HALEY ALDRICH

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PERIODIC REVIEW REPORT FOR PERIOD ENDING 30 NOVEMBER 2020
TARRYTOWN FORMER MGP SITE
BROWNFIELD CLEANUP AGREEMENT NO. C3600064
TARRYTOWN, NEW YORK

by
Haley & Aldrich of New York
Rochester, New York

for
New York State Department of Environmental Conservation
Albany, New York

File No. 134976-002
December 2020

Haley & Aldrich of New York
200 Town Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

23 December 2020
File No. 134976-002

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, New York 12233-7014

Attention: Michael Squire
Project Manager

Subject: Tarrytown Former MGP Site
Periodic Review Report Period Ending 30 November2018
Brownfield Cleanup Agreement No. C3600064

Ladies and Gentlemen:

On behalf of Ferry Landings, LLC, Haley & Aldrich has prepared this Site Management Periodic Review Report (PRR) for the period ending 30 November 2020. During the period for this PRR, the revised *Site Management Plan - Tarrytown Former MGP Site, Tarrytown, NY*, dated August 2010 and accepted by the NYSDEC on 26 August 2010, was in force.

Based on ongoing site monitoring data and inspections, the remedial action continues to perform and is effective. Based on the stability of site data and controls over several years of monitoring it is recommended the frequency of groundwater monitoring, underwater cap inspections, and DNAPL monitoring and extraction events be decreased; specific details appear in the PRR.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Jonathan D. Babcock, P.E. (NY)
Senior Technical Specialist

Vincent B. Dick
Principal

Enclosures

C: NYSDEC; Attn: Amen Omorogbe
Ferry Landings, LLC, Attn: Carl Monheit
Con Edison; Attn: Yelena Skorobogatov

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Executive Summary

This Site Management Periodic Review Report (PRR) for the period ending 30 November 2020 was prepared by Haley & Aldrich of New York on behalf of Ferry Landings, LLC. During the period covered by this PRR, the revised "Site Management Plan Tarrytown Former MGP Site, Tarrytown, NY," dated August 2010 and accepted by the NYSDEC on 26 August 2010 (the SMP), was in force.

This PRR provides a summary of the pre-remediation and post-remediation site conditions, and provides a synopsis of site activities conducted under the SMP during the reporting period, as follows:

- Based on site monitoring data and inspections performed during the reporting period, the remedial action remains functional and is effective as required by the SMP. Site monitoring and inspections should continue through the next PRR period per the SMP.

- Engineering Controls and Institutional Controls for the site are in place and effective.

- Site groundwater monitoring data, cap integrity observations, and consistency of decreasing DNAPL thickness/recovery all indicate that the frequency of monitoring (groundwater, underwater cap), or maintenance (DNAPL recovery events) of each of these site closure components can be decreased without compromising the integrity of the remedy. Specific schedule changes are summarized in this PRR. Response to this request following NYSDEC's review is requested.

The current annual schedule for submitting the PRR itself is satisfactory. The next PRR required to be submitted to NYSDEC, covering the year between 1 December 2020 and 30 November 2021, will be submitted following closure of that period, and within the time frame required.

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1. Overview

This Periodic Review Summary Report (PRR) for the Tarrytown Former Manufactured Gas Plant (MGP) Site is for the period 1 December 2019 through 30 November 2020. The Periodic Review Report Form for this period is provided in Appendix A. This report provides:

- Summary of the site and nature of contamination prior to remedial actions;
- Summary of the remedial actions completed;
- Description of the ongoing operations, maintenance, and monitoring;
- Description of site activities during the reporting period;
- Statements regarding satisfactory compliance with the SMP and recommendations for continued future monitoring of site remedy elements; and,
- Comments about the information entered on the PRR form.

2. Introduction

This section presents a brief summary of site history, past and current conditions, remedial actions, and post-remediation operations, maintenance, and monitoring. For more detailed information, the following reports prepared by Haley & Aldrich of New York (Haley & Aldrich) and previously submitted to NYSDEC may be consulted:

- Final Engineering Report Tarrytown Former MGP Site, Tarrytown, NY, 2005.
- Final Engineering Report Addendum Tarrytown Former MGP Site, Tarrytown, NY, 2006.
- Site Management Plan Tarrytown Former MGP Site, Westchester County, NY, August 2010, by Haley & Aldrich of New York. Approved by NYSDEC 26 August 2010.
- Periodic Review Report Tarrytown Former MGP site, 31 August 2011.
- Periodic Review Report Tarrytown Former MGP site, 31 August 2014.
- Periodic Review Report Tarrytown Former MGP site, 31 August 2015.
- Periodic Review Report Tarrytown Former MGP site, 27 October 2016.
- Periodic Review Report Tarrytown Former MGP site, 27 November 2017.
- Periodic Review Report Tarrytown Former MGP site, 14 December 2018.
- Periodic Review Report Tarrytown Former MGP site, 15 January 2020[1].

2.1 SUMMARY OF SITE, NATURE OF CONTAMINATION AND REMEDIAL ACTIONS

2.1.1 Site

A site locus showing the project location is provided as Figure 1 and site details (historic and current) are shown on plans provided in Figures 2 and 3. The site is located on the east side of the Hudson River north of the Governor Mario M. Cuomo (Tappan Zee) Bridge in the Village of Tarrytown, New York. The site is bound by Division and River Streets on the north, Railroad Avenue to the east, West Main Street on the south, and the Hudson River to the west. The site encompasses approximately 20 acres and was primarily used for industrial-commercial purposes prior to remediation. Remediation was performed between June 2004 and January 2005.

Prior to remediation, an asphalt plant was located in the northwest portion of the site and a truck terminal and maintenance facility was located in the southeast portion of the site. The central portion of the site included a former manufactured gas plant (MGP), reportedly operated between 1873 and 1938. The MGP was last operated by the Westchester Lighting Company, which was succeeded in ownership by Con Edison.

2.1.2 Nature of Contamination

This section presents a summary of the nature of contamination and objectives of the remedial actions performed for the contamination by area of interest, organized according to four areas of the site (Figure 2):

[1] Note that the PRR reporting periods have tracked the timeframes required by the NYSDEC in its tracking system and annual PRR reminder notice letters. Accordingly, each PRR may cover a different period of time from the prior PRR reporting period.

- Holder and Tar Well Area,
- Light Non-Aqueous Phase Liquid (LNAPL) Area,
- Northern Dense Non-Aqueous Phase Liquid (DNAPL) Area, and
- Western DNAPL and Sediment Removal Area.

Remedial actions for these areas are described in Section 2.1.3.

2.1.2.1 Holder and Tar Well Area

During site investigations in 2003, some flowing MGP DNAPL was present in Holders A, B, and C, but not in Holder D. Soils in the "Tar Well Area", located south of Holder A, contained zones with MGP DNAPL.

2.1.2.2 LNAPL Area

Measurements in 1998 and 1999 by Handex Group, Inc. identified a zone of free floating LNAPL (primarily diesel fuel) in an approximately triangular-shaped area defined by MW-2, MW-3, and MW-6. Additionally, residual contamination, due to historic LNAPL releases, was evident between the free-floating LNAPL and West Main Street. Investigations in 2003 confirmed previous data regarding residual contamination in that area. No petroleum-related contamination was observed in the top four feet of soil in this area.

2.1.2.3 Northern DNAPL Area

The Northern DNAPL Area is located in the north-central portion of the site, partially underneath an existing office building (former County Asphalt office) and was observed at the time to be about 500 ft long (east-west) and 200 ft wide (north-south). The primary affected media in this area was observed to be soil containing discrete zones of MGP DNAPL (apparently derived from coal tar), as observed during site investigation prior to remediation. The subject zones are located 12 to 15 ft below ground surface (bgs) on the west side of the building and 9 to 13 ft bgs on the east side. The zone was observed during site investigations to be at the bottom of a layer of fill and exhibits limited penetration into the underlying natural soil.

2.1.2.4 Wester DNAPL and Sediment Removal Area

Western DNAPL and Sediment Removal Area is located in the west-central portion of the site. The Western DNAPL Area was observed at the time to be about 240 feet long (east-west) by 40 ft wide (north-south). The primary affected media in this area was observed to be soil containing discrete zones of DNAPL (apparently derived from coal tar). These soils are located 22 to 26 feet bgs. The zone was observed during site investigations to be at the bottom of the fill and exhibits limited penetration into the underlying natural soil. DNAPL-contaminated river sediment was also identified prior to remediation west of the Western DNAPL Area within the adjacent portion of the Hudson River. Contamination extended about 160 ft along the existing sea wall, and outward into the river varying distances, up to about 120 ft. DNAPL contamination in the form of blebs and heavy sheens was also identified in river borings. The depth of the observed DNAPL ranged from one foot up to 8 feet below the top of sediment.

2.1.3 Remedial Actions

The following is a summary of the Remedial Actions performed at the site.

2.1.3.1 Holder and Tar Well Area

The remediation consisted of removing the contents, walls and floor of three former MGP holders and excavation of contaminated soils adjacent to the holders, including an area believed to be associated with the former MGP tar wells. Contaminated soil and debris were taken off site to a permitted facility for disposal and the excavations were backfilled with a combination of on-site and imported fill meeting quality standards established for the project.

2.1.3.2 LNAPL Area

The remediation consisted of two parts, excavation of contaminated soil and installation of a recovery trench and skimmer system for residual floating petroleum product. Contaminated soil was taken off site to a permitted facility for disposal and the excavation was backfilled with a combination of on-site and imported fill meeting quality standards established for the project. The LNAPL recovery system was operated April 2005 through September 2007. The monitoring results through August 2007 supported a request to NYSDEC for approval to discontinue operation and to dismantle the system. In response, the NYSDEC agreed with the recommendation to discontinue operation of the LNAPL recovery system in its letter dated 10 September 2007. The system was subsequently dismantled.

2.1.3.3 Northern DNAPL Area

The remediation consisted of installing a 360-foot long sheet pile barrier extending from about 3 feet below the ground surface, downward through the fill soils into the native clayey soils to a depth of about 22 feet bgs. The barrier prevents westward migration of residual DNAPL contained in a two to three-foot-thick zone generally found at the bottom of fill (9 to 15 feet bgs). Underlying clay soils impede downward migration of the DNAPL. The Northern DNAPL recovery trench is 360-ft long, located adjacent to the sheet pile barrier, and contains six DNAPL recovery wells. An observation well is located near each end of the recovery trench.

During remediation, contaminated soil at the south end of the barrier was excavated and taken off site for disposal. The excavation was backfilled with a combination of on-site and imported fill meeting quality standards established for the project.

The recovery trench allows removal of DNAPL to the extent it accumulates on the east (upgradient) side of the barrier.

As reported in the 2017 PRR, in conjunction with the construction of the Lighthouse Building and Garage, two of the six recovery wells (RW-4N and RW-5N) were closed per an NYSDEC approval letter dated 17 May 2017. Since the system began operation in 2005, DNAPL had not been observed in either well.

In addition, the well head for RW-6N was modified by adding lateral riser piping connected to a new offset well head located outside the Lighthouse Building perimeter to facilitate future extraction operations.

2.1.3.4 Western DNAPL and Sediment Removal Area

The remediation consisted of installing a 160-foot long sheet pile barrier extending from the river bottom at the face of the relieving platform down to bedrock. The barrier prevents westward migration of residual DNAPL contained in a two to three-foot-thick zone generally found at the bottom of fill (22 to 26 feet bgs).

The Western DNAPL recovery trench is 60-ft long, about 26 to 28 feet deep, is situated about 65 feet inland (east) from the sheet pile barrier and contains two DNAPL recovery wells. An observation well is located near each end of the recovery trench.

The Sediment Removal Area included the area beneath the relieving platform (about 160 feet by 20 feet by 4 feet deep) and an area of the river bottom along the sheet pile barrier and extending into the river, with a maximum extent of about 120 ft. Sediment was removed to depths ranging from about 3 to 8 feet below the river bottom.

Containment of residual DNAPL was completed with the construction of a 4-foot thick, 20-foot wide underwater cap over the sediments found under the relieving platform. The underwater cap is located between the steel sheet pile barrier at the western side of the relieving platform and the timber retaining wall at the eastern side of the relieving platform.

2.1.3.5 Cover System

A clean soil cover was placed in areas that are not beneath structures, roads, paved walks, etc. The clean soil cover is a minimum two feet thick and was placed over a demarcation layer, consisting of an orange geotextile, or equivalent. The cover system was completed in December 2006. In its 9 January 2007 letter, NYSDEC said that it had performed a site inspection on 28 December 2006 and the letter stated, "the clean soil cover was installed as required in the approved Work Plan." The cover system was disturbed between January 2010 and August 2014 for site development; cover was restored with the development by a new combination of cover elements (i.e., in places soil cover was replaced by new building and/or pavement and otherwise restored by replacement of the demarcation layer, soil cover and landscaping that meets cover thickness and material criteria). The cover system remained in place except for the minor cover disturbances for development activities between August 2014 and March 2016 and between April 2017 and July 2017. Those cover disturbances were restored as reported to NYSDEC in previous PRR Summary Reports.

During the current reporting period, the cover was not disturbed – see section 3 of this report for more information.

2.1.3.6 Sub-Slab Soil Vapor Intrusion Management Systems

Per the SMP, new buildings have been and will be constructed with passive sub-slab soil vapor intrusion management systems (VIMS) which are designed to be converted to active systems, if required by the NYSDEC or NYSDOH. Refer to sections 6.3.4 and 6.3.5 for the summary of VIMS activities preformed.

2.2 EFFECTIVENESS OF THE REMEDIAL PROGRAM

The remedial action, with the exception of periodically required replacement of site cover following construction activities, was completed in January 2005. Site cover placement was originally completed in October 2006. The 2005 Final Engineering Report and 2006 Final Engineering Report Addendum concluded that the remedial actions were performed in accordance with the Work Plans (and approved deviations). The Final Engineering Report was accepted by NYSDEC in its letter dated 25 May 2005 and the Final Engineering Report Addendum was accepted by NYSDEC in its letter dated 9 January 2007.

2.3 COMPLIANCE

The engineering controls are in place and effective.

2.4 RECOMMENDATIONS

The use of the SMP and Periodic Review Reports should continue. The SMP was revised during 2010; the August 2010 Revised SMP was accepted by the NYSDEC on 26 August 2010 and remains applicable to the site during the next reporting period. The next PRR reporting period will be 1 December 2020 through 30 November 2021 (assuming the PRR end-date next year remains the same in NYSDEC's tracking system).

3. Site Overview

3.1 SITE LOCATION AND SIGNIFICANT FEATURES

Refer to Section 2.1, above.

3.2 CHRONOLOGY, CLEANUP GOALS, AND MAIN FEATURES OF THE REMEDIAL PROGRAMS

For chronology of the remedial program, refer to Section 2.1, above. In terms of cleanup goals, as given in the August 2010 SMP, the criteria for soil to remain on site and be re-used (if excavated) below site cover are:

- Total benzene, toluene, ethylbenzene, and xylenes (BTEX) less than 10 ppm, and
- Total polycyclic aromatic hydrocarbons (PAH) less than 500 ppm.

Criteria for clean soil cover are presented in 6 NYCRR Part 375 Table 367-6.8(b) for Restricted Residential use.

The main features of the remedial program are provided in Section 2.1, above. The only change to the site remedy since the remedy was selected is the closure of the LNAPL recovery system. Refer to Section 2.1.3, above.

3.3 SITE ACTIVITIES DURING THE REPORTING PERIOD

During the reporting period:

- Routine groundwater monitoring was performed – see Section 6.3.1,
- The DNAPL system was monitored and operated – see Section 6.3.2,
- Routine Underwater Cap Inspection took place – see Section 6.3.3,
- Indoor air quality sampling was performed in some of the completed buildings – see Section 6.3.4, and
- Soil vapor sampling in the vicinity of the Lighthouse Building and Garage was performed– see Section 6.3.5.

During the reporting period, there was no impact to the site cover beyond the established demarcation layer.

4. Remedy Performance, Effectiveness, and Protectiveness

The remedy performance and effectiveness has been previously reported to NYSDEC in annual reports and Periodic Review Reports. The most recent prior PRR was for the Period Ending 30 November 2019. During the current reporting period, the remedy continued to perform effectively and be protective of human health and the environment. A synopsis of the remedy performance follows:

- The LNAPL system successfully removed practically-recoverable floating product. The system was dismantled, following NYSDEC approval on 10 September 2007.

- The DNAPL recovery systems continue to operate as intended. Thickness of DNAPL in the recovery wells continues to be monitored and recovery is ongoing. The thickness of DNAPL in recovery and monitoring wells continued to decrease through the monitoring period, as described in Section 6. Note that consistency of DNAPL thickness and recovery over the past 5 to 7 years indicates a decrease in annual recovery event frequency appears to be supported by monitoring data. Please see Section 6 for our recommendation.

- The underwater cap in the Hudson River was inspected in December 2019. The condition of the cap was satisfactory. The underwater cap inspection report is appended to this PRR and observations are summarized in Section 6. Cap integrity has remained stable over the last ~14 years and three intervals of inspection. We therefore have recommended a slight decrease in the frequency of monitoring; please see Section 6 for the summary.

Sub-slab Vapor Intrusion Management Systems (VIMS) are in place and functional, as reported in previous PRRs. The site VIMS may be summarized as follows:

- Lookout Building South – one VIMS with seven risers for the entire building.
- Lookout Building North – a separate VIMS for each of two ground floor residential units, and one VIMS with nine risers for the garage space occupying the rest of the ground floor.
- Carriage Houses South – a separate VIMS for each of 14 residential units.
- Carriage Houses North – a separate VIMS for each of 13 residential units.
- Clubhouse – one VIMS with four risers for the entire building.
- Lighthouse Building and Garage – a separate VIMS for each of 9 ground-level residential units and one VIMS with six risers for the area encompassed by the Garage and lobby of the Lighthouse Building.

Refer to Section 6 for a discussion of VIMS post-installation testing performed during this reporting period.

5. Institutional Controls/Engineering Controls Plan Compliance Report

5.1 INSTITUTIONAL CONTROLS/ENGINEERING CONTROLS REQUIREMENTS AND COMPLIANCE

The ICs and ECs are listed and described in tabular format in Box 3 and Box 4 of the attached Institutional and Engineering Controls Certification Form (Appendix A).

5.2 INSTITUTIONAL CONTROLS/ENGINEERING CONTROLS CERTIFICATION

Based on the data collected, the remedial actions are effective. Based on analysis of site long-term monitoring data, selected recommendations for changes in the monitoring program have been made herein. Please refer to Section 6 for additional details.

5.3 COVER DISTURBANCE

NYSDEC will be notified of future construction which disturbs the site cover per the SMP.

6. Monitoring Plan Compliance Report

6.1 COMPONENTS OF THE MONITORING PLAN

Monitoring under the current SMP requirements include:

- Bi-annual (every other year) groundwater monitoring.
- Monitoring of DNAPL observation and recovery wells during DNAPL extraction events, currently at a frequency of 4 to 6 events a year.
- Inspection of the underwater cap at intervals of every 5 years.
- Annual site inspection.

6.2 SUMMARY OF MONITORING

Monitoring was performed per the SMP during the reporting period, as described below.

6.3 COMPARISON WITH REMEDIAL OBJECTIVES

6.3.1 Groundwater

Groundwater monitoring was performed in 2018 and 2020 in accordance with the bi-annual schedule. The current schedule would require the next round of groundwater monitoring to take place in 2022. Based on the results summarized below, we recommend this be decreased to a triennial requirement (sample every three years) going forward.

Results of the most recent groundwater monitoring are presented in the report: *Tarrytown Former MGP Site Post-Remediation Groundwater Monitoring 2020 Data Tarrytown, Site No. C360069 Brownfield Cleanup*, 15 December 2020, provided in Appendix C. The report concluded that results over the period of monitoring were consistent with past monitoring, and the comparison of down-gradient versus up-gradient water quality also remained consistent, indicating the remedy continues to be effective. A summary of the report follows.

6.3.1.1 MW-29 (up-gradient)

Iron and manganese concentrations were greater than the comparison criteria; however, these concentrations were consistent with previous results. No VOC or PAH compounds were detected at concentrations greater than the comparison criteria.

6.3.1.2 MW-12 (up-gradient)

Iron concentration was greater than the comparison criteria; however, the concentration was consistent with previous results. Manganese was detected at a concentration less than the comparison criterion. No VOC compounds were detected. Seven PAH compounds were detected at concentrations greater than the comparison criteria; these PAH concentrations were consistent with previous results.

6.3.1.3 MW-20 (down-gradient)

No VOC compounds were detected. Iron and manganese concentrations and six PAH compounds were detected greater than the comparison criteria; however, the concentration was consistent with previous results. Additionally, note that in comparison to upgradient well MW-12, these PAH compounds were also detected at the upgradient well. One PAH compound (Acenaphthene) was detected but at a concentration less than the comparison criteria.

6.3.1.4 MW-21 (down-gradient)

Iron and manganese were detected at concentrations greater than the comparison criterion; however, the concentrations are consistent with previous results. No VOC compounds were detected at concentrations greater than the comparison criteria. One PAH compound (Benz(a)anthracene) concentration was detected at a concentration greater than the comparison criteria; however, the PAH concentration was consistent with previous results. Three other PAH compounds were detected at a concentration less than the comparison criteria.

6.3.1.5 MW-24 (down-gradient)

Iron and manganese were detected at a concentration slightly greater than the comparison criteria; their concentrations are consistent with previous results. No VOCs compounds were detected at concentrations greater than the comparison criteria, which is consistent with previous results. Six PAH compounds were detected at concentrations greater than the comparison criteria, however, note that in comparison to upgradient well MW-12, these PAH compounds were also detected. The detections of the PAH compounds and the levels measured for Iron and Manganese appear to be greater than historically measured. This could be attributed to a higher turbidity in the sample than historically observed.

6.3.1.6 COMPARISON OF UP-GRADIENT TO DOWN-GRADIENT WELLS

In general, concentrations of parameters in the down-gradient wells were less than or equal to the up-gradient concentrations, specifically:

- BTEX compound concentrations were not detected in up-gradient nor down-gradient wells.
- Concentrations of detected PAH compounds in up-gradient wells were equivalent to down-gradient wells for all locations except MW-24 which is believed to have had greater turbidity than past sampling events.
- Iron and Manganese concentrations in up-gradient wells were greater than or equivalent to down gradient wells.

6.3.1.7 GROUNDWATER DATA SUMMARY

Based on the results, while there were some exceedances of groundwater standards and guidance values in the sample data, the consistency of results over the period of monitoring and consistency of down-gradient versus up-gradient water quality indicate the remedy continues to be effective. There continues to be no groundwater use at the Site. Given the monitoring results to date, and without the

potential exposure pathway of groundwater use, the remedy at the site remains protective of human health with respect to groundwater quality. Groundwater monitoring at this site has now accumulated a database spanning 14 years and results in both upgradient and downgradient wells have remained consistent over that period. We therefore believe a decrease in frequency is warranted and would not compromise the objective or protectiveness provided by this element of the site remedy. We recommend that groundwater monitoring continue on a triennial basis from here forward; this would put the next monitoring event in 2023. NYSDEC review and approval of this change is requested.

6.3.2 DNAPL

6.3.2.1 DNAPL System Operation

Vacuum Enhanced Fluid Recovery (VEFR) is used to remove DNAPL from wells in the Northern and Western DNAPL Recovery Systems. During DNAPL extraction, some water is also removed; however, based on visual observation, the majority of the volume removed is DNAPL. During the reporting period, a total of 600 gallons of DNAPL and water was extracted by Enviro Waste Oil Recovery, LLC and transported to their facility in Mahopac, New York. DNAPL monitoring and extraction forms and copies of the non-hazardous waste manifests are provided in Appendix D.

The following table presents the amounts (gallons) extracted per well and per event. DNAPL was not observed in the other DNAPL wells at the site. These results are consistent with past observations and extraction activities.

Area	Well ID	3/12/20	9/8/20	10/26/20
Western Wells	OW-1	83	54	42
	RW-1	20	50	48
	RW-2	12	43	31
Northern Wells	RW-3N	36	25	46
	RW-6N	24	53	33
TOTALS	Gallons	175	225	200

Figures showing DNAPL thickness and fluid recovery volume over time are provided in Appendix D. Least-squares linear regression was used to determine the trend lines for the DNAPL thickness over time. The trend lines show DNAPL thickness continues to decrease over time. Trend lines may not, on their own, predict future DNAPL thickness.

6.3.2.2 DNAPL DATA SUMMARY

System operation is summarized as follows:

- The thickness of DNAPL in wells RW-1 and RW-2 in the Western DNAPL System shows a consistent decreasing trend since system inception of operation (2005) to the present.
- The thickness of DNAPL in wells RW-3N and RW-6N in the Northern DNAPL System shows a consistent decreasing trend since system inception of operation (2005) to the present.
- Data continues to show that DNAPL is not migrating around the DNAPL barriers.

- The DNAPL systems are being operated in general accordance with the approved SMP, continue to be effective in containing DNAPL, and the systems remain protective of human health and the environment.

- Over the last five to seven years, DNAPL monitoring and extraction events have occurred at a frequency of four to six events per year. In 2020, there were three events executed (COVID prevented a May-June timeframe event). However, the decrease to three events did not negatively change the decrease in DNAPL thickness trend. We therefore recommend that DNAPL monitoring and extraction events occur at a frequency of 3 times per year going forward. NYSDEC review and approval of this change is requested.

6.3.3 Underwater Cap

Past underwater cap inspections were in 2007 and 2014. The results of those two rounds of inspection concluded the underwater cap had not been compromised and was performing its intended function.

The most recent inspection was conducted on 12 December 2019. The summary report of the inspection is presented in Appendix E and concludes that the cap was found to be in satisfactory condition, continues to be uncompromised and is performing its intended function. Given the consistency of cap condition and integrity over the 13-14 years represented by the three inspections to date, we believe the cap inspection frequency can be decreased further from the current 5-year intervals, and recommend it be modified to every 7 years. Under this revised frequency the next inspection is recommended to take place in 2026, seven years from the 2019 inspection. NYSDEC review and approval of this change is requested.

6.3.4 Indoor Air Quality and Sub-slab Vapor Sampling

Sub-slab soil vapor (SS), and indoor air (IA) quality sampling and analysis was performed in March 2020 per the NYSDEC letter dated 22 July 2019 (see Appendix B). The results of the SS and IA sampling were previously reported to NYSDEC in Haley & Aldrich of New York, "Vapor Intrusion Management (VIMS), NYSDEC No. C360064, Tarrytown Former MGP, Tarrytown, NY," 7 May 2020.

Based on the data resulting from the indoor air quality and sub-slab soil vapor sampling, the 7 May 2020 report concluded:

- Soil vapor sampling and analysis for compounds required by New York State Department of Health (NYSDOH) vapor intrusion guidance indicated most target compounds were not detected in the soil vapor samples. Where chemical concentrations for target compounds were detected, the resulting concentrations were uniformly less than the NYSDOH vapor intrusion comparison criteria that would require further action or monitoring. Therefore, based on NYSDOH criteria and guidance, no further monitoring or action is required.

- Indoor air quality analyses were conducted concurrently with the sub-slab soil vapor sampling and indicated indoor air has not been compromised by the compounds of concern for the site. A limited set of compounds were detected in indoor air with results above EPA national survey 75th-percentile data for indoor air quality. We concluded these detections are not present due to the site conditions and instead appear to be related to common commercial cleaner products, personal care products, or building materials/building finishes.

Additional sampling for some remaining site buildings is required where units could not be accessed during the 2019-2020 heating season. In email correspondence on 19 March 2020 between Haley & Aldrich and NYSDEC (Appendix B), the Department agreed to postponing the additional IA/SS sampling due to site access limitations and complications related to the COVID-19 pandemic. To complete the comprehensive site indoor air quality assessment, testing remains to be completed in the following buildings:

- Townhouses 1, 3, and 4
- Carriage Houses (four buildings)

As with the sampling reported herein, sampling of these remaining locations will be completed per the SMP and our intent letter submitted on behalf of Ferry Landings dated 21 August 2019.

6.3.5 VIMS

Post-construction "grid" sampling and testing of soil vapor quality (evaluation of the potential for future exposures) was performed in 2020 in the vicinity of the Lighthouse Building and Garage per SMP section 2.3.4. The results of the post-construction "grid" sampling were previously reported to NYSDEC in Haley & Aldrich of New York, "Vapor Intrusion Management Systems (VIMS), NYSDEC Site No. C360064, Tarrytown Former MGP, Tarrytown, NY," 7 May 2020.

Based on the data regarding the post-construction soil vapor sampling, the 7 May 2020 report concluded:

- Soil vapor chemical concentrations for compounds detected in the samples collected were uniformly less than NYSDOH vapor intrusion comparison criteria and USEPA vapor intrusion evaluation criteria.

- The data indicated there has been no increase in potential exposure to soil vapor due to building construction.

- Vapor Intrusion Mitigation System (VIMS) controls that have been installed in the Lighthouse Building consistent with the SMP are effective as intended. VIMS systems described in the SMP should continue to be installed in future buildings constructed at the site, as they have been in the past; the data do not indicate any revision in VIMS design or modification to their current function is needed for future buildings.

6.3.6 Site Inspection

Overall annual inspection was completed and documented (see Appendix F). As a result of the inspection and other site documentation reviewed and provided herein, we have determined that the Engineering Controls and Site Controls are in place and operating as intended. We recommend that site inspections continue on an annual basis.

6.4 MONITORING DEFICIENCIES

No deficiencies in the monitoring program were identified during the reporting period.

6.5 CONCLUSIONS AND RECOMMENDATIONS FOR CHANGES

Based on the data collected, the remedial actions are effective and site monitoring data of selected media (groundwater) and controls (DNAPL system, underwater cap) appear to be maintaining integrity over several years of accumulated data. We therefore have made recommendations to decrease the monitoring frequency of these elements of the site remedy.

7. Operation and Maintenance Plan Compliance Report

With the closure of the LNAPL recovery system, there are no mechanical systems operated or maintained at the site. Recovery of DNAPL is performed using a vacuum truck.

8. Overall PRR Conclusions and Recommendations

8.1 COMPLIANCE WITH THE SMP

Site Engineering and Institutional controls are in place and effective, as described in this report. Site monitoring and construction activities have been performed in conformance with the SMP.

8.2 PERFORMANCE AND EFFECTIVENESS OF THE REMEDY

Based on site monitoring data and our annual inspection, the remedial action continues to perform and is effective as required by the SMP. Several years of accumulated monitoring data indicate certain monitoring frequencies, specifically for groundwater, DNAPL extraction and the underwater cap inspection, can be modified over current requirements without compromise of integrity of these elements of the site remedy. We request NYSDEC review the changes recommended in Section 6 and approve them for implementation for this PRR period.

8.3 FUTURE PRR SUBMITTALS

The current annual schedule for submitting the PRR is satisfactory. The next PRR will cover the year between 1 December 2020 and 30 November 2021, assuming the same PRR ending date is maintained by NYSDEC.

9. Commentary for the Periodic Review Report Form

The PRR Form is contained in Appendix A to this report. The following commentary is organized according to the PRR Form.

9.1 BOX 1 SITE DETAILS

1. The site information is correct, except the Reporting Period should be December 1, 2019 to November 30, 2020. This was confirmed via email with NYSDEC (Appendix B).
2. Property ownership for the subject site did not change during the reporting period.
3. There was no change of use during the reporting period.

9.2 BOX 2

1. The site use (residential, commercial, and park) is consistent with restricted residential, commercial and industrial uses.
2. All of the ICs and ECs are in place.

9.3 BOX 2A

1. The validity of the Qualitative Exposure Assessment remains uncompromised.
2. All assumptions in the Qualitative Exposure Assessment are valid.

9.4 BOX 3 DESCRIPTION OF INSTITUTIONAL CONTROLS

The Institutional Controls each of the seven parcels in Box 3 are all in place.

9.5 BOX 4 DESCRIPTION OF ENGINEERING CONTROLS.

A summary of the status of the Engineering Controls at the site is presented in this report and below. Note that for Parcel 1-P-20, the LNAPL Recovery System was dismantled with NYSDEC approval in 2007 (see Section 4 of this report).

9.6 ENGINEERING CONTROL – COVER SYSTEM

Site cover, as required by the SMP, is currently in place.

9.7 ENGINEERING CONTROL – VAPOR MITIGATION

This Engineering Control refers to the soil vapor intrusion management systems (VIMS) for buildings required in the SMP. All buildings constructed on this site under the SMP have VIMS installed. Additional testing of the buildings with VIMS systems for indoor air and sub-slab vapor quality is being scheduled for the 2020-2021 heating season.

9.8 ENGINEERING CONTROL – "LEACHATE COLLECTION"

For parcels 1-P-22, 1-P-23, and 1-P-24, "Leachate Collection" refers to the Northern DNAPL Recovery System. For parcel 1-P-21, "Leachate Collection" refers to the Western DNAPL Recovery System. Both of these systems are in place and functioning per the SMP.

9.9 BOX 5 PERIODIC REVIEW REPORT (PRR) CERTIFICATION STATEMENTS

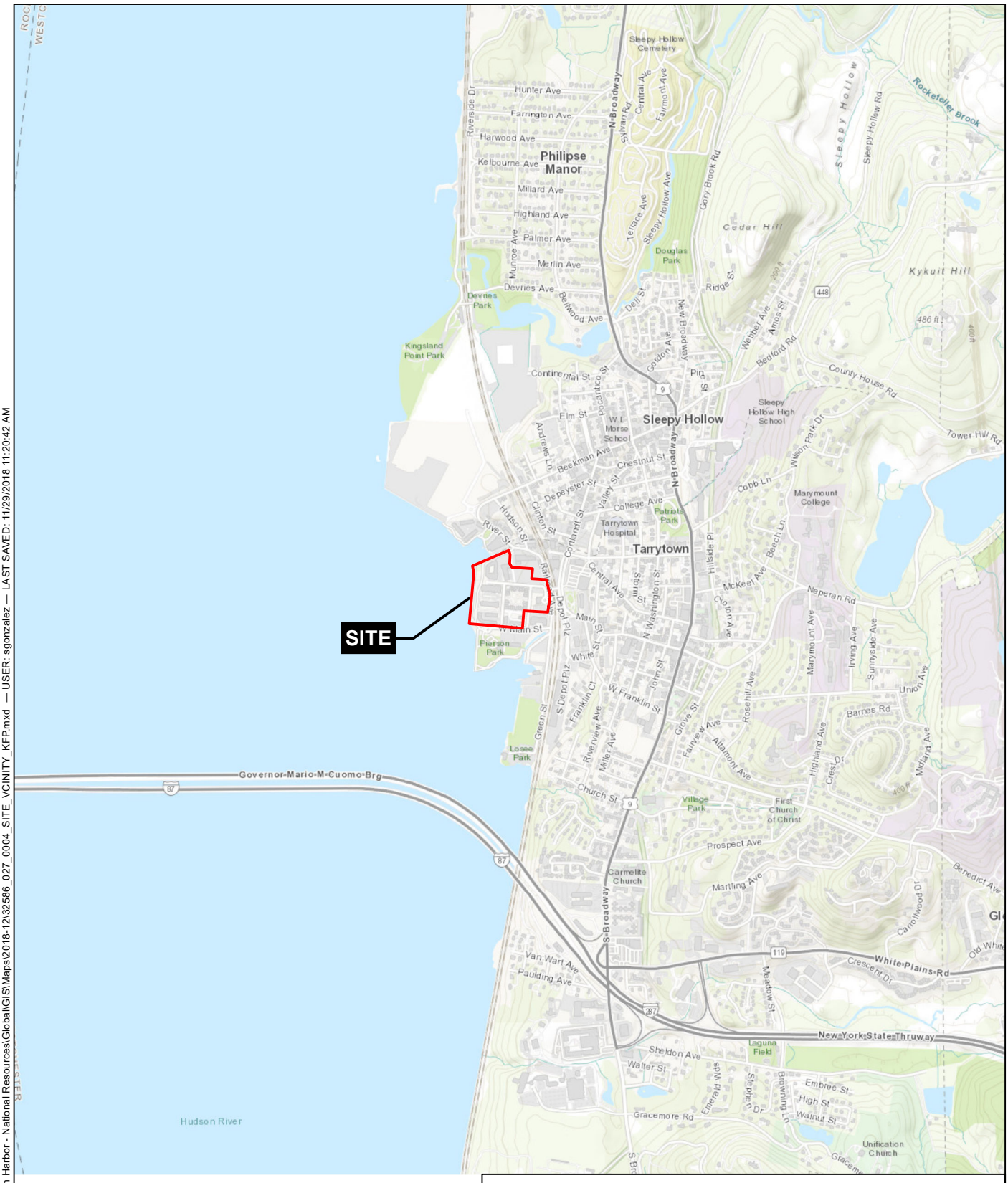
1. The response is "Yes." Both statements are true.

2. The response is "Yes." Statement 'e' does not apply; there is no financial assurance mechanism required.

9.10 BOXES 6 AND 7 IC/EC CERTIFICATIONS

Signatures are provided for the certifications.

