.21	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	04/12/23	04/12/23 12:12	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	04/12/23	04/12/23 12:12	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:12	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Chloroethane	1.54	ug/L	0.50	0.50	0.1	04/12/23	04/12/23 12:12	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	04/12/23	04/12/23 12:12	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
		_	UU	0				
1,1-Dichloroethane	0.15	J ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3041205-01 (Vapor) Sampled on: 04/12/23 07:05

			Papartina	Detection				
Analyte	Result	Notes Units	Reporting Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/					Director	Topuled	7 11141 7 204	711101731
1.1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:12	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:12	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:12	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Styrene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Toluene	0.35	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Trichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL

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Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3041205-01 (Vapor) Sampled on: 04/12/23 07:05

			Reporting	Detection					
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst	
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)									
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL	
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL	
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL	
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL	
o-Xylene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL	
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:12	LL	
Surrogate: 1,2-Dichloroethane-d4		70-130	101 %	04/12/2	3	04/12/23 12:1.	2		
Surrogate: Toluene-d8		75-120	100 %	04/12/2	3	04/12/23 12:11	2		
Surrogate: 4-Bromofluorobenzene		65-120	100 %	04/12/2	3	04/12/23 12:1.	2		

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410-247-7600

www.mdspectral.com Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3041205-02 (Vapor) Sampled on: 04/12/23 07:20

		54	Demantine					
Analyte	Result N	otes Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
-					Dilution	Frepared	Allalyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prep ND	ared by GCMS- ug/L		1.00	0.1	04/12/23	04/12/23 12:36	LL
Acetone		ē	1.00					
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	04/12/23	04/12/23 12:36	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Benzene	8.78	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	04/12/23	04/12/23 12:36	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	04/12/23	04/12/23 12:36	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:36	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	04/12/23	04/12/23 12:36	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	04/12/23	04/12/23 12:36	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3041205-02 (Vapor) Sampled on: 04/12/23 07:20

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)								
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:36	LL
sopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:36	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	04/12/23	04/12/23 12:36	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Styrene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Toluene	4.08	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Trichloroethene	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



1500 Caton Center Dr Suite G

Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3041205-02 (Vapor) Sampled on: 04/12/23 07:20

				Reporting	Detection				
Analyte	Result	Notes U	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)									
1,2,3-Trichloropropane	ND		ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Vinyl chloride	ND		ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
o-Xylene	0.21		ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
m- & p-Xylenes	0.76	;	ug/L	0.20	0.10	0.1	04/12/23	04/12/23 12:36	LL
Surrogate: 1,2-Dichloroethane-d4		70-13	30	99 %	04/12/23		04/12/23 12:36		
Surrogate: Toluene-d8		75-12	20	99 %	04/12/23		04/12/23 12:36		
Surrogate: 4-Bromofluorobenzene		65-12	20	99 %	04/12/23		04/12/23 12:36		

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Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

Millebruster

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





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Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

Vapor | 8260 (Full List) | Vinyl chloride Vapor | 8260 (Full List) | m- & p-Xylenes

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600

www.mdspectral.com

Reported: 04/20/23 15:08

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willistenden

Company Name:		Compan 1600 Spa	•		Blv						Anal	ysis F	Reque	estec	l	CHAI	N-OF-	CUST	TODY RECORD	,]	
Tradepoint Atlantic		Sparrow															-	-	al Services, Inc.		
Project Name: Sparrows Point IM	•	Project N Bob Two			3) 64	9-50	73		+ + 5							410-	Balti -247–70	more, № 600 • Fa	er Drive, Suite G MD 21227 ax 410–247–7602		
Sampler(s): Guy Davis/ARM Group (443) 610-0211		Attention ap@trac			ic.co	<u>ım</u>		Containers	FULL SUITE VOCs + NAPHTHALENE 8260								NW (n	on-pota	spectral.com able water), DW (di	inking	
Field Sample ID		Date	Time	MO	Water	Soil	SV	No. of C	FULL SU NAPHTH							Preservative		eld otes	MSS Lab ID)	
CELL 3 SVE IN	JF	4/12/23	0705				X	1	\geq										30412	05	- 0
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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

23 May 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 05/15/23 13:41.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ull Buyle

President





1500 Caton Center Dr Suite

410-247-7600

Baltimore MD 21227

www.mdspectral.com Reported:

05/23/23 15:45

Analytical Results

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Matrix Date Received Client Sample ID Alternate Sample ID Laboratory ID **Date Sampled** CELL 3 SVE INF 3051509-01 Vapor 05/15/23 06:55 05/15/23 13:41

 ${\it The results in this report apply to the samples analyzed in accordance with the chain of}$ custody document. This analytical report must be reproduced in its entirety.



1500 Caton Center Dr Suite (

Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/23/23 15:45

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 3 SVE INF

3051509-01 (Vapor) Sampled on: 05/15/23 06:55

Molatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES					Reporting	Detection				
Acetone ND ug/L 1.00 1.00 0.1 05/16/23 05/16/23 11:30 tetr-Amyl alcohol (TAA) ND ug/L 2.00 2.00 0.1 05/16/23 05/16/23 11:30 tetr-Amyl alcohol (TAA) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tetr-Amyl ethyl ether (TAEE) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tetr-Amyl methyl ether (TAME) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 DB monochonomethane ND ug/L 0.20 0.10 0.1 05/16/23	Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
tert-Amyl alcohol (TAA)	Volatile Organics by EPA 8260B	(GC/MS) Pr	epared by	GCMS-	VAPOR-VOLAT	ILES				
tert-Amyl ethyl ether (TAME) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Amyl methyl ether (TAME) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Benzene 1.02 ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromochisormethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromochishoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromochishoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromochishoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromochishoromethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Bromochishoromethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 terr-Butanol (TBA) <td>Acetone</td> <td>ND</td> <td></td> <td>ug/L</td> <td>1.00</td> <td>1.00</td> <td>0.1</td> <td>05/16/23</td> <td>05/16/23 11:30</td> <td>LL</td>	Acetone	ND		ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:30	LL
tert-Amyl methyl ether (TAME) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Benzene 1.02 ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromochloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromochloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromofirm ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromofirm ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Bromomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Bromomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Bromomethane ND ug/L 1.50 1.50 0.1 05/16/23 05/16/23 11:30 Let-Buthone (MEK) ND ug/L	tert-Amyl alcohol (TAA)	ND		ug/L	2.00	2.00	0.1	05/16/23	05/16/23 11:30	LL
Benzene 1.02 ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromodichoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromodichoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromodichloromethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Bromomethane ND ug/L 1.50 1.50 0.1 05/16/23 05/16/23 11:30 Bromomethane ND ug/L 1.50 1.50 0.1 05/16/23 05/16/23 11:30 Bromomethane ND ug/L 1.50 1.50 0.1 05/16/23 05/16/23 11:30 tetr-Bultanol (TBA) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tetr-Bultanol (TBA) ND ug/L	tert-Amyl ethyl ether (TAEE)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Bromobenzene ND	tert-Amyl methyl ether (TAME)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Bromochloromethane ND	Benzene	1.02		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Bromodichloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromoform ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Bromomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 tert-Butanol (TBA) ND ug/L 1.50 1.50 0.1 05/16/23 05/16/23 11:30 2-Butanone (MEK) ND ug/L 1.00 1.00 0.1 05/16/23 05/16/23 11:30 n-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 sec-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon tetrachloride ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotetrane 1.39 ug/L	Bromobenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Bromoform ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	Bromochloromethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Bromomethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 tert-Butanol (TBA) ND ug/L 1.50 1.50 0.1 05/16/23 05/16/23 11:30 2-Butanone (MEK) ND ug/L 1.00 1.00 0.1 05/16/23 05/16/23 11:30 n-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 see-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon fisulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotelane ND ug/L	Bromodichloromethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
tert-Butanol (TBA) ND ug/L 1.50 1.50 0.1 05/16/23 05/16/23 11:30 2-Butanone (MEK) ND ug/L 1.00 1.00 0.1 05/16/23 05/16/23 11:30 n-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 see-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorothere ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotoluene ND ug/L	Bromoform	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
2-Butanone (MEK) ND ug/L 1.00 1.00 0.1 05/16/23 05/16/23 11:30 n-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 sec-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon tetrachloride ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorothane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotethane 1.39 ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotothane ND ug/L	Bromomethane	ND		ug/L	0.50	0.50	0.1	05/16/23	05/16/23 11:30	LL
n-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 see-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon tetrachloride ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotethane 1.39 ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chlorotethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chlorototluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L	tert-Butanol (TBA)	ND		ug/L	1.50	1.50	0.1	05/16/23	05/16/23 11:30	LL
sec-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 tert-Butylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon tetrachloride ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotethane 1.39 ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chlorotethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug	2-Butanone (MEK)	ND		ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:30	LL
tert-Buylbenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon tetrachloride ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotethane 1.39 ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chloroform ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotoluene ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L <td>n-Butylbenzene</td> <td>ND</td> <td></td> <td>ug/L</td> <td>0.20</td> <td>0.10</td> <td>0.1</td> <td>05/16/23</td> <td>05/16/23 11:30</td> <td>LL</td>	n-Butylbenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Carbon disulfide ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Carbon tetrachloride ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorothane 1.39 ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chlorotofrm ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotoluene ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromoethane (EDB) ND ug/L<	sec-Butylbenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Carbon tetrachloride ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotethane 1.39 ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chloroform ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chlorotoluene ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L	tert-Butylbenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Chlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chloroethane 1.39 ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chloroform ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chloromethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/	Carbon disulfide	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Chloroethane 1.39 ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 Chloroform ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chloromethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND	Carbon tetrachloride	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Chloroform ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Chloromethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichloromethane ND	Chlorobenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Chloromethane ND ug/L 0.50 0.50 0.1 05/16/23 05/16/23 11:30 2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromochloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	Chloroethane	1.39		ug/L	0.50	0.50	0.1	05/16/23	05/16/23 11:30	LL
2-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromochloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenz	Chloroform	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
4-Chlorotoluene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromochloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.10 0.1 05/16/23 05/16/23 11:30 1,4	Chloromethane	ND		ug/L	0.50	0.50	0.1	05/16/23	05/16/23 11:30	LL
1,2-Dibromo-3-chloropropane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromochloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	2-Chlorotoluene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Dibromochloromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	4-Chlorotoluene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,2-Dibromoethane (EDB) ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dibromomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	1,2-Dibromo-3-chloropropane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Dibromomethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	Dibromochloromethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,2-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	1,2-Dibromoethane (EDB)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,3-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	Dibromomethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,4-Dichlorobenzene ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30 Dichlorodifluoromethane ND ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	1,2-Dichlorobenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	1,3-Dichlorobenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
2 VIZV VIIV	1,4-Dichlorobenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,1-Dichloroethane 0.17 J ug/L 0.20 0.10 0.1 05/16/23 05/16/23 11:30	Dichlorodifluoromethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
	1,1-Dichloroethane	0.17	J	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
$1,2-Dichloroethane \qquad ND \qquad ug/L \qquad 0.20 \qquad 0.10 \qquad 0.1 \qquad 05/16/23 \qquad 05/16/23 \ 11:30 \qquad 0.10 \qquad 0.1 $	1,2-Dichloroethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willester



nelao

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/23/23 15:45

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3051509-01 (Vapor) Sampled on: 05/15/23 06:55

			Reporting	Detection				
Analyte	Result Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepared by	GCMS-VAPOI	R-VOLATILES (c	ontinued)				
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:30	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:30	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:30	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Styrene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Toluene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Trichloroethene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



1500 Caton Center Dr Suite **Baltimore MD 21227** 410-247-7600

www.mdspectral.com

Reported: 05/23/23 15:45

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3051509-01 (Vapor) Sampled on: 05/15/23 06:55

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAPO	OR-VOLATILES (continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:30	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	97 %	05/16/23	1	05/16/23 11:30	1	
Surrogate: Toluene-d8		75-120	100 %	05/16/23	:	05/16/23 11:30)	
Surrogate: 4-Bromofluorobenzene		65-120	106 %	05/16/23	;	05/16/23 11:30)	

 ${\it The results in this report apply to the samples analyzed in accordance with the chain of}$ custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President



1500 Caton Center Dr Suite G Baltimore MD 21227

410-247-7600 www.mdspectral.com

Reported: 05/23/23 15:45

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

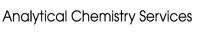
Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Millebrughen







1500 Caton Center Dr Suite **Baltimore MD 21227** 410-247-7600 www.mdspectral.com

> Reported: 05/23/23 15:45

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix, Method, Analyte

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

Vapor | 8260 (Full List) | Vinyl chloride Vapor | 8260 (Full List) | m- & p-Xylenes

 ${\it The results in this report apply to the samples analyzed in accordance with the chain of}$ custody document. This analytical report must be reproduced in its entirety.





nelao

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/23/23 15:45

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Tradepoint Atlantic		Sparrow																	•		I Services, Inc.
Project Name: Sparrows Point IM		Project I Bob Two	_		3) 64	9-507	'3		s + 260									410-	Baltii 247– 7 6	more, N 600 • Fa:	r Drive, Suite G 1D 21227 x 410-247-7602
Sampler(s):		Attentio						ners	00°S												spectral.com
Guy Davis/ARM Group (443) 610-0211		ap@trac	<u>lepoint</u>	atlant	ic.co	<u>m</u>		Containers	SUITE VOCs + ITHALENE 826									Matrix Codes: water), SV (soi			ble water), DW (drinking
Field Sample	D	Date .	Time	MO	Water	Soil	SV	No. of C	FULL SUITE VOCs + NAPHTHALENE 8260									Preservative		eld otes	MSS Lab ID
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□ UPS □ FedEx	Guy Da	vis	GD	<u>avis@</u>	<u> ∂arm</u>	grou	p.ne	<u> t</u>			Othe	er:		Det-			•	Disposal b	y lab		
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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

24 May 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 05/16/23 08:13.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ull Buyle

President





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/24/23 14:28

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID Alternate Sample ID Laboratory ID Matrix Date Sampled Date Received

CELL 1 SVE INF 3051601-01 Vapor 05/16/23 06:00 05/16/23 08:13

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



e nelao :

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/24/23 14:28

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3051601-01 (Vapor) Sampled on: 05/16/23 06:00

			- ·					
	D 1	NT	Reporting	Detection	D.1:	ъ .		
Analyte		Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B								
Acetone	ND	ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:54	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	05/16/23	05/16/23 11:54	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Benzene	2.03	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	05/16/23	05/16/23 11:54	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	05/16/23	05/16/23 11:54	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:54	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	05/16/23	05/16/23 11:54	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	05/16/23	05/16/23 11:54	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
*			**	**				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterender



21500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600

www.mdspectral.com

Reported: 05/24/23 14:28

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3051601-01 (Vapor) Sampled on: 05/16/23 06:00

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/M	IS) Prepar	ed by GCI	MS-VAPOF	R-VOLATILES (co	ontinued)				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:54	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:54	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	05/16/23	05/16/23 11:54	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Styrene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Toluene	0.30		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willester



1500 Caton Center Dr Suite G

Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/24/23 14:28

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3051601-01 (Vapor) Sampled on: 05/16/23 06:00

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAP	OR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	05/16/23	05/16/23 11:54	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	96 %	05/16/23	3	05/16/23 11:54	1	
Surrogate: Toluene-d8		75-120	101 %	05/16/23	3	05/16/23 11:54	4	
Surrogate: 4-Bromofluorobenzene		65-120	101 %	05/16/23	3	05/16/23 11:54	4	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



1500 Caton Center Dr Suite G

Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/24/23 14:28

Project: SPARROWS POINT IM

Project Number: [none]

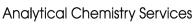
Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

Millebrighe

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.







1500 Caton Center Dr Suite **Baltimore MD 21227** 410-247-7600 www.mdspectral.com

> Reported: 05/24/23 14:28

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix, Method, Analyte

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

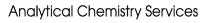
Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

Vapor | 8260 (Full List) | Vinyl chloride Vapor | 8260 (Full List) | m- & p-Xylenes

 ${\it The results in this report apply to the samples analyzed in accordance with the chain of}$ custody document. This analytical report must be reproduced in its entirety.





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 05/24/23 14:28

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright

Company Name:	Company Address:	Addres	ss:	Blvd					⋖	Analysis Requested	is Re	dne	sted			CHA	N-OF-C	SUSTC	CHAIN-OF-CUSTODY RECORD	20
ı radepoint Atlantic	Sparrows Point, MD 21219	Point, I	MD 2	1215			<u> </u>									M	aryland S	pectral	Maryland Spectral Services, Inc.	
Project Name: Sparrows Point IM	Project Manager: Bob Tworkowski (443) 649-5073	anager: kowski	(443	649 (-507;											15 410	ou Caton Baltim)-247-760	Caton Center Drive, Si Baltimore, MD 21227 47-7600 • Fax 410-247	isou Caton Center Drive, suite to Baltimore, MD 21227 410-247-7600 • Fax 410-247-7602	
Sampler(s): Guy Davis/ARM Group	Attention/Invoice: ap@tradepointatlantic.com	Invoice	: lantic	C.COT	CI	. '	eranist	FENE 8								latrix Codes	reporting :: NW (no	@mdsp n-potab	reporting@mdspectral.com Matrix Codes: NW (non-potable water), DW (drinking	(drinking
(443) 610-0211				-	\vdash										<u> </u>	water), 5v (soil vapor)	oli vapor) Field			
Field Sample ID	Date	Time	DN	tsW	ioS	ΛS									_	Preservative		s s	MSS Lab ID	O I C
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(Printed)	8:13	<i>*</i>			4) (A	£ .	0 0	S day	Normal (7 day) 5 day 4 day	aay	_		0 0		neceived on ice Received same day	>		
Delivery Method: Special Instruction	Special Instructions/QC Requirements &	C Requi	Ĭ.e.	ents		Comments:	ents:			3 day Rush	3 day Rush (2 dav)	(>(10,	Sample Disposal:	osal:			
2	/ski	btworkowski@tradepointatlantic.com GDavis@armgroup.net DHamilton@armgroup.net	orkowski@tradepointatlantic.c GDavis@armgroup.net DHamilton@armgroup.net	@trad arm(epoir arou	ntatlai O.net roup	otic.ca	T C		Next Day Other: Specific I	Next Day Other: Specific Due Date:	. μ [e]	ate: _		<u> </u>	Return to Client Disposal by lab	1	days		
D Other:																				





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

12 June 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 06/01/23 08:00.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President





Sineso A

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 1 SVE INF		3060101-01	Vapor	06/01/23 06:20	06/01/23 08:00
CELL 3 SVE INF		3060101-02	Vapor	06/01/23 06:40	06/01/23 08:00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willeburghen



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3060101-01 (Vapor) Sampled on: 06/01/23 06:20

			niipieu oii. 00/01					
Analyte	Result Not	es Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
				. ,	Dilution	rrepared	Anaryzeu	Allalyst
Volatile Organics by EPA 8260B					0.1	06/01/23	06/01/23 11:43	т т
Acetone	ND	ug/L	1.00	1.00				LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	06/01/23	06/01/23 11:43	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Benzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	06/01/23	06/01/23 11:43	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	06/01/23	06/01/23 11:43	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 11:43	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	06/01/23	06/01/23 11:43	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	06/01/23	06/01/23 11:43	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



nelad

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3060101-01 (Vapor) Sampled on: 06/01/23 06:20

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/				. ,		1	<u> </u>	
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
rans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Iexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
-Hexanone	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 11:43	LL
sopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
l-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 11:43	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 11:43	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Styrene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Coluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Frichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Frichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



nelao

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3060101-01 (Vapor) Sampled on: 06/01/23 06:20

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAPO	OR-VOLATILES ((continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 11:43	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	102 %	06/01/2	3	06/01/23 11:43	3	
Surrogate: Toluene-d8		75-120	100 %	06/01/2	3	06/01/23 11:43	3	
Surrogate: 4-Bromofluorobenzene		65-120	100 %	06/01/2	3	06/01/23 11:43	3	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright



Center Dr Suite G

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3060101-02 (Vapor) Sampled on: 06/01/23 06:40

			Parastina					
Analyte	Result	Notes Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
-				. ,	Dilution	Frepared	Allalyzed	Allalyst
Volatile Organics by EPA 8260B (-			0.1	06/01/22	06/01/22 12:07	т т
Acetone	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 12:07	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	06/01/23	06/01/23 12:07	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Benzene	0.39	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	06/01/23	06/01/23 12:07	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	06/01/23	06/01/23 12:07	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 12:07	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Chloroethane	1.29	ug/L	0.50	0.50	0.1	06/01/23	06/01/23 12:07	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	06/01/23	06/01/23 12:07	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,1-Dichloroethane	0.19	J ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



e nelac =

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3060101-02 (Vapor) Sampled on: 06/01/23 06:40

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepar	ed by GCMS-VAPO		ontinued)				
,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
rans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
-Hexanone	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 12:07	LL
sopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 12:07	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	06/01/23	06/01/23 12:07	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Styrene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Coluene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Frichloroethene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Frichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3060101-02 (Vapor) Sampled on: 06/01/23 06:40

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAP	OR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	06/01/23	06/01/23 12:07	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	100 %	06/01/2.	3	06/01/23 12:02	7	
Surrogate: Toluene-d8		75-120	99 %	06/01/2.	3	06/01/23 12:03	7	
Surrogate: 4-Bromofluorobenzene		65-120	106 %	06/01/2.	3	06/01/23 12:03	7	

custody documen

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright







1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Analytical Results

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix, Method, Analyte

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

 $Vapor \mid 8260 \; (Full \; List) \mid Vinyl \; chloride$ $Vapor \mid 8260 \; (Full \; List) \mid m\text{-} \; \& \; p\text{-}Xylenes$

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/12/23 11:01

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright

Company Name.	Company Address:	iress:	Analysis Requested	CHAIN-OF-CU	CHAIN-OF-CUSTODY RECORD
Tradepoint Atlantic	Sparrows Point Blvd Sparrows Point, MD 21219	nt, MD 21219		Maryland Sp	Maryland Spectral Services, Inc.
Project Name:	Project Manager:	jer:		1500 Caton Co	1500 Caton Center Drive, Suite G
Sparrows Point IM	Bob Tworkow	Bob Tworkowski (443) 649-5073		410-247-7600	baitimore, MD 27227 410-247-7600 • Fax 410-247-7602
Sampler(s):	Attention/Invoice			reporting@	reporting@mdspectral.com
Guy Davis/ARM Group (443) 610-0211	ap@tradepointatlantic.com	·		Matrix Codes: NW (non- water), SV (soil vapor)	Matrix Codes: NW (non-potable water), DW (drinking water), SV (soil vapor)
Field Sample ID	Date Time	DW Water Soil SV No. of C	FULL SU NAPHTH	Preservative Notes	MSS Lab ID
CELL I SVE INF	6/1/23 0620	δ Χ -	X		3060101-0
	6/1/23/0640	0 X 1	X		-07
					ALL MANAGEMENT AND
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Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time Rec	Received by: (Signature)
(Printed)	308/1/28	(Printed)	(Printed)	(P	(Printed)
Guy C Dawis	000				
~ 1	Date/Time	Received by Lab: (Signature) B.LOV - Received	Tur	Lab Use: Temp:°C	
(Printed)	8.00	Bradley Welss	Normal (/ day) 5 day 4 day	Received on Ice	
elivery Method: S Courier	nstructions/QC Report to:	Special Instructions/QC Requirements & Comments Please report to:	0 0	Sample Disposal:	***************************************
Bob Twork	(owski	btworkowski@tradepointatlantic.com GDavis@armgroup.net	0 0	Beturn to Client Disposal by lab	
USPS Other:	Doug Hamilton D	DHamilton@armgroup.net	Specific Due Date:	Archive for days	ys





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

27 June 2023

Bob Tworkowski
Tradepoint Atlantic
6995 Bethlehem Blvd.
Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 06/19/23 08:45.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President





1500 Caton Center Dr Suite **Baltimore MD 21227** 410-247-7600

www.mdspectral.com

Reported:

06/27/23 15:25

Analytical Results

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Matrix Date Received Client Sample ID Alternate Sample ID Laboratory ID **Date Sampled**

CELL 5 DPE INF

3061903-01

Vapor

06/19/23 06:55

06/19/23 08:45

 ${\it The results in this report apply to the samples analyzed in accordance with the chain of}$ custody document. This analytical report must be reproduced in its entirety.



* nelac

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/27/23 15:25

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 5 DPE INF

3061903-01 (Vapor) Sampled on: 06/19/23 06:55

			nipicu on. 00/12					
Analyte	Result	Notes Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
				. ,	Dilution	rrepared	Allalyzed	Anaryst
Volatile Organics by EPA 8260B					0.1	06/19/23	06/19/23 14:01	т т
Acetone	ND	ug/L	1.00	1.00				LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	06/19/23	06/19/23 14:01	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Benzene	0.98	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	06/19/23	06/19/23 14:01	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	06/19/23	06/19/23 14:01	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	06/19/23	06/19/23 14:01	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	06/19/23	06/19/23 14:01	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	06/19/23	06/19/23 14:01	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
,								

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



1500 Caton Center Dr Suite G

Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/27/23 15:25

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 5 DPE INF

3061903-01 (Vapor) Sampled on: 06/19/23 06:55

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/					` '				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	06/19/23	06/19/23 14:01	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	06/19/23	06/19/23 14:01	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	06/19/23	06/19/23 14:01	LL
Naphthalene	0.19	J	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Styrene	0.17	J	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Toluene	0.62		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willester



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/27/23 15:25

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 5 DPE INF

3061903-01 (Vapor) Sampled on: 06/19/23 06:55

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepar	ed by GC	MS-VAPO	R-VOLATILES (co	ontinued)				
1,2,3-Trichloropropane	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,2,4-Trimethylbenzene	0.17	J	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
1,3,5-Trimethylbenzene	0.10	J	ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Vinyl chloride	ND		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
o-Xylene	0.24		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
m- & p-Xylenes	0.89		ug/L	0.20	0.10	0.1	06/19/23	06/19/23 14:01	LL
Surrogate: 1,2-Dichloroethane-d4		7	70-130	102 %	06/19/23		06/19/23 14:01		
Surrogate: Toluene-d8		7	75-120	96 %	06/19/23		06/19/23 14:01		
Surrogate: 4-Bromofluorobenzene		6	55-120	99 %	06/19/23		06/19/23 14:01		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600

www.mdspectral.com Reported:

06/27/23 15:25

Project: SPARROWS POINT IM

Project Number: [none]

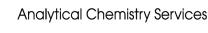
Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle





Maryland **spectral** Services

Analytical Results

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/27/23 15:25

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix, Method, Analyte

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

Vapor | 8260 (Full List) | Vinyl chloride Vapor | 8260 (Full List) | m- & p-Xylenes

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 06/27/23 15:25

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

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Willsburger

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sparrowe Point Manner Sparrowe Point Mor21219 Sparrowe Point Mor	Company Name:	Company Address:		Analysis Requested	CHAIN-OF	CHAIN-OF-CUSTODY RECORD
Sample ID Project Manager: Attention/Invoice: Project Manager: Attention/Invoice: Project Manager: Project Manage	i adepoiit Atlailat	Sparrows Point, MD 21219			Maryland	Spectral Services, Inc.
Field Sample ID Date Time S S S S S S S S S	Project Name: Sparrows Point IM	Project Manager: Bob Tworkowski (443) 649-5073			1500 Cato Balt 410-247-7	n Center Drive, Suite G more, MD 21227 500 • Fax 410–247–7602
Field Sample ID So Determine Secretary Signature Secretary Sampler(s): Guy Davis/ARM Group	Attention/Invoice: ap@tradepointatlantic.com	E AOC		reporti Matrix Codes: NW (r	ig@mdspectral.com on-potable water), DW (drinking	
Field Sample ID Sample ID Sample INT Sample Interventions CE Requirements & Comments: Sample Disposal:	(443) 610-0211		3TIC		water), SV (soil vapo	(L)
d by: (Signature) ad by: (Signature) base/Time class Page	Field Sample ID	Ti BW Water Vater	בחדר פו			
Aby: (Signature) Court Plase report to: Bob Tworkowski Eurodosusia amargous net both and a particular net both and a particu	SDPE		<u></u>			3061903-01
between the control of the control o						
bate Time Columbia						
Special Instructions/OC Requirements & Comments: Boody Hamilton @ armgroup.net						
Second Instructions/OC Requirements & Comments: Bob Ivorkowski brookwaski@armgroup.net Guy Davis Date/Time Cliptor Cli						
Set Desertine Columbia Colum						
Set by: (Signature) Set by: (Signature) Set by: (Signature) Set in the set of the set						
ad by: (Signature) Colored by: (Signature) Special Instructions/QC Requirements & Comments: Bob Tworkowski at a proper to:						
Comparison Date/Time Received by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature) Date/Time						
Continue Date/Time Received by: (Signature) Relinquished by: (Signature) Pate/Time Date/Time						
Companies Comp	Relinquished by: (Signature)		fé	Relinquished by: <i>(Signature)</i>	Date/Time	Received by: <i>(Signature)</i>
Date/Time Received by Jat Signature Date/Time Received by Signature Date/Time Received by Jat Special Instructions/OC Requirements & Comments: Bob Tworkowski@tradepointatiantic.com Special Instruction Special Instructions/OC Requirements & Comments: Rush (2 day) Sample Disposal: Rush (2 day) Sample Disposal: Special Instruction Sample Disposal Samp		•		[Printed]		(Printed)
Method: Special Instructions/QC Requirements & Comments: Bob Tworkowski & to Bob	1_	Date/Time Recover by Latt/ Sign	April 1	Turn Around Time:	1 7 7	
Method: Special Instructions/QC Requirements & Comments: a day Sample Disposal: Please report to: Rush (2 day) Bob Tworkowski@tradepointatiantic.com Next Day Beturn to Client Guy Davis GDavis@armgroup.net Other: Ap Disposal by lab Doug Hamilton DHamilton@armgroup.net DHamilton@armgroup.net Aprive for	(Printed)	(Printed)	Juma,	-		ay
Bob Tworkowski <u>btworkowski@tradepointatlantic.com</u> Guy Davis <u>GDavis@armgroup.net</u> Other. Doug Hamilton <u>DHamilton@armgroup.net</u> Specific Due Date: a Archive for	Method:		ments:		Sample Disposal:	
		ški r	lantic.com et up.net			days





12 July 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 07/06/23 13:55.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Who Beigh

President





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 1 SVE INF		3070607-01	Vapor	07/06/23 06:25	07/06/23 13:55
CELL 3 SVE INF		3070607-02	Vapor	07/06/23 06:45	07/06/23 13:55

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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inelac :

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3070607-01 (Vapor) Sampled on: 07/06/23 06:25

			nipicu on. 07/00					
Analyte	Result 1	Notes Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
				. ,	Dilution	rrepared	Anaryzed	Anaiysi
Volatile Organics by EPA 8260B					0.1	07/07/23	07/07/23 16:30	7.7
Acetone	ND	ug/L	1.00	1.00				LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	07/07/23	07/07/23 16:30	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Benzene	0.52	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	07/07/23	07/07/23 16:30	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	07/07/23	07/07/23 16:30	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:30	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	07/07/23	07/07/23 16:30	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	07/07/23	07/07/23 16:30	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3070607-01 (Vapor) Sampled on: 07/06/23 06:25

			impled on: 07/00					
			Reporting	Detection	- ·			
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/		·						
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:30	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:30	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:30	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Styrene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Toluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Trichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3070607-01 (Vapor) Sampled on: 07/06/23 06:25

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	GC/MS) Prepar	ed by GCMS-VAPO	OR-VOLATILES (continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:30	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	94 %	07/07/2	3	07/07/23 16:30)	
Surrogate: Toluene-d8		75-120	99 %	07/07/2	3	07/07/23 16:30)	
Surrogate: 4-Bromofluorobenzene		65-120	101 %	07/07/2	3	07/07/23 16:30)	

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Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3070607-02 (Vapor) Sampled on: 07/06/23 06:45

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Pre	epared by GCMS-	VAPOR-VOLAT	ΓILES				
Acetone	1.10	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:58	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	07/07/23	07/07/23 16:58	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Benzene	0.38	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	07/07/23	07/07/23 16:58	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	07/07/23	07/07/23 16:58	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:58	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Chloroethane	1.39	ug/L	0.50	0.50	0.1	07/07/23	07/07/23 16:58	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	07/07/23	07/07/23 16:58	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,1-Dichloroethane	0.22	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL

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Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3070607-02 (Vapor) Sampled on: 07/06/23 06:45

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/	MS) Prepar	ed by GCMS-VAPO	R-VOLATILES (c	ontinued)				
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
rans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
-Hexanone	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:58	LL
sopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:58	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	07/07/23	07/07/23 16:58	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Styrene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Coluene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Frichloroethene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Γrichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL

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Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3070607-02 (Vapor) Sampled on: 07/06/23 06:45

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAl	POR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	07/07/23	07/07/23 16:58	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	98 %	07/07/2	23	07/07/23 16:58	ı.	
Surrogate: Toluene-d8		75-120	99 %	07/07/2	23	07/07/23 16:58		
Surrogate: 4-Bromofluorobenzene		65-120	102 %	07/07/2	23	07/07/23 16:58		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix, Method, Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

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Will Brewington, President



Analytical Chemistry Services



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 07/12/23 11:11

Analytical Results

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

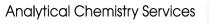
Matrix, Method, Analyte

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

 $Vapor \mid 8260 \; (Full \; List) \mid Vinyl \; chloride$ $Vapor \mid 8260 \; (Full \; List) \mid m\text{-} \; \& \; p\text{-}Xylenes$

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 07/12/23 11:11

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Mes

CHAIN-OF-CUSTODY RECORD	Maryland Spectral Services, Inc.	1500 Caton Center Drive, Suite G Baltimore, MD 21227 410-247-7600 • Fax 410-247-7602	reporting@mdspectral.com	Matrix Codes: NW (non-potable water), DW (drinking water), SV (soil vapor)	Field MSS Lab ID	10-100010	γο-					Received by: (Signature)	(Printed)	:	lay	- days
CHAIN-0F	Maryland	1500 Cato Balti 410–247–71	reportir	Matrix Codes: NW (noi water), SV (soil vapor)	Fi Preservative No							Date/Time	T	Lab Use:	☐ Received on Ice	Sample Disposal: Return to Client Disposal by lab
Analysis Requested												Relinquished by: <i>(Signature)</i>	(Printed)		№ Normal (7 day) □ 5 day □ 4 day	
			oce	V atio	No. of C	Ž	_							[6, 75]	バ	ents: ntic.com i.net
Company Address:	T600 Sparrows Point Blvd Sparrows Point, MD 21219	Project Manager: Bob Tworkowski (443) 649-5073		ap@tradepointatlantic.com	Ti BW Water Soil	5690	X 5490					ne Received by: (Signature)	(Printed)] e	Special Instructions/QC Requirements & Comments: Please report to: Bob Tworkowski btworkowski@tradepointatlantic.com Guy Davis GDavis@armgroup.net Doug Hamilton @Armgroup.net
Compan	Sparrow Sparrow	Project N Bob Two	Attention	ap@trad	Date	7/6/33	716183					Date/Time	<u> </u>	Date/Time 7/6/13	(3:5)	Special Instructions/C Please report to: Bob Tworkowski Guy Davis Doug Hamilton
Company Name:	Tradepoint Atlantic	Project Name: Sparrows Point IM	Sampler(s):	Guy Davis/ARM Group (443) 610-0211	Field Sample ID	CELL, 4 SVE INT	[fa]					Relinquished by: (Signature)	(Printed)	o pe	(Printed)	Delivery Method: Specii Courier Please De Client Bol De UPS Gu Do USPS Do Other.





16 August 2023

Bob Tworkowski
Tradepoint Atlantic
6995 Bethlehem Blvd.
Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 08/08/23 10:51.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President





e nelace

Analytical Results

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 1 SVE INF		3080803-01	Vapor	08/08/23 06:30	08/08/23 10:51
CELL 3 SVE INF		3080803-02	Vapor	08/08/23 07:50	08/08/23 10:51

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willsburger



1500 Caton Center Dr Suite G

Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3080803-01 (Vapor) Sampled on: 08/08/23 06:30

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Pr	epared by GCMS	S-VAPOR-VOLA	TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	08/08/23	08/08/23 14:25	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	08/08/23	08/08/23 14:25	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Benzene	10.7	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	08/08/23	08/08/23 14:25	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	08/08/23	08/08/23 14:25	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	08/08/23	08/08/23 14:25	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	08/08/23	08/08/23 14:25	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	08/08/23	08/08/23 14:25	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
*	-	· ·						

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterender



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3080803-01 (Vapor) Sampled on: 08/08/23 06:30

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/M	IS) Prepai	red by GC	MS-VAPOI	R-VOLATILES (co	ontinued)				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	08/08/23	08/08/23 14:25	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	08/08/23	08/08/23 14:25	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	08/08/23	08/08/23 14:25	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Styrene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Toluene	0.18	J	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willester



es **nelac**

Analytical Results

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3080803-01 (Vapor) Sampled on: 08/08/23 06:30

			Reporting	Detection							
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst			
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)											
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL			
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL			
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL			
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL			
o-Xylene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL			
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 14:25	LL			
Surrogate: 1,2-Dichloroethane-d4		70-130	98 %	08/08/2	3	08/08/23 14:23	5				
Surrogate: Toluene-d8		75-120	98 %	08/08/2	3	08/08/23 14:23	5				
Surrogate: 4-Bromofluorobenzene		65-120	97 %	08/08/2	3	08/08/23 14:23	5				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher



* nelac

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3080803-02 (Vapor) Sampled on: 08/08/23 07:50

A 1.	D 1:	NI	Reporting	Detection	Du e	D 1		
Analyte		Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B								
Acetone	ND	ug/L	1.00	1.00	0.1	08/08/23	08/08/23 15:14	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	08/08/23	08/08/23 15:14	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Benzene	0.71	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	08/08/23	08/08/23 15:14	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	08/08/23	08/08/23 15:14	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	08/08/23	08/08/23 15:14	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	08/08/23	08/08/23 15:14	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	08/08/23	08/08/23 15:14	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterender



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3080803-02 (Vapor) Sampled on: 08/08/23 07:50

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS	S) Prepar	ed by GCMS	-VAPO	R-VOLATILES (co	ntinued)				
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	08/08/23	08/08/23 15:14	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	08/08/23	08/08/23 15:14	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	08/08/23	08/08/23 15:14	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Styrene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Toluene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Millebrugher



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3080803-02 (Vapor) Sampled on: 08/08/23 07:50

			Reporting	Detection							
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst			
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)											
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL			
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL			
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL			
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL			
o-Xylene	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL			
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	08/08/23	08/08/23 15:14	LL			
Surrogate: 1,2-Dichloroethane-d4		70-130	98 %	08/08/2	3	08/08/23 15:14	4				
Surrogate: Toluene-d8		75-120	97 %	08/08/2	3	08/08/23 15:14	4				
Surrogate: 4-Bromofluorobenzene		65-120	97 %	08/08/2	3	08/08/23 15:14	4				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willistengten



1500 Caton Center Dr Suite G Baltimore MD 21227

410-247-7600

www.mdspectral.com Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

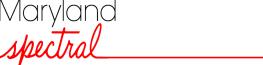
Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix, Method, Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

Millebrighe

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Analytical Chemistry Services



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Analytical Results

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix, Method, Analyte

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | 1,3,3-11111eurytoen

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

 $Vapor \mid 8260 \; (Full \; List) \mid Vinyl \; chloride$ $Vapor \mid 8260 \; (Full \; List) \mid m\text{-}\& \; p\text{-}Xylenes$

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 08/16/23 14:34

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright

Company Name: Tradepoint Atlantic	Compar 6995 Be			l Cui	ita 101	\prod			Analysis Requested CHAIN-OF-CUSTODY RECOR						RECORD				
Tradepoint Atlantic	1	re, MD 2			ite iot	´		***************************************							Mar	yland	Spectra	al Servic	es, inc.
Project Name: Sparrows Point IM	Project I Bob Two (443) 64	orkowski 9-5073		·				's + 3260							1500 410-:	Cato Balti 247–7	n Cente more, N 600 • Fa	r Drive, VD 212: x 410-2 spectral	Suite G 27 47–7602
Sampler(s): Guy Davis/ARM Group (443) 610-0211	Attention/Invoice: ap@tradepointatlantic.com					No. of Containers FULL SUITE VOCs + NAPHTHALENE 8260									NW (n	on-pota		er), DW (drinking	
Field Sample ID	Date	Time	DW	Water	Soil	. *	NO. 01	FULL ST NAPHTH							Preservative		eld otes		/ISS Lab ID
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Delivery Method: Special Inst		QC Requ	irem	ents	& Co	nme	nts:			3 day Rush		av.			Sample Dispos	sal:			
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□ FedEx Guy Dav	is	<u>GDa</u>	vis@	arm	group	<u>net</u>				Othe		 _	1a+=:		Disposal by	/ lab			
Doug Ha	milton	<u>DHa</u>	milt	on@	armg	oup.													



14 September 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 09/06/23 11:48.

Please visit our website at www.mdspectral.com for a complete listing of our accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rabecka Koons

Quality Assurance Officer



Project Manager: Bob Tworkowski

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com MD DW LabID 153

Project: SPARROWS POINT IM

Project Number: [none]

Reported: 09/14/23 11:09

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 1 SVE INF		3090602-01	Vapor	09/06/23 06:55	09/06/23 11:48
CELL 3 SVE INF		3090602-02	Vapor	09/06/23 08:05	09/06/23 11:48

Rakecka Koms

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Reported:

09/14/23 11:09

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3090602-01 (Vapor) Sampled on: 09/06/23 06:55

			Reporting	Detection				
Analyte	Result Notes	s Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prepare	d by GCMS-	VAPOR-VOLAT	TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 13:56	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	09/06/23	09/06/23 13:56	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Benzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	09/06/23	09/06/23 13:56	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	09/06/23	09/06/23 13:56	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 13:56	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	09/06/23	09/06/23 13:56	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	09/06/23	09/06/23 13:56	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

lakoka Kons



Reported:

09/14/23 11:09

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 1 SVE INF

3090602-01 (Vapor) Sampled on: 09/06/23 06:55

			Reporting	Detection				
Analyte	Result Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prepared	by GCMS-	VAPOR-VOLAT	ΓILES (continue	ed)			
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 13:56	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 13:56	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 13:56	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Styrene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Toluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

lakecka Kons



WID E

Reported: 09/14/23 11:09

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 1 SVE INF

3090602-01 (Vapor) Sampled on: 09/06/23 06:55

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Pr	epared by GCMS	S-VAPOR-VOLA	ATILES (continue	d)			
Trichloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 13:56	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	89 %	09/06/23	3	09/06/23 13:56		
Surrogate: Toluene-d8		75-120	87 %	09/06/23	3	09/06/23 13:56		
Surrogate: 4-Bromofluorobenzene		65-120	94 %	09/06/23	3	09/06/23 13:56		

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Reported:

09/14/23 11:09

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 3 SVE INF

3090602-02 (Vapor) Sampled on: 09/06/23 08:05

			Reporting	Detection				
Analyte	Result No	otes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepa	red by GCMS-	VAPOR-VOLA	ΓILES				
Acetone	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 14:21	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	09/06/23	09/06/23 14:21	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Benzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	09/06/23	09/06/23 14:21	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	09/06/23	09/06/23 14:21	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 14:21	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Chloroethane	1.65	ug/L	0.50	0.50	0.1	09/06/23	09/06/23 14:21	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	09/06/23	09/06/23 14:21	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,1-Dichloroethane	0.13	J ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pakecka Kons



Reported:

09/14/23 11:09

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 3 SVE INF

3090602-02 (Vapor) Sampled on: 09/06/23 08:05

			Reporting	Detection				
Analyte	Result Note	es Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prepar	ed by GCMS-	VAPOR-VOLA	TILES (continue	ed)	_	·	_
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 14:21	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 14:21	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	09/06/23	09/06/23 14:21	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Styrene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
Toluene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pakecka Koms



Reported:

09/14/23 11:09

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 3 SVE INF

3090602-02 (Vapor) Sampled on: 09/06/23 08:05

		Reporting	Detection						
Result Not	es Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst		
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)									
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
ND	ug/L	0.20	0.10	0.1	09/06/23	09/06/23 14:21	LL		
	70-130	98 %	09/06/2.	3	09/06/23 14:21				
	75-120	96 %	09/06/2.	3	09/06/23 14:21				
	65-120	99 %	09/06/2.	3	09/06/23 14:21				
	ND N	ND	ND	Result Notes Units Limit (MRL) Limit (LOD) CC/MS) Prepared by GCMS-VAPOR-VOLATILES (continue) ND ug/L 0.20 0.10 ND 09/06/2 0.10 ND 09/06/2 0.10	Result Notes Units Limit (MRL) Limit (LOD) Dilution CC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued) ND ug/L 0.20 0.10 0.1 ND 0.9/06/23 0.9/06/23 0.9/06/23	Result Notes Units Limit (MRL) Limit (LOD) Dilution Prepared CC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued) ND ug/L 0.20 0.10 0.1 09/06/23 70-130 98 % 09/06/23	Result Notes Units Limit (MRL) Limit (LOD) Dilution Prepared Analyzed CC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued) ND ug/L 0.20 0.10 0.1 09/06/23 09/06/23 14:21 ND ug/L 0.20		

lakofa Kons

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

Reported: 09/14/23 11:09

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

Rakecka Koms

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Tradepoint Atlantic		Baltimo				ne n											Mary	yland S	Spectra	al Serv	ices, Inc.	
Project Name: Sparrows Point IM Sampler(s):		Project I Bob Two (443) 64 Attentio	Manager orkowski 9-5073	": 				S	Cs + 8260								1500 410-2	Caton Baltin 247–76	Cente nore, N	r Drive /ID 21: x 410-	, Suite G 227 247–7602	
Guy Davis/ARM Group (443) 610-0211		ap@trac			ic.co	m		Containers	FULL SUITE VOCs + NAPHTHALENE 8260								Matrix Codes: N water), SV (soil			able wa	ater), DW (drink	ding
Field Sample II)	Date	Time	DW	Water	Soil	SV	No. of C	FULL SUNAPHTH				:				Preservative	Fie Not			MSS Lab ID	
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a UPS		orkowski	- Commission Commissio						c.com		Othe						□ Return to C Disposal by					
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10 October 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 10/02/23 11:34.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President





e nelad

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 1 SVE INF		3100202-01	Vapor	10/02/23 07:30	10/02/23 11:34
CELL 3 SVE INF		3100202-02	Vapor	10/02/23 07:50	10/02/23 11:34

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3100202-01 (Vapor) Sampled on: 10/02/23 07:30

Reporting Detection												
Analyte	Result 1	Notes Units	Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst				
				. ,	Dilution	Frepared	Allaryzed	Allalyst				
Volatile Organics by EPA 8260B					0.1	10/02/23	10/02/23 13:29	т т				
Acetone	ND	ug/L	1.00	1.00				LL				
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	10/02/23	10/02/23 13:29	LL				
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Benzene	0.26	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Bromobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Bromoform	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Bromomethane	ND	ug/L	0.50	0.50	0.1	10/02/23	10/02/23 13:29	LL				
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	10/02/23	10/02/23 13:29	LL				
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	10/02/23	10/02/23 13:29	LL				
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Chloroethane	ND	ug/L	0.50	0.50	0.1	10/02/23	10/02/23 13:29	LL				
Chloroform	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Chloromethane	ND	ug/L	0.50	0.50	0.1	10/02/23	10/02/23 13:29	LL				
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Dibromomethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL				
•		=										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterester



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3100202-01 (Vapor) Sampled on: 10/02/23 07:30

			54	impied on: 10/02					
				Reporting	Detection				
Analyte	Result		nits	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/		·							
1,1-Dichloroethene	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
cis-1,2-Dichloroethene	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
trans-1,2-Dichloroethene	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Dichlorofluoromethane	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,2-Dichloropropane	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,3-Dichloropropane	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
2,2-Dichloropropane	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,1-Dichloropropene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
cis-1,3-Dichloropropene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
trans-1,3-Dichloropropene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Diisopropyl ether (DIPE)	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Ethyl tert-butyl ether (ETBE)	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Ethylbenzene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Hexachlorobutadiene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
2-Hexanone	ND	u	g/L	1.00	1.00	0.1	10/02/23	10/02/23 13:29	LL
Isopropylbenzene (Cumene)	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
4-Isopropyltoluene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Methyl tert-butyl ether (MTBE)	ND	uş	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
4-Methyl-2-pentanone	ND	u	g/L	1.00	1.00	0.1	10/02/23	10/02/23 13:29	LL
Methylene chloride	ND	uş	g/L	1.00	1.00	0.1	10/02/23	10/02/23 13:29	LL
Naphthalene	ND	uş	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
n-Propylbenzene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Styrene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,1,1,2-Tetrachloroethane	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,1,2,2-Tetrachloroethane	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Tetrachloroethene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Toluene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,2,3-Trichlorobenzene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,2,4-Trichlorobenzene	ND	u	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,1,1-Trichloroethane	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,1,2-Trichloroethane	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Trichloroethene	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Trichlorofluoromethane (Freon 11)	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3100202-01 (Vapor) Sampled on: 10/02/23 07:30

			Reporting	Detection				
Analyte	Result	Notes Unit	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (Go	C/MS) Prepar	ed by GCMS-VA	POR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:29	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	96 %	10/02/2	23	10/02/23 13:29		
Surrogate: Toluene-d8		75-120	100 %	10/02/2	23	10/02/23 13:29		
Surrogate: 4-Bromofluorobenzene		65-120	101 %	10/02/2	23	10/02/23 13:29		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher



nela Car

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3100202-02 (Vapor) Sampled on: 10/02/23 07:50

Reporting Detection												
Analyte	Result N	Notes Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst				
Volatile Organics by EPA 8260B				. ,	Dilation	Trepared	7 mary 200	1 mary st				
Acetone Volatile Organics by EPA 8260B	(GC/MS) Prep ND	ug/L	1.00	1.00	0.1	10/02/23	10/02/23 13:54	LL				
	ND ND	ug/L ug/L	2.00	2.00	0.1	10/02/23	10/02/23 13:54	LL				
tert-Amyl alcohol (TAA) tert-Amyl ethyl ether (TAEE)	ND ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
		ug/L ug/L			0.1	10/02/23	10/02/23 13:54	LL				
tert-Amyl methyl ether (TAME)	ND	_	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Benzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Bromobenzene	ND	ug/L	0.20	0.10		10/02/23						
Bromochloromethane	ND	ug/L	0.20	0.10	0.1		10/02/23 13:54	LL				
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Bromoform	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Bromomethane	ND	ug/L	0.50	0.50	0.1	10/02/23	10/02/23 13:54	LL				
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	10/02/23	10/02/23 13:54	LL				
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	10/02/23	10/02/23 13:54	LL				
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Chloroethane	0.61	ug/L	0.50	0.50	0.1	10/02/23	10/02/23 13:54	LL				
Chloroform	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Chloromethane	ND	ug/L	0.50	0.50	0.1	10/02/23	10/02/23 13:54	LL				
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Dibromomethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterester



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3100202-02 (Vapor) Sampled on: 10/02/23 07:50

			54	implea on: 10/02	723 07.30				
				Reporting	Detection				
Analyte	Result		nits	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC)	MS) Prepar	ed by GCMS-V	APOI	R-VOLATILES (co	ontinued)				
1,1-Dichloroethene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
cis-1,2-Dichloroethene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
trans-1,2-Dichloroethene	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Dichlorofluoromethane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,2-Dichloropropane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,3-Dichloropropane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
2,2-Dichloropropane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,1-Dichloropropene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
cis-1,3-Dichloropropene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
trans-1,3-Dichloropropene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Diisopropyl ether (DIPE)	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Ethyl tert-butyl ether (ETBE)	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Ethylbenzene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Hexachlorobutadiene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
2-Hexanone	ND	ug	g/L	1.00	1.00	0.1	10/02/23	10/02/23 13:54	LL
(Sopropylbenzene (Cumene)	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
4-Isopropyltoluene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Methyl tert-butyl ether (MTBE)	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
4-Methyl-2-pentanone	ND	ug	g/L	1.00	1.00	0.1	10/02/23	10/02/23 13:54	LL
Methylene chloride	ND	ug	g/L	1.00	1.00	0.1	10/02/23	10/02/23 13:54	LL
Naphthalene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
n-Propylbenzene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Styrene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,1,1,2-Tetrachloroethane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,1,2,2-Tetrachloroethane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Tetrachloroethene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Гoluene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
,2,3-Trichlorobenzene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
,2,4-Trichlorobenzene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,1,1-Trichloroethane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,1,2-Trichloroethane	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Frichloroethene	ND	ug	g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Trichlorofluoromethane (Freon 11)	ND		g/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterester



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3100202-02 (Vapor) Sampled on: 10/02/23 07:50

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (G	C/MS) Prepar	ed by GCMS-VAP	OR-VOLATILES	(continued)				
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	10/02/23	10/02/23 13:54	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	92 %	10/02/2	3	10/02/23 13:54	1	
Surrogate: Toluene-d8		75-120	99 %	10/02/2	3	10/02/23 13:54	1	
Surrogate: 4-Bromofluorobenzene		65-120	102 %	10/02/2	3	10/02/23 13:54	1	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willistengten



1500 Caton Center Dr Suite G

Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix , Method , Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	$Vapor \mid 8260 \ (Full \ List) \mid 1,1,2,2\text{-}Tetrachloroethane}$
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

Milletrighten

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix , Method , Analyte

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

 $Vapor \mid 8260 \; (Full \; List) \mid Vinyl \; chloride$ $Vapor \mid 8260 \; (Full \; List) \mid m\text{-}\& \; p\text{-}Xylenes$

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher





1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 10/10/23 12:29

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Bright

Company Name: Tradepoint Atlantic			Company Address: 6995 Bethlehem Blvd, Suite 100						Analysis Requested								CHAIN-OF-CUSTODY RECORD					
Tradoponte Atlantio		Baltimo				110 10	~										Mai	ryland	Spectra	ıl Servi	ces, Inc.	
Project Name: Sparrows Point IM		Project N Bob Two (443) 645	orkowsk				:		s + 260								410-	Baltir -247–76	nore, M 800 • Fa	1D 212 x 410–	247–7602	
Sampler(s): Guy Davis/ARM Group (443) 610-0211		Attention ap@trac			ic.co	<u>m</u>		Containers	FULL SUITE VOCs + NAPHTHALENE 8260								Matrix Codes: water), SV (soi	NW (no				inking
Field Sample ID		Date	Time	DW	Water	Soil	SV	No. of C	FULL SU								Preservative	Fie No	eld tes		MSS Lab ID	ı
CELL 1 SUE!	NF	10/2/23	U730				X	I	\geq											310	0202-01	Α
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	Special Ins Please repo Bob Two Guy Day	I Instructions/QC Requirements & Commreport to: Tworkowski <u>btworkowski@tradepointatle</u> Davis <u>GDavis@armgroup.ne</u>			mm ntatla p.ne	ent	s: 3 day Rush (2 day) Next Day Other:						Sample Disposal: Return to Client Disposal by lab									
D Other:	Doug III	oug Hamilton <u>DHamilton@armgr</u>				<u>ırvu</u>	y.iic	net Specific Due Date:								Archive for days						



15 November 2023

Bob Tworkowski Tradepoint Atlantic 6995 Bethlehem Blvd. Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 11/06/23 12:45.

Please visit our website at www.mdspectral.com for a complete listing of our accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rabecka Koons

Quality Assurance Officer



Reported:

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski 11/15/23 15:18

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 3 SVE INF		3110602-01	Vapor	11/06/23 06:45	11/06/23 12:45
CELL 1 SVE INF		3110602-02	Vapor	11/06/23 10:30	11/06/23 12:45

lakela Koms

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Project Number: [none]

Project Manager: Bob Tworkowski

Project: SPARROWS POINT IM

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600

> Reported: 11/15/23 15:18

www.mdspectral.com MD DW LabID 153

CELL 3 SVE INF

3110602-01 (Vapor) Sampled on: 11/06/23 06:45

			Reporting	Detection				
Analyte	Result Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared l	oy GCMS-	VAPOR-VOLAT	TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:26	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	11/06/23	11/06/23 13:26	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Benzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	11/06/23	11/06/23 13:26	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	11/06/23	11/06/23 13:26	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:26	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Chloroethane	0.68	ug/L	0.50	0.50	0.1	11/06/23	11/06/23 13:26	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	11/06/23	11/06/23 13:26	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Reported: 11/15/23 15:18

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3110602-01 (Vapor) Sampled on: 11/06/23 06:45

			Reporting	Detection				
Analyte	Result Note	es Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prepar	ed by GCMS-	VAPOR-VOLA	FILES (continue	ed)		-	
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:26	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:26	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:26	LL
Naphthalene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Styrene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
Toluene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL
1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Pakecka Kons



1

Reported: 11/15/23 15:18

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 3 SVE INF

3110602-01 (Vapor) Sampled on: 11/06/23 06:45

			Reporting	Detection							
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst			
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)											
Trichloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
o-Xylene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:26	LL			
Surrogate: 1,2-Dichloroethane-d4		70-130	102 %	11/06/23	3	11/06/23 13:26					
Surrogate: Toluene-d8		75-120	98 %	11/06/23	3	11/06/23 13:26					
Surrogate: 4-Bromofluorobenzene		65-120	99 %	11/06/23	3	11/06/23 13:26					

lakofa Kons

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Reported:

11/15/23 15:18

Project: SPARROWS POINT IM

Project Number: [none]
Project Manager: Bob Tworkowski

CELL 1 SVE INF

3110602-02 (Vapor) Sampled on: 11/06/23 10:30

			Reporting	Detection				
Analyte	Result Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Prepared b	y GCMS-	VAPOR-VOLAT	TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:50	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	11/06/23	11/06/23 13:50	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Benzene	2.26	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	11/06/23	11/06/23 13:50	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	11/06/23	11/06/23 13:50	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:50	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Chloroethane	ND	ug/L	0.50	0.50	0.1	11/06/23	11/06/23 13:50	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	11/06/23	11/06/23 13:50	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

lakecka Kons



> Reported: 11/15/23 15:18

MD DW LabID 153

Project: SPARROWS POINT IM

Project Manager: Bob Tworkowski

Project Number: [none]

CELL 1 SVE INF

3110602-02 (Vapor) Sampled on: 11/06/23 10:30

1.1-Dichloroethene				Reporting	Detection				
1,2-Dichloroethane	Analyte	Result Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
1,1-Dichloroethene	Volatile Organics by EPA 8260B	(GC/MS) Prepared	l by GCMS-	VAPOR-VOLA	ΓILES (continue	ed)			
cis-1,2-Dichloroethene ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL trans-1,2-Dichloroethene ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL Dichlorofluoromethane ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL 1,2-Dichloropropame ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL 1,3-Dichloropropame ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL 1,1-Dichloropropame ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL 1,1-Dichloropropame ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL 1,1-Dichloropropame ND ug/L 0,20 0,10 0,1 11/06/23 11/06/23 13:50 LL 1,1-Dichloropropame ND ug/L 0,20 </td <td>1,2-Dichloroethane</td> <td>ND</td> <td>ug/L</td> <td>0.20</td> <td>0.10</td> <td>0.1</td> <td>11/06/23</td> <td>11/06/23 13:50</td> <td>LL</td>	1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
trans-1,2-Dichlororethene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,2-Dichlorofuoromethane ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,2-Dichloropropane ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,3-Dichloropropane ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,3-Dichloropropane ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropane ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropane ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene (Cumene) ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloropropene ND ug/L 0,20 0,10 0,1 11,0623 11,0623 13,50 LL 1,1-Dichloroprop	1,1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Dichloroffluoromethane	cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,2-Dichloropropane	trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,3-Dichloropropane ND	Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
2,2-Dichloropropane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1-Dichloropropene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL cis-1,3-Dichloropropene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL trans-1,3-Dichloropropene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL bisopropyl ether (DIPE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 2-Hexanne ND ug/L	1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,1-Dichloropropene	1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Control Cont	2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
trans-1,3-Dichloropropene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Diisopropyl ether (DIPE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1	1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Diisopropyl ether (DIPE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hexachlorobutadiene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hexachlorobutadiene ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Isopropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Isopropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Isopropylbenzene (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Isopropylbenzene (MTBE) ND ug/L 1.00 1.00 1.00 1.01 11/06/23 11/06/23 13:50 LL Isopropylbenzene ND ug/L 1.00 1.0	cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Ethyl tert-butyl ether (ETBE) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL Ethylpenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Ethylpenze	trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Ethylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hexachlorobutadiene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Sepropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Isopropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hexachlorobutadiene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hexachlorobutadiene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hexachlorobutadiene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hethyl tert-butyl ether (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Hethyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Hethyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Hethylene chloride ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL L L 1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL T1,1,1,2-T	Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Hexachlorobutadiene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 2-Hexanone ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Isopropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Isopropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Isopropylbenzene (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Methyl-2-pentanone ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Methyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL 4-Methyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Methylene chloride ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Naphtha	Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
2-Hexanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Isopropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Isopropylbenzene (Cumene) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Isopropylbenzene (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 4-Methyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL 4-Methyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Methylene chloride ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Styrene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1.1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1.1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	Ethylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Suppropylenzene (Cumene)	Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
ND	2-Hexanone	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:50	LL
Methyl tert-butyl ether (MTBE) ND ug/L 0.20 0.10 0.1 11/06/23 13:50 LL 4-Methyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 13:50 LL Methylene chloride ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND u	Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
4-Methyl-2-pentanone ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Methylene chloride ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL n-Propylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL n-Propylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL styrene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Methylene chloride ND ug/L 1.00 1.00 0.1 11/06/23 11/06/23 13:50 LL Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL n-Propylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Styrene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Toluene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 <td< td=""><td>Methyl tert-butyl ether (MTBE)</td><td>ND</td><td>ug/L</td><td>0.20</td><td>0.10</td><td>0.1</td><td>11/06/23</td><td>11/06/23 13:50</td><td>LL</td></td<>	Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Naphthalene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL n-Propylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Styrene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Toluene 0.42 ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:50	LL
n-Propylbenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Styrene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Toluene 0.42 ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 </td <td>Methylene chloride</td> <td>ND</td> <td>ug/L</td> <td>1.00</td> <td>1.00</td> <td>0.1</td> <td>11/06/23</td> <td>11/06/23 13:50</td> <td>LL</td>	Methylene chloride	ND	ug/L	1.00	1.00	0.1	11/06/23	11/06/23 13:50	LL
Styrene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Toluene 0.42 ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	Naphthalene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,1,1,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Toluene 0.42 ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	n-Propylbenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,1,2,2-Tetrachloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Tetrachloroethene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Toluene 0.42 ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	Styrene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Tetrachloroethene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL Toluene 0.42 ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	1,1,1,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
Toluene 0,42 ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	1,1,2,2-Tetrachloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,2,3-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	Tetrachloroethene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,2,4-Trichlorobenzene ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL 1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	Toluene	0.42	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
1,1,1-Trichloroethane ND ug/L 0.20 0.10 0.1 11/06/23 11/06/23 13:50 LL	1,2,3-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
-,-,-	1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
$1,1,2-Trichloroethane \qquad ND \qquad ug/L \qquad 0.20 \qquad 0.10 \qquad 0.1 \qquad 11/06/23 \qquad 11/06/23 13:50 \qquad LL$	1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL
	1,1,2-Trichloroethane	ND	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Reported: 11/15/23 15:18

CELL 1 SVE INF

3110602-02 (Vapor) Sampled on: 11/06/23 10:30

				Reporting	Detection						
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst		
Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)											
Trichloroethene	ND		ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
1,2,3-Trichloropropane	ND		ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
Vinyl chloride	ND		ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
o-Xylene	ND		ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
m- & p-Xylenes	0.12	J	ug/L	0.20	0.10	0.1	11/06/23	11/06/23 13:50	LL		
Surrogate: 1,2-Dichloroethane-d4		7	70-130	99 %	11/06/23		11/06/23 13:50				
Surrogate: Toluene-d8		7	75-120	97 %	11/06/23		11/06/23 13:50				
Surrogate: 4-Bromofluorobenzene		6	55-120	98 %	11/06/23		11/06/23 13:50				

lakofa Kons

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

11/15/23 15:18

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

Pakecka Koms

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Company Name:		Compar	•							,	Analy	ysis	Requ	ıeste	d			CHAIN-OF-CUSTODY RECORD			
Tradepoint Atlantic		6995 Be				ite 10	ן טכ			Τ	T	T	T					Man	dand (Spootra	al Services, Inc.
Project Name: Sparrows Point IM Sampler(s): Guy Davis/ARM Group		Project I Bob Two (443) 64 Attentio	Managei orkowsk 9-5073 n/Invoic	i :		ım		Containers	FULL SUITE VOCs + NAPHTHALENE 8260									1500 410–2 re	Caton Baltir 247–76 porting	Center nore, M 600 • Fa g@mds	r Drive, Suite G MD 21227 x 410–247–7602 spectral.com
(443) 610-0211								onta	ITE IALE									water), SV (soil			able water), DW (drinking
Field Sample	D	Date	Time	DW	Water	Soil	SV	No. of C	FULL SUITE VOCs +									Preservative	Fie Not		MSS Lab ID
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□ FedEx □ USPS □ Other:	Doug Ha					armı			<u>et</u>		Spe		Due	Date	e:		•	Archive for		days	





19 December 2023

Bob Tworkowski
Tradepoint Atlantic
6995 Bethlehem Blvd.
Baltimore, MD 21219

RE: SPARROWS POINT IM

Enclosed are the results of analyses for samples received by the laboratory on 12/12/23 14:58.

Maryland Spectral Services, Inc. is a TNI 2016 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2016 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2016 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington

Ulliburghe

President



enero Posta Paris
1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CELL 5 DPE INF		3121213-01	Vapor	12/12/23 07:25	12/12/23 14:58
CELL 3 SVE INF		3121213-02	Vapor	12/12/23 10:25	12/12/23 14:58
CELL 1 SVE INF		3121213-03	Vapor	12/12/23 13:25	12/12/23 14:58

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willessenge



* nelac

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 5 DPE INF

3121213-01 (Vapor) Sampled on: 12/12/23 07:25

		Sa	Danastina					
Analyte	Result N	lotes Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B					Dilation	Trepared	2 mary zou	1 mary st
Acetone Acetone	ND	ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:18	LL
	ND ND	ug/L ug/L	2.00	2.00	0.1	12/13/23	12/13/23 12:18	LL
tert-Amyl alcohol (TAA) tert-Amyl ethyl ether (TAEE)	ND ND	ug/L ug/L	0.20		0.1	12/13/23	12/13/23 12:18	LL
		ug/L ug/L		0.10	0.1	12/13/23	12/13/23 12:18	LL
tert-Amyl methyl ether (TAME)	ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Benzene Bromobenzene	0.59 ND	ug/L ug/L	0.20 0.20	0.10 0.10	0.1	12/13/23	12/13/23 12:18	LL
Bromochloromethane	ND ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Bromodichloromethane	ND ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Bromoform	ND ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Bromomethane	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
	ND ND	ug/L ug/L	1.50	1.50	0.1	12/13/23	12/13/23 12:18	LL
tert-Butanol (TBA) 2-Butanone (MEK)	ND ND	ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:18	LL
n-Butylbenzene	ND ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
sec-Butylbenzene	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
tert-Butylbenzene	ND ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Carbon disulfide	ND ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
		ug/L ug/L			0.1	12/13/23	12/13/23 12:18	LL
Carbon tetrachloride	ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Chlorobenzene Chloroethane	ND ND	_	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
		ug/L	0.50	0.50	0.1	12/13/23	12/13/23 12:18	LL
Chloroform	ND	ug/L	0.20	0.10				
Chloromethane	ND	ug/L	0.50	0.50	0.1	12/13/23	12/13/23 12:18	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiteren



1500 Caton Center Dr Suite G

Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 5 DPE INF

3121213-01 (Vapor) Sampled on: 12/12/23 07:25

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (C	GC/MS) Pr	epared by	GCMS-	VAPOR-VOLAT	ILES (continue	ed)			
1,1-Dichloroethene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
cis-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
trans-1,2-Dichloroethene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Dichlorofluoromethane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,3-Dichloropropane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
2,2-Dichloropropane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,1-Dichloropropene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
cis-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
trans-1,3-Dichloropropene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Diisopropyl ether (DIPE)	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Ethylbenzene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Hexachlorobutadiene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
2-Hexanone	ND		ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:18	LL
Isopropylbenzene (Cumene)	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
4-Isopropyltoluene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
4-Methyl-2-pentanone	ND		ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:18	LL
Methylene chloride	ND		ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:18	LL
Naphthalene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
n-Propylbenzene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Styrene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,1,1,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,1,2,2-Tetrachloroethane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Tetrachloroethene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Toluene	0.37		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2,3-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2,4-Trichlorobenzene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,1,1-Trichloroethane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,1,2-Trichloroethane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Trichloroethene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Trichlorofluoromethane (Freon 11)	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Whiterester



nelao

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 5 DPE INF

3121213-01 (Vapor) Sampled on: 12/12/23 07:25

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Pr	epared b	y GCMS-	VAPOR-VOLAT	TILES (continued	l)			
1,2,3-Trichloropropane	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Vinyl chloride	ND		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
o-Xylene	0.13	J	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
m- & p-Xylenes	0.45		ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:18	LL
Surrogate: 1,2-Dichloroethane-d4		7	70-130	101 %	12/13/23		12/13/23 12:18		
Surrogate: Toluene-d8		7	75-120	97 %	12/13/23		12/13/23 12:18		
Surrogate: 4-Bromofluorobenzene		ć	55-120	100 %	12/13/23		12/13/23 12:18		

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Milleburgher



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Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3121213-02 (Vapor) Sampled on: 12/12/23 10:25

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Pr	epared by GCM	IS-VAPOR-VOLA	TILES				
Acetone	ND	ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:42	LL
tert-Amyl alcohol (TAA)	ND	ug/L	2.00	2.00	0.1	12/13/23	12/13/23 12:42	LL
tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
tert-Amyl methyl ether (TAME)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Benzene	7.69	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Bromobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Bromochloromethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Bromodichloromethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Bromoform	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Bromomethane	ND	ug/L	0.50	0.50	0.1	12/13/23	12/13/23 12:42	LL
tert-Butanol (TBA)	ND	ug/L	1.50	1.50	0.1	12/13/23	12/13/23 12:42	LL
2-Butanone (MEK)	ND	ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:42	LL
n-Butylbenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
sec-Butylbenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
tert-Butylbenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Carbon disulfide	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Carbon tetrachloride	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Chlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Chloroethane	0.94	ug/L	0.50	0.50	0.1	12/13/23	12/13/23 12:42	LL
Chloroform	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Chloromethane	ND	ug/L	0.50	0.50	0.1	12/13/23	12/13/23 12:42	LL
2-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
4-Chlorotoluene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Dibromochloromethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,2-Dibromoethane (EDB)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Dibromomethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,2-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,3-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,4-Dichlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Dichlorodifluoromethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,1-Dichloroethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,2-Dichloroethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
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Whiterester



nelao

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3121213-02 (Vapor) Sampled on: 12/12/23 10:25

			Danastina					
Analyte	Result	Notes Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (Tiparea	1 1111/200	
1.1-Dichloroethene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
cis-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
trans-1,2-Dichloroethene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Dichlorofluoromethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,3-Dichloropropane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
2,2-Dichloropropane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,1-Dichloropropene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
cis-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
trans-1,3-Dichloropropene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Diisopropyl ether (DIPE)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Ethylbenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Hexachlorobutadiene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
2-Hexanone	ND	ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:42	LL
Isopropylbenzene (Cumene)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
4-Isopropyltoluene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Methyl tert-butyl ether (MTBE)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
4-Methyl-2-pentanone	ND	ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:42	LL
Methylene chloride	ND	ug/L	1.00	1.00	0.1	12/13/23	12/13/23 12:42	LL
Naphthalene	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
n-Propylbenzene	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Styrene	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,1,1,2-Tetrachloroethane	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,1,2,2-Tetrachloroethane	ND ND	ug/L ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Tetrachloroethene	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Toluene		ug/L			0.1	12/13/23	12/13/23 12:42	LL
1,2,3-Trichlorobenzene	0.44 ND	ug/L ug/L	0.20 0.20	0.10 0.10	0.1	12/13/23	12/13/23 12:42	LL
1,2,4-Trichlorobenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,1,1-Trichloroethane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,1,2-Trichloroethane	ND ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Trichloroethene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Themoroinculatic (Ficoli 11)	ND	ug/L	0.20	0.10	0.1	1411143	12/13/23 12.72	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willester



e nelad

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Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 3 SVE INF

3121213-02 (Vapor) Sampled on: 12/12/23 10:25

			Reporting	Detection				
Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Pr	epared by GCMS	-VAPOR-VOLA	TILES (continue	d)			
1,2,3-Trichloropropane	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,2,4-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
1,3,5-Trimethylbenzene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Vinyl chloride	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
o-Xylene	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
m- & p-Xylenes	ND	ug/L	0.20	0.10	0.1	12/13/23	12/13/23 12:42	LL
Surrogate: 1,2-Dichloroethane-d4		70-130	101 %	12/13/2.	3	12/13/23 12:42	2	
Surrogate: Toluene-d8		75-120	97 %	12/13/2.	3	12/13/23 12:42	2	
Surrogate: 4-Bromofluorobenzene		65-120	99 %	12/13/2.	3	12/13/23 12:42	2	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3121213-03RE2 (Vapor) Sampled on: 12/12/23 13:25

tert-Amyl methyl ether (TAME) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Benzene 25.6 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 2-Butanone (MEK) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 2-Butanone (MEK) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 0.50 0.25 0.25 0.				Reporting	Detection				
Acetone ND wg/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL tert-Amyl alcohol (TAA) ND wg/L 5.00 5.00 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Amyl methyl ether (TAME) ND wg/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Amyl methyl ether (TAME) ND wg/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Amyl methyl ether (TAME) ND wg/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butanol (TBA) ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butanol (TBA) ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butanol (TBA) ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 12-Bromochoromethane ND wg/L 0.50 0.25 0.25 1	Analyte	Result	Notes Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
tert-Amyl alcohol (TAA) ND ugl. 5.00 5.00 0.25 12/13/23 12/13/23 14.44 LL tert-Amyl ethyl ether (TAEE) ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL tert-Amyl methyl ether (TAME) ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dromobenzene ND ugl. 0.50 0.25 0.25 12/13/23 12/1	Volatile Organics by EPA 8260B	(GC/MS) Pr	epared by GCMS-	-VAPOR-VOLA	ΓILES				
tert-Amyl ethyl ether (TAME) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL tert-Amyl methyl ether (TAME) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL BROMOENTENE ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL SECREBURY) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL SECREBURY) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL SECREBURY) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL CARRON SURFERE ND Ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.	Acetone	ND	ug/L	2.50	2.50	0.25	12/13/23	12/13/23 14:44	LL
tert-Amyl methyl ether (TAME) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Benzene 25.6 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 2-Butanone (MEK) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 2-Butanone (MEK) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 0.50 0.25 0.25 0.	tert-Amyl alcohol (TAA)	ND	ug/L	5.00	5.00	0.25	12/13/23	12/13/23 14:44	LL
Benzene 25.6 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromofichromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14.44 LL Bromoform ND ug/L 2.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Letr-Butylbenzene ND ug/L 0.50 0.25 0.25	tert-Amyl ethyl ether (TAEE)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Bromobenzene ND	tert-Amyl methyl ether (TAME)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Bromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL	Benzene	25.6	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Bromodichloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL	Bromobenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Bromoform ND	Bromochloromethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Bromomethane ND	Bromodichloromethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
tert-Butanol (TBA) ND ug/L 3.75 3.75 0.25 12/13/23 12/13/23 14:44 LL 2-Butanone (MEK) ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL n-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL sec-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon tetrachloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1	Bromoform	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
2-Butanone (MEK) ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14/44 LL n-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL sec-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Carbon tetrachloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/	Bromomethane	ND	ug/L	1.25	1.25	0.25	12/13/23	12/13/23 14:44	LL
n-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon tetrachloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochlane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochlane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dibromochlane ND ug/L	tert-Butanol (TBA)	ND	ug/L	3.75	3.75	0.25	12/13/23	12/13/23 14:44	LL
sec-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon tetrachloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochtane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochtane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochtane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochtane ND ug/L 0.50 0.25	2-Butanone (MEK)	ND	ug/L	2.50	2.50	0.25	12/13/23	12/13/23 14:44	LL
tert-Butylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon tetrachloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorochane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.2-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1-Dichlorochane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/2	n-Butylbenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Carbon disulfide ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Carbon tetrachloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL LL LL Chloromethane ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL LL LL LL Chloromethane ND ug/L 0.50	sec-Butylbenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Carbon tetrachloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloroethane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 2-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromo-3-chloropropane ND ug/L 0.50 0.25	tert-Butylbenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Chlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloroethane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL 2-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromo-3-chloroperopane ND ug/L 0.50 0.25 <th< td=""><td>Carbon disulfide</td><td>ND</td><td>ug/L</td><td>0.50</td><td>0.25</td><td>0.25</td><td>12/13/23</td><td>12/13/23 14:44</td><td>LL</td></th<>	Carbon disulfide	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Chloroethane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL 2-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromo-3-chloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25	Carbon tetrachloride	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Chloroform ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Chloromethane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL 2-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromo-3-chloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0	Chlorobenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Chloromethane ND ug/L 1.25 1.25 0.25 12/13/23 12/13/23 14:44 LL 2-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromo-3-chloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL	Chloroethane	ND	ug/L	1.25	1.25	0.25	12/13/23	12/13/23 14:44	LL
2-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromo-3-chloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Chloroform	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
4-Chlorotoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromo-3-chloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Chloromethane	ND	ug/L	1.25	1.25	0.25	12/13/23	12/13/23 14:44	LL
1,2-Dibromo-3-chloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromo-3-chloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromomethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorocethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorocethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichlorocethane	2-Chlorotoluene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Dibromochloromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromomethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	4-Chlorotoluene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,2-Dibromoethane (EDB) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dibromomethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,2-Dibromo-3-chloropropane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Dibromomethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Dibromochloromethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,2-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,2-Dibromoethane (EDB)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,3-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Dibromomethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,4-Dichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,2-Dichlorobenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Dichlorodifluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,3-Dichlorobenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
$1,1-Dichloroethane \qquad ND \qquad ug/L \qquad 0.50 \qquad 0.25 \qquad 0.25 \qquad 12/13/23 \qquad 12/13/23 \ 14:44 \qquad LL$	1,4-Dichlorobenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
$1,1-Dichloroethane \qquad ND \qquad ug/L \qquad 0.50 \qquad 0.25 \qquad 0.25 \qquad 12/13/23 \qquad 12/13/23 \ 14:44 \qquad LL$	Dichlorodifluoromethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
	1,1-Dichloroethane	ND	ug/L			0.25	12/13/23	12/13/23 14:44	LL
	1,2-Dichloroethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



nelac

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3121213-03RE2 (Vapor) Sampled on: 12/12/23 13:25

Name				Reporting	Detection				
	Analyte	Result Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
cis-1,2-Dichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL trans-1,2-Dichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Dichlorofluoromethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2-Dichloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 2,2-Dichloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL turbinsperopene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl terr-buyl ether (DIPE) ND ug/L	Volatile Organics by EPA 8260B (GC/MS) Prepared by GCMS-VAPOR-VOLATILES (continued)								
trans-1,2-Dichlorochene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL Dichlorofuoromethane ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,2-Dichloropropane ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropane ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropane ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropane ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropane ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.25 12/13/23 12/13/23 14.44 LL 1,1-Dichloropropene ND ugL 0.50 0.25 0.2	1,1-Dichloroethene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Dichloroffuoromethane ND	cis-1,2-Dichloroethene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,2 - Dichloropropane	trans-1,2-Dichloroethene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,3-Dichloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 2,2-Dichloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,3-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Diisopropyl ether (DIPE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl terr-buryl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Hexachlorobutdiene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 2-Hexanone ND ug/L	Dichlorofluoromethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
2,2-Dichloropropane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/14/4 LL 1,1-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Licis-1,3-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Dissopropyl ether (DIPE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Ethyl terr-buryl ether (DIPE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Ethyl terr-buryl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Hexachlorobutadiene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14/44 LL Seproprylbenzene (Cumene) N	1,2-Dichloropropane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,1-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL cis-1,3-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL trans-1,3-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Diisopropyl ether (DIPE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Les thyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Methyl tert-butyl ether (MT	1,3-Dichloropropane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
cis-I,3-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL trans-I,3-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Diisopropyl ether (DIPE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl bener (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl benezne (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14	2,2-Dichloropropane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
trans-1,3-Dichloropropene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Diisopropyl ether (DIPE) ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13	1,1-Dichloropropene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Diisopropyl ether (DIPE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl tert-butyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethyl	cis-1,3-Dichloropropene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Ethyl tert-buyl ether (ETBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Exachlorobutadiene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Expropylbenzene ND ug/L 0.50 0.25 0.25 1	trans-1,3-Dichloropropene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Ethylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Hexachlorobutadiene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 2-Hexanone ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Isopropylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Hsopropylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Hsopropylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Methylere chloride ND ug/L 2.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 </td <td>Diisopropyl ether (DIPE)</td> <td>ND</td> <td>ug/L</td> <td>0.50</td> <td>0.25</td> <td>0.25</td> <td>12/13/23</td> <td>12/13/23 14:44</td> <td>LL</td>	Diisopropyl ether (DIPE)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Hexachlorobutadiene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 2-Hexanone ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Isopropylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Isopropylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Isopropylbenzene (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Isopropylbenzene (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Methyl-2-pentanone ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Methyl-2-pentanone ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Methylene chloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.2	Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
2-Hexanone ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Isopropylbenzene (Cumene) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Isopropylbenzene (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Isopropylbenzene (ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Methyl-2-pentanone ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Methyl-2-pentanone ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Methylene chloride ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Styrene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Styrene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,3-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,3-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L	Ethylbenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Sopropylbenzene (Cumene) ND	Hexachlorobutadiene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
4-Isopropyltoluene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Methyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Methyl-2-pentanone ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Methyl-ence chloride ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/	2-Hexanone	ND	ug/L	2.50	2.50	0.25	12/13/23	12/13/23 14:44	LL
Methyl tert-butyl ether (MTBE) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 4-Methyl-2-pentanone ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Methylene chloride ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL n-Propylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL styrene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Toluene 4.99 ug/L 0.50 <	Isopropylbenzene (Cumene)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
4-Methyl-2-pentanone ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Methylene chloride ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL n-Propylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL n-Propylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,2,3-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1 1.1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1 1.1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 0.25 12/13/23 12/13/23 14:44 LL 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	4-Isopropyltoluene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Methylene chloride ND ug/L 2.50 2.50 0.25 12/13/23 12/13/23 14:44 LL Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL n-Propylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Styrene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Toluene 4.99 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25	Methyl tert-butyl ether (MTBE)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Naphthalene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL n-Propylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Styrene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Toluene 4.99 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25<	4-Methyl-2-pentanone	ND	ug/L	2.50	2.50	0.25	12/13/23	12/13/23 14:44	LL
n-Propylbenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Styrene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,3-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,4-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Methylene chloride	ND	ug/L	2.50	2.50	0.25	12/13/23	12/13/23 14:44	LL
Styrene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Toluene 4.99 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,4-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50	Naphthalene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,1,1,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Toluene 4.99 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,4-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL <	n-Propylbenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,1,2,2-Tetrachloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Tetrachloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Toluene 4.99 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,4-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Styrene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Tetrachloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Toluene 4.99 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,4-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Toluene 4.99 ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,4-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,2,3-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,2,4-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Tetrachloroethene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,2,4-Trichlorobenzene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Toluene	4.99	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,1,1-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL 1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,1,2-Trichloroethane ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Trichloroethene ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	1,1,1-Trichloroethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1.5	1,1,2-Trichloroethane	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Trichlorofluoromethane (Freon 11) ND ug/L 0.50 0.25 0.25 12/13/23 12/13/23 14:44 LL	Trichloroethene	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
	Trichlorofluoromethane (Freon 11)	ND	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Willesseyle



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1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

CELL 1 SVE INF

3121213-03RE2 (Vapor) Sampled on: 12/12/23 13:25

				Reporting	Detection				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B	(GC/MS) Pr	epared b	y GCMS-	·VAPOR-VOLAT	ILES (continued	l)			
1,2,3-Trichloropropane	ND		ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,2,4-Trimethylbenzene	ND		ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
1,3,5-Trimethylbenzene	ND		ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Vinyl chloride	ND		ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
o-Xylene	ND		ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
m- & p-Xylenes	0.29	J	ug/L	0.50	0.25	0.25	12/13/23	12/13/23 14:44	LL
Surrogate: 1,2-Dichloroethane-d4		7	70-130	99 %	12/13/23		12/13/23 14:44		
Surrogate: Toluene-d8		7	75-120	96 %	12/13/23		12/13/23 14:44		
Surrogate: 4-Bromofluorobenzene		6	55-120	99 %	12/13/23		12/13/23 14:44		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services	
Matrix, Method, Analyte	
Vapor 8260 (Full List) Acetone	Vapor 8260 (Full List) tert-Amyl alcohol (TAA)
Vapor 8260 (Full List) tert-Amyl ethyl ether (TAEE)	Vapor 8260 (Full List) tert-Amyl methyl ether (TAME)
Vapor 8260 (Full List) Benzene	Vapor 8260 (Full List) Bromobenzene
Vapor 8260 (Full List) Bromochloromethane	Vapor 8260 (Full List) Bromodichloromethane
Vapor 8260 (Full List) Bromoform	Vapor 8260 (Full List) Bromomethane
Vapor 8260 (Full List) tert-Butanol (TBA)	Vapor 8260 (Full List) 2-Butanone (MEK)
Vapor 8260 (Full List) n-Butylbenzene	Vapor 8260 (Full List) sec-Butylbenzene
Vapor 8260 (Full List) tert-Butylbenzene	Vapor 8260 (Full List) Carbon disulfide
Vapor 8260 (Full List) Carbon tetrachloride	Vapor 8260 (Full List) Chlorobenzene
Vapor 8260 (Full List) Chloroethane	Vapor 8260 (Full List) Chloroform
Vapor 8260 (Full List) Chloromethane	Vapor 8260 (Full List) 2-Chlorotoluene
Vapor 8260 (Full List) 4-Chlorotoluene	Vapor 8260 (Full List) 1,2-Dibromo-3-chloropropane
Vapor 8260 (Full List) Dibromochloromethane	Vapor 8260 (Full List) 1,2-Dibromoethane (EDB)
Vapor 8260 (Full List) Dibromomethane	Vapor 8260 (Full List) 1,2-Dichlorobenzene
Vapor 8260 (Full List) 1,3-Dichlorobenzene	Vapor 8260 (Full List) 1,4-Dichlorobenzene
Vapor 8260 (Full List) Dichlorodifluoromethane	Vapor 8260 (Full List) 1,1-Dichloroethane
Vapor 8260 (Full List) 1,2-Dichloroethane	Vapor 8260 (Full List) 1,1-Dichloroethene
Vapor 8260 (Full List) cis-1,2-Dichloroethene	Vapor 8260 (Full List) trans-1,2-Dichloroethene
Vapor 8260 (Full List) Dichlorofluoromethane	Vapor 8260 (Full List) 1,2-Dichloropropane
Vapor 8260 (Full List) 1,3-Dichloropropane	Vapor 8260 (Full List) 2,2-Dichloropropane
Vapor 8260 (Full List) 1,1-Dichloropropene	Vapor 8260 (Full List) cis-1,3-Dichloropropene
Vapor 8260 (Full List) trans-1,3-Dichloropropene	Vapor 8260 (Full List) Diisopropyl ether (DIPE)
Vapor 8260 (Full List) Ethyl tert-butyl ether (ETBE)	Vapor 8260 (Full List) Ethylbenzene
Vapor 8260 (Full List) Hexachlorobutadiene	Vapor 8260 (Full List) 2-Hexanone
Vapor 8260 (Full List) Isopropylbenzene (Cumene)	Vapor 8260 (Full List) 4-Isopropyltoluene
Vapor 8260 (Full List) Methyl tert-butyl ether (MTBE)	Vapor 8260 (Full List) 4-Methyl-2-pentanone
Vapor 8260 (Full List) Methylene chloride	Vapor 8260 (Full List) Naphthalene
Vapor 8260 (Full List) n-Propylbenzene	Vapor 8260 (Full List) Styrene
Vapor 8260 (Full List) 1,1,1,2-Tetrachloroethane	Vapor 8260 (Full List) 1,1,2,2-Tetrachloroethane
Vapor 8260 (Full List) Tetrachloroethene	Vapor 8260 (Full List) Toluene
Vapor 8260 (Full List) 1,2,3-Trichlorobenzene	Vapor 8260 (Full List) 1,2,4-Trichlorobenzene
Vapor 8260 (Full List) 1,1,1-Trichloroethane	Vapor 8260 (Full List) 1,1,2-Trichloroethane
Vapor 8260 (Full List) Trichloroethene	Vapor 8260 (Full List) Trichlorofluoromethane (Freon 11)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Analytical Results

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Maryland Spectral Services

Matrix, Method, Analyte

Vapor | 8260 (Full List) | o-Xylene

Vapor | 8260 (Full List) | 1,2,3-Trichloropropane

Vapor | 8260 (Full List) | 1,3,5-Trimethylbenzene

Vapor | 8260 (Full List) | 1,2,4-Trimethylbenzene

 $Vapor \mid 8260 \; (Full \; List) \mid Vinyl \; chloride$ $Vapor \mid 8260 \; (Full \; List) \mid m\text{-} \; \& \; p\text{-}Xylenes$

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Analytical Results

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported: 12/19/23 10:36

Project: SPARROWS POINT IM

Project Number: [none]

Project Manager: Bob Tworkowski

Notes and Definitions

J Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

RE Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified

with a sample qualifier.

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

%-Solids Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Milleburgher

Company Name: Company Address: 6995 Bethlehem Blvd, Suite 1				ite 10	00			A	Analys	is Req	ueste	d		CHAIN	I-OF-	CUST	ODY RECORD		
Hudopolik Atlaikto		Baltimor			-	110 10										Mar	yland	Spectra	l Services, Inc.
Project Name: Sparrows Point IM		Project M Bob Two (443) 649	orkowski						; +							410-	Balti: 247–76	more, N 300 • Fax	r Drive, Suite G 1D 21227 x 410-247-7602
Sampler(s):		Attentio		-				ers	OCs							re	portin	g@mds	spectral.com
Guy Davis/ARM Group (443) 610-0211		ap@trac	lepointat	lanti	c.co	m		Containers	SUITE VOCs +							Matrix Codes: I water), SV (soi			ble water), DW (drinking
Field Sample I	D	Date	Time	DW	Water	Soil	SS	No. of C	FULL SUITE VOCs +							Preservative		eld tes	MSS Lab ID
CEU 5 DPE	INF	Edeile	0725				\boxtimes	1	$\geq \leq$										3121213-01
CELL 3 SVE 1	NF	J.	1025				\boxtimes	1	$\geq \!$										-02
ceu 1 SVE	NF	12/0/23	1325				X	١	>										-03
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25-	/ARM	12/12				,					44.0	u 1571 (51)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7		Janes 11110		11000/VCG	oy. torgraturey
(Printed)		_		Printe	1)					(Pri	nted)							(Printed)	
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Relinquished by: (Signature)		Date/Tin	23 R		d by i	all is	gyfat			Tur	n Aro	und Ti	me:			Lab Use: Temp:°C			
(Printed) 14.58 Pachel		Ho	rn	w		Norm 5 day 4 day		lay)			□ Received o □ Received s	n Ice	ay						
Delivery Method: Courier Courier Courier Delivery Method: Delivery Method: Special Instructions/QC Requirements & Complete to: Delivery Method: Please report to: Bob Tworkowski btworkowski@tradepoints						0	3 day Rush Next	(2 day Day)			Sample Dispos	· · · · ·		1				
□ UPS □ FedEx □ Guy Davis □ DHamilton □ Other:		p.ne	<u>t</u>	Other:			Disposal by lab												

APPENDIX B 2023 Groundwater Sampling Purge Logs

	Low Flow Sampling Purge Log Well Number: CO23 PEM 903						ARM Group Enterprises LLC Engineers and Scientists						
Well Number:	0023	OZM	902	3		Project Nam	ie: COA	GW - QI	1 2023				
Well Diameter			,			Project Nun							
Depth to Produc	ct (ft):	_					8/23						
Depth to Water		.42				One Well V	olume (gal)	1.09					
Product Thickne		, ,				Flow Rate (
Depth to Bottor	n (ft): 2.7	15				Length of ti	me Purged (min) 3c					
facilities and the	-5760105	0.0	BELL	R F	URGING I					116.00	8911		
Time	Volume Purged (gallons)	T.	ΓW eet)	Temp (°C)	pH (s.u.) ± 0,1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
14.25	.4			14.44	10.67	1:87	181	-217	5.85				
1430	,79	15,	42	17.61	10.84		0.56	-231	11.13				
1435	119			17.40	10.91	1.55	0.59						
7	1.59										\vdash		
14 40	1.97			17.50	10.96	1.53	0.34		3.22				
1445	11 8			17.34	10,97		0.36		2.06				
1450	2,38			17.55			0.28						
1455	277	18	-40	17.26	10.98	1.52	0.43	-231	1.40				
	, ,	"											
		8		SAMPLE R	ECORD AN	ORD AND WELL DETAILS							
Sample	e ID		Time Co	llected		Well Inspection /							
C023-P21	Paga			_	Well has b	een found ar	nd is access	ible withou	out hazards. If	no,	. /		
10003-10	.008		150	0	explain in	explain in the comments section.							
						Well Pad Condition I: no visible cracks and is sloping							
	Sampling P										V		
Parameter	Collected?		meter	Collected?		visible cracl	ks and/or n	ot sloping					
TCL-VOCs	ļ		ved Zn			ily cracked							
TPH-GRO			l Cd	,		ad has been b	ouried by si	te activition	es .				
TPH-DRO		4	X and		Bolts in pl								
O&G			halene	Δ	Bolts are r	nissing	W.II C	-1	Tiet				
Total Cyanide			OC, C, TAL		Carina is i	C C		sing Con		W-11 ID	$-\mathcal{A}$		
TCL SVOCs			ls and		Casing is	iree from dar			ked with the	well ID			
TAL Metals			cury,				wei	l Condition	n				
and Mercury			fate,		Casing Volun	ne: 1" [D. = 0.04	l gal/ft - 2" l [l/ft - 4" I.D. = 0.6	53 gal/ft - 6"	I.D. = 1,47		
(total)			rate,				x ft	gal/ft gal/ft =	(gal)				
TAL Metals			nonia,						700				
and Mercury		l co	DD,			ucturally sou	ınd: not ber	ıt, broken,	and no block	cage	$ \ \ \ \ $		
(dissolved)		Alka	linity,		identified								
Hexavalent			bidity. Well is bent or broken but is able to be used Well is broken and is not able to be used										
Chromium			oidity,										
PCB		4	os,			ocked and is	not able to	be used					
Matrix Spike		4 .	ecific		Cap is pre						V		
Duplicate	0 :	Condu	uctance		Well perm	nit is present					I.		
Sampled By	Comments:												

	Low Flow Sampling Purge Log Well Number: COZ472M007					ARM Group Enterprises LLC Engineers and Scientists						
Well Number:	CO 24 9	2.W007			Project Nam	e: COA	GW - Q1	2023				
Well Diameter (Project Num	ber: 20010	210			\neg		
Depth to Produc	et (ft):	-			Date: 2/8					\neg		
Depth to Water	(ft): 1 5. c	23			One Well V		1.14	٠ -				
Product Thickne					Flow Rate (1	mL/min)	300					
Depth to Botton	n (ft): 2.2	13			Length of tin	me Purged (5		\neg		
			P	URGING I	RECORD	-Die III						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ents		
1325	.4	. 1	14.24	9.64	0.80	1.76	20	4.04				
13 30	79	15.50	17.20	9.60	1.05	1.19	-25	9.65				
	119	10.00	17.29		1.32					-		
1335	1.1			9.55		0.89	-66	5.66		-		
1340	1.59		17.34	9.60	1.49	0.81	-83	2.44				
1545	1.98		17.16	9.48	159	0.68	-92	1.52				
1350	2.38		17.16	9.48	1.65	0.67	-93	1.12				
1355	2.T+		17.26	9.47	1.69	0.62		1.09				
			CAMBLEDI	ECODD AN	D WELL DI	TAIL C						
Comple	, ID	Time Co	The second secon	ECORD AN	ORD AND WELL DETAILS Well Inspection							
Sample	עוי	Time CC	offected	Wall back	aan farmad an				·	_		
C024F	2meo 7	- 140	x		Il has been found and is accessible without hazards. If no, blain in the comments section. Well Pad Condition							
	Sampling P	arameters		Good: no	d: no visible cracks and is sloping							
Parameter	Collected?	Parameter	Collected?		visible cracl							
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked					2		
TPH-GRO		and Cd			ad has been b	uried by sit	e activitie	es				
TPH-DRO		BTEX and	5/	Bolts in pl								
O&G		naphthalene	X	Bolts are r								
Total Cyanide		VOC,			_	Well Ca	sing Cond	dition				
TCL SVOCs		SVOC, TAL		Casing is	free from dan	nage and vi	sibly mar	ked with the	Well ID			
TAL Metals		Metals and				Wel	Conditio	n				
and Mercury		mercury,	8	Casina Valum	U"I D = 0.04	1 mal/0 2" LE	0.162 ==	1/ft - 4" I.D. = 0.6	£11(0 - 6"	10 - 147		
(total)		Sulfate,		Casing voiun	1¢, 1 1.D. – 0.04		gal/ft		gai/II - 0	1.0 1.47		
TAL Metals		Nitrate,			_	ft x	gal/ft =	(gal)				
		Ammonia,		Wall is str	noturally con	nd: not bon	t broken	and no block	2000			
and Mercury		COD,		identified	ucturally sou	ilia. Hot bell	ii, biokeii,	, and no block	age	· \		
(dissolved) Hexavalent		Alkalinity,			nt ou burl	hartion labels	ha ha	1				
Chromium		Chloride,			Vell is bent or broken but is able to be used Vell is broken and is not able to be used							
PCB		Turbidity,			ocked and is							
Matrix Spike		TDS, Specific		Cap is pre		ווטנ מטוכ נט	oc uscu					
Duplicate		• •	13									
Duplicate	Comments	Conductance		wen perii	ni ia preaciit							
Sautpled By	Comments: Well permit is present											

Low Flow Sampling Purge Log				ARM Group Enterprises LLC									
		irge Log				-	Engine	ers and Scient	ists				
Well Number:	002698	MOOT			Project Nam		GW - QI	1 2023					
Well Diameter (in): Z	ŠEC.	= 1		Project Num	ber: 20010)210						
Depth to Produc	et (ft):				Date: 2/				10				
Depth to Water		· U	- 1		One Well V								
Product Thickne					Flow Rate (1		300						
Depth to Botton	n (ft): 27	3 7 4			Length of tir	me Purged (min) [5					
MERCHAN	ES HOLD THE		P	URGING I	RECORD			100					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents			
1200			16.99	11.43	2.142	0.86	-175	22.9		25 25			
1205	_		16.92	11.33		0.65		12.8					
				11.28		0.52		10.40					
1210	Oorl		16.89	11.60	11730	0.02	-112	10,40	-				
1215	Dea						- '						
		1											
			CAMDIE DI	ECODD AN	ORD AND WELL DETAILS								
Sample	e ID	Time Co		ECORD AI	ID WELL DI		Inspectio	on.					
Sample	(L 1)	Time co	nected	Well has b	Well Inspection Vell has been found and is accessible without hazards. If no,								
COLL-PIA	no +	1155			xplain in the comments section.								
)		1177		onpium m	Well Pad Condition								
	Sampling P	arameters		Good: no	od: no visible cracks and is sloping								
Parameter	Collected?	Parameter	Collected?		air: some visible cracks and/or not sloping								
TCL-VOCs		Dissolved Zn	11		ily cracked								
TPH-GRO		and Cd		Unsure: pa	ad has been b	uried by si	te activitie	es					
TPH-DRO		BTEX and	~ /	Bolts in pl	ace								
O&G		naphthalene	X	Bolts are r	nissing								
Total Cyanide		VOC,				Well Ca	sing Con	dition					
TCL SVOCs		SVOC, TAL		Casing is	free from dan	nage and vi	sibly mar	ked with the	Well ID	V			
TAL Metals		Metals and				Wel	l Conditio	on					
and Mercury		mercury,	1	Casing Volun	ne: 1" LD = 0.04	L gal/ft - 2" LT) = 0.163 ga	1/ft - 4" 1.D = 0.6	53 gal/ft - 6"	ID = 1.47			
(total)		Sulfate,		Caomig Fordin			gal/ft		oo Builti				
TAL Metals		Nitrate,				ft x	gal/ft =	(gal)					
and Mercury		Ammonia,		Well is str	ucturally sou	nd: not ber	t. broken	, and no block	cage				
(dissolved)		COD,		identified	in and a second		,	,	<i>U</i> -				
Hexavalent	Aikaiinity,				nt or broken	but is able	to be used	1					
Chromium	0,				Well is bent or broken but is able to be used Well is broken and is not able to be used								
PCB	Tarounty,					Well is blocked and is not able to be used							
Matrix Spike	· · · · · · · · · · · · · · ·					Cap is present							
Duplicate						Well permit is present							
	Comments:												
Sampled By	I	an Pri	5										

	Low Flow Sampling Purge Log Well Number: CO 77. Non 017				ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	<u> </u>	7 11 112	91-		Project Nam	a: COA	GW - Q:	1 2023				
Well Diameter (6 FINCE	V 1 /		Project Nun			1 2023	_			
Depth to Produc		<u> </u>				3/23	7210					
Depth to Water		74			One Well V		. 1 .	7 7				
Product Thickne					Flow Rate (300	7		$\overline{}$		
Depth to Botton		17.45			Length of ti			-5				
			wa oma P	PURGING			like III (I)	Brei B V				
Time	Volume Purged (galions)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	ments		
1235	.99	5,35	13.93	11.34	1.431	0.70	-275 -280	3.59				
1245	1.59	5,35	13.99	11.35	1,37	0.49	-256 -250 -257	3,70	7			
				11,30					S.			
		V										
			CAMBLED	ECORD AN	ND WELL DI	FFATEC						
Sample	a ID	Time Co		ECORD AP	ID WELL D		Inspection	n e				
CO27	Penol		00		een found ar	nd is access ts section.	•	out hazards. If	no,			
	Sampling P	arameters		Good: no	Good: no visible cracks and is sloping							
Parameter	Collected?	Parameter	Collected?		visible cracl							
TCL-VOCs		Dissolved Zn			ily cracked		1					
TPH-GRO		and Cd			ad has been b	ouried by si	te activitie	es				
TPH-DRO		BTEX and		Bolts in pl	ace					,		
O&G		naphthalene	7	Bolts are r	nissing							
Total Cyanide		VOC,					sing Con			100		
TCL SVOCs		SVOC, TAL		Casing is	free from dar	nage and v	isibly mar	ked with the '	Well ID			
TAL Metals		Metals and				Wel	l Conditio	n		5.		
and Mercury (total)		mercury, Sulfate, Nitrate,		Casing Volun	ne: [" I.D. = 0.04		gal/ft	I/ft - 4" I D = 0 6: (gal)	53 gal/ft - 6"	I D. = 1,47		
TAL Metals		Ammonia,		*** ** *			Blanck N			$\overline{}$		
and Mercury		COD,			ucturally sou	ind: not ber	it, broken	, and no block	cage	_•		
(dissolved)	ssolved) Alkalinity, identi					identified						
	J. J					Well is bent or broken but is able to be used						
Chromium		Well is broken and is not able to be used						\vdash				
PCB Matrix Smiles	<u> </u>	TDS,		Well is blocked and is not able to be used Cap is present								
Matrix Spike		Specific Conductance			it is present					10		
Duplicate	Comments:	Conductance		wen bein	nt is brescut					4,2		
Sampled By	Commonto.											

	Vell Number: LOZ 7 - 02M 046				ARM Group Enterprises LLC Engineers and Scientists								
Well Number:	(.07	7-02M	046	\$75	Project Nan	ne: COA	GW - Q	1 2023					
Well Diameter	(in): 7	, V	V 1 ()		Project Nun								
Depth to Produc	` '				Date: 77								
Depth to Water		7,92		-	One Well V		10	5					
Product Thickn					Flow Rate (360						
Depth to Bottor		1.20			Length of ti								
				PURGING		······································							
					Specific	Dissolved							
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comi	nents			
1200	4		14 09	11,05	2,900	17)	-277	3.52					
	30	794	10 4	11.09	3.359	1 2	- 299	346					
1205	-	1 77	14.T.J.	1.0		0 42	70.3	3.70					
1210	1.19	7.42	14.28	11.09	3.312	0.82	-207	3.08	<u> </u>				
1215	1.59	-	14.18	11.10	3 410	0.55	-796	2,78	2/				
17.20	1 90		1422	11.10	3.433	0.53	-303	266	(V				
1		1.	1 /			,							
		1\0											
		U U											
	_												
4			SAMPLE R	ECORD AN	ND WELL DI	ETAILS		1					
Sampl	e ID	Time Co	lected		Well Inspection								
(N27-1	proof	1225	П		been found at the commen	ts section.		out hazards. If	fno,	V			
00-	C l' D			Continu	Well Pad Condition								
-	Sampling P	v	G 11 . 10		od: no visible cracks and is sloping r: some visible cracks and/or not sloping								
Parameter	Collected?	Parameter	Collected?			ks and/or no	ot sloping		6.				
TCL-VOCs		Dissolved Zn	ı		vily cracked	000011							
TPH-GRO		and Cd	/		ad has been b	oursed by si	te activition	es		V			
TPH-DRO		BTEX and	🗙	Bolts in pl									
O&G		naphthalene	(2	Bolts are r	missing								
Total Cyanide		VOC,		~			sing Con						
TCL SVOCs		SVOC, TAL Metals and		Casing is	iree from dar			ked with the	well ID	V			
TAL Metals						Wel	l Condition	on					
and Mercury		mercury,		Casing Volun	ne: 1" I.D. = 0.04	11 gal/ft - 2" 1.E	0. = 0.163 ga	I/ft - 4" I.D. = 0.6	53 gal/ft - 6"	I.D. = 1.47			
(total)	= ===	Sulfate,				8	gal/ft						
TAL Metals		Nitrate,		The same	-	fl x	gal/ft =	(gal)					
and Mercury		Ammonia, COD,		Well is structurally sound: not bent, broken, and no blockage									
(dissolved)				identified									
Hexavalent	Alkaninty,					hut is able	to he used		4.0				
Chromium			Well is bent or broken but is able to be used Well is broken and is not able to be used										
PCB		Turbidity, TDS,			ocked and is				-	1			
Matrix Spike		Specific		Cap is pre		4010 10				 			
Duplicate		Conductance			nit is present					a /1/			
Duplicate	Comments:	Conductance	ı	a on poin	iii io proseiit					100			
Sampled By	Comments.	ichts.											
The state of the s													
190													

	Low Flow Sampling Purge Log				ARM Group Enterprises LLC Engineers and Scientists								
Well Number:	CO 2002	Malb			Project Nam	ne: COA	GW - Q	1 2023		$\neg \neg$			
Well Diameter (7-			Project Nun								
Depth to Produc	` '				Date: 2/								
Depth to Water		12.44			One Well V		2.4	17.					
Product Thickne					Flow Rate (300						
Depth to Botton		27.5	8		Length of ti			5					
				URGING			A WIN	Market 1	STEENANT III	HE EN			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents			
1005	,4	94 - 1	16.43	111.55	1.965	1.02	450	2.96					
1010	,79		16.53	11.62		0.58		2.19					
	1 (6)			11.65	1.976	0.46	-155	2.31					
1015			16.48	1			-153						
1020	1.59		16.73										
1025	1.98		16.67	11.68	1.981	0.40	-152	2.36					
٠			30	• 1			450						
A71.50			100	£ .		10	٠	*					
92			34		a 1		,	. 251					
								- 1					
			<u> </u>										
			SAMPLE D	ECORD AN	AND WELL DETAILS								
Sample	e ID	Time Co		ECORD AI	Well Inspection								
		Time ce	nicolea	Well has h	een found ar			out hazards. If	f no				
CO3082	MØ (6	101	30		the commen	ts section.	ad Condi		. 110,	1 1			
	Sampling P	arameters		Good: no	visible crack:	e cracks and is sloping							
Parameter	Collected?	Parameter	Collected?	Fair: some	visible cracl	ks and/or ne	ot sloping						
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked								
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activitie	es					
TPH-DRO		BTEX and		Bolts in pl	ace								
O&G		naphthalene	×	Bolts are r	missing								
Total Cyanide		VOC,				Well Ca	sing Con	dition					
TCL SVOCs		SVOC, TAL		Casing is	free from dar	nage and vi	isibly mar	ked with the	Well ID				
TAL Metals		Metals and				Wel	l Conditio	n					
and Mercury		mercury,		Casing Volum	ne I** I D = 0.04	Ll gal/ft - 2" LE) = 0.163 ga	l/ft - 4" I.D. = 0.6	53 oal/ft - 6"	1D = L47			
(total)		Sulfate,		Casing voidin		_	gal/ft		55 guilti- 0	1.0. (.47			
TAL Metals		Nitrate,			_	ft x	gal/fl =	(gal)					
and Mercury		Ammonia, COD,		Well is str	ucturally sou	ınd: not her	nt. broken	and no block	cage				
(dissolved)		identified	acturary sou		., 01011011	, and no olou	6-	es:					
Aikaiiiity,					Well is bent or broken but is able to be used								
	Cinoriae,						s broken and is not able to be used						
PCB		TDS,			ocked and is								
Matrix Spike		Specific		Cap is pre									
Duplicate		Conductance								· ***			
2 aprioate	Comments:	Domactanee		sa pern	In probent								
Sampled By	Comments:												

						ARM Group Enterprises LLC Engineers and Scientists Project Name: COA GW - Q1 2023							
Well Number:	* ((0310-021	4008		Project Nan	ne: COA	GW - Q	1 2023					
Well Diameter	(in):	2	- 43		Project Nun)210						
Depth to Produc	ct (ft):				Date:	7/23		_					
Depth to Water	(ft): 7,4	9			One Well V	olume (gal):)9					
Product Thickn	ess (ft):	<u></u>			Flow Rate (mL/min)	300						
Depth to Bottor	n (ft):	14.20			Length of ti	me Purged (min) 3	. ()					
	1=281= H1			URGING I	RECORD		100			KETTIETO			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	nents			
0925	·Ar		11.27	11.61	1.712	1.11.	115	3.94					
0930	29	8.43	11.40	11.60	1.751	1.18	-115	3.25					
6935	110	5.6	11.39	11. 10.7	1 715	143	- 121	125		· · · · · ·			
200.5	150	4 7 7	11/37	* * * * *	1.717	2 04		3.26	_				
0170	1.25	8,17	11.6	11.63	1.417	0.90	143	1.60	7				
0945	145 (1) 9-75 11.12					0.83	-152	7,38	/				
0950	750 11.85 1					0.82	153	189					
	<u> </u>				5 🔳								
						11							
<u> </u>													
			SAMPLE R	ECORD A	CORD AND WELL DETAILS								
Sampl	e ID	Time Co											
		I ime Ct	niectea			Wel	Inspection	on					
		Time CC	offected	Well has b	een found a			on out hazards. If	no,				
		1955	offected		peen found an	nd is access			no,				
CO36.42		0955	offected			nd is access ts section.		out hazards. If	no,				
		0955	Shected	explain in		nd is access ts section. Well F	ible with	out hazards. If	no,				
	N 008	0955	Collected?	explain in Good: no	the commen	nd is access ts section. Well F s and is slo	ible with ad Condi	out hazards. If	no,				
CO36.42	Sampling P	D955	Collected?	explain in Good: no Fair: some	the commen	nd is access ts section. Well F s and is slo	ible with ad Condi	out hazards. If	no,				
CO 36. V	Sampling P	D953 arameters	Collected?	explain in Good: no Fair: some Poor: heav Unsure: pa	visible crack visible crack vily cracked ad has been b	nd is access ts section. Well F s and is slo ks and/or no	ible wither ad Condi ping ot sloping	out hazards. If	no,				
Parameter TCL-VOCs TPH-GRO TPH-DRO	Sampling P	Parameters Parameter Dissolved Zn and Cd BTEX and	Collected?	explain in Good: no Fair: some Poor: heav Unsure: pa Bolts in pl	visible crack visible crack vily cracked ad has been bace	nd is access ts section. Well F s and is slo ks and/or no	ible wither ad Condi ping ot sloping	out hazards. If	no,				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G	Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene	Collected?	explain in Good: no Fair: some Poor: heav Unsure: pa	visible crack visible crack vily cracked ad has been bace	nd is access ts section. Well F s and is slo ks and/or no buried by si	ad Conding of sloping te activiti	out hazards. If	no,				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide	Sampling P	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC,	Collected?	Good: no Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r	visible crack e visible crac vily cracked ad has been b lace missing	nd is access ts section. Well I s and is slo ks and/or no buried by si Well Ca	ad Conding of sloping te activiti	out hazards. If					
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G	Sampling P	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL	Collected?	Good: no Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r	visible crack e visible crac vily cracked ad has been b lace missing	nd is access ts section. Well F s and is slo ks and/or no buried by si Well Ca mage and v	Pad Condiping of sloping te activities activities is a consisting	out hazards. If					
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Well Number:	Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists							
Project Number: 2010/210 Depth to Product Thickness (a):	Well Number:	(03/4.	92.MO 4-3			Project Nam	ne: COA	GW - O	1 2023		-		
Depth to Water (I): Depth to Water (I): Depth to Water (II): Depth to Water (II): Depth to Bottom (II): September			10.040										
Depth to Water (R): Combined	· · · · · · · · · · · · · · · · · · ·	,.							-				
Product Thickness (ft)								94500	7.6				
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TPH-DRO O&G Total Cyanide TOtal Cyanide TCL SVOCs TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium Chloride, Turbidity, PCB Matrix Spike Duplicate Comments: Bolts in place Bolts are missing Well Casing Condition Casing is free from damage and visibly marked with the Well ID Casing volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.653 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 (gal) Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is blocked and is not able to be used Cap is present Well permit is present	TCL-VOCs		Dissolved Zn		Poor: heav	vily cracked							
D&G	TPH-GRO		and Cd		Unsure: p	ad has been t	ouried by si	te activiti	es				
Total Cyanide TCL SVOCs TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (total) TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Alkalinity, Chloride, Chromium TCB SVOC, TAL Metals and Mercury (dissolved) Alkalinity, Chloride, Chromium TUB Metals Ammonia, COD, Alkalinity, Chloride, Chromium Turbidity, PCB TDS, Matrix Spike Duplicate Comments: Well Casing Condition Casing is free from damage and visibly marked with the Well ID Casing Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 gal/ft Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is broken and is not able to be used Cap is present Well permit is present	TPH-DRO		4		-	_							
TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (total) TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium Ch					Bolts are	missing	*				\perp		
TAL Metals and Mercury (total) TAL Metals and Mercury (total) TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) TAL Metals and Mercury (dissolved) Hexavalent Chloride, Chromium PCB TDS, Well is blocked and is not able to be used Metals and Well Condition Well condition Casing Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 (gal) Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is blocked and is not able to be used Well is blocked and is not able to be used Cap is present Well permit is present											 		
mercury, Sulfate, Nitrate, Ammonia, and Mercury (dissolved) Hexavalent Chromium PCB TDS, Matrix Spike Duplicate Mercury (total) Mercury (total) Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 gal/ft	TCL SVOCs		E .		Casing is	free from dar			<u> </u>	Well ID	~		
Sulfate, Nitrate, TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB Matrix Spike Duplicate Casing Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 Casing Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 gal/ft Mell is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is broken and is not able to be used Casing Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 [gal/ft] Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Cap is present Casing Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 [gal/ft] Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Cap is present Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 [gal/ft] Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is broken and is not able to be used Cap is present Volume: 1"I.D. = 0.041 gal/ft - 2"I.D. = 0.163 gal/ft - 4"I.D. = 0.653 gal/ft - 6"I.D. = 1.47 [gal/ft] Well is structurally sound: not bent, broken, and no blockage identified	TAL Metals						We	ll Condition	on				
Nitrate, TAL Metals and Mercury (COD, (dissolved) Hexavalent Chromium PCB Matrix Spike Duplicate Nitrate, Ammonia, COD, Alkalinity, Chloride, Chromium Turbidity, PCB Matrix Spike Comments: Nitrate, Ammonia, COD, Alkalinity, Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is broken and is not able to be used Cap is present Well permit is present	and Mercury		, ,		Casing Volur	ne: 1" I.D. = 0.04	11 gal/ft - 2" L1	D. = 0.163 ga	1/ft - 4" I.D. = 0.6	53 gal/ft - 6"	I.D. = 1,47		
TAL Metals and Mercury (dissolved) Ammonia, COD, Alkalinity, Chloride, Chromium PCB Matrix Spike Duplicate Comments: Ammonia, COD, Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is broken and is not able to be used Cap is present Well permit is present	(total)				1		0		(B				
and Mercury (dissolved) Alkalinity, Hexavalent Chromium PCB TDS, Matrix Spike Duplicate Comments: COD, Alkalinity, Chloride, Turbidity, TDS, Well is structurally sound: not bent, broken, and no blockage identified Well is structurally sound: not bent, broken, and no blockage identified Well is bent or broken but is able to be used Well is broken and is not able to be used Cap is present Well permit is present Well permit is present	TAL Metals		· ·				n x	gavit =	(gai)				
(dissolved) Alkalinity, identified Hexavalent Chromium Chloride, Well is bent or broken but is able to be used PCB TDS, Well is blocked and is not able to be used Matrix Spike Specific Cap is present Duplicate Conductance Well permit is present					Well is str	ructurally sou	ınd: not be	nt, broken	, and no block	cage	다구		
Hexavalent Chloride, Turbidity, PCB TDS, Well is broken and is not able to be used Well is broken and is not able to be used Duplicate Comments: Well is broken and is not able to be used Cap is present VO Well permit is present VO Well permit is present VO			· ′		identified								
Chromium Turbidity, PCB TDS, Matrix Spike Specific Duplicate Conductance Comments: Well is broken and is not able to be used Well is blocked and is not able to be used Cap is present Well permit is present Well permit is present	Hexavalent		1 7		Well is be	nt or broken	but is able	to be used	1				
PCB TDS, Well is blocked and is not able to be used Matrix Spike Specific Cap is present Duplicate Conductance Well permit is present Comments:	Chromium												
Duplicate Conductance Well permit is present VO Comments:	PCB		1		Well is bl	ocked and is	not able to	be used					
Comments:	Matrix Spike		Specific	= 2							1 - 1		
	Duplicate		Conductance		Well pern	nit is present					NO		
	Sampled By	Comments:											

Low Flow Sampling Purge Log 12.92 Well Number: C037- P20038				2.82	Engineers and Scientists							
Well Number:	C037-	P2M038			Project Nan	ne: COA	GW - Q	1 2023		\neg		
Well Diameter		1 **			Project Nur	nber: 20010						
Depth to Produc	et (ft):				Date:	214	173			\neg		
Depth to Water	The second name of the second	12.	62		One Well V	olume (gal)		6.03		\neg		
Product Thickn		******		-	Flow Rate (300					
Depth to Botton	The second second	90			Length of ti	me Purged (35				
RESIDENCE DE LA COMPANIONE				PURGING			HILL STREET	Kara III jira	NA: 59			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents		
1025	19	17 10	15.12	[].[]	1.605	1.32	- 209	3,02				
1030	1 14	12,70	17.20	11.14	1.638	0106	116	1,47		$\vdash \vdash \vdash$		
1032	1 1	230	15.20	11.10	1.640	0.66	-244	401		$\vdash \vdash \vdash$		
1940	1,59	12,70	15.32	11.23	1.702	0.50	- 258	0,47				
1045	1.98		15.92	11.34	1.813	242	-704	0,919				
1050	2.38	1)0	15.26	11.40	1.8 40	0.41	-299	0.87				
055	2.7+		1-77	11.42	1.851	0.40	-305	0.74	- 1			
103.9			13-62	11. 15	(.0/	0.70	7//3	1		$\vdash \vdash \vdash$		
		<u> </u>				 				\vdash		
				-								
				ECORD AN	CORD AND WELL DETAILS							
Sample		Time Co	llected		Well Inspection							
CO37-	pro38	1/00)		Well has been found and is accessible without hazards. If no, explain in the comments section.							
•				0 1	Well Pad Condition							
-	Sampling P	_	G 11 . 10		Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping							
Parameter	Collected?	Parameter	Collected?			ks and/or no	ot sloping		•	<u> </u>		
TCL-VOCs		Dissolved Zn			ily cracked					\longrightarrow		
TPH-GRO		and Cd		THE R. P. LEWIS CO., LANSING, MICH.	ad has been b	ouried by sil	e activitie	es				
TPH-DRO		BTEX and		Bolts in pl								
O&G		naphthalene		Bolts are r	nissing					\Box		
Total Cyanide		VOC,					sing Cond					
TCL SVOCs		SVOC, TAL		Casing is	free from dar			ked with the	Well ID	-		
TAL Metals		Metals and				Well	l Conditio	on	0.1.5, 0.5, 0.0×c			
and Mercury		mercury, Sulfate,		Casing Volum	ne; 1" I.D. = 0.04	11 gal/ft - 2" I.C	o. = 0.163 ga	$1/f_1 - 4^n I_1 D_1 = 0.65$	53 gal/ft - 6"	I.D. = 1.47		
(total) TAL Metals		Nitrate,		Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" gal/ft - 4" I.D. = 0.653 gal/ft - 6" gal/ft - 4" I.D. = 0.653 gal/ft - 6"								
and Mercury		Ammonia, COD,		Well is str	ucturally sou	ind: not ben	t. broken	and no block	age			
(dissolved)		identified			.,	,	0	/				
Hexavalent		Well is bent or broken but is able to be used						$\vdash \vdash \vdash$				
Chromium		Well is broken and is not able to be used Well is broken and is not able to be used						$\vdash \vdash \vdash$				
PCB		Well is blocked and is not able to be used						$\vdash \vdash \vdash$				
Matrix Spike	Cap is present						$\vdash A$					
Duplicate		Specific Conductance			nit is present					110		
2 aprilate	Comments:			ou poin	. IS present	·			- 17	444		
Sampled By												

Low Flow Sampling Purge Log Well Number: (038 1200)						1	Ente	RM Group erprises LL ers and Scient					
Well Number:	CD3X	12000	5/4		Project Nam	ne: COA	GW - O	1 2023	==+				
Well Diameter	(in): 7	1			Project Nun								
Depth to Produ					Date: 7								
Depth to Water		7	1		One Well V		1.4	4					
Product Thickn					Flow Rate (_		-		$\overline{}$			
Depth to Bottor	n (ft):	40			Length of ti			3					
A R BOL	U BIRWE	VALUE OF SERVICE		PURGING I		ALLEGA VA	JELLES,		12,201	Jak			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	nents			
110	.4	4.15	1166	10.14	1.730	0.98	-277	7,99					
MOT	,79	216	11.23	10,27	1 25/	0.62	- 701_	6 24					
14716	119	7,0	1, 3 8	10,27	1702	a ct	- 294	5.47					
1120	1 69	7116	11 /-		1,737	0/33	00.	4 31					
	188		11.67		1.746	0.47	-240	2,00	_	\vdash			
1120	14 1//		1,27	10.25	1.728	0.46	-289	3.17	\rightarrow				
1/25	2.38		11.31	10.30	1.724	0.46	-287	2.65					
1170	2,97		1.32	16.29	11724	0.45	-295	2.47	2				
			SAMPLE R	ECORD AN	CORD AND WELL DETAILS								
Sampl	e ID	Time Co		Well Inspection									
				Well has b	een found ar				no.				
CO78.P	m coll	112	>	Well has been found and is accessible without hazards. If no, explain in the comments section.									
'					Well Pad Condition								
	Sampling P	arameters		Good: no v	Good: no visible cracks and is sloping								
Parameter	Collected?	Parameter	Collected?	Fair: some	visible cracl	ks and/or n	ot sloping						
TCL-VOCs		Dissolved Zn	1	Poor: heav	ily cracked								
TPH-GRO		and Cd		Unsure: pa	id has been b	ouried by si	te activitie	es					
TPH-DRO		BTEX and		Bolts in pla	ace								
O&G		naphthalene		Bolts are n	nissing								
Total Cyanide		VOC,					sing Cond						
TCL SVOCs		SVOC, TAL		Casing is f	ree from dar			ked with the \	Well ID	. 1			
TAL Metals		Metals and				Wel	l Conditio	n					
and Mercury		mercury,		Casing Volum	e 1" I.D. = 0.04	I gal/ft - 2" I I	0 163 ga	/ព - 4" I D = 0 6:	53 gal/ft - 6"	ID = 1.47			
(total)		Sulfate,				-	gal/ft		<u> </u>				
TAL Metals		Nitrate, Ammonia,		$\underline{\qquad} \text{fi } x \underline{\qquad} \text{gal/fi} = \underline{\qquad} \text{(gal)}$									
and Mercury		COD,		Well is structurally sound: not bent, broken, and no blockage						025			
(dissolved)	COD,												
Hexavalent	Aikainity,					Well is bent or broken but is able to be used							
Chromium	0					Well is broken and is not able to be used							
PCB						Well is blocked and is not able to be used							
Matrix Spike	Spike Specific Cap is present												
Duplicate		Conductance			it is present		. 3			1/15			
	Comments:				Thi (_							
Sampled By													
(10-					9								

	Low Flow Sampling Purge Log Vell Number: CO 38 - PZA O 43					-	Ente	RM Group erprises LL eers and Scient				
Well Number:	CO 3	8- PZM C	14.3		Project Nan	ne: COA	GW - Q	1 2023				
Well Diameter ((in): Z				Project Nun	nber: 20016	0210		_			
Depth to Produc	et (ft):	Area.			Date:	7/23						
Depth to Water	(ft): <	65			One Well Y	olume (gal)	6.8	10				
Product Thickne					Flow Rate (mL/min)	500	9		$\neg \neg$		
Depth to Bottor	n (ft): 4-4	YO			Length of ti	me Purged (min) 3	30				
				PURGING	RECORD							
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
1020 1025 1030 1035 1040	-9 -79 1.19 1.59 1.98	9,15	13.76 13.54 14.04 14.19 13.97	8,63 8,22 9,03 7,84 7,74	1.328 1.328 1.367 1.384	1.39 0.84 0.71 0.66 0.65	30 19, -44 -87	6,76 3,09 4,66 2,92 2,72	7			
10 45	2.37	9.40	14,03	7.67	1, 38 4	O. Sto	-99	265				
Sampl	e ID	Time Co		LCORD A	CORD AND WELL DETAILS Well Inspection							
CO 37 -1		1050	7		/ell has been found and is accessible without hazards. If no, explain in the comments section.							
	Sampling P	arameters		Good: no	Good: no visible cracks and is sloping							
Parameter	Collected?	Parameter	Collected?		air: some visible cracks and/or not sloping							
TCL-VOCs	Conceica.	Dissolved Zn	Conceited.		vily cracked	ito una or m	or broping	2				
TPH-GRO		and Cd	9		ad has been t	nuried by si	te activiti	es				
TPH-DRO		BTEX and	6	Bolts in pl			10 4011 7111	0.5				
O&G		naphthalene	\sim	Bolts are r			-					
Total Cyanide		VOC,		Botts are t	mosmg	Well Ca	sing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is	free from day			rked with the	Well ID			
		Metals and		Cubing 10			l Condition					
TAL Metals and Mercury (total)		mercury, Sulfate,		Casing Volum	ne: 1" I D = 0.04	11 gal/ft - 2" 1.1	O = 0.163 ga	al/ft - 4" D. = 0.6	53 gal/ft - 6"	I.D. = 1.47		
TAL Metals		Nitrate,			191700	ftx	gal/ft =	(gal)				
and Mercury		Ammonia, COD,		Well is str	ucturally sou	ınd: not ber	nt, broken	, and no block	cage			
(dissolved)		· ′		identified			,		J			
Hexavalent	Alkaninty,				Well is bent or broken but is able to be used							
,					Well is bent or broken but is able to be used Well is broken and is not able to be used							
1,					ell is blocked and is not able to be used							
					Cap is present							
Duplicate							10					
	Comments:				nt is present					(M)		
Sampled By												

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		ow Sampl irge Log	ing			A	Ente	RM Group erprises LL ers and Scient		
Well Number:	C039	- DAM O	07		Project Nan	ne: COA	GW - Q	1 2023		
Well Diameter ((in): 7	10710			Project Nun					
Depth to Produc		12.		- 1986	Datė: 2					
Depth to Water		E 20 000			One Well V		: - 1	2		
Product Thickne		2 2			Flow Rate (500	τ		
Depth to Botton		7.01			Length of ti					
Deptil to Botton	ii (it).	4/11		PURGING I		me r argea (BIOLISH A	ALC: U	
					Specific	Dissolved				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	nents
14-15		795	14,76	10/25	1848	418	-185	9.5	Đ	
1270		7:96	14 9 1	10.35	839	7.30	-183	10,24	1.00	
1975		7.70	17.7		711	7 70	183	1010		
14 63		4/90	4.40	10.40	1.84/0	0.79	- 10 (0.10		
450		1	14.58	10.42	1347	0.57	180	4.89		
11135			14.19	10.42	1 73/	0,21	-128	3,97	12.	
1 7				· ·						
		/ /)								
		H-W-		<u> </u>						-
		\ <u>\</u>								
]					
			SAMPLE R	ECORD AN	ND WELL D	ETAILS				
Sampl	e ID	Time Co					1 Inspection	on		
C170 0	1 m 007	11.1	1 2	Well has b	een found a			out hazards. If	no.	1
(001.1	0007	144	0		the commen				,	
i '		1.1.1					Pad Condi	tion		
	Sampling P	arameters		Good: no	visible crack					
Parameter	Collected?	Parameter	Collected?		visible crac					
TCL-VOCs	Conceteu.	Dissolved Zn	1		ily cracked					
TPH-GRO		and Cd			ad has been l	nuried by si	te activiti	es		
TPH-DRO		BTEX and		Bolts in pl		ourica by Br	to doll vitte	<u>сь</u>		
O&G		naphthalene	l X	Bolts are r						\vdash
Total Cyanide		VOC,		Dotts are 1	mssing	Well Co	asing Con	dition		
	-	SVOC, TAL		Cacina is	fraa fram da			ked with the	Well ID	0
TCL SVOCs		Metals and	1	Casing is	iree iroin dai		ll Condition		Well ID	
TAL Metals		mercury,				we	ii Condini	лі		
and Mercury		Sulfate,		Casing Volun	ne 1" I D. = 0.04	41 gal/ft - 2" [.]		1/ft - 4" I.D. = 0.6	53 gal/ft - 6"	LD. = 1.47
(total)		Nitrate,				Α	gal/ft	(gal)		
TAL Metals		Ammonia,			3-	пх	- Santi	(Rai)		
and Mercury		COD,		Well is str	ucturally sou	und: not bei	nt, broken	, and no blocl	cage	
(dissolved)		Alkalinity,		identified						4
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used	<u></u>		
Chromium		Turbidity,			oken and is a		_			
PCB		TDS,			ocked and is		_			
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance			nit is present					No
Dapricate	Comments:			on poin	io prosent					''
Sampled By	Commons.									