FIGURES



GIS FILE PATH: G:\Projects\28590 Hudson Harbor - National Resources\Global\GIS\Maps\2018-12\32586_027_0004_SITE_VCINITY_KFP.mxd — USER: sgonzalez — LAST SAVED: 11/29/2018 11:20:42 AM

MAP SOURCE: ESRI
USGS QUAD: WHITEPLAINS, NEW YORK
SITE COORDINATES: 41°4'42.9"N, 73°52'3.6"W

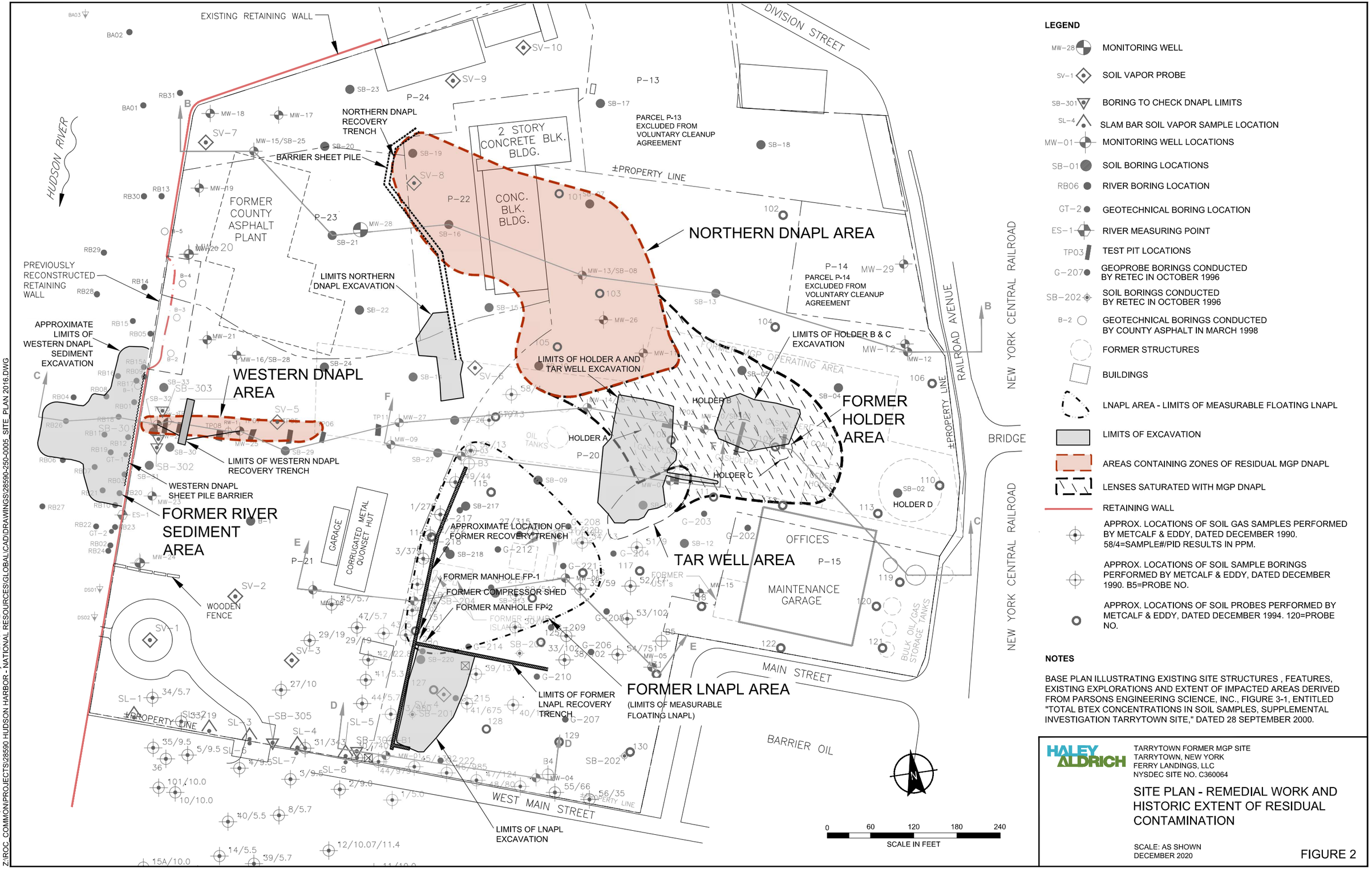
HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
DECEMBER 2020

FIGURE 1



LEGEND

- MW-28 MONITORING WELL
- SV-1 SOIL VAPOR PROBE
- SB-301 BORING TO CHECK DNAPL LIMITS
- SL-4 SLAM BAR SOIL VAPOR SAMPLE LOCATION
- MW-01 MONITORING WELL LOCATIONS
- SB-01 SOIL BORING LOCATIONS
- RB06 RIVER BORING LOCATION
- GT-2 GEOTECHNICAL BORING LOCATION
- ES-1 RIVER MEASURING POINT
- TP03 TEST PIT LOCATIONS
- G-207 GEOPROBE BORINGS CONDUCTED BY RETEC IN OCTOBER 1996
- SB-202 SOIL BORINGS CONDUCTED BY RETEC IN OCTOBER 1996
- B-2 GEOTECHNICAL BORINGS CONDUCTED BY COUNTY ASPHALT IN MARCH 1998
- FORMER STRUCTURES
- BUILDINGS
- LNAPL AREA - LIMITS OF MEASURABLE FLOATING LNAPL
- LIMITS OF EXCAVATION
- AREAS CONTAINING ZONES OF RESIDUAL MGP DNAPL
- LENSES SATURATED WITH MGP DNAPL
- RETAINING WALL
- APPROX. LOCATIONS OF SOIL GAS SAMPLES PERFORMED BY METCALF & EDDY, DATED DECEMBER 1990. 58/4=SAMPLE#/PID RESULTS IN PPM.
- APPROX. LOCATIONS OF SOIL SAMPLE BORINGS PERFORMED BY METCALF & EDDY, DATED DECEMBER 1990. B5=PROBE NO.
- APPROX. LOCATIONS OF SOIL PROBES PERFORMED BY METCALF & EDDY, DATED DECEMBER 1994. 120=PROBE NO.

NOTES

BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES , FEATURES, EXISTING EXPLORATIONS AND EXTENT OF IMPACTED AREAS DERIVED FROM PARSONS ENGINEERING SCIENCE, INC., FIGURE 3-1, ENTITLED "TOTAL BTEX CONCENTRATIONS IN SOIL SAMPLES, SUPPLEMENTAL INVESTIGATION TARRYTOWN SITE," DATED 28 SEPTEMBER 2000.

HALEY ALDRICH

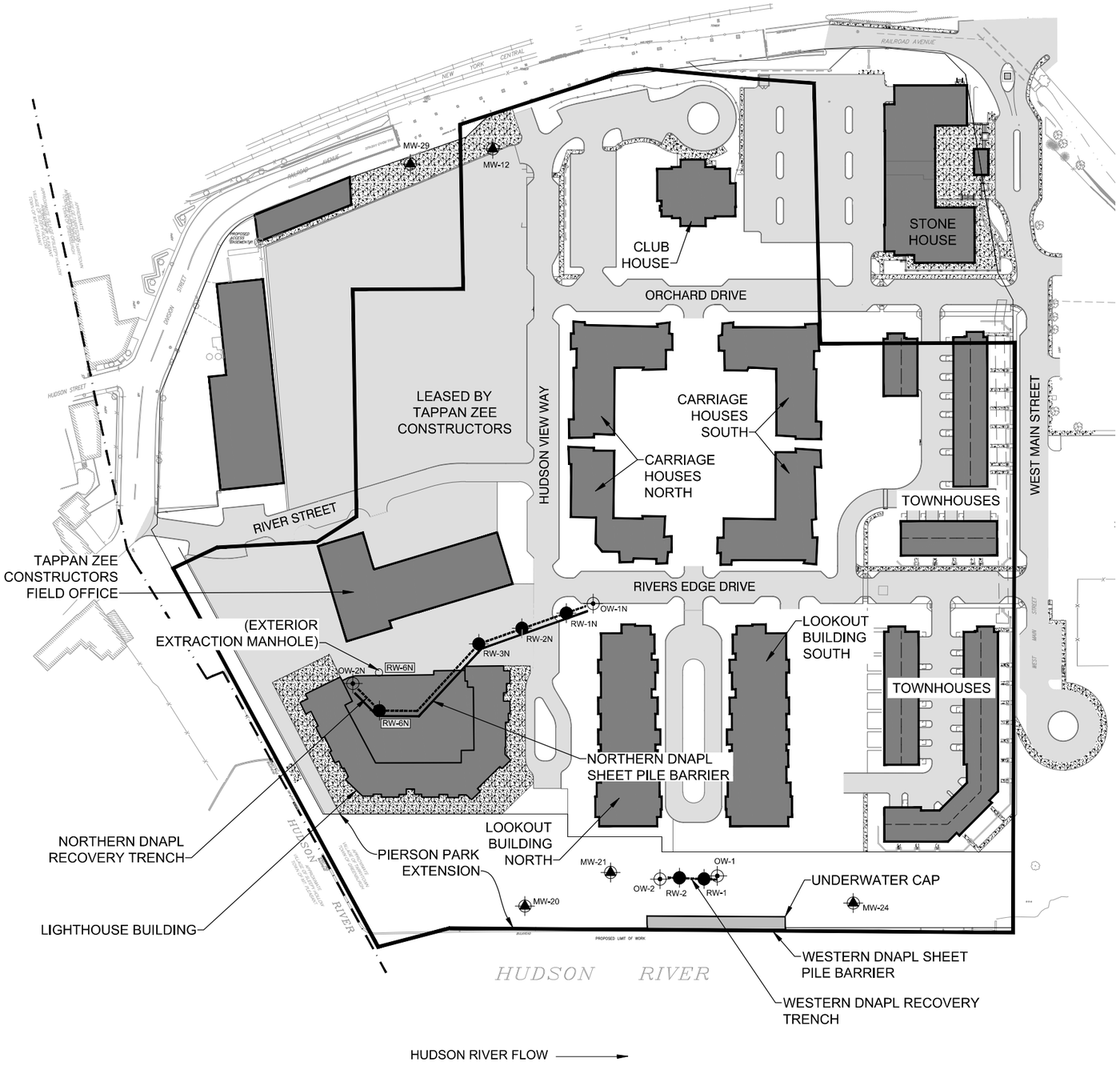
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE PLAN - REMEDIAL WORK AND HISTORIC EXTENT OF RESIDUAL CONTAMINATION

SCALE: AS SHOWN
DECEMBER 2020

FIGURE 2

POSTOLOWSKI, KEVIN Printed: 11/20/2018 1:13 PM Layout: 2018 FIG 2
Z:\ROC_COMMON\PROJECTS\28590 HUDSON HARBOR - NATIONAL RESOURCES\GLOBAL\CAD\DRAWINGS\28590-250-0005_SITE_PLAN 2016.DWG



LEGEND

- GROUNDWATER MONITORING WELL
- DNAPL RECOVERY WELL
- EXTERIOR EXTRACTION MANHOLE
- DNAPL OBSERVATION WELL
- APPROXIMATE AREA ENCOMPASSED BY THE BROWNFIELD CLEAN-UP AGREEMENT #C36OO64
- LANDSCAPED AREAS (THESE AREAS CONTAIN DEMARCATION LAYER BELOW CLEAN FILL AND LANDSCAPING)
- PAVED WALKS, PATIOS, OR COURTYARDS
- EXISTING BUILDINGS
- ROADS AND PARKING AREAS

NOTES

1. BASE MAP IS BASED ON CAD DRAWING ENTTILED "PH1_10399-08_PHASE.DWG," DATED 1 JULY 2009 FROM CHAZEN COMPANIES OF GLENN FALLS, NEW YORK AND "PARKING ALLOCATION DIAGRAM," DATED 7 MARCH 2013 FROM LESSARD GROUP, INC., VIENNA, VIRGINIA.

N

0 80 160 240 320
SCALE IN FEET

HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE COVER PLAN

SCALE: AS SHOWN
DECEMBER 2020

FIGURE 3

APPENDIX A

Periodic Review Report Form

HALEY ALDRICH

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. C360064

Site Name CE - Tarrytown MGP

Site Address: 129 West Main Street Zip Code: 10591
City/Town: Tarrytown
County: Westchester
Site Acreage: 20.000

Reporting Period: February 29, 2020 to November 30, 2020

	YES	NO
1. Is the information above correct?	X	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Restricted-Residential, Commercial, and Industrial	X	☐
7. Are all ICs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

	Box 2A	
	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	X
If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.		
9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	X	☐
If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.		

SITE NO. C360064 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
1-P-20	Ferry Investments, LLC	Ground Water Use Restriction Landuse Restriction O&M Plan Site Management Plan

Inst. Controls:(i) Any proposed soil excavation on the Controlled Property below the 2 foot cover or below the demarcation layer requires prior notification to the NYSDEC in accordance with the approved Site Management Plan. Excavated soil must be managed, characterized, and properly disposed in accordance with the approved Site Management Plan and applicable regulations and/or guidance. (ii) The use of untreated groundwater for any purpose is not permitted.

1-P-22	Westchester Industries, Inc.	O&M Plan Site Management Plan Ground Water Use Restriction Landuse Restriction

Inst. Controls:(i) Any proposed soil excavation on the Controlled Property below the 2 foot cover or below the demarcation layer requires prior notification to the NYSDEC in accordance with the approved Site Management Plan. Excavated soil must be managed, characterized, and properly disposed in accordance with the approved Site Management Plan and applicable regulations and/or guidance. (ii) The use of untreated groundwater for any purpose is not permitted.

1-P-23	Westchester Industries	Site Management Plan O&M Plan Ground Water Use Restriction Landuse Restriction

Inst. Controls:(i) Any proposed soil excavation on the Controlled Property below the 2 foot cover or below the demarcation layer requires prior notification to the NYSDEC in accordance with the approved Site Management Plan. Excavated soil must be managed, characterized, and properly disposed in accordance with the approved Site Management Plan and applicable regulations and/or guidance. (ii) The use of untreated groundwater for any purpose is not permitted.

1-P-24	Ferry Landings, LLC	Site Management Plan O&M Plan Ground Water Use Restriction Landuse Restriction

Inst. Controls:(i) Any proposed soil excavation on the Controlled Property below the 2 foot cover or below the demarcation layer requires prior notification to the NYSDEC in accordance with the approved Site Management Plan. Excavated soil must be managed, characterized, and properly disposed in accordance with the approved Site Management Plan and applicable regulations and/or guidance. (ii) The use of untreated groundwater for any purpose is not permitted.

1-P15	Ferry Investments, LLC	O&M Plan Site Management Plan Ground Water Use Restriction Landuse Restriction

Inst. Controls: (i)Any proposed soil excavation on the Controlled Property below the 2 foot cover or below the demarcation layer requires prior notification to the NYSDEC in accordance with the approved Site Management Plan. Excavated soil must be managed, characterized, and properly disposed in accordance with the approved Site Management Plan and applicable regulations and/or guidance.
(ii)The use of untreated groundwater for any purpose is not permitted.

1-P21 Westchester Industries

Site Management Plan
Ground Water Use Restriction
O&M Plan
Landuse Restriction

Inst. Controls:(i) Any proposed soil excavation on the Controlled Property below the 2 foot cover or below the demarcation layer requires prior notification to the NYSDEC in accordance with the approved Site Management Plan. Excavated soil must be managed, characterized, and properly disposed in accordance with the approved Site Management Plan and applicable regulations and/or guidance.(ii) The use of untreated groundwater for any purpose is not permitted.

1-P24A Ferry Landings, LLC

Site Management Plan
O&M Plan
Ground Water Use Restriction
Landuse Restriction

Inst. Controls:(i) Any proposed soil excavation on the Controlled Property below the 2 foot cover or below the demarcation layer requires prior notification to the NYSDEC in accordance with the approved Site Management Plan. Excavated soil must be managed, characterized, and properly disposed in accordance with the approved Site Management Plan and applicable regulations and/or guidance. (ii) The use of untreated groundwater for any purpose is not permitted.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
1-P-20	Cover System Vapor Mitigation

Eng. Controls: (i) In areas not proposed for future building construction or impervious covering, residually contaminated soils on the Controlled Property that meet backfill criteria as stipulated in Section 3.4 of the approved Site Management Plan, must be covered by a demarcation layer consisting of an orange, non-woven, 4 oz/sy geotextile and must be covered with 2 feet of clean imported fill material. This barrier must be maintained as per the approved Site Management Plan; and (ii) A passive Soil Vapor Management System (SVMS) must be installed in every new building erected within the Controlled Property. Newly constructed buildings within the Controlled Property shall also be subjected to a Soil Vapor Intrusion (SVI) Investigation, conducted in accordance with the applicable guidance in effect at the time of the investigation. If the results of this SVI investigation demonstrate ineffectiveness of the existing passive SVMS, an appropriate active Soil Vapor Management System shall be designed, constructed and maintained. (iii) Operate and maintain the LNAPL Recovery System depicted in Figure 2 as set forth in Section 3 of OM&MP which is Appendix A to the approved Site Management Plan.

1-P-22

Vapor Mitigation
Cover System
Leachate Collection
Subsurface Barriers

Eng. Controls: (i) In areas not proposed for future building construction or impervious covering, residually contaminated soils on the Controlled Property that meet backfill criteria as stipulated in Section 3.4 of the approved Site Management Plan, must be covered by a demarcation layer consisting of an orange, non-woven, 4 oz/sy geotextile and must be covered with 2 feet of clean imported fill material. This barrier must be maintained as per the approved Site Management Plan; and (ii) A passive Soil Vapor Management System (SVMS) must be installed in every new building erected

Parcel	Engineering Control

within the Controlled Property. Newly constructed buildings within the Controlled Property shall also be subjected to a Soil Vapor Intrusion (SVI) Investigation, conducted in accordance with the applicable guidance in effect at the time of the investigation. If the results of this SVI investigation demonstrate ineffectiveness of the existing passive SVMS, an appropriate active Soil Vapor Management System shall be designed, constructed and maintained. (iii) Operate and maintain the Northern DNAPL Recovery System depicted in Figure 2 as set forth in Section 2 of OM&MP which is Appendix A to the approved Site Management Plan.

1-P-23

Vapor Mitigation
Cover System
Leachate Collection

Eng. Controls: (i) In areas not proposed for future building construction or impervious covering, residually contaminated soils on the Controlled Property that meet backfill criteria as stipulated in Section 3.4 of the approved Site Management Plan, must be covered by a demarcation layer consisting of an orange, non-woven, 4 oz/sy geotextile and must be covered with 2 feet of clean imported fill material. This barrier must be maintained as per the approved Site Management Plan; and (ii) A passive Soil Vapor Management System (SVMS) must be installed in every new building erected within the Controlled Property. Newly constructed buildings within the Controlled Property shall also be subjected to a Soil Vapor Intrusion (SVI) Investigation, conducted in accordance with the applicable guidance in effect at the time of the investigation. If the results of this SVI investigation demonstrate ineffectiveness of the existing passive SVMS, an appropriate active Soil Vapor Management System shall be designed, constructed and maintained. (iii) Operate and maintain the Northern DNAPL Recovery System depicted on Figure 2 as set forth in Section 2 of OM&MP which is Appendix A to the approved Site Management Plan.

1-P-24

Vapor Mitigation
Cover System
Leachate Collection
Subsurface Barriers

Eng. Controls: (i) In areas not proposed for future building construction or impervious covering, residually contaminated soils on the Controlled Property that meet backfill criteria as stipulated in Section 3.4 of the approved Site Management Plan, must be covered by a demarcation layer consisting of an orange, non-woven, 4 oz/sy geotextile and must be covered with 2 feet of clean imported fill material. This barrier must be maintained as per the approved Site Management Plan; and (ii) A passive Soil Vapor Management System (SVMS) must be installed in every new building erected within the Controlled Property. Newly constructed buildings within the Controlled Property shall also be subjected to a Soil Vapor Intrusion (SVI) Investigation, conducted in accordance with the applicable guidance in effect at the time of the investigation. If the results of this SVI investigation demonstrate ineffectiveness of the existing passive SVMS, an appropriate active Soil Vapor Management System shall be designed, constructed and maintained. (iii) Operate and maintain the Northern DNAPL Recovery System depicted on Figure 2 as set forth in Section 2 of OM&MP which is Appendix A to the approved Site Management Plan.

1-P15

Vapor Mitigation
Cover System

Eng. Controls: (i)In areas not proposed for future building construction or impervious covering, residually contaminated soils on the Controlled Property that meet backfill criteria as stipulated in Section 3.4 of theapproved Site Management Plan , must be covered by a demarcation layer consisting of an orange, non-woven, 4 oz/sy geotextile and must be covered with 2 feet of clean imported fill material. This barrier must be maintained as per the approved Site Management Plan; and (ii)A passive Soil Vapor Management System (SVMS) must be installed in every new building erected within the Controlled Property. Newly constructed buildings within the Controlled Property shall also be subjected to a Soil Vapor Intrusion (SVI) Investigation, conducted in accordance with the applicable guidance in effect at the time of the investigation. If the results of this SVI investigation demonstrate ineffectiveness of the existing passive SVMS, an appropriate active Soil Vapor Management System shall be designed, constructed and maintained.

1-P21

Vapor Mitigation
Cover System
Leachate Collection

Eng. Controls: (i) In areas not proposed for future building construction or impervious covering,

Parcel	Engineering Control
	residually contaminated soils on the Controlled Property that meet backfill criteria as stipulated in Section 3.4 of the approved Site Management Plan, must be covered by a demarcation layer consisting of an orange, non-woven, 4 oz/sy geotextile and must be covered with 2 feet of clean imported fill material. This barrier must be maintained as per the approved Site Management Plan; and (ii) A passive Soil Vapor Management System (SVMS) must be installed in every new building erected within the Controlled Property. Newly constructed buildings within the Controlled Property shall also be subjected to a Soil Vapor Intrusion (SVI) Investigation, conducted in accordance with the applicable guidance in effect at the time of the investigation. If the results of this SVI investigation demonstrate ineffectiveness of the existing passive SVMS, an appropriate active Soil Vapor Management System shall be designed, constructed and maintained. (iii) Operate and maintain the Western DNAPL Recovery System depicted on Figure 2 as set forth in Section 2 of OM&MP which is Appendix A to the approved Site Management Plan.
1-P24A	Vapor Mitigation Cover System
	Eng. Controls: (i) In areas not proposed for future building construction or impervious covering, residually contaminated soils on the Controlled Property that meet backfill criteria as stipulated in Section 3.4 of the approved Site Management Plan, must be covered by a demarcation layer consisting of an orange, non-woven, 4 oz/sy geotextile and must be covered with 2 feet of clean imported fill material. This barrier must be maintained as per the approved Site Management Plan; and (ii) A passive Soil Vapor Management System (SVMS) must be installed in every new building erected within the Controlled Property. Newly constructed buildings within the Controlled Property shall also be subjected to a Soil Vapor Intrusion (SVI) Investigation, conducted in accordance with the applicable guidance in effect at the time of the investigation. If the results of this SVI investigation demonstrate ineffectiveness of the existing passive SVMS, an appropriate active Soil Vapor Management System shall be designed, constructed and maintained.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

   (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C360064

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Carl Monheit (print name) at 485 West Putnam Ave. Greenwich, CT 06830 (print business address),

am certifying as Designated Representative (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Carl Monheit
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

12/23/2020
Date

EC CERTIFICATIONS

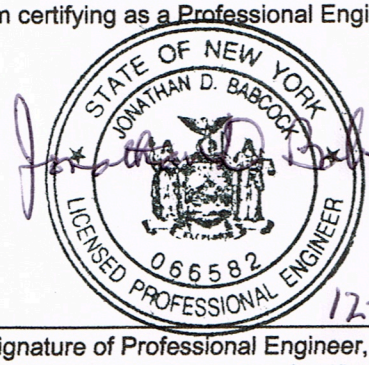
Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jonathan D. Babcock (print name) at Haley & Aldrich of New York, 200 Town Centre Drive, Suite 2, Rochester, NY 14623 (print business address),

am certifying as a Professional Engineer for the Owner (Owner or Remedial Party)



Jonathan D. Babcock

12-21-20

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification	Stamp (Required for PE)	Date

APPENDIX B

Correspondence

Dick, Vince

From: Dick, Vince
Sent: Wednesday, September 23, 2020 4:48 PM
To: Squire, Michael H (DEC)
Cc: Carl Monheit; Babcock, Jonathan; Aldinger, Brad
Subject: RE: Tarrytown PRR schedule

Sounds good – thanks very much Michael!

From: Squire, Michael H (DEC) <Michael.Squire@dec.ny.gov>
Sent: Wednesday, September 23, 2020 4:45 PM
To: Dick, Vince <VDick@haleyaldrich.com>
Cc: Carl Monheit <cmonheit@nationalresources.com>; Babcock, Jonathan <JBabcock@haleyaldrich.com>; Aldinger, Brad <BAldinger@haleyaldrich.com>
Subject: RE: Tarrytown PRR schedule

CAUTION: External Email

Vince,

That's just due to the unfinished SVI and IAQ sampling being part of a corrective measures entry, which threw the PRR dates off. You can proceed with the usual reporting period and I'll fix the dates.

Thanks,
Michael

From: Dick, Vince <VDick@haleyaldrich.com>
Sent: Wednesday, 23 September, 2020 16:39
To: Squire, Michael H (DEC) Michael.Squire@dec.ny.gov
Cc: Carl Monheit <cmonheit@nationalresources.com>; Babcock, Jonathan <JBabcock@haleyaldrich.com>; Aldinger, Brad <BAldinger@haleyaldrich.com>
Subject: Tarrytown PRR schedule

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Michael,
Just wanted to check in with you and let you know that Ferry Landings has received the NYSDEC reminder letter for the 2020 PRR – please see the attached letter.

Please note that it says the PRR should cover a reporting period of February 29, 2020 through November 30, 2020, which we believe to be incorrect.
The site's normal reporting period the last few years has been December 1st to November 30th each year, which is what we plan to do for this upcoming PRR.

Please let us know if there is something else afoot that makes the reporting period different; we will otherwise proceed with Dec-Nov for this PRR.
Also, we fully expect to submit the PRR to you by the required due date of December 30th.

Best regards,
Vince

Vincent B. Dick
Principal

Haley & Aldrich
200 Town Centre Drive, Suite 2
Rochester, NY 14623

T: 585.321.4207
C: 585.734.6838

www.haleyaldrich.com

Dick, Vince

From: Squire, Michael H (DEC) <Michael.Squire@dec.ny.gov>
Sent: Thursday, March 19, 2020 11:59 AM
To: Dick, Vince
Subject: FW: VIMS sampling time frame for C360064 Tarrytown MGP - UPDATE 03-18-2020

CAUTION: External Email

Vince,

Just received this from the DOH project manager's supervisor. In either case, please let me know when you can reschedule sampling and which apartments are left. Have a good rest of the week.

Thanks,
Michael

From: Schuck, Maureen E (HEALTH) <maureen.schuck@health.ny.gov>
Sent: Thursday, March 19, 2020 11:26 AM
To: Berninger, Steven G (HEALTH) <Steven.Berninger@health.ny.gov>
Cc: Squire, Michael H (DEC) <Michael.Squire@dec.ny.gov>; Karpinski, Steven (HEALTH) <steven.karpinski@health.ny.gov>; Brown, Janet E (DEC) <janet.brown@dec.ny.gov>
Subject: Re: VIMS sampling time frame for C360064 Tarrytown MGP - UPDATE 03-18-2020

I agree with the pushing the sampling out, but if it can wait until next years 2020/2021 heating season that would be preferred. Otherwise additional follow-up sampling during the heating season may be recommended anyway.—If needed we can discuss this by phone.—Thanks! Maureen
Sent from my iPad

> On Mar 19, 2020, at 10:55 AM, Berninger, Steven G (HEALTH) <Steven.Berninger@health.ny.gov> wrote:
>
> Hi Michael:
>
> Just got my state email working from home.
>
> I think under these circumstances we can allow pushing the sampling back to late summer.
>
> Steven Berninger
>
> ---
>
> **From:** Squire, Michael H (DEC) <Michael.Squire@dec.ny.gov>
> **Sent:** Thursday, March 19, 2020 9:26 AM
> **To:** Berninger, Steven G (HEALTH) <Steven.Berninger@health.ny.gov>
> **Subject:** FW: VIMS sampling time frame for C360064 Tarrytown MGP - UPDATE 03-18-2020
>
> Steve,

What do you think about pushing back remaining sampling to later in summer, rather than waiting until the next heating season? The approved work plan's schedule was for sampling to be done during the heating season, but would the systems described below allow for sampling outside the heating season?

Thanks,
Michael

From: Dick, Vince <VDick@haleyaldrich.com>
Sent: Wednesday, March 18, 2020 5:13 PM
To: Squire, Michael H (DEC) <Michael.Squire@dec.ny.gov>
Cc: Aldinger, Brad <BAldinger@haleyaldrich.com>; Babcock, Jonathan <JBabcock@haleyaldrich.com>; 'Carl Monheit (cmonheit@nationalresources.com)' <cmonheit@nationalresources.com>; Fisher, Samantha <SFisher@haleyaldrich.com>; Sanger, Jonathan <JSanger@haleyaldrich.com>
Subject: RE: VIMS sampling time frame for C360064 Tarrytown MGP - UPDATE 03-18-2020

Michael,
Update for Thursday 3/18/20:

- We're mobilizing to the site this evening to undertake a day of sampling tomorrow (Thurs).
- Based on input from Ferry Landings staff, there will be at least 1 and possibly 2 or 3 resident units available to complete IA and SS samples.
- Other sampling - we rechecked the SMP to see if anything else might be covered while on site and determined that there are outdoor soil vapor samples around the relatively new Lighthouse Building required by the SMP (other phases of the development were covered by prior grid soil vapor samples). Therefore we will collecting soil vapor samples – one each in a N, S, E and W direction around the building - while on site as well.

We will continue our communications with Ferry Landings staff who have been in discussions with the residents that originally agreed to have their units sampled. However, beyond the samples to be collected tomorrow I have doubts that there will be any remaining residential units made accessible to complete the IA/SS sampling until the COVID-19 protocols for social distancing have relaxed and public concern has subsided.

I'm therefore interested in your feedback about how long we look at delaying remaining sampling. Carl Monheit has asked me whether we should reconsider the conventional heating season timeframe; the NYSDOH guidance is written as blanket protocol and does not appear to consider a circumstance where the home furnace and HW heater are high efficiency with separate fresh air intakes thus not drawing air from the homes interior and creating a slight negative pressure in each unit (year round, instead of just each heating season). All the Hudson Harbor homes are considered high efficiency with separate dedicated fresh air intakes to each unit. Thus, we wonder if it would be OK to punt remaining sampling to another time this summer when we return to the site for other work such as a DNAPL extraction or other site work; or are we strapped to no further IA/SS sampling until the next heating season starts in October 2020? Your input would be welcomed. If you want to talk it through, please give me a call ; even though we are all working remotely, my work number will ring to my desktop.

Best regards,
Vince

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

7 May 2020
File No. 28590-029

New York State Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, NY 12233-7014

Attention: Michael Squire
Project Manager, Remedial Bureau C

Subject: Vapor Intrusion Management Systems (VIMS)
NYSDEC Site No. C360064
Tarrytown Former MGP
Tarrytown, NY

Dear Mr. Squire:

On behalf of Ferry Landings, LLC, Haley & Aldrich of New York (Haley & Aldrich) has prepared this letter report of soil vapor and indoor air sampling for the above-referenced site. This report fulfills the commitment letter submitted by Haley & Aldrich dated 21 August 2019 on behalf of Ferry Landings and responds to NYSDEC's email dated 27 September 2019 regarding the subject site (the "Site"). For all locations referred to in this report, please see attached the attached Site Plan. Results of the sampling program conducted between 9 and 19 March 2020 are presented herein.

PURPOSE

Soil vapor (SV), sub-slab soil vapor (SS), and indoor air (IA) quality sampling and analysis was performed as outlined in Section 2.3.4 of the revised *Site Management Plan – Tarrytown Former MGP Site, Tarrytown, NY*, dated August 2010 and accepted by the NYSDEC on 26 August 2010 (the SMP), and as adapted to the phases and footprints of buildings developed on the site since the SMP was approved.

The sampling program was conducted for two purposes presented in the SMP: a) to complete "verification air sampling" of indoor air and b) to complete the "post-construction evaluation of the potential for future exposures" for the Lighthouse building.

In general, the verification air sampling consisted of concurrent indoor air and sub-slab sampling for one ground floor location in each of 13 current buildings present on the Site. The post-construction evaluation of the potential for future exposures soil vapor sampling was completed to address the recently completed Lighthouse building and consisted of four SV samples (north, south, east, west)

outside the Lighthouse building perimeter and one SS sample beneath the building. Post-construction evaluation of other structures was completed and reported in past submittals to NYSDEC. Descriptions of the sampling program's scope, locations, methods, and laboratory analyses are presented in this report; our conclusions are presented in the following section.

GENERAL CONCLUSIONS

Based on the data resulting from the indoor air quality and sub-slab soil vapor sampling, we conclude:

- Soil vapor sampling and analysis for compounds required by New York State Department of Health (NYSDOH) vapor intrusion guidance indicated most target compounds were not detected in the soil vapor samples. Where chemical concentrations for target compounds were detected, the resulting concentrations are uniformly less than the NYSDOH vapor intrusion comparison criteria that would require further action or monitoring. Therefore, based on NYSDOH criteria and guidance no further monitoring or action is required.

- Indoor air quality analyses conducted concurrently with the sub-slab soil vapor sampling indicate indoor air has not been compromised by the compounds of concern for the site. A limited set of compounds were detected in indoor air with results above EPA national survey 75th-percentile data for indoor air quality. We conclude these detections are not present due to the site conditions and instead appear to be related to common commercial cleaner products, personal care products, or building materials/building finishes.

Based on the data regarding the post-construction soil vapor sampling, we conclude:

- Soil vapor chemical concentrations for compounds detected in the samples collected are uniformly less than NYSDOH vapor intrusion comparison criteria and USEPA vapor intrusion evaluation criteria.

- There has been no increase in potential exposure to soil vapor due to building construction.

- Vapor Intrusion Mitigation System (VIMS) controls that have been installed in the Lighthouse Building consistent with the SMP are effective as intended. VIMS systems described in the SMP should continue to be installed in future buildings constructed at the site, as they have been in the past; the data do not indicate any revision in VIMS design or modification to their current function is needed for future buildings.

Please note we have also prepared a letter with sample results for each of the three individual occupied residences noted herein. Each letter is being provided to that resident by Ferry Landings/National Resources under separate cover and following submittal of this report to NYSDEC.

Lastly note that not all structures originally intended for sampling could be accessed due to both federal and state agency recommendations relative to COVID-19 pandemic protocols that were actively being issued and changed while sample access was being arranged between Ferry Landings and site tenants. Seven buildings remain to be accessed and sampled; these will be the subject of additional outreach by Ferry Landings to obtain access and schedule sampling, ideally in the next heating season.

INDOOR AIR AND SUB-SLAB SOIL VAPOR SAMPLING AND ANALYSIS

SCOPE AND METHODS

To be representative of the Site, one set of indoor air and sub-slab soil vapor samples was collected for each building at the Site to be consistent with the SMP. The SMP requires a sample set in a ground floor unit; sampling was completed in the 2019-2020 heating season, consistent with procedures contained in NYSDOH *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006* limited only by units for which access was authorized by the site owner or unit occupants. See Figure 1 for sample locations and subsequent figures for specific sample locations within the units made accessible for sampling. Inaccessible buildings are discussed near the end of this report. Brief descriptions of the accessible buildings and sampling locations are as follows:

- Club House - no residential units are present however the basement area has a fitness area and yoga studio. Sample locations are shown on Figure 2.

- Lighthouse - one ground floor unit, unoccupied at the time of sampling, was available for both sub-slab and indoor air sampling. Sample locations are shown on Figure 3.

- Lookout North - one ground floor occupied unit from this building was accessible for indoor air sampling, however due to the types of floor finishes present within the occupied space the sub-slab soil vapor sample was collected in the garage adjacent to the unit. Sample locations are shown on Figure 4.

- Lookout South - no residential units are present on the ground floor level and samples were collected from the building water equipment room and garage. Sample locations are shown on Figure 5.

- Townhouse 2 - each unit from this building has a garage, bathroom, and living space on the ground floor slab-on grade. An occupied unit was made accessible for sampling and sample locations are shown on Figures 6 and 7.

- Townhouse 5 - each unit from this building has a garage, bathroom, and living space on the ground floor slab-on grade. An occupied unit was made accessible for sampling and an occupied unit was made accessible for sampling and sample locations are shown on Figures 6 and 8.

Field methods were consistent with guidance from the NYSDOH *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006*. Indoor air and sub-slab sampling occurred

concurrently. For indoor air sampling, a laboratory-supplied 2.7-liter Summa canister with flow regulator was placed within the living space of a residential unit on the ground floor (floor in contact with the slab-on-grade) and the regulator was set to obtain a complete sample over an approximately one hour sample duration.

For sub-slab soil vapor sampling a small hole was drilled through the concrete slab into the sub-slab gravel. A new vapor pin seal was used for each test hole and flexible tubing was connected a laboratory-supplied 2.7-liter Summa canister with a flow regulator set to fill at a rate to obtain a complete sample over an approximately one hour duration (consistent with the indoor air sample). Following sampling, the test holes were sealed with hydrated bentonite and finished with non-shrinking grout. Per the SMP, at least once for each round of sampling a tracer gas (Helium) was used as a quality assurance/quality control measure to verify the method to seal the soil vapor probe was satisfactory.

Please note that the Site was cleaned up and redeveloped through NYSDEC's Brownfield Cleanup Program due to its past use as a manufactured gas plant, bus fleet fueling facility and asphalt batch plant, which in aggregate left residues of coal tar and petroleum products that were remediated. However, all samples were analyzed for all target VOCs included within the United States Environmental Protection Agency (USEPA) Method TO-15 at a NYSDOH certified laboratory, including compounds (such as chlorinated solvents) beyond just those necessary to assess just coal tar and petroleum residues. Laboratory analyses were performed by Alpha Analytical, Mansfield, Massachusetts (Alpha), which is accredited by the National Environmental Laboratory Accreditation Program (NELAP). Alpha is also a NYSDOH ELAP lab, ID #11627.

LABORATORY RESULTS AND EVALUATION

Laboratory testing results are provided in Table 1. A data usability summary report (DUSR) was prepared for each round of analyses performed by Alpha. The results presented by Alpha were compliant with the data quality objectives for the project. Results in Table 1 have been flagged as indicated by the laboratory and DUSR. Laboratory Data Reports and DUSRs are provided in Appendix A.