		low Sampl irge Log	ing			4	Ente	RM Group erprises LL ers and Scient	<u>C</u>	
Well Number:	C039	- 7/2 10 0	<u>4</u> Σ		Project Nan	ne: COÁ	GW - QI	1 2023		-
Well Diameter	(in): 7	PEMO			Project Nun					
Depth to Produc		. ~		• * .		7/2.1				
Depth to Water	The state of the s	47			One Well V		: (9.1		
Product Thickne		1	_		Flow Rate (217 272	400			
Depth to Botton	100	10 00	0		Length of ti		min)	7.5		
		60 00		URGING		I BUE LEVO				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
14-55	.4		15.30	11.08	903	203	770	6.82		
1000	2.4	455	15 47	11 09	1 400	028	-797	259		
1500	77	0.55	10 77	107	1.0-7-7	270	-232	7 /		\vdash
13 03	1.10	0 15 3	(5/5)	11.08	1.884	DAL	23.2	2.45	7	
1510	1.59		15.98	(12,OX	1.875	0.43	- 239	2.07	4	
1515	1,97		11.08	1869	0.42	275	1.93			
	••	1 /1			' ' ' ' '					
		(//)								
										-
		· ·	<u> </u>							
	<u> </u>									\vdash
				<u> </u>						
		T mi in		ECORD AN	ND WELL D	The state of the s	1 7 200			- 10
Sampl		Time Co	ollected		- i		l Inspectio			
C039-1	02,M047	1520	5		the commen	ts section.	Pad Condi	out hazards. If	no,	
	Sampling P	arameters		Good: no:	visible crack			tion		
Parameter	Collected?	Parameter	Collected?		visible crac					
TCL-VOCs	Conected:	Dissolved Zn			ily cracked	K5 dilabor ii	or stoping			
TPH-GRO	1	and Cd			ad has been b	ouried by si	te activitie	P.C		
TPH-DRO		BTEX and		Bolts in pl		outloa by s	te activiti	<u></u>		-
O&G	<u> </u>	naphthalene	X	Bolts are r						\vdash
Total Cyanide		VOC,		Don's are i	mosmg	Well C	asing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is:	free from day			ked with the	Well ID	
		Metals and		Custing is			l Condition		., 011 12	
TAL Metals		mercury,								
and Mercury		Sulfate,		Casing Volun	ne: l'' l.D. = 0.04	11 gal/ft - 2" I.		1/ft - 4" [.D. = 0.6	53 gal/ft - 6"	I.D. = 1.47
(total)		Nitrate,		1		ft x	gal/fl gal/ft =	(gal)		
TAL Metals		Ammonia,								
and Mercury		COD,			ucturally sou	ind: not be	nt, broken	, and no block	cage	
(dissolved)		Alkalinity,		identified				<u> </u>		
Hexavalent		Chloride,			nt or broken			i		
Chromium		Turbidity,			oken and is r					ļ
PCB		TDS,			ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre				.		
Duplicate		Conductance		Well pern	nit is present					10
Sampled By	Comments:									′

,

		ow Sampli Irge Log	ing			-	Ente	RM Group erprises LL eers and Scient			
Well Number:	C040	- VZON C	20%		Project Nan	ne: COA	GW - Q	1 2023			
Well Diameter	(in): 7	1			Project Nun						
Depth to Produc	ct (ft):	-			Date: 3	1142					
Depth to Water		5			One Well V			+	·		
Product Thickn				· ·	Flow Rate (800				
Depth to Botton	n (ft):	12.7	<u>(a</u>		Length of ti	me Purged (min) 🝣	0			
				PURGING	RECORD		THE POLICE	ALL CHICATES			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents	
1115	,4		14.07	9.6	2.035	4.84	-135	1,75			
1120	79	770	14,00	4.75	2097	1.40	-141	192			
1175	19	0'25	1421	8 x 2	2087	0.5%	-154	0.78			
1120	(20)	7.70	17.00	957	2.073	0.50	-183	10	_	-	
11 77	1.35	# 10	17.90	8,56		0.54	703				
1135	100	7,78	12.80	XILL	2.056	0.8/	-177	0%	<u>_</u>		
11 40	-6.38		13.91	8.70	6,090	0.5	199	1.59	11		
			13.	335	1356	'	20 12				
						0.85					
		1									
			SAMPLE R	ECORD A	ND WELL D	ETAILS					
Sampl	e ID	Time Co		CORD AND WELL DETAILS Well Inspection							
•						44 (-1	i mopeem	011			
0011	3 17 - ASS			Well has b	een found ar			out hazards. If	no,	,	
C04() - 12n058	114	5		een found ar	nd is access			no,	Lucia	
C04() - 1/2moss	114	5			nd is access ts section.		out hazards. If	no,	L	
C04(Sampling P	114	5	explain in		nd is access ts section. Well I	ible witho	out hazards. If	no,	L	
CO4	Sampling P Collected?	arameters Parameter	Collected?	explain in Good: no	the commen	nd is access ts section. Well I s and is slo	ible without on the condition of the con	out hazards. If	no,	L	
Parameter TCL-VOCs			5	Good: no Fair: some Poor: heav	visible cracker visible cracker visible cracker vily cracked	nd is access ts section. Well I s and is slo ks and/or n	eible without Pad Condi ping ot sloping	out hazards. If	no,	-	
		Parameter	5	Good: no Fair: some Poor: heav	visible cracked vily cracked ad has been b	nd is access ts section. Well I s and is slo ks and/or n	eible without Pad Condi ping ot sloping	out hazards. If	no,	L .	
TCL-VOCs TPH-GRO TPH-DRO		Parameter Dissolved Zn and Cd BTEX and	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in p	visible cracked vily cracked ad has been blace	nd is access ts section. Well I s and is slo ks and/or n	eible without Pad Condi ping ot sloping	out hazards. If	no,	-	
TCL-VOCs TPH-GRO TPH-DRO O&G		Parameter Dissolved Zn and Cd BTEX and naphthalene	5	Good: no Fair: some Poor: heav	visible cracked vily cracked ad has been blace	nd is access ts section. Well I s and is slo ks and/or ne	ible withor ad Conding ping ot sloping te activities	out hazards. If	no,	٠	
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC,	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in p	visible cracked vily cracked ad has been blace	nd is access ts section. Well I s and is slo ks and/or n buried by si Well Ca	Pad Condi ping ot sloping te activition	out hazards. If			
TCL-VOCs TPH-GRO TPH-DRO O&G		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in p	visible cracked vily cracked ad has been blace	nd is access ts section. Well I s and is slo ks and/or n buried by si Well Ca mage and v	eible without a Conding of sloping te activition is a consisting C	out hazards. If			
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in p	visible cracked vily cracked ad has been blace	nd is access ts section. Well I s and is slo ks and/or n buried by si Well Ca mage and v	Pad Condi ping ot sloping te activition	out hazards. If			
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury,	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in pl Bolts are r	visible cracked vily cracked ad has been blace missing	ts section. Well Is and is slooks and/or nouried by si Well Camage and v	Pad Condiping ot sloping te activities asing Consisibly man	out hazards. If	Well ID		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate,	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in pl Bolts are r	visible cracked vily cracked ad has been blace missing	well Camage and v	Pad Condiping ot sloping te activities using Con isibly man I Condition = 0 163 ga gal/ft	dition dition dition dition dition dition dition dition diff - 4" I,D = 0 6	Well ID		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate,	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in pl Bolts are r	visible cracked vily cracked ad has been blace missing	well Camage and v	Pad Condiping ot sloping te activities using Con isibly man I Condition = 0 163 ga gal/ft	es dition ked with the	Well ID		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total)		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia,	5	Good: no Fair: some Poor: heav Unsure: pi Bolts in pi Bolts are i Casing is	visible cracked visible cracked ad has been blace missing	Well Is and is soon well Is and is soon well Canage and vell Is gal/ft - 2" If	Pad Condiping ot sloping te activition using Con isibly man I Condition = 0 163 ga gal/ft gal/ft =	dition Well ID 53 gal/ft - 6"	I.D. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD,	5	Good: no Fair: some Poor: heav Unsure: pi Bolts in pi Bolts are i Casing is	visible cracked visible cracked ad has been blace missing	Well Is and is soon well Is and is soon well Canage and vell Is gal/ft - 2" If	Pad Condiping ot sloping te activition using Con isibly man I Condition = 0 163 ga gal/ft gal/ft =	dition dition dition dition dition dition (gal)	Well ID 53 gal/ft - 6"		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia,	5	explain in Good: no Fair: some Poor: heav Unsure: pr Bolts in pr Bolts are r Casing is Casing Volum Well is stridentified	visible cracked visible cracked ad has been blace missing	Well Camage and v Well find the section. Well Find the section. Well Camage and v Well Camage and v Well Camage and v Well find the section section section section.	Pad Condiping ot sloping te activities using Contisibly man I Condition D = 0 163 ga gal/ft gal/ft =	dition (gal) dition dition (gal) dition dition (gal)	Well ID 53 gal/ft - 6"	I.D. = 1.47	
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved)		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity,	5	explain in Good: no Fair: some Poor: heav Unsure: pr Bolts in p Bolts are r Casing is Casing Volum Well is str identified Well is be	visible cracked vily cracked ad has been blace missing free from dar ne 1"ID = 0.04	Well I s and is slooks and/or no well Camage and v Well I gal/ft - 2" I I ft x und: not ber	Pad Condiping ot sloping te activities using Con isibly man I Condition 0 = 0 163 ga gal/ft gal/ft = nt, broken	dition (gal) dition dition (gal) dition dition (gal)	Well ID 53 gal/ft - 6"	I.D. = 1.47	
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride,	5	Good: no Fair: some Poor: heav Unsure: pr Bolts in pl Bolts are r Casing is Casing Volum Well is stridentified Well is be Well is be	visible cracket visible cracked ad has been blace missing free from dar ne 1" ID = 0.04 ructurally sou	well Camage and v Well Is a sand is slooks and/or not be side to but is able to but it is able	Pad Condiping ot sloping te activition asing Con isibly man I Condition D = 0 163 ga gal/ft gal/ft = nt, broken to be used	dition (gal) dition dition (gal) dition dition (gal)	Well ID 53 gal/ft - 6"	I.D. = 1.47	
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity,	5	explain in Good: no Fair: some Poor: heave Unsure: pr Bolts in pr Bolts are r Casing is Casing Volum Well is stridentified Well is ber Well is br Well is pre	visible crack e visible crack e visible crack vily cracked ad has been b lace missing free from dar are 1"ID = 0.04 cructurally sou cont or broken oken and is r ocked and is esent	Well Famage and v Well Famage and v Well Camage a	Pad Condiping ot sloping te activition asing Con isibly man I Condition D = 0 163 ga gal/ft gal/ft = nt, broken to be used	dition (gal) dition dition (gal) dition dition (gal)	Well ID 53 gal/ft - 6"	I.D. = 1.47	
TCL-VOCs TPH-GRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (total) Hexavalent Chromium PCB		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS,	5	explain in Good: no Fair: some Poor: heave Unsure: pr Bolts in pr Bolts are r Casing is Casing Volum Well is stridentified Well is ber Well is br Well is pre	visible crack e visible crack e visible crack vily cracked ad has been b lace missing free from dar ne 1"ID = 0.04 ructurally sou ent or broken oken and is r ocked and is	Well Famage and v Well Famage and v Well Camage a	Pad Condiping ot sloping te activition asing Con isibly man I Condition D = 0 163 ga gal/ft gal/ft = nt, broken to be used	dition (gal) dition dition (gal) dition dition (gal)	Well ID 53 gal/ft - 6"	I.D. = 1.47	
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB Matrix Spike	Collected?	Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS, Specific	5	explain in Good: no Fair: some Poor: heave Unsure: pr Bolts in pr Bolts are r Casing is Casing Volum Well is stridentified Well is ber Well is br Well is pre	visible crack e visible crack e visible crack vily cracked ad has been b lace missing free from dar are 1"ID = 0.04 cructurally sou cont or broken oken and is r ocked and is esent	Well Famage and v Well Famage and v Well Camage a	Pad Condiping ot sloping te activition asing Con isibly man I Condition D = 0 163 ga gal/ft gal/ft = nt, broken to be used	dition (gal) dition dition (gal) dition dition (gal)	Well ID 53 gal/ft - 6"	I.D. = 1.47	

		ow Sampli irge Log	ing			-	Ente	RM Group erprises LL ers and Scient		
Well Number:	00	41-10-	MOOL		Project Nan	ne: COA	GW - Q	1 2023		-
Well Diameter (Project Nun			2025		
Depth to Produc		/			Date: Z					
Depth to Water		30			One Well V		0,4	-4-		
Product Thickne					Flow Rate (
Depth to Botton		10.05			Length of ti			3		
				PURGING I						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
305	0,4	13.65	10.88	7.47	6,568 0,547 0,525 0,526	0.64	197 195 197	0,79	·	
1320	1.98		10,46	7,90	0,513	0.59	195	1.34	- 4	
				ECORD AN	D WELL D		-10			
Sample		Time Co	llected				Inspection	*		
CO41- P2	nool	1325	-		the commen	ts section.	able with	out hazards. If	no,	-
	Sampling P	arameters		Good: no s	visible crack			tion		
Parameter	Collected?	Parameter	Collected?		visible crac					
TCL-VOCs		Dissolved Zn			ily cracked		1 0			
TPH-GRO		and Cd		Unsure: pa	nd has been b	ouried by si	te activitie	es		
TPH-DRO		BTEX and		Bolts in pl	ace					
O&G		naphthalene	LX	Bolts are r	nissing					
Total Cyanide		VOC,					sing Con			
TCL SVOCs		SVOC, TAL		Casing is t	free from dar	nage and v	isibly mar	ked with the '	Well ID	
TAL Metals		Metals and				Wel	l Condition	n		
and Mercury (total)		mercury, Sulfate, Nitrate,		Casing Volum			gal/ft	I/ft - 4" LD = 0.6.	53 gal/ft - 6"	LD. = I 47
TAL Metals		Ammonia,								
and Mercury		COD,		l .	ucturally sou	ind: not ber	ıt, broken	, and no block	age	
(dissolved)		Alkalinity,		identified						/
Hexavalent		Chloride,			nt or broken			i		
Chromium		Turbidity,			oken and is n					
PCB		TDS,			ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre						//
Duplicate		Conductance		Well perm	it is present					
Sampled By	Comments:								•	:

=		ow Sampli irge Log	ing				Ente	RM Group rprises LL ers and Scienti		
	- 40	0 0	-5 /		D 1 N	004				
Weil Number:		41- 12/	VO36	Λ	Project Nan		GW - Q1	1 2023		
Well Diameter	,	7			Project Nun					-
Depth to Produc						41112				$\overline{}$
Depth to Water		8.2			One Well V Flow Rate (.4		
Product Thickne		50,05	*		Length of ti			.0		
Depth to Bottor	n (11):	50,03	P. Carlotte	PURGING		me ruigeu (min)		200 W	100
				CROING	199	5 1 1				-
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents
1225	0,4	24	15,29	10.73	1.501	3,0/2	-241	264		
12:30	0.79	13.83	14.38	10.37	1.542	0.54	~234	0.07	Para Trans	
1735	110	12 72	1, 49	10.73	1.546	12:	-727	0.44	- /	
17 15	40 1,59 1 14.57				1,550	2 2	-242	045	1	
1040	40 1,39 16,34				1,530	0.34	-6/2	0.77		
235	76.57				11 999	- 54 F	Ü.	***	1	
W			** # E	10. 10.	2.4				\vdash	
					,					
		_								
	بر تکلیات		SAMPLE RI	ECORD AN	D WELL D	ETAILS	95			
Sampl	e ID	Time Co	llected			Wel	Inspection	n		
CO41.1	2n 038	124	5		een found at the commen	ts section.		out hazards. If	no,	_
1	C 1' D			Continu	2.26.1		ad Condi	tion		
D	Sampling P		Collected?		visible crack visible crac					-
Parameter TCL-VOCs	Collected?	Parameter Dissolved Zn			vily cracked	ks and/or no	or stobing			-
TPH-GRO		and Cd			ad has been b	ouried by ci	to activitie	36		
TPH-ORO		BTEX and	. /	Bolts in pl		ouried by si	ie activitie	-5		-
O&G		naphthalene	X	Bolts are r						\vdash
Total Cyanide		VOC,		Doits are i	111331115	Well Ca	sing Cond	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from da			ked with the	Well ID	
TAL Metals		Metals and		9			l Conditio			
and Mercury		mercury,			U.S.	KV ISSE	200 500	wis .0.750		
(total)		Sulfate,		Casing Volum	ne I I D = 0.04	11 gal/tt - 2" 1.1	o. = 0, 163 ga gal/ft	Vft - 4" LD = 0 65	53 gal/II - 6"	1.D. = 1.47
		Nitrate,		l		fl x		(gal)		
TAL Metals		Ammonia,		Wall is str	naturally an	ındı not bar	t broken	and no block	000	
and Mercury (dissolved)		COD,		identified	uciulally sol	ang, not oci	n, DIUKCII,	, and no block	uge	
Hexavalent		Alkalinity,			nt or broken	hut is abla	to be used	1		
Chromium		Chloride,			nt or broken oken and is r					
PCB		Turbidity, TDS,			ocked and is					
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance			nit is present					1/6
	Comments:	1		, sa perm	II probein					1
Sampled By										

		ow Sampli irge Log	ing		70	A	Ente	RM Group erprises LL ers and Scient	-			
Well Number:	C042	-PZNO04			Project Nan	ne: COA	GW - Q	1 2023				
Well Diameter (Project Nun	nber; •20010	0210					
Depth to Produc			1.0		Date: 2	11.127						
Depth to Water		4			One Well V	olunie (gal)	1,2	-3				
Product Thickne					Flow Rate (8 00					
Depth to Botton	<u> </u>	6.35			Length of ti		min)	30				
			The state of the s	PURGING					- PEC 12			
					Specific	Dissolved						
'Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s,u.) ± 0.1	Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents		
10 10	1.		14.46	211	083/	602	741.5	2.04				
1015	170	172	14.38	7/11	0.792	304	700	104				
1013	7-1-	2,80				0.7	250	1.01				
025	19	8.06	14.14	7.16	0.762	3.58	2451	3.68	-			
1025	159	746	13.78	1.18	0.722	3.58	242	1.34	7			
1030	1,98	7.5%	13.70	718	0.314	2.73	238	1.26	-	/		
1835	7.37		13 23	7.19	0.712	3.82	247	1-08	1/			
1000	0,71		100	1711	712	7,00	-11	1.00				
			12/11									
			SAMPLE R	ECORD A	ND WELL D	ETAILS		TIME I				
Sample	e ID	Time Co	llected			Wel	l Inspection	on				
	la a	1040	7	Well has b	oeen found a	nd is access	ible with	out hazards. If	no,	, ,		
CO 42-	12m004	1040	/	explain in	explain in the comments section.							
04 10						Well I	ad Condi	tion				
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			111/2		
Parameter	Collected?	Parameter	Collected?	Fair: some	e visible crac	ks and/or n	ot sloping	<u> </u>		1111		
TCL-VOCs		Dissolved Zn			vily cracked							
TPH-GRO		and Cd		Unsure: p	ad has been b	ouried by si	te activiti	es				
TPH-DRO		BTEX and		Bolts in p						100		
O&G		naphthalene	0	Bolts are	missing							
Total Cyanide		VOC,					ising Con					
TCL SVOCs		SVOC, TAL		Casing is	free from dat	mage and v	isibly maı	ked with the	Well ID	2		
TAL Metals		Metals and				Wel	l Condition	on				
and Mercury		mercury,		Cocina Volum	ne 1" I D = 0.0/	(1 gal/0 2")) = 0.163 ps	nl/ft - 4" I.D. = 0.6	53 gal/0 - 6"	'LD = L47		
(total)		Sulfate,		Casing voidi	ile i i D o.o-		gal/ft		oo garin - o	1.46		
TAL Metals		Nitrate,				fl x	gal/ft =	(gal)				
	1	Ammonia,		Wall is st	nicturally son	ınd: not baı	nt broken	, and no block	/апе			
and Mercury		COD,		identified	deturally soc	ilia. Hot bei	ii, biokeii	, and no block	tage	1		
(dissolved)		Alkalinity,	1			1 . 1 11	. 1					
Hexavalent		Chloride,			nt or broken			<u> </u>				
Chromium	_	Turbidity,			oken and is r					 		
PCB		TDS,		Well is blocked and is not able to be used					+ $+$			
Matrix Spike		Specific			Cap is present							
Duplicate		Conductance		Well pern	nit is present					NO		
Sampled By	Comments:								•			

		ow Sampli Irge Log	ing			-	Ente	RM Group erprises LLC ers and Scienti	and the same of th	
Well Number:	C05	5- DENO	00	_	Project Nam	ne: COA	GW - Q	1 2023		
Well Diameter (Project Nun					
Depth to Produc					Date: 2	9/23	_		**	
Depth to Water		81			One Well V		(),3	9		
Product Thickne		-	<u> </u>		Flow Rate (-		
Depth to Botton		1.19			Length of ti)		
			P	URGING				ALL ALL S		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
1005		16.00	12.47:	11,35	1.728	7.95	1x.5	OP		
1017	75	11.35	12.82	11.48	1301	4.13	131	62		
	/ .)	1000	D127	11.70	1.001	7/1/	171	7		
10/2-			4/4/	119 6-	(4)	124				$\overline{}$
(%)			/	13		- 181 °	-			\square
42			,	章"	13			1		1
				12	X8					
		100			,	%				
		* 41			4 2	 				\vdash
						1				
1										
				<u> </u>						
			SAMPLE R	ECORD AN	ND WELL D					
Sample	e ID	Time Co					l Inspection			100
CACK	DD00150	2 16 23	(9)				sible with	out hazards. If	no,	
(, ()3)	p2, 000	ام مد	_	explain in	the commen					
		1205	·				Pad Condi	tion		
	Sampling P	arameters			visible crack					
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping	<u></u>		
TCL-VOCs		Dissolved Zn			ily cracked					
TPH-GRO		and Cd		Unsure: pa	ad has been l	ouried by si	te activiti	es		
TPH-DRO		BTEX and		Bolts in p	ace					
O&G		naphthalene		Bolts are i	nissing					
Total Cyanide		VOC,					sing Con			
TCL SVOCs		SVOC, TAL		Casing is	free from dai	mage and v	isibly maı	ked with the \	Well ID	
TAL Metals		Metals and				We	ll Condition	on .		
and Mercury		mercury,		Cosing Volum	no: 1" I D = 0.0	11 ani/0 - 2" Li	D = 0.163 gs	al/ft - 4" LD. = 0 65	53 nal/ft - 6"	TD = 147
(total)		Sulfate,		Casing voidi	ile, t t.D 0.0	41 gaunt - 2 III	gal/ft	int - 4 LD. 00.	oo ganti - o	1.5. 1.47
		Nitrate,				ft x	gal/ft =	(gal)		
TAL Metals		Ammonia,		Well is st	neturally co	ind: not ha	nt broken	, and no block	age	00
and Mercury		COD,		identified	ucturally 500	atio. Hot del	ii, biokeli	, and no block		
(dissolved)		Alkalinity,				1	4-1	.		
Hexavalent		Chloride,			nt or broken oken and is i			u .		\vdash
Chromium		Turbidity,			oken and is i				-	
PCB		TDS,		$\overline{}$		not able to	oe usea			
Matrix Spike		Specific		Cap is pre			<u></u>			NO
Duplicate	0	Conductance		well pern	nit is present					\V\
Shapled By	Comments:				-					

		ow Sampli Irge Log	ing			A	Ent	RM Group erprises LL eers and Scient	C	
Well Number:	(AE)	- 42050	1/		Project Nan	ne: COA	GW - Q	1 2023		-
Well Diameter (in).	VZP VC			Project Nun					\neg
Depth to Produc					Date: 2		0210		14	
Depth to Water		5.67			One Well V		· (C) (70		
Product Thickne		5.47			Flow Rate (200			-
		19.1			Length of ti			0		-
Depth to Botton	1 (11):	19/1	> P	URGING		me ruigeu (, mint) <u>Z</u>		NIES DA	-Lrewi
				ORGING !	- 2)	Dissolved				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
1025	.26	15/08	13.50	11,26	1.584	317	73	26,5		
10 20	* 3	10.00	14.05	11.2/	1,610	1 10	64	4 33		
1000	72	10/05	14,00	11.61		0.01	<u> </u>	200		\vdash
1042	1,002	15 16 t	14.10	Wift	1.617	0.96	64	3.50	7	
in 50	1,000	•	14.28	11.28	1.622	0.98	66	3.4+	10	
			Lat			l				
-		. 1								18
	_	 				1	 	1		-
						ļ		 		
				0.00						
			SAMPLE RI	ECORD AN	ND WELL D	ETAILS				
Sample	e ID	Time Co	llected			Wel	l Inspecti	on		
C056		1055	5		been found a the commen	its section.	sible with	out hazards. It	f no,	
-	Sampling P	aramèters		Good: no	visible crack					
Parameter	Collected?	Parameter	Collected?		visible crac					
TCL-VOCs	Conecieu:	Dissolved Zn			vily cracked	AS UNCOT II	ot biopin	b		
		and Cd			ad has been	huried by s	te activit	ies		
TPH-GRO	_	BTEX and		Bolts in pl	_	ouried by s.	ne activit	103		77
TPH-DRO		4		Bolts are			-	<u> </u>		+
O&G		naphthalene VOC,		Dons are 1	moonig	Wall C	asing Cor	dition		
Total Cyanide	L	SVOC, TAL		Cocinatio	fran fran J-			rked with the	Well ID	1
TCL SVOCs		Metals and		Casing is	nee mom da		ll Conditi		TY CIL ID	-
TAL Metals		mercury,				we	ıı Conaiti	1011		
and Mercury	ļ	Sulfate,		Casing Volum	ne 1" I D = 0.0	41 gal/ft - 2" 1	D. = 0.163 g	gal/ft - 4" I.D. = 0.6	553 gal/ft - 6'	LD. = 1.47
(total)		Nitrate,				Δ	gal/fi	= Cont		
TAL Metals		Ammonia,				п х	gal/ft	=(gal)		
and Mercury		COD,		Well is str	ructurally so	und: not be	nt, broke	n, and no bloc	kage	
(dissolved)		Alkalinity,		identified	*				-	
Hexavalent		Chloride,			nt or broken	hut is able	to he use	ed.		
Chromium		Turbidity,			oken and is					
PCB		TDS,			ocked and is					
Matrix Spike	-	Specific		Cap is pre			50 4504			
		Conductance			nit is present					NS
Duplicate	Comment	Conductance		44 en ben	int is present					1//0
Sampled By	Comments:									**

		ow Sampli irge Log	ing				Ente	RM Group erprises LL ers and Scient		1		
Well Number:	6057-1	500 at	,		Project Nam	ne: COA	GW - Q	1 2023	<u>-</u> .			
Well Diameter ((in);	2			Project Nun							
Depth to Produc	ct (ft):				Date: 28	123						
Depth to Water	(ft):	110.40			One Well V	olume (gal):	1	平 0.1	2.5			
Product Thickne	ess (ft):				Flow Rate (mL/min)	200					
Depth to Botton	n (ft):	17.94			Length of ti	me Purged (min)	10				
				PURGING I	RECORD	The state of the	- 40					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) = ± 0.1	Specific Conductance (ms/cm) + 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
1) \$23	0.24	16.99	11.00	10.27	0.817	7. 3/2	125	12.8				
2000	0.53	*** * * * * * * * * * * * * * * * * *	11/1		0.856	7.66	87	7.52				
1071			118 7	10/10/	V1030	TIUU	0)	7.52				
7K-7												
•		×								 		
		,										
		9										
			SAMPLE R	ECORD AN	D WELL D	ETAILS						
Sample	e ID	Time Co		ECORD III	ID WELL D		Inspection	on				
C057-P2P	503	1.1	1	Well has b	een found ar			out hazards. If	no.			
0031	V12	11516			explain in the comments section.							
	- 1	() `			Well Pad Condition Good: no visible cracks and is sloping							
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping					
Parameter	Collected?	Parameter	Collected?	Fair: some	visible cracl	ks and/or no	ot sloping					
TCL-VOCs		Dissolved Zn	4		ily cracked							
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activiti	es		-		
TPH-DRO		BTEX and		Bolts in pl	ace							
O&G		naphthalene		Bolts are r	nissing							
Total Cyanide	,	VOC,	2				sing Con	•				
TCL SVOCs		SVOC, TAL	4	Casing is	free from dar			ked with the	Well ID	4		
TAL Metals		Metals and				Wel	l Condition	on				
and Mercury		mercury,	-	Casing Volum	ne 1"1D = 0.04		0 163 22	n - 4" I.D = 0 6	53 gal/ft - 6"	1.D. = 1.47		
(total)		Sulfate,					gal/ft		0,00	255 - 3		
TAL Metals		Nitrate,				fl x	gal/ft =	(gal)				
and Mercury		Ammonia, COD,		Well is str	ucturally sou	ınd: not ber	ıt, broken	, and no block	age			
(dissolved)		Alkalinity,		identified	•		-		_	4		
Hexavalent	,	Chloride,		Well is be	nt or broken	but is able	to be used	d				
Chromium		Turbidity,			oken and is n							
PCB		TDS,		Well is blo	ocked and is	not able to	be used					
Matrix Spike		Specific		Cap is pre	sent					4		
Duplicate		Conductance			it is present					NO		
in =	Comments:	-	-	_ 1	1	X						
Sample By	PA	N Vrg		PY	710)						

(

		ow Sampli irge Log	ing			A	Ente	LM Group rprises LL ers and Scient		
Well Number:	C0538	22MOOL			Project Nam	COA	GW - Q1			
Well Diameter (7			Project Num			2023		
Depth to Produc						8/23	7210			-
Depth to Plottac		1-			One Well V		0.92	a		
Product Thickne	ec (ft):	<u></u>	·		Flow Rate (1.4	300	• (
Depth to Botton		\$ 19.25			Length of ti			Ø		
Depth to Botton	(II). W/3/2/	19.20	P	URGING I		ine ruigea (·······	San Hala in		and the same
					Specific	Dissolved				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ±10	Turbidity (NTU) ± 10% or < 5	Comm	nents
1230	4	14.62	10.81	11.33	1.785	1.67	-96	(1)		
1235	.79		16.69			-	-71	5.16		
	1.10	10 100		_		0.45				
1240		16.40		10.50				2.60		-
1245	1,259	V6/15K	16.51	10.27		1.21	-26	2.21		551
1250	198		16.52	10.49		1.21	-23	1/40		
1255	7.38		16.63	10.68	0.85	1.20	-27	1.42	l	
			CARADIED	ECODD AN	ID MELL DI	TO A SE C				
Sample	· ID	Time Co		ECORD AN	D WELL DI		Inspection			
Sample		Tittle Co	nected	Wall book	aan faund an			out hazards. If		
C058PZA	1001	1300	•		the comment	s section.	ad Condi		no,	V
	Sampling P	arameters		Good: no v	visible cracks					
Parameter	Collected?	Parameter	Collected?		visible crack					
TCL-VOCs		Dissolved Zn			rily cracked					
TPH-GRO		and Cd			ıd has been b	uried by si	te activitie	es		
TPH-DRO		BTEX and		Bolts in pl						
O&G		naphthalene		Bolts are n						
Total Cyanide		VOC,	<u> </u>			Well Ca	sing Cond	dition		
TCL SVOCs		SVOC, TAL		Casing is f	ree from dan			ked with the	Weil ID	
TAL Metals		Metals and				Wel	l Conditio	n		
and Mercury		mercury,		0 1 1/1	1115 -001	110 0111	-0.163	l'ft - 4" I D = 0.6:	C2 1/0 (//	10 149
(total)		Sulfate,		Casing Volum	ie: 1 1 D = 0.04	i gavit - 2 i.i.). — 0.163 ga gal/ft	HR-4 ID - 06	33 gavit - 6	LD - 1.47
		Nitrate,				ft x	gal/ft =	(gal)		1
TAL Metals		Ammonia,		Wall in atra	uaturally gov	nd: not bon	t broken	and no block	2000	
and Mercury		COD,		identified	ucturally SOU	na. not ben	n, diokeil,	and no block	age	
(dissolved) Hexavalent		Alkalinity,			المعامم المعامم	has in all i	to he !	1		
Chromium		Chloride,			nt or broken oken and is n			ı		
PCB		Turbidity,			ocked and is n					
		TDS,		Cap is pres		not able to	oc useu			
Matrix Spike		Specific			it is present					
Duplicate	Comments:	Conductance		wen perm	iii is present					
Sampled By	Comments:									

		ow Sampli irge Log	ng	:		A	Ente	RM Group erprises LL ers and Scient	C	
Well Number:	715	SEA 1/7 1	0.000		Project Nan	COA	GW - Q	1 2023	89	
Well Diameter (in): 2	134-15	002		Project Nun			1 2023		
		·				9/23	0210			-
Depth to Produc		37 451			One Well V		: Û,	(59)		
Depth to Water		1/4.491			Flow Rate (300	16		
Product Thickne		19.00						7 6		
Depth to Botton	n (tt):	17/00		PURGING	Length of ti	me Purged ((min)			
				UKOINO						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
0135	.4	1/4.49	13,61	9.08	1,382	4/11	178	4.41		
140	19	14.50	13 43	X,94	1755	7,77	171	3.09		
	1.19	1/ 50	14 63	8,97	1,356	2,07	1/4	1 00	_	
1175	(9	16,30	17 0 1	076			168	100		-4
7150	100	<u> </u>	13,73	8193	1,362	171	66	1,09		-
415.5	1 94		13.76	8.97	1398	1,58	164	1.29	1/	
		<i> </i>						•		
		<i> </i>								
		 								
		N		<u> </u>					_	
						-	-	ļ		
	7.06.00									
				ECORD A	ND WELL D					
Sample	e ID	Time Co	llected				l Inspection			
6.05	7-821002	177	66		een found at the commen		sible with	out hazards. If	fno,	
0.0	1 4-4	1 , 0	, ,				Pad Condi	tion		
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?		visible crac			 !		
TCL-VOCs	33,100,132	Dissolved Zn			vily cracked		1 0	,	-	
TPH-GRO		and Cd			ad has been l	buried by si	ite activiti	es		
TPH-DRO		BTEX and		Bolts in pl		<u></u>				
O&G	140	naphthalene		Bolts are						
Total Cyanide		VOC,		Done are :		Well C	asing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from da			ked with the	Well ID	
		Metals and		Cusing is	ii cc ii oiii da	_	ll Condition			<u> </u>
TAL Metals	1 a	mercury,			331 24243	V-250 223		4.01 ESF 153.00	SUPPLICATE Y	
and Mercury		Sulfate,		Casing Volun	ne: I" I D = 0.04	41 gal/ft - 2" I.		$d/R - 4^{11} I.D. = 0.6$	53 gal/ft - 6"	LD = 1.47
(total) TAL Metals	V	Nitrate,	27.	413	9	ft x	gal/ft gal/ft =	(gal)		
and Mercury		Ammonia,	8.	Well is str	ucturally so	ınd: not be	nt. broken	, and no blocl	kage	
(dissolved)		COD,		identified			, 0.011011	,		
Hexavalent	 	Alkalinity,			nt or broken	but is abla	to be use			+
Chromium		Chloride,			oken and is i			<u>u</u>		++
	 	Turbidity,			ocked and is					+
PCB		TDS,				not able to	De useu		 .	+
Matrix Spike		Specific		Cap is pre						111
Duplicate	0	Conductance	<u>. </u>	well pern	nit is present			ar.		NA
Sampled By	Comments:							10		

		ow Sampli irge Log	ing			4	Ente	RM Group erprises LL ers and Scient	<u>C</u>	
Well Number:	Car Triball	(093-	12M		Project Nan	ne: COA	GW - Q	1 2023		
Well Diameter (in):	2	1		Project Nun					
Depth to Produc		~	·		Date: 2					
Depth to Water		10.85			One Well V	olume (gal):	1,4	_		
Product Thickne					Flow Rate (800			
Depth to Bottom		19	.35		Length of ti					
La constitution of the con			P	URGING				BARIB	He was	
					Specific	Dissolved				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ents
1130			14.90	6.32	0,523	4,72	-125	10,43		
11.35		11	12.95	6.37	0.620	3.64	-194	9 /1	1	
7		11.10				7 4		7.01	81/1/	
1146		11.84	12.83	5.96	6.487	419		7.49	11 -	——
1145		11.87	12.77	1.76	0.87	19.85	-48	5.01		
1150		11.87	12.80	6.59	0943	17.03	- (9)	3.71		
1155	1		12.89	6.38	BALLA	11 19	-250	5.69		
1200			12.96	2.79	1.23	11.37	-301	3.04		
		//				144				
1205		()/	12.98	7.76	1.30	12.85	- 306	3.19	-	
1210		U	[3,0]	7.84	1.35	2,3,95	-315	3.11	>PO	
1215			13.36_	8.00	1.40	2.35	331	2.73		- 1
				ECORD A	ND WELL D	ETAILS			II EQ	
Sample	e ID	Time Co	llected			Well	Inspection	on	3 3388	
			*	Well has t	een found a			out hazards. I	f no,	
C093	5-12m	123	\wedge		the commen				,	
000	1	160	0				ad Condi	tion		
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?		visible crac					\neg
TCL-VOCs	Concolod:	Dissolved Zn	Concetted:		vily cracked			<u> </u>		
TPH-GRO		and Cd			ad has been b	nuried by si	te activiti			7/
TPH-DRO		BTEX and		Bolts in p		Janica by Si	ic activiti		_	3)
O&G		naphthalene	\times	Bolts are						
		VOC,	,	Don's are i	mosnig	Well Co	sing Con	dition		
Total Cyanide		SVOC, TAL		Cosinalia	fran fran 1-			ked with the	Wall ID	
TCL SVOCs		Metals and		Casing is	nee from dai			-	AA CII ID	
TAL Metals		mercury,				Wel	l Condition	n		
and Mercury		Sulfate,		Casing Volur	ne: 1" I.D. = 0.04	41 gal/ft - 2" f.E	D. = 0.163 ga	nl/ft - 4" I.D. = 0.6	553 gal/ft - 6"	I.D. = 1.47
(total)							gal/ft	4 10		- 1
TAL Metals		Nitrate, Ammonia,			_	ft x	gal/ft =	=(gal)		
and Mercury		COD,		Well is str	ucturally sou	ınd: not ber	nt, broken	, and no bloc	kage	, , ,
(dissolved)		'		identified			,	,		
Hexavalent		Alkalinity,			nt or broken	but is able	to be use			
Chromium		Chloride,			oken and is r			u		
		Turbidity,			ocked and is					\vdash
PCB		TDS,				not able to	oc useu			$\vdash \dashv$
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance			nit is present	1	1	1 2 107	+	
A .A_	Comments:	TINE 1220	13.90	7.04	1.41	12.08	-30	5 2.8/		
Sampled By		125		8.07	1.40	1.87	-33	9 2.96		
111		1230		8.09			-	-	TL	
7		1)630	13, 43	10.09	11.39	11.60	-34.	3 7.02		
							+		1	
	2	4 nail	Der De	ila.		30	75		1 8	
		וומוני ו	LAM I	1 M						

Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists							
W. H. M					Project Name: COA GW - Q1 2023							
Well Number: Well Diameter (2.142		Project Name: COA GW - Q1 2023 Project Number: 20010210								
Depth to Produc		·			Date: 2		0210					
Depth to Water			-		One Well V			11/-	<u>.</u>			
Product Thickne		<u> </u>			Flow Rate (1- 7	500	-,				
Depth to Botton		クトト			Length of ti			160				
Depth to Botton	1 (10): 7	3,55		PURGING		me Purgeu ((11111)	41)	THE REAL PROPERTY.			
					Specific	Dissolved						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	(s.u.) Conductance Oxygen (mV) (NTU)					Comments			
1100	-4		15,99	In .45	7.012	6.07	-245	2.81				
1105	39	8 71	14.38	1122	1.985	/17	-242	1,49				
110	110	0.01	1. 1.2	0 . 0 .		10/60	- 6/7	1 12				
1110	- /-	X 18 7.	6.77	10.90	1500	0.55	-670	3/19				
1115	1.59	8.85	4.050	10.90	1.385	0,43	- 240	4.85				
1170	1.98	7.88	14.25	[3./4]	1.7.62	10,42	-275	39,4	TURP	7		
1105	7.37	8.90	110,30	2.69	0.814	0.34	-715	11.2		de		
1130	2.77	7 90	1/40		0819	0.34	213	11 4-	/ (10		
1130			10,70	8.59	 	1	-210	11,4	-			
1136	3.17	8.90	10A	1.50	8.119	0.31	-21/4	11.0	-			
	•		•							12		
	12			ECORD A	ND WELL D							
Sample	e ID	Time Co	llected			Wel	l Inspection	on				
CO182-1	nwz	1140		Well has been found and is accessible without hazards. If no, explain in the comments section.								
100				Well Pad Condition Good: no visible cracks and is sloping								
	Sampling P									0		
Parameter	Collected?	Parameter	Collected?		visible crac	ks and/or n	ot sloping		1			
TCL-VOCs		Dissolved Zn	•'		vily cracked							
TPH-GRO		and Cd		Unsure: p	ad has been t	ouried by si	te activitie	es				
TPH-DRO		BTEX and		Bolts in p				27				
O&G		naphthalene		Bolts are	missing				19			
Total Cyanide		VOC,			·	Well Ca	asing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is	free from dar	mage and v	isibly mar	ked with the	Well ID	سب		
TAL Metals		Metals and				Wel	ll Condition	n		-		
and Mercury		mercury,										
(total)		Sulfate,		Casing Volur	ne i ID. = 0.04	+1 gai/11 - 2" []	D. = 0.163 ga gal/ft	I/ft - 4" I.D. = 0.6	gai/it - 6° ددا	1.D = 1.47		
· · · · · · · · · · · · · · · · · · ·		Nitrate,				ft x		(gal)				
TAL Metals	10	Ammonia,				12				1		
and Mercury		COD,		1	ucturally sou	ınd: not bei	nt, broken	, and no blocl	kage	-		
(dissolved)		Alkalinity,		identified								
Hexavalent		Chloride,			nt or broken			<u> </u>				
Chromium		Turbidity,			oken and is r							
PCB		TDS,		Well is bl	ocked and is	not able to	be used					
Matrix Spike		Specific		Cap is pre	sent					L		
Duplicate		Conductance		Well pern	nit is present					L		
	Comments:											
Sampled By												

_

Low Flow Sampling Purge Log						ARM Group Enterprises LLC Engineers and Scientists						
Well Number:	(0)	90-16	7.2		Project Name: COA GW - Q1 2023							
Well Diameter	(in): · ·	7.			Project Number: 20010210							
Depth to Produc		Date: 2/27/23										
Depth to Water		One Well V		: 10 0	_							
Product Thickne		Flow Rate (300								
Depth to Botton		22.87	- 11		Length of ti			6				
Depin to Botton		O D. IV		PURGING		ine i digea (•			DE ROSS		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5		ments		
1250	. 4	1	14.47	5,66	× 1.55	10,71	-157	36,2	1S/AC	12		
17.55	134	14,65	11n03	5:93	1.58	4.79	-155	35.5				
1300	1 8	14:14	14.32	1.04	1,35	417	-152	3/1				
305	- 	1 4 1 30	144	C 197	121	9 57	13.7	5 201		3		
1000	1.59	127,109	16.38.	10.14	1 0	3.33	174	230				
130	1,99	14.64	16.59	(e. 6	1,18	3.08	-139	64,4	15	- 25		
1315	2.37		14.55	Ce. 18	1.17	2.92	-137	13.3	7	20 3		
1320	2.77		16.63	6.19	1.1/4	2.79	- 13/0	13 9				
1325	3.17	(\1	11.11	6 70	1.16	7.68	- 136	12.02	<u> </u>			
(3.63	7.1	 \ \/ 	10 11 0	6.00	1. 1/2	1.00	- 120	1000	1	 		
		<u> </u>		-			-	201		* ×		
1,42,9							ļ		100			
				ECORD AN	ND WELL D							
Sample	e ID	Time Co	llected				l Inspection		-			
CO 190-MWS 1725			Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition									
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping					
Parameter	Collected?	Parameter	Collected?		visible cracl							
TCL-VOCs		Dissolved Zn			ily cracked		1 0					
TPH-GRO		and Cd			ad has been b	ouried by si	te activitie	es .				
TPH-DRO	3	BTEX and	/ 30	Bolts in pl								
O&G		naphthalene	X	Bolts are r						 		
Total Cyanide		VOC,	, ,		8	Well Ca	sing Cond	lition		'		
TCL SVOCs		SVOC, TAL		Casing is	free from dar			ked with the	Well ID	Pust,		
		Metals and		Custing 13	i co nom uar		l Conditio	-	., 1D	Fray		
TAL Metals	7	mercury,	80	The state of the s	arrange .			u 1100 1000				
and Mercury		Sulfate,	The state of the			1 gal/ft - 2" I [l/ft - 4" [D. = 0.6	53 gal/ft - 6"	I.D. = 1.47		
(total)	3	Nitrate,	77	- Agr.		Δ	gal/ft	. (l)				
TAL Metals	, I	Ammonia,		17		ft x	gal/ft =	(gal)		10,,,		
and Mercury		COD,		Well is str	uctūrally sou	ind: not ber	nt, broken,	and no block	kage			
(dissolved)		Alkalinity,		identified	,				-			
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used	<u> </u>		 		
Chromium		Turbidity,	111/3		oken and is n							
PCB	1	TDS,	1		ocked and is							
Matrix Spike	,	Specific		Cap is pre						1		
Duplicate		Conductance			nit is present	-						
A	Comments:	Jonauctanice		11 on poin	to present							
Sampled By	Johnnollia.			٠, ا								

Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	(0) 95	-MW.			Project Name: COA GW - Q1 2023							
Well Diameter (586		Project Number: 20010210							
Depth to Produc	ct (ft):				Date: 2/8/27							
Depth to Water	(ft): 15.	65			One Well Volume (gal): 3.92							
Product Thickne	ess (ft):	_			Flow Rate (1	mL/min) 🗳	300		-			
Depth to Botton	n (ft): 3	9.7			Length of ti	me Purged (i	min) 4	0				
			In the second	URGING I	RECORD	III INSE						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ents		
0905	,4	14.54	17.04	9.45	0.294	0.91	34	6.74				
0910	.79		17.54	10.69		1.05	- 93	11.70				
0915	1.19	14.55	17.67	11.18	1.63	0.98		6.42				
	1.59	14.50										
0920			17.54	11.41	1.78	0.85		5.93				
0925	1.98		17.52	11.49	1.81	0.83		6.59				
0930	2,78		17.58	11. 54		0.68	-153	8.21				
0935	2.77		17.79	11.57	1.83	0.63	-158	8.27				
0940	3.17		17.70	11.59	1.84	0.66		8.10				
	2.17		11111									
										$\overline{}$		
			SAMDIE D	ECODD AN	ND WELL DI	TAILS			11/			
Sample	e ID	Time Co		COKD A	NO THELL DI		Inspection	nn .				
		7 11110 00	1100100	Well has been found and is accessible without hazards. If no,								
c0195-	BWH.	094	5	explain in the comments section. Well Pad Condition								
				Good: no visible cracks and is sloping								
I -	Sampling P	arameters		Good: no	visible cracks	s and is slop	oing			$\overline{}$		
Parameter	Sampling P Collected?	Parameter	Collected?		visible cracks visible crack					V		
Parameter TCL-VOCs			Collected?	Fair: some						V		
		Parameter	Collected?	Fair: some Poor: heav Unsure: pa	visible crack vily cracked ad has been b	ks and/or no	ot sloping			<u> </u>		
TCL-VOCs		Parameter Dissolved Zn and Cd BTEX and		Fair: some Poor: heav Unsure: pa Bolts in pl	visible crack vily cracked ad has been b ace	ks and/or no	ot sloping					
TCL-VOCs TPH-GRO		Parameter Dissolved Zn and Cd BTEX and naphthalene	Collected?	Fair: some Poor: heav Unsure: pa	visible crack vily cracked ad has been b ace	ks and/or no	ot sloping	es				
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r	visible crack vily cracked ad has been b ace missing	ks and/or no ouried by sit Well Ca	et sloping te activitie sing Cone	dition		V		
TCL-VOCs TPH-GRO TPH-DRO O&G		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r	visible crack vily cracked ad has been b ace missing	well Ca	te activities sing Cone sibly mar	es dition ked with the V	Well ID	V		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r	visible crack vily cracked ad has been b ace missing	well Ca	et sloping te activitie sing Cone	es dition ked with the V	Well ID	V		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is	visible cracked ad has been bace missing	well Ca mage and vi	te activities sing Conc sibly mar	dition ked with the V		1D. = 147		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is	visible cracked ad has been bace missing	Well Ca mage and vi Well gal/ft - 2" I E	te activities sing Cone sibly mar I Condition 0 = 0.163 ga	dition ked with the V on		1 D. = 1 47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total)		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is	visible cracked ad has been bace missing	Well Ca mage and vi Well gal/ft - 2" I E	te activities sing Cone sibly mar I Condition 0 = 0.163 ga	dition ked with the V		1 D 1 47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t	e visible cracked vily cracked ad has been b ace missing free from dan ne: 1"1.D. = 0.04	Well Ca mage and vi Well of gal/ft - 2" I E	sing Condition	dition ked with the V on	53 gal/ft = 6'*	1 D. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t	e visible cracked vily cracked ad has been b ace missing free from dan ne: 1"1.D. = 0.04	Well Ca mage and vi Well of gal/ft - 2" I E	sing Condition	dition ked with the V on Vft - 4" I.D. = 0.65	53 gal/ft = 6'*	1 D. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t Casing Volun Well is str identified	visible cracked ad has been bace missing free from darme: 1" I.D. = 0.04	Well Ca mage and vi Well I gal/ft - 2" I E ft x	sing Condition Condit	dition ked with the Von I/ft - 4" I D = 0 65 (gal) , and no block	53 gal/ft = 6'*	ID. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (total)		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t Casing Volun Well is str identified Well is be	e visible cracked vily cracked ad has been b ace missing free from dan ne: 1"1.D. = 0.04	Well Ca mage and vi Well I gal/ft - 2" I E ft x	sing Condition Condit	dition ked with the Von I/ft - 4" I D = 0 65 (gal) , and no block	53 gal/ft = 6'*	1D. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (total) Hexavalent		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t Casing Volun Well is str identified Well is be Well is br	visible cracked ad has been bace missing free from darme: 1" I.D. = 0.04 pucturally sount or broken	Well Canage and vi Well I gal/ft - 2" I D ft x Ind: not ben but is able to b	sing Condition Condit	dition ked with the Von I/ft - 4" I D = 0 65 (gal) , and no block	53 gal/ft = 6'*	1 D. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS,		Fair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t Casing Volun Well is str identified Well is be Well is br	e visible cracked vily cracked ad has been bace missing free from danne: 1" LD. = 0.04 ructurally sou not or broken oken and is nocked and is	Well Canage and vi Well I gal/ft - 2" I D ft x Ind: not ben but is able to b	sing Condition Condit	dition ked with the Von I/ft - 4" I D = 0 65 (gal) , and no block	53 gal/ft = 6'*	ID. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity,		Pair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t Casing Volun Well is str identified Well is be Well is br Well is bro Cap is pre	e visible cracked vily cracked ad has been bace missing free from danne: 1" LD. = 0.04 ructurally sou not or broken oken and is nocked and is	Well Canage and vi Well I gal/ft - 2" I D ft x Ind: not ben but is able to b	sing Condition Condit	dition ked with the Von I/ft - 4" I D = 0 65 (gal) , and no block	53 gal/ft = 6'*	I D. = 1.47		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB Matrix Spike		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS, Specific		Pair: some Poor: heav Unsure: pa Bolts in pl Bolts are r Casing is t Casing Volun Well is str identified Well is be Well is br Well is bro Cap is pre	e visible cracked vily cracked ad has been bace missing free from darme: 1" I.D. = 0.04 pucturally sou oken and is nocked and is sent	Well Canage and vi Well I gal/ft - 2" I D ft x Ind: not ben but is able to b	sing Condition Condit	dition ked with the Von I/ft - 4" I D = 0 65 (gal) , and no block	53 gal/ft = 6'*	1 D. = 1.47		

Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	C027	3-PZNC	2 6		Project Nam	ne:	COA	02				
Well Diameter (1			Project Nun		,					
Depth to Produc	The same of the sa				Date:	5117	173					
Depth to Water		.95			One Well V	olume (gal)	0.20	7				
Product Thickne		-			Flow Rate (\neg		
Depth to Botton	- Anna - Anna	21.55			Length of ti			-		\neg		
			MELCHEN	PURGING				BENDER				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
17.25		14.45	1995	10.17	207	1.31	-149	99				
170			10 AT	10.10	248	1 /. /.	-170	754				
1240			7.23	1000	719	1.46		7 70				
1645	/dl/	- V	15.41	10.01	1 1 1	1.71	41,3	27		\vdash		
1250		<u> </u>	19.76	909	2.13	1,19	-125	5.54	7			
1255			19.70	999	2.15	1.10	- 106		//			
1700		_ (<i>V)</i>	19.71	16,0	7/11	1.16	-164	2.68				
		V		•								
* .								-				
	q											
			SAMPLE R	FCORD A	ND WELL D	ETAILS						
Sample	e ID	Time Co	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN	I	Well Inspection							
C 23	80000		_	Well has been found and is accessible without hazards. If no,								
1(00%	70000	1305		explain in the comments section.								
		10-	11/		Well Pad Condition							
	Sampling P	arameters		Good: no	visible cracks and is sloping							
Parameter	Collected?	Parameter	Collected?	Fair: some	e visible craci	ks and/or n	ot sloping					
TCL-VOCs		Dissolved Zn			vily cracked							
TPH-GRO		and Cd		Unsure: p	ad has been b	ouried by si	te activitie	es				
TPH-DRO		BTEX and		Bolts in p								
O&G		naphthalene		Bolts are	missing							
Total Cyanide		VOC,		J. 1915	1		sing Con					
TCL SVOCs		SVOC, TAL		Casing is	free from dai			ked with the	Well ID			
TAL Metals		Metals and				Wel	l Conditio	n				
and Mercury	26	mercury,	8	Casing Volum	ne: 1" 1.D. = 0.04	11 gal/ft - 2" 1.1	O = 0 163 ga	l/ft - 4" I.D. = 0.6	53 gal/ft - 6"	1 D. = 1.47		
(total)		Sulfate, Nitrate,						0.29(gal)				
TAL Metals		Ammonia,			1/	A II XVA	9 gal/tt -	U/ Z I(gat)				
and Mercury		COD,		Well is str	ructurally sou	ınd: not bei	nt, broken	, and no blocl	kage			
(dissolved)		Alkalinity,		identified	-							
Hexavalent		Chloride,		Well is be	ent or broken	but is able	to be used	i				
Chromium		Turbidity,		Well is br	oken and is r	ot able to l	e used		l l			
PCB		TDS,		Well is bl	ocked and is	not able to	be used					
Matrix Spike		Specific	7	Cap is pre								
Duplicate		Conductance		Well perm	nit is present							
	Comments:							100				
Sampled By												

Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	CO 2	4- DM	007		Project Nan							
Well Diameter ((in): 2				Project Name: ()A Project Number: 200 0210							
Depth to Produc					Date: 5172J							
Depth to Water	TAXABLE DESCRIPTION OF THE PERSON OF THE PER	255			One Well Volume (gal): 0.3							
	Product Thickness (ft):						300					
Depth to Botton	Depth to Bottom (ft): 22,20					me Purged (min)	34 40				
			Water Stand	PURGING I			2,00	HEELING,		200		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
1330			20.04	9.06	1.73	1.86	-9	367	335			
1330		1427	14 28	0.76	138	101	-65	401				
222		1577	19 34	0 21	1.55	1.00	-82	73/	,			
1290		N.72	10 1.0	50 27	1 -0 4.	200	98	0.10				
1743		15,23	17,44	9.63	1.78	070	- 70	2.00		,		
7.250		15,23	17.37	922	1.01	0.93	<u> </u>	2.04				
1355			19.32	9 23	206	0.90	-118	1.77				
1400	*		19.740	9.19	2.12	0.99	- 125	1.54		1		
									1802	0		
		1										
		1				5 7 7						
			SAMPLE R	ECORD AN	ND WELL D	ETAILS			- 1 1			
Sample	e ID	Time Co					l Inspectio	on	100			
0-01-1	2MOOP	4 >		Well has b	een found a			out hazards. If	no.			
COLT	DAG	114C	15		the commen					-		
		(· 				ad Condi	tion				
0	Sampling P	arameters		Good: no	visible crack	s and is slo	ping					
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping					
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked		-					
TPH-GRO		and Cd	,	Unsure: pa	ad has been t	ouried by si	te activiti	es				
TPH-DRO		BTEX and		Bolts in pl	ace							
O&G		naphthalene		Bolts are r	nissing				100			
Total Cyanide		VOC,			III.	Well Ca	sing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is:	free from dai	mage and v	isibly mar	ked with the	Well ID			
TAL Metals		Metals and	10			Wel	l Conditio	on	ME	T. 7 6.		
and Mercury		mercury,		Casine Volum	ne I*1D = 0.04	11 eal/ft - 2" 11) = 0 163 00	l/ft - 4" I D. = 0.6	53 gal/ft - 6"	LD = 1.47		
(total)		Sulfate,		Tomana Toluli				6,31 (gal)	- 2 Danie 0			
TAL Metals		Nitrate,			7.0	eo fix 0.	CH]gal/ft =	0,31 (gal)				
and Mercury	í e	Ammonia,		Well is str	ucturally son	ınd: not ber	nt, broken	, and no block	cage			
(dissolved)		COD,		identified			,	, 0.001				
Hexavalent		Alkalinity, Chloride,			nt or broken	but is able	to he user					
Chromium		Turbidity,	1 3		oken and is r					\vdash		
PCB		TDS,			ocked and is					\vdash		
Matrix Spike		Specific		Cap is pre								
Duplicate		Conductance			nit is present							
_ aprioute	Comments:			- III puin	Francis							
Sampled By												

Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	CO	25-112	-M DA K		Project Name: COA GW Q7							
Well Diameter (in):				Project Number 20010 210							
Depth to Product (ft):					Date: 5 1 23							
Depth to Water (ft):					One Well V	olume (gal):						
Product Thickne			mL/min)				$\overline{}$					
Depth to Bottom		271	<			me Purged (
			COMPLEMENTS.	URGING			===			20 10		
						D: 1 1						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
1330			14.40	YI.P	330	0.69	-157	DL				
1725			10,0	0 41	217	V 34	- 195	3.80				
(2 K-X			1020	0 -1	2 2	4 77	200	2 17				
10 40			1.33	7.0	3.12	0.73	- 208	2,16				
1745			13.67	4.54	3.10	0.69	· 622	4.10				
1350			17.98	9.76	3.14	0,65	-228	3.35				
1755			13 8>	9 77	3.14	0.65	-272	2.10				
1400	-		(d a)	9.3%	216	206.	719	77 16		1		
1700			10.07	0 73	717	1 to 1 to 1	240	2.10	-			
1703			14.00	7.87	3, 3	0.63	- (10	3.01				
	-		SAMPLE R	ECORD AN	ND WELL D	ETAILS						
Sample		Time Co	llected		Well Inspection							
C025	Ponor	14/	5	Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition								
	Sampling P	arametere	· · · · · · · · · · · · · · · · · · ·	Good: no	visible crack			HOH				
Parameter	Collected?	Parameter	Collected?		visible crac							
TCL-VOCs	Collected?	Dissolved Zn	Conected?		vily cracked	KS and Of the	ot stoping					
		and Cd			ad has been t	ouried by cit	te activiti	36				
TPH-GRO	-					ourted by sit	te activitio	CS				
TPH-DRO		BTEX and	X	Bolts in pl		-						
O&G		naphthalene		Bolts are r	nissing	W 0.0	-1 O	distant				
Total Cyanide		VOC,	M	Carlos :	C		sing Con		W-11 ID	11/2011		
TCL SVOCs		SVOC, TAL		Casing is	iree from dai			ked with the	well ID	VXX F		
TAL Metals		Metals and		15		Wel	l Conditio	on				
and Mercury		mercury, Sulfate,		Casing Volun	ne: I" I.D. = 0.04	11 gal/ft - 2" I.E). = 0.163 ga	l/ft - 4" 1.D. = 0.6	53 gal/ft - 6"	LD. = 1.47		
(total)		Nitrate,		100	17 /	G AN	µgal/ft	0,32(gal)	From	previous		
TAL Metals		1			T/	m x v.o	gal/fi =	U/ O (Ugl)	PT	w name		
and Mercury		Ammonia, COD,		Well is str	ucturally sou	ınd: not ben	ıt, broken	, and no blocl	kage			
(dissolved)		Alkalinity,		identified	,				_			
Hexavalent		Chloride,			nt or broken	but is able	to be used					
Chromium		Turbidity,			oken and is r			-				
PCB		TDS,			ocked and is							
Matrix Spike		Specific		Cap is pre		4010 10	De gibeti					
Duplicate		Conductance			nit is present		*					
Duplicate	Comments:	A Des!	Late 7		ac is present							
Sampled By	Onunents:	Not 1	JOID Z	84w	Duc	6	Par	in Ic	9			

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ARM Group Enterprises LLC **Low Flow Sampling** Purge Log **Engineers and Scientists** 00 / Project Name: Well Number: Project Number: 00/026 Well Diameter (in): Date: 5/17/7/ Depth to Product (ft): One Well Volume (gal): O,16 Depth to Water (ft): 300 Flow Rate (mL/min) Product Thickness (ft): Length of time Purged (min) 25 Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved ORP Turbidity Volume pΗ DTW Conductance Temp Oxygen (s.u.) (mV) (NTU) Comments Time Purged (ms/cm) (mg/L)(feet) (°C) (gallons) ± 0.1 ± 10 $\pm 10\% \text{ or } < 5$ ± 3% ± 0.3 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities and Cd TPH-GRO TPH-DRO BTEX and Bolts in place naphthalene Bolts are missing O&G VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, Casing Volume: 1" 1.D. = 0.041 gal/ft - 2" 1.D. = 0.163 gal/ft - 4" 1.D. = 0.653 gal/ft - 6" 1.D. = 1.47 3.99 ft x 0.04 (gal/ft = 0.16 (gal) and Mercury Sulfate, (total) Nitrate, TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used **PCB** TDS, Matrix Spike Cap is present Specific Well permit is present Duplicate Conductance Comments: Sampled By

ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q2 2023 Well Number: CO27-PZN012 Project Number: 20010210 Well Diameter (in): Date: 61/23 Depth to Product (ft): 5 One Well Volume (gal): 0,53 Depth to Water (ft): 4.53 Flow Rate (ml/min) 300 Product Thickness (ft): * Length of time Purged (min) 60 Depth to Bottom (ft): 17,41 **PURGING RECORD** Dissolved Specific Volume pH Condicac Oxygen MIG Lemp Comments Lime Purged 1 - 11.1 (mg.L): Heeti 161 (m c i) 1 % or 5 0.1 (gallons) т 0.3 0.93 3.77 3.60 1220 4,53 1.96 -250 26.46 8.68 1.96 3.65 4.55 24.88 276 1225 1,95 071 2.99 4.57 24/13 8.66 -317 1230 -287 3,46 2.04 0.88 8,98 22,54 1235 -264 3.82 2.09 2.05 4,59 400 22,74 1240 22.75 8.85 205 -253 3.03 1245 4.60 8.84 22.78 2.04 -254 3.13 1250 1255 5,29 -257 340 2.04 8.87 22.85 1300 5.07 -257 3.10 12.77 2.04 8.85 204 4,91 22.79 1305 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. X 1315 1027-PZ NO12 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Collected? Fair: some visible cracks and/or not sloping Collected? Parameter Parameter Poor; heavily cracked Dissolved Zn TCL-VOCs Unsure: pad has been buried by site activities TPH-GRO and Cd BTEX and Bolts in place TPH-DRO 0&Gnaphthalene Bolts are missing Well Casing Condition VOC. Total Cyanide SVOC. TAI Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 4.34 D = 0.044 gal ft = 2.4 D = 0.163 gal ft = 4.4 D = 0.653 gal ft = 6.4 D = 4.47 Sulfate. (total) 12,88 1 \ 0.041 gal 11 0,53 (gal) Nitrate: TAL Metals Ammonia, Well is structurally sound; not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalmity. Well is bent or broken but is able to be used Hexavalent Chloride. Well is broken and is not able to be used Chromium Lurbidity: Well is blocked and is rotable to be used PCB IDS. X Cap is present Matrix Spike Specific Conductance Well permit is presen Duplicate Comments: Sampled By SHL

ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists COA GW Q2 2023 Well Number: 0017-12M046 Project Name: Well Diameter (in) Project Number: 20010210 123 Date: Depth to Product (ft): -Depth to Water (ft) TOI One Well Volume (gal): (, 84 Flow Rate (mL/min) Product Thickness (ft): 51,90 Length of time Purged (min) Depth to Bottom (ft): PURGING RECORD Dissolved Specific Volume pH ORP Furbidity. Oxygen DIW Lemp Conductance (VIII) (comments Trunc Purged (511.) (/mt) (ms cm) (mg L) Heeti 111 Hip o tar 3 0.1 (gallons). ± 0.3 5.95 -252 7,36 7.03 22.75 1320 -250 8.11 4.86 7.64 1325 22 46 8.91 9.13 9.52 1330 4.86 22.53 5.23 -263 5.03 -264 7,89 1335 22.62 9.13 4.86 7.05 22,49 9,12 -263 5.99 4.86 340 8.97 9,11 4.37 -264 22.49 4.95 1346 9,10 22.47 9,14 5,24 -265 5,59 3.99 -264 9.60 1355 9.18 22.48 3.91 -264 9.45 9.19 5,66 1400 22.45 3.80 2247 5.70 -264 8,57 1405 SAMPLE RECORD AND WELL DETAILS Well Inspection Sample ID Time Collected Well has been found and is accessible without hazards. If no. 135 C027-PZn046 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter Poor, heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities and Cd TPH-GRO \mathbf{x} Bolts in place TPH-DRO BTEX and naphthalene 0&6 Bolts are missing Well Casing Condition VOC. Total Cyanide \mathbf{x} Casing is free from damage and visibly marked with the Well ID TCL SVOCs SVOC. TAI Metals and Well Condition TAL Metals mercury. and Mercury Casing Volume 1-11) = 0.041 gal tt - 2-11) = 0.163 gal h - 4514) = 0.653 gal ft - 6-14) = 1.47 Sulfate. 44.88 n 0.041 gath 1.84 (gal) (total) Nitrate. TAL Metals Ammonia. Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalimity. Hexavalent Well is bent or broken but is able to be used Chloride: Well is broken and is not able to be used Chromium Turbidity. Well is blocked and is not able to be used PCB TDS. × Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments Sampled By

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		ow Sampl irge Log	ing	, i		4	Ente	RM Group erprises LLC ers and Scientis	THE RESERVE TO SERVE	
Well Number:	(048-	Pznolo			Project Nan	ne: COA G	W Q2 20	23		
Well Diameter (in): 7	1010		100	Project Nun					
Depth to Produc						24/23				
Depth to Water		11.38				olume (gal):	0.44			
Product Thickne	C (T ())	_ 11/			Flow Rate (300	· · · · · · · · · · · · · · · · · · ·		
Depth to Botton		. 22.0	0			me Purged (₹		-
Depair to Botton	1 (74).			PURGING		me r mgeo (,			
					T	Dissolved				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ients
1340			2016	2.28	801	3.73	40	3 8/		
1226		1147	0 (3	2 72	7.09	3 22	12	7 70		
1727		11,72	17.37	7 72	4	2.40	1.41	1.30		
1240		11,42	14.64	7.72	8.0+	3.67	113	1,72		
1345		11.42	19.92	19.ZI	7.01	3,43	157	1.58	7	
1350		1	2011	120	8.00	3.44	1/25	1 94	_	/
13:5			20,47	770	2 7	7 39	120	180		
1/33		 	2017 F	1.1.2.0	1.10	7.7	170	100		
				-		+		-		
				ļ		ļ				
		V								
			SAMPLE R	ECORD A	ND WELL D	ETAILS				-
Sample	e ID	Time Co	llected			Wel	Inspection	on		
C 145	0 .	1 2	2 *	Well has l	oeen found a	nd is access	ible with	out hazards. If	no,	
(-(-///)	- 197X 14	140	$\bigcirc\bigcirc\bigcirc$	explain in	the commen	its section.				
C070-12	mold	1 ' ' `					ad Condi	tion		
0 10	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			2
Parameter	Collected?	Parameter	Collected?		e visible crac					
TCL-VOCs		Dissolved Zn			vily cracked					
TPH-GRO		and Cd			ad has been l	buried by si	te activiti	es		1
TPH-DRO		BTEX and		Bolts in p						
O&G		naphthalene		Bolts are						
Total Cyanide		VOC,				Well Ca	asing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from day		The second secon	rked with the V	Vell ID	
		Metals and		C distriguis			l Condition			
TAL Metals		mercury,		-						
and Mercury		Sulfate,		Casing Volu				alfi - 4 1D 0 65	3 gal ft - 6	ID 147
(total)		Nitrate,			10.4	2 1,0		0.435(gal)		
TAL Metals		Ammonia,					, B	07- [20(8)		
and Mercury		COD,		Well is st	ructurally soi	und: not bei	nt, broken	, and no block	age	2
(dissolved)		Alkalinity,		identified						
Hexavalent		Chloride,		Well is be	ent or broken	but is able	to be use	d		
Chromium		Turbidity,			oken and is					
PCB		TDS,			ocked and is					1
Matrix Spike		Specific		Cap is pro						
Duplicate		Conductance			nit is present					1
- apriloute	Comments:	- STATISTICS		- in protit	p. 304.11					
Sample By	~ muvitin									

Collected Coll	niments
Depth to Product (ft):	sinments
Depth to Water (ft):	anments
Product Thickness (ft)	anments
Product Thickness (ft)	sinments
Time	sinments
Time	suments
Time Purged (gallons) Purg	panments
SAMPLE RECORD AND WELL DETAILS Sample ID Sampling Parameters Parameter Collected? Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping Poor: heavily cracked	
SAMPLE RECORD AND WELL DETAILS Sample ID Sampling Parameters Parameter Collected? Parameter	
SAMPLE RECORD AND WELL DETAILS Sample ID Sampling Parameters Parameter Collected? Parameter	
SAMPLE RECORD AND WELL DETAILS Sample ID Sampling Parameters Parameter Collected? Parameter	
SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well Pad Condition Sampling Parameters Parameter Collected? Parameter Collected? Fair: some visible cracks and is sloping Poor: heavily cracked	
SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
Sample ID Time Collected Well Inspection Well Inspection Well Inspection Well Inspection Well Pad Condition Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	`
Sample ID Time Collected Well Inspection Well Inspection Well Inspection Well Inspection Well Pad Condition Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
Sample ID Time Collected Well Inspection Well Inspection Well Inspection Well Inspection Well Pad Condition Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
Sample ID Time Collected Well Inspection Well Inspection Well Inspection Well Inspection Well Pad Condition Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
Sample ID Time Collected Well Inspection Well Inspection Well Inspection Well Inspection Well Pad Condition Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	1
Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping TCL-VOCs Dissolved Zn Poor: heavily cracked	
TCL-VOCs Dissolved Zn Poor: heavily cracked	\rightarrow
mark on o	
TPH-GRO and Cd Unsure: pad has been buried by site activities	
TPH-DRO BTEX and Bolts in place	
O&G naphthalene Bolts are missing	
otal Cyanide VOC, Well Casing Condition	
Casing is free from damage and visibly marked with the Well II	
TAL Metals Metals and Well Condition	
and Mercury mercury,	6 115 142
C. (C.)	9 ID 147
Nitrate, 29,08 ft x 004(gal ft = 20) gal)	
TAL Metals Ammonia,	
well is structurally sound: not bent, broken, and no blockage	
(dissolved) Alkalinity, identified	
Hexavalent Chloride, Well is bent or broken but is able to be used	-
Chromium Turbidity, Well is broken and is not able to be used	
PCB TDS, Well is blocked and is not able to be used	
Matrix Spike Specific Cap is present	
Duplicate Conductance Well permit is present	
Sampled By Comments:	

	10	low Sampl urge Log	ing			-	Ente	RM Group rprises LL(en and Scienti				
Well Number:	C03	0 - P2M0	15		Project Nan	ne: COA G	W Q2 20	23				
Well Diameter			•		Project Nun	jber: j20010	210					
Depth to Produ	ct (ft):					123						
Depth to Water	(ft):	. 69			One Well V	olume (gal):	0,68					
roduct Thickn	ess (ft):	and the second			Flow Rate (mL/min)	300					
Depth to Bottor	m (ft):	7.7.			THE RESERVE OF THE PERSON NAMED IN	me Purged (min) 3	0				
				PURGING	RECORD				477	- 1		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
225		11,70	20,21	9.88	2,79	0.71	-235	1,38				
700		11.25	20 FX	9 XE	2.9/2	12/1/2	-761	109				
1000		11170	20110	7.0	270	VI CO	- 263	122.	~	/		
7210			20.05	91/13	6.10	5,69	~ (4)	100		-/		
17.15	ļ		71,09	9.81	2,72	0.61	- 26 t	1,77	4	_		
1220			71,95	979	2,10	0,59	-27/	1.26				
					7-111-14							
	 	H				 	-					
		 \///						1				
		L V	CARANTER	DCORD 41	ID SUCCES OF	Em + *I C						
Sampl	la ID	Time Co		ECORD A	ND WELL D		Inspection	. 6%	-			
		1 line CC	niected	Wall has b	saan found o			out hazards. If	no			
2030-P	5V012	explain in the comments section. Well Pad Condition										
- wolf	Sampling P	arameters		Good: no visible cracks and is sloping								
Parameter	Collected?	Parameter	Collected?		visible cracl	ks and/or no	ot sloping					
TCL-VOCs		Dissolved Zn		Poor: heav	vily cracked							
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activitie	es		✓		
TPH-DRO		BTEX and	. /	Bolts in pl	lace							
O&G		naphthalene	Х	Bolts are a	nissing							
otal Cyanide		VOC,					sing Cone					
CL SVOCs		SVOC, TAL		Casing is	free from dar	mage and vi	sibly mar	ked with the \	Well ID			
		Metals and				Wel	Conditio	n				
TAL Metals		mercury,		Casing Volum	ne: 1" [D = 0.04	11 oal/ft - 2" 1 F) = 0.163 oa	1/ft - 4" I.D. = 0.65	3 oal/ft = 6"	1 D = 1		
TAL Metals and Mercury	1	Sulfate,		Casing voids		91 n x 00			o gairtí	1,0,		
nd Mercury	I	Nitrate,			10	711 ft x 0.00	41_gal/ft =	0.65 (gal)				
ind Mercury (total)			in the second	Well is str	neturally son	ınd: not ber	t broken	and no block	аде			
(total) TAL Metals		Ammonia,		Well is structurally sound: not bent, broken, and no blockage								
(total) TAL Metals and Mercury		COD,		identified		Aikainity,						
(total) TAL Metals and Mercury (dissolved)		COD, Alkalinity,		identified	nt or broken	hut is abla	to he used	1		l		
(total) TAL Metals and Mercury (dissolved) Hexavalent		COD, Alkalinity, Chloride,		Well is be				i	·			
rAL Metals and Mercury (dissolved) Hexavalent Chromium		COD, Alkalinity, Chloride, Turbidity,		Well is be Well is br	oken and is r	not able to b	e used	i				
rAL Metals and Mercury (dissolved) Hexavalent Chromium PCB		COD, Alkalinity, Chloride, Turbidity, TDS,		Well is be Well is br Well is bl	oken and is rocked and is	not able to b	e used	1				
nd Mercury (total) FAL Metals nd Mercury (dissolved) Hexavalent Chromium		COD, Alkalinity, Chloride, Turbidity,		Well is be Well is br Well is ble Cap is pre	oken and is rocked and is	not able to b	e used	l		-		

ARM Group Enterprises LLC **Low Flow Sampling** Purge Log **Engineers and Scientists** COA GW Q2 2023 Well Number: Project Name: Well Diameter (in): Project Number/20010210 Depth to Product (ft): Date: Depth to Water (ft): One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved Turbidity ORP Volume pΗ DTW Temp Conductance Oxygen Time Purged (s.u.) (mV) (NTU) Comments (ms/cm) (mg/L)(feet) (°C) (gallons) ± 0.1 ± 10 ± 10% or < 5 ± 3% ± 0.3 Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, 6 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Collected? Collected? Fair: some visible cracks and/or not sloping Parameter Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities and Cd TPH-GRO TPH-DRO BTEX and Bolts in place naphthalene Bolts are missing O&G VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate. 60.55 ft x 004 (gal/ft = 2.48 (gal) (total) Nitrate, TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific **Duplicate** Conductance Well permit is present Comments: Sampled By

	Pu	ow Sampl irge Log	ing			A	Engine	RM Group erprises LL ers and Scient	C	
Well Number:	CO 36	- PZMO	OX		Project Nam			23		
Well Diameter ((in): Z	23_			Project Nun	nber: 2001	0210			
Depth to Produc	ct (ft):	>			Date:	23125)			9
Depth to Water	(ft):	(1.47			One Well V	olume (gal)	: 0,3:	2_		
Product Thickne	ess (ft):	-			Flow Rate (mL/min)	300			
Depth to Botton	n (ft):	14.23			Length of ti			0		
STATE OF STATE		A PRINTER NAME	e de la lace	URGING I	RECORD			CHA DELO		227/00 H
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ments
1020		6.90	17.18	8,11 8,06 9.74 9,82	2.78 2.39 2.77	5.86 2.75 1.76	- 18 - 118 -277	7.13		
10 35			17.77 17.71 13.74	9,78 9,73 9,71	2.22	1.28 1.40 1.36	-218 -209 -200	7,71	3	
			CAMBI E DI	ECORD AN	ID WELL D	ЕТАН С				
Sampl	a ID .	Time Co		LCORD AN	ND WELL D		Inspection	on.		
CO 36	0				een found an	nd is access	THE RESERVE TO SERVE THE PARTY OF THE PARTY	out hazards. I	f no,	
C 0 30	, 10	103					ad Condi	tion		
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked					
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activiti	es		
TPH-DRO		BTEX and	X	Bolts in pl	ace					
O&G		naphthalene		Bolts are r	nissing					
Total Cyanide		VOC,				Well Ca	sing Con	dition		
TCL SVOCs		SVOC, TAL	1	Casing is t	free from dar	mage and v	isibly mar	ked with the	Well ID	
TAL Metals		Metals and			·-	We	l Conditio	on		
and Mercury (total)		mercury, Sulfate, Nitrate,		Casing Volun	ne: 1" I.D = 0 04	11 gal/ft - 2" 1.1	D. = 0.163 ga gal/ft	0,32(gal)	i53 gal/ft - 6'	LD. = 1.47
TAL Metals		Ammonia,			7_1	TOUR NOW	- Basit	a. a ciliui)		-
and Mercury		COD,			ucturally sou	ınd: not bei	nt, broken	, and no bloc	kage	
(dissolved)		Alkalinity,		identified						
Hexavalent	Ì	Chloride,		Well is be	nt or broken	but is able	to be used	1		$\overline{}$
Chromium		Turbidity,			oken and is r					
PCB		TDS,		Well is blo	ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance			nit is present					
SampledBy	Comments:		⇒w ⁵		•					

34.

		low Sampli irge Log	ing			-	Ente	CM Group rprises LL ers and Scient	C	
Well Number:	003	6- PZM	43		Project Nan	ne: COA G	W Q2 20	23		\neg
Well Diameter (Project Nup	nber:, 2001()210			
Depth to Produc	ct (ft):				Date: 5					
Depth to Water		6	98		One Well V		1.85			
Product Thickne					Flow Rate (300			
Depth to Botton		12.15			Length of ti		min) 4	Ø		\neg
				PURGING			Tr. 20700	CIED SI		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) $\pm 10\%$ or ≤ 5	Comn	nents
1055		7.46	18.44	7.76	2.09	2.65	47	3.34 2.32		
1110		7.49	18.63	9.88	4.05	0.89	-251 -271	1.07	4	
1120		7.49	18.59	10.03	4.20	0.82	-29/ -288	2.04		
~ .	-									
			SAMPLE R	ECORD AN	ND WELL D	ETAILS		- 17		
Sample	e ID	Time Co		LCORD M.	TO THE DE		Inspection	on		
C0361	121043	1130			ocen found and the commen	nd is access ts section.	Name and Address of the Owner, where	out hazards. I	f no,	
W	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or no	ot sloping			
TCL-VOCs	-	Dissolved Zn		Poor: heav	ily cracked					
TPH-GRO		and Cd	_ /_	Unsure: pa	ad has been b	ouried by si	te activitie	es		
TPH-DRO		BTEX and	X	Bolts in pl	ace					
O&G		naphthalene		Bolts are i	nissing					
Total Cyanide		VOC,				The second second second	sing Con	THE RESERVE OF THE PERSON NAMED IN COLUMN 1		
TCL SVOCs		SVOC, TAL		Casing is:	free from dai	The second line of the least l		ked with the	Well ID	
TAL Metals		Metals and				Wel	l Condition	n		1000
and Mercury (total)		mercury, Sulfate, Nitrate,		Casing Volun				1/85 (gal)	53 gal/ft - 6''	I.D. = 1.47
TAL Metals		Ammonia,		W 11 1		and a section	. l. 1			
and Mercury		COD,			ucturally sou	ına: not ber	it, broken	, and no block	kage	
(dissolved)	_	Alkalinity,		identified		1	. 1	1		
Hexavalent		Chloride,			nt or broken			1		-
Chromium		Turbidity,			oken and is r					
PCB		TDS,			ocked and is	not able to	oc used			$\vdash \! / \! -$
Matrix Spike		Specific		Cap is pre						-
Duplicate		Conductance		Well perm	nit is present					
Sampled By	Comments:									

		ow Sampli irge Log	ing			-	Ente	RM Group erprises LL eers and Scient	C	
Well Number:	603	37 - DZM	003		Project Nam	ne: COA G	W Q2 20)23		
Well Diameter (Project Nun	nber: 2001(210			
Depth to Produc	et (ft): 7 CQ C	e / 500/K	a hell		Date:	6/17/	27			
Depth to Water	(ft): '	/ 11	45		One Well V	olume (gal)				
Product Thickne		- 11			Flow Rate (mL/min)	300			
Depth to Botton	n (ft): 18.5	5			Length of ti	me Purged (
			F	URGING	RECORD					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0,1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents
1/27/0			23.44	12.50	126	6 20	-20%	38-9	-	
- Ja - Ja		12.72	21 34	12 (9	3 9 /	1 42	200	23.2	_	
120		16.92	21.77	12.57	7.70	1.18 7	7/2	20.0	7	
450		1	70.19	1629	7.99	1.48	- 2/3	62,9		
4-35		12.77	20.25	1250	794	1.27	-246	4-98		1
1440			20.80	1260	7.92	1.14	-248	4.04		
14.4-		_	70 26	12.50	7 98	0.94	- 756	298		
7 7 3			20.70	14.12/	7.70	N. 4 / /	- 27-	2.10		
										-
DAY EVENTOR	**************************************			ECORD AN	ND WELL DI					
Sample		Time Co	llected				Inspection			`
C077	-pznoo	14:	50		the commen	ts section.	ad Condi	out hazards. If	f no,	2
n io re	Sampling P	arameters		Good: no	visible crack			ittott		
Parameter	Collected?	Parameter	Collected?		visible cracl					
TCL-VOCs	Collected:	Dissolved Zn			vily cracked	KS and/OI II	or stoping			
TPH-GRO		and Cd			ad has been b	uried by ci	to notiviti	95		
TPH-DRO		BTEX and		Bolts in pl		ouried by si	ic activiti	CS		12
O&G		naphthalene	\times	Bolts are i					_	+
Total Cyanide		VOC,		Don's arc i	mssing	Well Co	sing Con	dition		
TCL SVOCs		SVOC, TAL	1	Cacina is	free from day			ked with the	Well ID	
		Metals and		Custing 15	nee nom dar		l Condition		Well ID	
TAL Metals		mercury,		_						
and Mercury		Sulfate,		Casing Volum	ne I" I D. = 0.04	H gal/ft - 2" LI		d/ft - 4'' I.D = 0.6	53 gal/ft - 6"	I.D. = 1,47
(total)		Nitrate,				ft x	gal/ft eal/ft =	(gal)		
TAL Metals		Ammonia,								 -
and Mercury		COD,			ucturally sou	ınd: not ber	it, broken	, and no blocl	kage	
(dissolved)		Alkalinity,		identified						
Hexavalent		Chloride,			nt or broken	_		1		
Chromium		Turbidity,			oken and is r					\perp
PCB		TDS,		Well is bl	ocked and is	not able to	be used			 }
Matrix Spiles		Specific		Cap is pre						
Duplicate		Conductance	<u> </u>	Well perm	nit is present					
Sampled By	Comments:	Sou in	hell							

		low Sampli irge Log	ing			A	Ente	RM Group erprises LL ers and Scient	C	
Well Number:	103	7- P)M	079		Project Nan	ne: COA (SW Q2 20)23		——(
Well Diameter	(in):	2	V J N		Project Nur					
Depth to Produc	, ,				Date: /	13 7/3	0210	-		-
Depth to Water		12.22			One Well V		1:			
Product Thickn		10.00			Flow Rate (
Depth to Bottor					Length of ti					1- 97
Depth to Botton	ii (ic).			PURGING		Me i diged		N. BEE		WHICH
					Specific	Dissolved	0.00	T. 1111		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ients
17.45			25,57	11,65	2.14	8.78	-369	4.62		
1250		12.35	7504	11 29	707	2,45	-403	4.33		
1255		1070	22.22	11.84	2,20	2.24	-411	395		
		12 2		11.84			7/4	- / -		
1300		12,35	22.24	11.85	2.21	1,82	1411	3.70	40	
305		12136	72.08	11,86	2.22	16	7920	3,67	20	
1310	100	, ,	7188	1187	2.22	1.14	-411	3.02		
1314			21,94	1185	2,22	0.90	- 420	2.94	4	
100		1	C1/11	11/13	2,00	0,70	120	a. Tu		
		//								
		1 (\(\lambda \)							N	
		(X								
			SAMPLE R	ECORD A	ND WELL D	ETAILS				
Sampl	e ID	Time Co	llected			Wel	l Inspection	on	30.7	1
C037-4	SKOWS	132	20		been found and the commen	ts section.	sible without the Pad Condi	out hazards. I	fno,	
	Sampling P	V Denomotora		Good: no	visible crack			tion		
D.			I C 11 . 10							
Parameter	Collected?	Parameter	Collected?		visible crac	ks and/or n	ot stoping		1	
TCL-VOCs		Dissolved Zn			vily cracked	. 11				
TPH-GRO		and Cd			ad has been l	buried by s	ite activitie	es		
TPH-DRO		BTEX and		Bolts in p		-				- '
O&G		naphthalene		Bolts are 1	missing					
Total Cyanide		VOC,					asing Con		17.5	-4
TCL SVOCs		SVOC, TAL	-	Casing is	free from dai		-	ked with the	Well ID	
TAL Metals		Metals and			7 II - 2	We	ll Conditio	on		
and Mercury		mercury,		Casing Volum	ne 1" I D = 0 0	41 eal/fi - 2" L	D = 0.163 ga	il/ft - 4" [,D, = 0,6	53 pal/ft - 6"	LD. = 1.47
(total)		Sulfate,		Cusing Forum		- 0	gal/ft		55 8-11	30.3
TAL Metals		Nitrate,				n x	gal/ft =	(gal)		
		Ammonia,		Wall is st	neturally so	ind: not bo	nt hroken	, and no block	cane.	
and Mercury		COD,		identified	uctulally sol	ana. noi be	nt, otokell	, and no bloc	rage	
(dissolved)		Alkalinity,			. 1 1	1		1		
Hexavalent		Chloride,			nt or broken			1		\vdash
Chromium		Turbidity,			oken and is r				-	\vdash
PCB		TDS,			ocked and is	not able to	be used			$\longrightarrow A$
Matrix Spike		Specific		Cap is pre						\perp
Duplicate		Conductance	<u> </u>	Well pern	nit is present					
Sampled By	Comments:		PY/ -	1	. \					
-			1,							

		ow Sampli irge Logʻ	ing			A	Ente	RM Group erprises LL ers and Scient	C	
Well Number:	(() 3	8- PZM	206		Project Nan	ne: COA G	W Q2 20	23		
Well Diameter (in): 2	,			Project Nun	nber: 2001(0210	·		
Depth to Produc	et (ft):	-			Date: C	23 23				
Depth to Water		, U	,			olume (gal):	0,40)		
Product Thickne					Flow Rate (300)		
Depth to Botton		15,75			Length of ti	me Purged (min) 🤣 d			
DATE DATE HERE	MACHINE IN			URGING	COLUMN WITH STREET			9 5 8	a war	
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comi	ments
1200		(0)	19.02	8.95	225	1.00 -	-262	1.18	-	
1205		G.20	10.67	1.07	2.23	414	- ZXI	4.10		1
1218	* .		18.45	8.87	2,27	0.74	- 288	1.92	7	
12.15	•	6.20	18,47	8.76	2.21	0:73	-292	1.79	-	
1226	-		1852	7.74	2.21	0.72	-794	1.85		
		1				V , 1	-			
		(1/)								
		\ \\								+
		V								\vdash
										\vdash
				ECORD A	ND WELL D					
Sample	e ID	Time Co	llected				Inspection			
C038	5-1200	123	30	L	the commen	ts section.	ible without the Pad Condi	out hazards. If	f no,	
<u> </u>	Committee of D			Goodine	visible crack			uon		
P	Sampling P Collected?	Parameter	Collected?		visible crack					+1
Parameter TCL-VOCs	Collected?	Dissolved Zn	Conected?		vily cracked	KS allu/Ol II	or stobilig	·		+
		and Cd	l X		ad has been b	ouried by si	ta activiti	20		$+ \rightarrow$
TPH-GRO TPH-DRO		BTEX and		Bolts in pl		Julied by Si	te activiti			
		naphthalene		Bolts are i						+
O&G		VOC,		DONS are I	illoanig	Wall Co	sing Con	dition		
Total Cyanide TCL SVOCs		SVOC, TAL		Cosing is	frag from da			ked with the	Well ID	
		Metals and		Casing is	nee nom da		l Condition	*	Well ID	
TAL Metals	ř.	mercury,								
and Mercury		Sulfate,		Casing Volum				d/ft = 4" I.D. = 0.6	53 gal/ft - 6	" I.D. = 1.47
(total)		Nitrate,			9,0	A n. 01)4) _{oal/ft} =	0.395(gal)		
TAL Metals		Ammonia,								
and Mercury		COD,			ucturally sou	und: not bei	nt, broken	, and no blocl	kage	$\perp \angle$
(dissolved)		Alkalinity,		identified						
Hexavalent		Chloride,			nt or broken			d		
Chromium		Turbidity,			oken and is 1					
PCB		TDS,		Well is bl	ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance		Well pern	nit is present					
Sampled By	Comments:				7 M					

==77		low Sampl irge Log	ing			-	Ente	RM Group erprises LL ers and Scient	C	
Well Number:	60	39. DZM	043		Project Nan	ne: COA G	W Q2 20	23		-
Well Diameter	(in):			-	Project Nun	nber: 2001	0210			
Depth to Produ	ct (ft):				Date:	17.3 %	1-3			
Depth to Water	(ft):	. 79			One Well V	olume (gal)	1,70	0		
Product Thickn	ess (ft):				Flow Rate (300			4
Depth to Bottor	n (ft):	49.100		1	Length of ti	me Purged (min)	26 40		
	THE PARTY NEW		HOLLES AND TH	PURGING	RECORD	dina di mala				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s,u,) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ments
7.4-5			18 46	648	1.75	0.81	-167	59,5	PM	\$
1750		7.58	10 77	6 05	121	10.40	19%	244		
17 300		2 1.3	13 -21	Ce.56	177	1997	1-1-5	14 <	1	
13.00		2.00	10,1	(8,30	1.71	1.13	170	100	7/10	
1300		5.60	18.40	10.50	1.70	1.07	100	12,0	70R	13
1305			18.94	6.54	1.72	1,02	-142	0.0		
1310			18.42	6.51	1.69	1.07	- 171	8.25	()	
1315		l .∕∧.	1877	651	1.78	1.01	170	787	16	
		(1)	1011				' '			
		V								
					Vi.					
			SAMPLE R	ECORD A	ND WELL D	ETAILS				
Sampl	e ID	Time Co	THE RESERVE OF THE PERSON NAMED IN				l Inspection	on		
6.1	102 A	1-0	6	Well has b	ocen found an	100000000000000000000000000000000000000	The same of the sa	out hazards. I	f no,	
C038-	22000	136	0		the commen				r	
						Well I	ad Condi	tion		
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn		Poor: heav	vily cracked					
TPH-GRO		and Cd		Unsure: p	ad has been t	ouried by si	te activiti	es		1 -
TPH-DRO		BTEX and	. /	Bolts in p						
O&G		naphthalene	Δ	Bolts are 1	missing					
Total Cyanide		VOC,		1 2000			ising Con			7
TCL SVOCs		SVOC, TAL	1	Casing is	free from dar			ked with the	Well ID	
TAL Metals		Metals and				Wel	l Condition	on		
and Mercury		mercury,		Casing Volum	ne: 1" I.D. = 0.04	H gal/ft - 2" LI	D, = 0,163 ga	d/ft = 4" LD. = 0.6	553 gal/ft - 6	" I.D. = 1.47
(total)		Sulfate, Nitrate,						1,750gal)		
TAL Metals		Ammonia,			420	OI II X U A	gal/tt =	L1 TOO(gal)		3
and Mercury		COD,		Well is str	ructurally sou	ınd: not ber	nt, broken	, and no bloc	kage	X
(dissolved)		Alkalinity,		identified	•				_	
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used	<u> </u>		
Chromium		Turbidity,			oken and is r					
PCB		TDS,		Well is bl	ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre	esent					
Duplicate		Conductance		Well pern	nit is present					(
Sampled By	Comments:						2	<u>gas</u>		

ARM Group Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** 0639-PZ4607 COA GW Q2 2023 Well Number: Project Name: Project Number: 20010210 Well Diameter (in): Depth to Product (ft): Date: Depth to Water (ft): 「十.13 One Well Volume (gal): 0.46 Flow Rate (mL/min) Product Thickness (ft): ---Depth to Bottom (ft): 18.00 Length of time Purged (min) 40 PURGING RECORD Specific Dissolved Volume рΗ ORP Turbidity DTW Conductance Oxygen Temp Time Purged (s.u.) (mV) (NTU) Comments (feet) (°C) (ms/cm) (mg/L)(gallons) ± 0.1 i: 10 1 10% or < 5 ± 3% E 0.3 24.43 7.81 6.73 0.003 1,40 233 5.98 1115 24,80 6.83 0.003 7.84 6.76 1120 1.37 228 7,85 25,17 6.76 0.003 1.21 231 4.14 1125 6.58 234 25,49 6,70 0.003 1,42 1130 25,80 6.65 0.003 1.04 233 1135 4.25 6.660.003 235 26,25 4,91 1140 236 3.95 0.003 26,59 6.62 1145 SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, 0039-PZM007 1150 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Parameter Parameter Collected? TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities **TPH-GRO** and Cd ablaTPH-DRO BTEX and Bolts in place naphthalene Bolts are missing O&G Total Cyanide VOC. Well Casing Condition SVOC, TAL Casing is free from damage and visibly marked with the Well ID ${f x}$ TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1" [D = 0.04] gal ft - 2" [D = 0.163 gal ft - 4" [D = 0.653 gal ft - 6 - 1 D = 1.47 Sulfate, 10.87 (x 0.04 lgal ft = 0.46 (gal) (total) Nitrate, TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS. Cap is present Matrix Spike Specific Duplicate Conductance Well permit is present Comments: Sampled By SHL

ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Well Number: COS9 - PZMO42 Project Name Well Diameter (in): 2" Project Number: 20010210 Depth to Product (ft): = Date: one Well Volume Depth to Water (ft): 901 Flow Rate (mL/min) 200 Product Thickness (ft): -Depth to Bottom (ft): 46,44 Length of time Purged (min) 45 PURGING RECORD Distric FULL ICHS Volume O vien MIG (m) (NL b) (miniments Purged Lime Heeti 10% or 5 (gallons) 4.63 22.68 6.99 0,003 264 1020 8,14 22.83 6.70 0.003 2.62 276 4.27 8,14 1025 22.91 6.67 0.003 0.46 277 3.98 8.14 1030 23,02 6,95 0,003 0,54 257 2.70 1035 23.14 7,10 0,002 246 3.68 8.15 1.09 1040 23.20 7.06 0.002 248 2.80 8.16 1,22 1045 23.28 7.08 0.003 1.15 245 2.79 1050 240 2.95 1055 23,36 7,05 0,003 1.35 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. CO39-PZM042 explain in the comments section. 1100 Well Pad Condition Good no vis be cricks a d Sampling Parameters Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter: Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities and Cd TPH-GRO BTFX and Bolts in place TPH-DRO Bolts are missing naphthalene 0&6 Well Casing Condition VOC. Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition TAL Metals mercury. and Mercury _ 1D = 1.63 g. Hr. 4 (D = 0.63 g.d tr. 6 (D = 1.42 CLIL Volum Sulfate, (total) 38431 0.041 1 1158 reals Nitrate. TAL Metals Ammonia. Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Well is bent or broker bu i: Hexavalent Chloride. Well is broken and is not ab Chromium Turbidity, Wel is blocked a d is o a PCB. TDS. X Cap is present Matrix Spike Specific Well permi is present Duplicate Conductance Comments: Sampled By

She

TV.		ow Sampli irge Log	ing			A	Ente	RM Group orprises LL ers and Scient		
Well Number:	C040	PZMOD	8		Project Nan	ne. COA G	W Q2 20	23	1000	
Well Diameter (in): 2	1			Project Nup	nber: 2001(0210			
Depth to Produc						25/27				
Depth to Water ((9			One Well V		0.32			
Product Thickne		-			Flow Rate (mL/min)	300			
Depth to Botton		12.75			Length of ti			")		
F # # 12.00		()	P	URGING		shows a	a sanday yanan	AND HUBBAN		
1					Specific	Dissolved				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) + 0.1	Conductance (ms/cm)	Oxygen (mg/L) ± 0.3	ORP (mV) & 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
1410			23.7.4	7.86	7.09	2.70	-162	330		
1110			70.08	19 (19	2.36	343	114	1.5)		
11.78			1043	0.55	2.41	247	147	7 12		
122-			4 D' 1 /		742	10	1/4	7 37		
1960			17.04	10.19	L. T 3	3/10	167	7.21		
14 30			17.87	10.01	2.43	3.01	172	5.80		
1735			17.75	10.05	2.41	291	164	291		
1440			12 22	10,01	7.40	2.80	160	2.10		
1,1,10			4701				1			
						 		1		
			<u> </u>		+	-	-			
							L			
				ECORD A	ND WELL D					
Sample	e ID	Time Co	llected				l Inspectio		^	
C040	YZMQY	194	5	l .	the commen	its section.	Pad Condi	out hazards. I	rno,	
	Sampling P	arameters		Good: no	visible crack					
Parameter	Collected?	Parameter	Collected?		e visible crac					
TCL-VOCs	Collected:	Dissolved Zn			vily cracked	- KS dittle Of 11	or stoping)		
TPH-GRO		and Cd			ad has been	buried by si	te activiti	06		
TPH-DRO		BTEX and		Bolts in p		buried by 31	ic activiti	C3		
0&G		naphthalene		Bolts are						
Total Cyanide		VOC,		Dona are	maanig	Wall C	asing Con	dition		
TCL SVOCs		SVOC, TAL		Cacina io	froe from de			rked with the	Well ID	
		Metals and		Casing 18	nee from da	Contract Con	ll Condition		WCHID	
TAL Metals		mercury,		_		0.000		-		_
and Mercury		Sulfate,		Casing Volu				il ft - 4° LD = 0 6	53 gal ft - 6	ID 14
(total)		Nitrate.			IZ.	860 n . 1	igal fi Matastas	0.32 _(gal)		
TAL Metals		Ammonia.			17		V • gal ii	- (gai)		,
and Mercury	4.	COD,				und: not be	nt, broken	, and no bloc	kage	
(dissolved)		Alkalinity,		identified						
Hexavalent		Chloride,		Well is be	ent or broken	but is able	to be use	d		
Chromium		Turbidity,		Well is bu	roken and is	not able to l	oe used			
PCB		TDS,		Well is bl	locked and is	not able to	be used			
Matrix Spike		Specific		Cap is pro						
Duplicate		Conductance			nit is present					
	Comments:	Water Company					. 1			
Sampled By		D:V	Not ?	Me	TU	νι ' '	ne to	,		



		ow Sampli rge Log	ng				Enter	M Group prises LLC rs and Scientisi	
11 N	511-02	MOOI			Project Nam	e: COA G	W Q2 202	23	
Well Number: C Well Diameter (ii	041 12	1001			Project Num				
		75 DM			Date: 6/	The second name of the second			1000-
Depth to Product	THE RESERVE TO A PERSON NAMED IN COLUMN 2				One Well Ve		0.12		
Depth to Water (THE RESERVE AND ADDRESS OF THE PERSON NAMED IN	2	- (C.7)		Flow Rate (i		200		
Product Thicknes		-			Length of tir				
Depth to Bottom	(fi) 16.0	0	P	URGING I					
						Dissolved			
Lime	Volume Purged (gallons)	D1W (feet)	1 · np	pH (s.u.) ()	Specific Conductance (ms/cm) + 3%	Oxygen (mg U) (-0.3	ORP (mV1 + 10	Turbidity (NTU) (10% or 5	Comments
1015		13.06	24,05	6.68	0,795	0.91	-190	6.09	
		1307	23.59	5.83		1.09	-192	4.02	
1020				6.79	0.751	1.75	-275	3,20	
1025		13.07	23.39		מועדי ט		284	3.35	
10:30		13.08	23.35	6.82	0,749	2.66			
1035		13.09	23.39	6.17		4.63	-251	4.02	
1040		13.09	23,48	5.60	0.745	6.88	-218	3.16	
1045		13.09	23.72	5.24		8.81	-202	3.03	
			23.92	4.92	0.738	9100	-187	272	
1050		13.10		4,65	0,734	9,60	-175		
1055		13.10	24.15	4,00				-	
1100			24.27	5,69	0.729		-365	.2.50	
			-	ECORD A	ND WELL D	ETAILS			
Sample	: ID	Time Co	llected		been to u d a	. 13	Octob Section	127 8	
CO41-P	ZM601	112	5	explain in	the commen	its sec			×
	Sampling P	arameters			visible crack				×
Parameter	Collected?	Parameter	Collected?		e visible crac	ks and/or r	iot sloping		
TCL-VOCs		Dissolved Zn			vily cracked				
TPH-GRO		and Cd		-	ad has been	buried by s	ite activiti	es	
TPH-DRO		BTEX and	\/	Bolts in p					Y
O&G		naphthalene	X	Bolts are	missing				·
Total Cyanide		VOC.					asing Con	dition	· y · 1 · · · · · ·
TCL SVOCs		SVOC, TAL		Casing is	free from da				
TAL Metals		Metals and				We	II Conditio	011	
and Mercury		mercury.	i i	Casing V s		16 -21	[0 6×g,	He-LID 0.6	31 g. l n - n - l D
(total)		Sulfate.		T d sings it		^	gal 1	0.127	
		Nitrate.			3.0	9 0	Col gal ft	0.12+	
TAL Metals		Ammonia.		Welliss	tructurally so	und: not be	nt, broken	, and no block	tage
and Mercury		COD,		identified					~
(dissolved)		Alkalinity.			ent or broker	s hut is abb	to be use	d	
Hexavalent		Chloride.			roken and is				
Chromium		Turbidity.			locked and is				
PCB		TDS.		Cap is pr		- HOT GIVING II			7
Matrix Spike		Specific			mit is presen	1			
Duplicate		Conductance		wen per	inicis presen	63)			
Sampled By 84L	Comments:								

1 1 11 1 1		ow Sampli rge Log	ng			A	Ente	M Group rprises LLC			
Well Number:	CO41-P	ZMOOI			Project Nam	ic. C	1700 - 152 G. 143 - 550				
Well Diameter ()		1000			Project Nun	ber: 20010	210				
Depth to Product	r (ft)					2/23		772			
Depth to Water (B 12.9	6		One Well V	olume (gal):	0.13				
Product Thickne					Flow Rate ()		300				
Depth to Bottom	(ft): Bu	85 10	.05		Length of ti	me Purged (min) 🥰	× 75			
			P	URGING I	RECORD						
1me	Volume Purged (gallons)	D (W (loct)			Specific Codic and some is em	Oxygen (mg	ORP (mV) - 10	Lurbidity (NTU) 10% or 5	C 4161181	ients	
1165		13.10	24.44	6.87	0.726	6.21	-307	2.51			
		1000	24.41	6.93		5.82		2.52			
1110					0.721						
1115			24,55				-312	272			
1120			24.59	6.88	0.723	6.28	-310	7 A C			
	:										
]			
					1					-	
			SAMPLE R	ECORD V	ND WELL D						
Sample	e ID	Time Co	illected			Wel	l Inspection	эн			
°041-	Sample ID Time Collected CO41-PZMO01 1125 Sampling Parameters				the commen	us sce	ad Condi	tion		×	
				Good: no visible cracks and is sloping Pair: some visible cracks and/or not sloping							
Parameter	Collected?	Parameter	Collected?			ks and/or n	ot stoping	,			
TCL-VOCs		Dissolved Zn			vily cracked						
TPH-GRO	<u> </u>	and Cd			ad has been	buried by s	te activiti	es		-	
TPH-DRO		BTEX and		Bolts in p						<u> </u>	
O&G		naphthalene	X	Bolts are	missing						
Total Cyanide		VOC,					ising Con			1-4	
TCL SVOCs		SVOC, TAL		Casing is	free from da			rked with the '	Well ID	\triangle	
TAL Metals		Metals and				We	II Conditi	on			
and Mercury		mercury,		102	11:0	15	b.	Lt+1 (D = 0.6	ssign none	10 1	
(total)		Sulfate,									
		Nitrate.			30	09 , 00	041	0,13 igali			
4-1		Ammonia.		W.sti in a	enationally ass	unit pat ha	nt broken	, and no block	ange	T	
TAL Metals		COD,		identified		una. na uc	ac oronch	i, micrae prote		X	
and Mercury		Alkalinity,				1	. 1	1		1	
and Mereury (dissolved)		Chloride.			ent or broken			(1		-	
and Mercury (dissolved)		20 L 1 D.		Well is broken and is not able to be used							
and Mercury (dissolved) Hexavalent Chromium		Turbidity.		Well is blocked and is not able to be used							
and Mercury (dissolved) Hexavalent Chromium PCB		TDS.				11070 10070				7 - 70	
and Mereury (dissolved) Hexavalent Chromium		TDS. Specific		Cap is pr	esent					>	
and Mercury (dissolved) Hexavalent Chromium PCB		TDS.		Cap is pr						>	

ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Well Number: CO41-PZ1036 COA GW Q2 2023 Project Name: Project Number: 20010210 Well Diameter (in): Date: 6/2/23 Depth to Product (ft): One Well Volume (gal): 153 Depth to Water (ft): 13,49 Flow Rate (mL/min) 2000 Product Thickness (ft): 50,85 Length of time Purged (min) 65 Depth to Bottom (ft) PURGING RECORD Specific Dissolved pH Lirbid Volume Conductance Oxygen DIM Lamp c/m1 INILE lime Purged (+11.) (ms/cm) (mg L) (lect) 111 10 101 or 3 0.1 (gallons). i = 0.31.60 1135 7,66 -368 5.02 24.91 8.90 13.50 6,10 24.74 8.99 1.62 6.64 -379 13.50 1140 6.06 -397 5.76 1145 9,29 13.51 24.68 1,62 ~417子 5.14 1.63 6,91 1150 24.61 9,76 13.51 5,79 24,80 10.71 1.61 5,10 -507 13,51 1155 5.99 -56% 13,52 4.18 24.81 11.59 1,61 1200 -701 6.18 25.03 13.88 1.59 13,52 1205 25,20 14,00 1,59 2,25-717 4.86 1210 25.46 14.00 1.58 2.00-722 1215 3.12 13.52 1,99-732 1220 25,69 14.00 1.57 SAMPLE RECORD AND WELL DETAILS Well Inspection Sample ID Time Collected Well has been found and is accessible without hazards. If no, X 1230 explain in the comments section. CO41-PZM036 Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Parameter Collected? Fair: some visible cracks and/or not sloping Parameter Dissolved Zn Poor: heavily cracked TCL-VOCs Unsure: pad has been buried by site activities TPH-GRO and Cd. Bolts in place TPH-DRO BTEX and \times Bolts are missing naphthalene O&G Well Casing Condition VOC. Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC, TAI × TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume, 1, 115 - 0.043 ad it = 2, 115 - 0.163 gal it = 1, 115 - 0.653 gal it = 6 Sulfate. 37.36n \ 0.041 gal ft 1, 53 (gal) (total) Nitrate. TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. \checkmark identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium furbidity, Well is blocked and is not able to be used PCB TDS. X Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: PH > 10 check pH Sensor? Sampled By Shu Crery nigh pH

	Pu	low Sampli urge Log				A	Ente	RM Group rprises LL ers and Scient	C	
Well Number:	C042-	POOMSV			Project Nam	ne: COA C	W Q2 20	23		
Well Diameter (1			Project Nun	nber: 2001(0210			_
Depth to Produc		*				252'			**	
Depth to Water					One Well ₩			5		
Product Thickne					Flow Rate (300			
Depth to Botton		1/0,35			Length of ti)		
Depth to Line	. (,-	- Var	F	PURGING I					-	
					Specific	Dissolved				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) + 0.1	Conductance (ms/cm)	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) £ 10% or < 5	Comm	ients
1245		8.74	24.42 23.03 22.39	3.01	0.833	1.41	234 14 -8/	369		
1255			22.11	7.65	0.830	1.21	-15/2	1.97	_	
1300			21,99	7.78	0.851	1.00	-174	1.65		
1705			71.92	770	0.852	1.03	-181	2.01		-
1310			21 97	51	0 05/	1.02	184	107	-	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	 	 	CILLY	7.5	0.100	106	10.	1.0	 	
									-	
						ļ				
			SAMPLE R	ECORD A	ND WELL D	ETAILS				
Sample	e ID	Time Co	llected				l Inspectio			
C042-	Poors	1313	,		been found at the commen	its section.	sible without Pad Condi	out hazards. It	f no,	
	C1: E			Cardona				tion		
	Sampling P	The state of the s	C 11 10		visible crack					
Parameter	Collected?	Parameter	Collected?		e visible crac	ks and/or n	ot stoping	,		
TCL-VOCs		Dissolved Zn			vily cracked	1.1				
TPH-GRO		and Cd			ad has been b	oursed by si	ite activiti	es		
TPH-DRO		BTEX and		Bolts in pl						
O&G		naphthalene		Bolts are	missing			** 4		
Total Cyanide		VOC,					asing Con			
TCL SVOCs		SVOC, TAL		Casing is	free from dai			ked with the	Well ID	
TAL Metals		Metals and				We	ll Condition	on		
and Mercury		mercury,		Casing Volu	me_1**1D = 0.0-	41 gal ft = 2" [1	D 0 163 gc	d ft - 4 [#] (D = 0 6	53 gal ft - 6	ID 14
(total)		Sulfate,						0,35 gal)	,	
TAL Metals		Nitrate,	7		8.4	5 fix U	04(gal fi =	U150 gal)		
and Mercury		Ammonia,		Well is st	ructurally sor	and not be	nt broken	, and no bloc	kage	
(dissolved)		COD,		identified			1111	1 001100		
Hexavalent		Alkalinity, Chloride,			ent or broken	but is able	to be used	.1		
Chromium					roken and is i			,1		
PCB	21 200	Turbidity, TDS,			locked and is				-	
		-		Cap is pro		HOU AUTE TO	De usea			
Matrix Spike		Specifie			nit is present					
Duplicate	2	Conductance		wen pern	mit is present					
Sampled By	Comments:									

		ow Sampli irge Log	ing			A	Ente	RM Group rprises LL ers and Scienti	THE RESERVE OF THE PERSON NAMED IN	
Well Number:	(0.	55-12	M 000)	Project Nam	1e. 7.44	. /	DA OLU	QZ_	-
Well Diameter (0 0 - 10	7. 000		Project Nun	10.		2.10	W.C.	
Depth to Produc			~		Date:	5/18		. 10		$\overline{}$
Depth to Produc		1,47			One Well V		THE RESERVE OF THE PERSON NAMED IN			
Product Thickne		7			Flow Rate (15 May 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	300	-		$\overline{}$
Depth to Bottom		1715	,		Length of ti			-		-
Deput to Botton	1 (11).	14.12		PURGING		me ruigea (min) to			
				DRGING						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0,1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
1145		14.89	20,35	0.98	403	4.07	-56	OR		
1156		12.28	19.69	10.63	7.49	4,54	-65	OK		
1665		1. 7.	1900	10 30	3.84	7.59	-69	272		
11.20		10,73	11.07	10,73	J. K U	907	-6/	OF		-
1200 -				177						
				1 ~y						
							 			
1000										
						L				
1 21	N THE TOTAL			ECORD AN	ND WELL DI					
Sample	e ID	Time Co	llected				Inspection			, , , ,
COSS	penoco	153	O		een found an	ts section.	ible without on the condi	out hazards. If	no,	
	Sampling P	arameters		Good: no	visible crack					$\overline{}$
Parameter	Collected?	Parameter	Collected2		visible cracl					
TCL-VOCs	Conected:	Dissolved Zn	Conecical		ily cracked	KS WIIG/OI II	ot stoping	0		
		and Cd	$\mid X \mid$			puried by ci	ta activiti	26		-A
TPH-GRO TPH-DRO		BTEX and		Bolts in pl	ad has been b	Julieu by Si	ie activiti			
	0			Bolts are r					-	
O&G		naphthalene		Bolls are i	nissing	377-11 C	-i C	Atat		
Total Cyanide		VOC, SVOC, TAL		Carinaire	C C 4		sing Con		Wall IIX	-4
TCL SVOCs		Metals and		Casing is	iree iroin dai			ked with the	well ID	
TAL Metals		mercury,	8			Wei	1 Conditio	on		
and Mercury		Sulfate,		Casing Volun	ne: 1" I.D. = 0.04	l1 gal/ft - 2" I.I	O. = 0.163 ga	$1/\Omega - 4^{\circ} 1.D. = 0.65$	53 gal/ft - 6"	I.D. = 1.47
(total)	55	Nitrate,			2,60	x . 00	ygal/ft	0/1_(gal)		
TAL Metals	2000	Ammonia,			۷٠ <u>۷</u>	U R X OL	gai/n =	(gai)		
and Mercury		COD,		Well is str	ucturally sou	ınd: not ber	nt, broken	, and no block	age	
(dissolved)		Alkalinity,		identified	,					/
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used			\Box
Chromium		Turbidity,			oken and is n					\Box
PCB		TDS,		_	ocked and is					
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance		_	nit is present					\Box
A	Comments:	Sondavanoc		sa porti	III prosont					
Sampled By	comments.	PAN		7F7						

		ow Sampl	ing			-	Ente	RM Group erprises LL ers and Scient	-		
Well Number:	700	C/2 1/2A	001		Project Nan	ne: ('Ò	4 (37	2025			
Well Diameter ((in):	219-15-10	0 - 1		Project Nun			210		_	
Depth to Produc		· ·	_		Date:	(1) 7	7.3	010			
Depth to Water		15.77			One Well V	olume (gal)	-	2		-	
Product Thickne		13.74			Flow Rate (300			-	
Depth to Botton		19,1	1 2		Length of ti					-	
Deptil to Botton	ii (II).	17,1		URGING		ille I uigeu (mm) – 11				
	No. of Concession, Name of Street, or other party of the Concession, Name of Street, or other pa			UKGING				100000000000000000000000000000000000000			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	nents	
1055			19,70	10-28	2.24	1.5%	54	34,4	4%		
1100		15,30	19.20	10,22	2,24	1.05	23	16,7			
1105		15 70	13 43	10-16	2.33	D. 87	-77	171			
1105		13-20		1.0		W . U .	73	77			
1619			17.29	10,14	232	0,92	~ [V]	270			
1110			7026	10.16	2.32	0.9/	- 132	2.41		70 39	
1170			17.30	10015	2.71	0.89	-190	2,36			
1125		1.	12.33	10,16	2.30	087	-149	2.32			
1.9.		///	.,			,	,,,				
		1///									
		\									
			CAMBLED	ECORD A	ID WELL D	ETAILS	Charles and				
Sample	o ID	Time Co	THE RESERVE AND ADDRESS OF THE PARTY OF THE	ECORD A	ND WELL D	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN THE PERSON	l Inspection	n n			
		Time Co	niecteu	Wall has b	oon found o				200		
C056	12000	113	6		Well has been found and is accessible without hazards. If no, explain in the comments section.						
000	/ /	170		CAPIAIII III	the commen		ad Condi	ition			
	Sampling P	arameters		Good: no	visible crack			ition			
Parameter	Collected?	Parameter	Collected?		visible crac			,			
TCL-VOCs	Concetcus	Dissolved Zn	4		ily cracked	KS UNO OF II	or stoping	•			
TPH-GRO		and Cd			ad has been b	nuried by ci	te activiti	95			
TPH-DRO		BTEX and		Bolts in p		Julied by Si	te activiti	<u> </u>			
O&G		naphthalene	\sim	Bolts are i						 	
Total Cyanide		VOC,	N	Doits are i	missing	Wall Co	sing Con	dition		ļ.,,	
TCL SVOCs		SVOC, TAL		Casing is	free from da			ked with the	Well ID		
		Metals and		Casing is	irec iroin dai		l Condition		WCII II		
TAL Metals		mercury,									
and Mercury		Sulfate,		Casing Volum				$al/ft - 4^{**} I.D. = 0.6$	53 gal/ft - 6"	1,D, = 1.47	
(total)		Nitrate,			35	72 6 7/	gal/ft ↑⊈L _{gal/ft} =	016 (gal)			
TAL Metals		Ammonia,				0_11 7 0 3	- M Bau II	(gat)			
and Mercury		COD,		Well is str	ucturally sou	ınd: not ber	nt, broken	, and no block	cage	/	
(dissolved)		Alkalinity,		identified							
Hexavalent		Chloride,	1	Well is be	nt or broken	but is able	to be used	<u>d</u>			
Chromium		Turbidity,		Well is br	oken and is r	not able to b	e used				
PCB		TDS,		Well is bl	ocked and is	not able to	be used				
Matrix Spike		Specific		Cap is pre	sent			·			
Duplicate		Conductance			nit is present					NO	
	Comments:	1.0		-> T	/						
Sampled By		X	1)/)	/ /	()						
MY .		()	>		100						

0.23

		ow Sampli irge Log	ing			-	Ente	RM Group erprises LLC eers and Scienti	and the same of th			
Well Number:	C05	7 - 107 V)	007		Project Nan	ne:	COA	64/		\neg		
Well Diameter (in):	2 1-1			Project Nun	nber: 20	1/2010					
Depth to Produc	et (ft):				Date: 5							
Depth to Water	(ft):	15.99			One Well V	olume (gal):	0,08					
Product Thickne	ess (ft):				Flow Rate (mL/min) 🛴	300					
Depth to Botton	n (ft):	1806			Length of ti	me Purged (min) I (>				
NO SALES	CO 17 - 7		C C	URGING	RECORD	7 E V. 8	paralle (d.					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Commen	ts		
1215		DRY	19.80	9.97	1,52	4.97	-16	5.88				
	1											
										\neg		
										\neg		
										\dashv		
										\dashv		
					-					\dashv		
										\dashv		
111			CONTRACT TO STATE OF THE PARTY	ECORD A	ND WELL D							
Sample	CONTRACTOR OF THE PARTY OF THE	Time Co	llected				Inspecti					
C057	V170002	1	- 1				ible with	out hazards. If	no,	/ /		
10031	Not .	15	OO	explain in	the commen		ad Cand	itian		\leftarrow		
	Campling D			Coodina	Well Pad Condition							
D	Sampling P		Collected?		Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping							
Parameter	Collected?	Parameter Dissolved Zn	Collected?		vily cracked	KS and/or no	or stoping		(8))	—— <u> </u>		
TCL-VOCs		and Cd			ad has been b	auriad by air	o antiviti	0.0		-4		
TPH-GRO		BTEX and	1	Bolts in p		ouried by si	e activiti	<u>c2</u>		\leftarrow		
TPH-DRO O&G		naphthalene	ΙX	Bolts are						\dashv		
Total Cyanide		VOC,		Don's are	missing	Well Ca	sing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is	free from day			rked with the	Well ID	$\overline{}$		
TAL Metals		Metals and					Conditi					
and Mercury		mercury,										
(total)		Sulfate,	8	Casing Volui				al/ft - 4" $I.D. = 0.63$	3 gai/it = 6" I.L), = 1.47		
		Nitrate,	8		20	01_n x 0.0	41 gal/ft =	= 0.08 (gal)		1		
TAL Metals		Ammonia,		Wall is st	maturally on	ındı nat han	t broken	, and no block	000	\neg		
and Mercury		COD,		identified	deturally soc	ilia. noi bei	ii, brokeii	i, and no block	age	/		
(dissolved) Hexavalent		Alkalinity,				lease to a letter a				\dashv		
Chromium		Chloride,			ent or broken oken and is r			u				
PCB		Turbidity, TDS,			ocked and is							
Matrix Spike		Specific		Cap is pre		not dole to	oe asea			-/		
Duplicate		Conductance	6		nit is present					-		
Duplicate	Comments:		_	on porn	no probone							
Sâmpled By	- Commons	Rac	1 Day		ď.							

		ow Sampli irge Log	ing	- 1 31-		A	Ente	RM Group rprises LL ers and Scient		
Well Number:	CO S	8 - 42M C	bdl		Project Nan	ne: COA G	W Q2 20	23	1,790	,
Well Diameter (Project Nun	nber: 2001(0210	-		
Depth to Produc	et (ft): 🚜	-			Date: 5	19/23				
Depth to Water		2.66				olume (gal)	0,23)		
Product Thickne					Flow Rate (mL/min)	300			
Depth to Botton	n (ft):	197	3		Length of ti	100	-			
HE'S DELINESS	ALLEN DOL		NO WEST OF	PURGING		UVII HOKES		. P. Biski		140,700
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	nents
0930		14,40	20,3	925	1,75	0.91	-Z -\$6 -53	4.17 3.63 2.15 2.79		
0950			19.18	\$ 24 \$ 25 \$ 36	0.757	1.40	-38 -34 -32	2.28	7	
			SAMPLE R	ECORD AN	D WELL D		0 9			
Sample	e ID	Time Co	llected				l Inspection			
C028-6	2001	100	5		een found at the commen	ts section.	ad Condi	out hazards. If	no,	i
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping		1	
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or ne	ot sloping		Strain Williams	
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked	ands.				
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activitie	es		
TPH-DRO		BTEX and		Bolts in pl	ace					
O&G		naphthalene		Bolts are r	nissing					
Total Cyanide		VOC,				Well Ca	sing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from dar	mage and v	isibly mar	ked with the	Well ID	
TAL Metals		Metals and				Wel	l Condition	n		
and Mercury (total)		mercury, Sulfate, Nitrate,		Casing Volum	ne 1" I D = 0 04	11 gal/ft - 2" 1.1	D. = 0.163 ga	Un - 4" I D. = 0.6	53 gal/ft - 6"	LD. = 1.47
TAL Metals		Ammonia,		Wall in st	naturalle e e :	and mas have	et basis	and no blast	10.00	$\overline{}$
and Mercury		COD,			ucturally sot	ma; not ber	n, broken	, and no block	lage	
(dissolved)	×	Alkalinity,		identified						
Hexavalent		Chloride,			nt or broken			1		$\vdash \vdash \vdash$
Chromium		Turbidity,			oken and is r					
PCB		TDS,			ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance		Well perm	iit is present					
Sampled By	Comments:									

		ow Sampli irge Log	ing			-	Ente	RM Group erprises LL ers and Scienti		
Well Number:	605	9-1200	202		Project Nam	ne:	DA 6	SV QZ		
Well Diameter (in): 2	1 1 1			Project Nun					
Depth to Produc					Date:					
Depth to Water		.00			One Well V		0.12	3		
Product Thickne					Flow Rate (mL/min)	200	5		
Depth to Botton	_ ` ′	.00			Length of ti	me Purged (min) 4)		
	William III		Albert St Alf	URGING I	RECORD	والمتحبيلين			RESIDENCE	
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents
1245 1250 1255 1300		16.00	20,76 20.20 20.09 19.71	796 806 793 813	1.93	1.13 094 1.27	75 73 71 65	53.8 7.81 12.4 4.70		
1305			19.07	8.9 %	1.91	1.78	36	2.33 2.11 2.43	\	
							-	<u> </u>		$\overline{}$
			SAMPLE R	ECORD AS	ID WELL D	ETAILS				
Sample	o ID	Time Co	Contract of the Contract of th	ECORD AN	AD WELL D		l Inspecti	on		
C059	- P7 4002	133	26	l .	een found ar	nd is access		out hazards. If	`no,	
	Sampling P	foromators		Good: no	visible crack			ition		
Parameter	Collected?	Parameter	Collected?		visible crack					
TCL-VOCs	Collected:	Dissolved Zn			ily cracked	KS dild Of 11	ot stoping			
TPH-GRO		and Cd			ad has been b	huried by si	te activiti	es		
TPH-DRO		BTEX and	,	Bolts in pl		barred by 31	to detiviti			\vdash
O&G		naphthalene		Bolts are r					ن -	1
Total Cyanide		VOC,		Done are.		Well Ca	asing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from day		- Address -	rked with the	Well ID	
TAL Metals		Metals and					ll Condition			13
and Mercury		mercury,		Casing Volum	ne: U" I D = 0.04			al/ft = 4" [D = 0.6	53 gal/ft - 6"	ID = 147
(total)		Sulfate, Nitrate,		Cusing voidin				0,123 _(gal)	or Burn	
TAL Metals		Ammonia,			27	n x OA	U4 gavn	(gai)		
and Mercury		COD,		Well is str	ucturally sou	ınd: not bei	nt, broken	, and no block	cage	
(dissolved)		Alkalinity,		identified	-					,
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be use	d		\vdash
Chromium		Turbidity,			oken and is r					
PCB		TDS,		Well is blo	ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre	sent					
Duplicate		Conductance			nit is present					
Sampled By	Comments:									. 8

ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q2 2023 Well Number: // C093-PZM Well Diameter (in): Project Number: 20010210 Depth to Product (ft): -Date: 0/1/23 One Well Volume (gal): 0.32 Depth to Water (ft): 0.87 Product Thickness (ft): Flow Rate (mL/min) Length of time Purged (min) (OC) Depth to Bottom (ft): 19.61 PURGING RECORD Specific Dissolved ORP Volume pH Turbidity DTW Conductance Oxygen Temp Time Purged (mV) (NTU) Comments (s.u.) (ms/cm) (mg/L)(feet) (°C) (gallons) 1.0.1 ± 10 E 10% or ≤ 5 1:3% ± 0.3 0.59 1430 25,77 6.37 1.02 -201 5,58 11.89 6.69 1.03 0.56 24,69 6.41 -270 11.98 1425 24,43 -249 5,02 6.06 1.07 1440 1.13 24.30 5.69 -240 1445 11,98 1 14 1.31 5.08 1450 -265 24,22 6.03 1,20 1,13 5,75 049-336 5.88 11.98 1455 24.05 7.36 1,30 0.60 -347 6-34 24.01 4.58 1,43 1500 7,57 23,96 1,50 0.64 -347 6,40 1505 1.59 0.66 23,97 1510 1515 23,50 1.58 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. C093-PZW 1525 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Fair: some visible cracks and/or not sloping Parameter Collected? TCL-VOCs Dissolved Zn Poor: heavily cracked and Cd Unsure: pad has been buried by site activities TPH-GRO TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing Well Casing Condition Total Cyanide VOC. SVOC, TAL TCL SVOCs Casing is free from damage and visibly marked with the Well ID Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1" 1 D = 0.041 gal ft - 2" I D = 0.163 gal ft - 4" I D = 0.653 gal ft - 6" I D = 1.47 Sulfate, 7,74n x 0,041 gal ft = 0,32 (gal) (total) Nitrate, TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, ablaCap is present Matrix Spike Specific Duplicate Conductance Well permit is present Comments: Sampled By SHL

		ow Sampl irge Log	ing			-	Ente	RM Group erprises LL ers and Scient	C	
Well Number:	CO 1	79 - ML	, ()		Project Nam	ne: COA G	W Q2 20)23		
Well Diameter (7-7-701	/ 3	-	Project Nun					
Depth to Produc		ON PIA				13/27	7210			
Depth to Produc		2		_	One Well W					
Product Thickne			_		Flow Rate (300			
		17.73	1		Length of ti					
Depth to Botton	n (II):	1+.+		PURGING		me ruigeu (111111)	SECTION STATES	III CLEECTION	3.00
				UKGING	RECORD					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents
1240		(20,30	12.67	808	474	-341	7.34		
1211			19.18	1> 12	8.28	09/	- 3/3	9.28	•	
1390		 \ 		1200		07		- CO	3.0/_	
1360		\	1955	12,58	8.26	Vitt	- 389	OF T	3.47	
455			19.65	12.58	8.32	0.50	389	4.71	/	
1400			19.42	12.58	8.75	0.51	-388	4,22	1	
						'				
		1					-			
1000		(
			SAMPLE R	ECORD A	ND WELL D	ETAILS				
Sampl	le ID	Time Co					Inspecti	on		
				Well has l	peen found a			out hazards. I	f no.	
(0)7	14-MUS	140	35		the commen				,	1
00 (1	1 1	1-10		СКРІШПІ ІІІ	the commen		ad Cond	ition		1
	Sampling P	arameters		Good: no	visible crack					/ "
Parameter	Collected?	Parameter	Collected?		visible crac					
	Collecteur	Dissolved Zn	-		vily cracked	KS GUADOT III	ot stoping			
TCL-VOCs					ad has been b	ouried by ci	to activiti	00	_	
TPH-GRO		and Cd				buried by Si	te activiti	62		
TPH-DRO		BTEX and		Bolts in p						
O&G		naphthalene		Bolts are	missing	377 11 63	. 0	1'4'		
Total Cyanide		VOC,			0 0		sing Con		11/ 11/75	
TCL SVOCs		SVOC, TAL		Casing is	tree from dai			rked with the	well ID	,
TAL Metals	100	Metals and				Wel	l Conditi	on		
and Mercury		mercury,		Casing Volu	ne: [" [D. = 0 04	41 gal/ft - 2" 11	0 163 g	al/ft - 4" 1.D. = 0.6	553 gal/ft - 6'	1.D = 1.47
(total)		Sulfate,					gal/fl			
TAL Metals		Nitrate,				ft x	gal/ft =	= (gal)		
and Mercury		Ammonia,		Well is et	nicturally ea	and not her	nt broken	, and no bloc	kage	
		COD,		identified		mia, not ou	, oronor	., a.i.a iio bioe		
(dissolved)		Alkalinity,				hard in old	to be			+
Hexavalent		Chloride,			ent or broken			<u>u</u>		
Chromium		Turbidity,			oken and is a					-
PCB	-	TDS,			ocked and is	not able to	ve used		¥8.	-
Matrix Spike		Specific		Cap is pro	_			.		
Duplicate		Conductance		Well perr	nit is present		<u> </u>			
Sampled by	Comments:	inable ?	to the	P	fly P	7 ce p	5	teef di	clhe	-
				Ī	11 /	18				

		low Sampli irge Log	ing			A	Ente Engine	RM Group erprises LL ers and Scient	C	
Well Number:	(0)	70-MW			Project Nan	ne: COA C	W Q2 20)23		
Well Diameter	(in): 7				Project Nur	nher: 2001(0210			
Depth to Produc	ct (ft):				Date:	23 23				
Depth to Water	(ft):	125			One Well V	dume (gal)	0,17	4		
Product Thickne	ess (ft):				Flow Rate (300			
Depth to Bottor		15,50				ime Purged (-
SILON SE ME S	EEVILE			PURGING	THE RESERVE OF THE PERSON NAMED IN COLUMN 1			ESTREE !	SUE BALL	SELENCE.
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents
340			18.18	10.10	4.0%	A 89	-254	2.52		$\overline{}$
17/		1121	10 2		Tiva	0	200			
1245		11.77	17.51	10.07	4.03	0.60	-200	7.7	•	\vdash
1250			18/12	10.13	4.09	0.66	-298	2.29		ļ
1255		1/,75	18.14	10.15	9.18	0.64	- 304	241		
1400		1	19.10	10.71	1	0 64	-30	2.45	-32	
ITOU			17.10	10.01	7.11	U. UT	B , O ,	4.73		
		, ,								\square
		1 /6								
						-		 		-
										\vdash
			SAMPLE R	ECORD AN	ND WELL D	ETAILS	Fundi	No. 1	CT H	= XX, _0X,
Sample	e ID	Time Co	llected			Wel	Inspection	on		
142		185	$\overline{}$	Well has b	een found a	nd is access	ible with	out hazards. I	f no.	
(0)	-MUS	1 40	ለ ጋ		the commen				,	
00100	,	' ' '		****			ad Condi	tion		
	Sampling P	arameters		Good: no	visible crack					
Daramatar	Collected?	T T	Collected?		visible crac					-
Parameter	Collected?	Parameter				KS and/or no	ot stoping			\vdash
TCL-VOCs		Dissolved Zn			ily cracked					\vdash
TPH-GRO		and Cd			ad has been l	buried by si	te activiti	es		\vdash
TPH-DRO		BTEX and		Bolts in pl						\Box
O&G		naphthalene		Bolts are t	nissing					
Total Cyanide		VOC,				Well Ca	sing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from da	mage and v	isibly mar	ked with the	Well ID	
TAL Metals		Metals and				Wel	l Conditio	on		
and Mercury		mercury,		-	Total Word			27 PATS	10 823	196
· · · · · · · · · · · · · · · · · · ·		Sulfate,		Casing Volun				$1/ft - 4^{\circ} ID = 0.6$	53 gal/ft - 6"	D. = 1.47
(total)		Nitrate,			4.	25 n x 0.0	gal/ft =	0.174 oah		
TAL Metals		Ammonia,			- 17.	- n x V	Barit	- to Land		
and Mercury		COD,		Well is str	ucturally sou	und: not ber	at, broken	, and no blocl	kage	
(dissolved)		Alkalinity,		identified	-				_	
Hexavalent		Chloride,		Well is he	nt or broken	but is abla	to be used	1		\vdash
Chromium		7			oken and is i			•		
PCB		Turbidity,			ocked and is				17.0	-
		TDS,				not able to	oc used			+A
Matrix Spike		Specific		Cap is pre						+' A
Duplicate		Conductance	<u> </u>	Well perm	nit is present					
Sampled By	Comments:									
121										

		ow Sampli irge Log	ing			-	Ente	RM Group erprises LL eers and Scient	C	
Well Number:	C	0180-	MUI		Project Nan	ne: COA C	W Q2 20)23		
Well Diameter (in):	7			Project Nun	nber: 20010)210			$\neg \neg$
Depth to Produc	t (ft):				Date: 5/	23/2	3			
Depth to Water	(ft):	11.	30	-	One Well V	olume (gal)	1.70			
Product Thickne	- F-2000				Flow Rate (300			
Depth to Botton	n (ft):	21.45	-		Length of ti	me Purged (min) 25	5		
		Contract to	KILL MANA	URGING	RECORD				OMIN - M	00 F
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comi	nents
425 425 425		11.3	9.63	10.59 16.56 10.55 10.56	7.23 7.26 7.25 7.24	0,69	-794 -303 -309 -312	1.9/ 1.72 1.61	.>	/
							**		P	
		,							-	\vdash
			SAMPLE R	FCORD A	ND WELL D	ETAILS			011111111111111111111111111111111111111	
Sample	- ID	Time Co		LCORD A.	ID WEDD D		Inspection	nn .		
C0180	I-MWI	- 14	75		peen found at the commen	nd is access		out hazards. I	f no,	~
	Sampling P	arameters	1.00	Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked					
TPH-GRO		and Cd		Unsure: pa	ad has been l	ouried by si	te activiti	es		
TPH-DRO		BTEX and		Bolts in pl						
O&G		naphthalene		Bolts are	nissing					
Total Cyanide		VOC,				Well Ca	sing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from da		THE RESERVE AND PERSONS ASSESSED.	ked with the	Well ID	
TAL Metals		Metals and					l Conditio			
and Mercury (total)		mercury, Sulfate, Nitrate,		Casing Volum		41 gal/ft - 2" LI	D. = 0.163 ga	al/ft - 4" D, = 0.6	553 gal/ft - 6'	1.D. = 1.47
TAL Metals		Ammonia,			~11.45	TO IL XUL	gaun =	(gai)		
and Mercury		COD,		Well is str	ucturally sou	ınd: not bei	nt, broken	, and no bloc	kage	
(dissolved)	Ö	Alkalinity,		identified					-	
Hexavalent		Chloride,			nt or broken	but is able	to be used	d		
Chromium		Turbidity,			oken and is r			-		
PCB		TDS,			ocked and is					
Matrix/Spike		Specific		Cap is pre			4340			
Duplicate		Conductance			nit is present					
Sampled By	Comments:	Conquetance		wen pen	ar to present					

		ow Sampli rge Log	ng			A	Ente	M Group rprises LL ers and Scient	С	
Well Number:	CAIR	-MY5			Project Nam	ie: COA G	W Q2 20	23		
Well Diameter (i	n): 44	5 7			Project Nun)210			
Depth to Product						24/27				
Depth to Water (17.74			One Well V		0.24			
Product Thickne					Flow Rate (300			\neg
Depth to Bottom		13 44			Length of ti		AND RESIDENCE OF THE PERSON NAMED IN			
Deptil to Bottoni	(11).	11103	P	URGING		me r arges (
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	p[[(s.u.) 1-0,1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ents
125 1135		11.74	21.58 20.70 20,59	9.64	3.56 2.63 2.56	0.48	-162 -271 -273	74.4	7	
145	-		20.39	9.58	2.57	0.43	-265	3.91	Y	
			SAMPLE RI	ECORD A	ND WELL D	ETAILS			THE RE	
Sample	: ID	Time Co	llected	1000		Wel	1 Inspection	on		
CO 18				explain in	the commen	its section. Well I	Pad Condi	out hazards. I	f no,	
	Sampling P				visible crack					
Parameter	Collected?	Parameter	Collected?		visible crac	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn			vily cracked					
TPH-GRO		and Cd		Unsure: p	ad has been l	buried by s	ite activitie	es		
TPH-DRO		BTEX and		Bolts in p	lace					
O&G		naphthalene		Bolts are	missing	320				
otal Cyanide		VOC,		7.02			asing Con			
TCL SVOCs		SVOC, TAL		Casing is	free from da	mage and v	isibly mai	ked with the	Well ID	
TAL Metals		Metals and					Il Conditio	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN		
and Mercury (total)		mercury, Sulfate,		Casing Volu				0.24(gal)	653 gal ft - 6	ID 147
TAL Metals		Nitrate,			210	fix U	Weal'fi	0,44(gal)		
and Mercury		Ammonia,		Well is st	ructurally so	und: not be	nt, broken	, and no bloc	kage	
(dissolved)		COD,		identified			5.5661	, 0100		/
		Alkalinity,			ent or broken	ملمام من فريط	to be wee	4		
Hexavalent		Chloride,			oken and is			u	a free (gr	
Chromium' 6		Turbidity,								
PCB		TDS,			ocked and is	not able to	oe used			-
Matrix Spike	,	Specific		Cap is pro						
Duplicate		Conductance		Well perr	nit is present					
Sampled By	Comments:									

		ow Sampli irge Log	ng			A	Ente Engine	M Group rprises LLC		
Well Number:	CO18	1- MW.	L		Project Nan		W Q2 20	23		
Vell Diameter (Project Nun		210			
Depth to Produc	the state of the s		1 -			2475	1:00			
Depth to Water			62		One Well V			•		
roduct Thickne						mL/min) 💈				
epth to Botton	ı (ft): 53	3,30		UDCINC	The second name of the local division in which the local division is not to be a second name of the local division in the local divi	me Purged (min) 30)		
			ŀ	URGING					_	_
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) .E 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) E 10% or < 5	Comi	nents
275			71.30	9.58	341	6)43	-71.4	4.33		
021		11, 21.	2132	9 58	2 60	0 41	1770	2.77		
050		11 27	11 37	2/4	3 20	0.7	- 770	1 0/		
16 33		11.72	7 173	TUT	7.75	0.77	707	7 70	7	-
1240			21.57	9,65	2.75	0.51	-292	7.79	1	
2 45			71.10	7.72	3.14	0.37	-293	2.74		
•								1		
		•								
									,	
		·				<u> </u>				<u> </u>
			SAMPLE R	ECORD A	ND WELL D	ETAILS				
Sampl	c ID	Time Co	and the second s	COND A.	TO WELL D		Inspection	on		
Sumpi	CID	71110 CC		Well has h	ocen found a			out hazards. If	no.	
C0181	-MUI	12.50)		the commen	its section.	Pad Condi			
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn			vily cracked					
TPH-GRO		and Cd	. /	Unsure: p	ad has been l	buried by si	te activiti	es		
TPH-DRO		BTEX and	X	Bolts in p	THE RESERVE THE PERSON NAMED IN COLUMN 2 I					
O&G		naphthalene		Bolts are	missing					
otal Cyanide		VOC,					sing Con			
TCL SVOCs		SVOC, TAL		Casing is	free from da	mage and v	isibly mar	ked with the	Well ID	/
TAL Metals		Metals and				We	l Conditio	on		
and Mercury		mercury,		Casma Volu	ne l'ID on	41 gal ft = 2° 11) () [63 e:	ln-4"1D 06	53 gal ft - 6	TD 14
		Sulfate,		asing voids	1100 1 1 1 7 (2030)	e e e	gal ft	1,72(gal)	e-contract	100 000
(total)		Nitrate,			41.7	88_ft x OA	U4(galfit	14 4 Z(gal)		
		Ammonia,		Well is st	ructurally so	und: not he	nt, broken	, and no block	kage	
TAL Metals	Del.	COD,		identified	-		5. 5. 5. 5.			
TAL Metals and Mercury		Alkalinity,			ent or broken	but is able	to be use	d		
TAL Metals and Mercury (dissolved)		· ·				not able to				
TAL Metals and Mercury (dissolved) Hexavalent		Chloride,		Well is bu	oken and is					
TAL Metals and Mercury (dissolved) Hexavalent Chromium		Chloride, Turbidity,					be used			
TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB		Chloride, Turbidity, TDS,		Well is bl	ocked and is		be used			/
ΓAL Metals and Mercury (dissolved) Hexavalent Chromium		Chloride, Turbidity,		Well is bl	ocked and is	not able to	be used			/

		ow Sampli irge Log	ng			-	Ente	RM Group erprises LLC ers and Scientif		
Well Number:	00182-1	uw i			Project Nam	ne: COA G	W Q2 20	23		
Well Diameter (Project Nun		210			
Depth to Produc	rt (ft): -				Date: 5/	31/23				
Depth to Water	(ft): 7.4				One Well V	olume (gal):				
Product Thickne		10.000	3 7 7 7		Flow Rate (mL/min)	300			
Depth to Botton	n (ft): 54	, 25			Length of ti	me Purged (min) 8	5		
			F	URGING	RECORD					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pII (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) + 10	Turbidity (NTU) ± 10% or < 5	Comm	nents
1320		7,93	26.63	10-03	1,95	0.75	-319	9,10		
1325	5	¥ 168Ue	W/ Pur			int ed		Dina *		
1330			24.50	9,97	1.00	0.93	-315	9,00		
1335		8.16				1,19	-320	10.14		
		8.37	22.50	-	1.56	-				
1340		8.39	21:69	8,12	1.38	0.97	-338	9.80		
1345			2149	7.92	1.37	0.92	-341	8.11		
1350		8,40	21,59	7.65	1,37	1,01	-349			
1355			21,47	7.35	1.37	1.05	-339			
1400			21.48	7,07	1,4	1.07	-325			
1405		V	21,58	6,43	1,42	1,25	-282	6-07		
					ND WELL D					
Sample	e ID	Time Co	llected			Wel	Inspection	on		
COIS	2-NW1	1440	٠		the commen	ts section.		out hazards. If	no,	X
				Caadina	المصور والمانين		ad Condi	ition	·	1
D	Sampling F	· ·	C-114-49		visible crack visible crac					-
Parameter TCL-VOCs	Collected?	Parameter Dissolved Zn	Collected?		vily cracked	ks and/or in	ot stoping			-
TPH-GRO		and Cd			ad has been b	buried by si	te activiti	PK.		-
TPH-DRO		BTEX and		Bolts in p		ouried by si	te activiti	C5		8
O&G		naphthalene	\times	Bolts are			A	7		1
Total Cyanide		VOC,		2010000		Well Ca	sing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from da	0.0		ked with the \	Well ID	8
TAL Metals		Metals and					1 Condition			
and Mercury		mercury,			11115 00					115 - 1
(total)		Sulfate,		Casing Volu				dn-4 ID 063	os gar ii - o	ID = 1
TAL Metals		Nitrate.			40	704 n x O.	741 gal ft =	1,92 _(gal)		
and Mercury		Ammonia,		Well is en	neturally so	und: not bei	at, broken	, and no block	age	
(dissolved)		COD,		identified	acturary 300	1101 001	iii oronon	, and no brock		$ \times $
Hexavalent	3 37 83	Alkalinity, Chloride,			ent or broken	hut is able	to be use	rl		
Chromium		Turbidity,			oken and is i			-		
PCB		TDS,			ocked and is					
Matrix Spike		Specific		Cap is pro						×
Duplicate		Conductance			nit is present					$\overline{\mathbf{x}}$
Sampled By	Comments:			T. O. P.	, m probett	131 F				

Well Number: CO182 - MWI Well Diameter (in): 2" Depth to Product (ft):					ARM Group Enterprises LLC Engineers and Scientists							
					Project Name: COA GW Q2 2023							
					Project Number: 20010210 Date: 5/31/23							
												Depth to Water (ft): 7,41
Product Thickness (ft):					Flow Rate (mL/min) 300							
Depth to Botton	n (ft): 54,	25			Length of ti	me Purged (·				
· · · · · · · · · · · · · · · · · · ·			F	PURGING								
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) + 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ±.10	Turbidity (NTU) ± 10% or < 5	Comments			
1410			22.01	6,10	1.42	1/31	-266	5,53				
1415			21.65		1.44	1.63	-255					
			22.05		1:43	1.00	-220	6-22				
1420	<u>.</u>			5011	1.44	1.96						
1425			22.11	5-34	-		-218	6.05				
1430			21.91	5,29	1.45	2,05	-219	5.75				
						<u> </u>						
						 	 					
			CAMPIED	ECORD AS	ID WELL D	ETAILS						
			ECORD AND WELL DETAILS Well Inspection									
Sample ID CO182-MW1				Well has been found and is accessible without hazards. If no,								
				explain in the comments section. Well Pad Condition								
	Sampling P	arameters		Good: no visible cracks and is sloping								
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping					
TCL-VOCs		Dissolved Zn		Poor: heavily cracked								
TPH-GRO		and Cd		Unsure: pad has been buried by site activities								
TPH-DRO		BTEX and	V	Bolts in place								
O&G	:	naphthalene		Bolts are missing								
Total Cyanide		VOC,				Well Ca	sing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is	free from da	mage and v	isibly mar	ked with the V	Vell ID	×		
TAL Metals		Metals and				Wel	l Conditio	on				
and Mercury		mercury,		Casano Voluis	ns 1°1D = 0.0.	11 aul û - 2° 13) 0.163 gs	lit - 4 [D 0.65	Godfi-6"	ID SE		
(total)		Sulfate,		Casing votor			_		Ear II - V			
TAL Metals	7 - 2	Nitrate,			4	6.84m x 0.1	741 gal fi	,92 (gal)				
and Mercury		Ammonia,		Woll ie en	neturally co	und: not her	at broken	, and no block	ายอ			
(dissolved)		COD,		identified	ucturally 501	and, not oci	ac oroxen	, and no block	uge	X		
Hexavalent	/	Alkalinity,			unt on Employer	but to alst -	to bo me	4				
Chromium		Chloride,		Well is bent or broken but is able to be used Well is broken and is not able to be used								
PCB		Turbidity, TDS,										
Matrix Spike		4	12	Well is blocked and is not able to be used Cap is present								
Duplicate		Specific Conductancé	2/		nit is present					-5		
Duplicate	Comments:	Conductance		Twen bem	nic is present							
Sampled By												

Low Flow Sampling					ARM Group Enterprises LLC						
	Purge Log Ell Number:					-	Engine	ers and Scient	ists		
Well Number:	60 19	10-MWS			Project Nam	ne: COA G	W Q2 20	23			
Well Diameter	(in):	2			Project Number: 20010210						
Depth to Produc	ct (ft):				Date:	13/2	3				
Depth to Water	One Well Volume (gal):										
Product Thickne	ess (ft):				Flow Rate (mL/min) 300						
Depth to Bottor	n (ft):	23.37			Length of ti	me Purged (min)				
				PURGING	RECORD	100.00					
500 COM	Purged			pH (s.u.) ± 0.1	Specific Conductance (ms/cm) 0.793	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents	
1030		17.96	19.78 17.61 17.54	7.67	0.817	12.52	-276 -300 -324 -341	18,1			
1050		10,90	17.66	7.66	0.828	15.09	- 352 - 328	16.0	<u> </u>		
1100			1 1 1 1 1 1	7.72	0.820	14.08	-33 <u>1</u> -333	9.66 10.2	1		
		Ÿ									
			SAMPLE R	ECORD AN	D WELL DI	ETAILS	222	LINE S IN	MILL		
Sampl	e ID	Time Co	llected			Wel	Inspection	n	- PE 1727W	July Uni	
CO180			ĺ	Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition							
					visible cracks						
Parameter	Collected?		Collected?		visible cracl	ks and/or n	ot sloping				
TCL-VOCs					ily cracked					igwdown	
					ad has been b	ouried by si	te activitie	es		\vdash	
				Bolts in pl						\vdash	
				Bolts are r	nissing	W II O		12.2			
				Carina in I	C C 1		sing Con	The second secon	W-II ID	$\overline{}$	
				Casing is i	ree from dar			ked with the	well ID		
TAL Metals						wei	l Conditio	n			
and Mercury				Casing Volun	ne: 1" I.D. = 0.04	1 gal/ft - 2" I.I		$1/\text{ft} - 4^{\circ} \text{ I.D.} = 0.6$	53 gal/ft - 6"	1.D. = 1.47	
(total)						A v	gal/ft gal/ft =	(gal)			
TAL Metals											
and Mercury					ucturally sou	ınd: not bei	it, broken	and no block	kage		
(dissolved)				identified							
Hexavalent				Well is bent or broken but is able to be used							
Chromium		Turbidity,			oken and is n					ļl	
PCB		4			ocked and is	not able to	be used			\Box	
Matrix Spike		4 '		Cap is pre							
Duplicate	<i>p</i>	Conductance		Well perm	it is present						
Sampled By	Comments:										

Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists							
Well Number: CO 90 - Mw 5					Project Name: COA GW Q2 2023							
Well Diameter (in):					Project Number: 20010210							
Depth to Product (ft):					Date: 6 13 23							
Depth to Water (ft): 4,50					One Well Volume (gal):							
Product Thickness (ft):					Flow Rate (mL/min) 300							
Depth to Botton		77.49			Length of time Purged (min)							
NOTE OF THE OWNER.	PRINTER		HIERO COM	PURGING		AND THE REAL PROPERTY.	Sew M	N. LVSIII				
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments			
0930 09 \$5 09 40 09 45 09 50 09 55 1000		14.72 14.72 14.70	21.60 21.45 71.40 21.34 21.06 21.27 21.22 21.23	7.08 7.04 7.02 7.03 7.05 7.05 7.06	3.00 2.93 2.90 2.78 1.66 1.45 1.45	22.80 11.29 5,91 5,44 6.43 6.18 6.18 6.28	- 5 60 - 160 - 168 - 169 - 146 - 135 - 129 - 123	20,7 23.8 20,6 30.9 19.8 31.3 29.8 29.0	7			
Sample	e ID	Time Co	SAMPLE R	ECORD AN	ND WELL D		Inspection	on				
C019Q-MWS 1010			Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition									
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping	٨		-		
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or ne	ot sloping	,				
TCL-VOCs		Dissolved Zn		Poor: heavily cracked								
TPH-GRO		and Cd		Unsure: pad has been buried by site activities								
TPH-DRO		BTEX and		Bolts in place								
O&G		naphthalene		Bolts are missing								
Total Cyanide		VOC,				Well Ca	sing Con	dition		$\overline{}$		
TCL SVOCs		SVOC, TAL		Casing is free from damage and visibly marked with the Well ID								
TAL Metals		Metals and		Well Condition								
and Mercury (total) TAL Metals		mercury, Sulfate, Nitrate,		Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1,47 gal/ft								
and Mercury (dissolved)		Ammonia, COD,		Well is structurally sound: not bent, broken, and no blockage identified								
Hexavalent		Alkalinity,			nt or broken	hut ie abla	to be use	4				
Chromium		Chloride,		Well is bent or broken but is able to be used Well is broken and is not able to be used								
PCB		Turbidity,			ocked and is					\vdash		
Matrix Spike .		TDS, Specific		Cap is pre		ווטו מטוכ נט	oc asca					
Duplicate		Conductance			it is present							
Sampled By	Comments:	Conductance		wen peni	n to present							

ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Well Number: 00191 -MUD5 Project Name: COA GW Q2 2023 Project Number: 20010210 Well Diameter (in): 2" Depth to Product (ft): NA Date: 5/20/23 Depth to Water (ft): 12.60 8 One Well Volume (gal): ().41 Flow Rate (mL/min) Product Thickness (ft): Depth to Bottom (ft): 22.73 Length of time Purged (min) 65 **PURGING RECORD** Specific Dissolved Volume ORP рH Turbidity DTW Oxygen Temp Conductance Time Purged (mV) (NTU) Comments (s.u.) (feet) (ms/cm) (mg/L) (°C) (gallons) ± 0.1 ± 10 $\pm 10\% \text{ or } < 5$ ± 3% ± 0.3 9.17 0.865 1345 12,73 26.30 0.93 -250 2.07 1350 12,43 26.13 9.11 0.89 0.791 2,42 9.08 0.755 12.75 26.05 0.82 3,23 355 -205 8.22 12,75 26.21 400 0.63E 3.05 3.03 8.35 2,92 1405 26.23 0.906 2.89 8.30 26.31 0.887 2,76 1410 26.26 8.27 0,860 2.56 1415 2.46 1420 26.21 8.26 0.843 2.48 -240 2.42 0.837 2.43 -275 1425 26,15 8-25 0,828 -279 1430 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. 1445 explain in the comments section. C0191-4WE Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? TCL-VOCs Dissolved Zn Poor: heavily cracked TPH-GRO and Cd Unsure: pad has been buried by site activities TPH-DRO BTEX and Bolts in place naphthalene O&G Bolts are missing VOC. Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, i0.05 ft x 0.04 (gal/ft = 0.41 (gal) (total) Nitrate, TAL Metals Ammonia, and Mercury Well is structurally sound: not bent, broken, and no blockage COD. identified (dissolved) \times Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, \leq Matrix Spike Cap is present Specific Duplicate Conductance Well permit is present Comments: Sampled By Shi

ARM Group **Low Flow Sampling** Enterprises LLC Purge Log **Engineers and Scientists COA GW Q2 2023** Project Name: Well Number: CO194 - MINS Project Number: 20010210 Well Diameter (in): Depth to Product (ft): -Date: 5/30/23 One Well Volume (gal): (), 4 () Depth to Water (ft): 13910 Flow Rate (mL/min) 200 Product Thickness (ft): -Depth to Bottom (ft): 25.11 Length of time Purged (min) 45 PURGING RECORD Specific Dissolved ORP Turbidity Volume pH DTW Temp Conductance Oxygen Purged (s.u.) (mV) (NTU) Comments Time (ms/cm) (mg/L)(feet) (°C) (gallons) £ 0.1 i 10 $\pm 10\%$ or ≤ 5 1.3% ± 0.3 0.79 1500 13,99 6.16 -1042.65 28.48 9.24 0.52 2.32 1505 13.98 27.46 9.00 6.26 -123 13,99 6.41 -130 1510 26.93 9,04 0.50 2.38 26.25 2.38 1515 9.13 6,69 0.49 -137 0.48 1520 25.83 9.18 7.00 2,00 7,18 525 2,12 0.49 25,61 9.20 7.26 1530 0.49 25,51 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, 10194-MW8 explain in the comments section. 1540 Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters ⋈ Fair: some visible cracks and/or not sloping Collected? Collected? Parameter Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities **TPH-GRO** and Cd BTEX and Bolts in place TPH-DRO naphthalene Bolts are missing O&G VOC. Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1" 1D = 0.041 gal ft - 2" 1D = 0.163 gal ft - 4" 1D = 0.653 gal ft - 6 | 1D Sulfate. 11/15n x 0041 gat n = 0.46 (gal) (total) Nitrate. TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. \boxtimes identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Conductance Well permit is present Duplicate Comments: Sampled By SHL

ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q2 2023 10195-MWS Well Number: Well Diameter (in): Project Number: 20010210 Depth to Product (ft): -Date: 5/31/23 Depth to Water (ft): 13.76 One Well Volume (gal): 102 Flow Rate (mL/min) Product Thickness (ft): Depth to Bottom (ft): 38-55 Length of time Purged (min) **PURGING RECORD** Dissolved Specific ORP Turbidity Volume pH DTW Temp Conductance Oxygen (mV) (NTU) Comments Time Purged (s.u.) (mg/L)(ms/cm) (feet) (°C) E 10 t. 10% or ≤ 5 ± 0.1 (gallons) ± 3% i: 0.3 4.47 13,76 22.01 22,1,22 -98 8.35 1.14 1110 22.28 8.68 0.618 1115 13,76 0.92 - 82 9.12 8.90 0.970 13.76 21.60 0.81 -140 1120 22.33 9.29 0.99 9,20 1114 -189 1125 1,87 -226 22,59 9.63 1.11 10,30 1130 0.96 -228 10-80 22.69 9.42 1.21 1135 -240 1.07 22.77 9,58 1.66 10,90 140 1,24 -277 23.07 9,68 2.63 1145 9.90 2.84 1,18 22,22 1150 9,70 2,91 1158 SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, explain in the comments section. C0195-MWS Well Pad Condition × Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Collected? Parameter Parameter TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities TPH-GRO and Cd TPH-DRO BTEX and Bolts in place Bolts are missing naphthalene O&G Well Casing Condition Total Cyanide VOC. Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1 TD 0.041 gal ft - 2 TD 0.163 gal ft - 4 TD 0.653 gal ft - 6 TD Sulfate. 2479n x 0.04 (gal ft = 1.02 (gal) (total) Nitrate. TAL Métals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Mátrix Spike Specific Cap is present Well permit is present Duplicate Conductance Comments: Sampled By OHL

ARM Group Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q2 2023 Well Number: CO196-MWS Project Number: 20010210 Well Diameter (in): Date: 5/31/23 Depth to Product (ft): One Well Volume (gal): 0.73 13.12 Depth to Water (ft): Flow Rate (mL/min) 300 Product Thickness (ft): Length of time Purged (min) 30,91 Depth to Bottom (ft): PURGING RECORD Dissolved Specific ORP Volume Turbidity pH DTW Conductance Oxygen Temp (mV)(NTU) Comments Time Purged (s.u.) (feet) (°C) (ms/cm) (mg/L)£ 10% or ≤ 5 ± 0.1 i. 10 (gallons) 1 3% ± 0.3 13.12 24.61 9.74 2.91 -2259.20 1210 0.82 13.12 24,09 2.92 0,55 -217 9.30 1215 9:36 0.53 -234 13/12 2,95 10-30 23:69 9.38 1220 23.83 2.93 0.49 -247 9:35 12,00 1225 2.98 0.52 -218 11.60 9,37 23.16 1230 23-31 9:87 9.87 0,57-244 9,10 2,99 1235 3.00 0.52 - 240 10.00 1240 0,53-246 9,70 23.39 9.82 2.98 1245 SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no. explain in the comments section C0196-MW8 1250 Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Collected? Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn and Cd Unsure: pad has been buried by site activities TPH-GRO TPH-DRO BTEX and Bolts in place naphthalene Bolts are missing O&G VOC. Well Casing Condition Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1" 1D = 0.041 gal ft - 2" 1D = 0.163 gal ft - 4" LD = 0.653 gal ft - 6 - LD = 1.47 Sulfate. 1779 n x 0.04 lgal n 0.729(al) (total) Nitrate. **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. X identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used PCB TDS, Matrix Spike Cap is present Specific Well permit is present Duplicate Conductance Comments: Sampled By SHL

		ow Sampl irge Log	ing			A	Ente	M Group rprises LL ers and Scient	C	
Well Number:	(.0) 10	8 - MUJ	-		Project Nan	ne: COA G	W Q2 20	23	- 46	
Well Diameter		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Project Nun		0210			
Depth to Produc						114/23				
Depth to Water		3,80		-	One Well V		_			
Product Thickn		~			Flow Rate (
Depth to Bottor	ATTENDED TO THE REAL PROPERTY.	38,16			Length of ti					
Marcals 201		20110	Transaction I	URGING	The second division in which the second	The second	Tall Topics	ar In a ma	1 32 10	What 9
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	nents
1050		13.85	19.68 19.57 18.72 18.12	10.76 10.29 10.36 10.41	10.5 11.9 13.3 14.0	0.37	-15) -212 -261 -308 -320	1.88 2.51 1.35 1.60		
1113			18,14	10.41	19.2	0,75	-334	1.82		
			SAMPLE R	ECORD AN	ND WELL D					
Sampl		Time Co	ollected				Inspection			
C019	8-MWS		0	explain in	the commen	ts section. Well I	ad Condi	out hazards. If	no,	
D .			LC 11 . 10							4
Parameter	Collected?	Parameter	Collected?		visible crac	ks and/or n	ot stoping			├──
TCL-VOCs		Dissolved Zn			ily cracked					├──
TPH-GRO		and Cd			ad has been b	ouried by si	te activitie	es .		
TPH-DRO	ļ	BTEX and		Bolts in pl	*	-2754				├──
O&G		naphthalene		Bolts are r	nissing	*** ** **				
Total Cyanide	ļ	VOC,					sing Con			
TCL SVOCs		SVOC, TAL		Casing is	free from dai			ked with the	Well ID	
TAL Metals		Metals and				Wel	l Conditio	n		
and Mercury		mercury,		Casing Volum	ne I"ID = 0.04	11 gal/ft - 2" L	0 = 0 163 ga	Vft - 4" [D = 0 6.	53 gal/ft - 6"	ID = 1.4
(total)		Sulfate, Nitrate,						0.99 (gal)	- 0.11	
TAL Metals		Ammonia,				11.				
and Mercury		COD,			ucturally sou	ind: not ber	it, broken,	, and no block	tage	l _
(dissolved)		Alkalinity,		identified						
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used	l		
Chromium		Turbidity,			oken and is r					
PCB		TDS,		Well is blo	ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre	sent					
Duplicate		Conductance			nit is present					_
Sanapley By	Comments:									

ARM Group Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q2 2023 Well Number: CO 201-MWO Project Number: 20010210 Well Diameter (in): Depth to Product (ft): 5/3//23 One Well Volume (gal): 0,95 Depth to Water (ft): 12.58 Flow Rate (mL/min) 200 Product Thickness (ft): Length of time Purged (min) 55 Depth to Bottom (ft): 35,65 **PURGING RECORD** Dissolved Specific Volume Пq ORP Turbidity DTW Conductance Oxygen Temp (mV) (NTU) Comments Time Purged (s.u.) (ms/cm) (mg/L)(feet) (°C) + 0.1 ± 10 +10% or < 5 (gallons) £ 3% i: 0.3 9,25 20,98 0.93 3.31 18 4.90 1000 12.67 20,74 9.16 3.38 0.80 1005 12.67 -80 4,66 0.79 -102 12.68 20.79 3.40 9.15 4.73 1010 6.92 9.14 3.38 -109 12.68 21,03 4.66 1015 -119 3.37 6.52 21,23 9.03 1020 12.68 6.70 21119 3,39 -95 1025 9.02 8.98 3.37 6,30-128 4,77 21,32 1030 8.95 3.35 6.05 148 1035 21.42 8.95 3.35 21,53 5.82 -160 1040 8.94 3.33 5.69 21,61 1045 SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no. explain in the comments section. 10.50 C0201-MW8 Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities **TPH-GRO** and Cd TPH-DRO BTEX and Bolts in place X naphthalene -844 Bolts are missing O&G Well Casing Condition VOC. Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1 1D 0 041 gal ft - 2 1D 0 163 gal ft - 4 1D 0 653 gal ft - 6 1D Sulfate, 2307 ft x 0.04 (gal ft = 0.95(gal) (total) Nitrate. TAL Metals Ammonia. Well is structurally sound: not bent, broken, and no blockage and Mercury COD. × identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used PCB TDS, Matrix Spike Cap is present Specific × Well permit is present Duplicate Conductance Comments: Sampled By 5HL

		ow Sampli irge Log			A	Ente	RM Group erprises LL eers and Scient	C				
Well Number:	600	209-M	W5		Project Nan	ne: CC	2A (ow 0	2			
Well Diameter (in): 2				Project Nun	nber: Z C	2010	10				
Depth to Produc	et (ft):				Date: 5	198/2	. 3					
Depth to Water	(ft): 5	145			One Well V	lume (gal)	0.5			10000		
Product Thickne		-			Flow Rate (mL/min)	500					
Depth to Botton	n (ft):	7780		-	Length of ti	me Purged	(min) 2	5				
				PURGING	RECORD	BILL HIGH			durales.			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ents		
420 425 430 435		15,45	21.24 21.39 71.36 21.39	9.99 10.08 10.05 10.02	2.86 2.62 2.60 2.60	0.61	-189 -195 -101 206	2.40 2.25 2.54	7			
		0										
			SAMPLE R	ECORD A	ND WELL D	ETAILS	E E					
Sample	e ID	Time Co	llected			Wel	l Inspecti	on				
C020A	-MWS	1.44	6		has been found and is accessible without hazards. If no, in in the comments section. Well Pad Condition							
	Sampling P	arameters		Good: no	o visible cracks and is sloping							
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping	5				
TCL-VOCs		Dissolved Zn		Poor: heav	vily cracked							
TPH-GRO		and Cd		Unsure: pa	ad has been b	buried by si	ite activiti	es		,		
TPH-DRO		BTEX and		Bolts in p								
O&G		naphthalene		Bolts are t	missing							
Total Cyanide		VOC,				Well Ca	asing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is	free from da			ked with the	Well ID			
TAL Metals	-	Metals and					ll Conditie			$\overline{}$		
and Mercury		mercury,										
(total)		Sulfate,		Casing Volum	me: I'' I.D. = 0.04	41 gal/ft - 2" l.	D. = 0.163 gi	al/ft - 4" $I.D. = 0.6$	553 gal/ft - 6"	I,D, = 1,47		
		Nitrate,		1	12	35ft x 0,	04/gal/ft =	= <u>0,5 (</u> (gal)				
TAL Metals		Ammonia,		***				·	,			
and Mercury		COD,			-	and: not be	nt, broken	, and no bloc	kage	V		
(dissolved)	0	Alkalinity,		identified						.5		
Hexavalent		Chloride,			nt or broken	The second second		d	1	e d		
Chromium		Turbidity,			oken and is r					ř.		
PCB		TDS,			ocked and is	not able to	be used					
Matrix Spike		Specific		Cap is pre								
Duplicate		Conductance	comment to v	Well permit is present								
Sampled By	Comments:				101							

ARM Group Low Flow Sampling **Enterprises LLC** Purge Log Engineers and Scientists COA GW Q2 2023 Project Name: Well Number 0209-446 Project Number 20010210 Well Diameter (in): 2 Depth to Product (ft): Date: 6/2/23 One Well Volume (gal): 0.75 Depth to Water (ft) 10-23 Flow Rate (mL/min) Product Thickness (ft): ---Length of time Purged (min) Depth to Bottom (ft): 28-45 **PURGING RECORD** Specific Dissolved ORD Curbidity pH Volume Oxygen MIG Lemp Conductance int i (NTU) 1501 Purged Time (ms/cm) (mg L) Heelt (1) 101 10% or 5 (gallons). 1.3° a i 0.3 0.28 -216 10,5 9,93 6.08 25.00 10,25 1420 9.93 6.12 6.91 0.23-221 10.25 24.48 1425 0.25 -223 6.96 24.13 10.04 6.14 10.25 1430 24,21 10.03 6.13 1435 0,24 -221 5.41 24.08 10.02 6,16 0.24 -221 4,72 1440 SAMPLE RECORD AND WELL DETAILS Well Inspection Time Collected Sample ID Well has been found and is accessible without Lazar Is. If no explain in the comments section 1450 00209-MWS Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Dissolved Zn Poor: heavily cracked TCL-VOCs Unsure: pad has been buried by site activities and Cd TPH-GRO Bolts in place BTEX and TPH-DRO naphthalene Bolts are missing 0&GWell Casing Condition VOC. Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC, TAI TCL SVOCs Metals and Well Condition TAL Metals mercury, Casing Volume | | 1D | 0.041 gal (t - 2.4D | 0.163 gal (t - 4.4D | 0.653 gal (t - 6.4D | 1.47 and Mereury Sulfate. 18.22 n 0.040 gat ft 0.75 (gab (total) Nitrate. TA1. Metals: Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. $\boldsymbol{\times}$ identified (dissolved) Alkalinity. Hexavalent Well is bent or broken but is able to be used Chloride. Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used PCB. TDS. Cap is present. Matrix Spike Specific Well permit is present Duplicate Conductance Comments: PHY10 Sampled By

		ow Sampli irge Log	ing			-	Ente	M Group rprises LLC		-
Well Number:	10200 -	17(1)			Project Nam	COA C	W Q2 202	23		
Well Diameter (, , , , , , , , , , , , , , , , , , , ,	·		Project Nun	-				
Depth to Produc					-	2/23	22.10			10-11-0
Depth to Water	The second second	7			One Well V	-	1.77			
Product Thickne					Flow Rate ()		300	•		
Depth to Botton		.51		2000	Length of til			,		
Depth to Botton	1(10) 39	.DI	P	PURGING		ine rangea ((1)(11)			
				1000 Table 1	Specific	Dissolved				
	Volume	DEW	Lemm	pΗ	Conductance	Oxygen	ORP	Turbidity		
Lime	Purged	(feet)	60	(s.u.)	(ms/cm)	(mg L)	(mV)	(NEU) - 10% or - 5	Come	nents
	(gallons)	50000		0.1	± 3 ^a n	€0.3	- 10	, 10, 90 5		
1310		10.33	30,10	13.52	1.27	1.60	-378	2.98		
						2,94		2.49		
1315		10,33	27.98	13.09						
1320		10,33		9.65	4.20	2,30	-165	3.43		
1325		10.33	26,41	9.81	2.54	2,00	-204	3,75		
1330			26,36	9.85	2.63	1.71	-227	4,20		
1335			26.63		2.68	1.21	-258		5-121-1-1-1	
12/10					030					
1340			25.52			1.08		4.22		
1345		V	25.91	10.04		0.89		4.87		
1350			26.54	10,09	2,98	0.78	-312	4.61		
1365			26,10	10,13	3.02	0.70	-325	4.23		
					D WELL DI					
Sample	: ID	Time Co					р			
0209	-mw1	场化	405		een found ar the commen	ts section.	ible witho	ut hazards. If ion	no,	×
	Sampling P	arameters		Good no	visible erack	s u d	evis.			X
Parameter	Collected?	Parameter	Collected?	Fair: some	visible érac	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn		Poor: heav	1 y cracked		70			3331 3
TPH-GRO		and Cd		Unsure pa	ad Las been b	ouriec	te acital te		10 10 10	
TPH-DRO		BTEX and		Bolts in pl	acc					
O&G		naphthalene	\times	Bolts are r	nissing			B	P	X
Total Cyanide		VOC,				Well Ca	ising Conc	lition		
TCL SVOCs	-	SVOC, TAL		Casing is	free from dar	nage	es lo Jamai		,	×
TAL Metals	0	Metals and				We	ll Conditio	n ¹		
and Mercury		mercury,		V						
		Sulfate		Carine Volum		1-2		H = 11 065	3 g, 1 H - B	11) 1.17
(total)		Nitrate		16.	43	5.24 01	High in	.77 _(gab)		
TAL Metals		Ammonia,								1
and Mercury		COD		Well is str	u ally sou	ı lin	I have	Said no block	CR.	\ \shi
(dissolved)		Alkalimity,		identified						
Hexavalent		Chloride			rt or broken					4
Chromium		Turbidity			sken and is r					
PCB		TDS.		Well is bl	seked and is	1) a	be used			
Matrix Spike		Specific		Cap is pre	se t		3			×
Duplicate		Conductance		Well pern	ut is piesen					X
Sampled By	Comments: PH	>10					140			

100		ow Sampli irge Log	ng			A	Ente	M Group rprises LLC ers and Scienti			
Well Number:	1370	II MI	~		Project Nam	e: COA G	W 02 20	23			
Well Diameter ((in): 2	1-/1W.			Project Num			20			
Depth to Produc					Date:	15/2					
Depth to Water		35,02			One Well V						
Product Thickne		75,02			Flow Rate (
Depth to Botton		49.05			Length of ti						
Depth to Botton	ii (it).		P	URGING I		ine i diged (
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ients	
1435		17,62 8.08 14,50 50.0 - 176 20.2									
			. 4	8.34 14.90 1.74 -229 10.70							
1440											
1445			18,45	8.45 15.00 1.15 -255 5.49							
14 50		8	18.63	842 15,10 0.94 - 261 4.22							
1455		V-1	18.59								
1500			18.67	8.32		101	266			3	
1000			10.00	0,0,0	1010						
× -											
	4-1			ECORD AN	ND WELL DI	W1114	10 p. 10				
Sampl	e ID	Time Co	llected				Inspection				
9001	-MWI	150	5		the comment	ts section.	ible without the Pad Condi	out hazards. If	no,	X	
1	Sampling P	arameters		Good: no	visible cracks			11011		X	
Parameter	Collected?	Parameter	Collected?		visible crack				_		
TCL-VOCs	Conecteu:	Dissolved Zn	Conceteu:		ily cracked	and of the	or stoping	·			
TPH-GRO		and Cd			ad has been b	uried by si	te activiti	26			
TPH-DRO		BTEX and		Bolts in pl		dired by si	ic activiti			~	
O&G		naphthalene	X	Bolts are r							
	-	VOC,		Doits are i	moonig	Well Co	sing Con	dition			
Total Cyanide		SVOC, TAL		Cocing is	fraa from dar			ked with the \	Well ID		
TCL SVOCs		Metals and		Çasıng is	irec iroin dar		l Condition		V CII ID		
TAL Metals		mercury,				wei	Conditio) N			
and Mercury		Sulfate,		Casing Volum	ne: I" I.D. = 0.04	I gal/ft - 2" Ll		I/ft - 4" I D = 0 65	3 gal/ft - 6"	ID = 1.47	
(total)		Nitrate,				0 -	gal/ft	(gal)			
TAL Metals		Ammonia,			-	II X	gann	(gat)			
and Mercury		COD,		Well is str	ucturally sou	ınd: not bei	nt, broken	, and no block	age	. ,	
(dissolved)								X			
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used	i			
Chromium		Turbidity,		Well is bro	oken and is n	ot able to l	e used				
PCB		TDS,			ocked and is						
Matrix Spike		Specific		Cap is pre					_	~	
Duplicate		Conductance			nit is present					X	
Sampled By	Comments:		Sit Dro			for DI	w.				
TUY											