Analytical results of the indoor air sampling events were evaluated by comparison to two sets of comparison criteria. For compounds targeted for soil vapor intrusion evaluation by the NYSDOH, indoor air sample results were compared to matrices contained in the NYSDOH *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.* For all compounds, including those not targeted by the NYSDOH guidance, results were also compared to the Indoor Air Quality (IAQ) levels published by the USEPA Office of Indoor Air and Radiation in the *Building Assessment Survey (BASE) Study (USEPA, 2001).* The BASE study used a standardized protocol to collect extensive indoor air quality data from one hundred locations in thirty-seven cities in the U.S. The indoor and outdoor comparison levels used for comparison in the evaluation of analytical data were those published in the USEPA guidance document at the 75th percentile level.

Regarding the NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2006)*, the analyte-appropriate decision matrix determinations used were provided by Tables 3.1, 3.2, and Appendix A of the NYSDOH guidance document as updated in May 2017. Specifically, NYSDOH has

established guidance action levels for eight volatile chemicals, mainly chlorinated volatile organic compounds, based on state review of toxicity data, risk assessments, and soil vapor intrusion data. Regarding all other compounds, including compounds related to coal tar and petroleum residues associated with the past site use and addressed by remediation completed on the site, the USEPA BASE study provides comparison criteria for assessment of those compounds.

In overall summary and in the buildings that were accessible for sampling, based on our comparison of the data to the applicable NYSDOH guidance matrices (Matrix A, Matrix B, Matrix C) for both indoor air and sub-slab vapor samples, all comparisons to the NYSDOH guidance values in Table 1 show that No Further Action is required.

The NYSDOH guidance provides comparison criteria within the risk matrices predominantly for chlorinated VOCs (e.g. trichloroethene) and does not provide criteria for coal tar or petroleum-based VOCs. Building-specific sampling descriptions are provided below.

In the Club House, the sub-slab sample was collected in a maintenance closet and the indoor air sample was collected in an adjacent hallway. Results of the indoor air sample were below NYSDOH criteria for further monitoring or action; selected results only exceeded the BASE database 75th percentile levels for ethanol and isopropyl alcohol, both common in cleaning and personal care products.

In the Lighthouse building, construction and demolition activities were underway during the time of sampling, however sampling was able to proceed without interference in an unoccupied residential unit. Both the indoor air and sub-slab soil vapor concentrations were below NYSDOH criteria for further monitoring or action and the BASE database comparison levels.

In the Lookout North building, the indoor air sample was collected in an occupied residential unit hallway. The sub-slab soil vapor sample was collected in the adjacent garage because floor finishes prevented drilling through the residence floor. Results of the indoor air sample were below NYSDOH criteria for further monitoring or action; selected results only exceeded BASE database levels for ethanol, and ethyl acetate, compounds commonly found in cleaning products and/or personal care products such as rubbing alcohol and nail polish remover. There was also an exceedance of chloroform in the indoor air sample as well, which could be due to household products such cleaning agents being present. There were no exceedances of any BASE database criteria in the sub-slab soil vapor sample.

In the Lookout South building, no ground floor residential units are present and building support spaces were used for sampling. The sub-slab sample was collected in the water room and the indoor air sample was collected in an adjacent hallway. Results of the indoor air and sub-slab soil vapor sample were both below NYSDOH criteria for further monitoring or action and the BASE database comparison levels.

In the Townhouse 2 building a residential unit was made accessible. The sub-slab sample was collected in the garage (residence floor finishes prevented drilling through the residence floor) and the indoor air sample was collected in an adjacent hallway within the living space. Results of the indoor air and sub-slab soil vapor sample were below the NYSDOH criteria for further monitoring or action and BASE database comparison levels.

In the Townhouse 5 building a residential unit was made available. The sub-slab sample was collected in the maintenance closet adjacent to the garage and the indoor air sample was collected in the first-floor bathroom. Results of the indoor air and sub-slab soil vapor sample were below the NYSDOH criteria for further monitoring or action. The indoor air sample exceeded BASE database 75th percentile comparison criteria for acetone, ethyl acetate, and methylene chloride. Both acetone and ethyl acetate are common in personal care products (this sample was collected in the unit's bathroom).

POST-CONSTRUCTION SOIL VAPOR SAMPLING

While our sample crews were on site for the indoor air and soil vapor sampling for each building, we also took advantage of the mobilization and completion of Lighthouse building construction to complete related soil vapor sampling required by the SMP and associated with the vapor intrusion management system (VIMS) already installed with the building.

The VIMS installations for the Lighthouse were constructed per the SMP and were substantially completed with the main structure in 2018. The VIMS consist of a concrete slab over a vapor barrier placed over a crushed stone sub-base containing a network of perforated pipes to vent the sub-slab area. Vertical riser pipes connected to the sub-slab piping extend above the roof to convey soil vapor away from the building. The crushed stone acts as a relatively higher permeability zone through which vapor can migrate to the riser piping. Penetrations for pipe and conduits through the slab were sealed during construction using a boot.

Separate VIMS for each of nine ground-level residential units and one VIMS with six risers for the area encompassed by the Parking Garage and lobby of the Lighthouse Building were installed. Confirmation testing of the constructed VIMS for potential leaks through the floor slab and for connectivity within the sub-slab gravel for vapor movement was successfully completed for these buildings as reported in *Tarrytown Former MGP Site Periodic Review Report-Period Ending 30 November 2018, Tarrytown, New York, 14 December 2018.*

As required in the SMP, after new buildings have been constructed, evaluation of the potential for future exposures to volatile organic chemicals in soil vapor is to be performed by obtaining soil vapor samples at sampling points located on a grid pattern associated with the building(s) being evaluated. For the current sampling, the grid pattern included one sample location within the Lighthouse building footprint and one sample north, east, south and west of the building. See Figure 1 for sample locations adjacent to the Lighthouse.

METHODOLOGY

Field methods used were consistent with guidance from the New York State Department of Health *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006*. Sampling procedures followed Section 2.3.4 of the SMP. At each exterior sample location, a pilot hole was completed to the proposed sample depth of 4 to 5 ft below existing ground surface by driving a solid stainless-steel rod into the ground. A 5 ft. long x ⅛ in. inside diameter hollow stainless-steel probe was inserted into the pilot hole to the sample depth and sealed at the ground surface with hydrated

bentonite chips. Where water was encountered in the pilot hole, the depth of the bottom of the probe was adjusted upward so the bottom of the probe was above the water surface. At the interior sample location, a hole was drilled through the concrete floor slab with an impact drill, a steel probe was used to clear sub-slab gravel away from the hole, a plastic sampling tube was inserted through the hole into the sub-surface soils, and the hole was sealed at the slab surface using a tapered rubber seal. Per the SMP, a tracer gas (Helium) was used as a quality assurance/quality control measure to verify the method to seal the soil vapor probe was satisfactory, although high moisture content observed while placing the sample point generated apparent false helium detection during the sampling.

Sampling was performed by evacuating each borehole briefly to purge stagnant vapor, then a laboratory-supplied 2.7-liter Summa canister with a flow regulator set to fill in approximately one hour. As noted previously, although potential VOC impacts at the Site would be associated with coal tar and petroleum residues in the subsurface, the samples were analyzed for the full set of VOCs by USEPA Method TO-15, including those beyond this potential coal tar/petroleum related compounds. Laboratory analyses were performed by Alpha Analytical, Mansfield, Massachusetts.

In summary, during this round of sampling, five post-construction soil vapor samples were collected from the Lighthouse building (one sub-slab soil vapor sample inside the building and four soil vapor samples outside the buildings) and one ambient air sample was collected. Results from the ambient air sample were used as background concentrations for comparison purposes.

LABORATORY RESULTS AND EVALUATION

Laboratory testing results for these soil vapor samples are provided in Table 2. A data usability summary report (DUSR) was prepared for the separate round of analyses performed by Alpha. The DUSR evaluation indicates that selected results require tags related to usability, however all results presented by Alpha were compliant with the data quality objectives for the project. Results in Table 2 have been flagged as indicated by the laboratory and DUSR. Laboratory reports and DUSRs are provided in Appendix A.

Analytical results of the soil vapor sampling events were evaluated by comparison to the NYSDOH *Final Guidance for Evaluating Soil Vapor Intrusion in New York State* (2006) for NYSDOH targeted compounds, and for all remaining compounds data were compared to the Soil Gas Screening (SGS) levels published by the USEPA Office of Solid Waste and Emergency Response (OSWER) in the *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (USEPA 2002).*

The factors used in the development of the EPA soil gas screening levels are consistent with the approach used to develop the risk matrices published in the NYSDOH *Final Guidance for Evaluating Soil Vapor Intrusion in New York State* (2006). The NYSDOH guidance only provides comparison criteria within the risk matrices for chlorinated VOCs (e.g. trichloroethene) and does not provide criteria for petroleum-based VOCs detected in shallow soil vapor at the Site. All comparison criteria appear in left hand columns of Table 2.

As shown on Table 2, all soil vapor results were below the NYSDOH comparison criteria for those target compounds. For all remaining compounds, the interior sub-slab soil vapor sample concentrations were well below the SGS levels for all target compounds. The four exterior soil vapor sample results also compared favorably to SGS levels, with the limited exception of 1,3-butadiene in two samples which exceeded the USEPA screening level for 1,3-butadiene (4.3 ug/m^3) with a concentration of 8.1 ug/m^3 and 9.2 ug/m^3. As reported to NYSDEC for the Lookout North area of the site in post-construction grid sampling (reported in August 2015), this result is consistent with prior site soil vapor sample results.

SCOPE LIMITATIONS AND RECOMMENDATIONS FOR FUTURE WORK

According to the scope presented in our 21 August 2019 correspondence with NYSDEC, additional sampling for some remaining site buildings is required where units could not be accessed this heating season. In email correspondence on 19 March 2020 between us and NYSDEC, the Department agreed to postponing the additional IA/SS sampling due to site access limitations and complications related to the COVID-19 pandemic. To complete the comprehensive site indoor air quality assessment, testing remains to be completed in the following buildings:

- Townhouses 1, 3, and 4
- Carriage Houses (four buildings)

As with the sampling reported herein, sampling of these remaining locations will be completed per the SMP and our intent letter submitted on behalf of Ferry Landings dated 21 August 2019.

CLOSING

Based on the sampling completed and comparison of the data to the applicable NYSDOH guidance matrices (Matrix A, Matrix B, Matrix C) for both indoor air and sub-slab vapor samples, all comparisons to the NYSDOH guidance values indicate that No Further Action or Monitoring is required for the buildings/locations where sampling has been completed.

The NYSDOH guidance provides comparison criteria within the risk matrices predominantly for chlorinated VOCs (e.g. trichloroethene) and does not provide criteria for coal tar or petroleum-based VOCs. For those compounds, comparison was made to the USEPA BASE dataset 75th percentile values. Results of indoor air compared to that database indicates only a select few compounds detected at concentrations greater than the BASE comparison criteria; all of the compounds detected above the 75th percentile threshold appear to be associated with common commercial cleaner products, personal care products and/or building materials or finishes.

Please note we have also prepared a letter with sample results for each of the three individual occupied residences noted herein. Each letter is being provided to that resident by Ferry Landings/National Resources under separate cover and following submittal of this report to NYSDEC.

We plan to access the remaining residential units in order to complete the remainder of the indoor air quality and sub-slab soil vapor sampling assessment as noted herein. Sampling will address units in the

remaining buildings which are vacant or can be made accessible by a resident and when the work can be reasonably completed, given current restrictions and concerns related to the COVID-19 pandemic, and as confirmed by the 19 March 2020 email from NYSDEC.

Please contact us if you have any questions.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Vincent B. Dick
Principal

Jonathan D. Babcock, P.E.
Senior Technical Specialist

Attachments:

Table 1 – Summary of Air Quality Analytical Results, April 2020
Table 2 – Summary of Soil Vapor Analytical Results – Lighthouse, April 2020
Figure Set – Includes overall Site Plan and Individual Unit Sample Locations, updated April 2020
Appendix A – Data Usability Summary Reports and Laboratory Data Reports

c: Carl Monheit, Ferry Landings, LLC
Steven Berninger, NYSDOH

\\haleyaldrich.com\share\roc_common\Projects\28590 Hudson Harbor - National Resources\120 2020 Services\2020 DEC Correspondence\Building Letters\0507_2020-046_IAQ SS SV Letter to DEC_F.docx

TABLES

TABLE I
SUMMARY OF AIR QUALITY ANALYTICAL RESULTS
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location Group	Comparison Criteria				Clubhouse		Lighthouse		Lookout North	
Sample Name	NYSDOH Matrices	NYSDOH Matrices	BASE database	BASE database	Indoor Air - Clubhouse	Subslab - Clubhouse	Indoor Air - Lighthouse	Subslab - Lighthouse	Indoor Air - Lookout North	Subslab - Lookout North
Sample ID	Indoor Air	Sub Slab Soil Vapor	Indoor Air	Outdoor Air	IACH	SSCH	IALH	SSLH	IALON	SSLON
Lab Sample ID	No Further Action	No Further	75th Percentage	75th Percentage	IACH-030920-1226	SSCH-030920-1238	IALH-031020-1630	SSLH-031020-1629	IALON-031120-1700	SSLON-031120-1653
Sample Date	May 2017	ActionMay 2017	USEPA, 2001	USEPA, 2001	03/09/2020	03/09/2020	03/10/2020	03/10/2020	03/11/2020	03/11/2020
Lab Sample ID					L2010778-01	L2010778-02	L2010778-10	L2010778-09	L2011083-05	L2011083-04
Matrix					IA	GS	IA	GS	IA	GS
Volatile Organic Compounds (ug/m3)										
1,1,1-Trichloroethane	3 - 10	100 - 1000	10.8	1.7	0.109 U	1.09 U	0.109 U	1.09 U	0.109 U	1.09 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U
1,1,2-Trichloroethane	NA	NA	<1.4	<1.4	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U
1,1-Dichloroethane	NA	NA	<0.5	<0.6	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,1-Dichloroethene	0.2 - 1	6 - 60	<1.2	<1.2	0.079 U	0.793 U	0.079 U	0.793 U	0.079 U	0.793 U
1,2,4-Trichlorobenzene	NA	NA	<1.2	<1.2	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U
1,2,4-Trimethylbenzene	NA	NA	5.1	3.1	0.983 U	0.983 U	**1.01**	**1.62**	0.983 U	0.983 U
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	<1.4	<1.4	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U
1,2-Dichlorobenzene	NA	NA	<1.0	<1.0	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	NA	NA	<0.7	<0.6	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,2-Dichloropropane	NA	NA	<1.6	<1.6	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U
1,2-Dichlorotetrafluoroethane (CFC 114)	NA	NA	<3.0	<3.0	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,3,5-Trimethylbenzene	NA	NA	<4.6	<2.4	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
1,3-Butadiene	NA	NA	<2.7	<2.8	0.442 U	0.442 U	0.442 U	0.442 U	**0.513**	0.442 U
1,3-Dichlorobenzene	NA	NA	<1.1	<1.0	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NA	NA	1.4	<1.4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dioxane	NA	NA	NA	NA	0.721 U	**2.75**	0.721 U	**27.5**	0.721 U	**1.05**
2,2,4-Trimethylpentane	NA	NA	NA	NA	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U
2-Butanone (Methyl Ethyl Ketone)	NA	NA	7.5	5.7	1.47 U	1.47 U	1.47 U	**4.66**	**2.3**	1.47 U
2-Hexanone	NA	NA	NA	NA	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
4-Ethyl toluene	NA	NA	<3.1	<2.0	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	NA	NA	3	0.9	2.05 U	2.05 U	2.05 U	2.05 U	2.05 U	2.05 U
Acetone	NA	NA	59.8	31.7	**17.9**	**39.4**	**7.06**	**575**	**17.1**	**23.2**
Allyl chloride	NA	NA	NA	NA	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U
Benzene	NA	NA	5.1	3.7	**0.658**	0.639 U	**1.03**	**6.58**	**0.776**	**0.709**
Benzyl Chloride	NA	NA	<1.7	<1.6	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U
Bromodichloromethane	NA	NA	NA	NA	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U
Bromoform	NA	NA	NA	NA	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U
Bromomethane (Methyl Bromide)	NA	NA	<1.1	<1.0	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U
Carbon disulfide	NA	NA	2.1	2.2	0.623 U	**2.15**	0.623 U	**3.61**	0.623 U	**0.713**
Carbon tetrachloride	0.2 - 1	6 - 60	<1.1	<1.0	**0.503**	1.26 U	**0.421**	1.26 U	**0.472**	1.26 U
Chlorobenzene	NA	NA	<0.8	<0.8	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U
Chloroethane	NA	NA	<1.0	<1.0	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U
Chloroform (Trichloromethane)	NA	NA	<1.2	<0.6	0.977 U	0.977 U	0.977 U	0.977 U	**1.84**	0.977 U
Chloromethane (Methyl Chloride)	NA	NA	3.1	3	**1.07**	0.413 U	**1.06**	**0.791**	**1.69**	**0.725**
cis-1,2-Dichloroethene	0.2 - 1	6 - 60	<1.2	<1.2	0.079 U	0.793 U	0.079 U	**1.11**	0.079 U	0.793 U
cis-1,3-Dichloropropene	NA	NA	<2.0	<2.0	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Cyclohexane	NA	NA	NA	NA	0.688 U	0.688 U	0.688 U	0.688 U	0.688 U	0.688 U
Dibromochloromethane	NA	NA	NA	NA	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Dichlorodifluoromethane (CFC-12)	NA	NA	10.5	5.8	**2**	**2.25**	**2.07**	**2.39**	**2.06**	**2.06**
Ethanol	NA	NA	140	47	**366**	**207**	**52.6**	**1590**	**708**	**78.2**
Ethyl acetate	NA	NA	3.2	<1.2	1.8 U	1.8 U	1.8 U	1.8 U	**4.43**	1.8 U
Ethylbenzene	NA	NA	3.4	1.6	0.869 U	0.869 U	0.869 U	**1.03**	0.869 U	0.869 U
Hexachlorobutadiene	NA	NA	<2.5	<2.6	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U
Hexane	NA	NA	NA	NA	0.705 U	0.705 U	**1.73**	**2.44**	0.705 U	0.705 U
Isopropyl Alcohol	NA	NA	56	6.6	**268**	**81.6**	1.23 U	**32.7**	**5.33**	**5.51**
m,p-Xylenes	NA	NA	12.2	7.3	1.74 U	1.74 U	**1.91**	**3.44**	1.74 U	1.74 U

TABLE I
SUMMARY OF AIR QUALITY ANALYTICAL RESULTS
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location Group	Comparison Criteria				Clubhouse		Lighthouse		Lookout North	
Sample Name Sample ID Lab Sample ID Sample Date Lab Sample ID Matrix	NYSDOH Matrices Indoor Air No Further Action May 2017	NYSDOH Matrices Sub Slab Soil Vapor No Further ActionMay 2017	BASE database Indoor Air 75th Percentage USEPA, 2001	BASE database Outdoor Air 75th Percentage USEPA, 2001	Indoor Air - Clubhouse IACH IACH-030920-1226 03/09/2020 L2010778-01 IA	Subslab - Clubhouse SSCH SSCH-030920-1238 03/09/2020 L2010778-02 GS	Indoor Air - Lighthouse IALH IALH-031020-1630 03/10/2020 L2010778-10 IA	Subslab - Lighthouse SSLH SSLH-031020-1629 03/10/2020 L2010778-09 GS	Indoor Air - Lookout North IALON IALON-031120-1700 03/11/2020 L2011083-05 IA	Subslab - Lookout North SSLON SSLON-031120-1653 03/11/2020 L2011083-04 GS
Methyl Tert Butyl Ether	NA	NA	<6.4	<5.4	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U
Methylene chloride	3 - 10	100 - 1000	5	3	1.74 U	**2.99**	1.74 U	**2.4**	1.74 U	1.74 U
N-Heptane	NA	NA	NA	NA	0.82 U	0.82 U	0.82 U	**3.99**	0.82 U	**1.27**
o-Xylene	NA	NA	4.4	2.6	0.869 U	0.869 U	0.869 U	**1.78**	0.869 U	0.869 U
Styrene	NA	NA	<2.3	<2.0	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U
Tert-Butyl Alcohol (tert-Butanol)	NA	NA	NA	NA	1.52 U	**2.58**	1.52 U	**19**	1.52 U	**2.84**
Tetrachloroethene	3 - 10	100 - 1000	5.9	3	**0.346**	1.36 U	0.136 U	1.36 U	**0.454**	1.36 U
Tetrahydrofuran	NA	NA	NA	NA	1.47 U	1.47 U	1.47 U	**14.6**	1.47 U	1.47 U
Toluene	NA	NA	25.9	16.3	**1.31**	**0.825**	**3.4**	**5.05**	**2.16**	**1.28**
trans-1,2-Dichloroethene	NA	NA	NA	NA	**14**	**1.68**	0.793 U	0.793 U	0.793 U	0.793 U
trans-1,3-Dichloropropene	NA	NA	<1.2	<1.2	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Trichloroethene	0.2 - 1	6 - 60	1.2	<1.6	0.107 U	1.07 U	0.107 U	**31.1**	**0.253**	1.07 U
Trichlorofluoromethane (CFC-11)	NA	NA	6.7	2.8	1.12 U	1.12 U	**1.2**	1.12 U	1.12 U	1.12 U
Trifluorotrichloroethane (Freon 113)	NA	NA	<3.0	<2.0	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U
Vinyl Bromide (Bromoethene)	NA	NA	NA	NA	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U
Vinyl chloride	0.2	6	<1.0	<1.0	0.051 U	0.511 U	0.051 U	0.511 U	0.051 U	0.511 U

Abbreviations:
- BASE: Building Assessment Survey Evaluation
- IA: Indoor Air
- AA: Ambient Air
- GS: Soil Gas (Sub-Slab)
- SV: Soil Vapor
- ug/m3: microgram per cubic meter
- U: compound not detected, number value is laboratory reporting limit

Notes Regarding Comparison Criteria and Results

1. No Further Action (NFA) Level – No further action is required when the detected concentration of the target compounds in both the Indoor Air (IA) and Sub Slab (GS) soil vapor samples are below the applicable concentration range provided by the May 2017 NYSDOH Decision Matrices (A or B) where "No Further Action" is recommended.
2. Results above that are in **BOLD** font are compounds detected at concentrations greater than the laboratory reporting limit. They do not exceed regulatory criteria unless they are also highlighted - see the notes below.
3. Target compounds detected at concentrations greater than the May 2017 NYSDOH Decision Matrix No Further Action levels for both the IA and SS samples are highlighted yellow.
4. Target compounds in Indoor Air and Ambient Air detected at concentrations greater than the USEPA 2001 BASE 75th Percentage comparison criteria are highlighted blue. This can be caused by emissions from nearby businesses, consumer products in the air space sampled or other similar common sources.
5. See the attached report for further details.

TABLE I
SUMMARY OF AIR QUALITY ANALYTICAL RESULTS
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location Group	Comparison Criteria				Lookout South		Townhouse 2		Townhouse 5	
Sample Name	NYSDOH Matrices	NYSDOH Matrices	BASE database	BASE database	Indoor Air - Lookout South	Subslab - Lookout South	Indoor Air - Townhouse 2	Subslab - Townhouse 2	Indoor Air - Townhouse 5	Subslab - Townhouse 5
Sample ID	Indoor Air	Sub Slab Soil Vapor	Indoor Air	Outdoor Air	IALOS	SSLOS	IATH2	SSTH2	IATH5	SSTH5
Lab Sample ID	No Further Action	No Further	75th Percentage	75th Percentage	IALOS-030920-1635	SSLOS-030920-1637	IATH2-031120-0957	SSTH2-031120-0957	IATH5-031020-1358	SSTH5-031020-1408
Sample Date	May 2017	ActionMay 2017	USEPA, 2001	USEPA, 2001	03/09/2020	03/09/2020	03/11/2020	03/11/2020	03/10/2020	03/10/2020
Lab Sample ID					L2010778-04	L2010778-03	L2011083-02	L2011083-01	L2010778-06	L2010778-07
Matrix					IA	GS	IA	GS	IA	GS
Volatile Organic Compounds (ug/m3)										
1,1,1-Trichloroethane	3 - 10	100 - 1000	10.8	1.7	0.109 U	1.09 U	0.109 U	1.09 U	0.109 U	1.09 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U
1,1,2-Trichloroethane	NA	NA	<1.4	<1.4	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U
1,1-Dichloroethane	NA	NA	<0.5	<0.6	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,1-Dichloroethene	0.2 - 1	6 - 60	<1.2	<1.2	0.079 U	0.793 U	0.079 U	0.793 U	0.079 U	0.793 U
1,2,4-Trichlorobenzene	NA	NA	<1.2	<1.2	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U
1,2,4-Trimethylbenzene	NA	NA	5.1	3.1	0.983 U	**1.3**	0.983 U	0.983 U	0.983 U	**1.1**
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	<1.4	<1.4	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U
1,2-Dichlorobenzene	NA	NA	<1.0	<1.0	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	NA	NA	<0.7	<0.6	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,2-Dichloropropane	NA	NA	<1.6	<1.6	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U
1,2-Dichlorotetrafluoroethane (CFC 114)	NA	NA	<3.0	<3.0	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,3,5-Trimethylbenzene	NA	NA	<4.6	<2.4	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
1,3-Butadiene	NA	NA	<2.7	<2.8	0.442 U	0.442 U	0.442 U	0.442 U	0.442 U	0.442 U
1,3-Dichlorobenzene	NA	NA	<1.1	<1.0	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NA	NA	1.4	<1.4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dioxane	NA	NA	NA	NA	0.721 U	**1.17**	0.721 U	**0.825**	0.721 U	**2.13**
2,2,4-Trimethylpentane	NA	NA	NA	NA	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U
2-Butanone (Methyl Ethyl Ketone)	NA	NA	7.5	5.7	**2.34**	**4.28**	1.47 U	**8.2**	1.47 U	**18.6**
2-Hexanone	NA	NA	NA	NA	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
4-Ethyl toluene	NA	NA	<3.1	<2.0	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	NA	NA	3	0.9	2.05 U	2.05 U	2.05 U	**4.34**	2.05 U	2.05 U
Acetone	NA	NA	59.8	31.7	**8.46**	**132**	**13.2**	**361**	**292**	**328**
Allyl chloride	NA	NA	NA	NA	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U
Benzene	NA	NA	5.1	3.7	0.639 U	**0.843**	**0.68**	**0.85**	0.639 U	**0.834**
Benzyl Chloride	NA	NA	<1.7	<1.6	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U
Bromodichloromethane	NA	NA	NA	NA	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U
Bromoform	NA	NA	NA	NA	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U
Bromomethane (Methyl Bromide)	NA	NA	<1.1	<1.0	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U
Carbon disulfide	NA	NA	2.1	2.2	0.623 U	**3.71**	0.623 U	0.623 U	0.623 U	**0.738**
Carbon tetrachloride	0.2 - 1	6 - 60	<1.1	<1.0	**0.415**	1.26 U	**0.421**	1.26 U	**0.415**	1.26 U
Chlorobenzene	NA	NA	<0.8	<0.8	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U
Chloroethane	NA	NA	<1.0	<1.0	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U
Chloroform (Trichloromethane)	NA	NA	<1.2	<0.6	0.977 U	0.977 U	0.977 U	0.977 U	0.977 U	0.977 U
Chloromethane (Methyl Chloride)	NA	NA	3.1	3	**0.989**	0.413 U	**1.12**	0.413 U	**1.18**	**1.23**
cis-1,2-Dichloroethene	0.2 - 1	6 - 60	<1.2	<1.2	0.079 U	0.793 U	0.079 U	0.793 U	0.079 U	0.793 U
cis-1,3-Dichloropropene	NA	NA	<2.0	<2.0	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Cyclohexane	NA	NA	NA	NA	0.688 U	0.688 U	**1.41**	**1.24**	0.688 U	0.688 U
Dibromochloromethane	NA	NA	NA	NA	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Dichlorodifluoromethane (CFC-12)	NA	NA	10.5	5.8	**2.15**	**2.17**	**1.99**	**2.08**	**2.13**	**2.1**
Ethanol	NA	NA	140	47	9.42 U	**137**	**134**	**155**	**39**	**168**
Ethyl acetate	NA	NA	3.2	<1.2	**2.5**	1.8 U	1.8 U	1.8 U	**12.5**	1.8 U
Ethylbenzene	NA	NA	3.4	1.6	0.869 U	0.869 U	0.869 U	0.869 U	0.869 U	0.869 U
Hexachlorobutadiene	NA	NA	<2.5	<2.6	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U
Hexane	NA	NA	NA	NA	0.705 U	0.705 U	**1.46**	**1.27**	0.705 U	0.705 U
Isopropyl Alcohol	NA	NA	56	6.6	**4.5**	**33.9**	**8.31**	**12.4**	**13.9**	**31**
m,p-Xylenes	NA	NA	12.2	7.3	1.74 U	**1.82**	1.74 U	1.74 U	**2.08**	**2.55**

TABLE I
SUMMARY OF AIR QUALITY ANALYTICAL RESULTS
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location Group	Comparison Criteria				Lookout South		Townhouse 2		Townhouse 5	
Sample Name Sample ID Lab Sample ID Sample Date Lab Sample ID Matrix	NYSDOH Matrices Indoor Air No Further Action May 2017	NYSDOH Matrices Sub Slab Soil Vapor No Further ActionMay 2017	BASE database Indoor Air 75th Percentage USEPA, 2001	BASE database Outdoor Air 75th Percentage USEPA, 2001	Indoor Air - Lookout South IALOS IALOS-030920-1635 03/09/2020 L2010778-04 IA	Subslab - Lookout South SSLOS SSLOS-030920-1637 03/09/2020 L2010778-03 GS	Indoor Air - Townhouse 2 IATH2 IATH2-031120-0957 03/11/2020 L2011083-02 IA	Subslab - Townhouse 2 SSTH2 SSTH2-031120-0957 03/11/2020 L2011083-01 GS	Indoor Air - Townhouse 5 IATH5 IATH5-031020-1358 03/10/2020 L2010778-06 IA	Subslab - Townhouse 5 SSTH5 SSTH5-031020-1408 03/10/2020 L2010778-07 GS
Methyl Tert Butyl Ether	NA	NA	<6.4	<5.4	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U
Methylene chloride	3 - 10	100 - 1000	5	3	1.74 U	1.74 U	1.74 U	1.74 U	**5.21**	**3.79**
N-Heptane	NA	NA	NA	NA	0.82 U	**1.25**	0.82 U	**1.84**	**1.3**	**1.82**
o-Xylene	NA	NA	4.4	2.6	0.869 U	**0.873**	0.869 U	0.869 U	0.869 U	**1.07**
Styrene	NA	NA	<2.3	<2.0	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U
Tert-Butyl Alcohol (tert-Butanol)	NA	NA	NA	NA	1.52 U	**11.8**	1.52 U	**6.85**	1.52 U	**6.06**
Tetrachloroethene	3 - 10	100 - 1000	5.9	3	0.136 U	1.36 U	0.136 U	1.36 U	**0.515**	1.36 U
Tetrahydrofuran	NA	NA	NA	NA	**4.6**	**69.3**	**1.6**	1.47 U	1.47 U	**3.51**
Toluene	NA	NA	25.9	16.3	0.754 U	**1.64**	**2.43**	**1.84**	**3.01**	**2.63**
trans-1,2-Dichloroethene	NA	NA	NA	NA	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U
trans-1,3-Dichloropropene	NA	NA	<1.2	<1.2	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Trichloroethene	0.2 - 1	6 - 60	1.2	<1.6	0.107 U	1.07 U	**0.403**	1.07 U	0.107 U	**2.87**
Trichlorofluoromethane (CFC-11)	NA	NA	6.7	2.8	**1.23**	**1.15**	1.12 U	1.12 U	**1.22**	1.12 U
Trifluorotrichloroethane (Freon 113)	NA	NA	<3.0	<2.0	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U
Vinyl Bromide (Bromoethene)	NA	NA	NA	NA	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U
Vinyl chloride	0.2	6	<1.0	<1.0	0.051 U	0.511 U	0.051 U	0.511 U	0.051 U	0.511 U

Abbreviations:
- BASE: Building Assessment Survey Evaluation
- IA: Indoor Air
- AA: Ambient Air
- GS: Soil Gas (Sub-Slab)
- SV: Soil Vapor
- ug/m3: microgram per cubic meter
- U: compound not detected, number value is laboratory reporting limit

Notes Regarding Comparison Criteria and Results

1. No Further Action (NFA) Level – No further action is required when the detected concentration of the target compounds in both the Indoor Air (IA) and Sub Slab (GS) soil vapor samples are below the applicable concentration range provided by the May 2017 NYSDOH Decision Matrices (A or B) where "No Further Action" is recommended.
2. Results above that are in **BOLD** font are compounds detected at concentrations greater than the laboratory reporting limit. They do not exceed regulatory criteria unless they are also highlighted - see the notes below.
3. Target compounds detected at concentrations greater than the May 2017 NYSDOH Decision Matrix No Further Action levels for both the IA and SS samples are highlighted yellow.
4. Target compounds in Indoor Air and Ambient Air detected at concentrations greater than the USEPA 2001 BASE 75th Percentage comparison criteria are highlighted blue. This can be caused by emissions from nearby businesses, consumer products in the air space sampled or other similar common sources.
5. See the attached report for further details.