		ow Sampli irge Log	ing			A	Ente	RM Group erprises LL ers and Scient	C		
Well Number:	GD02	-MWI			Project Nam	ne: COA	GW	Q2 20	23		
Well Diameter (i					Project Nun		0102				
Depth to Produc					Date: 6/						
Depth to Water (77				olume (gal):					
Product Thickne		7			Flow Rate (
Depth to Bottom		.31				me Purged (min)				
Company of the compan		HERSHIP MINISTER	UE TE SELL	PURGING			WE DER		MASSE A SIRRE	E-47/18/19/0	
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents	
1525			23.64	8.03	1.28	5.81	-193	15,1	(=)		
1530			17.11	7.74	0.61	3-20	-237	- 1			
			11.72	777	0.60	2.05	-248				
1535			10,45	17-10							
1540			17.02	1.10							
1645			18,62	7.70 0.604 1.86 -255 7.56 7.69 0.605 2.25 -258 6.98							
1550			19.00	7.69	0.612	2.35	-258	6,97			
			1								
				-							
				2023	11 Care 10						
				ECORD AN	ND WELL DI				-		
Sample		Time Co	llected				Inspection				
GDC	2-MWI			1			ible withou	out hazards. If	no,		
050		160	0	explain in	the commen						
~~~							ad Condi	tion			
	Sampling P				visible crack					X	
Parameter	Collected?	Parameter	Collected?		e visible cracl	ks and/or n	ot sloping				
TCL-VOCs		Dissolved Zn			vily cracked			-1-			
TPH-GRO		and Cd			ad has been t	ouried by si	te activitie	es			
TPH-DRO		BTEX and	/	Bolts in pl						X	
O&G		naphthalene		Bolts are r	missing						
Total Cyanide		VOC,				Well Ca	sing Con	dition			
TCL SVOCs	150	SVOC, TAL		Casing is	free from dar	mage and v	isibly mar	ked with the	Well ID		
TAL Metals		Metals and				Wel	l Conditio	on			
and Mercury	!	mercury,		C Value	1110 000	11 - 110 - 2011	-0.162.00	10 4 1D = 0.6	es1/0 6"	1.D = 1.47	
(total)	!	Sulfate,		Casing volum	ne. 1 1.D 0.04	H gairtt-∠ na	2. = 0.163 ga gal/ft	$d/ft - 4^{10} I_1 D_1 = 0.65$	33 gaint - 0	LD = LH/	
		Nitrate,				ft x	gal/ft =	(gal)			
TAL Metals	!	Ammonia,		337 - 11 in at-	·11	1 t has	· Italian	· · · · · · · · hlool	(9)	T	
and Mercury	!	COD,			ructurally sou	and: not bei	it, broken	, and no block	tage		
(dissolved)		Alkalinity,		identified							
Hexavalent		Chloride,		Well is bent or broken but is able to be used						<del></del>	
Chromium		Turbidity,		Well is broken and is not able to be used						—	
PCB		TDS,		Well is blocked and is not able to be used						1	
Matrix Spike		1 '								12	
Duplicate		Conductance		Well pern	nit is present					7>	
Sampled By	plicate Conductance Well permit is present  Comments:										

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q3 2023 CD 23 - PZMODB Well Number Project Number: 20010210 Well Diameter (in): Date: 087/15/23 Depth to Product (ft): Depth to Water (ft): One Well Volume (gal): .3 14,12 200 - 250 Product Thickness (ft): Flow Rate (mL min) 22.130 Length of time Purged (min) Depth to Bottom (ft): PURGING RECORD Specific Dissolved Volume pΗ ORP Turbidity DTW Conductance Temp Oxygen (mV)(NTU) Comments Time: Purged (8.0.) (ms/cm) (mg/L) (feet) (°C) $\pm 0.1$ 1.10 10% of 5 (gallons) 1.3° a 0.3 30.91 0.19 14.LI 10.49 6.46 3.71 2.55 10.60 6.07 3.88 14.12 30.71 · Increase procesper 1.91 6.51 10.75 0.06 14.12 30.57 3.25 14.12 30.53 10.88 1.82 0.06 14.12 30.58 10.90 1.80 0.06 14.12 30.64 10.91 1.80 'ماه، ٥ 30,78 10.92 0.00 -183 14.12 SAMPLE RECORD AND WELL DETAILS Time Collected Sample ID Well Inspection Well has been found and is accessible without hazards. If no, 1155 CO23-PEMODE explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd TPH-DRO BTEX and Bolts in place 0&G naphthalene Bolts are missing No look VOC. Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs OF DA Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1 1D 0.041 gal ft - 2 1D 0.163 gal ft - 4 1D 0.653 gal ft - 6 1D 1.47 Sulfate. 8.02 ft x 0.163 gal ft = 1.3( (gal) (total) Nitrate. TAL Metals Ammoñía. Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity. Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity. Well is blocked and is not able to be used PCB. TDS. Cap is present Matrix Spike Specific Duplicate Conductance Well permit is present no Comments: Sampled By GP

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists COA GW Q3 2023 Well Number: CO24-PZMOD7 Project Name: Project Number: 20010210 Well Diameter (in): Date: 08/15 Depth to Product (ft): 13.73 One Well Volume (gal): Depth to Water (ft): 1.37 250 Flow Rate (mL/min) Product Thickness (ft) Depth to Bottom (ft): 22.12' Length of time Purged (min) PURGING RECORD Specifie Dissolved ORP Turbidity Volume pΠ Conductance Oxygen DTW Temp Time Purged (mV) (NTU) Comments (s.u.) (mg/L) (ms/cm) (feet) (°C) £ 0.1 $\pm 10$ 10% or < 5 (gallons) ± 30% 1 0.3 1398 1-63 1023 28.38 9.21 0.31 14.08 1028 9.28 -67 28.01 1033 14.16 9.20 27.17 80.0 1038 14.19 9.24 -188 27.75 ماه. ۵ 9.19 14.21 0.05 - 205 けいろ 27.90 1048 14.23 27.89 9.16 1.94 1.36 -212 0.05 27.99 1053 058 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, CO24-PZMOOT 1055 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd Bolts in place TPH-DRO BTEX and naphthalene Bolts are missing No lade 0&G VOC. Well Casing Condition Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC TAL TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume, 1°110 = 0.041 gal ft - 2°140 = 0.163 gal ft - 4°140 = 0.653 gal ft - 6°140 = 1.47 Sulfate, 6.39 ft \ (137 (gal) (total) Nitrate. TAL Metals Ammonia. Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride. Chromium Well is broken and is not able to be used Turbidity. Well is blocked and is not able to be used **PCB** TDS. Cap is present Matrix Spike Specific Dupficate Conductance Well permit is present Comments: Sampled By LEP

		ow Sampli irge Log	ing			A	Ente	RM Group rprises LL en and Scient	C		
Well Number:	6026	-182W 010-			Project Nan	ne: COA	- ල <b>ය</b> (	23 2023			
Well Diameter (					Project Nun	nber: <b>2.6</b>	010211	9			
Depth to Produc	t (ft): —				Date: 08	114/23					
Depth to Water	(ft): 14.1	03 TOC			One Well V	olume (gal)	ीत्रप	1		T	
Product Thickne					Flow Rate (	mL/min)	133 -	الات) الاتا			1
Depth to Botton	n (ft):	63' TOC			Length of ti	me Purged (		s min			
Division Line	DATE OF	Participate State		PURGING	RECORD		110000	AS WINDS	SISMISA	MARINA	
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	nents	
1102		15.10	24.74	9.93	247.	2.72	121-191	10.9	Dust's C	Je class	3
1107		16.85	25.13	9.77	2.48	21.12	-198	OR r	10 70	three draw	-do
1111		17.70	25.66	9.70	2.46	0.71.	-194.	- ^	- Distan	1	
1112						0.58		00 x			1
1117		18.44	24.16	9.65	2.41		-192	DR.			ł
1122		19.50	26.79	9.66,	2.36	0.48	-193	7.93			ł.
1127		19.82	27.19	9.72	2.33	0.44	-17				
1132		20.46	27.58	9.84	2.30	0.42	-210	10.54			. ĝ.
1137		20.95	17.91	9.94	2.26	0.50	- 218	8.22	1		D
1142		21.68	28.22	10.00	2.21	6.72	- 213	9.07		1700	
1147		22.23	28.55	9.97	2.17	0.86	-203	02	200	dry at	116
		808. X 3			ND WELL D		1 2 3	91		300	7
Sample	e ID	Time Co					Inspection	on			1
C026- PZ	m007	12	15	explain in	the commen	ts section. Well I	Pad Condi	out hazards. It	fno,	/	8
	Sampling P	arameters			visible crack						
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crac	ks and/or n	ot sloping			6.000 6.000	
TCL-VOCs		Dissolved Zn			ily cracked						
TPH-GRO	_	and Cd		Unsure: pa	ad has been b	ouried by si	te activitie	es			
TPH-DRO		BTEX and		Bolts in pl						no lock	4
O&G		naphthalene		Bolts are r	nissing						4
Total Cyanide		VOC,					sing Con			",	1
TCL SVOCs		SVOC, TAL		Casing is:	free from dai			ked with the	Well ID	1	
TAL Metals		Metals and				We	l Conditio	n		A.	
and Mercury		mercury,		Casing Volun	ne: 1" I D. = 0.04	11 gal/ft - 2" 1.1	D. = 0.163 ga	1/ft - 4" f.D. = 0.6	53 gal/ft - 6	ID = 1.47	,
(total)		Sulfate, Nitrate,		21	~		gal/ft				
TAL Metals		Ammonia,			1	11 x U	<b>L to S</b> gal/ft −	1.[4](gal)		70	
and Mercury		COD,		Well is str	ucturally sou	ınd: not bei	ıt, broken	, and no blocl	kage	,	Н
(dissolved)		Alkalinity,		identified							
Hexavalent	6	Chloride,		Well is be	nt or broken	but is able	to be used	i	T III		]
Chromium		Turbidity,		Well is br	oken and is r	not able to l	e used				]
PCB		TDS,		Well is blo	ocked and is	not able to	be used				
Matrix Spike		Specific		Cap is pre		,				~	
Duplicate		Conductance			nit is present					No	
Sampled By	Comments:	- 64 - 84	sell ran a	dry after brief	er SS ma of rechar	ape ope	d nen	nd looml	/min		

	r (in): 2 th Project Number: 20010210												
Well Number:	C0210 - 8	FOO MS			Project Nan	ne: COA G	W Q3 20	)23					
Well Diameter (							0210	······································					
Depth to Produc	et (ft). 🚤				Date: 08								
Depth to Water	(fu): 14.6	שי דסכ			One Well V		ીતમા						
Product Thickne		_			Flow Rate (		COD						
Depth to Botton	n (ft): 22	. (631 TOC			Length of ti	me Purged (	min) SS	Min					
			1	URGING	RECORD		,						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) + 0_1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) + 0.3	ORP (mV) ± 10	Turbidity (NTU) + 10% or < 5	Com	ments			
1152		(Mar)	28.94	10.01	.01 2.16 1.48 -179 - andry								
		92 TS 1.20%			Y								
		1065											
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									<del> </del>	<del>  </del>			
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<u> </u>									ļ	$\perp$			
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			SAMPLE R	ECORD A	ND WELL D	ETAILS							
Sample	a ID	Time Co											
Barrier	CID	Time Co	llected			Wel	1 Inspectio	on					
			llected			nd is access		on out hazards. If	f no.				
C026-1		12/5	llected		peen found at the commen	nd is access ts section.	sible with	out hazards. If	f no.				
	72M007	12/5	llected	explain in	the commen	nd is access ts section. Well I	sible witho	out hazards. If	f no.				
C026-1	PEMOOT Sampling P	12/5		explain in Good: no	the commen	nd is access ts section. Well I s and is slo	sible wither	out hazards. If	f no,				
COZIO-1	72M007	125 arameters Parameter	Collected?	explain in Good: no Fair: some	the commen visible crack visible crac	nd is access ts section. Well I s and is slo	sible wither	out hazards. If	f no.				
Parameter TCL-VOCs	PEMOOT Sampling P	arameters Parameter Dissolved Zn		Good: no Fair: some Poor: hear	visible crack e visible crac vily cracked	nd is access ts section. Well I s and is sto ks and/or n	sible without Pad Conding of sloping	out hazards. If	f no.				
Parameter TCL-VOCs TPH-GRO	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd		Good: no Fair: some Poor: hear Unsure: p	visible crack e visible crac vily cracked ad has been b	nd is access ts section. Well I s and is sto ks and/or n	sible without Pad Conding of sloping	out hazards. If	f no.				
Parameter TCL-VOCs TPH-GRO TPH-DRO	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and	Collected?	explain in Good: no Fair: some Poor: hear Unsure: p Bolts in p	visible crack e visible érac vily cracked ad has been b	nd is access ts section. Well I s and is sto ks and/or n	sible without Pad Conding of sloping	out hazards. If	f no.				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene		Good: no Fair: some Poor: hear Unsure: p	visible crack e visible érac vily cracked ad has been b	nd is access ts section. Well I s and is slo ks and/or n ouried by si	sible withor Pad Condinging ot sloping ite activities	out hazards. If	f no.	no (reda			
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC,	Collected?	Good: no Fair: some Poor: hear Unsure: p Bolts in p Bolts are	visible crack e visible crac vily cracked ad has been b lace missing	nd is access ts section.  Well I s and is sto ks and or n  puried by si	Pad Condi ping ot sloping ite activiti	out hazards. If		no (reda			
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL	Collected?	Good: no Fair: some Poor: hear Unsure: p Bolts in p Bolts are	visible crack e visible crac vily cracked ad has been b lace missing	nd is access ts section.  Well I s and is slo ks and/or n  buried by si  Well Ca mage and v	Pad Condi ping ot sloping ite activiti asing Con isibly man	out hazards. If		ns (reh			
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and	Collected?	Good: no Fair: some Poor: hear Unsure: p Bolts in p Bolts are	visible crack e visible crac vily cracked ad has been b lace missing	nd is access ts section.  Well I s and is slo ks and/or n  buried by si  Well Ca mage and v	Pad Condi ping ot sloping ite activiti	out hazards. If		ns (reh			
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL	Collected?	Good: no Fair: some Poor: head Unsure: p. Bolts in p. Bolts are Casing is	visible crack e visible crac vily cracked ad has been b lace missing	well Canage and v	Pad Condiping ot sloping ite activities assing Consisibly mail Condition 163 ga	out hazards. If	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total)	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury,	Collected?	Good: no Fair: some Poor: head Unsure: p. Bolts in p. Bolts are Casing is	visible crack e visible crac vily cracked ad has been b lace missing	well I s and is sto well I s and is slo well I s and is slo well Camage and v	Pad Condiping ot sloping ite activition asing Con isibly man Il Condition D = 0.163 gal fi	es  dition  rked with the on	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate,	Collected?	explain in  Good: no Fair: some Poor: head Unsure: p. Bolts in p Bolts are in  Casing is	visible crack e visible crack e visible cracked ad has been blace missing free from dan	well I s and is sto ks and or n  Well Canage and v  Well Canage and v  Well Canage and v	Pad Condiping ot sloping ite activition asing Contisibly man ll Condition  D 0 163 gal fit gal fit	out hazards. If	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate,	Collected?	explain in  Good: no Fair: some Poor: head Unsure: p. Bolts in p Bolts are  Casing is  Casing Volum  Well is str	visible crack e visible crack e visible crac vily cracked ad has been b lace missing free from dai me 1° 1D = 0.0- ructurally sou	well I s and is sto ks and or n  Well Canage and v  Well Canage and v  Well Canage and v	Pad Condiping ot sloping ite activition asing Contisibly man ll Condition  D 0 163 gal fit gal fit	es  dition  rked with the on	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved)	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity,	Collected?	Good: no Fair: some Poor: head Unsure: p. Bolts in p. Bolts are i Casing is  Casing Volum Well is stridentified	visible cracked visible eracked ad has been blace missing free from darme 1°fb = 0.0-	well I sand is sto ks and or n  Well I sand is sto ks and or n  Well Canage and v  Well Canage and v  Well Canage and v  well gal ft - 2° 11	Pad Condinging ot sloping ite activition asing Contisibly man Il Condition  On 163 gas gal ft = nt, broken	es  dition  ked with the on  fix-4" ID 116  (gab)  , and no block	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride,	Collected?	explain in  Good: no Fair: some Poor: head Unsure: p. Bolts in p Bolts are i  Casing is  Casing Volum  Well is stridentified Well is be	visible crack e visible crack e visible crac vily cracked ad has been b lace missing free from dan me 1"fD = 0.0- ructurally sou	well I s and is sto ks and or n well Canage and v well I s and is sto ks and or n well Canage and v well that h = 2.11 ft x and; not betaut is able	Pad Condiping ot sloping ite activities asing Consisibly man ll Condition D 0 163 ga gal fi gal fi to be used	es  dition  ked with the on  fix-4" ID 116  (gab)  , and no block	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity,	Collected?	explain in  Good: no Fair: some Poor: head Unsure: p. Bolts in p Bolts are  Casing is  Casing Volum  Well is stridentified  Well is be Well is be	visible crack e visible erac vily cracked ad has been b lace missing free from dan me 1° 10 = 00- ructurally sou ent or broken oken and is i	Well I s and is slo ks and or n  well I s and is slo ks and or n  well Ca mage and v  We  I gat tt - 2 11  ft x  and: not be but is able tot able to	Pad Condiping ot sloping ot sloping ite activition asing Con isibly man ll Condition  D 0 163 gal fi gal fi gal ft to be used	es  dition  ked with the on  fix-4" ID 116  (gab)  , and no block	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS,	Collected?	explain in  Good: no Fair: some Poor: head Unsure: p. Bolts in p. Bolts are no Casing is  Casing Volunt  Well is stridentified  Well is bed  Well is bed  Well is bed	visible crack e visible crack e visible crack e visible crac vily cracked ad has been b lace missing free from dan me 1" (D = 0.0- ructurally sou ent or broken roken and is 1 ooked and is	Well I s and is slo ks and or n  well I s and is slo ks and or n  well Ca mage and v  We  I gat tt - 2 11  ft x  and: not be but is able tot able to	Pad Condiping ot sloping ot sloping ite activition asing Con isibly man ll Condition  D 0 163 gal fi gal fi gal ft to be used	es  dition  ked with the on  fix-4" ID 116  (gab)  , and no block	Well ID				
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB Matrix Spike	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS, Specific	Collected?	explain in  Good: no Fair: some Poor: head Unsure: p. Bolts in p Bolts are i  Casing is  Casing Volun  Well is stridentified Well is be Well is be Well is proposed in the pro	visible crack e visible crack e visible crack e visible crac vily cracked ad has been b lace missing free from dar me 1"fD =0.0- ructurally sou ent or broken oken and is r ocked and is esent	Well I s and is slo ks and/or n  Well Ca mage and v  Well Ca mage and v  We  It pat ft - 2 "1"  ft x  Ind: not be but is able not able to	Pad Condiping ot sloping ot sloping ite activition asing Con isibly man ll Condition  D 0 163 gal fi gal fi gal ft to be used	es  dition  ked with the on  fix-4" ID 116  (gab)  , and no block	Well ID	1D = 147			
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB	PEMOOT Sampling P	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS,	Collected?	Casing Volume Well is stridentified Well is be Well is processory Well	visible crack e visible crack e visible crack e visible crac vily cracked ad has been b lace missing free from dan me 1" (D = 0.0- ructurally sou ent or broken roken and is 1 ooked and is	Well I s and is slo ks and/or n  Well Ca mage and v  Well Ca mage and v  We  It pat ft - 2 "1"  ft x  Ind: not be but is able not able to	Pad Condiping ot sloping ot sloping ite activition asing Con isibly man ll Condition  D 0 163 gal fi gal fi gal ft to be used	es  dition  ked with the on  fix-4" ID 116  (gab)  , and no block	Well ID				

## ARM Group **Low Flow Sampling** Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q3 2023 CO 30 - P(M 03 Well Number: Well Diameter (in): Project Number, 20010210 Depth to Product (ft): Date: Depth to Water (ft): One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) 7.7.60 Depth to Bottom (ft): Length of time Purged (min) **PURGING RECORD** Specific Dissolved Volume ρН ORP Turbidity DTW Conductance Temp Oxygen Purged (mV) (NTU) Time (s.u.) Comments (ms/cm) (mg/L) (feet) (°C) (gallons) ± 10 $\pm 10\% \text{ or } < 5$ $\pm 0.1$ ± 3% ± 0.3 2.86 0.59 2.80 SAMPLE RECORD AND WELL DETAILS Time Collected Sample ID Well Inspection Well has been found and is accessible without hazards. If no, 0825 0 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Collected? Fair: some visible cracks and/or not sloping Parameter Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities **TPH-GRO** and Cd **TPH-DRO** BTEX and Bolts in place naphthalene O&G Bolts are missing VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate. _gal/ft = TAL Metals Ammonia, and Mercury Well is structurally sound: not bent, broken, and no blockage COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, Matrix Spike Cap is present Specific Duplicate Conductance Well permit is present Comments: Sampled By

# ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Well Number: Project Name: Project Number: Well Diameter (in): 020 Date: 7126123 Depth to Product (ft): One Well Volume (gal): Depth to Water (ft): Product Thickness (ft): Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved Volume ORP Turbidity pΗ DTW Conductance Temp Oxygen (mV) (NTU) Comments Time Purged (s.u.) (ms/cm) (mg/L) (feet) (°C) (gallons) ± 0.1 $\pm 10$ ± 10% or < 5 ± 3% $\pm 0.3$ SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Collected? Fair: some visible cracks and/or not sloping Collected? Parameter Parameter TCL-VOCs Poor: heavily cracked Dissolved Zn and Cd Unsure: pad has been buried by site activities TPH-GRO TPH-DRO BTEX and Bolts in place Bolts are missing O&G naphthalene VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1" | D = 0.041 gal/ft - 2" | D = 0.163 gal/ft - 4" | D = 0.653 gal/ft - 6" | D = 1.47 Sulfate, (total) Nitrate, gal/ft = **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used **PCB** TDS, Matrix Spike Cap is present Specific Well permit is present Duplicate Conductance Comments: Sampled By

#### ARM Group **Low Flow Sampling** Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q3 2023 Well Number: (036 - 12 M 008 Project Number: 20010210 Well Diameter (in): 2-Date: 8/11/23 Depth to Product (ft): One Well Volume (gal): 3-Depth to Water (ft): 4.25 Flow Rate (mL/min) 30 Product Thickness (ft): ~ Length of time Purged (min) Depth to Bottom (ft): (U.20 **PURGING RECORD** Specific Dissolved ORP Turbidity Volume pΗ DTW Temp Conductance Oxygen (mV) (NTU) Comments Purged (s.u.) Time (feet) (°C) (ms/cm) (mg/L) ± 10% or < 5 $\pm 10$ $\pm 0.1$ (gallons) $\pm 0.3$ ± 3% -257 -2 0.5 43.9 21.67 11.42 1.74 -210 8.37 .30 22.01 0.91 \$6.01 22.09 11.08 30 0.73 -208 22,12 0.46 -22/ uil 1:25 11.15 22112 [1 - 19 0.3z -234 2.66 : 30 1.43 .50 -247 2.07 1:35 22.20 11.21 0.24 -256 .23 22,23 11,27 1.54 0.22 1410 1.60 0.20 22,24 -243III.us 11.24 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection (034-P2n008 Well has been found and is accessible without hazards. If no, 1150 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities and Cd TPH-GRO TPH-DRO BTEX and Bolts in place naphthalene Bolts are missing O&G VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1" I D = 0.041 gal ft - 2" I D = 0.163 gal ft - 4" | D = 0.653 gal ft - 6" I D = 1.47 Sulfate, gal/ft (total) Nitrate, ft x TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS. Cap is present Matrix Spike Specific Well permit is present Conductance Duplicate to take of a de to size (and it ians. Well is half Surice Comments: Lhall Sampled By

### ARM Group **Low Flow Sampling** Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q3 2023 036-PZM0+3 Well Number: Well Diameter (in): Project Number: 20010210 8/10/27 Depth to Product (ft): Date: 6-72 One Well Volume (gal): Depth to Water (ft): Flow Rate (mL/min) Product Thickness (ft): 3 Od Length of time Purged (min) Depth to Bottom (ft): 65 PURGING RECORD Specific Dissolved pН ORP Turbidity Volume DTW Conductance Oxygen Temp Time Purged (s.u.) (mV) (NTU) Comments (ms/cm) (mg/L) (°C) (feet) $\pm 0.1$ $\pm 10$ ± 10% or < 5 (gallons) # 3% $\pm 0.3$ 4.43 ~297 0.91 1.51 21169 5.29 トフマカ C.46 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, Co36- Pino43 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn **TPH-GRO** and Cd Unsure: pad has been buried by site activities **TPH-DRO** BTEX and Bolts in place O&G naphthalene Bolts are missing VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the WALLED TCL SVOCs Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" [ D = 0.041 gal/ft - 2" [ D = 0.163 gal/ft - 4" [ D = 0.653 gal/ft - 6" [ D = 1.47 Sulfate. gal/ft (total) Nitrate. gal/ft = TAL Metals Ammonia, Well is structurally sound; not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, Cap is present Matrix Spike Specific Duplicate Conductance Well permit is present Conditos Comments: Sampled By 1196k

## **ARM Group Low Flow Sampling** Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q3 2023 Well Number: Project Number: 20010210 Well Diameter (in): Depth to Product (ft): Date: One Well Volume (gal): Depth to Water (ft): Flow Rate (mL/min) Product Thickness (ft): Depth to Bottom (ft): Length of time Purged (min) **PURGING RECORD** Dissolved Specific ORP Turbidity Volume pΗ DTW Temp Conductance Oxygen (mV) Comments Purged (NTU) Time (s.u.) (ms/cm) (mg/L) (feet) (°C) (gallons) $\pm 0.1$ $\pm 10$ ± 10% or < 5 ± 3% $\pm 0.3$ SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, 1510 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Parameter Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, gal/ft (total) gal/ft = Nitrate. ftх (gal) TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, lidentified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments:

		ow Sampli irge Log	ing			A	Ente	RM Group rprises LL ers and Scient								
Well Number:	(0)3	3- 47	MAZX		Project Nam	ne: COA G	W Q3 20	23			1					
Well Diameter (	in): 7	1 10	V.P.		Project Nun											
Depth to Produc					Date: \$	7/2										
Depth to Water		11.7	9		One Well V				<del>-</del>	Comments  ID						
Product Thickne	THE RESIDENCE OF THE PARTY OF T				Flow Rate (		700	-								
Depth to Botton		4	7.85		Length of ti											
16011535411.31	Allessani	(1) (50) (58°)		PURGING					84501							
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents						
14.05			25.96	1162	2.21	2.01	-313	2-66								
1400		11 0 x	2130	11 9	7 75	0.45	-375	140								
1419		11. 10	0170	11 22	7 70		-	1 70								
1413		11.72	2.56	11.35	2.30	0.79	425	1.68	7							
1920		11.90	21.97	11.86	2, 35	0.40	-435	0,40	/							
1425			21.39	11.83	7,75	0.31	-439	0.81								
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			CANADIER	ECORD II	ID WELL O	CT A II C					١,					
Com-I	. ID	Time Co		ECORD AN	ND WELL D		Inspection	m		3211 10	(					
Sample				Wall back	san faund ar	and the second s	The second second	out hazards. If	fno		1					
C037.1	1240 20	1430	)		the commen		ibie with	out nazarus. H	110,							
		1		explain in	the commen		ad Condi	tion								
	Sampling P	arameters	3	Good: no	visible crack			11011								
Parameter	Collected?	Parameter	Collected?		visible crack											
TCL-VOCs	Conceicus	Dissolved Zn	Concetted.		vily cracked	RS dila or it	or broping			<del>                                     </del>						
TPH-GRO		and Cd	<b> </b>		ad has been t	ouried by si	te activitie	28		-	1					
TPH-DRO		BTEX and		Bolts in pl												
O&G		naphthalene		Bolts are r			-			<del>                                     </del>	1					
Total Cyanide		VOC,			8	Well Ca	sing Con	dition			١.					
TCL SVOCs		SVOC, TAL		Casing is:	free from dai			ked with the	Well ID		r					
TAL Metals		Metals and					1 Condition				î.					
and Mercury		mercury,				100		-	40 1:0 4:	15 110	1					
(total)		Sulfate,		Casing Volun	ne: $1^{\circ}$ 1.D. = 0.04	H gal/ft - 2" 1.1	2. = 0.163 ga gal/ft	$I/R - 4^{\circ} I.D. = 0.6$	53 gal/It - 6	1.D. = 1.47	L					
		Nitrate,				ft x		(gal)			ı					
TAL Metals		Ammonia,		W-11 1			A 11	and an blook		T .	Ł					
and Mercury		COD,		identified	ructurally sot	ma: not ber	n, proken	, and no block	kage		1					
(dissolved)		Alkalinity,	1							-	1					
Hexavalent Chloride, Well is bent or broken but is able to be used  Well is broken and is not able to be used								-	1							
Chromium		Turbidity,								-	Ł					
PCB		TDS,	11		ocked and is	not able to	be used			<del>                                     </del>	1					
Matrix Spike		Specific		Cap is pre						+	1,					
Duplicate									ł(							
Samiled by	Comments:															

### **ARM Group** Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q3 2023 Well Number: 038-01m006 Well Diameter (in): Project Number: 20010210 Depth to Product (ft): Date: One Well Volume (gal): Depth to Water (ft): 04 Product Thickness (ft): Flow Rate (mL/min) 15.73 Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved ORP Volume Turbidity рΗ DTW Temp Conductance Oxygen (mV) Time Purged (s.u.) (NTU) Comments (feet) (°C) (ms/cm) (mg/L) ± 10% or < 5 (gallons) ± 0.1 $\pm 10$ ± 3% $\pm 0.3$ 218 -143 3.86 311 0347 32+ a 09 41 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn TPH-GRO and Cd Unsure: pad has been buried by site activities TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1" I.D = 0 041 gal/ft - 2" 1 D = 0 163 gal/ft - 4" I D = 0.653 gal/ft - 6" I D = 1 47 Sulfate. (total) gal/ft Nitrate. gal/ft = (gal) **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: SampledBy

	Low F	low Sampl	ing		- 4			RM Group erprises LL			
	Pu	urge Log						ers and Scient			
Well Number:	CO	38-121	1006		Project Nan	ne: COA C	W Q3 20	023			
Well Diameter		3 4 - 1 - 1	000		Project Nun						
Depth to Produ					Date:	1/27	JE 10				
Depth to Water		20			One Well V						
Product Thickn					Flow Rate (		300				
Depth to Bottor		-7 3×	,		Length of ti				10000		
Depth to Botton		7.30		PURGING		ine raigea (	illii)	100 E		THE	
					Specific	Dissolved					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents	
755		4.41	23.65	10.53	1.62	0.22	-3 <i>5</i> %	2.19	7		
1305		)	23.25	10.65	1.61	014	-372	0.22	7		
1710			22.95		1.60	0.15	ング	0 72			
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Sampl	e ID	Time Co	llected			-	Inspection			_	
C038-	Prodole	1310					ible with	out hazards. If	f no,		
0000	1- ,-0-	11/10		explain in	the commen						
	•					-	ad Condi	tion			
	Sampling P	arameters			visible crack					1	
Parameter	Collected?	Parameter	Collected?		visible cracl	ks and/or n	ot sloping				
TCL-VOCs		Dissolved Zn			ily cracked						
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activitie	es			
TPH-DRO		BTEX and	X	Bolts in pl	ace						
O&G		naphthalene		Bolts are r	nissing						
Total Cyanide		VOC,				Well Ca	sing Con	dition			
TCL SVOCs		SVOC, TAL		Casing is	free from dar	nage and v	isibly mar	ked with the	Well ID		
TAL Metals		Metals and				Wel	l Conditio	on			
and Mercury		mercury,		0 1 11 1	1215 001	11 110 2011	0.142	NO 1010 07	62 110 60		
(total)		Sulfate,		Casing Volum	1e; T. I.D. = 0,04	ii gai/tt - 2 iit	). = 0.163 ga gal/ft	$I/ft - 4^{st} I.D. = 0.6$	53 gai/11 - 6	1.0. = 1,4	
, ,	-	Nitrate,		ŀ		ft x		(gal)			
TAL Metals		Ammonia,		W/_10.4	15	11	. 1. 1			Г	
and Mercury		COD,			ucturally sou	ind: not ber	it, broken	, and no block	cage	/	
(dissolved)		Alkalinity,		identified						/	
Hexavalent		Chloride,			nt or broken			1			
Chromium		Turbidity,		Well is broken and is not able to be used							
PCB		TDS,		Well is blocked and is not able to be used							
						Cap is present					
Duplicate		Conductance		Well perm	nit is present						
Sampled By	Comments:	3	Œ								

## **ARM Group** Low Flow Sampling Enterprises LLC **Purge Log** Engineers and Scientists Project Name: COA GW Q3 2023 Well Number: 0 38-14M143 Well Diameter (in): Project Number 20010210 Date: **(1877)** Depth to Product (ft): One Well Volume (gal): Depth to Water (ft): Product Thickness (ft): Flow Rate (mL/min) Length of time Purged (min) 49.5 Depth to Bottom (ft): PURGING RECORD Dissolved Specific Volume pΗ ORP Turbidity DTW Conductance Oxygen Temp (NTU) Comments Time Purged (s.u.) (mV) (ms/cm) (mg/L) (°C) (feet) ± 10% or < 5 (gallons) $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ -271 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, 21013 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Collected? Fair: some visible cracks and/or not sloping Parameter Parameter Collected? Poor: heavily cracked Dissolved Zn TCL-VOCs Unsure: pad has been buried by site activities TPH-GRO and Cd Bolts in place **TPH-DRO** BTEX and O&G naphthalene Bolts are missing Well Casing Condition VOC, Total Cyanide Casing is free from damage and visibly marked with the Well ID TCL SVOCs SVOC, TAL Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I D. = 0 041 ga / ft - 2" I D. = 0 163 gal ft - 4" I D. = 0 653 gal ft - 6" I D. = 1 47 Sulfate. gal/ft (total) Nitrate, gal/ft TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: Sampled By

9 [		low Sampl urge Log	ing			A	Ente	RM Group erprises LL eers and Scient	C	*8		
Well Number:	.00	38 - 12	1043		Project Nar	ne. COA (	SW Q3 20	)23				
Well Diameter	(in): Z				Project Nur	nber: 2001	0210					
Depth to Produ	ct (ft): -					8/7/2						
Depth to Water	(ft):	0,67			One Well V	olume (gal)						
Product Thickn	ess (ft):	(6			Flow Rate (		300	5				
Depth to Botton	m (ft):	51.2	5		Length of t	ime Purged						
CANTELO VALUE	WILLIAM 1240			PURGING		BEERIUM		WE WIND	E VEXI	QUE III		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ments		
14/0	88		938/4	10.50	7.79	1.52	-311	585				
1110		\-/	02 17	10.105	72 67	A 12	201	100				
1413		\/	21 70		3.77	0.44	- 54	4.07		<del></del>		
420		1 <u> </u>	21.99	10.64	3.79	0.51	-365	2.89	1			
1425			21,75	10,70	4.07	0.41	-361	2.98	1			
1430			21.70	10.71	410	0.68	-360	7.11	1			
			17.7			100						
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100												
		HUT NO		ECORD AN	ND WELL D							
Sampl		Time Co	llected		Well Inspection							
603	8-720	14	35		Well has been found and is accessible without hazards. If no, explain in the comments section.  Well Pad Condition							
	Sampling P	arameters		Good: no	well Pad Condition							
Parameter	Collected?	Parameter	Collected?		visible crac							
TCL-VOCs		Dissolved Zn			ily cracked		1 0		-			
TPH-GRO		and Cd			ad has been b	ouried by si	te activitie	28				
TPH-DRO		BTEX and		Bolts in pl								
O&G		naphthalene	X	Bolts are n								
Total Cyanide		VOC,				Well Ca	sing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is 1	free from dar			ked with the	Well ID			
TAL Metals	5.0	Metals and					l Conditio					
and Mercury	.'01	mercury,			7000 500	10 100		V-022		<del>-  </del>		
(total)		Sulfate,		Casing Volum	ie: I" I D. = 0.04	H gal/ft - 2" H		If $t - 4^{10}$ I.D. = 0.6	53 gal/ft - 6"	I.D. = 1.47		
		Nitrate,				ft x	gal/ft gal/ft =	(gal)		/		
TAL Metals		Ammonia,				33-32)	787			1/		
and Mercury		COD,			ucturally sou	ınd: not ber	it, broken	, and no block	tage	/ /		
(dissolved)		Alkalinity,		identified					/			
Hexavalent						but is able	to be usec					
Chromium						Well is broken and is not able to be used						
PCB	Turoratty,					Well is blocked and is not able to be used						
Matrix Spike		Specific		Cap is present								
Duplicate	`							<del></del> -				
Sampled By	Comments:	7/2 to	†AX	e D	14	Pu	to	0634	ructo	n		

## **ARM Group Low Flow Sampling** Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q3 2023 Well Number: Project Number: 20010210 Well Diameter (in): Depth to Product (ft): Date: Depth to Water (ft): One Well Volume (gal): Flow Rate (mL/min) 300 Product Thickness (ft): Depth to Bottom (ft): Length of time Purged (min) **PURGING RECORD** Specific Dissolved Volume pН ORP Turbidity DTW Conductance Temp Oxygen Purged (mV) (NTU) Comments Time (s.u.) (ms/cm) (mg/L) (feet) (°C) (gallons) $\pm 0.1$ $\pm 10$ ± 10% or < 5 ± 3% $\pm 0.3$ 2.64 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Parameter Fair: some visible cracks and/or not sloping Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd **TPH-DRO** BTEX and Bolts in place O&G naphthalene Bolts are missing VOC, Well Casing Condition Total Cyanide SVOC. TAL TCL SVOCs Casing is free from damage and visibly marked with the Well ID Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" | D. = 0.041 gal/ft - 2" | D. = 0.163 gal/ft - 4" | D. = 0.653 gal/ft - 6" | D. = 1.47 Sulfate, (total) Nitrate. ft x gal/ft = (gal) **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, PCB Well is blocked and is not able to be used TDS, Cap is present Matrix Spike Specific Duplicate Conductance Well permit is present Comments: to unside conditions DUR Sampled By 10

		ow Sampli irge Log	ing			A	Ente	RM Group erprises LL ers and Scient				
Well Number:	C039	- PZMO	4.7		Project Nan	ne: COA G	SW Q3 20	23				
Well Diameter (					Project Nun							
Depth to Produc						177	02.10					
Depth to Water		-0			One Well V		;					
Product Thickne		_			Flow Rate (		300		•			
Depth to Botton		6.00			Length of ti							
		A SHADOW NEWS		URGING		MILES E				HE PASSE		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	ents		
1225			24.62	11.43	-323	2.09	324	1.37				
130			77:49	11/3	- 285	0.58	-401	177.				
11 7			7109	11.63	-24-16	0.40	-48	0.94		-		
11 4 6			2177	11.42	7 73	0,36	-430	0.25	7			
1640			71.77	11163	2 4 1	0/20	- 747	0 /0	-			
12.90			21.74	11.64	2.40	0.31	-95	0.17				
						-						
									10/1			
		\										
			SAMPLE R	ECORD A	ND WELL D	ETAILS	W RIIII			-		
Sample	e ID	Time Co			ID III DELE DI		l Inspectio	n				
C039-12	n 0+2	125	Ó		een found at	nd is access ts section.	ible witho	out hazards. If	no,	_		
	87	<u> </u>					ad Condi	tion				
- 11	Sampling P				visible crack							
Parameter	Collected?	Parameter	Collected?		visible crac	ks and/or n	ot sloping					
TCL-VOCs		Dissolved Zn	/		vily cracked					$ \lambda$		
TPH-GRO		and Cd			ad has been b	ouried by si	te activitie	es				
TPH-DRO		BTEX and	X	Bolts in pl								
O&G		naphthalene	=( )	Bolts are i	missing	317 11 0	ratus C	The same				
Total Cyanide		VOC,		Casin	C		sing Con		Wall ID	-4		
TCL SVOCs		SVOC, TAL Metals and		Casing is	iree from dai			ked with the	well ID			
TAL Metals		mercury,				Wel	l Condition	on		- 41		
and Mercury		Sulfate,		Casing Volum	ne: 1" I.D. = 0.04	gal/ft - 2"   . [		l/ft - 4" I D. = 0.6	53 gal/ft - 6"	D. = 1.47		
(total)		Nitrate,				ft v	gal/ft gal/ft =	(gal)				
TAL Metals		Ammonia,					-30					
and Mercury		COD,			ucturally sou	ınd: not ber	nt, broken	, and no block	age			
(dissolved)		Alkalinity,		identified								
Hexavalent		Chloride,		Well is bent or broken but is able to be used								
Chromium		Turbidity,		Well is broken and is not able to be used								
PCB		TDS,		Well is blocked and is not able to be used								
Matrix Spike		Specific		Cap is present								
Duplicate		Conductance	L	Well permit is present								
Sampled By	Comments:	Dtv										

## ARM Group **Low Flow Sampling** Enterprises LLC **Purge Log** Engineers and Scientists Project Name: COA GW Q3 2023 2M 000 Well Number: Project Number: 20010210 Well Diameter (in): Date: </ Depth to Product (ft): One Well Volume (gal): Depth to Water (ft): 500 Product Thickness (ft): Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved ORP Volume Turbidity pН Conductance DTW Temp Oxygen (mV) (NTU) Comments Time Purged (s.u.) (ms/cm) (mg/L) (feet) (°C) $\pm 10$ ± 10% or < 5 (gallons) $\pm 0.1$ ± 3% $\pm 0.3$ 00191 SAMPLE RECORD AND WELL DETAILS Well Inspection Sample ID Time Collected Well has been found and is accessible without hazards. If no, CO40-PINOS explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Dissolved Zn Poor: heavily cracked TCL-VOCs Unsure: pad has been buried by site activities TPH-GRO and Cd TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing VOC, Well Casing Condition Total Cyanide SVOC, TAL TCL SVOCs Casing is free from damage and visibly marked with the Well ID Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) gal/ft Nitrate. ft x gal/ft = (gal) TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Duplicate Conductance Well permit is present Comments:

### **ARM Group** Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q3 2023 Well Number: Well Diameter (in): Project Number; 20010210 Depth to Product (ft): Date: Depth to Water (ft): One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) 300 11.02 Depth to Bottom (ft): Length of time Purged (min) **PURGING RECORD** Specific Dissolved Volume ORP рΗ Turbidity DTW Temp Conductance Oxygen Purged (mV) Time (s.u.) (NTU) Comments (feet) (°C) (ms/cm) (mg/L) (gallons) $\pm 10\% \text{ or } \leq 5$ $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ -204 235 66 00 0,774 245 453 03 254 50 500 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, 1505 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Parameter Collected? Collected? Parameter TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities **TPH-GRO** and Cd **TPH-DRO** BTEX and Bolts in place naphthalene O&G Bolts are missing Total Cyanide VOC, Well Casing Condition TCL SVOCs SVOC, TAL Casing is free from damage and visibly marked with the Well ID Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" 1.D. = 0.041 gal/ft - 2" f.D. = 0.163 gal/ft - 4" f.D. = 0.653 gal/ft - 6" f.D. = 1.47 Sulfate, (total) gal/ft Nitrate. _gal/ft = __ **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, Matrix Spike Cap is present Specific Well permit is present Duplicate Conductance Comments:

### ARM Group **Low Flow Sampling** Enterprises LLC **Purge Log Engineers and Scientists** Project Name: COA GW Q3 2023 Well Number: Well Diameter (in): Project Number: 20010210 Date: 8 2 27 Depth to Product (ft): One Well Volume (gal): Depth to Water (ft): 14,01 Product Thickness (ft): Flow Rate (mL/min) 0,70 Depth to Bottom (ft): Length of time Purged (min) PURGING RECORD Specific Dissolved рΗ Volume ORP Turbidity DTW Conductance Oxygen Temp Time Purged (mV) (NTU) Comments (s.u.) (feet) (°C) (ms/cm) (mg/L) (gallons) $\pm 0.1$ $\pm 10\% \text{ or } \le 5$ $\pm 10$ ± 3% ± 0.3 343 10. 35) SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. 20036 Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities **TPH-GRO** and Cd TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing Total Cyanide VOC, Well Casing Condition SVOC, TAL TCL SVOCs Casing is free from damage and visibly marked with the Well ID Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" LD. = 0.041 gal/ft - 2" LD. = 0.163 gal/ft - 4" LD. = 0.653 gal/ft - 6" LD. = 1.47 Sulfate. (total) gal/ft Nitrate. gal/ft = **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, Matrix Spike Cap is present Specific Duplicate Conductance Well permit is present Comments: Sampled By

# ARM Group Low Flow Sampling Enterprises LLC **Purge Log Engineers and Scientists** Well Number: 655 5 - 12m Coo Project Name: COA GW Q3 2023 Well Diameter (in): Project Number: 20010210 Depth to Product (ft): Date: 1/6/23 Depth to Water (ft): 13.42 One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) Depth to Bottom (ft): 7.21 Length of time Purged (min) PURGING RECORD Specific Dissolved Volume pН ORP Turbidity DTW Temp Conductance Oxygen Purged Time (s.u.) (mV) (NTU) Comments (feet) (°C) (ms/cm) (mg/L)(gallons) $\pm 0.1$ ± 10 $\pm 10\% \text{ or } < 5$ ± 3% $\pm 0.3$ SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Fair: some visible cracks and/or not sloping Collected? TCL-VOCs Dissolved Zn Poor: heavily cracked TPH-GRO and Cd Unsure: pad has been buried by site activities TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing Total Cyanide VOC, Well Casing Condition SVOC, TAL TCL SVOCs Casing is free from damage and visibly marked with the Well ID Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate. _gal/ft = TAL Metals Ammonia. Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, Matrix Spike Cap is present Specific Duplicate Conductance Well permit is present Comments: Sampled By

15		low Sampl urge Log	ing			A	Ente	RM Group erprises LLC ers and Scienti			
Well Number:	1551	- 102 W O	0)		Project Nan	ne: COA G	W Q3 20	)23			
Well Diameter (	(in): 7		<u> </u>			nber: 2001(					
Depth to Produc					Date:	1012	1		_		
Depth to Water		.21			One Well V	olume (gal)			_		
Product Thickne					Flow Rate (	_	302	5			
Depth to Botton	THE RESERVE AND ADDRESS OF THE PARTY OF THE	,25				me Purged (					
Depin to Botton	7			URGING							
						Dissalued				100	
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents	
1235		14.22	24.5	10.71	UT	6.20	187	10.47			
12 40		111.44	73.6	11,20	2,36	420	-162	12.6			
12 I		Y A CO	11 8		2.43		-191	0.83			
1177		14.72	1170	11.3/2			-7				
750		14,22	21.79	11.39	1.39 2.45 0.36-178 0.13						
1255		110	21.65	11.71	2.46	0.32	-179	0.02			
								1			
					-					<u> </u>	
	*	1									
			SAMPLE R	ECORD AN	ND WELL D	FTAILS			40.2	200	
Sample	a ID	Time Co		ECOND A.	TO WEBE D	-	l Inspection	nn .			
Sample	C ID	Time Co	riceted	Wall back	soon found a		_	out hazards. If	no		
	-	レスグス	·				ibic with	Jul Hazarus, H	no,	$  \cup  $	
				explain in	the commen		ad Condi	**			
				0 1				lion			
	Sampling P	_			visible crack						
Parameter	Collected?	Parameter	Collected?		visible crac	ks and/or ne	ot sloping	260 65			
TCL-VOCs		Dissolved Zn			ily cracked					$\perp A$	
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activiti	es			
TPH-DRO		BTEX and		Bolts in pl	ace						
O&G	-	naphthalene		Bolts are r	missing		-73		77		
Total Cyanide		VOC,				Well Ca	sing Con	dition			
TCL SVOCs		SVOC, TAL		Casing is	free from dar			ked with the V	Well ID		
TAL Metals		Metals and					l Conditio				
		mercury,	8								
and Mercury		Sulfate,		Casing Volun	ne I"ID 0 04	11 gal/ft - 2" 1 E		d/ft - 4" I D 0 65	3 gal ft - 6"	ID 147	
(total)		Nitrate,		. x		fl x	gal/ft gal/ft =	(gal)			
TAL Metals		Ammonia,							1-1-1		
and Mercury		COD,			ucturally sou	ınd: not ber	it, broken	, and no block	age	1/	
(dissolved)		Alkalinity,		identified							
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used	i			
Chromium		Turbidity,			oken and is r			<u>-</u>			
PCB		TDS,			ocked and is			· <del>-</del>			
Matrix Spike		Specific		Cap is pre	_					V	
		Conductance			nit is present					No	
Duplicate	Comment	Conductance		well beili	ne is present	_				** 0	
Carrala 4 D	Comments:									- 1	
Sampled By											
										1	
									-	7—	
		1	10	11			A		/		
				1/2							
				•							

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists COS 7 - PZPODZ Project Name: COA GW Q3 2023 Well Number: Well Diameter (in): Project Number: 20010210 Date: 08/14/23 Depth to Product (ft): One Well Volume (gal): Depth to Water (ft): 15.08 'TOC 0.44 Product Thickness (ft): Flow Rate (mL/min) ത്ര Depth to Bottom (ft): 17.86' TOC Length of time Purged (min) PURGING RECORD Specific Dissolved ORP Turbidity Volume pil DTW Temp Conductance Oxygen (NTU) Comments Purged (N.U.) (mV) Time (ms/cm) (mg/L) (feet) 1°C) 1.0.1 + 10 $\pm 10\% \text{ or } \le 5$ (gallons) 1.3% £ 0.3 15.30 3.7Z -40 02 10.33 36.10 1.30 1303 15.45 35.97 1.24 1.66 OR 1308 10.88 -88 15.59 10.91 1.29 35.24 1.46 -90' 10.0 15.73 1.29 1.31 -95 1.72, 1318 34.69 11.09 15.93 11.15 24.20 1.32 -103 14.10 1.32 -105 33.88 11.16 1.04 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. 1330 explain in the comments section. COS7-PZP002 Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing no lack Well Casing Condition VOC. Total Cyanide SVOC. TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume 1 (D = 0.04) gal ft = 2 (D = 0.163 gal ft = 4 (D = 0.653 gal ft = 6 (D) = 1.47 Sulfate. (total) 2.72 n . 0.16 3at 1 6.44 (gal) Nitrate. TAL Metals Ammonia, Well is structurally sound; not bent, broken, and no blockage and Mercury COD. (dissolved) lidentified Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride. Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used PCB TDS. Matrix Spike Cap is present Specific Well permit is present Duplicate Conductance an Comments Sampled By USP

1		rprises LEC ers and Scienti			-	Low Flow Sampling Purge Log						
1		23	W Q3 20	e COA G	Project Nam			PZMOOI	- (P20)	Well Number		
┨	·	<u> </u>			Project Nun			( 2 ( 400)	***	Well Diameter (		
1				114/23				•		Depth to Produc		
1			Ln3		One Well V	Depth to Water (ft): 12.93						
1	·	3->200			Flow Rate (a	Product Thickness (ft):						
7		50 min		me Purged (1	Length of ti	Depth to Bottom (ft): 19.24 '						
]					RECORD	PURGING	F					
	Comments	Dissolved   ORP   Turbidity   Comments   10.1   13%   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10.3   10					Temp (°C)	DTW (feet)	Volume Purged (gallons)	Time		
7		0/2	72.	4.18.	2.07	8.57	34.41	13.05		1385		
1		3.29	-40	0.35	2.02	9.03	34.07	13.13		1400		
7		3.25	-74	0.20	2.01	9.34	33.53	13.17		1405		
$\dashv$		4.05	-95X									
-	<del>  </del>		X	0.18	1.98	9.51	33.17	13.21		1410		
-		3.87	-106	6.17	1.83	9.60	??.50	13.25		1415		
क्री	Sped up to hyman		-105	0.21	1.39	9.53	33.06	13.28		1420		
4		6.65	-80 T	0.23	1.10	8.78	33.11	13.35		1425		
		2.39	-5v	0.26	1-02	8.51	33.07	13.47		1430		
		3.71	7.	0.35	1.62	9.06	33.06	13.59		1435		
		1.90	36	0.45	1.03	9.00	33.10	13.77		1440		
7	·				ND WELL D	ECORD A	SAMPLE R					
.,		Well	llected	Time Co	e ID	Sampl						
	f no.	out hazards. If	ible witho			Well has lexplain in	1026					
·   *		tion	ad Condi		the commen							
·   <del>&gt;</del>			ping	Well F s and is slo	visible crack			arameters	Sampling P			
*			ping	Well F s and is slo	visible crack visible crac	Fair: some	Collected?	arameters Parameter	Sampling P Collected?	Parameter		
*			ping ot sloping	Well F s and is slop ks and/or no	visible crack visible crac vily cracked	Fair: some Poor: hea		Parameter Dissolved Zn		TCL-VOCs		
*			ping ot sloping	Well F s and is slop ks and/or no	visible crack c visible crack vily cracked ad has been b	Fair: some Poor: hea Unsure: p		Parameter Dissolved Zn and Cd		TCL-VOCs TPH-GRO		
*			ping ot sloping	Well F s and is slop ks and/or no	visible crack visible crack vily cracked ad has been t lace	Fair: some Poor: hear Unsure: p Bolts in p		Parameter Dissolved Zn and Cd BTEX and		TCL-VOCs TPH-GRO TPH-DRO		
-	no lac	28	ping ot sloping te activitie	Well F s and is slop ks and/or no ouried by si	visible crack visible crack vily cracked ad has been t lace	Fair: some Poor: hea Unsure: p		Parameter Dissolved Zn and Cd BTEX and naphthalene		TCL-VOCs TPH-GRO TPH-DRO O&G		
		dition	ping ot sloping te activition	Well F s and is slop ks and/or no buried by si Well Ca	visible crack e visible crack vily cracked ad has been b lace missing	Fair: some Poor: hea Unsure: p Bolts in p Bolts are		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC,		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide		
		es dition ked with the \	ping ot sloping te activition using Containing Containing	Well F s and is slop ks and/or no buried by si Well Ca mage and v	visible crack e visible crack vily cracked ad has been b lace missing	Fair: some Poor: hea Unsure: p Bolts in p Bolts are		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs		
	Well ID	es dition ked with the V	ping ot sloping te activition using Contisibly man	Well F s and is slop ks and/or no buried by si Well Ca mage and v	visible crack e visible cracked vily cracked ad has been b lace missing	Fair: some Poor: hea Unsure: p Bolts in p Bolts are Casing is		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals		
		dition ked with the Von	ping ot sloping te activition using Contisibly man I Condition	Well F s and is slop ks and/or no buried by si  Well Ca mage and v  Wel  Wel	visible crack e visible cracked vily cracked ad has been b lace missing free from dar	Fair: some Poor: hea Unsure: p Bolts in p Bolts are Casing is		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury		
	Well ID	dition ked with the Von	ping ot sloping te activition using Contisibly man I Condition	Well F s and is slop ks and/or no buried by si  Well Ca mage and v  Wel  Wel	visible crack e visible cracked vily cracked ad has been b lace missing free from dar	Fair: some Poor: hea Unsure: p Bolts in p Bolts are Casing is		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury,		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total)		
	Well ID	dition ked with the Von 1 (i - 4"   D = 0 6:	te activitions is in grant to the section of the se	Well Fs and is slop ks and/or no buried by si  Well Ca mage and v  Wel  Wel  Wel  Wel  On N  On	visible crack e visible crack vily cracked ad has been b lace missing free from dar  he 1°110 = 00-	Fair: some Poor: hea Unsure: p Bolts in p Bolts are Casing is		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate,		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals		
47	Well ID	dition ked with the Von	te activitions is in grant to the section of the se	Well Fs and is slop ks and/or no buried by si  Well Ca mage and v  Wel  Wel  Wel  Wel  On N  On	visible crack e visible cracked ad has been blace missing free from dar ne 1°110 = 000 foructurally sou	Pair some Poor: hea Unsure: p Bolts in p Bolts are Casing is		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate,		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury		
47	Well ID 653 gal #-6 TD = 1	dition ked with the Von  1 ft - 4" LD = 0 6:  (gal)  , and no block	ping ot sloping te activitie using Con- isibly man I Conditio  O this galling alling ant, broken	Well Fs and is slop ks and/or no buried by si  Well Ca mage and v  Wel  41 gat n - 2" 11  -3 ( n x )  und: not ber	visible crack e visible cracked vily cracked ad has been blace missing free from dar  free from dar  free trap = 0.00  fructurally sou	Pair some Poor: hea Unsure: p Bolts in p Bolts are Casing is Casing Volume		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity.		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved)		
47	Well ID 653 gal #-6 TD = 1	dition ked with the Von  1 ft - 4" LD = 0 6:  (gal)  , and no block	te activities  asing Consisibly man I Condition  asing the search of the	Well Fs and is slop ks and/or no buried by si  Well Ca mage and v  Wel  Ugat n - 2" If  Al n x D  und: not ber  but is able	visible crack e visible crack vily cracked ad has been t lace missing free from dar  free from dar  cucturally sou	Pair some Poor: hea Unsure: p Bolts in p Bolts are Casing is Casing Volum Well is st identified Well is be		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride.		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (total) Hexavalent		
47	Well ID 653 gal #-6 TD = 1	dition ked with the Von  1 ft - 4" LD = 0 6:  (gal)  , and no block	te activities  using Condition  I Condition  I Condition  I Condition  I Condition  I To be used  to be used	Well Fs and is slop ks and/or no buried by si  Well Ca mage and v  Wel  Wel  Wel  That n - 2" If  A (n \ )  und: not ber  but is able not able to b	visible crack e visible crack e visible crack vily cracked ad has been b lace missing free from dar   Pair some Poor: hea Unsure: p Bolts in p Bolts are Casing is Casing Volun Well is st identified Well is be Well is be		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity.		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium			
47	Well ID 653 gal ti-6 TD = 1-	dition ked with the Von  1 ft - 4" LD = 0 6:  (gal)  , and no block	te activities  using Condition  I Condition  I Condition  I Condition  I Condition  I To be used  to be used	Well Fs and is slop ks and/or no buried by si  Well Ca mage and v  Wel  Wel  Wel  That n - 2" If  A (n \ )  und: not ber  but is able not able to b	visible crack e visible crack vily cracked ad has been blace missing free from dar ne 1°10 = 00- corructurally sou ent or broken oken and is i	Pair some Poor: hea Unsure: p Bolts in p Bolts are Casing is Casing Volun Well is st identified Well is be Well is be Well is be		Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS,		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB		
	Well ID 653 gal #-6 TD = 1	dition ked with the Von  1 ft - 4" LD = 0 6:  (gal)  , and no block	te activities  using Condition  I Condition  I Condition  I Condition  I Condition  I To be used  to be used	Well Fs and is slop ks and/or no buried by si  Well Ca mage and v  Wel  41 gat n - 2" 11  -3 ( n \ )  and: not ber but is able not able to b not able to	visible crack e visible crack vily cracked ad has been blace missing free from dar ne 1°10 = 00- corructurally sou ent or broken oken and is i	Pair: some Poor: hea Unsure: p Bolts in p Bolts are Casing is Casing Volume Well is stidentified Well is be Well is be Well is be Cap is pre-	X	Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity.		TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium		

		low Sampli	ing	ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	CACR -	PZMODI			Project Name: COA GW Q3 2023						
Well Diameter (		randor			Project Number: 20010210						
Depth to Produc					Date: 68/14/23						
Depth to Water		.931			One Well Volume (gal): 1.03						
Product Thickne		.73									
Depth to Botton		A41									
Deptil to Botton	1 (10).	241		PURGING		ine ruiged (		רוא מלו			
				CROING							
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	) Conductance Oxygen (mV) (NTU) Co					nents	
1945		13.93	33.18	9.13	605	0.51	23	3.14			
1450		14.02	33.28	9.50	1.08	0.47	72X	2.86			
							-13	_ A			
1455		14.12	33.37	10.29	1.169	0.34	- A	3.32			
1800		14.28	33.40	16.63	1.21	0.28	-115	1.32			
1505		14,40	33.37	10.77	1.24	0.24	-153	1.13			
1510		14.55	33.29	10.78	1.21 v	0.27	-139	259			
1515		14.76	83.16	lo.bby	1.15	0.36	-137	1.64			
1520			32.97	1054	1.12		-130	3.30			
1525		14.86				0.46	-12(				
			32.80	10.37	1.10	056	-				
1530		15.65	32.68	10.37	1.13	0.59	721	139			
				ECORD AN	ND WELL D		Inspection				
	Sample ID Time Collected  COS8-PZMOOI 1536					nd is access ts section.	ible with	out hazards. I	f no,	<b>/</b>	
Daramatar	Sampling P Collected?		Collected?		visible crack			•			
Parameter TCL-VOCs	Collected?	Parameter Dissolved Zn			ily cracked	KS allu/UI III	or grobing	3			
TPH-GRO		and Cd			ad has been b	uried by si	te activiti	ec		./	
TPH-DRO		BTEX and		Bolts in p		raried by si	ic activiti				
0&G	ļ	naphthalene	X	Bolts are i						nolod	
Total Cyanide		VOC,		20110 010		Well Ca	sing Con	dition		IIVAIOO	
TCL SVOCs		SVOC, TAL		Casing is	free from dar			rked with the	Well ID		
TAL Metals		Metals and	Ì				l Condition				
and Mercury		mercury,			KIRL F.					0 67. 73	
(total)		Sulfate,		Casing Volun		- 1111111	gal/ft	al/ft - 4"   D = 0 6	53 gal/ft - 6"	ID = 1.4	
` '		Nitrate,			1/2	ft x	gal/ft =	(gal)			
TAL Metals		Ammonia,							<u> </u>		
and Mercury		COD,	100		ucturally sou	ind: not ben	it, broken	, and no blocl	kage		
(dissolved)		Alkalinity,		identified							
Hexavalent		Chloride,			nt or broken			d			
Chromium		Turbidity,			oken and is n		•			-	
PCB		TDS,		$\overline{}$	ocked and is	not able to	be used				
Matrix Spike		Specific		Cap is pre						1	
Duplicate	0	Conductance	<u> </u>	well perm	nit is present					NO	
Sampled By	Comments:	At c	idics rol								

		low Sampli irge Log	ing	ARM Group Enterprises LLC Engineers and Scientists								
Well Number:	CACR-	100MZ			Project Nan	ne: COA G	W Q3 20	)23			17	
Well Diameter					Project Number: 20010210							
Depth to Produ					Date: 08/14/23							
Depth to Water		21			One Well Volume (gal): 1.03							
Product Thickn					Flow Rate (mL/min) 133-> 260							
Depth to Botton	. , ,	U1			Length of ti			או פא			1	
Deput to Botto	11 (11).	PURGING		me i argea (		O BOTO	Heli ex	11 11 11 10	d.			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific   Dissolved   ORP   Turbidity   Comm					nents		
1535		15.95	32-50	10.61	1.20	0.57	- 130	3.22			1	
1242		17.15	70-00	(0.0)			1,70	7,500			1	
Sampl		Time Co		Well has b		Wel nd is access	I Inspection	on out hazards. If	fno,			
COSB-	65WW 1	1335		explain in	the commen		Pad Condi	ition			1	
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping				1	
Parameter	Collected?	Parameter	Collected?		visible cracl						1	
TCL-VOCs		Dissolved Zn			vily cracked		1 0				1	
TPH-GRO		and Cd			ad has been b	ouried by si	te activiti	es			1	
TPH-DRO		BTEX and		Bolts in p							1	
O&G		naphthalene	X	Bolts are						No loca	1	
Total Cyanide	· · · · ·	VOC,				Well Ca	sing Con	dition		100 100	1	
TCL SVOCs	-	SVOC, TAL		Casing is	free from dar			ked with the	Well ID		1	
		Metals and		4			l Condition				1	
TAL Metals		mercury,				****	Condition	JII			4	
and Mercury		Sulfate,		Casing Volum	ne: 1" I.D. = 0.04	11 gal/ft - 2" 11	-	If t - 4" I.D. = 0.6	53 gal/ft - 6"	I.D = 1.4	7	
(total)		Nitrate,				fl x	gal/ft oal/ft =	(gal)			П	
TAL Metals		Ammonia,						(501)			4	
and Mercury		COD,		Well is str	ructurally sou	ınd: not bei	nt, broken	, and no block	cage	l . /	4	
(dissolved)		Alkalinity,		identified							1	
Hexavalent	1	Chloride,		Well is be	nt or broken	but is able	to be used	il			1	
Chromium		Turbidity,			oken and is r						1	
PCB		TDS,			ocked and is						1	
Matrix Spike	İ	Specific		Cap is pre						1	1	
Duplicate	1	Conductance			nit is present					10	1	
	Comments:			pear						1	1	
Sampled By		4.1	letes en p	g I								

### **ARM Group Low Flow Sampling** Enterprises LLC **Purge Log** Engineers and Scientists Project Name: COA GW Q3 2023 Well Number: Project Number: 20010210 Well Diameter (in): Depth to Product (ft): Date: One Well Volume (gal): Depth to Water (ft): 14.75 300 Product Thickness (ft): Flow Rate (mL/min) Depth to Bottom (ft): Length of time Purged (min) **PURGING RECORD** Specific Dissolved Volume pΗ ORP Turbidity DTW Conductance Oxygen Temp Time Purged (mV) (NTU) Comments (s.u.) (ms/cm) (mg/L) (feet) (°C) (gallons) ± 0.1 $\pm 10$ $\pm 10\%$ or < 5± 3% $\pm 0.3$ 2.70 2.52 2,24 2.11 2.07 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping Poor: heavily cracked TCL-VOCs Dissolved Zn and Cd Unsure: pad has been buried by site activities **TPH-GRO** TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing VOC, Well-Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" | D. = 0.041 gal/ft - 2" | D. = 0.163 gal/ft - 4" | D. = 0.653 gal/ft - 6" | D. = 1.47 Sulfate, (total) gal/ft Nitrate. gal/ft = ft x (gal) **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: Sammeled By

### ARM Group **Low Flow Sampling** Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q3 2023 Well Number: (060-PZP 001 Well Diameter (in): Project Number: 20010210 Depth to Product (ft): Date: 08/14/23 One Well Volume (gal): 0.073 Depth to Water (ft): 14.31 Flow Rate (mL/min) Product Thickness (ft): 14.76' Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Dissolved Specific ORP Turbidity Volume pΗ DTW Conductance Oxygen Temp (mV)(NTU) Comments Time Purged (s.u.) (ms cm) (mg/L) (°C) (feet) (10 1.10% or < 5 (gallons) $\pm 0.1$ ± 3° 0 0.3 thous SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. 1235 explain in the comments section. C060-PZP0016 Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and or not sloping Collected? Parameter Collected? Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities X and Cd TPH-GRO Bolts in place TPH-DRO BTEX and naphthalene Bolts are missing notodle O&G Well Casing Condition VOC. Total Cyanide SVOC: TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1"1D = 0.041 gal ft - 2 TD = 0.163 gal ft - 4"1D = 0.653 gal ft - 6"1D = 1.47 Sulfate. gal ft (total) Nitrate. gal ti = TAL-Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride. Chromium Well is broken and is not able to be used Turbidity. Well is blocked and is not able to be used **PCB** TDS. Cap is present Matrix Spike Specific Duplicate Conductance Well permit is present 20 Comments: Sampled By Jel

		low Sampli 1rge Log						rprises LL			
Well Number:	C093-P	2.00			Project Nam	coa G	W Q3 20	23			
Well Diameter		611			Project Number: 20010210						
Depth to Produc					Date: %/8/23						
Depth to Water		19'			One Well Volume (gal): (.58						
Product Thickn			· · · · · · · · · · · · · · · · · · ·		Flow Rate (mL/min) 260						
Depth to Bottor		.48			Length of tu	me Purged (		) Ma	-	·	
•			P	URGING							
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0,1	Specific Conductance (ms/cm) 1.3° ii	Dissolved Oxygen (mg/L) ±0.3	ORP (mV) + 10	Furbidity (NTU) + 10% or < 5	Comments		
1410		10.63	\$ 34.9	0?	0.703	351	330	6R	ziggled	Hodban	
(415		1 - 1	34.57	8.25			-335	OQ.	3.22	741	
		10.77					-402,	8.8			
1420		10.84	33.98	9.34	. X		X				
1425		10.82	33.82	10.08	0.775	4.07	-416	10.19			
1430		10.83	33.49	10.68	0.869	0.6	-438	5.53			
1435		10.82	33.20	10.74	0,903	0.80	-445	5.53			
1440		10.82	32.87	10.83	0.996	0.76	-444	6.88			
1445		(0.83	32.46	10.08	0.986	ס.קט	-444	7.79 ~			
1450		10.82	32,40		0.01	0.81	-449	9.07			
1455		(0.82	32.25	10.93	1.03	0.82	-445	8.53			
1170		10.00			ND WELL D	_		0.20	ı		
Sampl	e ID	Time Co	llected			Wel	Hnspectic	on			
Co93-		Time Co		1	peen found ar the commen	nd is access ts section.		out häzards. If	fno.	/	
		151		explain in		nd is access ts section. Well I	ible witho	out häzards. If	f no.	/	
	.pzm	151		explain in Good: no Fair: some	the commen visible crack visible crac	nd is access ts section. Well I s and is slo	ible without on the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the conding of the c	out hazards. H	fno.	<i>J</i>	
C093-	Pam Sampling I	arameters	Collected?	Good: no Fair: some Poor: heav	visible crack visible crac vily cracked	nd is access ts section. Well I s and is slo ks and/or n	rible withor  Pad Condi  ping  ot sloping	out hazards. If	fno.	<i>J</i>	
Co93-	Pam Sampling I	Parameters Parameter Dissolved Zn and Cd	Collected?	Good: no Fair: some Poor: heav Unsure: p	visible crack e visible crac vily cracked ad has been b	nd is access ts section. Well I s and is slo ks and/or n	rible withor  Pad Condi  ping  ot sloping	out hazards. If	f no.	\tag{\tau}	
Co93- Parameter TCL-VOCs	Pam Sampling I	Parameters Parameter Dissolved Zn and Cd BTEX and	Collected?	Good: no Fair: some Poor: head Unsure: p Bolts in p	visible crack e visible crac vily cracked ad has been b	nd is access ts section. Well I s and is slo ks and/or n	rible withor  Pad Condi  ping  ot sloping	out hazards. If	f no.		
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene	Collected?	Good: no Fair: some Poor: heav Unsure: p	visible crack e visible crac vily cracked ad has been b	nd is access ts section.  Well I s and is slo ks and or n  buried by si	ible withor and Conding ot sloping te activition	out hazards. If	f no.	No 1 and	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC.	Collected?	Good: no Fair: some Poor: heav Unsure: p Bolts in p Bolts are	visible crack e visible crac vily cracked ad has been t lace missing	nd is access ts section.  Well I s and is slo ks and or n  buried by si  Well Ca	Pad Condi ping ot sloping te activition	out hazards. If		No 1 sul	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL	Collected?	Good: no Fair: some Poor: heav Unsure: p Bolts in p Bolts are	visible crack e visible crac vily cracked ad has been t lace missing	nd is access ts section. Well I s and is slo ks and/or n buried by si  Well Ca mage and v	ad Condi ping ot sloping te activitions ising Con- isibly mar	tion es dition ked with the			
Parameter TCL-VOCs TPH-GRO TPH-DRO	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and	Collected?	Good: no Fair: some Poor: heav Unsure: p Bolts in p Bolts are	visible crack e visible crac vily cracked ad has been t lace missing	nd is access ts section. Well I s and is slo ks and/or n buried by si  Well Ca mage and v	Pad Condi ping ot sloping te activition	tion es dition ked with the		No 1 sul	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury,	Collected?	Good: no Fair: some Poor: head Unsure: p Bolts in p Bolts are Casing is	visible crack e visible crack e visible cracked ad has been b lace missing free from dat	well I s and is slo ks and or n  Well Ca mage and v  Well Ca	Pad Condiping ot sloping te activition using Consisibly mar	tion es dition ked with the	Well ID	Ao I D	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Fotal Cyanide TCL SVOCs TAL Metals	Sampling I Collected?	Parameters  Parameter  Dissolved Zn and Cd  BTEX and naphthalene  VOC, SVOC, TAL Metals and mercury, Sulfate,	Collected?	Good: no Fair: some Poor: head Unsure: p Bolts in p Bolts are Casing is	visible crack e visible crack e visible cracked ad has been b lace missing free from dat	well I s and is slo ks and or n  Well Ca mage and v  Well Ca	Pad Condiping ot sloping te activition using Consisibly mar	tion es dition ked with the	Well ID	Ao I D	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury,	Collected?	Good: no Fair: some Poor: head Unsure: p Bolts in p Bolts are Casing is	visible crack e visible crack e visible crack vily cracked ad has been t lace missing free from dat  ne ("TD = 0.0)	Well I s and is slo ks and/or n buried by si  Well Ca mage and v  Well   Pad Condiping ot sloping te activition using Condisibly man Il Condition D = 0.163 ga gal ft	tion  es  dition  ked with the on  the 1.50 (gal)	Well ID	Ao I D		
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate,	Collected?	explain in  Good: no Fair: some Poor: head Unsure: p Bolts in p Bolts are  Casing is  Casing Volunt Well is sti	visible crack e visible crack e visible crack vily cracked ad has been b lace missing free from dat  ne 1°TD = 0.0  q.	Well I s and is slo ks and/or n buried by si  Well Ca mage and v  Well   Pad Condiping ot sloping te activition using Condisibly man Il Condition D = 0.163 ga gal ft	tion es dition ked with the	Well ID	Ao I D		
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Fotal Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved)	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia.	Collected?	Good: no Fair: some Poor: heav Unsure: p Bolts in p Bolts are Casing is  Casing Volunt Well is stridentified	visible cracked visible cracked ad has been blace missing free from darme 1°10 and q.	well Camage and v Well Tamage and v Well Camage and v	Pad Condiping ot sloping te activities using Consisibly mar Il Condition D 0 163 ga gat fi M3 gat fi nt. broken	dition  es  dition  ked with the  on  1.50  (gal)	Well ID	Ao I D	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Fotal Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD,	Collected?	Good: no Fair: some Poor: heav Unsure: p Bolts in p Bolts are Casing is  Casing Volut Well is stridentified Well is be	visible cracked visible cracked ad has been blace missing free from darme 1°TD 40-4-4.	Well I s and is slo ks and/or n buried by si  Well Ca mage and v  Wel  Wel  At gal n - 2 = 11  An x 0.  and: not bei	Pad Condiping ot sloping te activitie using Condisibly mar Il Condition of 163 ga gat it le3 gat it to be used	dition  es  dition  ked with the  on  1.50  (gal)	Well ID	Ao I D	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalimity, Chloride, Turbidity,	Collected?	Good: no Fair: some Poor: head Unsure: p Bolts in p Bolts are  Casing is  Casing Volunt Well is stridentified Well is be Well is be	visible crack e visible crack e visible crack vily cracked ad has been b lace missing free from dat  ne ("TD = 0.0  g.  ructurally sou ent or broken oken and is t	Well I s and is slo ks and or n buried by si  Well Ca mage and v  Well H gal n - 2 - 11  M n x 6.  and: not be but is able not able to l	Pad Condiping ot sloping te activition using Condisibly man Il Condition portogen to the goal to the becaused	dition  es  dition  ked with the  on  1.50  (gal)	Well ID	Ao I D	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS,	Collected?	Casing Volume Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but Well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well is but well	visible crack e visible crack e visible crack e visible crack evily cracked ad has been b lace missing free from dar ne 1°TD = 0.0  ructurally sou ent or broken roken and is rocked and is	Well I s and is slo ks and or n buried by si  Well Ca mage and v  Well H gal n - 2 - 11  M n x 6.  and: not be but is able not able to l	Pad Condiping ot sloping te activition using Condisibly man Il Condition portogen to the goal to the becaused	dition  es  dition  ked with the  on  1.50  (gal)	Well ID	As ID	
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium	Sampling I Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalimity, Chloride, Turbidity,	Collected?	Casing Volume Well is be Well is be Cap is process.	visible crack e visible crack e visible crack e visible crack evily cracked ad has been b lace missing free from dar ne 1°TD = 0.0  ructurally sou ent or broken roken and is rocked and is	Well I s and is slo ks and/or n buried by si  Well Ca mage and v  Wel  H gal n - 2 - 11  And: not being able to l not able to l	Pad Condiping ot sloping te activition using Condisibly man Il Condition portogen to the goal to the becaused	dition  es  dition  ked with the  on  1.50  (gal)	Well ID	Ao I D	

	ARM Group Enterprises LLC Engineers and Scientists											
Well Number:	C093-	PZM			Project Nam	ne: CoA	6616	3 2023				
Well Diameter (					Project Number: 200 (6 210							
Depth to Produc					Date: 08 (15/23							
Depth to Water		79			One Well Volume (gal): (.5%							
Product Thickne					Flow Rate (mL/min)							
Depth to Botton		48'			Length of time Purged (min)							
Deptil to Botton	1 (10).			PURGING	RECORD	ine raigea (	11111)	O Price	,511			
				ORGING								
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	(s.u.) Conductance (ms/cm) (mg/L) (mV) (NTU) Co					nents		
1500		10.83	32.00	10.93	1.64	0.83	-447	8.42				
1385				1010	4			0.00				
459C)	-					_				$\vdash$		
						,						
									•			
					1		]					
			SAMPLE R	ECORD A	ND WELL DI	ETAILS		CONTRACTOR OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE				
Sample	e ID	Time Co	llected			Well	Inspectio	n				
		Well ha			Il has been found and is accessible without hazards. If no,							
(69	13-P7M	150	<u>~</u>	explain in the comments section.								
0,	, , , , ,	107	U	Well Pad Condition								
	Sampling P	arameters		Good: no	visible crack	s and is slo	oing					
Parameter	Collected?	Parameter	Collected?	Fair: some	visible cracl	ks and/or no	ot sloping					
TCL-VOCs		Dissolved Zn		Poor: heav	vily cracked							
TPH-GRO		and Cd			ad has been b	ouried by si	te activitie	es		~		
TPH-DRO		BTEX and		Bolts in pl				<u>-</u>				
O&G		naphthalene	×	Bolts are						no lock		
Total Cyanide	. JA	VOC,				Well Ca	sing Cond	dition		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
TCL SVOCs	1	SVOC, TAL		Casing is	free from dar			ked with the	Well ID	1. TO		
	7	Metals and				THE RESERVE AND ADDRESS OF THE PERSON NAMED IN	l Conditio			V		
TAL Metals		mercury,										
and Mercury		Sulfate,		Casing Volun	ne: 1" I.D. = 0.04	11 gal/ft - 2" I.I		1/ft - 4" $I.D. = 0.69$	53 gal/ft - 6°	I.D. = 1.47		
(total)	j.	Nitrate,				ft x	gal/ft gal/ft =	(gal)				
TAL Metals		Ammonia,										
and Mercury		COD,			ructurally sou	ınd: not ber	it, broken,	, and no block	age			
(dissolved)		Alkalinity,		identified								
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used	I				
Chromium		Turbidity,		Well is br	oken and is r	not able to b	e used					
PCB		TDS,		Well is bl	ocked and is	not able to	be used					
Matrix Spike		Specific		Cap is pre	sent					1		
Duplicate		Conductance			nit is present							
1	Comments:			Till Ville	12/2	-33333						
Sampled By												

# **ARM Group Low Flow Sampling** Enterprises LLC **Purge Log Engineers and Scientists** Project Name: COA GW Q3 2023 Well Number: Well Diameter (in): Project Number: 20010210 Depth to Product (ft): Date: One Well Volume (gal): Depth to Water (ft): Product Thickness (ft): Flow Rate (mL/min) 3 Length of time Purged (min) Depth to Bottom (ft): PURGING RECORD Specific Dissolved Volume pΗ ORP Turbidity Conductance DTW Oxygen Temp (mV) (NTU) Comments Time Purged (s.u.) (ms/cm) (mg/L)(feet) (°C) $\pm 10\% \text{ or } < 5$ (gallons) ± 0.1 $\pm 10$ ± 3% $\pm 0.3$ 62 0.29 0.3 100 0.90 SAMPLE RECORD AND WELL DETAILS Sample ID Well Inspection Time Collected (0182-MWI Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Collected? Parameter Parameter Dissolved Zn Poor: heavily cracked TCL-VOCs TPH-GRO and Cd Unsure: pad has been buried by site activities BTEX and Bolts in place TPH-DRO O&G naphthalene Bolts are missing Well Casing Condition VOC, Total Cyanide Casing is free from damage and visibly marked with the Well ID TCL SVOCs SVOC, TAL Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate. gal/ft (total) Nitrate, ft x gal/ft = **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, (dissolved) identified Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, PCB Well is blocked and is not able to be used TDS, Cap is present Matrix Spike Specific Duplicate Conductance Well permit is present Comments: Sampled By

		ow Sampli irge Log	ng	:		4	Ente	RM Group rprises LL ers and Scient		
Well Number:	C0190 -	MINS			Project Nam	e: COA G	W Q3 20	23		
Well Diameter (		14400 >			Project Nun					
Depth to Produc		<del>-</del>				115/23				
Depth to Water (		43			One Well V		1.525			
Product Thickne		-			Flow Rate (		200 -	250		
Depth to Botton	ı (ft):: 22	.79			Length of ti					
•			P	URGING I	RECORD					
fime	Volume Purged (gallons)	DTW (feet)	Femp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) 1/3%	Dissolved Oxygen (mg/L) = 0.3	ORP (mV) ± 10	Turbidity (NTU) 10% or < 5	Cons	nents
1235		13.50	31.10	7.00	2.80	0.52	-203,	002	artyans	6.
1240		13.50	30.74	7.12	2.70,	0.71	- 233			
				7.04	2.07	0.33	-209			
1245		13.50	30.62		1 ^					<u> </u>
1250		13.50	30.53	6.93	1.54	0.33	-164'x	OR		
nss		13.50	30.74		1.31 ×	-0.84	-150	OR	Seeed	4 bres
1360		13.51	30.21	7.00 x	1.15	01.42	-146	6R		
1305		13,51	30.21	7.14	1-04	1.76	-131	OR		ļ
1310		13.51	30.19	7.20	1.02,	1.84	-126	OR		
1315		13.51	30.17	7.23	1.01.	1.82	-124	OR		
1320		1351	30.17	7.26	1.00	1.73	-125	81.01		
Ų ū ū		345		ECORD A	ND WELL D			, -		
Sample	e ID	Time Co	Hected			Wel	Inspection	on		
C0190-N	Zwn	1335			peen found at the commen	ts section.	ible witho	out hazards. It	f no.	1
	Sampling F	arameters		Good: no	visible crack					
Parameter	Collected?	Parameter	Collected?		visible crac					
TCL-VOCs	Conceted.	Dissolved Zn	Conceted:		vily cracked			·		<del> </del>
TPH-GRO		and Cd			ad has been I	ouried by si	te activiti	es		
TPH-DRO		BTEX and	N /	Bolts in p						
0&G		naphthalene	₩ W	Bolts are	missing					golod
otal Cyanide		VOC.				Well Ca	ising Con	dition		
ΓCL SVOCs		SVOC, TAL		Casing is	free from da	mage and v	isibly mai	ked with the	Well ID	
TAL Metals		Metals and				We	l Conditio	on		
and Mercury		mercury.		Casing Volu	ne L'IID - 0-0-	41 gal ft - 27 F1	0 163 2,	al fit-4" ED = 0 r	s53 gal ft = n	" [D 1]4
(total)		Sulfate.					gal fi			
TAL Metals		Nitrate, Ammonia,			7.	40 n x 0.1	65 gai #6*	1. <b>525</b> gan		
and Mercury		COD,		Well is st	ructurally soi	and: not be	it, broken	, and no bloc	kage	
(dissolved)		Alkalinity.		identified						/
Hexavalent		Chloride,		Well is be	ent or broken	but is able	to be use	d		
Chromium		Turbidity,			oken and is i					
РСВ		TDS,		Well is bl	ocked and is	not able to	be used			
Matrix Spike		=Specific								1
Duplicate		Conductance		Well perr	nit is present					~
Matrix Spike Duplicate Sampled By	Comments:	Candinatanea	riefly.	Well per	p is present ell permit is present Flow through all due to dule particulate of initial shirty, persistant particulate					ind pur

		low Sampli arge Log	ng				Ente	RM Group rprises LLC		
						1	8.9011	ers and Scienti	j (	
Well Number:	C0190-M	ws.			Project Nan		W Q3 20	23		
Well Diameter (					Project Nun		)210			
Depth to Produc		_			Date: 68/					
Depth to Water		3			One Well V			0		
Product Thickn		26			Flow Rate (		200-2	20		
Depth to Bottor	٠٤ کار (۱۱) ۱۱	/7		PURGING I	Length of ti	me Purged (	1111111)			
				OKGINGI						
Time	Volume Purged (gallons)	DTW ⁽⁾ (feet)	Femp (°C)	pH (s.u.) ± 0,1	Specific Conductance (ms/cm) ± 3""	Oxygen (mg L) + 0.3	ORP (mV) E10	Turbidity (NTU) ± 10° ₀ or ≤ 5	Com	nents
1325		13.51	30.18	7.27,	1.00, 1.75, -127, 8.74,					
1330		13.51	30.33	7.27		1.78	-130	8.74 8.19 9.29		
1335		1351			1.00	1.69	- 3	GRAX	· · · · · · · · · · · · · · · · · · ·	
1922		(59)	30.44	7.18	1.05	1.6	-145	1.5		
										<u> </u>
					:	17.7				
								1		
						10				
								1		
							<u> </u>	<u>                                     </u>	<u></u>	
			SAMPLE D	CCODD A						
				ECORD A.	ND WELL D					
Sampl	e ID	Time Co				Wel	Inspection			
,		Time Co	llected	Well has b	ocen found a	Wel nd is access		on out hazards. If	`no,	
,		Time Co	llected	Well has b		Wel nd is access ts section.	ible with	out hazards. If	`no,	/
,	-mws	1335	llected	Well has be explain in	ocen found a the commen	Wel nd is access ts section. Well I	ible witho	out hazards. If	`no,	<i></i>
C0190	Sampling I	1335	llected	Well has be explain in Good: no	neen found at the commen visible crack	Wel is access ts section. Well I s and is slo	ible without on the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the condition of the con	out hazards. If	`no.	1
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# **ARM Group Low Flow Sampling** Enterprises LLC **Purge Log Engineers and Scientists** Well Number: Project Name: COA GW Q3 2023 Project Number: 20010210 Well Diameter (in): Depth to Product (ft): Date: マリリてフ Depth to Water (ft): One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) Depth to Bottom (ft): Length of time Purged (min) PURGING RECORD Specific Dissolved ORP Volume pΗ Turbidity DTW Temp Conductance Oxygen Time Purged (s.u.) (mV) (NTU) Comments (°C) (ms/cm) (mg/L) (feet) ± 10% or < 5 (gallons) $\pm 0.1$ ± 10 ± 3% $\pm 0.3$ SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no. explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Parameter Parameter Collected? Dissolved Zn Poor: heavily cracked TCL-VOCs and Cd Unsure: pad has been buried by site activities TPH-GRO **TPH-DRO** BTEX and Bolts in place O&G naphthalene Bolts are missing Total Cyanide VOC. Well Casing Condition TCL SVOCs SVOC, TAL Casing is free from damage and visibly marked with the Well ID Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate. (total) gal/ft Nitrate. gal/ft = (gal) TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used **PCB** TDS, Matrix Spike Cap is present Specific **Duplicate** Conductance Well permit is present Comments: Sampled By

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Well Number:	40 20	3			Project Nan	1e: COA	9611			-
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Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents
1005			23.K	11.08	2.69	1.17	153	17.4		
6101		9.36	22.76	11.13	2.61	0.51	-145	7.1		
1015		1	22.61	11.18	2.61	0.49	-115	98		
1020			22 54	11 16	2.60	042	- 01	4 51	•	
4			1-14	LEO LA	250	0.77	-200	100		$\overline{}$
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1030			22,75	1619	257	0.28	- 206	3,59	10	
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TCL-VOCs		Dissolved Zn			vily cracked		1 0			$\Box$
TPH-GRO		and Cd			ad has been b	ouried by si	te activitie	es		$\Box$
TPH-DRO		BTEX and		Bolts in pl		7				
O&G		naphthalene	0	Bolts are r						1
Total Cyanide		VOC,				Well Ca	sing Con	dition		
TCL SVOCs		SVOC, TAL		Casing is	free from dar		The second name of the second	ked with the	Well ID	
TAL Metals		Metals and				Wel	l Conditio	n		
and Mercury		mercury,		Cacing Volum	no: 1" LD = 0.0d	II asl/ft - 2" I f	) = 0.163 ca	I/ft - 4" I.D. = 0.6	53 gal/ft - 6"	1D = 1.17
(total)		Sulfate,		Casing voidil	nv. 1 1,12, = 0,04		gal/ft		Sant - O	1.07
TAL Metals		Nitrate,				ft x	gal/ft =	(gal)		
and Mercury		Ammonia,		Well is str	ucturally sor	ınd: not her	ıt. broken	and no block	kage	
(dissolved)		COD,	1	identified			,	,	~ o*	
Hexavalent		Alkalinity, Chloride,			nt or broken	but is able	to be used	<u> </u>		$\vdash \vdash \vdash$
Chromium		Turbidity,			oken and is r					$\vdash \vdash \vdash$
PCB		TDS,			ocked and is					$\vdash \vdash \vdash$
Matrix Spike		Specific		Cap is pre						
Duplicate		Conductance			nit is present					<del>                                     </del>
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		ow Sampl	_			*	Ente Engine	RM Group erprises LL ers and Scient	C	
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1115			24.92	11,19	2.52	1.04	234	6.34		
1120		14,62	24.43	11.21	2 48	071	721	4.08	5	
1125		14 11	23.54	11.22	21.49	7 67	-2/2	4.01		
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Parameter	Collected?	Parameter	Collected?		visible crack	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn			vily cracked					
TPH-GRO		and Cd			ad has been b	ouried by si	te activiti	es		
TPH-DRO		BTEX and		Bolts in pl						
O&G		naphthalene	-	Bolts are r	missing	W II C		11.1		
Total Cyanide		VOC, SVOC, TAL		Ci i-	C		sing Con		W.II ID	-
TCL SVOCs		Metals and		Casing is	iree from dan			ked with the	Well ID	-
TAL Metals		mercury,				wei	1 Condition	n		-
and Mercury		Sulfate,		Casing Volun	ne: 1" I.D. = 0.04	1 gal/ft - 2" 1.[		1/ft - 4" $I.D. = 0.6$	53 gal/ft - 6"	1.D. = 1.47
(total)		Nitrate,		l .		ft x	gal/ft gal/ft =	(gal)		
TAL Metals		Ammonia,								-4
and Mercury		COD,			ucturally sou	ind: not ber	it, broken	, and no block	cage	/
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Depth to Water		180				blume (gal)					
roduct Thickne		10.014			Flow Rate (		300				
Depth to Botton	n (ft):	18140		PURGING	Length of ti	me Purged (	mın)			1009/3	
				ORGING		D: ( )			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents	
105			25,42.	11.05	11.05 1.57 1.9 -3 3.28						
41117		17.00	24.07.	10.99	1410	1: 00	- 80	3,01			
1114		1780	23,00	11.00	1 47	1729	-81	414		c	
1120		11,00	7470	11 61	120	0,57	-170	7/09			
1100			2 4 19	111.01	1 7	0144	- 27	40			
1123		<del></del>	01.12	11.10	1156	0.70 A 49	-190	7.01			
70		//	24.00	11-10(	164	0.38	7	4 7 6	7		
11.25		( <del>/)</del>	23.98	11.20	1.6k	0.41	209	9.11			
140		<u> </u>	23,97	11.17	1.65	0.37	-212	3.93			
					V,						
								-			
	10	<b>5</b> 0		ECORD A	ND WELL D		1 ×			=====	
Sample	e ID	Time Co	llected	337 11 1	C 1		Inspection				
107	07.	11 42	,	1	the commen		ibie witho	out hazards. If	no,	1	
	MWS		,	1			ad Condi	tion		NUL	
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping				
Parameter	Collected?	Parameter	Collected?		visible crac	ks and/or n	ot sloping				
TCL-VOCs		Dissolved Zn			vily cracked						
TPH-GRO		and Cd			ad has been l	buried by si	te activitie	es		-	
TPH-DRO		BTEX and	X	Bolts in p							
0&G		naphthalene	1	Bolts are	missing	137 11 0	· · · · · · ·	Hala			
otal Cyanide		VOC, SVOC, TAL		Coginalia	fran frans des		ising Con	dition ked with the \	Vall III		
TCL SVOCs	<u> </u>	Metals and		Casing is	nee from dal		l Condition		WEIL ID	<u> </u>	
TAL Metals		mercury,									
and Mercury		Sulfate,		Casing Volur	me: I 1 I.D. = 0.04	11 gal/ft - 2" I I		I/ft - 4" I.D. = 0.65	53 gal/ft - 6"	LD = 1.4	
(total)		Nitrate,				ft x	gal/ft gal/ft =	(gal)		18	
TAL Metals		Ammonia,		Well!		·			0.00		
and Mercury		COD,		Well is sti	ructurally sou	una: not bet	n, proken	, and no block	age		
(dissolved) Hexavalent		Alkalinity,			ent or broken	hart la chil-	to be used	1			
Chromium		Chloride,			oken and is r					<del></del>	
		Turbidity, TDS,			ocked and is						
PCR		Specific		Cap is pre		4010 10					
PCB Matrix Spike	l	[ [3] H2C1111		FAMP OF PLA						L -	
PCB Matrix Spike Duplicate		Conductance			nit is present						

# **ARM Group Low Flow Sampling** Enterprises LLC **Purge Log** Engineers and Scientists Project Name: COA GW Q3 2023 AI-MYZ Well Number: Well Diameter (in): Project Number: 20010210 Date: Depth to Product (ft): 34,78 One Well Volume (gal): Depth to Water (ft): Product Thickness (ft): Flow Rate (mL/min) 49.05 Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved ORP Turbidity Volume pΗ DTW Temp Conductance Oxygen Comments Time Purged (s,u,) (mV) (NTU) (feet) (°C) (ms/cm) (mg/L) (gallons) $\pm 0.1$ ± 10 $\pm 10\% \text{ or } \le 5$ ± 3% $\pm 0.3$ 1210 5.0 91.15 12.5 8,36 2 29 7.25 230 235 12 40 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities **TPH-GRO** and Cd **TPH-DRO** BTEX and Bolts in place O&G naphthalene Bolts are missing VOC, Total Cyanide Well Casing Condition SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate, gal/ft = ſtх (gal) **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: Sampled By

#### **ARM Group Low Flow Sampling** Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW 03 2023 SDOI - MWI Well Number: Project Number: 20010210 Well Diameter (in): 2" Date: 08/16/23 Depth to Product (ft): -34.84' One Well Volume (gal): Depth to Water (ft): Flow Rate (mL/min) 240 -> 140 Product Thickness (ft): Length of time Purged (min) Depth to Bottom (ft): 49.39' TOC PURGING RECORD Dissolved Specific ORP Turbidity Volume pΗ DTW Conductance Oxygen Temp (mV) (NTU) Comments Time Purged (s.u.) (feet) (°C) (ms/cm) (mg/L) $\pm 10\%$ or < 5 $\pm 10$ (gallons) $\pm 0.1$ $\pm 0.3$ ± 3% nok below 1.53 -203, 1310 29.04 80,8 1.52 12.0 purse soit slowed 0.96 12.3 1932 0.19 1315 8.08 -216 - 227. 0.85 29.25 1320 8.08 12.7, 1.60 1825 - 235 0.26 29.22 12.8. 1.87 8.00. 1.95 -240 0.28 1330 29.25 8.00 12.8 1335 SAMPLE RECORD AND WELL DETAILS Well Inspection Time Collected Sample ID Well has been found and is accessible without hazards. If no, 1335 explain in the comments section. GDOI-MWI Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn and Cd Unsure: pad has been buried by site activities TPH-GRO TPH-DRO BTEX and Bolts in place Bolts are missing O&G naphthalene VOC, Well Casing Condition Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume. I" I D. = 0 041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I D. = 0.653 gal/ft - 6" I D. = 1 47 Sulfate, (total) Nitrate. TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: * sanded for total/amerable:/available/free CN, TDS, TSS, Obliside Sampled By EP - submissible purp used due to vater depth--unable to monitor DTW due to large Monst in purp cord blocking casing

# ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q3 2023 Well Number: Well Diameter (in): Project Number: 20010210 Depth to Product (ft): Date: X 12 23 Depth to Water (ft): 1917 One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) 3*0*0 5013 Depth to Bottom (ft): Length of time Purged (min) **PURGING RECORD** Specific Dissolved ORP Turbidity Volume pΗ DTW Temp Conductance Oxygen (mV) (NTU) Comments Time Purged (s.u.) (feet) (°C) (ms/cm) (mg/L) ± 10% or < 5 (gallons) $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ 14.70 3.03.34 102 -107 3 0.207 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, 1350 GDOZ-MUZ explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Dissolved Zn Poor: heavily cracked TCL-VOCs and Cd Unsure: pad has been buried by site activities **TPH-GRO** TPH-DRO BTEX and Bolts in place O&G naphthalene Bolts are missing VOC. Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I D. = 0.041 gal/ft - 2" I D. = 0 163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I D. = 1.47 Sulfate, (total) gal/fl Nitrate. gal/ft = ft x **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: mpled By

		ow Sampl irge Log	ing			A	Ente	RM Group erprises LL ers and Scient		
Well Number:	GDO2-	TIMM			Project Nam	ne: CoA	GWQ3	7023		
Well Diameter (					Project Nun		10210			
Depth to Produc		19.15'?	(II)		Date: 08			,		
Depth to Water		S' TOC			One Well V		4.97			
Product Thickne		D RYAC	2? * ad	e lælena	Flow Rate (		1230			
Depth to Botton		9.64' 100			Length of ti	,	•			
			HIVE YEAR	URGING					11/13	
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ments
1100		19.33	26.11	7.19	0.237	2.53	-19	6R	DUCTOR	60.
1106		19.35	25.52	7.13	6.230	1.56	-96	6R		7
		19.37	25.23	714	0.230	A.	-107	OR		$\vdash$
1110	191	V 1 - / 1		111		1.02,				
1115		19.38	25:16	7.14	0.232	0.83	-114	10.69		
1120		19.39	25:19	7.14	0.259	0.52	-124	OR		
1125		19.39	25.31	7.14	0.876	0.69	-161	OR		
1130		19.40	25.49	7.60	3.67	1-5 Bodes	-295	· OR		
1135		19.39	25.49	7.68	4.84	1.78	-328	OR		1
1140		19.40	25.57	7.68,	5.31	1.900	-342,	10.10.		
1145		19.40			2, 3 1 X					<del>                                     </del>
1175		[7.40	25.74	7.67	5.49	2.80	- 350'	9.36		
G1	. 10	Т: С-		ECORD A	ND WELL D		T			
Sample	e ID	Time Co	niected	557 - 11 1 1	C 1 -		Inspection		2	
GDOZ	-MWI	1209	5		the commen	ts section.	ad Condi	out hazards. If	no,	
	Sampling P	arameters		Good: no	visible crack					
Parameter	Collected?	Parameter	Collected?		visible cracl					
TCL-VOCs		Dissolved Zn			vily cracked					
TPH-GRO		and Cd	1		ad has been b	ouried by sit	te activitie	es		
TPH-DRO		BTEX and		Bolts in pl						
O&G		naphthalene		Bolts are i		-				
Total Cyanide		VOC,				Well Ca	sing Cond	dition		- H L
TCL SVOCs		SVOC, TAL		Casing is	free from dar	nage and vi	sibly mar	ked with the	Well ID	OI un
TAL Metals		Metals and				Wel	l Conditio	n		L L L
and Mercury		mercury,		0 55161	- 1215 - 001	1 - 16 2015	0.163	NA CLD -04	5211061	1.05 - 1.42
(total)		Sulfate,		Casing Volun				l/ft - 4" I.D. = 0.6	33 gai 11 - 0	1.07 - 1.47
` '		Nitrate,			30.1	49 n x 0.1	63gal/ft =	4.97 (gal)		
TAL Metals	1	Ammonia,		Wall is st	nuntuma Ilu nau	andrinat han	t healran	and no blook		<del>                                     </del>
and Mercury		COD,		identified	ucturally soc	ind: not ben	ii, brokeii,	, and no block	tage	
(dissolved)		Alkalinity,								1
Hexavalent		Chloride,			nt or broken			1		$\vdash$
Chromium		Turbidity,			oken and is n					$\vdash$
PCB		TDS,			ocked and is	not able to	oe used			$\vdash$
Matrix Spike		Specific		Cap is pre						1
Duplicate	0 :	Conductance		well perm	nit is present					
Sampled By	Comments:	Sampled for trace Mr	or total /	amenable e due to	/availabl	le/free (	CN, TI	S, TSS, whitehan	chotid sat u	e sater

to purged water turned plastic outflow tubing / white bucket blackish, fooded back is

		ow Sampl	ing		4			RM Group erprises LL			
	Pı	irge Log				1	Engine	ers and Scient	ists		
Well Number:	GD02-1	AIAIT -			Project Nan	ne: COA G	W Q3 20	23			
Well Diameter (		WUL			Project Nun						
Depth to Produc		15'				116123	7210				
Depth to Water		15' 70C			One Well V	olume (gal)	497				
Product Thickne			knok on eg	. 1	Flow Rate (		230				
Depth to Botton		GY' TOC	14010 011 47	,	Length of ti						
Depin to Botton				PURGING		- a Boo		21 110 17 1			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm)	Dissolved Oxygen (mg/L)	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Con	nments	
	(ganons)				± 3%	± 0.3					
ાકે		19.40	26.00	7.68	5.49	2.59	-349	5.240			
1155		19.40	26.12	7.68	5.45	2.31	-322	3.98?	<u> </u>		
1200		9.41	2630	_	5.48	8.31	-346	4.93	3		
		19.41	26.45		5.44	2,44	-353	3.82	<b>&gt;</b>	1	
1205		(7.71	7642	1.400	3.33	α, ι¬	- 37 3	5.02		+	
						<u> </u>					
			<u> </u>				-			1	
									<u> </u>		
		Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie		ECORD A	ND WELL D				Tell		
Sample	e ID	Time Co	llected				Inspection				
		100					ible withou	out hazards. I	f no,		
GD02-1	MWE	120	>	explain in the comments section.							
				Well Pad Condition							
	Sampling P	arameters		Good: no visible cracks and is sloping							
Parameter	Collected?	Parameter	Collected?	Fair: some	e visible cracl	ks and/or n	ot sloping				
TCL-VOCs		Dissolved Zn			vily cracked						
TPH-GRO		and Cd		Unsure: p	ad has been b	ouried by si	te activitie	es			
TPH-DRO		BTEX and		Bolts in p	lace					V	
O&G		naphthalene		Bolts are	missing						
Total Cyanide		VOC,				Well Ca	sing Con	dition			
TCL SVOCs		SVOC, TAL		Casing is	free from dar	nage and v	isibly mar	ked with the	Well ID	NO ZO	
TAL Metals		Metals and				Wel	l Conditio	n			
and Mercury		mercury,		2000	1110 -001	100 5011	0.162	10 10 0	42 US		
(total)		Sulfate,	1	Casing Volum	me 1 1D = 0.04	ii galitt - 2 11	gal/ft	I ft - 4" $ID = 0.6$	53 gai/tt - t	) ID = 14	
		Nitrate,				ft x		(gal)			
TAL Metals		Ammonia,		337 13 2	, 11	. 46 . 4	4 h 1	4 11 1	l	_	
and Mercury		COD,			*	ina: not bei	ii, broken	, and no bloc	kage	/	
(dissolved)		Alkalinity,		identified						+	
Hexavalent		Chloride,			ent or broken			i			
Chromium		Turbidity,			oken and is n					+	
PCB		TDS,			ocked and is	not able to	be used				
Matrix Spike		Specific		Cap is pro				· · · · · · · · · · · · · · · · · · ·		1	
Duplicate		Conductance		Well pern	nit is present						
Sampled By  LEP  Comments:  Sampled for total (a)					le /availa	ble/free	(N, T	DS, TSS,	Chlorio	Le	

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#### ARM Group **Low Flow Sampling** Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q4 2023 FHOO P28601 COZ3-P2MOON Well Number: Project Number: 20010210 Well Diameter (in): 11/5/23 Depth to Product (ft): -Date: Depth to Water (ft): 15.02 One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) Depth to Bottom (ft): 2214 Length of time Purged (min) **PURGING RECORD** Specific Dissolved Volume pН ORP Turbidity DTW Conductance Oxygen Temp Purged (s.u.) (mV) (NTU) Comments Time (ms/cm) (mg/L) (feet) (°C) (gallons) $\pm 0.1$ $\pm 10$ ± 10% or < 5 $\pm 3\%$ $\pm 0.3$ 1245 4-75 0.84 15100 17.00 - 227 10.84 19.83 10.84 41.28 0-77 - 243 5.55 15.00 17.20 1250 16.97 3/21 0.19 1255 5.55 15102 10.87 - > 30 5.76 4187 -235 15.63 2165 17:10 6.19 BW 10.49 11.0 17.49 2 1415 - Z412 5.41 15,182 1305 Dian 14.92 2.27 0117 -=50 C1.70 1310 15,02 10,92 17.11 15/15 2,24) - ZU18 3,76 1315 0117 54.01 17.29 2,21 1320 15100 0.10 -254 3,17 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, (023-12 may 1325 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities and Cd TPH-GRO BTEX and Bolts in place TPH-DRO naphthalene Bolts are missing O&G VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" L.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate, ft x gal/ft = TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, **PCB** Well is blocked and is not able to be used TDS, Matrix Spike Cap is present Specific Well permit is present Duplicate Conductance Comments: Apit Jut Sampled By 7)

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q4 2023 Well Number: (U24-PZMU) Project Number: 20010210 Well Diameter (in): 2 Date: 11/15/27 Depth to Product (ft): Depth to Water (ft): One Well Volume (gal): Flow Rate (mL/min) Product Thickness (ft): Length of time Purged (min) Depth to Bottom (ft): 22.19 PURGING RECORD Specific Dissolved Volume pН ORP Turbidity DTW Conductance Oxygen Temp (mV) (NTU) Comments Time Purged (s.u.) (mg/L) (°C) (ms/cm) (feet) (gallons) $\pm 0.1$ $\pm 10$ ± 10% or < 5 ± 3% $\pm 0.3$ 14196 trun 17.10 14.22 1143 2.16 1410 -82 16.91 1,55 28.6 1564 0.69 1415 12194 -48 14/20 14,901 16.79 9-74 1,99 0.01 -1641 134 16.84 2,12 1494 9.69 0.55 -118 1.85 1429 0 :U7 14.94 16,80 9.61 2,29 -131 tilio 1430 0.42 1,47 4,94 16.97 9.53 739 137 14135 -138 1.46 17,12 0.39 141 1984 4.52 7.42 14140 14 ,94 17,15 036 -14/134 4.44 2.46 MUS SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, (024-P2m 1450 explain in the comments section. COT Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd BTEX and Bolts in place TPH-DRO naphthalene Bolts are missing O&G Well Casing Condition Total Cyanide VOC, Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) _ft x __ Nitrate, gal/ft = (gal) **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used **PCB** TDS. Cap is present Matrix Spike Specific Well permit is present Conductance Duplicate Comments: Sampled By \$ reduced flowerste to revue drawdown

### **ARM Group** Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q4 2023 025-PZM 008 Well Number: Well Diameter (in): Project Number: 21010210 Depth to Product (ft): Date: 11/28/2 5,23 Depth to Water (ft): One Well Volume (gal): Flow Rate (mL/min) Product Thickness (ft): Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved ORP **Turbidity** Volume рΗ Conductance DTW Oxygen Temp Comments Purged (s.u.) (mV) (NTU) Time (mg/L) (°C) (ms/cm) (feet) ± 10% or < 5 (gallons) $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ 10.23 3.48 10,32 095 250 16.22 10 41 3.44 -186 13.15 lito 1255 3.45 13.51 110r2Z 10.48 300 3.42 1305 1.12 SAMPLE RECORD AND WELL DETAILS Time Collected Sample ID Well Inspection Well has been found and is accessible without hazards. If no, 1,310 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Collected? Parameter Parameter TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities and Cd TPH-GRO TPH-DRO BTEX and Bolts in place naphthalene Bolts are missing O&G Well Casing Condition VOC, Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate, ft x gal/ft = (gal)**TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present **Duplicate** Conductance Comments: Sampled By

Low Flow Sampling Purge Log  Well Number: (026-102 new7						A	Ente	RM Group erprises LL ers and Scient				
Well Number:	LA-5-2	= (a>6-v	07 an 047		Project Nam	e: COA G	W 04 20	123				
Well Diameter		. (0=0 /	2/100/		Project Nun			720				
Depth to Produc	`					5/27	7210					
Depth to Water		^			One Well V							
Product Thickne		<u> </u>			Flow Rate (							
Depth to Botton	` ,	(.5			Length of ti		min)					
E##EKK   d=#XIII				PURGING				ne michelina	1000	HINOVI		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents		
1140		17.21	6.30	11.58	3.19	0.56	-209	0.7	. 4			
11115		7.60	(4.29	(1,59			-219	8.72	Po	/ 4		
					3-16	0.60		2,017		A		
(19)		18.10	16.20	11.59	3.17	0.25	-226					
1155		18.619	14.28	11:59	3.15	0,25	-238	5.43				
1200		18.78	1037	11.59	3113	0125	-238	41.75				
					10 y 1							
V												
						Ш						
			CAMPIED	ECORD AN	ID WELL DI	COPATE C						
Sample	a ID	Time Co		ECURD AN	ND WELL DI		Inspection					
Sample	ם ום	Time Co	nected	Wall has b	oon found on				'no			
(026-P	7007	1205			Well has been found and is accessible without hazards. If no, explain in the comments section.  Well Pad Condition							
	Sampling P	arameters		Good: no	visible cracks			tion				
Parameter	Collected?		Collected?		visible crack							
TCL-VOCs	Conceicu:	Dissolved Zn			ily cracked	and of the	or stoping					
TPH-GRO		and Cd			ad has been b	uried by sit	e activitie	26				
TPH-DRO		BTEX and		Bolts in pl		direct by sin	e delivition	23				
O&G		naphthalene		Bolts are r								
Total Cyanide		VOC,		Botto are :		Well Ca	sing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is t	free from dan			ked with the	Well ID			
TAL Metals		Metals and					Condition					
and Mercury		mercury,										
(total)		Sulfate,		Casing Volum	ne: 1" I.D. = 0.04	1 gal/ft - 2" [ [	0. = 0.163 ga gal/ft	l/ft - 4" 1.D. = 0.65	53 gal/ft - 6"	I.D. = 1.47		
		Nitrate,				ft x		(gal)				
TAL Metals		Ammonia,			. 11							
and Mercury		COD,			ucturally sou	nd: not ben	t, broken,	, and no block	age			
(dissolved)		Alkalinity,		identified				•		_		
Hexavalent		Chloride,			nt or broken			1				
Chromium		Turbidity,			oken and is n							
PCB Matrix Spiles		TDS,		$\vdash$	ocked and is	not able to	be used					
Matrix Spike		Specific Conductance		Cap is pre						-		
Duplicate	Commanta				it is present							
Sampled By	Comments:	APH le	4	, mi	U ₂			140 040	1			
	Atrine	w flor ru	de dum	ر بري يصو	et 45 P	'as lote	to re	me Oline	own			

#### ARM Group **Low Flow Sampling** Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q4 2023 Well Number: CO27 - PZMO12 Project Number: 20010210 Well Diameter (in): 11/13/23 Date: Depth to Product (ft): Depth to Water (ft): One Well Volume (gal): 4.64 Product Thickness (ft): -Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Dissolved Specific ORP Volume pН Turbidity DTW Temp Conductance Oxygen Time Purged (s.u.) (mV) (NTU) Comments (feet) (°C) (ms/cm) (mg/L) ± 10 $\pm 10\% \text{ or } < 5$ (gallons) ± 0.1 $\pm 3\%$ $\pm 0.3$ 1420 16.35 2,76 -30% 1.58 11.32 0.54 4.66 16.53 11.26 2.16 0.43 -315 0.46 1425 1.108 0.91 16.68 11.24 1.85 0.37-322 68 1430 16.81 0.41 -328 0.106 4.69 11,22 1.74 1435 11,21 16.85 1.72 0.45 -332 0.46 1440 16.86 11.21 0.37 -337 1:71 0.42 1445 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, X 1450 explain in the comments section. C027-PZM012 Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping X Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities and Cd TPH-GRO Bolts in place X BTEX and TPH-DRO naphthalene Bolts are missing O&G Well Casing Condition VOC, Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, gal/ft ft x _____gal/ft = ____(gal) (total) Nitrate, TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, X identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: Sampled By SWL

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q4 2023 Well Number: CO27 - PZM 046 Project Number: 20010210 Well Diameter (in): Depth to Product (ft): Date: 11/14/23 One Well Volume (gal): Depth to Water (ft): 10.98 Product Thickness (ft): -Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): PURGING RECORD Specific Dissolved ORP Volume pН Turbidity DTW Temp Conductance Oxygen (mV) Comments Purged (s.u.) (NTU) Time (feet) (°C) (ms/cm) (mg/L) $\pm 10\% \text{ or } < 5$ (gallons) $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ 9.35 1.30 -341 0935 19,20 7.02 3.31 1,64 9.79 19.14 3.31 0.61 -349 7.03 11940 0945 9.88 3.39 0.46 -351 7,04 6950 9.93 4.15 0.90-349 16.45 7.05 4.04 0.89 9,87 0955 3.96 0.76 -327 1.01 1000 17.601 3.97 0.48 1005 3.98 9.82 1010 11.71 SAMPLE RECORD AND WELL DETAILS Well Inspection Sample ID Time Collected Well has been found and is accessible without hazards. If no, X 1020 CO27-PZM046 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping $\times$ Sampling Parameters Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities **TPH-GRO** and Cd × TPH-DRO BTEX and Bolts in place X naphthalene Bolts are missing O&G Well Casing Condition VOC. Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID X TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate. gal/ft = ft x TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, **PCB** Well is blocked and is not able to be used TDS, X Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: Sampled By OM

	P	urge Log						erprises LLC		
Well Number:	107	N - V25	Ale		Project Nan	oo: COA G	W Q4 20	123		
Well Diameter	(in):	) [2/]	NIS		Project Nun			.20		,
Depth to Produ		_			Date:	1823			· - · · ·	
Depth to Water		91			One Well V					
Product Thickr		-11			Flow Rate (					
Depth to Botto					Length of ti		min)			
KS ATTERNE	PROPERTY.		(C)=H5))(SEIIIII	PURGING					8 HB2/H2	SINE
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comm	nents
1000			1292	16/7 is	7.79	1.62	~1/	0,90		
1000		1192	1010 %	11 10	2 9 /	0.05	-119	1 71		
1003		11 97	100	11.40	200	2 23	121	1 42		
	1	11.75	1716	11, 710	7.92	0.47	170	1. 16		
10 13	<del>                                     </del>	11-96	17.00	1125	7 77	0,54	-195	1.23	$\rightarrow$	
1020	<del></del>		17.61	11.55	2.94	0.52	-201	0,75		
1025			17.10	11.56	2,93	0.21	- 203	0.74	1	
		97						,		
		*G								
									-	
		1						-		
			SAMPLE R	ECORD A	ND WELL DI	ETAILS				
Sampl	e ID	Time Co	llected			Well	Inspection	n		
(030-	PENAIS	1271	$\overline{}$	Well has b	een found ar	nd is access	ible witho	out hazards. If	no,	
00 34	10,000	1030		explain in	the commen					
							ad Condi	tion		
	Sampling P				visible crack			7		/
Parameter	Collected?		Collected?		visible cracl	ks and/or no	ot sloping			
		Dissolved Zn			ily cracked					
TCL-VOCs		and Cd	/	Unsure: pa	ad has been b	ouried by si	te activitie	es		v
TCL-VOCs TPH-GRO										
TCL-VOCs TPH-GRO TPH-DRO		BTEX and	X	Bolts in pl						
TCL-VOCs TPH-GRO TPH-DRO O&G		naphthalene	8	Bolts in pl Bolts are r		77. 11.0		****		
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide		naphthalene VOC,	8	Bolts are r	nissing		sing Cond		V-II ID	
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs		naphthalene VOC, SVOC, TAL	8	Bolts are r	nissing	nage and vi	sibly mar	ked with the V	Well ID	7
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals		naphthalene VOC, SVOC, TAL Metals and	8	Bolts are r	nissing	nage and vi		ked with the V	Well ID	7
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury		naphthalene VOC, SVOC, TAL Metals and mercury,	8	Bolts are r	nissing free from dar	nage and vi Wel	sibly mar l Conditio	ked with the V		I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total)		naphthalene VOC, SVOC, TAL Metals and	8	Bolts are r	nissing free from dar	wel	sibly mar l Conditio 0. = 0.163 ga gal/ft	ked with the V on Vft - 4" I.D. = 0.65		I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals		naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate,	8	Bolts are r Casing is r Casing Volum	free from dar	mage and vi Wel I gal/ft - 2" 1. I	sibly mar l Condition 0 = 0.163 ga gal/ft gal/ft =	ked with the V on VR - 4" I.D. = 0.65	3 gal/ft - 6"	I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury		naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate,	8	Casing is to Casing Volum	free from dar	mage and vi Wel I gal/ft - 2" 1. I	sibly mar l Condition 0 = 0.163 ga gal/ft gal/ft =	ked with the V on Vft - 4" I.D. = 0.65	3 gal/ft - 6"	I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved)		naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity,	8	Casing is a Casing Volume Well is stridentified	free from dar ne: 1" I.D. = 0.04 ructurally sou	Mage and vi Wel I gal/ft - 2" I.  ft x  and: not ben	sibly mar l Conditio 0 = 0.163 ga gal/ft gal/ft = tt, broken,	ked with the Von  VR - 4" LD = 0.65  (gal)  and no blocks	3 gal/ft - 6"	I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent		naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride,	8	Casing is to Casing Volume Well is stridentified Well is be	free from dar ne: 1" I.D. = 0.04 ructurally sou	well gal/ft - 2" 1. If x	sibly mar l Condition 0 = 0.163 ga gal/ft gal/ft = at, broken,	ked with the Von  VR - 4" LD = 0.65  (gal)  and no blocks	3 gal/ft - 6"	I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium		naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity,	8	Casing Volum  Well is stridentified  Well is bewell is brown	free from dar ne: 1" I.D. = 0.04 ructurally sou nt or broken oken and is n	Mage and vi Wel I gal/ft - 2" I I ft x  and: not ben but is able tot able to b	sibly mar.  I Condition  1 = 0.163 ga gal/ft gal/ft =  tt, broken,  to be used e used	ked with the Von  VR - 4" LD = 0.65  (gal)  and no blocks	3 gal/ft - 6"	I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB		naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity, TDS,	8	Casing is a Casing Volum Well is str identified Well is be Well is browell is browell	free from dar ne: 1" I.D. = 0.04 ructurally sou nt or broken oken and is nocked and is	Mage and vi Wel I gal/ft - 2" I I ft x  and: not ben but is able tot able to b	sibly mar.  I Condition  1 = 0.163 ga gal/ft gal/ft =  tt, broken,  to be used e used	ked with the Von  VR - 4" LD = 0.65  (gal)  and no blocks	3 gal/ft - 6"	I.D. = 1.4
TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium		naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity,	8	Casing Volum  Well is stridentified  Well is be  Well is browell is browell is pre	free from dar ne: 1" I.D. = 0.04 ructurally sou nt or broken oken and is nocked and is	Mage and vi Wel I gal/ft - 2" I I ft x  and: not ben but is able tot able to b	sibly mar.  I Condition  1 = 0.163 ga gal/ft gal/ft =  tt, broken,  to be used e used	ked with the Von  VR - 4" LD = 0.65  (gal)  and no blocks	3 gal/ft - 6"	I.D. = 1.

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log Engineers and Scientists Project Name: COA GW Q4 2023 Well Number: (67) 7-12 ~ 603 Project Number: 20010210 Well Diameter (in): 고 Date: 1/2/23 Depth to Product (ft): it it's One Well Volume (gal): Depth to Water (ft): 11-71 Product Thickness (ft): 0.06 Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): **PURGING RECORD** Specific Dissolved ORP Turbidity Volume pН DTW Conductance Oxygen Temp (NTU) Comments Purged (s.u.) (mV) Time (feet) (°C) (ms/cm) (mg/L) $\pm 10\%$ or $\leq 5$ (gallons) $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ - 363 1255 11.96 4.02 15,03 8136 0-38 10+ 12,10 15,22 8,31 0.32 12,20 2.50 170) 274 15,28 12,14 1.44 1705 8.39 -268 0,27 15131 -262 +31573W 12,16 0, 24 8.419 1:414 15.613 1315 8153 125,0 - 201 0.93 12.17 SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, 13 20 (037-PZMU03 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn and Cd Unsure: pad has been buried by site activities TPH-GRO TPH-DRO BTEX and Bolts in place naphthalene Bolts are missing O&G Well Casing Condition VOC. Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate. $ft \times gal/ft = gal$ TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride. Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Matrix Spike Specific Cap is present Well permit is present **Duplicate** Conductance Sampled By AISSUES SOHMS DIE THE TO MARCHUM APPLICATION ATTITUDEN flow me dee to deardon.

						A	Ente Engine	RM Group rprises LL ers and Scienti	ets	
Well Number:	637-P	2m038			Project Nam			<del>32 2023 - (</del> 04	9 642	53
Well Diameter (i	in): Z				Project Num	ber:20010	112			
Depth to Produc	t (ft): —				Date: [1/2	1/23		·		
Depth to Water (		)			One Well V	olume (gal)				
Product Thickne					Flow Rate (1	mL/min) ອ	io .			
Depth to Bottom					Length of ti					
Deptil to Bottom	(10. C  1 A		P	URGING				I WATER TO SEE		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comir	nents
1400		12.41	14.50	11.77	2.5%	OLLI	-311	1.99		
		-	14,78		2.54	0,24	-343	1.31		
1405	·	12.41		17.68			<u> </u>	1.49	PO AI	16.4
1419		12,41	141.75	11.66	2.52	0,21	-354		RAH	107
1420		12.611	14,62	11.45	2,51	6,20	-366	103		
1425		12.41	14.67	11.05	2.52	0.19	-374	1.02		
		12.41	14.72	11.65	2.52	0.19	-384	0.94		
1430		1-191	(9), / \	117.4.3		V	1 0	0.77		
				ECORD A	ND WELL D					
Sample	e ID	Time Co	liected				ll Inspecti			,
(137-PZ.		1435		explain in	the commen	ts section. Well	Pad Cond	out hazards. I	f no,	
	Sampling P	arameters		Good: no	visible crack	s and is slo	ping			
Parameter	Collected?	Parameter	Collected?	Fair: som	e visible crac	ks and/or r	ot sloping	3		
TCL-VOCs		Dissolved Zn		Poor: hea	vily cracked					<u> </u>
TPH-GRO		and Cd		Unsure: p	ad has been l	buried by s	ite activiti	es		
TPH-DRO		BTEX and		Bolts in p	lace			-		
O&G		naphthalene		Bolts are	missing	<del>-</del>				
Total Cyanide		VOC,				Well C	asing Cor	ndition		
TCL SVOCs		SVOC, TAL		Casing is	free from da	mage and v	/isibly ma	rked with the	Well ID	
	<del> </del>	Metals and					ll Conditi			
TAL Metals		mercury,				_				
and Mercury		Sulfate,	1	Casing Volu	me   111) = 0.0	41 gal/fi - 2".1		al/ft - 4" [ D: = 0.6	53 gal/ft - 6"	ID =
(total)		Nitrate,				ft x	gal/fi gal/fi	(gal)		
TAL Metals		Ammonia,						<u></u>	·	_
and Mercury		COD,		Well is st	tructurally so	und: not be	nt, brokei	a, and no bloc	kage	
(dissolved)		Alkalinity,		identified	1					
Hexavalent		Chloride,		Well is b	ent or broken	but is able	to be use	·d		
Chromium		Turbidity,			roken and is					
PCB	-	TDS,			locked and is					
Matrix Spike		Specific		Cap is pr				<del></del>		1
Duplicate		Conductance			mit is present					
Sampled By	Comments:	H lut		T. en liet	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					

#### ARM Group Low Flow Sampling Enterprises LLC **Purge Log** Engineers and Scientists Project Name: COA GW Q4 2023 Well Number: CO41 - PZMOOL Well Diameter (in): 2" Project Number: 20010210 Depth to Product (ft): -Date: 11/14/23 Depth to Water (ft): 13.05 One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) Depth to Bottom (ft): Length of time Purged (min) PURGING RECORD Specific Dissolved pН Volume ORP Turbidity DTW Conductance Oxygen Temp Time Purged (s.u.) (mV) (NTU) Comments (ms/cm) (mg/L) (feet) (°C) (gallons) $\pm 0.1$ $\pm 10$ ± 10% or < 5 $\pm 3\%$ $\pm 0.3$ 0.74 -256 3.56 * Decreased 7.85 1,01 1135 13.15 1821 13 FC 18.16 0.989 0.26-270 295 7,60 1140 13.15 7,59 0.979 1145 13,15 0,22 -278 18.11 1.65 7.55 0.970 2.67 1150 18,13 0.19 -283 1155 0.9 59 0.10 285 18,14 7.53 1.44 SAMPLE RECORD AND WELL DETAILS Sample ID Time Collected Well Inspection Well has been found and is accessible without hazards. If no, × 1205 6041-PZM001 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping × Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities **TPH-GRO** and Cd $\mathbf{x}$ TPH-DRO BTEX and Bolts in place X naphthalene Bolts are missing O&G VOC, Well Casing Condition Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs X Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate, flx gal/ft = TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, × (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Chromium Well is broken and is not able to be used Turbidity, **PCB** Well is blocked and is not able to be used TDS, Cap is present × Matrix Spike Specific Well permit is present Duplicate Conductance Comments: Sampled By SHL

		ow Sampli irge Log	ing			-	Ente	RM Group rprises LL ers and Scient	C				
Well Number:	CO41- P7	2M036			Project Nam	ne: COA G	W Q4 20	23					
Well Diameter (	(in): 2"				Project Num	nber: 2001(	)210						
Depth to Produc					Date: 11/	14/23							
Depth to Water	(ft): 13.5	9			One Well V	olume (gal):							
Product Thickne					Flow Rate (1	mL/min)							
Depth to Botton	n (ft):				Length of ti	me Purged (	min)						
		Castillo leag		PURGING I	RECORD	SYRGLAYS.			DESCRIPTION	ew lieu			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents			
1100		13.60	18.48	10.19	1.56	0.91	-296	2.05					
1105			18,40	10,26	1,55	0.49	-305	4.16					
		10 10			1.55		-308	1.02					
1110		13.60	11.36	10.28		0.39							
1115		13.60	18.33	10.28	1.56	0.33	-313	1.60					
							-						
	-												
			SAMPLE R	FCORD AN	CORD AND WELL DETAILS								
Sample	e ID	Time Co		BEOND AL	Well Inspection								
	•			Well has b	een found an			out hazards. If	no.				
00011-	PZM036	112	5		the comment				ĺ	8			
0041	7 211000						ad Condi	tion					
	Sampling P	arameters		Good: no visible cracks and is sloping									
Parameter	Collected?	Parameter	Collected?	Fair: some	visible cracl	ks and/or ne	ot sloping						
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked								
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activitie	es					
TPH-DRO		BTEX and		Bolts in pl	ace					~			
O&G		naphthalene	$\times$	Bolts are r	nissing								
Total Cyanide		VOC,					sing Cond						
TCL SVOCs		SVOC, TAL		Casing is f	free from dan	nage and vi	isibly mar	ked with the	Well ID	X			
TAL Metals		Metals and				Wel	l Condition	on					
and Mercury		mercury,		Casing Volum	ne 1" [ D = 0.04	1 gal/ft - 2" 1 [	D. = 0.163 ga	l/ft - 4" 1.D. = 0.6	53 gal/ft • 6"	LD. = 1.47			
(total)		Sulfate,		"			gal/ft		- 115				
TAL Metals		Nitrate,			_	R x	gal/ft =	(gal)					
and Mercury		Ammonia, COD,		Well is str	ucturally sou	ınd: not ber	nt, broken.	and no block	cage				
(dissolved)		Alkalinity,		identified					_	X			
Hexavalent		, , , , , , , , , , , , , , , , , , ,		Well is be	nt or broken	but is able	to be used						
		Chloride	ŀ					-					
Chromium		Chloride, Turbidity,			oken and is n	iot able to b	e usea						
Chromium PCB		Chloride, Turbidity, TDS,		Well is bro	oken and is nocked and is								
-		Turbidity,		Well is bro	ocked and is					X			
PCB		Turbidity, TDS,		Well is bro Well is blo Cap is pre	ocked and is					X			
PCB Matrix Spike	Comments:	Turbidity, TDS, Specific		Well is bro Well is blo Cap is pre	ocked and is					X			

	Purge Log  Well Number: COUL-12/NOU					A	Ente	RM Group erprises LL ers and Scient	
377 11 37 1			An A		D : OI	004.0			
		JOHN COUL	FFLANOU		Project Nam			123	
Well Diameter	<u> </u>				Project Nun Date: \/2		J210		
Depth to Produc									
Depth to Water Product Thickness			_	_	One Well V Flow Rate (				
Depth to Bottor					Length of ti		min)		
Depth to Bottor	n (11): [4-7-)			PURGING		ine Purgeu (	min)		-((
				CAGARG		Discount			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
lius		9-29	LU.5 2	6.83	0.927	0-46	-124	6.23	
150		9.41	15.22	6.92	0.881	0.u7	- 198	2.88	
1153		9.63	16.26	7.15	0.869	0.32	-256	2.45	
		4.70	15.23				-277		
1200				7.27	0.177	0.31		1.08	
1205		9.82	15.60	7.34	0.865	0.30	->89	0.59	
126		9.91	15.64	231	0.462	0.30	-299	0.45	_
1215		995	15.62	7.51	0.455	0.29	-243	6.26	
			SAMPLE R	ECORD AT	ND WELL DI	ETAILS			-
Sampl	e ID	Time Co					Inspection	n	
				Well has b	een found an			out hazards. If	no.
(895-6	2-0011	1220			the comment				
· ·		1220			_ L _ VII.	Well P	ad Condi	tion	
	Sampling P	arameters		Good: no	visible cracks	and is slo	oing		
Parameter	Collected?	Parameter	Collected?	Fair: some	visible crack	s and/or no	ot sloping		
TCL-VOCs		Dissolved Zn		Poor: heav	vily cracked			-	
TPH-GRO		and Cd		Unsure: pa	ad has been b	uried by si	e activitie	es	
TPH-DRO		BTEX and		Bolts in pl	lace				
O&G		naphthalene		Bolts are a	missing				
Total Cyanide	I	VOC,				Well Ca	sing Cone	lition	
TCL SVOCs		SVOC, TAL		Casing is:	free from dan	nage and vi	sibly mar	ked with the \	Well ID
TAL Metals		Metals and				Wel	Condition	n	
and Mercury		mercury,		Casing Volum	ne: 1" LD. = 0.04	L gal/f) - 2" 1.F	0. = 0.163 ga	l/ft - 4" LD = 0.64	53 gal/ft - 6" I.D. = 1.
(total)		Sulfate,					gal/ft		Since Harry
TAL Metals		Nitrate, Ammonia,				fl x	gal/ft =	(gal)	
and Mercury		COD,		Well is str	ucturally sou	nd: not ben	t, broken.	and no block	age
(dissolved)		Alkalinity,		identified					
Hexavalent		Chloride,		Well is be	nt or broken	but is able	to be used		
Chromium		Turbidity,			oken and is n				
PCB	= = =	TDS,			ocked and is				
Matrix Spike		Specific		Cap is pre					
Duplicate		Conductance			nit is present				
	Comments:								•
Sampled By									
±S_	Strand	flargh	f fu	to 00	The down ,	turned a	Slow o	is rossible	

	Low Fl		ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	(UK5-F	2m600			Project Nam	ne: COA G	W Q4 20	)23		
Well Diameter (					Project Nun	nber: 2001(	210			
Depth to Produc	et (ft):				Date:	5/23				
Depth to Water	(ft): 15 1 🚭	LIN		1	One Well V	olume (gal):				
Product Thickne					Flow Rate (					
Depth to Botton	n (ft): りょく	4			Length of ti	me Purged (	min)			
The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		- Bridge		URGING	RECORD					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	ments
090		6-66	14.93	11.58	2,56	1.67	-44	344	50,000	
1015 -										
1015										
					ļ					
K-VIII TOTAL			SAMPLE R	ECORD A	ND WELL DI	ETAILS	(1)			
Sample	e ID	Time Co		LCORD A	ND WELL D		Inspection	on		
- Junipi	0 125			Well has l	been found ar			out hazards. If	îno.	
					the commen				,	
							ad Condi	tion		
	Sampling P	arameters		Good: no	visible cracks	s and is slo	oing			
Parameter	Collected?	Parameter	Collected?	Fair: some	e visible cracl	ks and/or no	ot sloping			
TCL-VOCs		Dissolved Zn		Poor: hear	vily cracked					
TPH-GRO		and Cd		Unsure: p	ad has been b	ouried by si	te activiti	es		
TPH-DRO		BTEX and		Bolts in p	lace					
O&G		naphthalene		Bolts are	missing	-				
Total Cyanide		VOC,					sing Con			
TCL SVOCs		SVOC, TAL		Casing is	free from dar	nage and vi	sibly mar	ked with the	Well ID	
TAL Metals		Metals and		40		Wel	l Conditio	on		
and Mercury		mercury,		Casing Volu	me: 1" LD. = 0.04	1 gal/ft - 2" L.I	). = 0.163 ga	ıl/ft - 4" I.D. = 0.6	53 gal/ft - 6"	LD. = 1.47
(total)		Sulfate,					gal/ft		. 5	ENERG DE
TAL Metals		Nitrate,				ft x	gal/ft =	(gal)		17.0
and Mercury		Ammonia, COD,		Well is st	ructurally sou	ınd: not ben	ıt, broken	, and no block	cage	
(dissolved)		Alkalinity,		identified	•		,	-	•	
Hexavalent		Chloride,		Well is be	ent or broken	but is able	to be used			
Chromium		Turbidity,			oken and is n					
PCB		TDS,			ocked and is					
Matrix Spike		Specific		Cap is pre				· · · · · · · · · · · · · · · · · · ·		
Duplicate		Conductance			nit is present		_			
Sampled By	Comments:	Fling (4)	LAN	OF Res	4	MINIMP	Ja	r Jam		.12

#### **ARM Group** Low Flow Sampling Enterprises LLC **Purge Log Engineers and Scientists** Project Name: COA GW Q4 2023 (056- 12PUU) Well Number: Project Number: 20010210 Well Diameter (in): Depth to Product (ft): 5,20 Depth to Water (ft): One Well Volume (gal): Product Thickness (ft): Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): 19115 **PURGING RECORD** Specific Dissolved рΗ ORP Turbidity Volume DTW Temp Conductance Oxygen (mV) (NTU) Comments Time Purged (s.u.) (feet) (°C) (ms/cm) (mg/L) ± 10% or < 5 (gallons) $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ 5.29 15.415 7,76 1040 2.87 -126 11.16 01413 15 29 3 Y) 16.15 2,85 11.141 0.40 -1415 10015 15,29 16.33 11-13 2.63 0.36 158 2.09 1053 10.39 0.33 15.29 -157 2-46 1.13 2.50 เมษร SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, (U36-PZ PU) 1100 explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Parameter Collected? Parameter Collected? Fair: some visible cracks and/or not sloping Poor: heavily cracked TCL-VOCs Dissolved Zn TPH-GRO Unsure: pad has been buried by site activities and Cd Bolts in place **TPH-DRO** BTEX and naphthalene Bolts are missing O&G Well Casing Condition VOC. Total Cyanide Casing is free from damage and visibly marked with the Well ID TCL SVOCs SVOC, TAL Metals and Well Condition **TAL Metals** mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate. ft x gal/ft = TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: APH lut Sampled By

		low Sampli irge Log	ing		ARM Group Enterprises LLC Engineers and Scientists								
Well Number:	0057-1	PZV002			Project Nam	ne: COA G	W Q4 20	)23					
Well Diameter (					Project Number: 20010210								
Depth to Produc	ct (ft): —				Date: 11/14/23								
Depth to Water	(ft): 15.9	3			One Well Volume (gal):								
Product Thickne					Flow Rate (mL/min)								
Depth to Botton	n (ft): 18.7	2.4			Length of time Purged (min)								
	auto la mili	MICHELISMIN	BUSHING INC.	PURGING I	RECORD	and a			BAR - 3	SHIER			
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific   Dissolved   Oxygen   (mV)   ± 10% or < 5   Core								
1340	_	16.49	19.88	10.81	1.57	0.54	-115	2.41	* Dec	reased,			
		17.32	19,93		1.55	0.48		4.55	L PUM	र किर			
1345			1-1/-10	10,00	1.00	0.40	110	7.50	*				
1350		17.15											
1900													
							İ						
		L					9						
							\ <u></u>	1					
0 1	ID	Tr: 0	SAMPLE R	ECORD AN	D WELL D		T						
Sample	e ID	Time Co	llected				Inspection						
	0-000						ible with	out hazards. It	no,	$\times$ L			
CO2.4	-PZP002	1 '		explain in	the commen		ad Condi	ition					
	Sampling P	laramatara	A III	Gooding	visible cracks			ition		X			
Danamatan			Callagtad9		visible crack			,					
Parameter TCL VOCa	Collected?	Parameter Dissolved Zn	Conected?		ily cracked	ks allu/of lic	or grobing	<b>,</b>					
TCL-VOCs TPH-GRO		and Cd			id has been b	uriad by air	ta nativiti	00					
		BTEX and		Bolts in pla		ouried by Si	ie activiti	CS					
TPH-DRO			X	Bolts are n	-					×			
O&G Total Cyanide		naphthalene VOC,	- '	Dollo ale II	moonig	Well Co	sing Con	dition					