TABLE I
SUMMARY OF AIR QUALITY ANALYTICAL RESULTS
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location Group	Comparison Criteria				Carriage House Courtyard	Lookout Courtyard	Lighthouse				Park
Sample Name	NYSDOH Matrices Indoor Air No Further Action May 2017	NYSDOH Matrices Sub Slab Soil Vapor No Further ActionMay 2017	BASE database Indoor Air 75th Percentage USEPA, 2001	BASE database Outdoor Air 75th Percentage USEPA, 2001	Soil Vapor - Carriage House Yard	Soil Vapor - Lookout C	Soil Vapor - Lighthouse East	Soil Vapor - Lighthouse North	Soil Vapor - Lighthouse South	Soil Vapor - Lighthouse West	Outdoor Ambient Air - Upwind Sample
Sample ID					SVCHY	SVLC	LHE	LHN	LHS	LHW	AAPK
Lab Sample ID					SVCHY-031020-1215	SVLC-031120-1142	LHE-031920-1249	LHN-031920-1005	LHS-031920-1209	LHW-031920-1043	AAPK-031020-1432
Sample Date					03/10/2020	03/11/2020	03/19/2020	03/19/2020	03/19/2020	03/19/2020	03/10/2020
Lab Sample ID					L2010778-05	L2011083-03	L2012452-04	L2012452-01	L2012452-03	L2012452-02	L2010778-08
Matrix					SV	SV	SV	SV	SV	SV	AA
Volatile Organic Compounds (ug/m3)											
1,1,1-Trichloroethane	3 - 10	100 - 1000	10.8	1.7	1.09 U	1.09 U	1.09 U	1.09 U	**4.98**	1.09 U	0.109 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U
1,1,2-Trichloroethane	NA	NA	<1.4	<1.4	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U
1,1-Dichloroethane	NA	NA	<0.5	<0.6	**0.959**	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,1-Dichloroethene	0.2 - 1	6 - 60	<1.2	<1.2	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.079 U
1,2,4-Trichlorobenzene	NA	NA	<1.2	<1.2	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U
1,2,4-Trimethylbenzene	NA	NA	5.1	3.1	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	<1.4	<1.4	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U
1,2-Dichlorobenzene	NA	NA	<1.0	<1.0	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	NA	NA	<0.7	<0.6	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,2-Dichloropropane	NA	NA	<1.6	<1.6	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U
1,2-Dichlorotetrafluoroethane (CFC 114)	NA	NA	<3.0	<3.0	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,3,5-Trimethylbenzene	NA	NA	<4.6	<2.4	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
1,3-Butadiene	NA	NA	<2.7	<2.8	**5.69**	**0.916**	**0.712**	**9.23**	**2.74**	**8.1**	0.442 U
1,3-Dichlorobenzene	NA	NA	<1.1	<1.0	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NA	NA	1.4	<1.4	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dioxane	NA	NA	NA	NA	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U
2,2,4-Trimethylpentane	NA	NA	NA	NA	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U
2-Butanone (Methyl Ethyl Ketone)	NA	NA	7.5	5.7	**9.88**	**2.9**	**3.39**	**6.61**	**3.6**	**4.39**	1.47 U
2-Hexanone	NA	NA	NA	NA	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
4-Ethyl toluene	NA	NA	<3.1	<2.0	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	NA	NA	3	0.9	2.05 U	2.05 U	2.05 U	2.05 U	2.05 U	2.05 U	2.05 U
Acetone	NA	NA	59.8	31.7	**36.6**	**13.3**	**10.9**	**21.9**	**13.3**	**12.2**	**5.96**
Allyl chloride	NA	NA	NA	NA	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U
Benzene	NA	NA	5.1	3.7	**4.31**	**10.5**	**1.13**	**6.8**	**2.77**	**7.54**	0.639 U
Benzyl Chloride	NA	NA	<1.7	<1.6	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U
Bromodichloromethane	NA	NA	NA	NA	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U
Bromoform	NA	NA	NA	NA	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U
Bromomethane (Methyl Bromide)	NA	NA	<1.1	<1.0	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U
Carbon disulfide	NA	NA	2.1	2.2	**6.01**	**2.26**	**1.16**	**2.17**	**3.67**	**54.5**	0.623 U
Carbon tetrachloride	0.2 - 1	6 - 60	<1.1	<1.0	1.26 U	1.26 U	1.26 U	1.26 U	1.26 U	1.26 U	**0.472**
Chlorobenzene	NA	NA	<0.8	<0.8	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U
Chloroethane	NA	NA	<1.0	<1.0	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U
Chloroform (Trichloromethane)	NA	NA	<1.2	<0.6	0.977 U	**1.97**	0.977 U	**1.69**	**2.31**	0.977 U	0.977 U
Chloromethane (Methyl Chloride)	NA	NA	3.1	3	**0.609**	0.413 U	0.413 U	**0.735**	0.413 U	0.413 U	**1.25**
cis-1,2-Dichloroethene	0.2 - 1	6 - 60	<1.2	<1.2	**0.971**	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.079 U
cis-1,3-Dichloropropene	NA	NA	<2.0	<2.0	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Cyclohexane	NA	NA	NA	NA	**1.2**	**0.84**	0.688 U	0.688 U	0.688 U	**15.7**	0.688 U
Dibromochloromethane	NA	NA	NA	NA	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Dichlorodifluoromethane (CFC-12)	NA	NA	10.5	5.8	**2.05**	**212**	**1.8**	**2.01**	**1.88**	**1.81**	**2.27**
Ethanol	NA	NA	140	47	9.42 U	9.42 U	9.42 U	9.42 U	9.42 U	9.42 U	9.42 U
Ethyl acetate	NA	NA	3.2	<1.2	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Ethylbenzene	NA	NA	3.4	1.6	0.869 U	**1.25**	0.869 U	0.869 U	0.869 U	0.869 U	0.869 U
Hexachlorobutadiene	NA	NA	<2.5	<2.6	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U
Hexane	NA	NA	NA	NA	**2.81**	**1.18**	0.705 U	**1.41**	0.705 U	**6.1**	0.705 U
Isopropyl Alcohol	NA	NA	56	6.6	**13.4**	**4.45**	**1.25**	**1.46**	1.23 U	**1.26**	1.23 U
m,p-Xylenes	NA	NA	12.2	7.3	**2.25**	**3.11**	**1.89**	1.74 U	1.74 U	**1.88**	1.74 U

TABLE I
SUMMARY OF AIR QUALITY ANALYTICAL RESULTS
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location Group	Comparison Criteria				Carriage House Courtyard	Lookout Courtyard	Lighthouse				Park
Sample Name	NYSDOH Matrices	NYSDOH Matrices	BASE database	BASE database	Soil Vapor - Carriage House Yard	Soil Vapor - Lookout C	Soil Vapor - Lighthouse East	Soil Vapor - Lighthouse North	Soil Vapor - Lighthouse South	Soil Vapor - Lighthouse West	Outdoor Ambient Air - Upwind Sample
Sample ID	Indoor Air	Sub Slab Soil Vapor	Indoor Air	Outdoor Air	SVCHY	SVLC	LHE	LHN	LHS	LHW	AAPK
Lab Sample ID	No Further Action	No Further	75th Percentage	75th Percentage	SVCHY-031020-1215	SVLC-031120-1142	LHE-031920-1249	LHN-031920-1005	LHS-031920-1209	LHW-031920-1043	AAPK-031020-1432
Sample Date	May 2017	ActionMay 2017	USEPA, 2001	USEPA, 2001	03/10/2020	03/11/2020	03/19/2020	03/19/2020	03/19/2020	03/19/2020	03/10/2020
Lab Sample ID					L2010778-05	L2011083-03	L2012452-04	L2012452-01	L2012452-03	L2012452-02	L2010778-08
Matrix					SV	SV	SV	SV	SV	SV	AA
Methyl Tert Butyl Ether	NA	NA	<6.4	<5.4	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U
Methylene chloride	3 - 10	100 - 1000	5	3	**2.01**	1.74 U	1.74 U	1.74 U	1.74 U	1.74 U	1.74 U
N-Heptane	NA	NA	NA	NA	**2.6**	**1.75**	**1.66**	**1.18**	**1.43**	**4.18**	0.82 U
o-Xylene	NA	NA	4.4	2.6	**0.96**	**1.5**	**0.873**	0.869 U	0.869 U	0.869 U	0.869 U
Styrene	NA	NA	<2.3	<2.0	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U
Tert-Butyl Alcohol (tert-Butanol)	NA	NA	NA	NA	**4.97**	1.52 U	**1.69**	1.52 U	1.52 U	1.52 U	1.52 U
Tetrachloroethene	3 - 10	100 - 1000	5.9	3	1.36 U	1.36 U	1.36 U	1.36 U	**2.58**	1.36 U	0.136 U
Tetrahydrofuran	NA	NA	NA	NA	1.47 U	1.47 U	1.47 U	**1.78**	1.47 U	1.47 U	1.47 U
Toluene	NA	NA	25.9	16.3	**3.2**	**5.28**	**1.93**	**4.11**	**2.28**	**9.95**	0.754 U
trans-1,2-Dichloroethene	NA	NA	NA	NA	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U
trans-1,3-Dichloropropene	NA	NA	<1.2	<1.2	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Trichloroethene	0.2 - 1	6 - 60	1.2	<1.6	**6.02**	1.07 U	1.07 U	1.07 U	1.07 U	1.07 U	0.107 U
Trichlorofluoromethane (CFC-11)	NA	NA	6.7	2.8	**1.15**	1.12 U	1.12 U	1.12 U	**3.59**	**1.23**	**1.25**
Trifluorotrichloroethane (Freon 113)	NA	NA	<3.0	<2.0	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U
Vinyl Bromide (Bromoethene)	NA	NA	NA	NA	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U
Vinyl chloride	0.2	6	<1.0	<1.0	0.511 U	0.511 U	0.511 U	0.511 U	0.511 U	0.511 U	0.051 U

Abbreviations:
- BASE: Building Assessment Survey Evaluation
- IA: Indoor Air
- AA: Ambient Air
- GS: Soil Gas (Sub-Slab)
- SV: Soil Vapor
- ug/m3: microgram per cubic meter
- U: compound not detected, number value is laboratory reporting limit

Notes Regarding Comparison Criteria and Results

1. No Further Action (NFA) Level – No further action is required when the detected concentration of the target compounds in both the Indoor Air (IA) and Sub Slab (GS) soil vapor samples are below the applicable concentration range provided by the May 2017 NYSDOH Decision Matrices (A or B) where "No Further Action" is recommended.
2. Results above that are in **BOLD** font are compounds detected at concentrations greater than the laboratory reporting limit. They do not exceed regulatory criteria unless they are also highlighted - see the notes below.
3. Target compounds detected at concentrations greater than the May 2017 NYSDOH Decision Matrix No Further Action levels for both the IA and SS samples are highlighted yellow.
4. Target compounds in Indoor Air and Ambient Air detected at concentrations greater than the USEPA 2001 BASE 75th Percentage comparison criteria are highlighted blue. This can be caused by emissions from nearby businesses, consumer products in the air space sampled or other similar common sources.
5. See the attached report for further details.

TABLE 2
SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS - LIGHTHOUSE
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location	Comparison Criteria		Lighthouse					Park
Sample Name			Soil Vapor - Lighthouse East	Soil Vapor - Lighthouse North	Soil Vapor - Lighthouse South	Soil Vapor - Lighthouse West	Subslab - Lighthouse	Outdoor Ambient Air - Upwind Sample
Sample ID			LHE	LHN	LHS	LHW	SSLH	AAPK
Lab Sample ID	NYSDOH Matrices Sub Slab Soil Vapor No Further ActionMay 2017	Soil Gas Screening Levels	LHE-031920-1249	LHN-031920-1005	LHS-031920-1209	LHW-031920-1043	SSLH-031020-1629	AAPK-031020-1432
Sample Date			03/19/2020	03/19/2020	03/19/2020	03/19/2020	03/10/2020	03/10/2020
Lab Sample ID			L2012452-04	L2012452-01	L2012452-03	L2012452-02	L2010778-09	L2010778-08
Matrix			SV	SV	SV	SV	GS	AA
Volatile Organic Compounds (ug/m3)								
1,1,1-Trichloroethane	100 - 1000	NA	1.09 U	1.09 U	**4.98**	1.09 U	1.09 U	0.109 U
1,1,2,2-Tetrachloroethane	NA	NA	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U
1,1,2-Trichloroethane	NA	NA	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U
1,1-Dichloroethane	NA	NA	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,1-Dichloroethene	6 - 60	NA	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.079 U
1,2,4-Trichlorobenzene	NA	NA	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U
1,2,4-Trimethylbenzene	NA	3000	0.983 U	0.983 U	0.983 U	0.983 U	**1.62**	0.983 U
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U
1,2-Dichlorobenzene	NA	NA	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	NA	NA	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,2-Dichloropropane	NA	NA	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U
1,2-Dichlorotetrafluoroethane (CFC 114)	NA	NA	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,3,5-Trimethylbenzene	NA	3000	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
1,3-Butadiene	NA	4.3	**0.712**	**9.23**	**2.74**	**8.1**	0.442 U	0.442 U
1,3-Dichlorobenzene	NA	NA	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dichlorobenzene	NA	NA	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,4-Dioxane	NA	NA	0.721 U	0.721 U	0.721 U	0.721 U	**27.5**	0.721 U
2,2,4-Trimethylpentane	NA	NA	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U	0.934 U
2-Butanone (Methyl Ethyl Ketone)	NA	500000	**3.39**	**6.61**	**3.6**	**4.39**	**4.66**	1.47 U
2-Hexanone	NA	NA	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U
4-Ethyl toluene	NA	NA	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U	0.983 U
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	NA	NA	2.05 U	2.05 U	2.05 U	2.05 U	2.05 U	2.05 U
Acetone	NA	180000	**10.9**	**21.9**	**13.3**	**12.2**	**575**	**5.96**
Allyl chloride	NA	NA	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U	0.626 U
Benzene	NA	160	**1.13**	**6.8**	**2.77**	**7.54**	**6.58**	0.639 U
Benzyl Chloride	NA	NA	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U
Bromodichloromethane	NA	NA	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U
Bromoform	NA	NA	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U	2.07 U
Bromomethane (Methyl Bromide)	NA	NA	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U	0.777 U
Carbon disulfide	NA	350000	**1.16**	**2.17**	**3.67**	**54.5**	**3.61**	0.623 U
Carbon tetrachloride	6 - 60	NA	1.26 U	1.26 U	1.26 U	1.26 U	1.26 U	**0.472**
Chlorobenzene	NA	NA	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U	0.921 U
Chloroethane	NA	NA	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U	0.528 U
Chloroform (Trichloromethane)	NA	NA	0.977 U	**1.69**	**2.31**	0.977 U	0.977 U	0.977 U
Chloromethane (Methyl Chloride)	NA	NA	0.413 U	**0.735**	0.413 U	0.413 U	**0.791**	**1.25**
cis-1,2-Dichloroethene	6 - 60	NA	0.793 U	0.793 U	0.793 U	0.793 U	**1.11**	0.079 U
cis-1,3-Dichloropropene	NA	NA	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Cyclohexane	NA	NA	0.688 U	0.688 U	0.688 U	**15.7**	0.688 U	0.688 U

TABLE 2
SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS - LIGHTHOUSE
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FILE NO. 28590

Location	Comparison Criteria		Lighthouse					Park
Sample Name			Soil Vapor - Lighthouse East	Soil Vapor - Lighthouse North	Soil Vapor - Lighthouse South	Soil Vapor - Lighthouse West	Subslab - Lighthouse	Outdoor Ambient Air - Upwind Sample
Sample ID			LHE	LHN	LHS	LHW	SSLH	AAPK
Lab Sample ID	NYSDOH Matrices Sub Slab Soil Vapor No Further ActionMay 2017	Soil Gas Screening Levels	LHE-031920-1249	LHN-031920-1005	LHS-031920-1209	LHW-031920-1043	SSLH-031020-1629	AAPK-031020-1432
Sample Date			03/19/2020	03/19/2020	03/19/2020	03/19/2020	03/10/2020	03/10/2020
Lab Sample ID			L2012452-04	L2012452-01	L2012452-03	L2012452-02	L2010778-09	L2010778-08
Matrix			SV	SV	SV	SV	GS	AA
Dibromochloromethane	NA	NA	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Dichlorodifluoromethane (CFC-12)	NA	NA	**1.8**	**2.01**	**1.88**	**1.81**	**2.39**	**2.27**
Ethanol	NA	NA	9.42 U	9.42 U	9.42 U	9.42 U	**1590**	9.42 U
Ethyl acetate	NA	NA	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Ethylbenzene	NA	1100	0.869 U	0.869 U	0.869 U	0.869 U	**1.03**	0.869 U
Hexachlorobutadiene	NA	NA	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U
Hexane	NA	100000	0.705 U	**1.41**	0.705 U	**6.1**	**2.44**	0.705 U
Isopropyl Alcohol	NA	NA	**1.25**	**1.46**	1.23 U	**1.26**	**32.7**	1.23 U
m,p-Xylenes	NA	3500000	**1.89**	1.74 U	1.74 U	**1.88**	**3.44**	1.74 U
Methyl Tert Butyl Ether	NA	NA	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U	0.721 U
Methylene chloride	100 - 1000	NA	1.74 U	1.74 U	1.74 U	1.74 U	**2.4**	1.74 U
N-Heptane	NA	NA	**1.66**	**1.18**	**1.43**	**4.18**	**3.99**	0.82 U
o-Xylene	NA	3500000	**0.873**	0.869 U	0.869 U	0.869 U	**1.78**	0.869 U
Styrene	NA	500000	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U	0.852 U
Tert-Butyl Alcohol (tert-Butanol)	NA	NA	**1.69**	1.52 U	1.52 U	1.52 U	**19**	1.52 U
Tetrachloroethene	100 - 1000	NA	1.36 U	1.36 U	**2.58**	1.36 U	1.36 U	0.136 U
Tetrahydrofuran	NA	NA	1.47 U	**1.78**	1.47 U	1.47 U	**14.6**	1.47 U
Toluene	NA	200000	**1.93**	**4.11**	**2.28**	**9.95**	**5.05**	0.754 U
trans-1,2-Dichloroethene	NA	NA	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U	0.793 U
trans-1,3-Dichloropropene	NA	NA	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U	0.908 U
Trichloroethene	6 - 60	NA	1.07 U	1.07 U	1.07 U	1.07 U	**31.1**	0.107 U
Trichlorofluoromethane (CFC-11)	NA	NA	1.12 U	1.12 U	**3.59**	**1.23**	1.12 U	**1.25**
Trifluorotrichloroethane (Freon 113)	NA	NA	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U	1.53 U
Vinyl Bromide (Bromoethene)	NA	NA	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U	0.874 U
Vinyl chloride	6	NA	0.511 U	0.511 U	0.511 U	0.511 U	0.511 U	0.051 U

USEPA Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. Office of Solid Waste and Emergency Response, November 2002. Table 3c-SG. Soil Gas Screening Levels for Scenario-Specific Vapor Attenuation Factors.

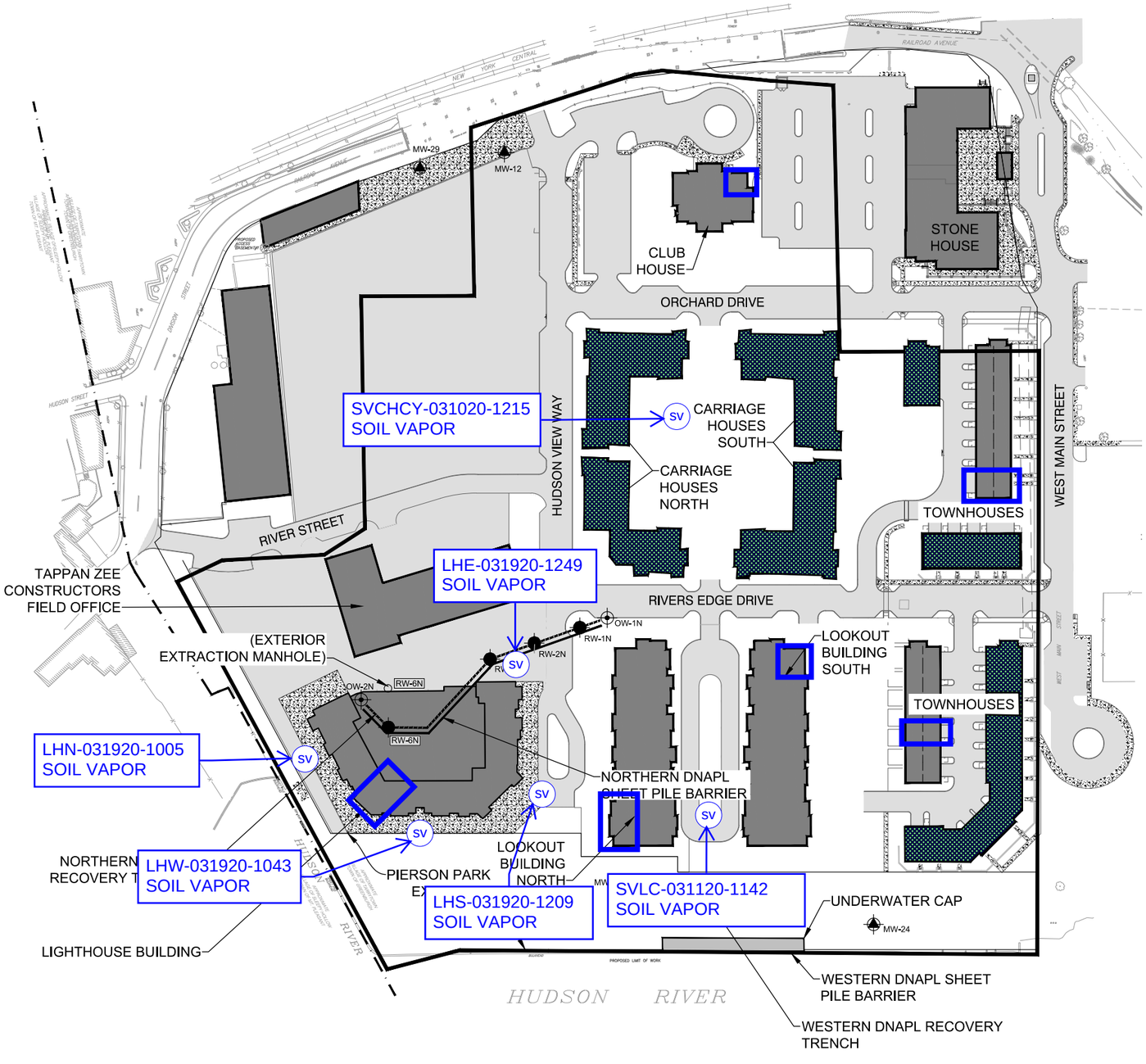
Abbreviations:

- SV: Soil Vapor
- GS: Soil Gas
- ug/m3: microgram per cubic meter
- U: compound not detected, number value is laboratory reporting limit

Notes Regarding Comparison Criteria and Results

1. Results above that are in **BOLD** font are compounds detected at concentrations greater than the laboratory reporting limit. They do not exceed regulatory criteria unless they are also highlighted
2. See the attached report for further details.

FIGURES



LEGEND

- (A) AMBIENT UPWIND AIR SAMPLE
- (SV) SOIL VAPOR SAMPLE
- SUB-SLAB AND INDOOR AIR SAMPLE COLLECTED WITHIN THE SAME UNIT
- *BUILDING STILL TO BE SAMPLED*
- APPROXIMATE AREA ENCOMPASSED BY THE BROWNFIELD CLEAN-UP AGREEMENT #C36OO64
- LANDSCAPED AREAS (THESE AREAS CONTAIN DEMARCATION LAYER BELOW CLEAN FILL AND LANDSCAPING)
- PAVED WALKS, PATIOS, OR COURTYARDS
- EXISTING BUILDINGS
- ROADS AND PARKING AREAS

NOTES

1. BASE MAP IS BASED ON CAD DRAWING ENTTILED "PH1_10399-08_PHASE.DWG," DATED 1 JULY 2009 FROM CHAZEN COMPANIES OF GLENN FALLS, NEW YORK AND "PARKING ALLOCATION DIAGRAM," DATED 7 MARCH 2013 FROM LESSARD GROUP, INC., VIENNA, VIRGINIA.

HALEY ALDRICH

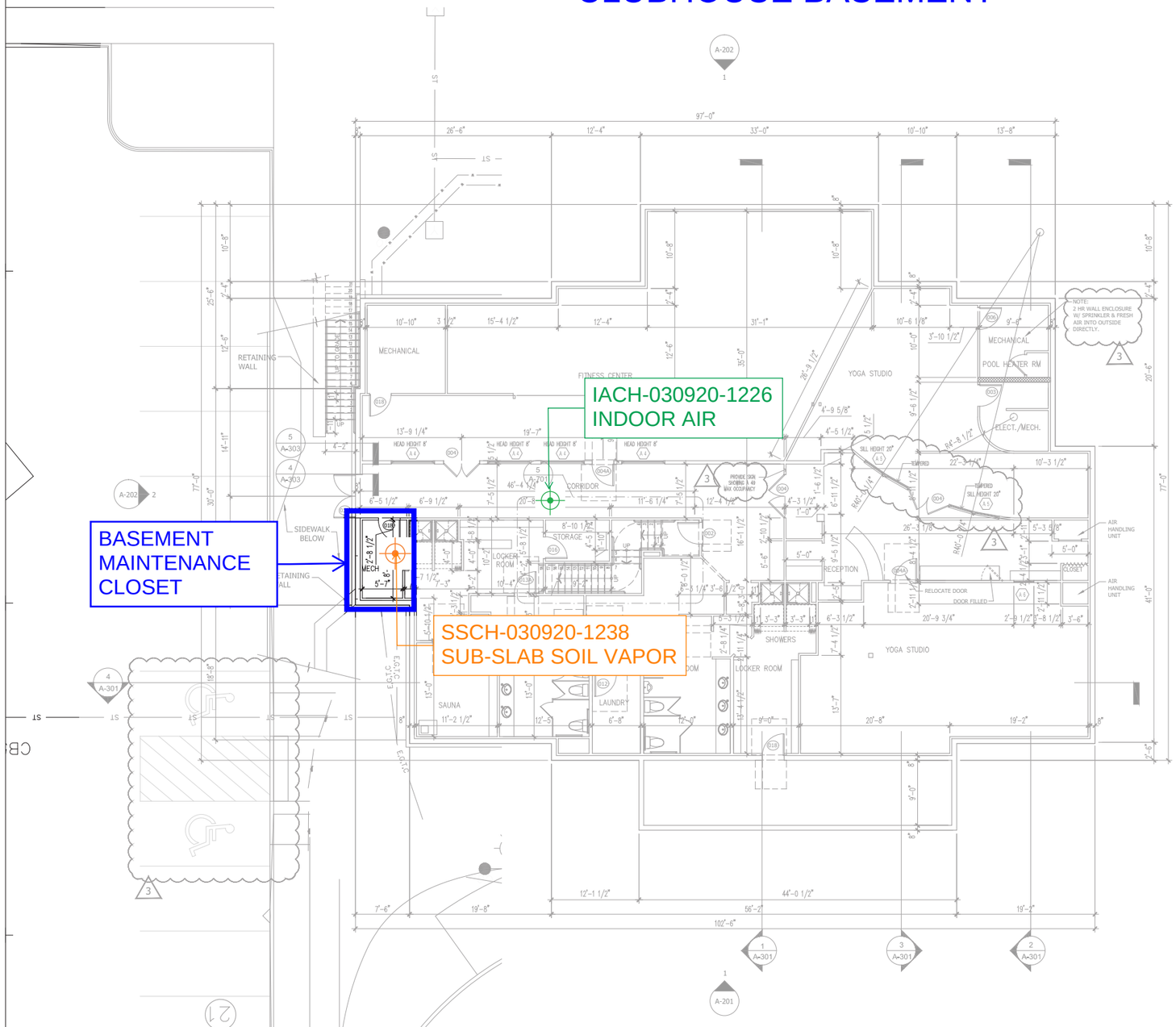
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

INDOOR AIR QUALITY ASSESSMENT - SITE OVERVIEW

SCALE: AS SHOWN
APRIL 2020

FIGURE 1

CLUBHOUSE BASEMENT



1 A-101 **BASEMENT**

SCALE: 1/8" = 1'-0"

HALEY & ALDRICH NOTE: BASEMAP HAS BEEN MODIFIED FROM RECORD DRAWING LESSARD DESIGN PLANS DATED 9/16/2008

HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

CLUBHOUSE BASEMENT FLOORPLAN

SCALE: AS SHOWN
APRIL 2020

FIGURE 2

GENERAL NOTES

A. ALL WALLS TO BE WALL 1/2" GYP BD OVER 2x4 STUDS UNLESS OTHERWISE NOTED.

B. ALL DIMENSIONS ARE TO FACE OF FINISHED SURFACE UNLESS OTHERWISE NOTED.

C. SEE SHEET A-201 AND 202 FOR BUILDING ELEVATIONS.

D. SEE SHEETS A-301 THRU A-304 FOR BUILDING SECTIONS AND WALL SECTIONS.

E. SEE SHEET A-401 FOR ENLARGED BATHROOM ELEVATIONS.

F. SEE SHEET A-402 FOR EXTERIOR WINDOW ELEVATIONS.

G. SEE SHEET A-601 FOR DOOR SCHEDULE AND DETAILS.

PLAN NOTES

1. SLOPE FLOOR MIN 1/8"/ FT. TO DRAIN (TYP.)

NOTE:
THESE SET OF CONSTRUCTION DOCUMENTS DRAWINGS ARE FROM THE ORIGINAL LESSARD ARCHITECTURAL GROUP DRAWINGS. THEY HAVE BEEN REVIEWED AND LESSARD DESIGN INC. AGREES TO STAND BEHIND THE CONSTRUCTION DOCUMENTS DRAWINGS.

NORTH ARROW

ARCHITECT:

lessard DESIGN

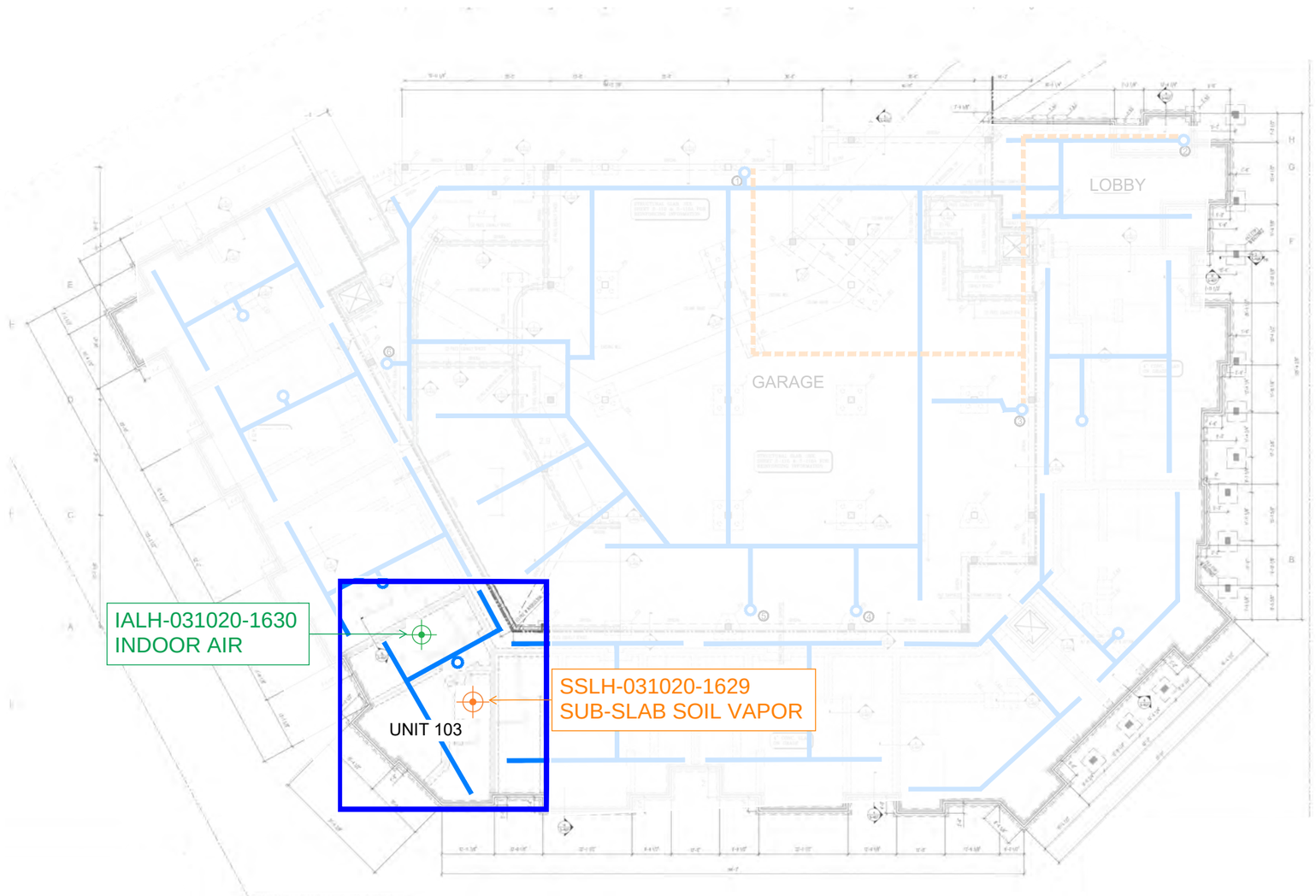
LESSARD DESIGN INC. P.C.
8521 Leesburg Pike, Suite 700
Vienna, VA 22182
P:703.596.4486
F:703.596.0147
WWW.LESSARDDESIGN.COM

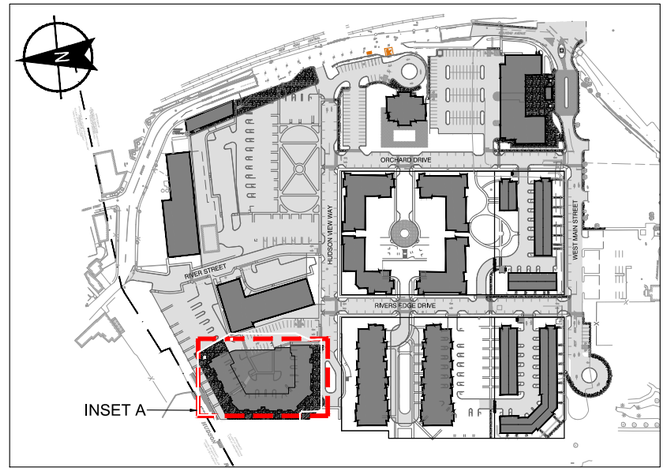
Hudson Harbor CH
TARRYTOWN, NY
National ReSources
BASEMENT
FLOOR PLAN

No.	Description	Date
3	CODE COMPLIANCE	11.18.11
1	REVIEW SET	9. 9. 08

PROJECT No: NRC001g
FILE NAME:
DRAWN BY: LC
CHECKED BY: LH
PLOT DATE: 9/16/2008 3:05:54 PM

A-101
3





□E□□L□N
SCALE 1" □ 200□

LEGEND

UNIT 101	ROOM DESIGNATION
①	RISER NUMBER
	HORIZONTAL PERFORATED SUB-SLAB PIPE
	APPROXIMATE LOCATION OF OVERHEAD LATERAL FOR RISERS
	HORIZONTAL SOLID RISER LEADER PIPE

NOTE□

1. BASE MAP IS DRAWING S-100 RIVER HOUSE TARRYTOWN, NY FOUNDATION PLAN REVISED 23 SEPTEMBER 2015. BY LESSARD DESIGN, VIENNA, VA.
2. SUB-SLAB PIPES ARE PERFORATED. RISERS AND OVERHEAD PIPES ARE SOLID.

0 15 30 45 60
APPROXIMATE SCALE IN FEET

HALEY ALDRICH

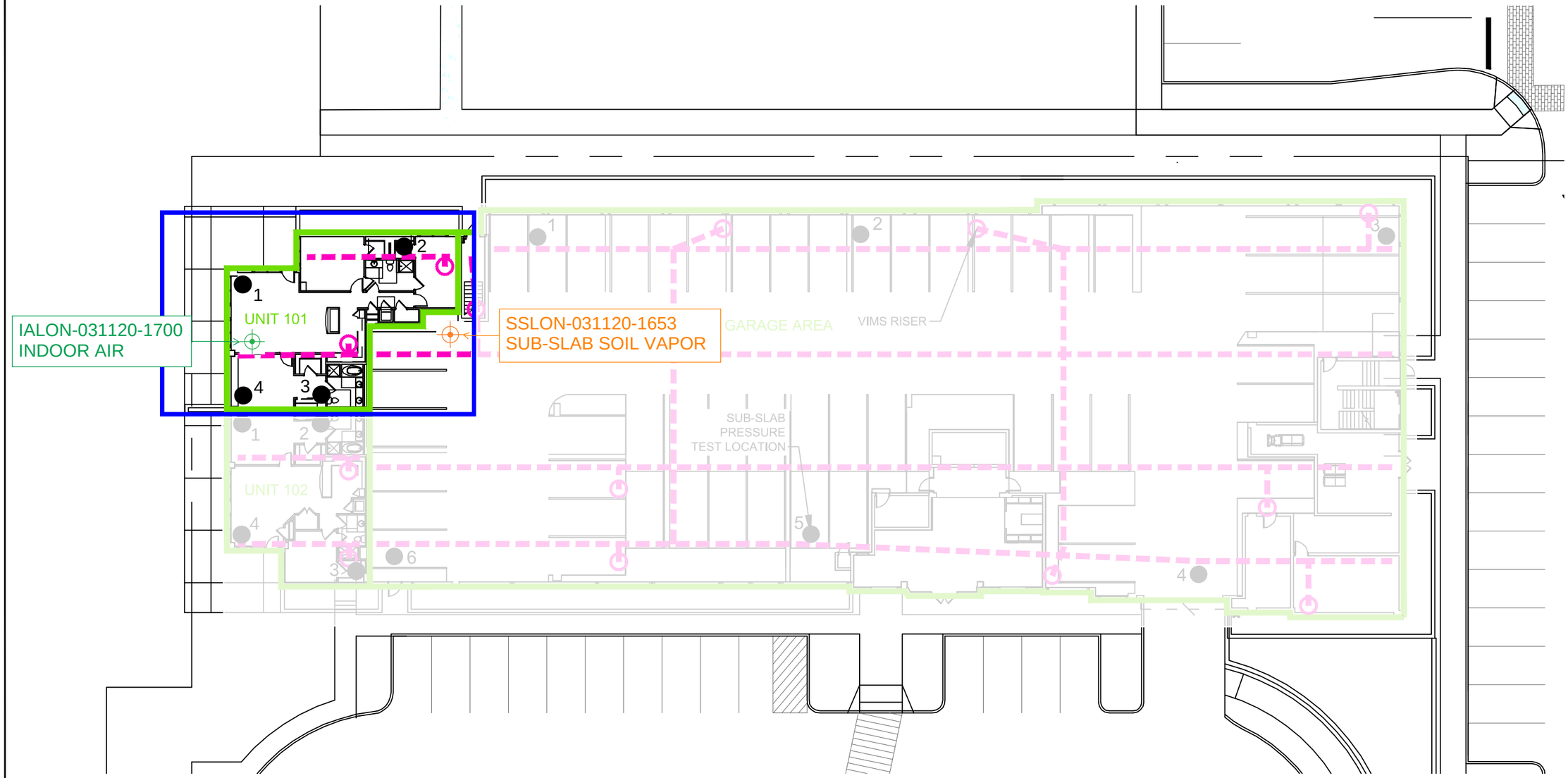
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

LIGHTHOUSE:
FLOORPLAN

SCALE: AS SHOWN
APRIL 2020

FIGURE 3

POSTOLOWSKI, KEVIN Printed: 12/10/2018 12:05 PM Layout: VIMS FIG 3
G:\28590\GLOBAL\CAD\DRAWINGS\28590-250-0022_VIMS PIPING PLAN.DWG



LEGEND:

- 1 ● SUB-SLAB PRESSURE TEST LOCATION
- ○ VIMS RISER
- 4" DIA PERFORATED PIPE
- OUTLINE OF BUILDING FOOTPRINT AND UNITS 101 AND 102

NOTES

1. THIS PLAN IS ADAPTED FROM LESSARD URBAN INC. DRAWING P-100U.
2. VIMS = VAPOR INTRUSION MANAGEMENT SYSTEM
3. SUB-SLAB PRESSURE TESTING POINTS LOCATIONS BY HALEY ALDRICH FIELD MEASUREMENT.

N W E S

HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE No. C360064

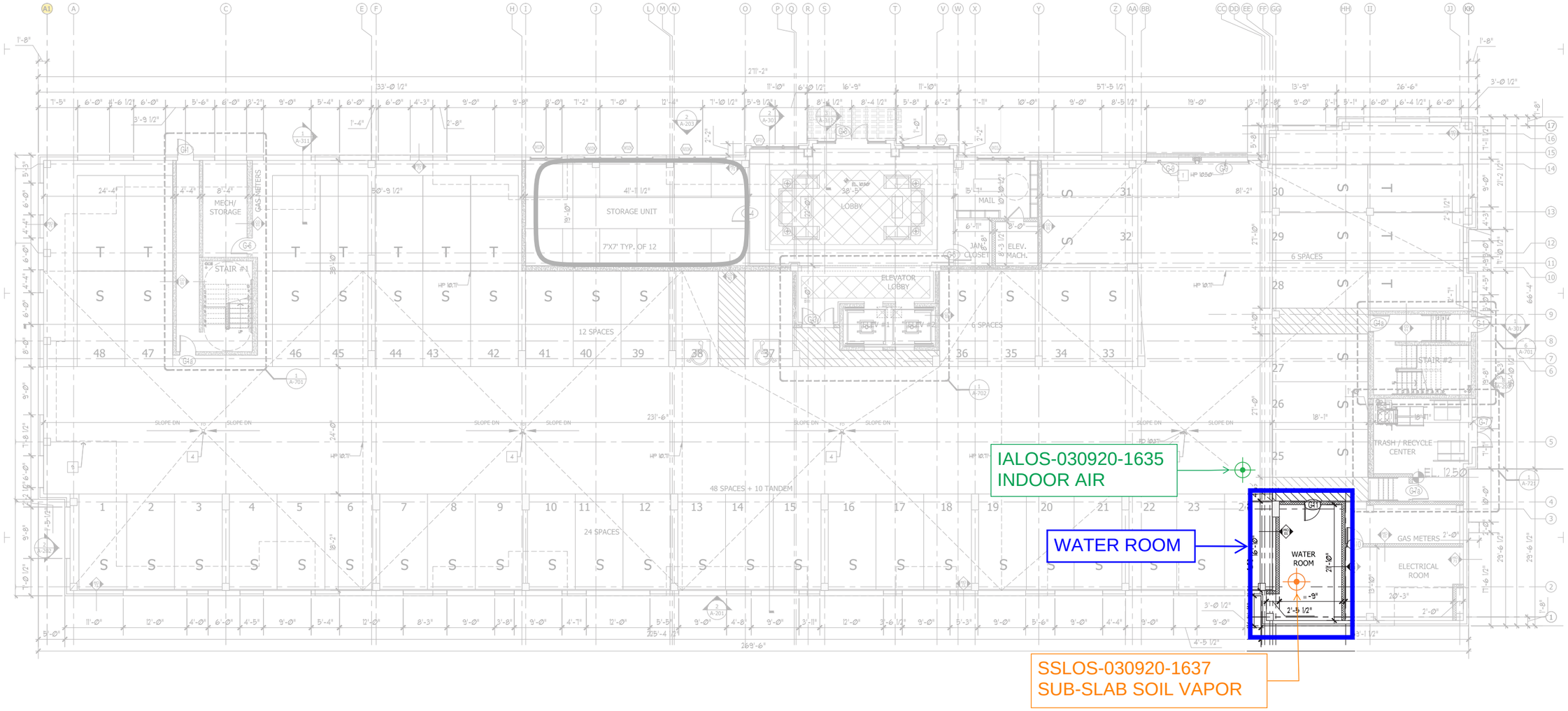
LOOKOUT NORTH:
FLOORPLAN

SCALE: NOT TO SCALE
APRIL 2020

FIGURE 4

G:\28590\GLOBAL\CAD\DRAWINGS\28590-000-0013 LOOKOUT BLDG #1 SOIL VAPOR SYSTEM R2.DWG

LOOKOUT SOUTH



GARAGE FLOOR PLAN

SCALE: 1/8" = 1'-0"

HALEY & ALDRICH NOTE: BASEMAP HAS BEEN MODIFIED FROM RECORD DRAWING LESSARD DESIGN PLANS DATED 11/28/2011

HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

LOOKOUT SOUTH:
FLOORPLAN

SCALE: AS SHOWN
APRIL 2020

FIGURE 5

DROPPED CEILING

GARAGE CEILING

KEY NOTES

SP STAND PIPE		14 ROOF DRAIN	1 TRENCH DRAIN
C.J. BRICK CONTROL JOINT		15 DOWN SPOUT	2 CORNER PROTECTION
F.E. FIRE EXTINGUISHER		16 GUTTER	3 BOLLARD
TOP TOP OF PARAPET		17 SHAFT(COORDINATE WITH MEP)	4 FLOOR DRAIN
HP HIGH POINT		18 CONDENSER FOR CORRIDOR - PROVIDE NEOPRENE PAD FOR EACH UNIT (COORDINATE WITH MEP)	5 WHEEL STOP
HB HOSE BIB		19 CONDENSER - PROVIDE NEOPRENE PADS FOR EACH UNIT (COORDINATE WITH MEP)	6 ROLL UP DOOR
		20 ROOF HATCH (REFER TO SPECS)	7 TRAFFIC PAINT
		21 ELEVATOR RELIEF (COORDINATE WITH MEP)	8 GUARD RAIL
		22 PATH	9 BUILDING OUTLINE ABOVE
		23 LOUVER	10 BUILDING OUTLINE BELOW
		24 16"x20" LOUVER	11 TRASH CHUTE EXHAUST
		25 18" POP VENT	12 DECO GRILLE
		26 DRAFT STOP	13 ACCESS CONTROL (RESIDENTIAL PARKING)

GENERAL NOTES

A. SEE A400 SERIES FOR ENLARGED 1/4" SCALE UNIT FLOOR PLANS DRAWINGS WITH ADDITIONAL INFORMATION (INTERIOR DIMENSIONS, WALL TYPES, DOOR REFERENCES, ETC.)
B. SEE A800 SERIES DRAWING FOR WALL SECTION REFERENCES
C. SEE A700 SERIES FOR STAIR, ELEVATOR & TRASH ROOM DIMENSIONS.
D. DIMENSION OF EXTERIOR WALLS ARE TO FACE OF STUD
E. SEE ELEVATIONS FOR EXTERIOR WINDOW KEY REFERENCES.
F. REFER TO SHEET G-081 FOR WALL PARTITION DETAILS AND FLOOR ASSEMBLIES.
G. REFER TO SHEETS G-045 AND G-046 FOR FIRE STOP PENETRATION DETAILS.
H. REFER TO SLAB PLAN FOR ADDITIONAL DIMENSION INFORMATION.
I. FOR RCP DRAWINGS REFER TO SHEETS X-XXX

N

Plot By: scarbas
PLOT STYLE:
Plot Date: 4/28/2011 7:11 PM
LAG096.CTB

ARCHITECT:
lessard DESIGN
LESSARD DESIGN INC. P.C.
8521 Leesburg Pike
Suite 700 | Vienna, VA 22182
P:703.596.4486 | F:703.596.0147
www.lessarddesign.com

SEAL & SIGNATURE:

OWNER:
NATIONAL RESOURCES
485 WEST PUTNAM AVE.
GREENWICH, CT 06830
203-661-0055
DAN BURTON
dburton@nationalresources.com

CONSULTANTS:
STRUCTURAL:
SCS, P.C.
67 FEDERAL ROAD
BROOKFIELD, CT 06804
203-740-7578
ALAN DE LA ROSA
arosa@scs-pc.com

CIVIL:
CHAZEN COMPANIES, P.C.
21 FOX STREET
POUGHKEEPSIE, NEW YORK 12601
845-454-3980
WALTER KUBOW
wkubow@chazencompanies.com

MEP:
EDWARD & ZUCK, P.C.
30 OAK STREET
4th FLOOR
STAMFORD, CT
203-352-1717
JOSEPH R. BARTELS
jbartels@ezzuck.com

MEP:
CDA CONSULTING ENGINEERS
46 RIVERSIDE AVENUE
WESTPORT, CT 06880
203-299-0250
DON EMANUEL JR.
demanuel@aerialelectric.com

HUDSON HARBOR
Tarrytown, N.Y.

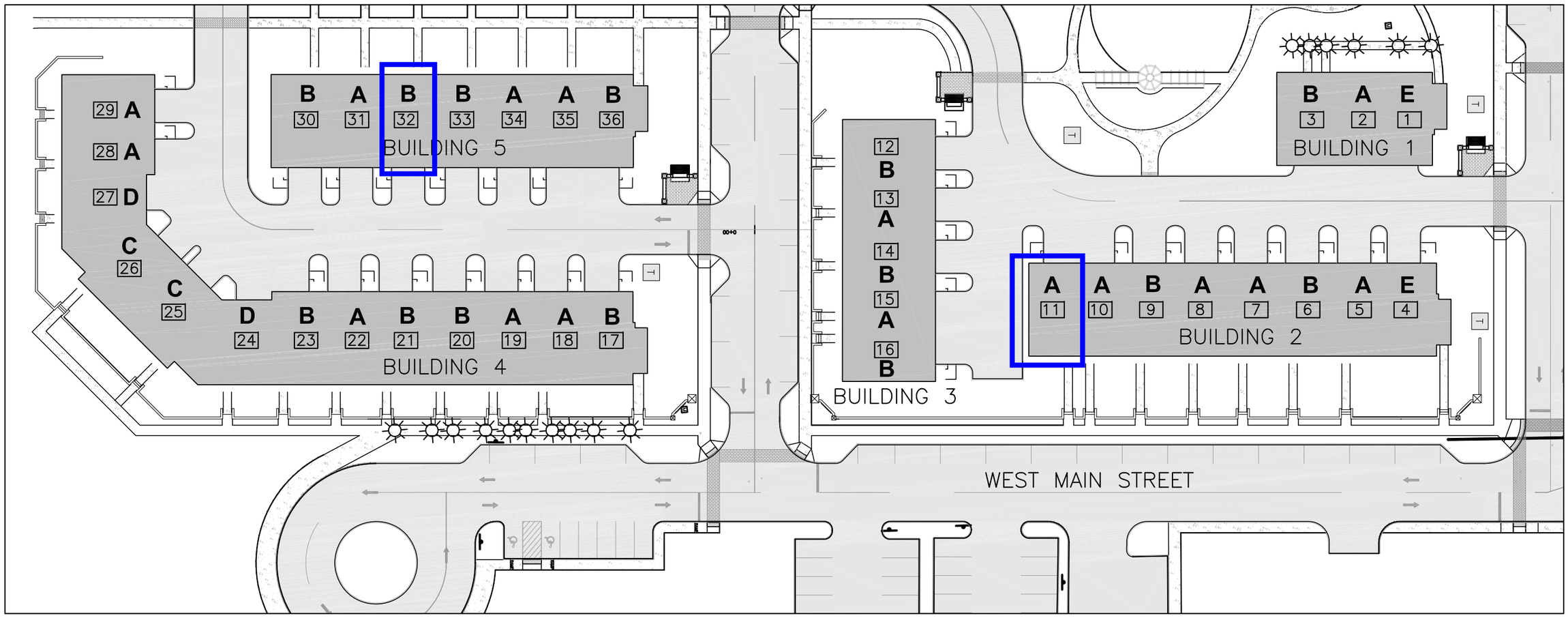
GARAGE FLOOR PLAN

LOOK OUT BUILDING 1A

NO	ISSUE/REVISION	DATE
-	PERMIT ISSUE	11.28.11
-	PERMIT ISSUE	05.16.11

PROJECT No: NRC.001F
FILE NAME: NRC001HA101.dwg
DRAWN BY: STAFF
CHECKED BY: R R
PLOT DATE: Nov. 28, 2011

A-101

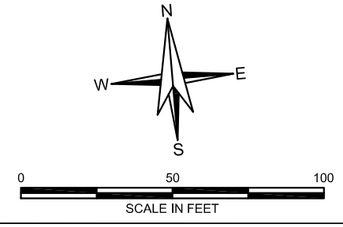


LEGEND:

23	UNIT NUMBER
A	UNIT FLOOR PLAN TYPE

NOTES:

1. THIS PLAN IS ADAPTED FROM CHAZEN COMPANIES DRAWING FILE "XLAYOUT_10399-00.DWG".
2. GEOTHERMAL SYSTEM INSTALLATION LOCATIONS ARE APPROXIMATE.
3. FOR SPECIFIC SAMPLE LOCATIONS WITHIN UNITS, SEE FIGURES 7 AND 8.



HALEY ALDRICH

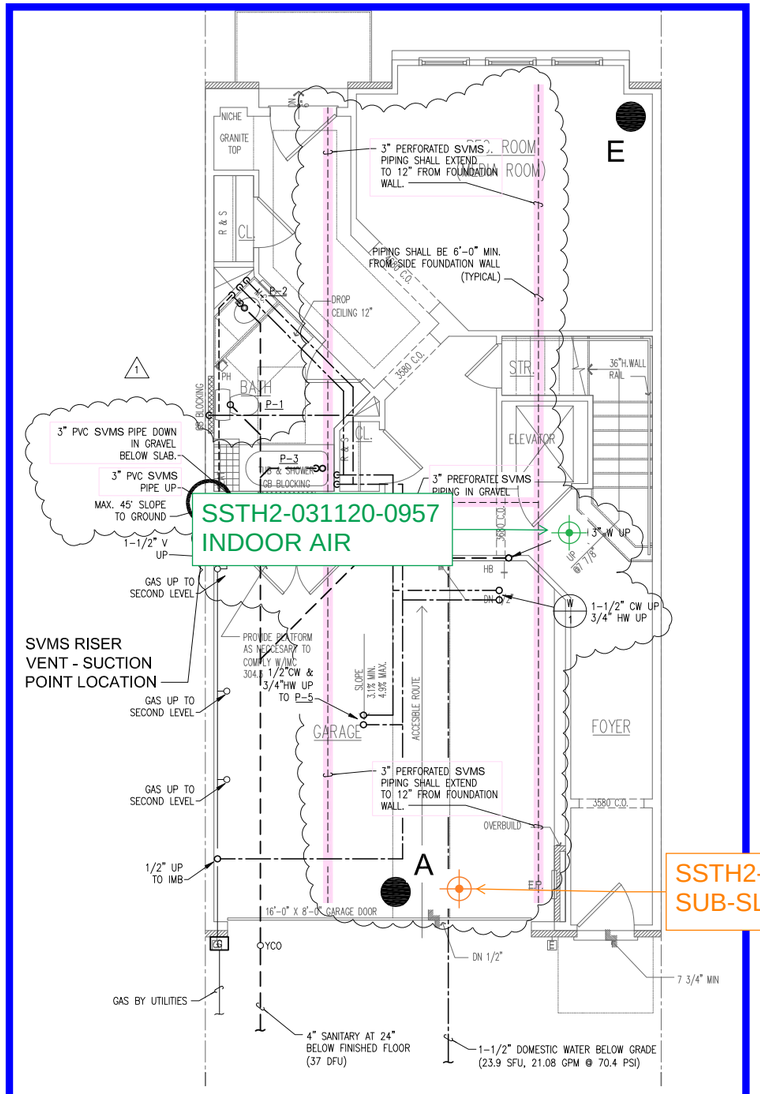
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NY
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

TOWNHOUSE BUILDING LAYOUT

SCALE: AS SHOWN
APRIL 2020

FIGURE 6

G:\PROJECTS\28590\017 SITE DEVELOPMENT SERVICES\CORRESPONDENCE\2011\SSD DEC DOCUMENTATION\FIGURE 4_2011-0720.DWG



UNIT A - GROUND FLOOR

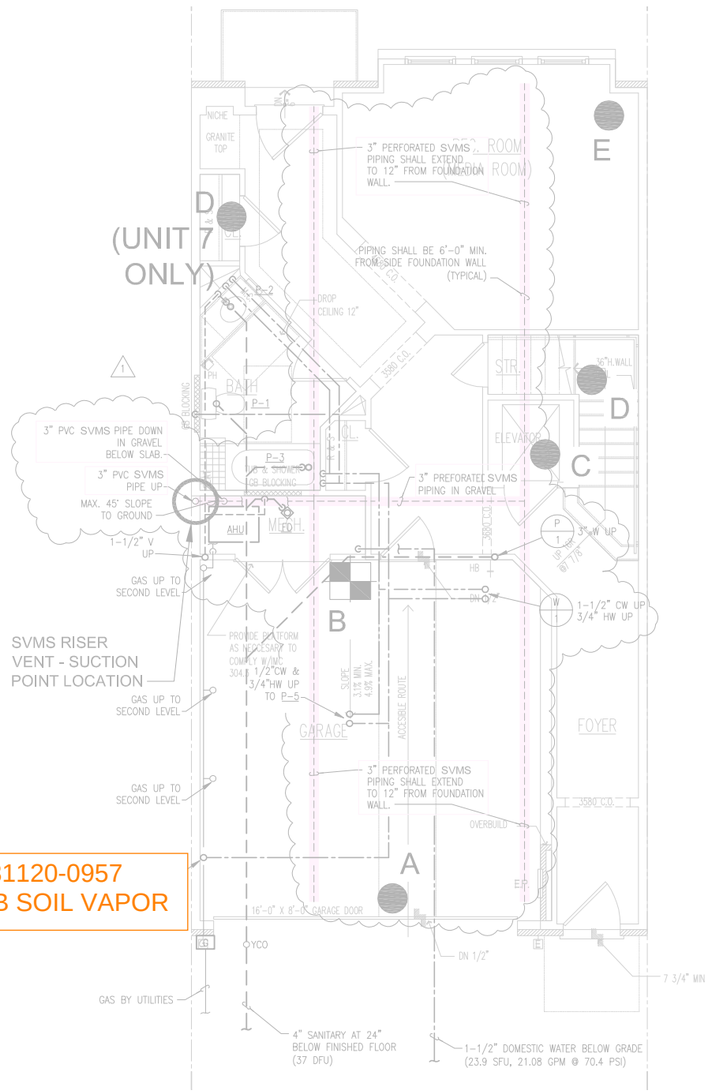
SCALE: 1/4" = 1'-0"

0 4 8

SCALE IN FEET

POST CONSTRUCTION APPROXIMATE SVMS TEST LOCATIONS

(TYP - UNIT A, EXCEPT CENTER UNIT)



UNIT A - GROUND FLOOR

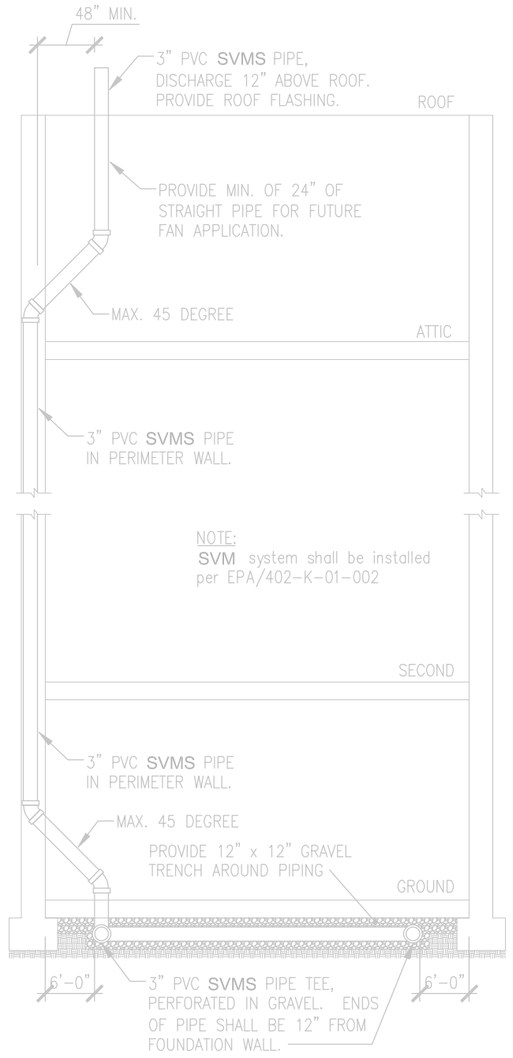
SCALE: 1/4" = 1'-0"

0 4 8

SCALE IN FEET

POST CONSTRUCTION APPROXIMATE SVMS TEST LOCATIONS

(TYP. - CENTER UNIT A)



SVSM PROFILE (TYP - ALL UNITS)

N.T.S.

LEGEND:

- SUB-SLAB VACUUM TEST
- SOIL VAPOR SAMPLE AND SUB-SLAB PRESSURE TEST
- A — TEST LOCATION IDENTIFICATION

NOTES:

1. SVMS = SOIL VAPOR MANAGEMENT SYSTEM
2. GROUND FLOOR PLANS SHOWN WERE TAKEN FROM DWGS. PA-200 THRU PE-200, PREPARED BY LESSARD ARCHITECTURAL GROUP, DATED 11-08-07. SVMS PROFILE TAKEN FROM DWG. P-701 PREPARED BY LESSARD ARCHITECTURAL GROUP, DATED 11-08-07.

HALEY ALDRICH

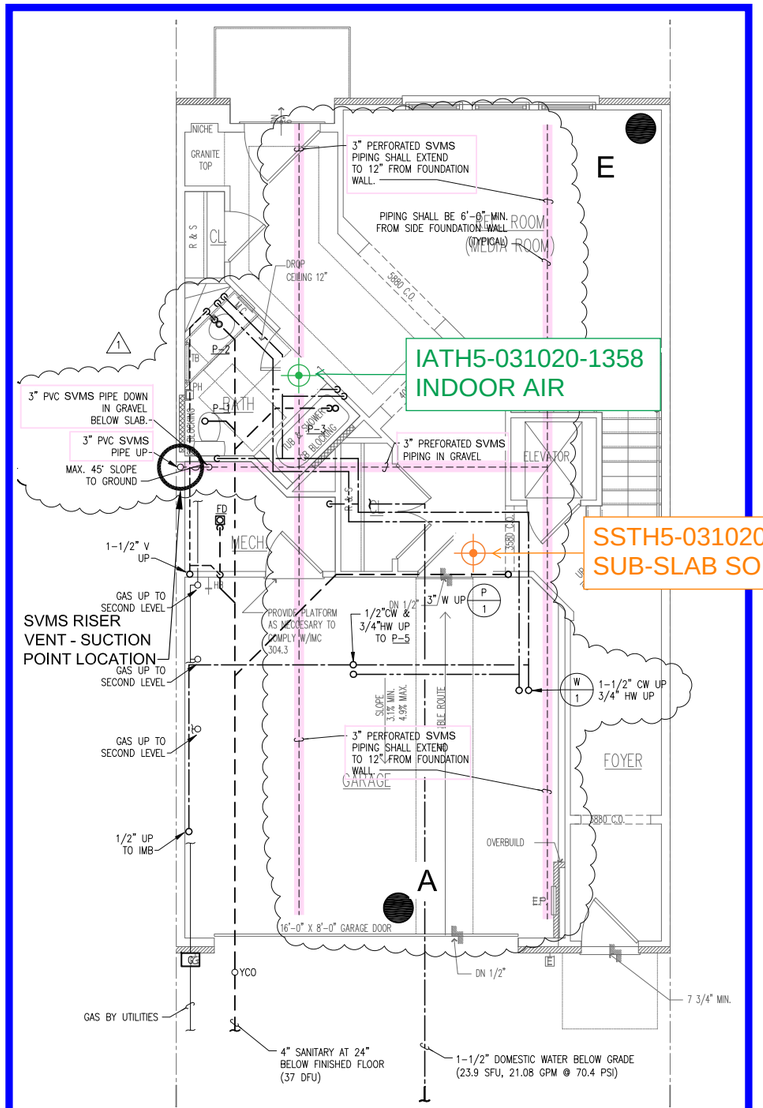
TARRYTOWN PROPERTY DEVELOPMENT
FERRY LANDINGS, LLC
SITE NO. C360064
BROWNFIELD CLEANUP INDEX NO. W3-1007-04-06

TOWNHOUSE UNIT A:
TYPICAL FLOORPLAN

SCALE: NOT TO SCALE
APRIL 2020

FIGURE 7

G:\PROJECTS\28590\017 SITE DEVELOPMENT SERVICES\CORRESPONDENCE\2011\SSD DEC DOCUMENTATION\FIG 2-4 SVM TESTING FLOOR PLANS.DWG



UNIT B - GROUND FLOOR

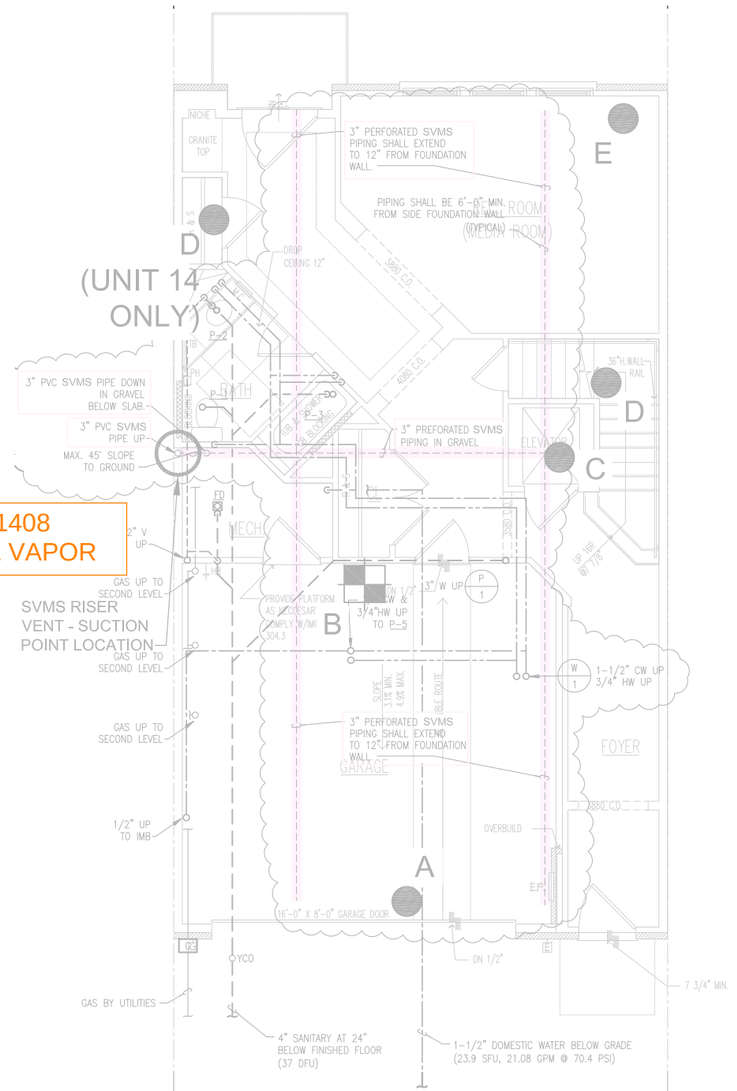
SCALE: 1/4" = 1'-0"

0 4 8

SCALE IN FEET

POST CONSTRUCTION APPROXIMATE SVMS TEST LOCATIONS

(TYP -UNIT B, EXCEPT CENTER UNIT)



UNIT B - GROUND FLOOR

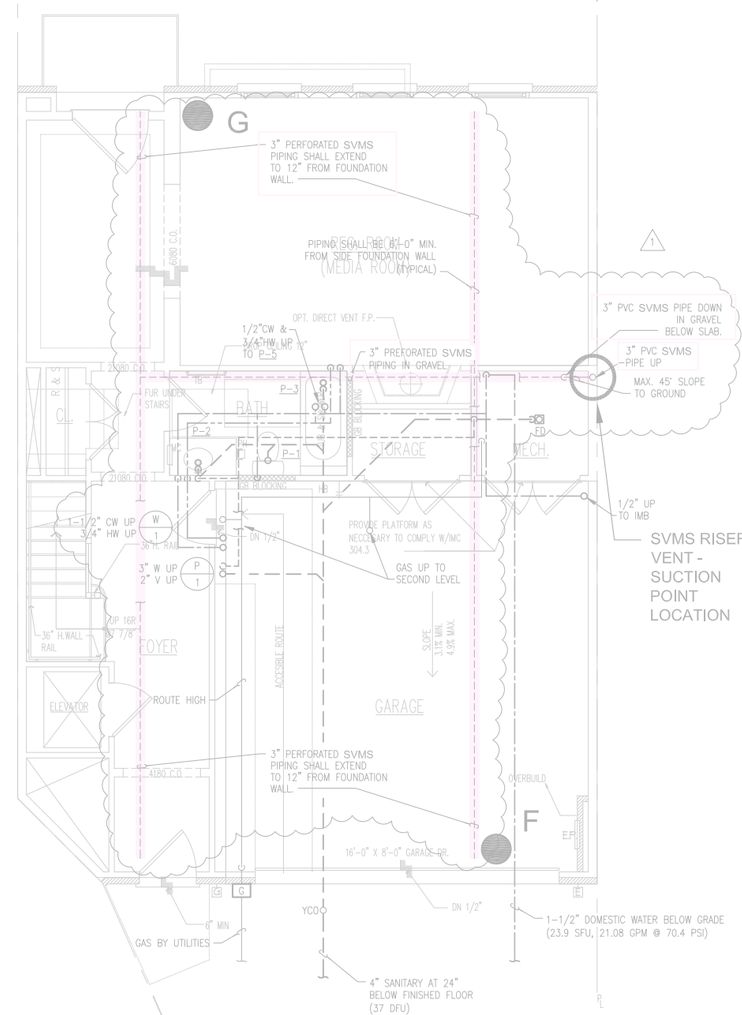
SCALE: 1/4" = 1'-0"

0 4 8

SCALE IN FEET

POST CONSTRUCTION APPROXIMATE SVMS TEST LOCATIONS

(TYP. - CENTER UNIT B)



UNIT C - GROUND FLOOR

SCALE: 1/4" = 1'-0"

0 4 8

SCALE IN FEET

POST CONSTRUCTION APPROXIMATE SVMS TEST LOCATIONS

(TYP. - ALL UNIT C)

LEGEND:

- SUB-SLAB VACUUM TEST
- SOIL VAPOR SAMPLE AND SUB-SLAB PRESSURE TEST
- A — TEST LOCATION IDENTIFICATION

NOTES:

1. SVMS = SOIL VAPOR MANAGEMENT SYSTEM
2. GROUND FLOOR PLANS SHOWN WERE TAKEN FROM DWGS. PA-200 THRU PE-200, PREPARED BY LESSARD ARCHITECTURAL GROUP, DATED 11-08-07. SVMS PROFILE TAKEN FROM DWG. P-701 PREPARED BY LESSARD ARCHITECTURAL GROUP, DATED 11-08-07.

HALEY ALDRICH

TARRYTOWN PROPERTY DEVELOPMENT
FERRY LANDINGS, LLC
SITE NO. C360064
BROWNFIELD CLEANUP INDEX NO. W3-1007-04-06

TOWNHOUSE UNIT B:
TYPICAL FLOORPLAN

SCALE: NOT TO SCALE
APRIL 2020

FIGURE 8

G:\PROJECTS\285900\017 SITE DEVELOPMENT SERVICES\CORRESPONDENCE\2011\SSD DEC DOCUMENTATION\FIG 1-3 SVM TESTING FLOOR PLANS.DWG

APPENDIX A

Data Usability Summary Report
Laboratory Data Reports

Haley & Aldrich of New York
200 Ton Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

Data Usability Summary Report

Project Name: Ferry Landings, LLC - Tarrytown Former MGP Site

Analytical Laboratory: Alpha Analytical, Inc.

Validation Performed by: Denis Conley

Validation Date: 31 March 2020

Haley & Aldrich of New York, Inc., prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the sub-slab (SS) vapor, soil vapor (SV), indoor air (IA) and ambient air (AA) samples collected from 9 – 17 March 2020 at the Hudson Harbors project site located in Tarrytown, NY. The analytical results for Sample Delivery Group(s) (SDG) L2010778, L2011083 and L2012452 were reviewed to determine the data usability and qualification requirements.

This data validation and usability assessment was performed with guidance provided by the U.S. Environmental Protection Agency's (EPA) *National Functional Guidelines (NFG) for Organic Data Review,* analytical method - specific criteria and the project Work Plan.

The following quality assurance/quality control (QA/QC) elements and associated acceptance criteria from the analysis of the project samples were reviewed:

- Holding Times/Preservation Compliance
- Reporting Limits and Sample Dilution Procedures
- Blank Sample Analysis Results
- Surrogate Compound Recovery Compliance
- Laboratory Control Sample Recovery Compliance
- Laboratory Duplicate Sample Analysis Results
- System Performance and Overall Assessment

Analytical precision and accuracy were evaluated based on the laboratory control, and laboratory duplicate analyses performed concurrently with the project samples.

Data reported in this sampling event were reported to the laboratory method detection limit (MDL). Results found between the MDL and reporting limit (RL) are flagged "J" as estimated.

Sample data were reported in accordance with laboratory's standard operating procedures (SOPs). The results presented in each laboratory report were found to be compliant with the data quality objectives for the project and usable; any exceptions are noted in the following sections.

1. Sample Delivery Group Numbers L2010778, L2011083 and L2012452

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers L2010778 results dated 16 March 2020, L2011083 results dated 17 March 2020, and L2012452 results dated 25 March 2020. Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

Samples were also received appropriately, identified correctly, and analyzed according to the chain of custody. Chains of custody were appropriately signed and dated by the field and laboratory personnel. No qualification of the reported results is recommended.

The results for the analyses were reported for the following project samples:

Sample ID	Sample Type	Lab ID	Sample Collection Date	Matrix	Methods	Holding Time
SSTH2-0311200957	SUMMA	L2011083-01	3/11/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
IATH2-031120-0957	SUMMA	L2011083-02	3/11/2020	Air	TO-15/TO-15 SIM	30 Days
SVLC-031120-1142	SUMMA	L2011083-03	3/11/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
SSLON-031120-1653	SUMMA	L2011083-04	3/11/2020	Soil Vapor	TO-15/TO-15 SIM	30Days
IALON-031120-1700	SUMMA	L2011083-05	3/11/2020	Air	TO-15/TO-15 SIM	30 Days
LHN-031920-1005	SUMMA	L2012452-01	3/17/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
LHW-031920-1043	SUMMA	L2012452-02	3/17/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
LHS-031920-1209	SUMMA	L2012452-03	3/17/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
LHE-031920-1249	SUMMA	L2012452-04	3/17/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
IACH-030920-1226	SUMMA	L2010778-01	3/9/2020	Air	TO-15/TO-15 SIM	30 Days
SSCH-030920-1238	SUMMA	L2010778-02	3/9/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
SSLOS-030920-1637	SUMMA	L2010778-03	3/9/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
IALOS-030920-1635	SUMMA	L2010778-04	3/9/2020	Air	TO-15/TO-15 SIM	30 Days
SVCHY-031020-1215	SUMMA	L2010778-05	3/10/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
IATH5-031020-1358	SUMMA	L2010778-06	3/10/2020	Air	TO-15/TO-15 SIM	30 Days
SSTH5-031020-1408	SUMMA	L2010778-07	3/10/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
AAPK-031020-1432	SUMMA	L2010778-08	3/10/2020	Air	TO-15/TO-15 SIM	30 Days
SSLH-031020-1629	SUMMA	L2010778-09	3/10/2020	Soil Vapor	TO-15/TO-15 SIM	30 Days
IALH-031020-1630	SUMMA	L2010778-10	3/10/2020	Air	TO-15/TO-15 SIM	30 Days

1.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control (QC) issues, such as internal standard exceedances and initial (ICV) and/or continuing calibration (CCV) exceedances. Below is a summary of the QC issues identified in the laboratory case narrative sections:

- SDG L2010778 sample-09 was reanalyzed at a dilution due to the concentration of a target compound that exceeded the instrument calibration. The results of both analyses are reported.

- Laboratory control sample results for 1,2,4-trichlorobenzene in batch WG-1351598 was above the laboratory specific acceptance criteria.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol without exception, no qualification of the reported results is recommended.

1.4 REPORTING LIMITS AND SAMPLE DILUTION

The reporting limits for the samples analyzed were below the minimum reporting limit requirements specified by the Project-specific Work Plan.

- Sample SSLH-031020-1629 from SDG L2010778 was reanalyzed at a dilution to enable quantification of then target compound “ethanol.” The reported result from the initial analysis was flagged with an “E” by the laboratory indicating that the concentration detected “exceeded” the instrument calibration.

The reported results from the initial analysis for ethanol should be rejected and the result reported from the reanalysis of this sample should be used to represent this sample location.

1.5 BLANK SAMPLE ANALYSIS

Method blank samples were prepared by the analytical laboratory and analyzed concurrently with the project samples to assess the potential for laboratory contamination to affect the reported results. Target compounds were not detected in any of the Method blank samples, indicating that no contamination from laboratory activities was observed. No qualification of the reported results is recommended.

1.6 SURROGATE RECOVERY COMPLIANCE

Surrogates, also known as internal standards, are compounds added to each sample prior to sample analysis to determining the efficiency of the analytical procedure by evaluating the percent recovery (%R) of the compounds.

The %R for each surrogate compound added to each project samples were determined to be within the laboratory specified QC limits without exception. No data qualification is recommended.

1.7 LABORATORY CONTROL SAMPLE ANALYSIS

The laboratory control sample analyses are used to assess the accuracy of the analytical system independent of matrix interferences. Compounds associated with the LCS analyses exhibited percent recoveries (%R) within the specified QC limits of 70-130 %R with the following exception:

- The calculated %R for target analyte 1,2,4-trichlorobenzene for the LCS analyzed with project samples reported for SDG L2011083 was 134% slightly higher that the upper limit of 130%.

Since 1,2,4-TCB was not detected in the project samples analyzed within this SDG, no qualification of the reported results is recommended.

1.8 LABORATORY DUPLICATE SAMPLES

The laboratory duplicate samples were analyzed concurrently with the project samples to evaluate the precision of the analytical system and reporting. The following sample(s) were used for laboratory duplicate analysis and the RPDs were all below the laboratory specific acceptance criteria of +/- 25% Replicate Percent Difference (RPD) without exception. No qualification of the reported results is recommended.

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
L2010778-01	IACH-03-930-1226	TO-15/TO-15 SIM
L2011083-02	IATH2-031120-0957	TO-15/TO-15 SIM
L2012452-02	LHW-031920-1043	TO-15/TO-15 SIM

1.9 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the data quality objectives for the project and the quality control guidelines specified by analytical method. Based on the review of this report, the data are 100% useable without exception.

Glossary

- Sample Types:
  - N Primary Sample
  - FD Field Duplicate Sample
- Units:
  - µg/M3 microgram per cubic meter
- Matrices:
  - IA Indoor Air
  - SV Soil Vapor
  - AA Ambient Air
- Abbreviations
  - DUSR Data Usability Summary Report
  - SDG Sample Delivery Group
  - EPA Environmental Protection Agency
  - NFG National Functional Guidelines
  - QA/QC Quality Assurance/Quality Control
  - RL Laboratory Reporting Limit
  - MDL Laboratory Method Detection Limit
  - SOP Standard Operating Procedures
  - COC Chain of Custody
  - %R Percent Recovery
  - RPD Relative Percent Difference
  - LCS Laboratory Control Sample

Qualifiers

Results are qualified with the following codes in accordance with EPA National Functional Guidelines:

- Concentration (C) Qualifiers:
  - U The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or "ND".
  - B The compound was found in the sample and its associated blank. Its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers:
  - E The compound was quantitated above the calibration range.
  - D The concentration is based on a diluted sample analysis.
- Validation Qualifiers:
  - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.
  - NJ The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification; the associated numerical value is therefore an estimated concentration only.
  - R The sample results were rejected as unusable; the compound may or may not be present in the sample.