TCL SVOCs		SVOC, TAL		Casing is f	ree from dar			ked with the	Well ID				
		Metals and		Cuonig io i	nom dar		l Condition		., 011 115	X			
TAL Metals		mercury,		- 2	Y25	135			E2 VI				
and Mercury		Sulfate,		Casing Volum	ie: 1" LD. = 0.04	l gal/ft - 2" Ι.Γ	_	ıl/ft - 4" I.D. = 0.6	53 gal/ft - 6"	I.D. = 1.47			
(total)		Nitrate,				fl x	gal/ft gal/ft =	(gal)					
TAL Metals		Ammonia,											
and Mercury		COD,			ucturally sou	ind: not ben	it, broken	, and no blocl	kage	X			
(dissolved)		Alkalinity,		identified									
Hexavalent		Chloride,			nt or broken			<u>d</u>					
Chromium		Turbidity,			ken and is n					<u> </u>			
PCB		TDS,		-	cked and is	not able to	be used						
Matrix Spike		Specific		Cap is pres						$\times$			
Duplicate		Conductance	<u> </u>	Well perm	it is present								
Sampled By	Comments:		Rac	n Dru	7; (D	867C38	201 Ru 3x	D 684	e				

# Low Flow Sampling Purge Log



# ARM Group Enterprises LLC Engineers and Scientists

	A 0 Pm -	190000		//4/102		004.0	101 O 4 00	222			
Well Number:		E1002		_	Project Name: COA GW Q4 2023						
Well Diameter (					Project Number: 20010210						
Depth to Produc					Date: 11/						
Depth to Water		6			One Well Volume (gal):						
Product Thickne					Flow Rate (						
Depth to Botton	n (ft): 17,	87			Length of time Purged (min)						
	100		I	PURGING	RECORD						
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents	
1345		16.34	19.51	10.91	1.32	1.46	107	9.29			
1350		16.45	19.42	11.02	1.28	1.76	53	6.68			
1356		16.47	19.37		1.28	1.35	31	4.60			
	*				1.29		19				
1400		16.53	19.33			2.30		3.46			
H05		16.76	19,11	11.12	1.32	0.94	-19	3.40			
1410		16.82	19.05	11,16	1.33	0.84	-46	1.79		L	
1415		16.88	19.02	11.10	1.34	0,93	- 55	2.92			
14/20		16.92	18.99	11,12	1.35	1.12	-63	4.09			
1.17-2											
			CAMDIED	ECOPD A	ND WELL DI	PTAILS					
Sample	- ID	Time Co		I CORD A	TO WELL DI	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	Inspection	on			
Sample	CID	Time Co	riceted	Well has b	seen found ar		_	out hazards. If	f no		
ca52 -	PZP002	170			the commen		ioie with	on nuzurus. 11	110,	×	
00%	7210	142	0	CAPIGITI III	Well Pad Condition						
	Sampling P	arameters		Good: no	Good: no visible cracks and is sloping						
Parameter	Collected?	Parameter	Collected?		visible cracl				<del></del>		
TCL-VOCs	Contolicat	Dissolved Zn	- Silvotou.	4	vily cracked						
TPH-GRO		and Cd			ad has been b	ouried by si	te activiti	es			
TPH-DRO		BTEX and		Bolts in p				_		X	
O&G		naphthalene	$\lambda$	Bolts are							
Total Cyanide		VOC,			<del></del>	Well Ca	sing Con	dition			
TCL SVOCs		SVOC, TAL		Casing is	free from dar			ked with the	Well ID	X	
		Metals and					l Conditio		<del></del>		
TAL Metals		mercury,									
and Mercury		Sulfate,		Casing Volum	ne: I'' I.D. = 0.04	I gal/ft - 2" I.I	). = 0.163 ga gal/ft	I/ft - 4" $I.D. = 0.6$	53 gal/ft - 6"	1.D. = 1.47	
(total)		Nitrate,				ft x		(gal)			
TAL Metals		Ammonia,								_	
and Mercury		COD,			ucturally sou	ind: not ber	it, broken	, and no block	kage	X	
(dissolved)		Alkalinity,		identified						-	
Hexavalent		Chloride,			nt or broken	<del></del>		il .	*	-	
Chromium		Turbidity,			oken and is n					ļ	
PCB		TDS,			ocked and is	not able to	be used			1	
Matrix Spike		Specific		Cap is pre						18	
Duplicate		Conductance		Well pern	nit is present						
Sampled By	Comments: - Was - Very 1	previou ou punt	ely pung	ged -	ran dru	. Wat	not	Bample	201 W/i	ંપ	

	Low Fl Pu		ARM Group Enterprises LLC Engineers and Scientists									
Well Number:	0058 -	PZNMI			Project Nam	ne: COA G	W Q4 20	123		-		
Well Diameter		21001			Project Nun	and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of th			•			
Depth to Produc					Date: 11/14/23							
Depth to Water	(ft): 13.	61		·	One Well Volume (gal):							
Product Thickn					Flow Rate (mL/min)							
Depth to Bottor	n (ft):				Length of ti	me Purged (	(min)					
MENTAL	AND THE IS	MHORESTA AND		PURGING I	RECORD	Der Alles	DELEGE D					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ments		
1256		14.15	19.33	11.16	2.26	1.53	-231	4-60	* Dec	eased		
1245		14.36	P1.36	11.17	2.24	1.30	-193	2.87	T De	1000		
1250		14.53	19.40	11.16	2.21	1.29	-181	3.04	*	- C-2076C		
1255		14,92	19,49	11.11	2.16	1.03	-172		*			
		17/16	19,54						75	+		
1300			11/54	11.08	2.10	0.84	-171	2.21	2			
			SAMDI F D	ECOPD AN	ND WELL DI	ETAIL S						
Sample	e ID	Time Co		LCORDAI	ID WELL D		l Inspection	nn .				
Батри	CID	Time Co	······································	Well has been found and is accessible without hazards. If no,								
C058-	PZM001	1305		explain in the comments section.  Well Pad Condition								
	Sampling P	arameters		Good: no	no visible cracks and is sloping							
Parameter	Collected?	Parameter	Collected?	Fair: some	visible cracl	ks and/or n	ot sloping			<del> </del> ×		
TCL-VOCs		Dissolved Zn		Poor: heav	ily cracked							
TPH-GRO		and Cd		Unsure: pa	ad has been b	ouried by si	te activiti	es				
TPH-DRO		BTEX and		Bolts in pl						*		
O&G		naphthalene	X	Bolts are r	nissing			111111111111111111111111111111111111111				
Total Cyanide		VOC,				70/11	sing Con					
TCL SVOCs		SVOC, TAL	1	Casing is	free from dar			ked with the	Well ID	$\perp \times \mid$		
TAL Metals	-	Metals and mercury,				Wel	ll Condition	on				
and Mercury (total)		Sulfate, Nitrate,		Casing Volun			gal/ft	d/ft = 4" L.D. = 0.6	53 gal/ft - 6	" I.D. = 1.47		
TAL Metals		Ammonia,										
and Mercury		COD,			ucturally sou	ınd: not bei	nt, broken	, and no bloc	kage	X		
(dissolved)		Alkalinity,		identified	_		_			~		
Hexavalent		Chloride,			nt or broken			1		<b>↓</b>		
Chromium		Turbidity,			oken and is n					+		
PCB		TDS,			ocked and is	not able to	be used					
Matrix Spike		Specific		Cap is pre						×		
Duplicate	Commence	Conductance		Well perm	nit is present			-				
Sampled By	Comments:											

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q4 2023 Well Number: 059-P78002 Project Number: 20010210 Well Diameter (in): 2" Date: 11/16/23 Depth to Product (ft): -One Well Volume (gal): Depth to Water (ft): 16.03 Flow Rate (mL/min) Product Thickness (ft): -Depth to Bottom (ft): 19,08 Length of time Purged (min) PURGING RECORD Dissolved Specific Volume pН ORP Turbidity DTW Conductance Oxygen Temp Purged (s.u.) (mV) (NTU) Comments Time (ms/cm) (mg/L) (°C) (feet) ± 10% or < 5 (gallons) $\pm 0.1$ $\pm 10$ ± 3% $\pm 0.3$ 132 18.51 10.74 2.22 10.51 1.66 16.02 1240 18.53 10.80 2.17 1.21 87 4.22 16.04 1245 18.55 10.96 2.19 16.04 0.94 62 1.09 1250 18.64 16,04 11.04 2.19 1.16 26 0.53 1250 18.72 1300 16.04 11.10 2.21 1.26 0.38 16,04 18.87 1,41 -23 0.35 11,13 2.29 1305 1, 44 11,23 2.34 -33 0.03 1310 1895 16.03 11.21 2,32 19.04 1.35 1315 16.04 -42 0.12 SAMPLE RECORD AND WELL DETAILS Well Inspection Sample ID Time Collected Well has been found and is accessible without hazards. If no, X C059-PZP002 1325 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters × Fair: some visible cracks and/or not sloping Collected? Parameter Collected? Parameter TCL-VOCs Dissolved Zn Poor: heavily cracked Unsure: pad has been buried by site activities TPH-GRO and Cd TPH-DRO BTEX and Bolts in place X X Bolts are missing naphthalene O&G Total Cyanide VOC, Well Casing Condition Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, gal/ft = ____(gal) (total) Nitrate, **TAL Metals** Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury X COD, identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Chromium Well is broken and is not able to be used Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific × Duplicate Conductance Well permit is present Comments: Sampled By PH>10 SHL

	Low Fl		ARM Group Enterprises LLC Engineers and Scientists									
Well Number:	C09	3-12M			Project Nan	ne: COA G	W Q4 20	23				
Well Diameter (	(in):				Project Nun	nber: 21010	0210					
Depth to Produc	et (ft):				Date: [1]	27)23						
Depth to Water	(ft): 10, (	67			One Well Volume (gal):							
Product Thickne		,			Flow Rate (mL/min) 306							
Depth to Botton	n (ft):				Length of ti	me Purged (	min)			1		
	NULL CONTROL			PURGING 1	RECORD					THE RESERVE		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ments		
1250			15.85	6.40	0.35%	4.99	-55	2.52				
12.00		11,27	15,67	486	0.789	(1, 7¢	-194	2,95				
1300		11,07	15 12	6) 21	0.939	0.3/	-394	2,22				
		11,30	19.1	00 10	1	N/	1					
1305			15.38	90,48	On. 1-10	0.32	-452	1.10	-	-		
1310		11:30	15.93	10.79	1.2.3	5.20	- 449	1.73	_			
1715		Ĭ.	15.78	10.90	1,29	0.29	- 444	2.20	2			
1320			15.79	10.96	1.32	028	- 439	2.98				
1325		-li	15.49	10 97	1.35	0,28	- 432	2.78	-			
		Ÿ										
		,										
(H)	9 11 11 11		SAMPLE R	ECORD A	ND WELL D	ETAILS			7/11111			
Sample	e ID	Time Co					Inspection	n	W			
C097					nas been found and is accessible without hazards. If no, n in the comments section.  Well Pad Condition							
				<u> </u>				tion				
	Sampling P				visible crack							
	Collected?	Parameter				ks and/or no	ot sloping			-		
TCL-VOCs		Dissolved Zn			ily cracked	. 11 .						
TPH-GRO		and Cd			ad has been l	buried by si	te activition	es				
TPH-DRO		BTEX and		Bolts in pl								
O&G		naphthalene VOC,		Bolts are i	nissing	W-II C-	sing Con	dision	_			
Total Cyanide		SVOC, TAL		Casina is	fraa from do			ked with the	Well ID			
TCL SVOCs		Metals and		Casing is	iree iroin dai		l Condition		Well ID			
TAL Metals		mercury,				**						
and Mercury		Sulfate,		Casing Volun	ne: $l'' l D_i = 0.04$	41 gal/ft - 2" 1.E		l/ft - 4" 1.D. = 0.6	53 gal/ft - 6	" LD. = 1.47		
(total)		Nitrate,				ft x	gal/ft gal/ft =	(gal)				
TAL Metals		Ammonia,										
and Mercury	1	COD,			ucturally sou	ınd: not ber	it, broken	, and no blocl	kage			
(dissolved)	- P.	Alkalinity,		identified						_		
Hexavalent		Chloride,			nt or broken			i		1		
Chromium		Turbidity,			oken and is r					-		
PCB		TDS,			ocked and is	not able to	be used			-		
Matrix Spike		Specific		Cap is pre						_		
Duplicate	C :	Conductance		well perm	nit is present			· · · ·				
Sampled By	Comments:											

#### **ARM Group** Low Flow Sampling Enterprises LLC **Purge Log** Engineers and Scientists 190-145 Project Name: COA GW Q4 2023 Well Number: / 1 Project Number: 21010210 Well Diameter (in): Depth to Product (ft): Date: 11/27/27 14,68 One Well Volume (gal): Depth to Water (ft): Product Thickness (ft): Flow Rate (mL/min) Length of time Purged (min) Depth to Bottom (ft): PURGING RECORD Specific Dissolved ORP Turbidity Volume pН DTW Temp Conductance Oxygen (mV) (NTU) Comments Time Purged (s.u.) (feet) (°C) (ms/cm) (mg/L) ± 10% or < 5 $\pm 0.1$ $\pm 10$ (gallons) ± 3% $\pm 0.3$ 3.44 13.30 6.08 1120 ZI. 14.44 158 -109 9.9 1129 12.79 6.34 3. 42 1444 140 14.44 12.45 6.43 3.40 1.45 -114 4.0 15.4 14.50 6.47 3.3H 1-08 -133 14.14 1135 14.56 2.98 6.uu 136 1.62 ーフュ 9.1 1.99 6.43 2.21 14.90 13.53 2.45 50 14,50 6.43 13.36 1456 2.57 6. US 1.90 5.3 1155 13.29 6.47 2.64 5.6 14.50 -62 1200 -62 13.60 6-49 2 . fy 1456 1-79 4.5 7 65 SAMPLE RECORD AND WELL DETAILS Time Collected Well Inspection Sample ID Well has been found and is accessible without hazards. If no, (0)98-my explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked Dissolved Zn TCL-VOCs Unsure: pad has been buried by site activities **TPH-GRO** and Cd Bolts in place TPH-DRO BTEX and naphthalene Bolts are missing O&G Well Casing Condition VOC. Total Cyanide Casing is free from damage and visibly marked with the Well ID TCL SVOCs SVOC, TAL Metals and Well Condition TAL Metals mercury, and Mercury Casing Volume: 1" 1 D = 0.041 gal/ft - 2" 1.D = 0.163 gal/ft - 4" 1 D = 0.653 gal/ft - 6" 1.D = 1.47 Sulfate, (total) Nitrate. gal/ft = ft x TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Hexavalent Well is bent or broken but is able to be used Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Conductance Duplicate Comments: Sampled By 17P

		low Sampl urge Log	ing		ARM Group Enterprises LLC Engineers and Scientists								
317-11 NII	/ 3 / 2	5 / W	-		D. C. AND	COAC							
Well Number:		14-11	1		Project Name: COA GW Q4 2023 Project Number: 20010210								
Well Diameter					Date:								
Depth to Produc		13 76			One Well Volume (gal):								
Depth to Water		12.40			Flow Rate (mL/min)								
Product Thickn					Length of time Purged (min)								
Depth to Bottor	n (II):	and the same of the same of		DEIDCINC	RGING RECORD								
Caracon a Section of				UKGING				_					
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comr	nents			
1245 1245 1255		13.70	19.90	12.05	5,59 5,81 5,89 (0.11	2.83 2.40 2.46 2.23	-110 -114 -115 -123	2,02 0,98 0,39	~				
1305			1908	1213	6.15	7.07	- 126 -131	0.60					
Season of most			SAMPLE R	ECORD AN	D WELL D	ETAILS							
Sampl	e ID	Time Co	llected	12 15		Well	Inspectio	on	W. II				
CO 19		131	Q	Well has been found and is accessible without hazards. If no, explain in the comments section.  Well Pad Condition									
	Sampling P	arameters			Good: no visible cracks and is sloping								
Parameter	Collected?	Parameter	Collected?		visible cracl	ks and/or no	t sloping						
TCL-VOCs		Dissolved Zn	(4)		ily cracked								
TPH-GRO		and Cd			nd has been b	ouried by sit	e activitie	es					
TPH-DRO		BTEX and		Bolts in pl									
O&G		naphthalene		Bolts are r	nissing								
Total Cyanide	1	VOC,					sing Cond						
TCL SVOCs		SVOC, TAL		Casing is t	free from dar	nage and vi	sibly mar	ked with the \	Well ID				
TAL Metals		Metals and				Well	Condition	n					
and Mercury (total)	1	mercury, Sulfate, Nitrate,		Casing Volum	ne: 1" I.D. = 0.04	- 100	gal/ft	1/ft - 4" I D = 0.65	53 gal/ft - 6"	1.D. = 1.47			
TAL Metals	′	Ammonia,			Sec.	n x	gal/ft =	(gal)					
and Mercury		COD,		Well is str	ucturally sou	ınd: not ben	t, broken.	and no block	age				
(dissolved)		Alkalinity,		identified					•				
Hexavalent		Chloride,		Well is be	nt or broken	but is able t	o be used	i i					
Chromium	O.Horido,					ot able to b							
PCB			ocked and is										
Matrix Spike		Cap is pre						_					
Duplicate		Specific Conductance			rmit is present								
1	Comments:				P								
Sampled By													

B

	Low Flow Sampling Purge Log					ARM Group Enterprises LLC Engineers and Scientists						
Well Number:	03	Tat-M	15		Project Nan	ie: COA G	W Q4 20	123				
Well Diameter	(in): -7	13			Project Nun				***	1		
Depth to Produc						8 23	32 10	_				
Depth to Water		93			One Well V							
Product Thickn					Flow Rate (							
Depth to Botton	-				Length of ti		The second second		_	9		
Depair to Bottor	III (10).			URGING		ine i uigea (	illini)	Design to	De de de	No.		
			2750			Discolused				1		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ments		
1145		13.94	19.65	10.16	0,813	0,34	-69 -72	7.18		<u>.</u>		
1200		13.94	18.93	11.50	1.97	0.35	- 189	7.01	,	2		
1215			18.80	11,60	2,41	0.37	-217 -221	0.95	2			
			SAMPLE RI	ECORD AN	D WELL DI	ETAILS						
Sample	e ID	Time Co	llected			Well	Inspection	n		•		
CO19	5-MUS	122	5		een found ar	ts section.	ible witho	out hazards. If	`no,			
	Sampling P	arameters		Good: no	visible cracks							
Parameter		Parameter	Collected?		visible cracl				<del></del>	<del>                                     </del>		
TCL-VOCs	Concetta:	Dissolved Zn	Concetca:		ily cracked		oloping.		_			
TPH-GRO		and Cd	,		ad has been b	uried by sit	te activitie	26	_	$\vdash$		
TPH-DRO		BTEX and		Bolts in pl		diled by bit				<del>                                     </del>		
O&G		naphthalene		Bolts are r								
Total Cyanide		VOC,	,	Dono are r	moonig	Well Ca	sing Cone	dition		_		
TCL SVOCs		SVOC, TAL		Casing is f	free from dan	THE RESIDENCE OF THE PERSON NAMED IN	Maria Caracteria Contractoria C	ked with the	Well ID			
	57 846 — 37 (500 5° 04)	Metals and	3	Cuoing io	TOO HOM day		l Conditio		TO THE	-		
TAL Metals and Mercury		mercury,										
(total)		Sulfate, Nitrate,		Casing Volum	ne: 1" l.D. = 0.04	_	gal/ft	/ft - 4" 1.D. = 0.65	53 gal/ft - 6"	I.D. = 1.47		
TAL Metals		Ammonia,	1	Wall in at-			4 11					
and Mercury		COD,		well is str	ucturally sou	na: not ben	u, proken,	and no block	age			
(dissolved)		Alkalinity,										
Hexavalent		Chloride,			nt or broken					<del></del>		
Chromium		Turbidity,			oken and is n					-		
PCB		TDS,	1		ocked and is	not able to	be used		_			
Matrix Spike		Specific		Cap is pre		1000 V 12 I						
Duplicate	-	Conductance		Well perm	it is present					1		
Sampled By	Comments:	-										

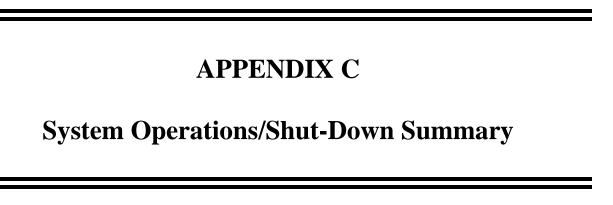
# ARM Group Low Flow Sampling **Enterprises LLC Purge Log Engineers and Scientists** Project Name: COA GW Q4 2023 CO 196-MW5 Well Number: Project Number: 20010210 Well Diameter (in): Depth to Product (ft): Date: 11 | 7 | 23 One Well Volume (gal): Depth to Water (ft): Flow Rate (mL/min) Product Thickness (ft): Length of time Purged (min) Depth to Bottom (ft): PURGING RECORD Dissolved Specific ORP Turbidity Volume pН Oxygen DTW Temp Conductance Comments (mV) (NTU) Purged (s.u.) Time (mg/L)(feet) (°C) (ms/cm) $\pm 10$ $\pm 10\% \text{ or } < 5$ $\pm 0.1$ (gallons) ± 3% $\pm 0.3$ -105 11,40 07 0.63 -178 0.65 3.01 3.05 20.22 SAMPLE RECORD AND WELL DETAILS Well Inspection Time Collected Sample ID Well has been found and is accessible without hazards. If no, 1125 explain in the comments section. Well Pad Condition Good: no visible cracks and is sloping Sampling Parameters Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Collected? Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd Bolts in place TPH-DRO BTEX and naphthalene Bolts are missing O&G Well Casing Condition VOC. Total Cyanide Casing is free from damage and visibly marked with the Well ID SVOC, TAL TCL SVOCs Metals and Well Condition / TAL Metals mercury, Casing Volume: 1" 1.D. = 0.041 gal/ft - 2" 1.D. = 0.163 gal/ft - 4" 1.D. = 0.653 gal/ft - 6" 1.D. = 1.47 and Mercury Sulfate, (total) Nitrate. ft x _gal/ft = TAL Metals Ammonia, Well is structurally sound: not bent, broken, and no blockage and Mercury COD, identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Duplicate Conductance Comments: Sampled By

		ow Samplinge Log	ing		ARM Group Enterprises LLC Engineers and Scientists							
Well Number:	6	10V - M	1.00		Project Name: COA GW Q4 2023							
Well Diameter (	in):	70-1-			Project Number 20010210							
Depth to Produc					Date: 1127							
Depth to Water		Of			One Well Volume (gal):							
Product Thickne		75			Flow Rate (mL/min)							
Depth to Botton					· · · · · · · · · · · · · · · · · · ·	me Purged (						
Depin to Botton	ii (it).	ILLRE THE OIL	E HAVE T	PURGING		me rangea (	Marshall		The Ho-	LOS ILI		
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm)	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comn	nents		
1740			1980	12.02	XING.	-1055	129	123				
1210		.70/	1710		APPIT -	707	120	1.07				
1595		15/16	14.85	120	8.76	120.5	187	1,18				
1350		13.97	19.65	1204	2 90	0,22	-203	1.7.a				
1355		13.97	19,08	12.06	10,4	0.18	-217	0.83				
1400		Λ	19,05	12.08	10.7	0.15	- 27/0	1.39				
1400			19.03	12.09	10.8	0,1/0	-235	033	1/			
1700			17.00	6.01	10, 8	0,110	- 2 /	0.77				
		1										
		<u> </u>										
			SAMPLE R	ECORD AN	ND WELL D				54 ES			
Sampl	e ID	Time Co	ollected				l Inspection					
C0198	Mus	1410		Well has been found and is accessible without hazards. If no, explain in the comments section.  Well Pad Condition								
	Sampling P	arameters		Good: no	visible crack							
Parameter	Collected?	Parameter	Collected?		visible crac							
TCL-VOCs	Conceteu:	Dissolved Zn			ily cracked		1 0					
TPH-GRO		and Cd			ad has been l	buried by si	te activitie	es				
TPH-DRO		BTEX and		Bolts in pl								
O&G		naphthalene		Bolts are n								
Total Cyanide		VOC,		20110 4110 1	8	Well Ca	asing Con	dition				
TCL SVOCs		SVOC, TAL		Casing is	free from da			ked with the	Well ID			
		Metals and					ll Condition					
TAL Metals		mercury,							1100			
and Mercury		Sulfate,		Casing Volum	ne: $1^{11} I D_1 = 0.04$	41 gal/ft - 2" 1.1	D. = 0.163 ga gal/ft	1/R - 4" $I.D. = 0.6$	53 gal/ft - 6"	I.D. = 1.47		
(total)		Nitrate,				ñх		(gal)				
TAL Metals		Ammonia,										
and Mercury		COD,			ucturally so	und: not bei	nt, broken	, and no block	cage			
(dissolved)		Alkalinity,		identified						,		
Hexavalent		Chloride,			nt or broken			<u>d</u>				
Chromium		Turbidity,		Well is broken and is not able to be used								
PCB		TDS,		Well is bl	ocked and is	not able to	be used					
Matrix Spike		Specific		Cap is pre								
Duplicate		Conductance	:	Well pern	nit is present							
Sampled By	Comments:											

#### ARM Group Low Flow Sampling Enterprises LLC Purge Log **Engineers and Scientists** Project Name: COA GW Q4 2023 CO70-145 Well Number: Well Diameter (in): Project Number: 20010210 Date: Depth to Product (ft): One Well Volume (gal): Depth to Water (ft): Product Thickness (ft): Flow Rate (mL/min) 300 Length of time Purged (min) Depth to Bottom (ft): PURGING RECORD Dissolved Specific ORP Turbidity Volume pН DTW Temp Conductance Oxygen Comments Purged (mV) (NTU) Time (s.u.) (mg/L) (feet) (°C) (ms/cm) (gallons) $\pm 10\% \text{ or } < 5$ $\pm 0.1$ $\pm 10$ $\pm 3\%$ $\pm 0.3$ SAMPLE RECORD AND WELL DETAILS Well Inspection Sample ID Time Collected Well has been found and is accessible without hazards. If no, CO 281-MUS explain in the comments section. Well Pad Condition Sampling Parameters Good: no visible cracks and is sloping Collected? Fair: some visible cracks and/or not sloping Parameter Collected? Parameter Poor: heavily cracked TCL-VOCs Dissolved Zn Unsure: pad has been buried by site activities TPH-GRO and Cd Bolts in place TPH-DRO BTEX and O&G naphthalene Bolts are missing Well Casing Condition VOC. Total Cyanide SVOC, TAL Casing is free from damage and visibly marked with the Well ID TCL SVOCs Metals and Well Condition TAL Metals mercury. and Mercury Casing Volume: 1" I.D. = 0.041 gal/ft - 2" I.D. = 0.163 gal/ft - 4" I.D. = 0.653 gal/ft - 6" I.D. = 1.47 Sulfate, (total) Nitrate. _gal/ft = TAL Metals Ammonia. Well is structurally sound: not bent, broken, and no blockage and Mercury COD. identified (dissolved) Alkalinity, Well is bent or broken but is able to be used Hexavalent Chloride, Well is broken and is not able to be used Chromium Turbidity, Well is blocked and is not able to be used **PCB** TDS, Cap is present Matrix Spike Specific Well permit is present Conductance Duplicate Comments: Sampled By

90		low Sampli urge Log	ing	1	ARM Group Enterprises LLC Engineers and Scientists					
Well Number:	(51)	11-MW			Project Nam			)23		
Well Diameter	(in):	,			Project Nun					
Depth to Produ				2415						
Depth to Water	iter (ft): 35, 65				One Well W					
Product Thickn					Flow Rate (		350			
Depth to Bottor	m (ft):				Length of ti	me Purged (	min)			
		THE RESERVE THE	P	PURGING	RECORD	- U-PANES			CANCEL SERVICE	-
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Com	ment
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V		1	+,00	- 20	17.1	4		8.55	-	+
1435		$\longrightarrow$	17.00	7.017	ITT	0.39	279	0.00	1	+
14 90		<u> </u>	17.69	7.97	174	0,65	245	7.01	-5	1
1445			12.75	795	17,9	0.23	-254	7.51	IV	
			,							
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					1795					
			3	7.	1000					+
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Sampl	a ID			ECORD AI	ND WELL D		Inspection	on		
Sampl	le ID	Time/Co		Well has b		Well nd is access ts section.		out hazards. I	f no,	
Sampl		Time/Co		Well has t explain in	peen found ar the commen	Well nd is access ts section. Well F	ible witho	out hazards. I	f no,	
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Parameter TCL-VOCs TPH-GRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium PCB	Sampling P Collected?	arameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride,	Collected?	Well has be explain in Good: no Fair: some Poor: heave Unsure: part Bolts in play Bolts are a Casing is Casing Volume Well is stridentified Well is be Well is brown to the control of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the case of the	visible cracked visible cracked visible cracked ad has been blace missing  free from danger 1 T D = 0.04  ructurally souther tor broken	Well Family and is access the section.  Well Family and is sloped with the section.  Well Family and the section with the section.  Well Camage and very well Camage and very well family and the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the section with the	Pad Condiping ot sloping te activitie asing Con isibly mar Il Conditio D = 0.163 ga gal/ft gal/ft = nt, broken to be used	es  dition  dition  dition  dition  rked with the  al/R - 4" LD. = 0.6  (gal)  and no block	Well ID	I I I I I I I I I I I I I I I I I I I
Parameter TCL-VOCs TPH-GRO TPH-DRO O&G Total Cyanide TCL SVOCs TAL Metals and Mercury (total) TAL Metals and Mercury (dissolved) Hexavalent Chromium	Sampling P Collected?	Parameters Parameter Dissolved Zn and Cd BTEX and naphthalene VOC, SVOC, TAL Metals and mercury, Sulfate, Nitrate, Ammonia, COD, Alkalinity, Chloride, Turbidity,	Collected?	Well has be explain in Good: no Fair: some Poor: heave Unsure: part Bolts in plays Bolts are researched. Casing is:  Casing Volume Well is stridentified Well is be Well is be Well is preserved.	visible crack e visible crack e visible crack vily cracked ad has been b lace missing free from dan me: 1" I D = 0.04  ructurally sou ent or broken roken and is rocked and is	Well Fs and is slop ks and/or no buried by si  Well Camage and v  Well Camage and v  Well Camage and v  but is able not able to but is able to but is able to but is able to but able to but able to but is able to but able to but is able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but able to but abl	Pad Condiping ot sloping te activitie asing Con isibly mar Il Conditio D = 0.163 ga gal/ft gal/ft = nt, broken to be used	es  dition  dition  dition  dition  rked with the  al/R - 4" LD. = 0.6  (gal)  and no block	Well ID	T' I.D

	Low Flow Sampling Purge Log  Well Number: 6002 - M-2				ARM Group Enterprises LLC Engineers and Scientists					
Well Number	(no) - m	レナ			Project Nam	e. COA	W Q4 20	23		
Well Diameter (					Project Nun					
Depth to Produc	1				Date:	2101	22.10			
Depth to Water		9-19-19			One Well V	olume (gal)	:			
Product Thickne					Flow Rate (					
Depth to Botton					Length of ti		(min)			
RESIDENCE.				PURGING			HERE			MI.
Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments	
\355		19.10	13.89	7.53 0.436 1.53 -49 10.7						
1340		20.10	14.15	7.(5	0.869	1.09	-169	4.9		
		50.63	13.49			0.98	-244			
1345				255	1.59					-
1350		20.10	13.14	7.50	4.10	6-79	-214	4-7		-
1365		₹6.10	13.19	7.59	5.5 3	0.48	-303	4.4		
1400		20.10	13.23	5.01	(23	0.33	-311	5.3	HI II	
१५७५		71.10	13.15	7.61	6.51	0.53	-314	4.1		
lylo		20.10	0.19	7,60	6.64	G453	-716	4.8		
1415		20.10	13.15	7.61	664	0-46	-8K	4.5		
		1,4	7,77,67			- 10				
			SAMPLE R	ECORD AL	ND WELL DI	ETAILS				
Sample	- ID	Time Co		ECORD AI	ND WELL DI		l Inspection	nn .		
6002-~		142		Well has been found and is accessible without hazards. If no, explain in the comments section.						
			To.			Well I	Pad Condi	tion		
	Sampling F	arameters			visible cracks					-
Parameter	Collected?	Parameter	Collected?	Fair: some	visible cracl	ks and/or n	ot sloping			
TCL-VOCs		Dissolved Zn			vily cracked					
TPH-GRO	1.5	and Cd			ad has been b	uried by si	te activitie	es		
TPH-DRO		BTEX and		Bolts in p						
O&G		naphthalene		Bolts are i	missing					
Total Cyanide		VOC,					sing Con			
TCL SVOCs		SVOC, TAL		Casing is	free from dar			ked with the V	Vell ID	
TAL Metals		Metals and				We	ll Condition	on		
and Mercury (total)		mercury, Sulfate, Nitrate,		Casing Volun	ne: 1" I D. = 0.04		gal/ft	l/ft - 4" I.D. = 0.65	3 gal/ft • 6" I.D. =	= 1.47
TAL Metals		Ammonia,					gabit	(gat)		
and Mercury		COD,		Well is str	ructurally sou	nd: not bei	nt, broken	, and no block	age	
(dissolved)		Alkalinity,		identified						
Hexavalent		Chloride,	1	Well is be	nt or broken	but is able	to be used	1		
Chromium		Turbidity,		Well is br	oken and is n	ot able to b	e used			
PCB		TDS,	1	Well is bl	ocked and is	not able to	be used			
Matrix Spike		Specific		Cap is pre	esent					
Duplicate		Conductance		Well pern	nit is present		I			
Sampled By	Comments:								7	



#### **JANUARY 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) - Sampled *Cell 3 (On) - Sampled *Cell 5 (On) - Sampled	•Cell 1 (On) - Southern wellfield configuration •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)
*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) - Sampled •Cell 3 (On)	•Cell 1 (On) •Cell 3 (Off) - AS hose replacement •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)
15 •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Northern wellfield configuration •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	31  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)				
		NOTES:				

#### FEBRUARY 2023

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
			•Cell 1 (On) •Cell 3 (On)	•Cell 1 (On) - Sampled •Cell 3 (On) - Sampled	•Cell 1 (On) •Cell 3 (On)	•Cell 1 (On) •Cell 3 (On)
_		_	•Cell 5 (On)	•Cell 5 (On) - Sampled	•Cell 5 (On) - Sampled	•Cell 5 (On)
5	6	7	8	9	10	11
-Call 4 (On)	0-114 (0-1)	0-114 (0-)	0-114 (0-1)	0-114 (0-1)	0-114 (0-1)	•Cell 1 (On)
•Cell 1 (On) •Cell 3 (On)	•Cell 1 (On) •Cell 3 (On)	•Cell 1 (On) •Cell 3 (On)	•Cell 1 (On) •Cell 3 (On)	•Cell 1 (On) •Cell 3 (On)	•Cell 1 (On) •Cell 3 (On)	•Cell 3 (On)
•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)
12	13	14	15	16	17	18
	•Cell 1 (On)				•Cell 1 (Off) - SVF VFD Fault	
•Cell 1 (On)	•Cell 3 (Off) - Power Fault	•Cell 1 (On)	Southern wellfield configuration	•Cell 1 (On)	alarm	•Cell 1 (Off)
			•Cell 3 (On)	•Cell 3 (On)		•Cell 3 (On)
19	20	21	22	23	24	25
	•Cell 1 (On)			•Cell 1 (Off) - Power Fault		
•Cell 1 (Off)	•Cell 3 (On) •Cell 5 (On) - LRP oil mist filter	•Cell 1 (On)	•Cell 1 (On)		•Cell 1 (Off)	•Cell 1 (Off)
•Cell 3 (On)	change-out, sulfuric acid drum	•Cell 3 (On)	•Cell 3 (On)	alarm	•Cell 3 (Off)	•Cell 3 (Off)
			•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)
26	21	28				
•Cell 1 (Off) •Cell 3 (Off)						
•Cell 5 (On)	•Cell 5 (On)	•Cell 5 (On)				
		NOTES:				
•Cell 3 (On) •Cell 5 (On)  19 •Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)  26 •Cell 1 (Off) •Cell 3 (Off)	alarm •Cell 5 (On)  20  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - LRP oil mist filter change-out, sulfuric acid drum transfer  27  •Cell 1 (Off) •Cell 3 (Off)	•Cell 3 (On) •Cell 5 (On)  21  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)  28  •Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 3 (On) •Cell 5 (On)  22 •Cell 1 (On)	•Cell 3 (On) •Cell 5 (On)  23 •Cell 1 (Off) - Power Fault alarm •Cell 3 (Off) - Power Fault	•Cell 3 (On) •Cell 5 (On) 24 •Cell 1 (Off)	-Cell 3 (On) -Cell 5 (On) 25

#### **MARCH 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Northern wellfield configuration •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
5 •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Sampled •Cell 3 (On) - Sampled •Cell 5 (On) - MS tank sight glass installation	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	11  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) - SVE VFD Fault alarm •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - Extraction well redrill event	•Cell 1 (Off) - SVE VFD Fault alarm •Cell 3 (On) •Cell 5 (Off)
-Cell 1 (Off) -Cell 3 (On) -Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - Begin extraction well redrill event	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - End extraction well redrill event	•Cell 1 (Off) - SVE VFD Fault alarm •Cell 3 (On) •Cell 5 (Off)	*Cell 1 (Off) *Cell 3 (On) *Cell 5 (Off)	*Cell 1 (Off) *Cell 3 (On) *Cell 5 (Off)	
		NOTES:				

#### **APRIL 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						•Cell 1 (Off) •Cell 3 (Off) - AS Compressor VFD Overcurrent Fault alarm •Cell 5 (Off)
•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (Off)	•Cell 1 (Off) - SVE VFD Fault alarm •Cell 3 (On) •Cell 5 (Off) - Extraction well development event	-Cell 1 (Off) - TPA overhead electric grid shutdown -Cell 3 (Off) - TPA overhead electric grid shutdown -Cell 5 (On) - LRP oil mist filter change-out	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On) - Sampled	*Cell 1 (Off) *Cell 3 (Off) *Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)
•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On) - Sulfuric acid metering pump check valve replacement	Cell 1 (On) - Southern wellfield configuration Cell 3 (On) Cell 5 (On) - Sulfuric acid/CL5432 anti-scalent drum transfer	•Cell 1 (On) - Sampled •Cell 3 (On) - Sampled •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled; LGAC hose clamp replacement	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Northern wellfield configuration •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)		NOTES:				

#### **MAY 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - Annual AST cleaning	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (Off) - Power Fault alarm •Cell 3 (Off) - Power Fault alarm •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)
7 •Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) - TPA overhead electric grid shutdown •Cell 3 (Off) - TPA overhead electric grid shutdown •Cell 5 (On) - Remote telemetry antenna installation	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On) - Sampled	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On) - Sampled	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (Off) - SVE VFD Fault alarm •Cell 3 (On) •Cell 5 (On)
•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) - Sampled •Cell 5 (On)	*Cell 1 (On) - Sampled *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sulfuric acid drum transfer	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - System taken offline for naphthalene breakthrough/carbon changeout	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) - Southern wellfield configuration •Cell 3 (On) - AS compressor preventative maintenance •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (Off) - SVE VFD Fault alarm •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (Off)
•Cell 1 (Off) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (Off)	*Cell 1 (Off) *Cell 3 (On) *Cell 5 (Off)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (Off)			
		NOTES:				

#### **JUNE 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				*Cell 1 (On) - Sampled *Cell 3 (On) - Sampled *Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
-Cell 1 (On) -Cell 3 (On) -Cell 5 (Off)	-Cell 1 (On) -Cell 3 (On) -Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	Cell 1 (On) - Northern wellfield configuration Cell 3 (On) Cell 5 (Off)	•Cell 3 (On) •Cell 5 (Off) - Carbon change- out	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - DPE Blower Low Vacuum alarms	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - DPE blower troubleshooting, damaged extraction well subsurface piping discovery	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - Extraction well subsurface piping excavation	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Extraction well subsurface piping repair	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
18  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sulfuric acid drum transfer	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	
		NOTES:				

#### **JULY 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Sampled •Cell 3 (On) - Sampled •Cell 5 (On)	Cell 1 (On) - AS compressor preventative maintenance Cell 3 (On) - AS compressor preventative maintenance Cell 5 (On) - Sulfuric acid metering pump check valve replacement	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)
9 •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Wellfield groundskeeping •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) - Wellfield groundskeeping •Cell 3 (On) •Cell 5 (On) - Sampled	-Cell 1 (On) - Wellfield groundskeeping -Cell 3 (On) -Cell 5 (On) - Sulfuric acid/CL5432 anti-scalent drum transfer	•Cell 1 (Off) - SVE VFD Fault alarm, AS compressor aftercooler fan replacement •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)
16  •Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) - Wellfield groundskeeping •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) - Wellfield groundskeeping •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On) - Sulfuric acid drum transfer	NOTES:				

#### **AUGUST 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		•Cell 1 (Off) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - New AS compressor aftercooler fan installed •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
6  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Northern wellfield configuration •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Sampled •Cell 3 (On) - Sampled •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	11  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	12  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
13  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sulfuric acid drum transfer	17 •Cell 1 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)
*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - LRP oil mist filter change-out/DPE blower preventative maintenance	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	31		
		NOTES:				

### **SEPTEMBER 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Southern wellfield configuration, AS compressor preventative maintenance •Cell 3 (On) •Cell 5 (On) - Sampled; sulfuric acid drum transfer	•Cell 1 (On) - Sampled	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) - Power Fault alarm •Cell 3 (Off) - Power Fault alarm •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)
17  •Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) - Northern wellfield configuration •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) - Power Fault alarm •Cell 3 (Off) - Power Fault alarm •Cell 5 (On)
•Cell 1 (Off) •Cell 3 (Off) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled; sulfuric	29	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)
		NOTES:				

#### **OCTOBER 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Sampled •Cell 3 (On) - Sampled •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) -Power Fault and MS Tank High Level alarms •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - DPE blower motor starter damaged due to phase loss from loose wire	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 ( <b>Off</b> )	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
-Cell 1 (On) -Cell 3 (On) -Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - DPE blower motor starter installed, sulfuric acid metering pump check valve replacement	•Cell 1 (On) - Sampled •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) - Southern wellfield configuration •Cell 3 (On) •Cell 5 (On)	24	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (Off) - Power Fault alarm •Cell 3 (Off) - Power Fault alarm •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - System taken offline for carbon change-out				
		NOTES:				

#### **NOVEMBER 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) - Sampled, Northern wellfield configuration •Cell 3 (On) - Sampled •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - Carbon change- out/24-hour GAC hydration	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - LRP oil mist filter change-out/DPE blower preventative maintenance	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On) - Sampled; sulfuric acid drum transfer	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
19 •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) - AS compressor preventative maintenance •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
•Cell 1 (Off) - MS Tank High Level alarm •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)		
		NOTES:				

### **DECEMBER 2023**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
3	4	5	6	7	8	9
•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
*Cell 1 (On) *Cell 3 (On) *Cell 5 (On)	•Cell 1 (Off) - MS Tank High Level alarm •Cell 3 (Off) - Power Fault alarm •Cell 5 (On)	•Cell 1 (On) - Sampled, Southern wellfield configuration •Cell 3 (On) - Sampled •Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	*Cell 1 (On) *Cell 3 (On) *Cell 5 (On) - Sampled	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)
17  •Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (On)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off) - Bad leak in original LGAC vessel	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) - Northern wellfield configuration •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)	•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)
•Cell 1 (On) •Cell 3 (On) •Cell 5 (Off)		NOTES:				

# APPENDIX D Historical Data Summary



## Coke Oven Historical Data Cell 5 Groundwater Analytical Results

Section 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	6/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Melegrame   196	Location ID:	CO23-PZ	ZM008	l	ug/L															
Sephenomy (170   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576   1576	Benzene	404	152	599	666	431	473	495	489	567	377	606	533	510	450	580	580	410	320	320
Series 1 31 32 3 33 44 21 142 34 329 52 54 27 34 32 46 26 28 312 30 30 30 70 120 120 120 120 120 120 120 120 120 12	Ethylbenzene	19.6	8.9	27.8	28.6	21.3	18.6	24.7	25	31.5	23.3	32.6	27.4	27	24	27	30	24	20	16
And the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the prop	Naphthalene	1,720	1,620	3,250	5,950	3,200	1,860	2,460	4,090	2,770	4,450	4,120	2,900	3,100	3,500	4,500	4,100	4,000	2,900	2,600
Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Controlled   Con	Toluene	181	30.7	303	344	201	172	244	293	357	217	343	324	260	280	310	330	240	70	150
This process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the process of the p	Xylenes	314	140	431	465	363	289	399	434	539	374	525	457	510	420	480	520	390	320	270
the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properties of the properti	Location ID:	CO24-PZ	ZM007		ug/L															
perhetering 1,720 4,70 1,70 1,70 1,70 1,70 1,70 1,70 1,70 1	Benzene	1.3	160	0.5	3	3.2	2.1	1.3	2.2	2.9	2.3	2.3	3.7	4.4	0.5	5.2	4.3	2.9	3.9	7.7
Second   12   373   18   19   19   13   1   14   19   14   14   19   14   14	Ethylbenzene	5.7	6	4.5	5.2	4.6	2.8	3.2	2.8	1.9	3.6	2.1	2.9	3.1	0.5	0.5	3.3	2.7	4.2	7
where 74 215 59 73 6.7 41 33 43 55 43 3 45 43 3 45 44 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Naphthalene	3,230	4,070	2,190	3,250	2,620	1,110	9,230	3,780	1,320	6,510	2,390	1,530	2,770	1,800	2,700	1,900	2,000	2,000	2,000
Secretical December 19 19 19 19 19 19 19 19 19 19 19 19 19	Toluene	1.2	37.3	1.6	1.9	1.9	1.3	1	1.4	1.9	1.4	1.4	1.9	2	0.5	0.5	0.5	2.2	0.5	5.6
The presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence o	Xylenes	7.4	21.5	5.9	7.3	6.7	4.1	3.3	4.3	3.5	4.3	3	4.5	4.4	0.5	0.5	0.5	0.5	0.5	14
thylpherene	Location ID:	CO26-PZ	ZM007	ı	ug/L															
### Parthalene      2,590   MS   3,390   437   2,030   2,170   33.8   966   409   1,840   2,880   3,380   MS   960   1,400   2,500   30   400   660	Benzene	201	NS	314	3.4	163	331	3.5	94.3	43.6	165	327	331	NS	120	210	260	4.7	120	240
thylene during the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of	Ethylbenzene	9.8	NS	14.1	0.5	6.1	10.9	0.5	3.5	1.9	6	10.7	10.6	NS	4.1	6.1	9.5	0.18	1.8	4.4
Velnes 207 NS 300 4 141 244 1.8 74.7 42.4 153 250 258 NS 94 140 210 3 38 93  ***Coctation ID:****  ***Coctation ID:****  ***Coctation ID:****  ***Coctation ID:****  ***Coctation ID:***  *	Naphthalene	2,590	NS	3,390	43.7	2,030	2,170	33.8	966	409	1,840	2,880	3,380	NS	960	1,400	2,500	30	400	660
Cocation ID: COSS-PZNOOD	Toluene	117	NS	179	1.1	82.8	182	1.4	43.9	16.8	87	179	175	NS	62	93	120	2.3	41	100
entence 3.5 23.5 0.5 222 1.2 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Xylenes	207	NS	300	4	141	244	1.8	74.7	42.4	153	250	258	NS	94	140	210	3	38	93
thylbenzene 0.5 0.63 0.5 7.6 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Location ID:	CO55-PZ	ZM000	ı	ug/L															
Aphthalene 5.8 454 1.7 1,920 3.4 0.5 0.5 0.5 11.8 2.8 5.4 245 0.5 3.8 0.49 650 7.7 12 130 of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the plane of the	Benzene	3.5	23.5	0.5	222	1.2	0.5	0.5	0.5	0.5	0.63	1.6	74	0.5	0.39	0.17	170	2.4	2.8	48
Oluene 3.8 7.6 0.32 12.5 0.41 0.5 0.5 0.5 0.5 0.5 0.5 0.47 1.2 38 0.5 0.27 0.5 76 1.2 1.6 16 16 16 16 16 16 16 16 16 16 16 16 16	Ethylbenzene	0.5	0.63	0.5	7.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.9	0.5	0.5	0.5	5.8	0.3	0.17	1.1
ylenes 4.2 10.6 0.5 158 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Naphthalene	5.8	45.4	1.7	1,920	3.4	0.5	0.5	0.5	11.8	2.8	5.4	245	0.5	3.8	0.49	650	7.7	12	130
Location ID: CO56-PZPOO1	Toluene	3.8	7.6	0.32	12.5	0.41	0.5	0.5	0.5	0.5	0.47	1.2	38	0.5	0.27	0.5	76	1.2	1.6	16
enzene 229 248 361 266 352 224 255 237 208 244 300 245 291 200 360 310 210 160 230 thylbenzene 8.2 8.6 10.5 8.6 11.7 10.1 10.7 9.4 8.5 7.5 10.4 9.2 10.3 7.2 11 8.9 8.4 8 7.5 aphthalene 1,930 2,200 2,790 3,750 3,250 1,470 NS 2,660 1,970 NS NS 2,310 1,810 2,000 3,000 2,600 2,100 1,900 1,900 oluene 88.1 61.4 122 89 157 21.3 95.5 129 108 73.1 91.6 87.9 173 53 75 72 70 73 76 ylenes 186 190 258 197 251 195 235 217 176 150 244 183 216 160 260 220 190 170 170 170 170 170 170 170 170 170 17	Xylenes	4.2	10.6	0.5	158	0.5	0.5	0.5	0.5	0.5	0.5	1.5	49.5	0.5	0.34	0.5	96	2.9	1.9	16
thylbenzene 8.2 8.6 10.5 8.6 11.7 10.1 10.7 9.4 8.5 7.5 10.4 9.2 10.3 7.2 11 8.9 8.4 8.9 7.5 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	Location ID:	CO56-P2	ZP001		ug/L															
laphthalene 1,930 2,200 2,790 3,750 3,250 1,470 NS 2,660 1,970 NS NS 2,310 1,810 2,000 3,000 2,600 2,100 1,900 1,900 oluene 88.1 61.4 122 89 157 21.3 95.5 129 108 73.1 91.6 87.9 173 53 75 72 70 73 73 76 ylenes 186 190 258 197 251 195 235 217 176 150 244 183 216 160 260 220 190 170 170 170 170 170 170 170 170 170 17	Benzene	229	248	361	266	352	224	255	237	208	244	300	245	291	200	360	310	210	160	230
oluene 88.1 61.4 122 89 157 21.3 95.5 129 108 73.1 91.6 87.9 173 53 75 72 70 73 76 ylenes 186 190 258 197 251 195 235 217 176 150 244 183 216 160 260 220 190 170 170 170 170 170 170 170 170 170 17	Ethylbenzene	8.2	8.6	10.5	8.6	11.7	10.1	10.7	9.4	8.5	7.5	10.4	9.2	10.3	7.2	11	8.9	8.4	8	7.5
ylenes 186 190 258 197 251 195 235 217 176 150 244 183 216 160 260 220 190 170 170 170 170 170 170 170 170 170 17	Naphthalene	1,930	2,200	2,790	3,750	3,250	1,470	NS	2,660	1,970	NS	NS	2,310	1,810	2,000	3,000	2,600	2,100	1,900	1,900
Location ID: CO57-PZP002	Toluene	88.1	61.4	122	89	157	21.3	95.5	129	108	73.1	91.6	87.9	173	53	75	72	70	73	76
enzene 0.5 2.4 0.5 0.5 0.5 NS NS NS NS 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Xylenes	186	190	258	197	251	195	235	217	176	150	244	183	216	160	260	220	190	170	170
thylbenzene 0.5 0.5 0.5 0.5 0.5 NS NS NS NS 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Location ID:	CO57-P2	ZP002		ug/L															
	Benzene	0.5	2.4	0.5	0.5	0.5	NS	NS	NS	NS	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.16	0.32
laphthalene 10.6 4.6 1.2 2.1 1.8 <i>NS NS NS NS</i> 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Ethylbenzene	0.5	0.5	0.5	0.5	0.5	NS	NS	NS	NS	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Naphthalene	10.6	4.6	1.2	2.1	1.8	NS	NS	NS	NS	0.5	0.5	0.5	0.3	0.5	0.5	0.5	0.5	0.5	0.5

U: Non-Detect, NS: Not Sampled

Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	6/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Toluene	0.45	0.74	0.5	0.5	0.5	NS	NS	NS	NS	0.5	0.5	0.5	0.25	0.5	0.5	0.5	0.32	0.5	0.25
Xylenes	0.5	0.5	0.5	0.5	0.5	NS	NS	NS	NS	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Location ID:	CO58-PZ	?M001	и	ıg/L															
Benzene	180	174	224	189	224	237	243	81.2	122	57.5	177	128	0.5	72	190	82	39	110	70
Ethylbenzene	7.9	9.4	10.9	8.9	10.3	10.6	11.4	5.2	6.3	3.2	9.1	5.4	0.5	3.4	8	4.2	1.6	5.4	2.8
Naphthalene	1,320	1,870	1,250	3,060	1,940	1,950	8,170	905	1,350	662	698	1,200	0.5	770	1,600	590	220	850	380
Toluene	51.7	75.4	92.5	75.6	89.6	63.3	68.5	20.2	27.8	10.4	55.4	43.2	0.5	26	69	21	10	36	21
Xylenes	123	156	180	142	174	166	197	74.8	101	41.6	142	91.1	0.5	64	140	65	25	84	44
Location ID:	CO59-P2	ZP002	и	ıg/L															
Benzene	2.4	4.6	7.4	0.5	17	0.5	NS	NS	0.5	2.2	231	0.5	0.5	13	13	150	0.27	2.5	5.9
Ethylbenzene	0.5	0.5	0.5	0.5	0.9	0.5	NS	NS	0.5	0.48	11	0.5	0.41	0.54	0.62	7.4	0.26	1.3	0.46
Naphthalene	5.7	19.9	26.1	2.2	31.4	68.6	NS	NS	0.5	2.8	852	1.2	0.5	53	58	680	1	5.7	24
Toluene	1.3	1.5	2.8	0.5	6.3	0.5	NS	NS	0.5	2.2	80.1	0.5	0.48	4.4	3.4	52	0.35	2.8	1.2
Xylenes	1.3	3.1	5.2	0.5	11.9	0.5	NS	NS	0.5	4.1	173	0.5	2.8	9.1	9.6	130	1.1	7.4	5.4
Location ID:	CO60-P2	ZP001	и	ıg/L															
Benzene	147	181	254	0.5	249	244	264	318	241	201	259	168	57.2	NS	NS	NS	NS	NS	NS
Ethylbenzene	5	5.8	8	0.5	7	10.1	8.7	11	8.8	6.5	8	6.2	2.2	NS	NS	NS	NS	NS	NS
Naphthalene	1,310	2,100	1,590	1.8	1,700	1,140	9,620	3,990	2,320	1,650	2,670	1,290	360	NS	NS	NS	NS	NS	NS
Toluene	16.2	13.4	20.8	0.5	35.1	23.7	60.7	113	60.5	19.2	37.8	30.9	10.1	NS	NS	NS	NS	NS	NS
Xylenes	111	117	172	0.5	162	211	225	269	225	164	184	133	40.1	NS	NS	NS	NS	NS	NS



## Coke Oven Historical Data Cell 2 Groundwater Analytical Results

Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	6/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Location ID:	CO179-I	MWS		ug/L															
Benzene	NS	8,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4,700	NS	NS
Ethylbenzene	NS	225	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	230	NS	NS
Naphthalene	NS	1,380	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1,200	NS	NS
Toluene	NS	4,400	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2,800	NS	NS
Xylenes	NS	2,150	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2,300	NS	NS
Location ID:	CO180-I	MWS		ug/L															
Benzene	NS	31,900	NS	NS	NS	NS	NS	NS	786	NS	NS	NS	24,000	NS	NS	NS	17,000	NS	NS
Ethylbenzene	NS	120	NS	NS	NS	NS	NS	NS	3.7	NS	NS	NS	110	NS	NS	NS	86	NS	NS
Naphthalene	NS	1,670	NS	NS	NS	NS	NS	NS	62.7	NS	NS	NS	930	NS	NS	NS	1,200	NS	NS
Toluene	NS	7,720	NS	NS	NS	NS	NS	NS	180	NS	NS	NS	6,500	NS	NS	NS	4,700	NS	NS
Xylenes	NS	2,060	NS	NS	NS	NS	NS	NS	54.5	NS	NS	NS	1,700	NS	NS	NS	1,500	NS	NS
Location ID:	CO181-I	MWS		ug/L															
Benzene	NS	21,900	NS	NS	NS	NS	NS	NS	28,400	NS	NS	NS	29,000	NS	NS	NS	21,000	NS	NS
Ethylbenzene	NS	92.5	NS	NS	NS	NS	NS	NS	145	NS	NS	NS	130	NS	NS	NS	130	NS	NS
Naphthalene	NS	1,810	NS	NS	NS	NS	NS	NS	3,710	NS	NS	NS	1,700	NS	NS	NS	1,700	NS	NS
Toluene	NS	4,260	NS	NS	NS	NS	NS	NS	5,810	NS	NS	NS	6,900	NS	NS	NS	6,300	NS	NS
Xylenes	NS	1,440	NS	NS	NS	NS	NS	NS	1,920	NS	NS	NS	2,000	NS	NS	NS	2,000	NS	NS
Location ID:	CO186-I	MWS		ug/L															
Benzene	NS	417,000	NS	NS	NS	NS	NS	NS	47,100	NS	NS	NS	31,600	NS	NS	NS	9,500	NS	NS
Ethylbenzene	NS	708	NS	NS	NS	NS	NS	NS	119	NS	NS	NS	59.7	NS	NS	NS	22	NS	NS
Naphthalene	NS	138	NS	NS	NS	NS	NS	NS	31.7	NS	NS	NS	8	NS	NS	NS	0.5	NS	NS
Toluene	NS	134,000	NS	NS	NS	NS	NS	NS	14,600	NS	NS	NS	6,090	NS	NS	NS	460	NS	NS
Xylenes	NS	21,800	NS	NS	NS	NS	NS	NS	2,140	NS	NS	NS	976	NS	NS	NS	150	NS	NS
Location ID:	CO209-I	MWS		ug/L															
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	12.7	NS	NS	NS	12.8	NS	NS	NS	180	NS	NS
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	2.1	NS	NS	NS	0.5	NS	NS	NS	5.7	NS	NS
Naphthalene	NS	NS	NS	NS	NS	NS	NS	NS	3,940	NS	NS	NS	1,730	NS	NS	NS	2,400	NS	NS
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	5.2	NS	NS	NS	3.8	NS	NS	NS	170	NS	NS
Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	18.8	NS	NS	NS	11.9	NS	NS	NS	82	NS	NS
Location ID:	CO27-PZ	M012		ug/L															
Benzene	13,500	13,000	11,600	11,900	3,700	9,470	7,750	12,700	9,230	8,490	8,340	11,000	13,000	8,700	12,000	14,000	15,000	5,500	13,000
Ethylbenzene	121	141	162	132	39.1	86.5	47.4	28.2	64.5	101	98.9	116	180	100	160	170	180	64	170
Naphthalene	667	905	1,140	1,240	365	609	256	1,120	383	793	661	645	870	820	1,100	1,100	1,200	470	1,100

U: Non-Detect, NS: Not Sampled

Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	6/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Toluene	4,390	3,980	4,240	3,750	653	3,400	1,070	1,060	2,680	2,750	2,430	3,080	5,200	3,200	4,600	4,500	5,200	1,100	4,900
Xylenes	1,070	1,280	1,390	1,140	299	746	369	234	777	843	795	1000	1,400	880	1,400	1,500	1,600	480	1,400
Location ID:	CO28-PZ	?M010	ι	ug/L															
Benzene	NS	147,000	37.1	NS	NS	NS	NS	NS	1	NS	NS	NS	15	NS	NS	NS	0.19	NS	NS
Ethylbenzene	NS	319	0.5	NS	NS	NS	NS	NS	0.5	NS	NS	NS	0.5	NS	NS	NS	0.5	NS	NS
Naphthalene	NS	5,550	10.4	NS	NS	NS	NS	NS	0.5	NS	NS	NS	0.36	NS	NS	NS	0.5	NS	NS
Toluene	NS	15,400	2.2	NS	NS	NS	NS	NS	0.5	NS	NS	NS	0.58	NS	NS	NS	0.5	NS	NS
Xylenes	NS	5,100	0.5	NS	NS	NS	NS	NS	0.5	NS	NS	NS	0.5	NS	NS	NS	0.5	NS	NS
Location ID:	CO36-PZ	?M008	ι	ug/L															
Benzene	11,200	9,710	6,780	7,190	10,000	24,000	11,900	9,050	38,700	17,700	20,400	19,000	5,360	9,900	9,100	14,000	11,000	15,000	NS
Ethylbenzene	44.6	47.4	30.4	23.7	46.1	99.6	45.4	18.7	61	61	89.5	17.1	17.9	53	36	66	48	60	NS
Naphthalene	343	462	424	447	456	817	583	378	540	769	943	233	226	560	420	700	410	530	NS
Toluene	2,320	2,360	1,700	1,390	2,430	5,800	2,750	1,570	8,940	4,160	4,460	1,510	1,350	2,700	2,000	3,300	2,300	3,200	NS
Xylenes	763	802	816	595	834	1,670	1,090	659	1,250	988	1,510	672	398	890	740	1,300	780	970	NS
Location ID:	CO37-PZ	?M003	ι	ug/L															
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	7,120	NS	NS	NS	7,050	NS	NS	NS	7,600	24	4,200
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	133	NS	NS	NS	125	NS	NS	NS	110	2.9	25
Naphthalene	NS	NS	NS	NS	NS	NS	NS	NS	1,270	NS	NS	NS	1,050	NS	NS	NS	730	9.1	200
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	3,000	NS	NS	NS	2,840	NS	NS	NS	3,100	42	1,200
Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	1,310	NS	NS	NS	1,410	NS	NS	NS	1,300	30	340
Location ID:	CO38-PZ	M006	ι	ug/L															
Benzene	5,940	1,900	4,210	4,490	4,670	4,370	5,420	9,970	4,110	4,500	5,070	5,230	9,100	3,400	3,300	4,600	2,900	2,800	NS
Ethylbenzene	65.2	34.4	74.3	64	64	57.5	54.3	52	46.1	59.3	58.7	56.4	52.4	38	44	56	34	29	NS
Naphthalene	1,280	651	1,740	2,110	1,990	1,460	1,360	1,140	981	1,620	1,660	1,180	1,570	890	800	1,200	730	590	NS
Toluene	859	133	1,260	1,020	1,070	984	1,300	1,080	800	871	1,130	1,210	936	400	630	920	390	470	NS
Xylenes	479	108	561	507	503	450	452	420	373	446	462	464	409	260	320	450	240	200	NS
Location ID:	CO39-PZ	7M007	ι	ıg/L															
Benzene	767	8,990	1,350	657	455	3,850	515	249	3,120	7,320	NS	891	486	1000	1,300	500	530	NS	NS
Ethylbenzene	4.7	52.9	12.6	4.3	2	32.2	0.5	0.5	6.9	21.8	39.5	3.8	0.5	4.6	7	3.3	2.7	NS	NS
Naphthalene	1,540	2,770	970	1,120	251	1,550	548	171	353	1,020	1,340	177	125	460	420	280	190	NS	NS
Toluene	126	1,980	295	98.6	45	1,230	27.2	12.2	487	1,080	1,640	123	36.8	140	160	66	65	NS	NS
Xylenes	48	472	90.8	32.7	11.9	265	6.8	0.5	58	195	374	35	8.7	35	52	30	18	NS	NS
Location ID:	CO40-PZ	7M008	L	ug/L															
Benzene	241	3,900	137	3,250	629	799	1,450	1,450	5,050	664	NS	2,360	3,740	8,300	5,400	5,600	9,400	740	NS
Ethylbenzene	1.6	70.6	1.3	48.6	5.8	5.7	4	8.7	61.3	3.5	20.8	18	21.3	80	53	55	110	5.6	NS
Naphthalene	61.3	3,340	68.2	2,310	335	179	303	1,220	2,260	336	1,570	3,720	1,600	1,100	1,900	1,400	1,100	150	NS
Toluene	19.8	1,230	19.6	898	134	145	78	197	712	75.7	291	337	546	1,900	1,100	1,700	3,100	110	NS

Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	6/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Xylenes	16.4	540	8.4	353	44.7	35.9	64.4	68.1	367	25.1	153	154	186	490	410	400	700	44	NS
Location ID:	CO41-PZ	7M001	и	g/L															
Benzene	2,520	4,470	6,500	1,190	546	43.8	5.8	7.3	1,740	124	17,400	2,130	1,880	18,000	29,000	21,000	14,000	690	11,000
Ethylbenzene	137	144	257	41.8	45.8	3.1	0.5	0.52	85.8	3.6	564	63.2	53.3	660	640	710	360	14	130
Naphthalene	75.7	103	133	109	30.5	0.5	0.5	14.3	29.3	3.4	332	23.2	22.5	440	340	320	130	11	49
Toluene	1,520	2,110	3,930	625	553	17	6.7	2.2	1,200	44.5	11,200	1,230	1,110	11,000	13,000	14,000	8,100	180	3,200
Xylenes	850	1,200	1,890	288	413	14.6	2.6	1.4	760	25.2	5,190	524	421	6,800	6,600	7,000	3,400	110	1,300
Location ID:	CO42-PZ	7M004	u	g/L															
Benzene	331	138	27.5	81.2	3	187	6.1	0.5	15.9	59.4	169	3.4	30.7	160	90	1.7	140	NS	580
Ethylbenzene	62	23.6	5.9	8.4	0.5	42.1	2.1	0.5	4.3	14.7	30.2	0.5	4	14	15	0.3	19	NS	56
Naphthalene	208	168	31.6	45.6	9.7	154	4.9	0.5	9.3	66.7	109	0.5	14.6	73	70	0.7	65	NS	170
Toluene	595	231	35.7	46.8	2.9	462	7	0.5	24.4	48.7	36	6.5	26.5	270	77	4.1	160	NS	190
Xylenes	627	318	121	128	7.4	286	9.2	0.5	37.2	84.9	129	2.6	26.9	150	120	2.8	140	NS	290



## Coke Oven Historical Data Cell 1 Groundwater Analytical Results

Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	5/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Location ID:	CO02-PZ	M006	и	ıg/L															
Benzene	205,000	145,000	312,000	339,000	191,000	15,700	241,000	104,000	63,100	46,800	155,000	127,000	148,000	143,000	141,000	NS	NS	NS	NS
Ethylbenzene	451	367	267	367	225	271	335	261	202	134	283	252	293	257	350	NS	NS	NS	NS
Naphthalene	392	511	273	360	210	276	370	314	164	119	187	231	218	244	318	NS	NS	NS	NS
Toluene	2,500	1,070	243	122	136	43.5	104	32	33.3	13.7	77.7	86	144	144	155	NS	NS	NS	NS
Xylenes	1,590	1,220	480	738	345	403	643	376	139	60.2	139	206	357	321	469	NS	NS	NS	NS
Location ID:	CO18-PZ	M006	u	ıg/L															
Benzene	227,000	198,000	227,000	669,000	365,000	454,000	293,000	251,000	328,000	281,000	149,000	338,000	670,000	596,000	241,000	NS	NS	NS	NS
Ethylbenzene	57	44.4	38.7	98.8	51.1	86.8	43.2	51.4	69.2	43.1	49.4	63.5	73.8	89.5	94.3	NS	NS	NS	NS
Naphthalene	132	142	140	262	117	211	159	182	172	121	135	221	189	230	211	NS	NS	NS	NS
Toluene	3,700	5,950	5,060	36,500	20,400	28,500	1,940	1,170	6,710	1,430	6,070	5,360	15,300	20,000	8,660	NS	NS	NS	NS
Xylenes	1,130	859	680	2,520	1,310	2,260	1,010	1,100	1,610	903	1,420	1,480	1,740	2,170	2,340	NS	NS	NS	NS
Location ID:	CO190-	MWS	u	ıg/L															
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	588,000	NS	90,000	24,000	98,000	35,000
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	63.8	NS	0.5	0.5	0.5	0.5
Naphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	231	NS	0.5	0.5	0.5	0.5
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	44,700	NS	5,100	420	4,600	1,600
Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1,530	NS	0.5	0.5	0.5	0.5
Location ID:	CO191-	MWS	u	ıg/L															
Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	67,000	NS
Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	220	NS
Naphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	548	NS	NS	NS	290	NS
Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6,700	NS
Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2,200	NS
Location ID:	CO93-I	PZM	u	ıg/L															
Benzene	507,000	209,000	335,000	180,000	230,000	230,000	215,000	117,000	122,000	201,000	172,000	162,000	247,000	184,000	148,000	180,000	150,000	160,000	170,000
Ethylbenzene	1,860	1,510	1,550	1,430	894	1,130	1,400	812	934	1,120	975	752	1,250	1,350	1,210	1,500	1,400	1,500	1,500
Naphthalene	11,900	2,080	5,660	1,970	1,480	3,750	10,000	1,540	1,790	1,930	1,930	1,670	1,900	14,100	4,800	2,200	2,200	5,400	1,900
Toluene	62,700	58,400	102,000	55,400	50,700	61,500	61,300	27,100	32,900	63,900	60,700	42,500	69,900	64,500	54,000	55,000	46,000	50,000	58,000
Xylenes	25,000	17,300	32,200	17,800	10,600	15,300	19,500	7,240	9,080	17,100	16,200	9,840	16,900	22,500	12,500	17,000	14,000	15,000	16,000



## Coke Oven Historical Data Cell 3 Groundwater Analytical Results

Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	6/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Location ID:	CO194-I	MWS	l	ug/L															
Benzene	NS	1,160	NS	NS	NS	NS	NS	NS	800	823	944	NS	617	NS	740	NS	600	NS	98
Ethylbenzene	NS	4.8	NS	NS	NS	NS	NS	NS	4.5	5.2	5	NS	4.1	NS	4.1	NS	6.3	NS	0.79
Naphthalene	NS	2,450	NS	NS	NS	NS	NS	NS	2,240	7,540	3,260	NS	2,960	NS	2,900	NS	1,900	NS	470
Toluene	NS	141	NS	NS	NS	NS	NS	NS	108	119	144	NS	105	NS	120	NS	130	NS	19
Xylenes	NS	70.9	NS	NS	NS	NS	NS	NS	60.4	65.9	73.9	NS	57.6	NS	65	NS	78	NS	9.6
Location ID:	CO195-I	MWS	l	ug/L															
Benzene	NS	54,100	NS	NS	NS	NS	NS	67,300	18,000	53,900	59,000	49,000	105,000	38,000	41,000	47,000	41,000	45,000	30,000
Ethylbenzene	NS	85.3	NS	NS	NS	NS	NS	69.6	21.8	76.2	82.3	76	66.3	0.5	0.5	96	0.5	73	55
Naphthalene	NS	4,850	NS	NS	NS	NS	NS	1,650	493	3,940	2,400	2,760	1,340	1,900	1,500	2,300	2,200	1,600	2,000
Toluene	NS	4,320	NS	NS	NS	NS	NS	5,540	1,220	3,350	4,340	3,860	7,600	3,100	3,000	3,800	3,400	3,100	2,700
Xylenes	NS	1,170	NS	NS	NS	NS	NS	930	305	980	1,160	1,160	855	860	780	1,100	1,100	830	700
Location ID:	CO196-I	MWS	ι	ug/L															
Benzene	NS	11,200	NS	NS	NS	NS	NS	NS	24,400	13,200	16,500	NS	20,300	NS	7,300	NS	6,000	NS	2,500
Ethylbenzene	NS	19.3	NS	NS	NS	NS	NS	NS	26.7	20.9	21.8	NS	15.1	NS	15	NS	14	NS	6.1
Naphthalene	NS	2,420	NS	NS	NS	NS	NS	NS	591	1,190	969	NS	541	NS	460	NS	600	NS	320
Toluene	NS	978	NS	NS	NS	NS	NS	NS	1,370	836	1,080	NS	670	NS	500	NS	490	NS	200
Xylenes	NS	253	NS	NS	NS	NS	NS	NS	329	239	240	NS	189	NS	160	NS	160	NS	74
Location ID:	CO198-I	MWS	l	ug/L															
Benzene	NS	841	NS	NS	NS	NS	NS	NS	677	636	697	NS	282	NS	280	NS	190	NS	310
Ethylbenzene	NS	4.3	NS	NS	NS	NS	NS	NS	5.4	4.7	5.7	NS	2.6	NS	2.3	NS	1.7	NS	0.5
Naphthalene	NS	3,170	NS	NS	NS	NS	NS	NS	5,590	17,000	3,490	NS	1,320	NS	2,000	NS	1,300	NS	1,900
Toluene	NS	124	NS	NS	NS	NS	NS	NS	115	111	129	NS	65.1	NS	62	NS	42	NS	79
Xylenes	NS	59.6	NS	NS	NS	NS	NS	NS	62.5	60.3	66.1	NS	37.4	NS	36	NS	22	NS	34
Location ID:	CO201-I	<i>NWS</i>	ι	ug/L															
Benzene	NS	1,720	NS	NS	NS	NS	NS	NS	2,420	3,880	13,900	NS	2,280	NS	1,800	NS	1,100	NS	330
Ethylbenzene	NS	4.9	NS	NS	NS	NS	NS	NS	5.3	6.5	19.7	NS	6	NS	4.1	NS	3.9	NS	0.94
Naphthalene	NS	168	NS	NS	NS	NS	NS	NS	276	692	702	NS	227	NS	240	NS	180	NS	44
Toluene	NS	130	NS	NS	NS	NS	NS	NS	266	272	904	NS	189	NS	120	NS	79	NS	6.9
Xylenes	NS	61	NS	NS	NS	NS	NS	NS	93.1	106	245	NS	89.8	NS	70	NS	56	NS	11
Location ID:	CO30-PZ	M015	ι	ug/L															
Benzene	69,900	53,300	56,300	63,900	59,300	66,400	75,800	98,700	64,000	678	57,000	62,800	134,000	54,000	62,000	50,000	43,000	56,000	40,000
Ethylbenzene	117	84.8	133	121	93.9	89.7	130	105	95.2	0.5	94.6	107	96.1	120	110	110	87	110	72
Naphthalene	9,090	8,640	5,540	17,100	2,320	1,830	3,130	8,420	1,790	542	2,300	4,810	1,650	2,100	2,000	2,600	2,000	2,300	2,000

U: Non-Detect, NS: Not Sampled

Parameter	6/1/2019	10/1/2019	12/1/2019	2/1/2020	5/1/2020	9/1/2020	12/1/2020	3/1/2021	6/1/2021	9/1/2021	12/1/2021	2/1/2022	6/1/2022	8/1/2022	12/1/2022	2/1/2023	6/1/2023	8/1/2023	11/1/2023
Toluene	5,110	4,560	4,240	4,710	4,100	4,800	5,550	7,990	16,300	49.1	4,650	5,720	9,830	4,300	4,400	3,900	3,200	4,000	3,000
Xylenes	1,590	1,230	1,840	1,650	1,310	1,200	1,910	1,480	1,360	17.9	1,380	1,670	1,250	1,500	1,300	1,400	1,100	1,300	920