References

1. United States Environmental Protection Agency, 2016. National Functional Guidelines for High Resolution Superfund Methods Data Review. EPA-542-B-16-001. April.

2. United States Environmental Protection Agency, 2017b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-2017-002. January.

3. Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air – 2nd Ed., 1999, EPA/625/R-96/010b, January.

ANALYTICAL REPORT

Lab Number:	L2010778
Client:	Haley & Aldrich 200 Town Centre Drive Suite 2 Rochester, NY 14623-4264
ATTN:	Vince Dick
Phone:	(585) 321-4207
Project Name:	HUDSON HARBORS
Project Number:	28590
Report Date:	03/16/20

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2010778-01	IACH-030920-1226	AIR	TARRYTOWN, NY	03/09/20 12:26	03/10/20
L2010778-02	SSCH-030920-1238	SOIL_VAPOR	TARRYTOWN, NY	03/09/20 12:38	03/10/20
L2010778-03	SSLOS-030920-1637	SOIL_VAPOR	TARRYTOWN, NY	03/09/20 16:37	03/10/20
L2010778-04	IALOS-030920-1635	AIR	TARRYTOWN, NY	03/09/20 16:35	03/10/20
L2010778-05	SVCHY-031020-1215	SOIL_VAPOR	TARRYTOWN, NY	03/10/20 12:15	03/10/20
L2010778-06	IATH5-031020-1358	AIR	TARRYTOWN, NY	03/10/20 13:58	03/10/20
L2010778-07	SSTH5-031020-1408	SOIL_VAPOR	TARRYTOWN, NY	03/10/20 14:08	03/10/20
L2010778-08	AAPK-031020-1432	AIR	TARRYTOWN, NY	03/10/20 14:32	03/10/20
L2010778-09	SSLH-031020-1629	SOIL_VAPOR	TARRYTOWN, NY	03/10/20 16:29	03/10/20
L2010778-10	IALH-031020-1630	AIR	TARRYTOWN, NY	03/10/20 16:30	03/10/20
L2010778-11	UNUSED CAN #2336	AIR	TARRYTOWN, NY		03/10/20

Project Name:	HUDSON HARBORS	**Lab Number:**	L2010778
Project Number:	28590	**Report Date:**	03/16/20

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:	HUDSON HARBORS	**Lab Number:**	L2010778
Project Number:	28590	**Report Date:**	03/16/20

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on March 9, 2020. The canister certification results are provided as an addendum.

L2010778-09: The sample was re-analyzed on dilution in order to quantify the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

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: Christopher J. Anderson

Title: Technical Director/Representative Date: 03/16/20

AIR

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-01
Client ID: IACH-030920-1226
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 12:26
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 18:05
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.404	0.200	--	2.00	0.989	--		1
Chloromethane	0.516	0.200	--	1.07	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	194	5.00	--	366	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	7.54	1.00	--	17.9	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	109	0.500	--	268	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	3.52	0.200	--	14.0	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-01
Client ID: IACH-030920-1226
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 12:26
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.206	0.200	--	0.658	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.347	0.200	--	1.31	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-01
Client ID: IACH-030920-1226
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 12:26
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	98		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	101		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-01
Client ID: IACH-030920-1226
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 12:26
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/13/20 18:05
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.080	0.020	--	0.503	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	0.051	0.020	--	0.346	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	94		60-140
bromochloromethane	95		60-140
chlorobenzene-d5	97		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-02
Client ID: SSCH-030920-1238
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 12:38
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 21:24
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.455	0.200	--	2.25	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	110	5.00	--	207	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	16.6	1.00	--	39.4	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	33.2	0.500	--	81.6	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	0.850	0.500	--	2.58	1.52	--		1
Methylene chloride	0.861	0.500	--	2.99	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	0.689	0.200	--	2.15	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	0.424	0.200	--	1.68	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-02
Client ID: SSCH-030920-1238
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 12:38
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	0.763	0.200	--	2.75	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.219	0.200	--	0.825	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-02
Client ID: SSCH-030920-1238
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 12:38
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	100		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	102		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-03
Client ID: SSLOS-030920-1637
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 16:37
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 22:03
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.439	0.200	--	2.17	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	72.6	5.00	--	137	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	55.5	1.00	--	132	2.38	--		1
Trichlorofluoromethane	0.204	0.200	--	1.15	1.12	--		1
Isopropanol	13.8	0.500	--	33.9	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	3.90	0.500	--	11.8	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	1.19	0.200	--	3.71	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.45	0.500	--	4.28	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-03
Client ID: SSLOS-030920-1637
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 16:37
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	23.5	0.500	--	69.3	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.264	0.200	--	0.843	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	0.324	0.200	--	1.17	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.306	0.200	--	1.25	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.436	0.200	--	1.64	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-03
Client ID: SSLOS-030920-1637
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 16:37
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	0.419	0.400	--	1.82	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	0.201	0.200	--	0.873	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	0.265	0.200	--	1.30	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	102		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	101		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-04
Client ID: IALOS-030920-1635
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 16:35
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 19:25
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.435	0.200	--	2.15	0.989	--		1
Chloromethane	0.479	0.200	--	0.989	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	3.56	1.00	--	8.46	2.38	--		1
Trichlorofluoromethane	0.218	0.200	--	1.23	1.12	--		1
Isopropanol	1.83	0.500	--	4.50	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.792	0.500	--	2.34	1.47	--		1
Ethyl Acetate	0.693	0.500	--	2.50	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	1.56	0.500	--	4.60	1.47	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-04
Client ID: IALOS-030920-1635
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 16:35
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-04
Client ID: IALOS-030920-1635
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 16:35
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	95		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	97		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-04
Client ID: IALOS-030920-1635
Sample Location: TARRYTOWN, NY

Date Collected: 03/09/20 16:35
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/13/20 19:25
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.066	0.020	--	0.415	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	90		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	95		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-05
Client ID: SVCHY-031020-1215
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 12:15
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 22:43
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.414	0.200	--	2.05	0.989	--		1
Chloromethane	0.295	0.200	--	0.609	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	2.57	0.200	--	5.69	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	15.4	1.00	--	36.6	2.38	--		1
Trichlorofluoromethane	0.204	0.200	--	1.15	1.12	--		1
Isopropanol	5.44	0.500	--	13.4	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	1.64	0.500	--	4.97	1.52	--		1
Methylene chloride	0.578	0.500	--	2.01	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	1.93	0.200	--	6.01	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	0.237	0.200	--	0.959	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	3.35	0.500	--	9.88	1.47	--		1
cis-1,2-Dichloroethene	0.245	0.200	--	0.971	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-05
Client ID: SVCHY-031020-1215
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 12:15
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.796	0.200	--	2.81	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	1.35	0.200	--	4.31	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	0.348	0.200	--	1.20	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	1.12	0.200	--	6.02	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.634	0.200	--	2.60	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.850	0.200	--	3.20	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-05
Client ID: SVCHY-031020-1215
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 12:15
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	0.519	0.400	--	2.25	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	0.221	0.200	--	0.960	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	100		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	101		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-06
Client ID: IATH5-031020-1358
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 13:58
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 20:05
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.430	0.200	--	2.13	0.989	--		1
Chloromethane	0.571	0.200	--	1.18	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	20.7	5.00	--	39.0	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	123	1.00	--	292	2.38	--		1
Trichlorofluoromethane	0.217	0.200	--	1.22	1.12	--		1
Isopropanol	5.64	0.500	--	13.9	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	1.50	0.500	--	5.21	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	3.46	0.500	--	12.5	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-06
Client ID: IATH5-031020-1358
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 13:58
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.318	0.200	--	1.30	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.800	0.200	--	3.01	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	0.480	0.400	--	2.08	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-06
Client ID: IATH5-031020-1358
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 13:58
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	96		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	98		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-06
Client ID: IATH5-031020-1358
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 13:58
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/13/20 20:05
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.066	0.020	--	0.415	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	0.076	0.020	--	0.515	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	93		60-140
bromochloromethane	93		60-140
chlorobenzene-d5	97		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-07
Client ID: SSTH5-031020-1408
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 14:08
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 23:22
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.425	0.200	--	2.10	0.989	--		1
Chloromethane	0.594	0.200	--	1.23	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	89.2	5.00	--	168	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	138	1.00	--	328	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	12.6	0.500	--	31.0	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	2.00	0.500	--	6.06	1.52	--		1
Methylene chloride	1.09	0.500	--	3.79	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	0.237	0.200	--	0.738	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	6.31	0.500	--	18.6	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-07
Client ID: SSTH5-031020-1408
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 14:08
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	1.19	0.500	--	3.51	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.261	0.200	--	0.834	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	0.591	0.200	--	2.13	0.721	--		1
Trichloroethene	0.534	0.200	--	2.87	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.445	0.200	--	1.82	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.698	0.200	--	2.63	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-07
Client ID: SSTH5-031020-1408
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 14:08
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	0.586	0.400	--	2.55	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	0.246	0.200	--	1.07	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	0.223	0.200	--	1.10	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	104		60-140
Bromochloromethane	102		60-140
chlorobenzene-d5	103		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-08
Client ID: AAPK-031020-1432
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 14:32
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 17:25
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.460	0.200	--	2.27	0.989	--		1
Chloromethane	0.605	0.200	--	1.25	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	2.51	1.00	--	5.96	2.38	--		1
Trichlorofluoromethane	0.223	0.200	--	1.25	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-08
Client ID: AAPK-031020-1432
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 14:32
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-08
Client ID: AAPK-031020-1432
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 14:32
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	103		60-140
chlorobenzene-d5	104		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-08
Client ID: AAPK-031020-1432
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 14:32
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/13/20 17:25
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.075	0.020	--	0.472	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	96		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	101		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-09
Client ID: SSLH-031020-1629
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:29
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/14/20 00:02
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.483	0.200	--	2.39	0.989	--		1
Chloromethane	0.383	0.200	--	0.791	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	736	5.00	--	1390	9.42	--	E	1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	242	1.00	--	575	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	13.3	0.500	--	32.7	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	6.28	0.500	--	19.0	1.52	--		1
Methylene chloride	0.690	0.500	--	2.40	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	1.16	0.200	--	3.61	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.58	0.500	--	4.66	1.47	--		1
cis-1,2-Dichloroethene	0.279	0.200	--	1.11	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-09
Client ID: SSLH-031020-1629
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:29
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	4.94	0.500	--	14.6	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.692	0.200	--	2.44	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	2.06	0.200	--	6.58	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	7.63	0.200	--	27.5	0.721	--		1
Trichloroethene	5.78	0.200	--	31.1	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.973	0.200	--	3.99	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	1.34	0.200	--	5.05	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	0.237	0.200	--	1.03	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-09
Client ID: SSLH-031020-1629
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:29
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	0.793	0.400	--	3.44	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	0.410	0.200	--	1.78	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	0.330	0.200	--	1.62	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	112		60-140
Bromochloromethane	109		60-140
chlorobenzene-d5	110		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-09 D
Client ID: SSLH-031020-1629
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:29
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/14/20 08:03
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethanol	845	12.5	--	1590	23.6	--		2.5

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	92		60-140
Bromochloromethane	86		60-140
chlorobenzene-d5	87		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-10
Client ID: IALH-031020-1630
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:30
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/13/20 20:44
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.419	0.200	--	2.07	0.989	--		1
Chloromethane	0.512	0.200	--	1.06	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	27.9	5.00	--	52.6	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	2.97	1.00	--	7.06	2.38	--		1
Trichlorofluoromethane	0.214	0.200	--	1.20	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-10
Client ID: IALH-031020-1630
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:30
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.491	0.200	--	1.73	0.705	--		1
Benzene	0.322	0.200	--	1.03	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.901	0.200	--	3.40	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	0.440	0.400	--	1.91	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-10
Client ID: IALH-031020-1630
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:30
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	0.206	0.200	--	1.01	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	96		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

SAMPLE RESULTS

Lab ID: L2010778-10
Client ID: IALH-031020-1630
Sample Location: TARRYTOWN, NY

Date Collected: 03/10/20 16:30
Date Received: 03/10/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/13/20 20:44
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.067	0.020	--	0.421	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	90		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	94		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/13/20 15:26

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-10 Batch: WG1350861-4								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/13/20 15:26

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-10 Batch: WG1350861-4								
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/13/20 15:26

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-10 Batch: WG1350861-4								
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 03/13/20 15:26

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01,04,06,08,10 Batch: WG1350863-4								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 Batch: WG1350861-3								
Dichlorodifluoromethane	81		-		70-130	-		
Chloromethane	88		-		70-130	-		
Freon-114	99		-		70-130	-		
Vinyl chloride	94		-		70-130	-		
1,3-Butadiene	98		-		70-130	-		
Bromomethane	97		-		70-130	-		
Chloroethane	97		-		70-130	-		
Ethanol	74		-		40-160	-		
Vinyl bromide	94		-		70-130	-		
Acetone	89		-		40-160	-		
Trichlorofluoromethane	102		-		70-130	-		
Isopropanol	90		-		40-160	-		
1,1-Dichloroethene	105		-		70-130	-		
Tertiary butyl Alcohol	98		-		70-130	-		
Methylene chloride	98		-		70-130	-		
3-Chloropropene	122		-		70-130	-		
Carbon disulfide	100		-		70-130	-		
Freon-113	104		-		70-130	-		
trans-1,2-Dichloroethene	103		-		70-130	-		
1,1-Dichloroethane	106		-		70-130	-		
Methyl tert butyl ether	98		-		70-130	-		
2-Butanone	106		-		70-130	-		
cis-1,2-Dichloroethene	106		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 Batch: WG1350861-3								
Ethyl Acetate	116		-		70-130	-		
Chloroform	103		-		70-130	-		
Tetrahydrofuran	107		-		70-130	-		
1,2-Dichloroethane	97		-		70-130	-		
n-Hexane	103		-		70-130	-		
1,1,1-Trichloroethane	91		-		70-130	-		
Benzene	99		-		70-130	-		
Carbon tetrachloride	96		-		70-130	-		
Cyclohexane	104		-		70-130	-		
1,2-Dichloropropane	105		-		70-130	-		
Bromodichloromethane	98		-		70-130	-		
1,4-Dioxane	111		-		70-130	-		
Trichloroethene	101		-		70-130	-		
2,2,4-Trimethylpentane	105		-		70-130	-		
Heptane	103		-		70-130	-		
cis-1,3-Dichloropropene	105		-		70-130	-		
4-Methyl-2-pentanone	106		-		70-130	-		
trans-1,3-Dichloropropene	88		-		70-130	-		
1,1,2-Trichloroethane	104		-		70-130	-		
Toluene	103		-		70-130	-		
2-Hexanone	112		-		70-130	-		
Dibromochloromethane	107		-		70-130	-		
1,2-Dibromoethane	104		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 Batch: WG1350861-3								
Tetrachloroethene	109		-		70-130	-		
Chlorobenzene	109		-		70-130	-		
Ethylbenzene	104		-		70-130	-		
p/m-Xylene	105		-		70-130	-		
Bromoform	107		-		70-130	-		
Styrene	102		-		70-130	-		
1,1,2,2-Tetrachloroethane	115		-		70-130	-		
o-Xylene	105		-		70-130	-		
4-Ethyltoluene	100		-		70-130	-		
1,3,5-Trimethylbenzene	100		-		70-130	-		
1,2,4-Trimethylbenzene	102		-		70-130	-		
Benzyl chloride	106		-		70-130	-		
1,3-Dichlorobenzene	106		-		70-130	-		
1,4-Dichlorobenzene	108		-		70-130	-		
1,2-Dichlorobenzene	106		-		70-130	-		
1,2,4-Trichlorobenzene	117		-		70-130	-		
Hexachlorobutadiene	107		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01,04,06,08,10 Batch: WG1350863-3								
Vinyl chloride	102		-		70-130	-		25
1,1-Dichloroethene	103		-		70-130	-		25
cis-1,2-Dichloroethene	100		-		70-130	-		25
1,1,1-Trichloroethane	90		-		70-130	-		25
Carbon tetrachloride	88		-		70-130	-		25
Trichloroethene	92		-		70-130	-		25
Tetrachloroethene	104		-		70-130	-		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1350861-5 QC Sample: L2010778-01 Client ID: IACH-030920-1226						
Dichlorodifluoromethane	0.404	0.424	ppbV	5		25
Chloromethane	0.516	0.551	ppbV	7		25
Freon-114	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	194	196	ppbV	1		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	7.54	7.74	ppbV	3		25
Trichlorofluoromethane	ND	0.205	ppbV	NC		25
Isopropanol	109	108	ppbV	1		25
Tertiary butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	3.52	3.45	ppbV	2		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25
2-Butanone	ND	ND	ppbV	NC		25
Ethyl Acetate	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1350861-5 QC Sample: L2010778-01 Client ID: IACH-030920-1226						
Chloroform	ND	ND	ppbV	NC		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
Benzene	0.206	0.202	ppbV	2		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.347	0.350	ppbV	1		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1350861-5 QC Sample: L2010778-01 Client ID: IACH-030920-1226						
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01,04,06,08,10 QC Batch ID: WG1350863-5 QC Sample: L2010778-01 Client ID: IACH-030920-1226						
Vinyl chloride	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Carbon tetrachloride	0.080	0.067	ppbV	18		25
Trichloroethene	ND	ND	ppbV	NC		25
Tetrachloroethene	0.051	0.049	ppbV	4		25

Project Name: HUDSON HARBORS

Lab Number: L2010778

Project Number: 28590

Report Date: 03/16/20

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2010778-01	IACH-030920-1226	01730	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.1	0
L2010778-01	IACH-030920-1226	3189	2.7L Can	03/09/20	316223	L2009137-02	Pass	-28.9	-3.0	-	-	-	-
L2010778-02	SSCH-030920-1238	0152	Flow 3	03/09/20	316223		-	-	-	Pass	36.0	36.1	0
L2010778-02	SSCH-030920-1238	386	2.7L Can	03/09/20	316223	L2009137-02	Pass	-29.2	-3.1	-	-	-	-
L2010778-03	SSLOS-030920-1637	01733	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	35.8	1
L2010778-03	SSLOS-030920-1637	3209	2.7L Can	03/09/20	316223	L2009137-02	Pass	-29.0	-2.2	-	-	-	-
L2010778-04	IALOS-030920-1635	01027	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.4	1
L2010778-04	IALOS-030920-1635	3006	2.7L Can	03/09/20	316223	L2009137-02	Pass	-29.0	-2.0	-	-	-	-
L2010778-05	SVCHY-031020-1215	0799	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.1	0
L2010778-05	SVCHY-031020-1215	3029	2.7L Can	03/09/20	316223	L2009308-09	Pass	-29.2	-4.5	-	-	-	-
L2010778-06	IATH5-031020-1358	0575	Flow 4	03/09/20	316223		-	-	-	Pass	36.0	35.7	1
L2010778-06	IATH5-031020-1358	2185	2.7L Can	03/09/20	316223	L2009308-09	Pass	-29.3	-3.8	-	-	-	-
L2010778-07	SSTH5-031020-1408	0396	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.4	1
L2010778-07	SSTH5-031020-1408	344	2.7L Can	03/09/20	316223	L2009308-09	Pass	-29.3	-3.5	-	-	-	-
L2010778-08	AAPK-031020-1432	01499	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.1	0

Project Name: HUDSON HARBORS

Project Number: 28590

Lab Number: L2010778

Report Date: 03/16/20

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2010778-08	AAPK-031020-1432	204	2.7L Can	03/09/20	316223	L2009308-09	Pass	-28.3	-1.8	-	-	-	-
L2010778-09	SSLH-031020-1629	0617	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.1	0
L2010778-09	SSLH-031020-1629	520	2.7L Can	03/09/20	316223	L2009308-09	Pass	-29.4	-3.7	-	-	-	-
L2010778-10	IALH-031020-1630	0556	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	35.7	1
L2010778-10	IALH-031020-1630	519	2.7L Can	03/09/20	316223	L2009308-09	Pass	-29.1	-3.5	-	-	-	-
L2010778-11	UNUSED CAN #2336	0735	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	35.2	2
L2010778-11	UNUSED CAN #2336	2336	2.7L Can	03/09/20	316223	L2009137-01	Pass	-28.6	-2.8	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/04/20 16:51
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	88		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/04/20 16:51
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009137

Project Number: CANISTER QC BAT **Report Date:** 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009137

Project Number: CANISTER QC BAT **Report Date:** 03/16/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	89		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/04/20 17:29
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	94		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	87		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009137
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/04/20 17:29
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009137

Project Number: CANISTER QC BAT **Report Date:** 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009137

Project Number: CANISTER QC BAT **Report Date:** 03/16/20

Air Canister Certification Results

Lab ID: L2009137-02
Client ID: CAN 3227 SHELF 10
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	87		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/03/20 22:14
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009308

Project Number: CANISTER QC BAT **Report Date:** 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	90		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/03/20 22:14
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/16/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	99		60-140
bromochloromethane	104		60-140
chlorobenzene-d5	103		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2010778
Report Date: 03/16/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2010778-01A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L2010778-02A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L2010778-03A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L2010778-04A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L2010778-05A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L2010778-06A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L2010778-07A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L2010778-08A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L2010778-09A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L2010778-10A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L2010778-11A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		CLEAN-FEE()

*Values in parentheses indicate holding time in days

Project Name:	HUDSON HARBORS	**Lab Number:**	L2010778
Project Number:	28590	**Report Date:**	03/16/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

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

Report Format: Data Usability Report

Project Name:	HUDSON HARBORS	**Lab Number:**	L2010778
Project Number:	28590	**Report Date:**	03/16/20

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.

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'.

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. If a 'Total' result is requested, the results of its individual components will also be reported.

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.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

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. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

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

Report Format: Data Usability Report

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2010778
Report Date: 03/16/20

Data Qualifiers

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.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; 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.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 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 I, 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.**

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.

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.

AIR ANALYSIS

PAGE 1 OF 1

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 3/11/20

ALPHA Job #: L2010778

Client Information

Client: HUDSON HARBORS
Address: 200 TOWN CENTRE DR.
ROCHESTER, NY 14623
Phone: 585.321.4207
Fax:
Email: vdick@babyldrich.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: HUDSON HARBORS
Project Location: TARRYTOWN, NY
Project #: 28590
Project Manager: VINCE DICK
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☐ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH Subject Non-petroleum HCs ☐	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
10778-01	IACH-030920-1226	3/9/20	1128	1226	-30.29	-3.88	AA	SLF	2.7L	3189	01730	X					
-02	SSCH-030920-1238	3/9/20	1125	1238	-30.38	-3.73	SS*	SLF	2.7L	386	0152	X					SS = SUB-SLAB
-03	SSLOS-030920-1637	3/9/20	1634	1637	-29.72	-4.01	SS	SLF	2.7L	3209	01733	X					
-04	IALOS-030920-1635	3/9/20	1535	1635	-30.06	-3.84	AA	SLF	2.7L	3006	01027	X					
-05	SVCHY-031020-1215	3/10/20	1050	1215	-29.21	-4.32	SV	SLF	2.7L	3029	0799	X					
-06	IATHS-031020-1358	3/10/20	1258	1358	-29.30	-4.00	AA	SLF	2.7L	2185	0575	X					
-07	SSTHS-031020-1408	3/10/20	1256	1408	-29.31	-3.76	SS	SLF	2.7L	0344	03916	X					
-08	AAPK-031020-1432	3/10/20	~~1333~~ 1331	1432	-28.48	-2.47	AA	SLF	2.7L	204	01499	X					
-09	SSLH-031020-1629	3/10/20	1528	1629	-29.97	-.389	SS	SLF	2.7L	520	0617	X					
-10	IALH-031020-1630	3/10/20	1527	1630	-29.95	-3.85	AA	SLF	2.7L	519	0556	X					

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

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.

Relinquished By:	Date/Time	Received By:	Date/Time:
A Fisher (CHASE 3, ALDRICH)	3/10/20, 1520		
Vincent Dick	3/10/20 1810		3/10/20 19:19
	3/11 0300		3/11/20 0300

Form No: 101-02 Rev: (25-Sep-15)

ANALYTICAL REPORT

Lab Number:	L2011083
Client:	Haley & Aldrich 200 Town Centre Drive Suite 2 Rochester, NY 14623-4264
ATTN:	Vince Dick
Phone:	(585) 321-4207
Project Name:	HUDSON HARBORS
Project Number:	28590
Report Date:	03/17/20

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2011083-01	SSTH2-031120-0957	SOIL_VAPOR	TARRYTOWN, NY	03/11/20 09:57	03/11/20
L2011083-02	IATH2-031120-0957	AIR	TARRYTOWN, NY	03/11/20 09:57	03/11/20
L2011083-03	SVLC-031120-1142	SOIL_VAPOR	TARRYTOWN, NY	03/11/20 11:42	03/11/20
L2011083-04	SSLON-031120-1653	SOIL_VAPOR	TARRYTOWN, NY	03/11/20 16:53	03/11/20
L2011083-05	IALON-031120-1700	AIR	TARRYTOWN, NY	03/11/20 17:00	03/11/20

Project Name:	HUDSON HARBORS	**Lab Number:**	L2011083
Project Number:	28590	**Report Date:**	03/17/20

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: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on March 9, 2020. The canister certification results are provided as an addendum.

The WG1351598-3 LCS recovery for 1,2,4-trichlorobenzene (134%) is above the upper 130% acceptance limit. All samples associated with this LCS do not have reportable amounts of this analyte.

Sample Receipt

L2011083-01: The sample identified as "SSTH2-031120-0957" on the chain of custody was identified as "SSTH5-031120-0957" on the container label. At the client's request, the sample is reported as "SSTH2-031120-0957".

L2011083-02: The sample identified as "IATH2-031120-0957" on the chain of custody was identified as "IATH5-031120-0957" on the container label. At the client's request, the sample is reported as "IATH2-031120-0957".

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: Christopher J. Anderson

Title: Technical Director/Representative Date: 03/17/20

AIR

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-01
Client ID: SSTH2-031120-0957
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 09:57
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/17/20 01:48
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.421	0.200	--	2.08	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	82.3	5.00	--	155	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	152	1.00	--	361	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	5.05	0.500	--	12.4	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	2.26	0.500	--	6.85	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	2.78	0.500	--	8.20	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-01
Client ID: SSTH2-031120-0957
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 09:57
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.360	0.200	--	1.27	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.266	0.200	--	0.850	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	0.359	0.200	--	1.24	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	0.229	0.200	--	0.825	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.450	0.200	--	1.84	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	1.06	0.500	--	4.34	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.487	0.200	--	1.84	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-01
Client ID: SSTH2-031120-0957
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 09:57
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	100		60-140
Bromochloromethane	101		60-140
chlorobenzene-d5	98		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-02
Client ID: IATH2-031120-0957
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 09:57
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/16/20 18:36
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.403	0.200	--	1.99	0.989	--		1
Chloromethane	0.543	0.200	--	1.12	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	70.9	5.00	--	134	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	5.55	1.00	--	13.2	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	3.38	0.500	--	8.31	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	0.542	0.500	--	1.60	1.47	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-02
Client ID: IATH2-031120-0957
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 09:57
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.415	0.200	--	1.46	0.705	--		1
Benzene	0.213	0.200	--	0.680	0.639	--		1
Cyclohexane	0.409	0.200	--	1.41	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.645	0.200	--	2.43	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-02
Client ID: IATH2-031120-0957
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 09:57
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	97		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	96		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-02
Client ID: IATH2-031120-0957
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 09:57
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/16/20 18:36
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.067	0.020	--	0.421	0.126	--		1
Trichloroethene	0.075	0.020	--	0.403	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	98		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	96		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-03
Client ID: SVLC-031120-1142
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 11:42
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/17/20 02:28
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	42.8	0.200	--	212	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	0.414	0.200	--	0.916	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	5.59	1.00	--	13.3	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	1.81	0.500	--	4.45	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	0.725	0.200	--	2.26	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.983	0.500	--	2.90	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-03
Client ID: SVLC-031120-1142
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 11:42
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	0.403	0.200	--	1.97	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.336	0.200	--	1.18	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	3.29	0.200	--	10.5	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	0.244	0.200	--	0.840	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.428	0.200	--	1.75	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	1.40	0.200	--	5.28	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	0.287	0.200	--	1.25	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-03
Client ID: SVLC-031120-1142
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 11:42
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	0.717	0.400	--	3.11	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	0.346	0.200	--	1.50	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	98		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-04
Client ID: SSLON-031120-1653
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 16:53
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/17/20 03:08
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.417	0.200	--	2.06	0.989	--		1
Chloromethane	0.351	0.200	--	0.725	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	41.5	5.00	--	78.2	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	9.76	1.00	--	23.2	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	2.24	0.500	--	5.51	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	0.936	0.500	--	2.84	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	0.229	0.200	--	0.713	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-04
Client ID: SSLON-031120-1653
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 16:53
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.222	0.200	--	0.709	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	0.292	0.200	--	1.05	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.309	0.200	--	1.27	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.340	0.200	--	1.28	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-04
Client ID: SSLON-031120-1653
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 16:53
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	101		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	99		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-05
Client ID: IALON-031120-1700
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 17:00
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/16/20 19:56
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.416	0.200	--	2.06	0.989	--		1
Chloromethane	0.819	0.200	--	1.69	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	0.232	0.200	--	0.513	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	376	5.00	--	708	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	7.21	1.00	--	17.1	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	2.17	0.500	--	5.33	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	0.781	0.500	--	2.30	1.47	--		1
Ethyl Acetate	1.23	0.500	--	4.43	1.80	--		1
Chloroform	0.377	0.200	--	1.84	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-05
Client ID: IALON-031120-1700
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 17:00
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Benzene	0.243	0.200	--	0.776	0.639	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.573	0.200	--	2.16	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-05
Client ID: IALON-031120-1700
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 17:00
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	97		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	97		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

SAMPLE RESULTS

Lab ID: L2011083-05
Client ID: IALON-031120-1700
Sample Location: TARRYTOWN, NY

Date Collected: 03/11/20 17:00
Date Received: 03/11/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/16/20 19:56
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	0.075	0.020	--	0.472	0.126	--		1
Trichloroethene	0.047	0.020	--	0.253	0.107	--		1
Tetrachloroethene	0.067	0.020	--	0.454	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	98		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	97		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/16/20 16:45

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1351598-4								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/16/20 16:45

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1351598-4								
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/16/20 16:45

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-05 Batch: WG1351598-4								
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2011083
Report Date: 03/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 03/16/20 17:25

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 02,05 Batch: WG1351599-4								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1351598-3								
Dichlorodifluoromethane	98		-		70-130	-		
Chloromethane	95		-		70-130	-		
Freon-114	99		-		70-130	-		
Vinyl chloride	97		-		70-130	-		
1,3-Butadiene	97		-		70-130	-		
Bromomethane	97		-		70-130	-		
Chloroethane	90		-		70-130	-		
Ethanol	90		-		40-160	-		
Vinyl bromide	88		-		70-130	-		
Acetone	78		-		40-160	-		
Trichlorofluoromethane	88		-		70-130	-		
Isopropanol	76		-		40-160	-		
1,1-Dichloroethene	99		-		70-130	-		
Tertiary butyl Alcohol	83		-		70-130	-		
Methylene chloride	99		-		70-130	-		
3-Chloropropene	98		-		70-130	-		
Carbon disulfide	91		-		70-130	-		
Freon-113	100		-		70-130	-		
trans-1,2-Dichloroethene	90		-		70-130	-		
1,1-Dichloroethane	93		-		70-130	-		
Methyl tert butyl ether	88		-		70-130	-		
2-Butanone	97		-		70-130	-		
cis-1,2-Dichloroethene	98		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1351598-3								
Ethyl Acetate	99		-		70-130	-		
Chloroform	98		-		70-130	-		
Tetrahydrofuran	96		-		70-130	-		
1,2-Dichloroethane	90		-		70-130	-		
n-Hexane	96		-		70-130	-		
1,1,1-Trichloroethane	93		-		70-130	-		
Benzene	96		-		70-130	-		
Carbon tetrachloride	99		-		70-130	-		
Cyclohexane	96		-		70-130	-		
1,2-Dichloropropane	97		-		70-130	-		
Bromodichloromethane	99		-		70-130	-		
1,4-Dioxane	96		-		70-130	-		
Trichloroethene	99		-		70-130	-		
2,2,4-Trimethylpentane	96		-		70-130	-		
Heptane	98		-		70-130	-		
cis-1,3-Dichloropropene	105		-		70-130	-		
4-Methyl-2-pentanone	100		-		70-130	-		
trans-1,3-Dichloropropene	90		-		70-130	-		
1,1,2-Trichloroethane	102		-		70-130	-		
Toluene	99		-		70-130	-		
2-Hexanone	108		-		70-130	-		
Dibromochloromethane	107		-		70-130	-		
1,2-Dibromoethane	104		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON HARBORS

Project Number: 28590

Lab Number: L2011083

Report Date: 03/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 Batch: WG1351598-3								
Tetrachloroethene	100		-		70-130	-		
Chlorobenzene	103		-		70-130	-		
Ethylbenzene	102		-		70-130	-		
p/m-Xylene	101		-		70-130	-		
Bromoform	109		-		70-130	-		
Styrene	104		-		70-130	-		
1,1,2,2-Tetrachloroethane	109		-		70-130	-		
o-Xylene	103		-		70-130	-		
4-Ethyltoluene	104		-		70-130	-		
1,3,5-Trimethylbenzene	107		-		70-130	-		
1,2,4-Trimethylbenzene	110		-		70-130	-		
Benzyl chloride	110		-		70-130	-		
1,3-Dichlorobenzene	110		-		70-130	-		
1,4-Dichlorobenzene	112		-		70-130	-		
1,2-Dichlorobenzene	113		-		70-130	-		
1,2,4-Trichlorobenzene	**134**	Q	-		70-130	-		
Hexachlorobutadiene	123		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HUDSON HARBORS

Project Number: 28590

Lab Number: L2011083

Report Date: 03/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 02,05 Batch: WG1351599-3								
Vinyl chloride	91		-		70-130	-		25
1,1-Dichloroethene	94		-		70-130	-		25
cis-1,2-Dichloroethene	90		-		70-130	-		25
1,1,1-Trichloroethane	88		-		70-130	-		25
Carbon tetrachloride	97		-		70-130	-		25
Trichloroethene	96		-		70-130	-		25
Tetrachloroethene	97		-		70-130	-		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1351598-5 QC Sample: L2011083-02 Client ID: IATH2-031120-0957						
Dichlorodifluoromethane	0.403	0.414	ppbV	3		25
Chloromethane	0.543	0.533	ppbV	2		25
Freon-114	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	70.9	70.3	ppbV	1		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	5.55	6.59	ppbV	17		25
Trichlorofluoromethane	ND	ND	ppbV	NC		25
Isopropanol	3.38	3.42	ppbV	1		25
Tertiary butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25
2-Butanone	ND	ND	ppbV	NC		25
Ethyl Acetate	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1351598-5 QC Sample: L2011083-02 Client ID: IATH2-031120-0957						
Chloroform	ND	ND	ppbV	NC		25
Tetrahydrofuran	0.542	0.596	ppbV	9		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	0.415	0.411	ppbV	1		25
Benzene	0.213	0.226	ppbV	6		25
Cyclohexane	0.409	0.422	ppbV	3		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	0.645	0.652	ppbV	1		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1351598-5 QC Sample: L2011083-02 Client ID: IATH2-031120-0957						
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 02,05 QC Batch ID: WG1351599-5 QC Sample: L2011083-02 Client ID: IATH2-031120-0957						
Vinyl chloride	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Carbon tetrachloride	0.067	0.068	ppbV	1		25
Trichloroethene	0.075	0.075	ppbV	0		25
Tetrachloroethene	ND	ND	ppbV	NC		25

Project Name: HUDSON HARBORS

Lab Number: L2011083

Project Number: 28590

Report Date: 03/17/20

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2011083-01	SSTH2-031120-0957	0346	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.2	1
L2011083-01	SSTH2-031120-0957	2006	2.7L Can	03/09/20	316223	L2009308-02	Pass	-29.2	-2.9	-	-	-	-
L2011083-02	IATH2-031120-0957	0714	Flow 3	03/09/20	316223		-	-	-	Pass	36.0	36.4	1
L2011083-02	IATH2-031120-0957	199	2.7L Can	03/09/20	316223	L2009308-09	Pass	-28.9	-3.1	-	-	-	-
L2011083-03	SVLC-031120-1142	01790	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	35.9	0
L2011083-03	SVLC-031120-1142	2278	2.7L Can	03/09/20	316223	L2009308-02	Pass	-29.2	-2.6	-	-	-	-
L2011083-04	SSLON-031120-1653	01496	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.2	1
L2011083-04	SSLON-031120-1653	221	2.7L Can	03/09/20	316223	L2009308-09	Pass	-29.1	-2.1	-	-	-	-
L2011083-05	IALON-031120-1700	01439	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	36.1	0
L2011083-05	IALON-031120-1700	2229	2.7L Can	03/09/20	316223	L2009308-09	Pass	-28.7	-3.2	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/03/20 17:48
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	88		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/03/20 17:48
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009308

Project Number: CANISTER QC BAT **Report Date:** 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009308

Project Number: CANISTER QC BAT **Report Date:** 03/17/20

Air Canister Certification Results

Lab ID: L2009308-02
Client ID: CAN 404 SHELF 1
Sample Location:

Date Collected: 03/02/20 16:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	100		60-140
bromochloromethane	106		60-140
chlorobenzene-d5	100		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/03/20 22:14
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	90		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009308
Report Date: 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/03/20 22:14
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009308

Project Number: CANISTER QC BAT **Report Date:** 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009308

Project Number: CANISTER QC BAT **Report Date:** 03/17/20

Air Canister Certification Results

Lab ID: L2009308-09
Client ID: CAN 212 SHELF 2
Sample Location:

Date Collected: 03/03/20 09:00
Date Received: 03/03/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	99		60-140
bromochloromethane	104		60-140
chlorobenzene-d5	103		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2011083
Report Date: 03/17/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2011083-01A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L2011083-02A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L2011083-03A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L2011083-04A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L2011083-05A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)

*Values in parentheses indicate holding time in days

Project Name:	HUDSON HARBORS	**Lab Number:**	L2011083
Project Number:	28590	**Report Date:**	03/17/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

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

Report Format: Data Usability Report

Project Name:	HUDSON HARBORS	**Lab Number:**	L2011083
Project Number:	28590	**Report Date:**	03/17/20

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.

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'.

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. If a 'Total' result is requested, the results of its individual components will also be reported.

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.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

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. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

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

Report Format: Data Usability Report

Project Name:	HUDSON HARBORS	**Lab Number:**	L2011083
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Data Qualifiers

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.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; 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.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 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 I, 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.**

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.

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.

AIR ANALYSIS

PAGE 1 OF 1

ALPHA ANALYTICAL — CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 3/12/20

ALPHA Job #: L2011083

Client Information

Client: HUDSON HARBORS
Address: 200 TOWN CENTRE DR. ROCHESTER, NY 14623
Phone: 585.321.4207
Fax:
Email: vdick@sloanaldrich.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: HUDSON HARBORS
Project Location: TARRYTOWN, NY
Project #: 28590
Project Manager: VINCE DICK
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☐ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH Subset Non-petroleum HCs ☐	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
11083-01	SSTH2-031120-0957	3/11/20	0854	0957	-30.09	-3.94	SS	SLF	2.7L	2006	0346	X					SS=SOB-SLAB
-02	IATH2-031120-0957	3/11/20	0855	0957	-30.19	-4.47	AA	SLF	2.7L	199	0714	X					
-03	SVLC-031120-1142	3/11/20	1042	1142	-30.31	-3.28	AA	SLF	2.7L	2278	01790	X					
-04	SSLON-031120-1653	3/11/20	1550	1653	-29.87	-3.76	SS	SLF	2.7L	221	01496	X					
-05	IALON-031120-1700	3/11/20	1544	1700	-30.11	-3.80	AA	SLF	2.7L	2229	01439	X					

SLF

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

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.

Relinquished By:	Date/Time	Received By:	Date/Time:
A Fisher (CHALEY'S ALDRICH)	3/11/20, 1716	[illegible] (AAL)	3/11/2020 17:30
[illegible] (AAL)	3/12/2020 18:20	[illegible]	3/13/20 0400

Form No: 101-02-EC (25-Sep-15)

ANALYTICAL REPORT

Lab Number:	L2012452
Client:	Haley & Aldrich 200 Town Centre Drive Suite 2 Rochester, NY 14623-4264
ATTN:	Vince Dick
Phone:	(585) 321-4207
Project Name:	HUDSON HARBORS
Project Number:	28590
Report Date:	03/25/20

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2012452-01	LHN-031920-1005	SOIL_VAPOR	TARRYTOWN, NY	03/19/20 10:05	03/19/20
L2012452-02	LHW-031920-1043	SOIL_VAPOR	TARRYTOWN, NY	03/19/20 10:43	03/19/20
L2012452-03	LHS-031920-1209	SOIL_VAPOR	TARRYTOWN, NY	03/19/20 12:09	03/19/20
L2012452-04	LHE-031920-1249	SOIL_VAPOR	TARRYTOWN, NY	03/19/20 12:49	03/19/20
L2012452-05	UNUSED CAN #142	SOIL_VAPOR	TARRYTOWN, NY		03/19/20
L2012452-06	UNUSED CAN #2592	SOIL_VAPOR	TARRYTOWN, NY		03/19/20
L2012452-07	UNUSED CAN #3100	SOIL_VAPOR	TARRYTOWN, NY		03/19/20
L2012452-08	UNUSED CAN #113	SOIL_VAPOR	TARRYTOWN, NY		03/19/20
L2012452-09	UNUSED CAN #3201	SOIL_VAPOR	TARRYTOWN, NY		03/19/20
L2012452-10	UNUSED CAN #2856	SOIL_VAPOR	TARRYTOWN, NY		03/19/20
L2012452-11	UNUSED CAN #2766	SOIL_VAPOR	TARRYTOWN, NY		03/19/20
L2012452-12	UNUSED CAN #2383	SOIL_VAPOR	TARRYTOWN, NY		03/19/20

Project Name:	HUDSON HARBORS	**Lab Number:**	L2012452
Project Number:	28590	**Report Date:**	03/25/20

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: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on March 9, 2020. The canister certification results are provided as an addendum.

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: Christopher J. Anderson

Title: Technical Director/Representative Date: 03/25/20

AIR

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-01
Client ID: LHN-031920-1005
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 10:05
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/24/20 23:03
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.406	0.200	--	2.01	0.989	--		1
Chloromethane	0.356	0.200	--	0.735	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	4.17	0.200	--	9.23	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	9.23	1.00	--	21.9	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	0.592	0.500	--	1.46	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	0.697	0.200	--	2.17	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	2.24	0.500	--	6.61	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-01
Client ID: LHN-031920-1005
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 10:05
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	0.346	0.200	--	1.69	0.977	--		1
Tetrahydrofuran	0.602	0.500	--	1.78	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.401	0.200	--	1.41	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	2.13	0.200	--	6.80	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.288	0.200	--	1.18	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	1.09	0.200	--	4.11	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-01
Client ID: LHN-031920-1005
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 10:05
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	112		60-140
Bromochloromethane	105		60-140
chlorobenzene-d5	107		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-02
Client ID: LHW-031920-1043
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 10:43
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/24/20 23:42
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.366	0.200	--	1.81	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	3.66	0.200	--	8.10	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	5.15	1.00	--	12.2	2.38	--		1
Trichlorofluoromethane	0.218	0.200	--	1.23	1.12	--		1
Isopropanol	0.514	0.500	--	1.26	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	17.5	0.200	--	54.5	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.49	0.500	--	4.39	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-02
Client ID: LHW-031920-1043
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 10:43
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	1.73	0.200	--	6.10	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	2.36	0.200	--	7.54	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	4.57	0.200	--	15.7	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	1.02	0.200	--	4.18	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	2.64	0.200	--	9.95	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-02
Client ID: LHW-031920-1043
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 10:43
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	0.432	0.400	--	1.88	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	105		60-140
Bromochloromethane	101		60-140
chlorobenzene-d5	101		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-03
Client ID: LHS-031920-1209
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 12:09
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/25/20 01:01
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.380	0.200	--	1.88	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	1.24	0.200	--	2.74	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	5.60	1.00	--	13.3	2.38	--		1
Trichlorofluoromethane	0.638	0.200	--	3.59	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	1.18	0.200	--	3.67	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.22	0.500	--	3.60	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-03
Client ID: LHS-031920-1209
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 12:09
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	0.473	0.200	--	2.31	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	0.912	0.200	--	4.98	1.09	--		1
Benzene	0.867	0.200	--	2.77	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.350	0.200	--	1.43	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.604	0.200	--	2.28	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	0.381	0.200	--	2.58	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-03
Client ID: LHS-031920-1209
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 12:09
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	113		60-140
Bromochloromethane	112		60-140
chlorobenzene-d5	113		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-04
Client ID: LHE-031920-1249
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 12:49
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/25/20 01:40
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.365	0.200	--	1.80	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	0.322	0.200	--	0.712	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	4.60	1.00	--	10.9	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	0.507	0.500	--	1.25	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	0.558	0.500	--	1.69	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	0.374	0.200	--	1.16	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.15	0.500	--	3.39	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-04
Client ID: LHE-031920-1249
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 12:49
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.354	0.200	--	1.13	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	0.405	0.200	--	1.66	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	0.511	0.200	--	1.93	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

SAMPLE RESULTS

Lab ID: L2012452-04
Client ID: LHE-031920-1249
Sample Location: TARRYTOWN, NY

Date Collected: 03/19/20 12:49
Date Received: 03/19/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	0.435	0.400	--	1.89	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	0.201	0.200	--	0.873	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	104		60-140
Bromochloromethane	103		60-140
chlorobenzene-d5	104		60-140

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/24/20 15:24

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG1354657-4								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/24/20 15:24

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG1354657-4								
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1

Project Name: HUDSON HARBORS
Project Number: 28590
Lab Number: L2012452
Report Date: 03/25/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 03/24/20 15:24

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG1354657-4								
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG1354657-3								
Dichlorodifluoromethane	82		-		70-130	-		
Chloromethane	90		-		70-130	-		
Freon-114	99		-		70-130	-		
Vinyl chloride	102		-		70-130	-		
1,3-Butadiene	98		-		70-130	-		
Bromomethane	94		-		70-130	-		
Chloroethane	105		-		70-130	-		
Ethanol	72		-		40-160	-		
Vinyl bromide	91		-		70-130	-		
Acetone	86		-		40-160	-		
Trichlorofluoromethane	96		-		70-130	-		
Isopropanol	88		-		40-160	-		
1,1-Dichloroethene	105		-		70-130	-		
Tertiary butyl Alcohol	94		-		70-130	-		
Methylene chloride	96		-		70-130	-		
3-Chloropropene	125		-		70-130	-		
Carbon disulfide	100		-		70-130	-		
Freon-113	103		-		70-130	-		
trans-1,2-Dichloroethene	104		-		70-130	-		
1,1-Dichloroethane	107		-		70-130	-		
Methyl tert butyl ether	94		-		70-130	-		
2-Butanone	106		-		70-130	-		
cis-1,2-Dichloroethene	109		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG1354657-3								
Ethyl Acetate	120		-		70-130	-		
Chloroform	100		-		70-130	-		
Tetrahydrofuran	108		-		70-130	-		
1,2-Dichloroethane	93		-		70-130	-		
n-Hexane	104		-		70-130	-		
1,1,1-Trichloroethane	84		-		70-130	-		
Benzene	100		-		70-130	-		
Carbon tetrachloride	92		-		70-130	-		
Cyclohexane	106		-		70-130	-		
1,2-Dichloropropane	108		-		70-130	-		
Bromodichloromethane	96		-		70-130	-		
1,4-Dioxane	107		-		70-130	-		
Trichloroethene	99		-		70-130	-		
2,2,4-Trimethylpentane	107		-		70-130	-		
Heptane	103		-		70-130	-		
cis-1,3-Dichloropropene	103		-		70-130	-		
4-Methyl-2-pentanone	107		-		70-130	-		
trans-1,3-Dichloropropene	85		-		70-130	-		
1,1,2-Trichloroethane	102		-		70-130	-		
Toluene	106		-		70-130	-		
2-Hexanone	115		-		70-130	-		
Dibromochloromethane	106		-		70-130	-		
1,2-Dibromoethane	107		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG1354657-3								
Tetrachloroethene	112		-		70-130	-		
Chlorobenzene	114		-		70-130	-		
Ethylbenzene	106		-		70-130	-		
p/m-Xylene	106		-		70-130	-		
Bromoform	109		-		70-130	-		
Styrene	106		-		70-130	-		
1,1,2,2-Tetrachloroethane	118		-		70-130	-		
o-Xylene	105		-		70-130	-		
4-Ethyltoluene	105		-		70-130	-		
1,3,5-Trimethylbenzene	105		-		70-130	-		
1,2,4-Trimethylbenzene	108		-		70-130	-		
Benzyl chloride	108		-		70-130	-		
1,3-Dichlorobenzene	111		-		70-130	-		
1,4-Dichlorobenzene	113		-		70-130	-		
1,2-Dichlorobenzene	113		-		70-130	-		
1,2,4-Trichlorobenzene	127		-		70-130	-		
Hexachlorobutadiene	114		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1354657-5 QC Sample: L2012452-02 Client ID: LHW-031920-1043						
Dichlorodifluoromethane	0.366	0.355	ppbV	3		25
Chloromethane	ND	ND	ppbV	NC		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	3.66	3.85	ppbV	5		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	ND	ND	ppbV	NC		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	5.15	6.61	ppbV	25		25
Trichlorofluoromethane	0.218	ND	ppbV	NC		25
Isopropanol	0.514	0.518	ppbV	1		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Tertiary butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	17.5	17.5	ppbV	0		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1354657-5 QC Sample: L2012452-02 Client ID: LHW-031920-1043						
2-Butanone	1.49	1.45	ppbV	3		25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
Ethyl Acetate	ND	ND	ppbV	NC		25
Chloroform	ND	ND	ppbV	NC		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	1.73	1.71	ppbV	1		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Benzene	2.36	2.33	ppbV	1		25
Carbon tetrachloride	ND	ND	ppbV	NC		25
Cyclohexane	4.57	4.56	ppbV	0		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	1.02	1.02	ppbV	0		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1354657-5 QC Sample: L2012452-02 Client ID: LHW-031920-1043						
Toluene	2.64	2.64	ppbV	0		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25
p/m-Xylene	0.432	0.417	ppbV	4		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
Benzyl chloride	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Project Name: HUDSON HARBORS

Project Number: 28590

Lab Number: L2012452

Report Date: 03/25/20

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2012452-01	LHN-031920-1005	01703	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	42.6	17
L2012452-01	LHN-031920-1005	2039	2.7L Can	03/09/20	316223	L2009137-01	Pass	-28.9	-2.3	-	-	-	-
L2012452-02	LHW-031920-1043	0303	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	39.3	9
L2012452-02	LHW-031920-1043	2997	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.3	-2.2	-	-	-	-
L2012452-03	LHS-031920-1209	0929	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	43.0	18
L2012452-03	LHS-031920-1209	2788	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.0	-2.6	-	-	-	-
L2012452-04	LHE-031920-1249	01396	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	33.6	7
L2012452-04	LHE-031920-1249	2230	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.1	-3.4	-	-	-	-
L2012452-05	UNUSED CAN #142	0069	Flow 1	03/09/20	316223		-	-	-	Pass	36.0	36.4	1
L2012452-05	UNUSED CAN #142	142	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.1	-29.8	-	-	-	-
L2012452-06	UNUSED CAN #2592	01078	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	39.9	10
L2012452-06	UNUSED CAN #2592	2592	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.2	-29.8	-	-	-	-
L2012452-07	UNUSED CAN #3100	01800	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	41.5	14
L2012452-07	UNUSED CAN #3100	3100	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.1	-29.8	-	-	-	-
L2012452-08	UNUSED CAN #113	01520	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	37.5	4

Project Name: HUDSON HARBORS

Lab Number: L2012452

Project Number: 28590

Report Date: 03/25/20

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2012452-08	UNUSED CAN #113	113	2.7L Can	03/09/20	316223	L2009137-01	Pass	-28.4	-29.8	-	-	-	-
L2012452-09	UNUSED CAN #3201	01436	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	39.8	10
L2012452-09	UNUSED CAN #3201	3201	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.1	-29.8	-	-	-	-
L2012452-10	UNUSED CAN #2856	0780	Flow 4	03/09/20	316223		-	-	-	Pass	36.0	40.7	12
L2012452-10	UNUSED CAN #2856	2856	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.1	-28.4	-	-	-	-
L2012452-11	UNUSED CAN #2766	01532	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	39.9	10
L2012452-11	UNUSED CAN #2766	2766	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.3	-29.8	-	-	-	-
L2012452-12	UNUSED CAN #2383	0938	Flow 2	03/09/20	316223		-	-	-	Pass	36.0	41.3	14
L2012452-12	UNUSED CAN #2383	2383	2.7L Can	03/09/20	316223	L2009137-01	Pass	-29.1	-29.1	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2009137
Report Date: 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 03/04/20 16:51
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	88		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 03/04/20 16:51
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L2009137
Report Date: 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L2009137

Project Number: CANISTER QC BAT **Report Date:** 03/25/20

Air Canister Certification Results

Lab ID: L2009137-01
Client ID: CAN 2247 SHELF 4
Sample Location:

Date Collected: 03/03/20 16:00
Date Received: 03/04/20
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	89		60-140

Project Name: HUDSON HARBORS
Project Number: 28590

Lab Number: L2012452
Report Date: 03/25/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2012452-01A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L2012452-02A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L2012452-03A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L2012452-04A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L2012452-05A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()
L2012452-06A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()
L2012452-07A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()
L2012452-08A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()
L2012452-09A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()
L2012452-10A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()
L2012452-11A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()
L2012452-12A	Canister - 2.7 Liter	NA	NA			Y	Absent		CLEAN-FEE()

*Values in parentheses indicate holding time in days

Project Name:	HUDSON HARBORS	**Lab Number:**	L2012452
Project Number:	28590	**Report Date:**	03/25/20

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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

Report Format: Data Usability Report

Project Name:	HUDSON HARBORS	**Lab Number:**	L2012452
Project Number:	28590	**Report Date:**	03/25/20

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.

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'.

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. If a 'Total' result is requested, the results of its individual components will also be reported.

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.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

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. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

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

Report Format: Data Usability Report

Project Name:	HUDSON HARBORS	**Lab Number:**	L2012452
Project Number:	28590	**Report Date:**	03/25/20

Data Qualifiers

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.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; 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.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 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 I, 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.**

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.

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.

Alpha Analytical
320 Forbes Blvd
Mansfield, MA 02048-1806
Tel: 508-822-9300
Fax: 508-822-3288

AIR Chain-of-Custody - ~~NJ~~ NY site NY

Date Rec'd in Lab: 3/20/20 | ALPHA Job#: L2012452

Client Contact Information

Company: HUDSON HARBORS
Address: 200 TOWN CENTRE DR.
City/State/Zip: ROCHESTER, NY 14623
Phone: 585 321 4207
FAX:
Email: vdick@chasyaldrich.com
Site Contact: CARL MANHEIT
Site Contact Phone:

Project Information

Project Name: HUDSON HARBORS
Project No: 28590
Site/Location: TARRYTOWN, NY
Project Manager: VINCE DICK

Analysis Turn-Around Time

~~Standard (Specify)~~
Rush (Specify)

NJ DEP Information

Bureau: Division: Contract No:

Report Information - Data Deliverables:

☐ FAX:
☐ ADEx ☐ Criteria Checker:
☐ EMail (standard pdf report)

Billing Information

☐ Same as Client Info PO #:

____ of ____ COCs

ALPHA LAB ID (Lab Use Only)	Sample Identification	Sample Date(s)	Time Start (24 hr clock)	Time Stop (24 hr clock)	Canister Pressure in Field (Hg) (Start)	Canister Pressure in Field (Hg) (Stop)	Interior Temp. (F) (Start)	Interior Temp. (F) (Stop)	Outgoing Canister Pressure (Hg) (Note1)	Incoming Canister Pressure (Hg) (Note 2)	Flow Reg. ID	Can ID	Can Size (L)	Flow Controller Readout (ml/min) (Note1)	Batch Cert ID (Note 1)	Analysis: TO-15	Analysis: EPA 3C	Matrix: Indoor/Ambient Air	Matrix: Soil Gas
12452-01	LHN-031920-1005	3/19/20	0909	1005	-30.62	-3.93					0703	2039	2.7L			X			X
-02	LHW-031920-1043	3/19/20	0945	1043	-30.14	-3.72					0303	2997	2.7L			X			X
-03	LHS-031920-1209	3/19/20	1115	1209	-30.52	3.84					0929	2788	2.7L			X			X
-04	LHE-031920-1249	3/19/20	1147	1249	-30.60	-4.65					01396	2230	2.7L			X			X
									SLF										

Custody Seals:
Outgoing Seal No: (refer to crate seal)
Incoming Seal No: (if applicable)

Temperature (Fahrenheit)

	Ambient	Maximum	Minimum	
Start				
Stop				

Pressure (inches of Hg)

	Ambient	Maximum	Minimum	
Start				
Stop				

Individual Preparing Canister/Containers and Laboratory Canister Certification
Name:
Signature:

Footnotes:
(1) Refer to equipment tags for these readings.
(2) Readings provided in data deliverable package.

Special Instructions/QC Requirements & Comments:

Canisters Shipped by:	Date/Time:	Canisters Received by:	Date/Time:
Samples Relinquished by: Esther (FAXED)	Date/Time: 3/19/20 1317	Received by:	Date/Time:
Relinquished by:	Date/Time: 3/19/20 1445	Received by:	Date/Time: 3-19-20 1317
	3/20 0730		3/20/20 0730

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until all ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

Note: Combined External Chain of Custody and NJDEP Field Test Data Sheet

APPENDIX C

Groundwater Monitoring Report

HALEY ALDRICH

Haley & Aldrich of New York
200 Town Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

23 December 2020
File No. 134976-002

Ferry Landings, LLC
485 West Putnam Avenue
Greenwich, CT 06830

Attention: Carl Monheit
Senior Director of Development and Chief Engineer

Subject: Tarrytown Former MGP Site
Post-Remediation Groundwater Monitoring - 2020 Data
Tarrytown, New York
Brownfield Site #C3600069

Ladies and Gentlemen:

We are pleased to submit this report which documents groundwater monitoring at the Tarrytown Former Manufactured Gas Plant (MGP) Site for 2020. Remediation ended and construction of the Hudson Harbor development began in 2005; site development continues to date. See Figure 1 for the site location.

Purpose

This report summarizes groundwater monitoring activities, which are requirements of the Site Management Plan (SMP), dated 10 August 2010 and approved by the New York State Department of Environmental Conservation (NYSDEC) on 26 August 2010.

Groundwater Monitoring Network

Five monitoring wells are used for post-remediation monitoring, two up-gradient and three down-gradient. The well locations are shown on Figure 2, as follows:

- Up-gradient Wells:
  - MW-29: near the eastern site property line, northern location, and
  - MW-12: near the eastern site property line, southern location.

- Down-gradient Wells:
  - MW-20: near the western site property line (near Hudson River), northern location,
  - MW-21: near the western site property line (near Hudson River), central location, and
  - MW-24: near the western site property line (near Hudson River), southern location.

In addition, observation and recovery wells associated with the northern DNAPL recovery system and the western DNAPL recovery system are also located on site (see Figure 2 for locations of the recovery systems). These wells are specific to the DNAPL systems (performance and operation), and they are not associated with post remediation site groundwater monitoring.

Groundwater Monitoring

Groundwater monitoring has occurred at the site during and since completion of remediation in 2005. During 2020, groundwater monitoring was performed in accordance with the Groundwater Monitoring Plan included in the SMP. Samples were collected using Operating Procedure OP3013 - Monitored Natural Attenuation Groundwater Sample Collection Procedure, 2003, which is appended to the NYSDEC-approved Groundwater Monitoring Plan.

Samples collected were analyzed for required parameters listed on Table 1, attached (which was derived from Table 2 of the NYSDEC-approved Groundwater Monitoring Plan), including:

- Volatile organic compounds (VOCs) benzene, toluene, ethylbenzene, and xylenes (BTEX);
- Semi-volatile organic compounds (SVOCs) classified as polycyclic aromatic hydrocarbons (PAHs); and,
- Attenuation Indicators iron, manganese, nitrate, nitrite, sulfate, Total Organic Carbon (TOC), Dissolved Organic Carbon (DOC), sulfide, Biochemical Oxygen Demand (BOD), and Chemical Oxygen Demand (COD).

Chemical analyses were performed by Phoenix Environmental Laboratories, Inc. (Phoenix), a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory.

Results for the 2006 through 2020 sampling rounds are on Table 2. Results are compared to the Class GA Groundwater values listed in Division of Water Technical and Operational Guidance Series 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, NYSDEC, June 1998 (TOGS 1.1.1). A summary of analytes detected during the three most current sampling rounds at concentrations greater than the TOGS 1.1.1 Class GA Groundwater Standards and Guidance Values (the comparison criteria) are on Table 3. Appendix A contains the laboratory reports for the groundwater sampling analyses. Results on Table 2 that indicate detections above laboratory reporting limits are shown in bold font; results that are higher than applicable standards or guidance values are shaded gray.

As has been the case in past years of reporting, for five PAH compounds (Benz(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, and Indeno(1,2,3-cd)pyrene), the laboratory method detection limit of 0.02 ug/L is greater than the TOGS 1.1.1 Class GA Groundwater comparison criterion (0.002 ug/L). Phoenix reported that concentrations of these PAHs less than the reporting limit of 0.02 ug/L cannot be measured using EPA standard methods.

2020 Results Summary

The 2020 groundwater sampling round was performed on 29 October 2020 using low flow procedures. Well purging, sampling, sample containment, chain of custody and sample shipping procedures, and laboratory analyses were completed as required by the SMP. Results, compared to the TOGS 1.1.1 Class GA Groundwater standards and guidance values are provided in Table 2 and Table 3, and are summarized as follows:

MW-29 (UP-GRADIENT)

Iron and manganese concentrations were greater than the comparison criteria; however, these concentrations were consistent with previous results. No VOC or PAH compounds were detected at concentrations greater than the comparison criteria.

MW-12 (UP-GRADIENT)

Iron concentration was greater than the comparison criteria; however, the concentration was consistent with previous results. Manganese was detected at a concentration less than the comparison criterion. No VOC compounds were detected. Seven PAH compounds were detected at concentrations greater than the comparison criteria; these PAH concentrations were consistent with previous results.

MW-20 (DOWN-GRADIENT)

No VOC compounds were detected. Iron and manganese concentrations and six PAH compounds were detected greater than the comparison criteria; however, the concentration was consistent with previous results. Additionally, note that in comparison to upgradient well MW-12, these PAH compounds were also detected and at similar or lower concentrations than the upgradient well. One PAH compound (Acenaphthene) was detected but at a concentration less than the comparison criteria.

MW-21 (DOWN-GRADIENT)

Iron and manganese were detected at concentrations greater than the comparison criterion; however, the concentrations are consistent with previous results. No VOC compounds were detected at concentrations greater than the comparison criteria. One PAH compound (Benz(a)anthracene) concentration was detected at a concentration greater than the comparison criteria; however, the PAH concentration was consistent with previous results. Three other PAH compounds were detected at a concentration less than the comparison criteria.

MW-24 (DOWN-GRADIENT)

Iron and manganese were detected at a concentration slightly greater than the comparison criteria; their concentrations are consistent with previous results. No VOCs compounds were detected at concentrations greater than the comparison criteria, which is consistent with previous results. Six PAH compounds were detected at concentrations greater than the comparison criteria, however, note that in comparison to upgradient well MW-12, these PAH compounds were also detected. Compared with

the upgradient concentrations and historic results for this location, the detections of the PAH compounds and the levels measured for Iron and Manganese appear to be greater that historically measured. Because both metals and PAHs are elevated over past results, this is believed to be attributed to a higher turbidity in the sample than historically observed.

Comparison of Up-Gradient to Down-Gradient Wells

In general, concentrations of parameters in the down-gradient wells were less than or equal to the up-gradient concentrations, specifically:

- BTEX compound concentrations were not detected in up-gradient nor down-gradient wells.
- Concentrations of detected PAH compounds in up-gradient wells were equivalent to down-gradient wells for all locations except MW-24 which is believed to have had greater turbidity than past sampling events.
- Iron and Manganese concentrations in up-gradient wells were greater than or equivalent to down gradient wells.

Recommendations

Based on the 2020 sampling results and analyses completed over several years of groundwater monitoring which consistently indicate the site remedy is effective, we recommend sampling to continue on a triennial basis (once every three years).

Summary

This groundwater monitoring report summarizes the data for 2020. Current and past concentrations of metals, VOCs, and PAHs have trended in a limited range, indicating a general consistent quality of up-gradient groundwater coming onto the site. The pattern of overall groundwater quality continues, such that detected up-gradient concentrations were generally greater for selected compounds than down-gradient concentrations.

The objective of groundwater monitoring is to determine if groundwater quality meets NYS groundwater standards and guidance values, assess achievement of the remedial performance criteria and evaluate site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment. Based on the results, while there are some exceedances of groundwater standards and guidance values, the consistency of results over the period of monitoring and consistency of down-gradient versus up-gradient water quality indicates the remedy continues to be effective.

The SMP and the Environmental Easement specify that the use of untreated groundwater from the Site for any purpose is not permitted. There continue to be no groundwater uses at the Site; given the

monitoring results to date, and without the potential exposure pathway of groundwater use, the remedy at the site remains protective of human health with respect to groundwater quality.

Closing and Request for Monitoring Frequency Change

In accordance with the 9 September 2015 NYS DEC approval of the 2014 groundwater monitoring round and our 28 August 2015 request for biennial groundwater sampling, groundwater monitoring will continue biennially, until the NYSDEC approves an alternative schedule. As recommended within this report we request that frequency of groundwater monitoring be adjusted from biennial to triennial, with the next triennial groundwater monitoring round scheduled for 2023.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Jonathan D. Babcock, P.E.
Senior Technical Specialist

Vincent B. Dick
Principal

Attachments:

Table 1 – Sampling Parameters and Recommended Analytical Methods
Table 2 – 2006 - 2020 Groundwater Monitoring Results
Table 3 – 2013 - 2020 Groundwater Monitoring Results Summary
Figure 1 – Project Locus
Figure 2 – Site Plan
Appendix A – Laboratory Reports for the Groundwater Analyses

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TABLES

Tarrytown Former MGP Site
Source: Site Management Plan Appendix F - Table 2

Table 1 - Sampling Parameters and Recommended Analytical Methods

Analyte	Analytical Method
BTEX	
Benzene	8260B
Toluene	8260B
Ethlybenzene	8260B
O-Xylene	8260B
M&P-Xylene	8260B
Polycyclic Aromatic Hydrocarbons (PAH)	
Acenaphthene	8270C
Acenapthylene	8270C
Anthracene	8270C
Benz(a)anthracene	8270C
Benzo(a)pyrene	8270C
Benzo(b)fluoranthene	8270C
Benzo(ghi)fluoranthene	8270C
Benzo(k)fluoranthene	8270C
Chysene	8270C
Dibenz(a,h)anthracene	8270C
Fluoranthene	8270C
Fluorene	8270C
Indeno(1,2,3-cd)pyrene	8270C
Napthalene	8270C
Phenanthrene	8270C
Pyrene	8270C
Attenuation Indicators	
FIELD PARAMETERS	
Dissolved Oxygen	Field Probe
Oxygen-Reduction Potential	Field Probe
pH	Field Probe
Specific Conductance	Field Probe
Temperature	Field Probe
Ferrous Iron (Fe^{+2})	Field Probe
Carbon Dioxide	Field Probe
Alkalinity	Field Probe
Turbidity	Field Probe
Laboratory Parameters	
Biochemical Oxygen Demand	5210B
Chemical Oxygen Demand	5520C, 5520D
Dissolved Organic Carbon	415.1
Total Organic Carbon	9060
Sulfate	375.4
Sulfide	376.1, 376.2
Nitrate	353.2
Nitrite	353.2
Total Iron	6010
Manganese	6010

TABLE 2
2006-2020 GROUNDWATER MONITORING RESULTS
Tarrytown Former MGP Site Groundwater Samples
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-29 (Up-Gradient)											
	Date Sampled	08/17/06	12/17/07	07/28/08	12/08/09	12/21/10	12/20/11	05/29/13	11/19/13	11/10/14	11/15/16	02/13/18	10/29/20
BTEX	**(ug/L)**												
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.70	< 0.70	< 0.70
Toluene	5	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	**3**	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
PAH	**(ug/L)**												
Acenaphthene	20	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.1**	< 0.10	< 0.10	< 0.47
Acenaphthylene	N/A[8,11]	<10	<10	<10	<0.3	<0.3	<0.3	<0.1	<0.1	**0.33**	< 0.10	**0.10**	< 0.47
Anthracene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.23**	**0.12**	**0.11**	< 0.47
Benz(a)anthracene	0.002	<10	<10	<10	<0.06	<0.02	<0.02	**0.06**	**0.02**	**0.25**	**0.03**	**0.07**	< 0.02
Benzo(a)pyrene	ND	<10	<10	<10	<0.2	<0.02	<0.02	**0.05**	<0.02	**0.4**	< 0.02	**0.09**	< 0.02
Benzo(b)fluoranthene	0.002	<10	<10	<10	<0.08	<0.02	<0.02	<0.02	<0.02	**0.51**	< 0.02	**0.07**	< 0.02
Benzo(g,h,i)perylene	N/A[8,11]	<10	<10	<10	<4	<2.5	<2.5	<0.1	<0.1	**0.29**	< 0.10	< 0.10	< 0.47
Benzo(k)fluoranthene	0.002	<10	<10	<10	<0.3	<0.02	<0.02	<0.02	<0.02	**0.22**	< 0.02	**0.06**	< 0.02
Chrysene	0.002	<10	<10	<10	<2	<0.02	<0.02	**0.05**	<0.02	**0.3**	**0.02**	**0.06**	< 0.02
Dibenz(a,h)anthracene	N/A[8,11]	<10	<10	<10	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	**0.02**	< 0.47
Fluoranthene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.63**	< 0.10	< 0.10	< 0.47
Fluorene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.13**	< 0.10	< 0.10	< 0.47
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<10	<0.2	<0.02	<0.02	**0.05**	<0.02	**0.23**	< 0.02	**0.06**	< 0.02
Naphthalene	10	<10	<10	<10	<10	<2.5	<2.5	**0.13**	<0.1	<0.1	< 0.10	< 0.10	< 0.47
Phenanthrene	50	<10	<10	<10	<0.07	<0.07	<0.07	<0.07	<0.07	**0.35**	< 0.07	< 0.07	< 0.47
Pyrene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.96**	< 0.10	**0.11**	< 0.47
ATTENUATION INDICATORS													
Field Parameters													
Dissolved Oxygen (mg/L)	N/A[10,11]							0.46	0.81	0.00	0.00	9.70	6.29
Oxygen-Reduction Potential (mV)	N/A[11]							-102	-22	-68	-89	-65	-156
pH (Standard)	6.5 - 8.5[10]							7.0	7.0	7.2	7.5	7.8	7.1
Specific Conductance (mS/cm)	N/A[11]							5.93	5.80	10.30	5.6	5.2	0.502
Temperature (°C)	N/A[11]							20.5	16.2	18.8	16.8	16.8	17.6
Turbidity (NTU)	5[10]							22.7	6.5	129.0	14.8	69.4	92.4
Laboratory Parameters	**(mg/L)**												
Nitrate as Nitrogen	10	**0.06**	<0.05	**0.06**	**0.54**	<0.05	**0.14**	<0.05	<0.05	<0.05	< 0.004	< 0.004	**0.10**
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**7.35**	< 0.05	< 0.05	< 0.200
Nitrate and Nitrite as Nitrogen (Total)	10	**0.06**	ND	**0.06**	**0.54**	ND	**0.14**	ND	ND	**7.35**	ND	ND	**0.10**
Sulfate	250	**30**	**30**	**37**	**210**	**51**	**47.4**	**54**	**113**	**780**	**102**	**48.9**	**56.9**
Total Organic Carbon	N/A[11]	**4.2**	**31**	**5.0**	**3.2**	**3.4**	**2.8**	**3.4**	**12**	**7.0**	**8.2**	**3.7**	**4.2**
Dissolved Organic Carbon	N/A[11]	**2.8**	**20**	**2.9**	**3.1**	**3.2**	**2.8**	**2.9**	**12**	**7.0**	**8.0**	**3.4**	**4.1**
Sulfide	1	<0.05	<0.2	<0.1	<0.1	NR	NR	<0.1	<0.1	<0.1	< 0.05	< 0.05	< 0.05
B.O.D./5 day	N/A[11]	<2.0	**7.4**	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	< 4.0	< 4.0	< 4.0
C.O.D.	N/A[11]	**12**	**45**	**54**	**76**	**75**	**52**	**53**	**72**	**104**	**103**	**142**	**171**
Total Iron	0.3	**1.05**	**12.8**	**7.14**	**15.7**	**5.97**	**9.40**	**4.92**	**5.39**	**9.46**	**4.63**	**9.38**	**8.02**
Manganese	0.3	**1.01**	**0.71**	**1.25**	**1.45**	**1.17**	**1.10**	**1.01**	**0.93**	**2.05**	**0.95**	**0.82**	**1.52**
Iron and Manganese (Total)	0.5	**2.06**	**13.51**	**8.39**	**17.15**	**7.14**	**10.50**	**5.93**	**6.32**	**11.51**	**5.58**	**10.20**	**8.02**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

TABLE 2
2006-2020 GROUNDWATER MONITORING RESULTS
Tarrytown Former MGP Site Groundwater Samples
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-12 (Up-Gradient)											
	Date Sampled	08/17/06	12/17/07	12/08/09	12/20/10	12/21/11	05/29/13	11/19/13	11/10/14	11/16/16	02/13/18	10/29/20	10/29/2020 duplicate
BTEX	**(ug/L)**												
Benzene	1	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 2.0	<1.0	< 0.70	< 0.70	< 0.70	< 0.70
Toluene	5	**1.6**	<5.0	<1.0	<10	<1.0	<1.0	< 2.0	<1.0	**0.7**	**0.67**	< 2.0	< 2.0
Ethyl Benzene	5	**20**	**9.6**	**2.6**	<10	**1.2**	**4**	< 2.0	**1.2**	**1.6**	**2.5**	< 2.0	< 2.0
o-Xylene	5	**39**	**14**	**16**	<10	**7.9**	<2	**9.4**	**3.8**	**7.9**	**10**	< 2.0	< 2.0
p&m-Xylene	5	**14**	**6.1**	**4.5**	<10	**2.3**	**5.9**	< 4.0	<2.0	**3.7**	**5.1**	< 2.0	< 2.0
Xylene (Total)	5	**53**	**20.1**	**20.5**	ND	**10.2**	**5.9**	**9.4**	**3.8**	**11.6**	**15.1**	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	<2.0	<2.0	<10	<2.0	**5.9**	< 4.0	<2.0	< 2.0	< 2.0	< 2.0	< 2.0
PAH	**(ug/L)**												
Acenaphthene	20	**41**	**18**	**77**	**57**	**51**	<50	**72**	**36**	**54**	**46**	**9.1**	**13**
Acenaphthylene	N/A[8,11]	<10	<10	5	**8.1**	**7.3**	<50	**4.9**	**3**	< 7.0	**3.6**	< 0.47	**0.61**
Anthracene	50	<10	<10	<10	<2.5	<2.8	<50	**1.5**	**1.3**	< 7.0	**1.3**	< 0.47	**0.49**
Benz(a)anthracene	0.002	<10	<10	<0.06	**0.084**	**0.089**	<50	**0.06**	**0.04**	< 3.4	**0.14**	**0.04**	**0.05**
Benzo(a)pyrene	ND	<10	<10	<0.2	**0.068**	**0.078**	<50	<0.02	<0.02	< 3.2	**0.16**	< 0.02	**0.05**
Benzo(b)fluoranthene	0.002	<10	<10	<0.08	**0.074**	**0.089**	<50	**0.03**	<0.02	< 3.4	**0.13**	< 0.02	**0.02**
Benzo(g,h,i)perylene	N/A[8,11]	<10	<10	<4	<2.5	<2.8	<50	<0.1	<0.01	< 5.0	**0.10**	< 0.47	< 0.47
Benzo(k)fluoranthene	0.002	<10	<10	<0.3	**0.023**	<0.022	<50	<0.02	<0.02	< 3.4	**0.11**	< 0.02	**0.02**
Chrysene	0.002	<10	<10	<2	**0.067**	**0.078**	<50	**0.04**	**0.03**	< 3.4	**0.12**	**0.03**	**0.05**
Dibenz(a,h)anthracene	N/A[8,11]	<10	<10	<0.2	**0.015**	**<0.011**	<50	<0.01	<0.01	< 7.0	**0.04**	< 0.47	< 0.47
Fluoranthene	50	<10	<10	<10	<2.5	<2.8	<50	**0.2**	**0.19**	< 7.0	**0.3**	< 0.47	< 0.47
Fluorene	50	**13**	<10	<10	**13**	**8.8**	<50	**14**	**8.7**	**13**	**10**	**0.67**	**1.8**
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<0.2	**0.045**	**0.056**	<50	<0.02	<0.02	< 3.4	**0.09**	< 0.02	**0.04**
Naphthalene	10	**600**	**280**	**400**	**44**	**110**	**290**	**96**	**53**	**88**	**130**	< 0.47	<0.47
Phenanthrene	50	**11**	<10	**3.9**	**6.4**	**3**	<50	**7**	**4.7**	**11**	**5.7**	< 0.47	< 0.47
Pyrene	50	<10	<10	<10	<2.5	<2.8	<50	**0.27**	**0.28**	< 7.0	**0.36**	< 0.47	< 0.47
ATTENUATION INDICATORS													
Field Parameters													
Dissolved Oxygen (mg/L)	N/A[10,11]						0.54	0.91	0.00	7.23	9.10	3.84	-
Oxygen-Reduction Potential (mV)	N/A[11]						-148	-13	-132	-117	-96	-36	-
pH (Standard)	6.5 - 8.5[10]						6.8	6.9	7.3	7.3	7.3	7.1	-
Specific Conductance (mS/cm)	N/A[11]						1.06	0.95	0.69	2.08	2.80	0.380	-
Temperature (°C)	N/A[11]						16.4	15.7	19.5	17.5	10.5	16.9	-
Turbidity (NTU)	5[10]						3.2	0.0	4.8	0.0	34.3	201.0	-
Laboratory Parameters	**(mg/L)**												
Nitrate as Nitrogen	10	**0.05**	<0.05	<0.05	**0.05**	<0.05	<0.05	<0.05	<0.05	< 0.004	< 0.004	< 0.004	< 0.004
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate and Nitrite as Nitrogen (Total)	10	**0.05**	ND	ND	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND
Sulfate	250	**34**	**110**	<3.0	**7.1**	**13.1**	<3.0	**10.3**	<3.0	< 3.0	< 3.0	**9.9**	10.7
Total Organic Carbon	N/A[11]	**20**	**93**	**17**	**23**	**15**	**20**	**18**	**15**	**18.8**	**19.5**	**5.0**	**5.6**
Dissolved Organic Carbon	N/A[11]	**15**	**90**	**15**	**19**	**14**	**18**	**15**	**12**	**14.9**	**17**	**3.9**	**4.3**
Sulfide	1	<0.05	0.21	<0.1	NR	NR	0.1	<0.1	<0.1	**0.06**	< 0.05	**0.34**	**0.36**
B.O.D./5 day	N/A[11]	**8.7**	**16**	**8.3**	<4.0	<4.0	**12**	**7.6**	**7.8**	**5.8**	< 3.7	< 4.0	< 4.0
C.O.D.	N/A[11]	**51**	**100**	**55**	**68**	**43**	**62**	**52**	**46**	**63**	**149**	**17**	**14**
Total Iron	0.3	**17.2**	**52.5**	**17.2**	**22.9**	**23.0**	**27.8**	**15.8**	**18.1**	**32.2**	**43.3**	**6.23**	**6.26**
Manganese	0.3	**0.31**	**0.50**	**0.27**	**0.22**	**0.26**	**0.17**	**0.16**	**0.18**	**0.24**	**0.32**	**0.201**	**0.209**
Iron and Manganese (Total)	0.5	**17.51**	**53.00**	**17.47**	**23.12**	**23.26**	**27.97**	**15.96**	**18.28**	**32.44**	**43.62**	**6.431**	**6.469**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

TABLE 2
2006-2020 GROUNDWATER MONITORING RESULTS
Tarrytown Former MGP Site Groundwater Samples
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-20 (Down-Gradient)															
	Date Sampled	08/17/06	12/18/07	12/18/2007 duplicate	07/29/08	12/08/09	12/8/2009 duplicate	12/22/10	12/19/11	05/30/13	11/19/13	11/19/2013 duplicate	11/11/14	11/11/2014 duplicate	11/15/16	02/14/18	10/29/20
BTEX	**(ug/L)**																
Benzene	1	<1.0	<1.0	<1.0	**3.1**	<1.0	<1.0	<1.0	<1.0	<0.7	<1.0	< 1.0	< 1.0	< 1.0	< 0.70	< 0.70	< 0.70
Toluene	5	<1.0	<3.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	**2.8**	2.8	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
PAH	**(ug/L)**																
Acenaphthene	20	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.91**	<0.1	<0.1	<0.1	<0.1	< 0.10	< 0.10	**1.1**
Acenaphthylene	N/A[8,11]	<10	<10	<10	<10	<0.3	<0.3	<0.3	<0.3	**0.29**	<0.1	<0.1	<0.1	<0.1	< 0.10	< 0.10	**0.69**
Anthracene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.47
Benz(a)anthracene	0.002	<10	<10	<10	<10	<0.06	<0.06	**0.023**	**0.09**	**0.06**	**0.02**	<0.02	**0.02**	**0.02**	< 0.02	**0.08**	**0.09**
Benzo(a)pyrene	ND	<10	<10	<10	<10	<0.2	<0.2	<0.02	**0.11**	**0.05**	<0.02	<0.02	<0.02	<0.02	< 0.02	**0.09**	**0.08**
Benzo(b)fluoranthene	0.002	<10	<10	<10	<10	<0.08	<0.08	<0.02	**0.13**	**0.04**	<0.02	<0.02	**0.02**	<0.02	< 0.02	**0.07**	**0.04**
Benzo(g,h,i)perylene	N/A[8,11]	<10	<10	<10	<10	<4	<4.0	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.47
Benzo(k)fluoranthene	0.002	<10	<10	<10	<10	<0.3	<0.3	<0.02	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	**0.06**	**0.03**
Chrysene	0.002	<10	<10	<10	<10	<2	<2	<0.02	**0.07**	**0.05**	<0.02	<0.02	<0.02	<0.02	< 0.02	**0.06**	**0.05**
Dibenz(a,h)anthracene	N/A[8,11]	<10	<10	<10	<10	<0.2	<0.2	<0.01	**0.01**	**0.01**	<0.01	<0.01	<0.01	<0.01	< 0.01	**0.02**	< 0.47
Fluoranthene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.24**	<0.1	<0.1	<0.1	<0.1	< 0.10	**0.10**	< 0.47
Fluorene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.1**	<0.1	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.47
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<10	<10	<0.2	<0.2	<0.02	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	**0.05**	**0.05**
Naphthalene	10	<10	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.47
Phenanthrene	50	<10	<10	<10	<10	<0.07	<0.07	<0.07	**0.07**	**0.07**	<0.07	<0.07	<0.07	<0.07	< 0.07	< 0.07	< 0.47
Pyrene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.17**	<0.1	<0.1	<0.1	<0.1	< 0.10	**0.1**	< 0.47
ATTENUATION INDICATORS																	
Field Parameters																	
Dissolved Oxygen (mg/L)	N/A[10,11]									0.40	1.69	0.00	0.00	0.00	5.56	4.57	7.93
Oxygen-Reduction Potential (mV)	N/A[11]									-205	92	99	99	99	175	46	159
pH (Standard)	6.5 - 8.5[10]									8.1	8.7	8.0	8.0	8.0	8.2	7.9	7.5
Specific Conductance (mS/cm)	N/A[11]									4.77	8.32	13.30	13.30	13.30	19.5	6.9	0.862
Temperature (°C)	N/A[11]									21.8	14.0	16.9	16.9	16.9	12.5	10.2	18.5
Turbidity (NTU)	5[10]									152.0	21.2	5.4	5.4	5.4	15.2	6.6	32.2
Laboratory Parameters	**(mg/L)**																
Nitrate as Nitrogen	10	<0.05	<0.05	<0.05	**0.05**	**0.55**	**0.54**	NR	**0.39**	**0.07**	**0.27**	**0.23**	**0.57**	**0.6**	< 0.1	**0.89**	**0.61**
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.78**	< 0.004	< 0.200
Nitrate and Nitrite as Nitrogen (Total)	10	ND	ND	ND	**0.05**	**0.55**	**0.54**	NR	**0.39**	**0.07**	**0.27**	**0.23**	**0.57**	**0.6**	**0.78**	**0.89**	**0.61**
Sulfate	250	**34**	**240**	**240**	**240**	**210**	**210**	**390**	**60.8**	**173**	**364**	**369**	**523**	**400**	**712**	**251**	**662**
Total Organic Carbon	N/A[11]	**3.5**	**12**	**5.7**	**4.6**	**3.2**	**3.2**	**3.5**	**4.1**	**3.3**	**2.7**	**2.4**	**2.7**	**2.6**	**2.9**	**3.8**	**4.2**
Dissolved Organic Carbon	N/A[11]	**2.2**	**11**	**4.9**	**3.9**	**3.3**	**3.1**	**3.0**	**3.3**	**3.2**	**2.6**	**2.4**	**2.7**	**2.3**	**2.7**	**3.6**	**4**
Sulfide	1	<0.05	<0.2	<0.2	<0.1	<0.1	<0.1	NR	NR	<0.01	<0.1	<0.1	<0.1	<0.1	< 0.05	< 0.05	**0.46**
B.O.D./5 day	N/A[11]	<2.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<40	<4.0	<4.0	<4.0	<4.0	<4.0	< 4.0	< 4.0	**5.4**
C.O.D.	N/A[11]	**120**	**58**	**52**	**69**	**67**	**76**	**110**	**28**	**66**	**100**	**100**	**125**	**161**	**228**	**185**	**530**
Total Iron	0.3	**0.06**	**0.14**	**0.13**	**0.37**	**0.32**	**0.32**	**0.44**	**18.40**	**1.68**	**0.24**	**0.23**	**0.34**	**0.31**	**0.28**	**0.92**	**17.30**
Manganese	0.3	**0.01**	**0.03**	**0.03**	**0.08**	**0.02**	**0.02**	**0.02**	**1.83**	**0.14**	**0.03**	**0.04**	**0.05**	**0.05**	**0.04**	**0.06**	**0.88**
Iron and Manganese (Total)	0.5	**0.06**	**0.17**	**0.16**	**0.44**	**0.34**	**0.34**	**0.46**	**20.23**	**1.82**	**0.27**	**0.26**	**0.39**	**0.35**	**0.32**	**0.98**	**18.18**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

TABLE 2
2006-2020 GROUNDWATER MONITORING RESULTS
Tarrytown Former MGP Site Groundwater Samples
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-21 (Down-Gradient)													
	Date Sampled	08/17/06	12/18/07	07/30/08	12/08/09	12/22/10	12/19/11	12/19/2011 duplicate	05/30/13	5/30/2013 duplicate	11/19/13	11/11/14	11/16/16	02/14/18	10/29/20
BTEX	**(ug/L)**														
Benzene	1	<1.0	<1.0	**1.4**	<1.0	<1.0	<1.0	<1.0	<0.7	<0.7	<1.0	**1.5**	**0.53**	< 0.70	< 0.70
Toluene	5	<1.0	<3.0	<1.0	<1.0	**4.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	< 2.0	< 2.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	< 2.0	< 2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 2.0
PAH	**(ug/L)**														
Acenaphthene	20	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	<0.1	<0.1	**0.6**	**0.27**	**< 0.10**	**0.54**
Acenaphthylene	N/A[8,11]	<11	<10	<10	<0.3	<50	<0.3	<0.3	**0.14**	**0.14**	**0.13**	**0.1**	**0.16**	**0.18**	< 0.47
Anthracene	50	<11	<10	<10	<10	<50	<2.5	<2.5	**0.17**	**0.17**	**0.2**	**0.12**	< 0.10	**0.35**	< 0.47
Benz(a)anthracene	0.002	<11	<10	<10	<0.06	<50	**0.05**	**0.03**	<0.02	<0.02	<0.02	**0.02**	**0.03**	**0.03**	**0.05**
Benzo(a)pyrene	ND	<11	<10	<10	<0.2	<50	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	< 0.02
Benzo(b)fluoranthene	0.002	<11	<10	<10	<0.08	<50	**0.04**	**0.02**	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	< 0.02
Benzo(g,h,i)perylene	N/A[8,11]	<11	<10	<10	<4	<50	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.47
Benzo(k)fluoranthene	0.002	<11	<10	<10	<0.3	<50	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	< 0.02
Chrysene	0.002	<11	<10	<10	<2	<50	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	< 0.02
Dibenz(a,h)anthracene	N/A[8,11]	<11	<10	<10	<0.2	<50	<0.01	<0.01	0.14	<0.01	<0.01	<0.01	< 0.01	< 0.01	< 0.47
Fluoranthene	50	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	**0.33**	**0.12**	**0.15**	**0.43**	**0.36**	**0.62**
Fluorene	50	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	< 0.10	<0.1	< 0.47
Indeno(1,2,3-cd)pyrene	0.002	<11	<10	<10	<0.2	<50	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	<0.02	< 0.02
Naphthalene	10	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	**0.15**	<0.1	<0.1	< 0.10	<0.1	< 0.47
Phenanthrene	50	<11	<10	<10	<0.07	<50	0.08	<0.07	<0.07	<0.07	<0.07	<0.07	**0.3**	<0.07	< 0.47
Pyrene	50	<11	<10	<10	<10	<50	<2.5	<2.5	**0.17**	**0.37**	**0.23**	**0.23**	**0.66**	**0.51**	**0.64**
ATTENUATION INDICATORS															
Field Parameters															
Dissolved Oxygen (mg/L)	N/A[10,11]								0.53	0.53	0.74	0.00	0.00	11.76	1.50
Oxygen-Reduction Potential (mV)	N/A[11]								-310	-310	-119	-340	-260	-237	-216
pH (Standard)	6.5 - 8.5[10]								7.3	7.3	6.6	8.0	7.6	7.1	7.4
Specific Conductance (mS/cm)	N/A[11]								2.99	2.99	4.29	2.99	3.21	3.37	0.298
Temperature (°C)	N/A[11]								24.9	24.9	14.0	18.6	15.6	11.2	16.6
Turbidity (NTU)	5[10]								24.6	24.6	8.2	0.0	0.0	6.6	6.6
Laboratory Parameters	**(mg/L)**														
Nitrate as Nitrogen	10	**0.05**	<0.05	<0.05	<0.05	NR	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.004	<0.05	< 0.05
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	< 0.05	< 0.04	< 0.020
Nitrate and Nitrite as Nitrogen (Total)	10	**0.05**	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sulfate	250	**350**	**460**	**360**	**360**	**640**	**474**	**479**	**155**	**163**	**496**	**43.6**	**353**	**298**	**99.5**
Total Organic Carbon	N/A[11]	**6.0**	**12**	**11**	**11**	**9.1**	**12**	**13**	**14**	**13**	**8.1**	**14**	**15.2**	**14.4**	**13.6**
Dissolved Organic Carbon	N/A[11]	**4.5**	**12**	**9.8**	**9.8**	**9.0**	**12**	**12**	**13**	**13**	**11**	**15**	**14.1**	**13.5**	**12.8**
Sulfide	1	<0.05	<0.2	**0.38**	**0.38**	NR	NR	NR	**3.1**	**3**	<0.1	<0.1	**1.61**	**2.87**	**24.1**
B.O.D./5 day	N/A[11]	<2.0	6.4	<4.0	<4.0	19	<4.0	<4.0	11	11	<4.0	10	**6.5**	< 4.2	**18**
C.O.D.	N/A[11]	**38**	**27**	**54**	**54**	**82**	**82**	**66**	**66**	**64**	**52**	**50**	**54**	**65**	**63**
Total Iron	0.3	**2.74**	**2.42**	**1.32**	**12.70**	**15.80**	**15.40**	**15.0**	**1.88**	**2.10**	**9.01**	**0.62**	**10.80**	**12.70**	**0.593**
Manganese	0.3	**0.43**	**0.44**	**0.38**	**1.54**	**1.49**	**1.08**	**1.09**	**0.31**	**0.33**	**0.89**	**0.14**	**0.77**	**0.66**	**0.311**
Iron and Manganese (Total)	0.5	**3.17**	**2.86**	**1.70**	**14.24**	**17.29**	**16.48**	**16.09**	**2.19**	**2.43**	**9.90**	**0.76**	**11.57**	**13.36**	**0.904**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

TABLE 2
2006-2020 GROUNDWATER MONITORING RESULTS
Tarrytown Former MGP Site Groundwater Samples
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-24 (Down-Gradient)													
	Date Sampled	08/17/06	8/17/2006 duplicate	12/18/07	07/30/08	7/30/2008 duplicate	12/08/09	12/22/10	12/19/11	05/30/13	11/20/13	11/11/14	11/16/16	02/14/18	10/29/20
BTEX	**(ug/L)**														
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.7	<1.0	<1.0	< 0.70	< 0.70	< 0.70
Toluene	5	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0	< 2.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
PAH	**(ug/L)**														
Acenaphthene	20	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	< 0.1	< 0.1	< 0.10	< 0.10	**2.9**
Acenaphthylene	N/A[8,11]	<50	<10	<10	<10	<10	<0.3	<0.3	<0.3	<0.1	<0.1	<0.1	< 0.10	< 0.10	**2.1**
Anthracene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.10
Benz(a)anthracene	0.002	<50	<10	<10	<10	<10	<0.06	**0.024**	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	**0.74**
Benzo(a)pyrene	ND	<50	<10	<10	<10	<10	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	**0.68**
Benzo(b)fluoranthene	0.002	<50	<10	<10	<10	<10	<0.08	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	**0.34**
Benzo(g,h,i)perylene	N/A[8,11]	<50	<10	<10	<10	<10	<4	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	0.002	<50	<10	<10	<10	<10	<0.3	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	**0.28**
Chrysene	0.002	<50	<10	<10	<10	<10	<2	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	**0.45**
Dibenz(a,h)anthracene	N/A[8,11]	<50	<10	<10	<10	<10	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10	< 0.10	**0.7**
Fluorene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	0.002	<50	<10	<10	<10	<10	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02	< 0.02	**0.36**
Naphthalene	10	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10	< 0.10	< 0.10
Phenanthrene	50	<50	<10	<10	<10	<10	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	< 0.07	< 0.07	< 0.07
Pyrene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10	< 0.10	**0.80**
ATTENUATION INDICATORS															
Field Parameters															
Dissolved Oxygen (mg/L)	N/A[10,11]									7.47	6.87	4.81	9.33	1.59	5.05
Oxygen-Reduction Potential (mV)	N/A[11]									94	205	64	30	49	48
pH (Standard)	6.5 - 8.5[10]									7.7	7.7	8.0	8.1	8.0	7.9
Specific Conductance (mS/cm)	N/A[11]									3.41	8.05	13.60	14.77	3.91	0.412
Temperature (°C)	N/A[11]									21.5	11.7	18.1	17.1	11.3	17.9
Turbidity (NTU)	5[10]									17.6	28.1	4.4	26.0	22.7	61.1
Laboratory Parameters	**(mg/L)**														
Nitrate as Nitrogen	10	**0.08**	**0.08**	**0.07**	**0.2**	**0.2**	**0.05**	NR	**0.43**	**0.59**	**0.63**	**0.81**	< 0.004	**0.84**	< 0.50
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**1.39**	< 0.04	< 0.200
Nitrate and Nitrite as Nitrogen (Total)	10	**0.08**	**0.08**	**0.07**	**0.2**	**0.2**	**0.05**	NR	**0.43**	**0.59**	**0.63**	**0.81**	**1.39**	**0.84**	ND
Sulfate	250	**320**	**290**	**280**	**330**	**340**	**240**	**340**	**95**	**141**	**327**	<3.0	**646**	**166**	**615**
Total Organic Carbon	N/A[11]	**3.3**	**3.3**	**8.6**	**3.9**	**5.1**	**8.0**	**3.6**	**3.5**	**2.8**	**2.6**	**2.6**	**2.7**	**2.5**	**4.4**
Dissolved Organic Carbon	N/A[11]	**2.2**	**2.8**	**5.7**	**2.6**	**3.0**	**7.9**	**2.9**	**3.5**	**2.2**	**2.6**	**2.4**	**2.5**	**2.8**	**3.9**
Sulfide	1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	NR	NR	<0.1	<0.1	<0.1	< 0.05	< 0.05	**0.35**
B.O.D./5 day	N/A[11]	<2.0	<2.0	<4.0	<4.0	<4.0	**4.2**	<4.0	<4.0	<4.0	<4.0	<4.0	< 4.0	< 4.0	**4.6**
C.O.D.	N/A[11]	**69**	**46**	**70**	**110**	**83**	**37**	**110**	<10	**58**	**89**	**180**	**194**	**237**	**407**
Total Iron	0.3	**0.07**	**0.06**	**0.11**	ND	ND	**0.22**	**0.08**	**1.00**	**0.23**	**0.68**	**0.09**	**0.76**	**0.58**	**5.82**
Manganese	0.3	**0.01**	**0.01**	**0.03**	**0.01**	**0.01**	**0.02**	**0.00**	**0.05**	**0.01**	**0.03**	**0.00**	**0.05**	**0.03**	**0.782**
Iron and Manganese (Total)	0.5	**0.08**	**0.07**	**0.14**	**0.01**	**0.01**	**0.24**	**0.08**	**1.04**	**0.23**	**0.72**	**0.10**	**0.81**	**0.61**	**6.602**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

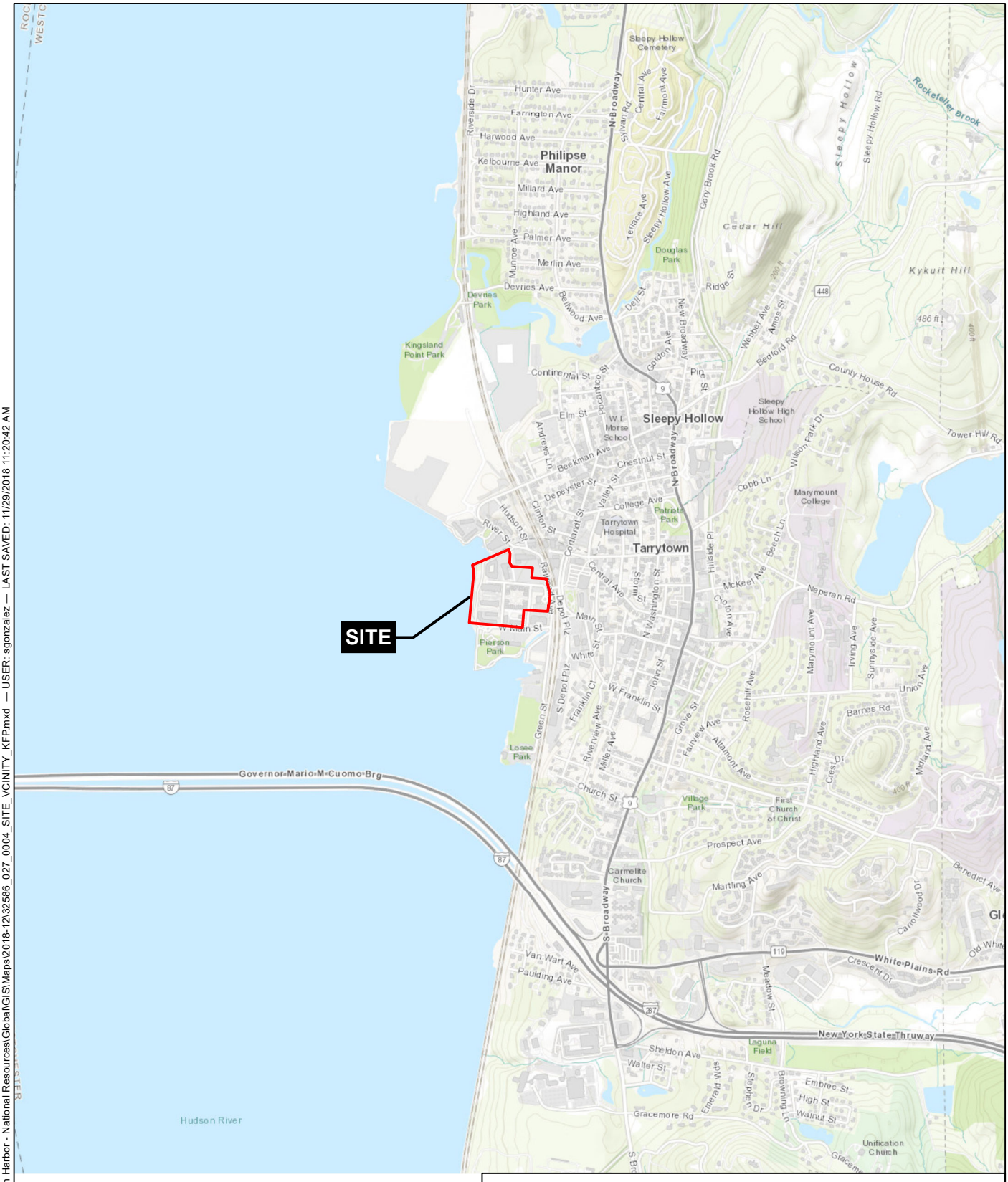
TABLE 3
2014-2020 GROUNDWATER MONITORING RESULTS SUMMARY
Tarrytown Former MGP Site Groundwater Samples
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Groundwater	MW-29 (Up-Gradient)				MW-12 (Up-Gradient)					MW-20 (Down-Gradient)				MW-21 (Down-Gradient)				MW-24 (Down-Gradient)			
	Date Sampled	11/2014	11/2016	2/2018	10/2020	11/2014	11/2016	2/2018	10/2020 duplicate	10/2020	11/2014	11/2016	2/2018	10/2020	11/2014	11/2016	2/2018	10/2020	11/2014	11/2016	2/2018	10/2020
VOCs	**(ug/L)**																					
Benzene	1	<1.0	<0.7	<0.7	<0.7	<1.0	<0.7	<0.7	<0.7	<0.7	< 1.0	<0.7	<0.7	<0.7	**1.5**	**0.53**	<1.0	<0.7	<1.0	<0.7	<0.7	<0.7
o-Xylene	5	<1.0	<2.0	<2.0	<2.0	**3.8**	**7.9**	**10**	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0
p&m-Xylene	5	<2.0	<2.0	<2.0	<2.0	<2.0	**3.7**	**5.1**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0
Xylene (Total)	5	<1.0	<1.0	<1.0	<2.0	**3.8**	**11.6**	**15.1**	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5	<1.0	<2.0	<2.0	<2.0	<1.0	**0.7**	**0.67**	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0
Methyl Tert Butyl Ether (MTBE)	10	<2.0	<2.0	<2.0	<2.0	<2.0	< 2.0	< 2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0	< 2.0	<2.0	<2.0	<2.0	< 2.0	<2.0	<2.0	<2.0	<2.0
PAH	**(ug/L)**																					
Acenaphthene	20	**0.1**	<0.1	< 0.1	<0.47	**36**	**54**	**46**	**9.1**	**13**	<0.1	<0.1	<0.1	**1.1**	**0.6**	**0.27**	<0.1	**0.54**	< 0.1	<0.1	<0.1	**2.9**
Benz(a)anthracene	0.002	**0.25**	**0.03**	**0.07**	<0.02	**0.04**	<3.4	**0.14**	<0.47	**0.61**	**0.02**	<0.02	**0.08**	**0.09**	**0.02**	**0.03**	**0.03**	**0.05**	<0.02	<0.02	<0.02	**0.74**
Benzo(a)pyrene	ND (0.02)	**0.4**	<0.02	**0.09**	<0.02	<0.02	<3.2	**0.16**	<0.47	**0.49**	<0.02	<0.02	**0.09**	**0.09**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.68**
Benzo(b)fluoranthene	0.002	**0.51**	<0.02	**0.07**	<0.02	<0.02	<3.4	**0.13**	**0.04**	**0.05**	**0.02**	<0.02	**0.07**	**0.08**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.34**
Benzo(k)fluoranthene	0.002	**0.22**	<0.02	**0.06**	<0.02	<0.02	<3.4	**0.11**	<0.02	**0.05**	<0.02	<0.02	**0.06**	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.28**
Chrysene	0.002	**0.3**	**0.02**	**0.06**	<0.02	**0.03**	<3.4	**0.12**	<0.02	**0.02**	<0.02	<0.02	**0.06**	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.45**
Indeno(1,2,3-cd)pyrene	0.002	**0.23**	<0.02	**0.02**	<0.02	<0.02	<3.4	**0.09**	<0.02	**0.02**	<0.02	<0.2	**0.05**	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.2	**0.36**
Naphthalene	10	<0.1	<0.1	< 0.1	<0.47	**53**	**88**	**130**	**0.03**	**0.05**	<0.1	<0.1	<0.1	<0.47	<0.1	<0.1	<0.1	<0.47	<0.1	<0.1	<0.1	<0.1
Metals	**(mg/L)**																					
Total Iron	0.3	**9.46**	**4.63**	**9.38**	**8.02**	**18.1**	**32.2**	**43.3**	**6.23**	**6.26**	**0.342**	**0.28**	**0.92**	**17.3**	**0.62**	**10.8**	**12.7**	**0.593**	**0.093**	**0.76**	**0.58**	**5.82**
Manganese	0.3	**2.05**	**0.95**	**0.82**	**1.52**	**0.183**	**0.24**	**0.32**	**0.201**	**0.209**	**0.052**	**0.04**	**0.06**	**0.88**	**0.143**	**0.77**	**0.66**	**0.311**	**0.004**	**0.05**	**0.03**	**0.782**
Iron and Manganese (Total)	0.5	**11.51**	**5.58**	**10.2**	**9.54**	**18.283**	**32.44**	**43.62**	**6.431**	**6.469**	**0.394**	**0.32**	**0.98**	**18.18**	**0.763**	**11.57**	**13.36**	**0.904**	**0.097**	**0.81**	**0.61**	**6.602**

Notes:
(A) Reference: NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(B) Concentrations shown in bold were detected.
(C) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(D) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
(E) Benzo(a)pyrene ND non-detectable standard of detection is listed by NYSDEC TOGS 1.1.1 at 0.002 which is below lab detection limits.

Acronyms:
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

FIGURES



GIS FILE PATH: G:\Projects\28590 Hudson Harbor - National Resources\Global\GIS\Maps\2018-12\32586_027_0004_SITE_VCINITY_KFP.mxd — USER: sgonzalez — LAST SAVED: 11/29/2018 11:20:42 AM

MAP SOURCE: ESRI
USGS QUAD: WHITEPLAINS, NEW YORK
SITE COORDINATES: 41°4'42.9"N, 73°52'3.6"W

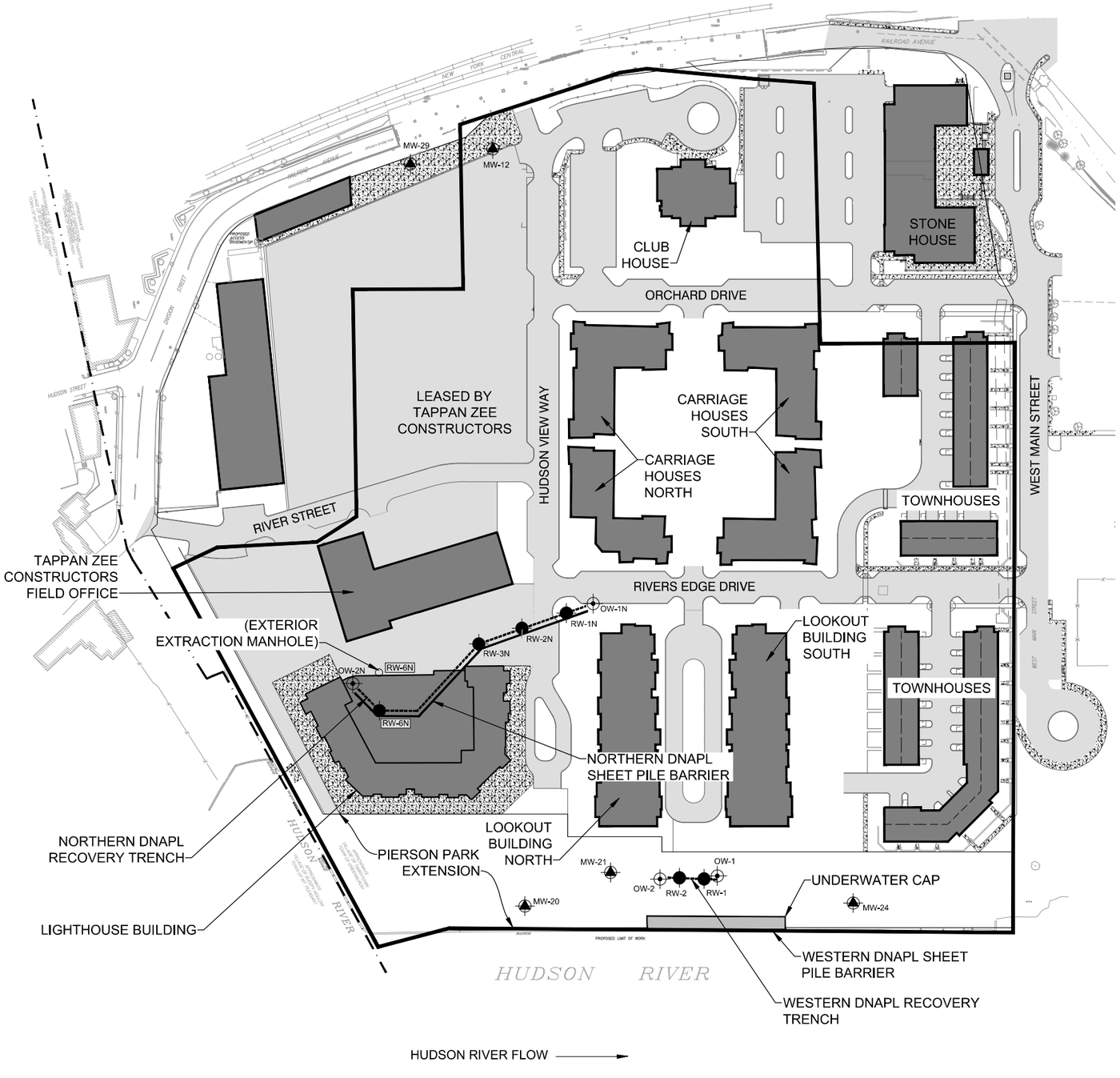
HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
DECEMBER 2020

FIGURE 1



LEGEND

- GROUNDWATER MONITORING WELL
- DNAPL RECOVERY WELL
- EXTERIOR EXTRACTION MANHOLE
- DNAPL OBSERVATION WELL
- APPROXIMATE AREA ENCOMPASSED BY THE BROWNFIELD CLEAN-UP AGREEMENT #C36OO64
- LANDSCAPED AREAS (THESE AREAS CONTAIN DEMARCATION LAYER BELOW CLEAN FILL AND LANDSCAPING)
- PAVED WALKS, PATIOS, OR COURTYARDS
- EXISTING BUILDINGS
- ROADS AND PARKING AREAS

NOTES

1. BASE MAP IS BASED ON CAD DRAWING ENTTILED "PH1_10399-08_PHASE.DWG," DATED 1 JULY 2009 FROM CHAZEN COMPANIES OF GLENN FALLS, NEW YORK AND "PARKING ALLOCATION DIAGRAM," DATED 7 MARCH 2013 FROM LESSARD GROUP, INC., VIENNA, VIRGINIA.

N

0 80 160 240 320
SCALE IN FEET

HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE COVER PLAN 2020

SCALE: AS SHOWN
DECEMBER 2020

FIGURE 2

APPENDIX A

Laboratory Reports

PHOENIX
Environmental Laboratories, Inc.

Monday, November 09, 2020

Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Project ID: TARRYTOWN FORMER MGP SITE
SDG ID: GCH06990
Sample ID#s: CH06990 - CH06996

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

November 09, 2020

SDG I.D.: GCH06990

SIM Analysis:
The lowest possible reporting limit under SIM conditions is 0.02 ug/L. The NY TOGS GA criteria for some PAHs is 0.002 ug/L. This level cannot be achieved.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Sample Id Cross Reference

November 09, 2020

SDG I.D.: GCH06990

Project ID: TARRYTOWN FORMER MGP SITE

Client Id	Lab Id	Matrix
MW-12-102920	CH06990	GROUND WATER
MW-29-102920	CH06991	GROUND WATER
MW-20-102920	CH06992	GROUND WATER
MW-21-102920	CH06993	GROUND WATER
MW-2A-102920	CH06994	GROUND WATER
DUP-102920	CH06995	GROUND WATER
TB-102920	CH06996	GROUND WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 09, 2020

FOR: Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		10/29/20	10:00
Location Code:	HALEY-NY	Received by:	B	10/30/20	16:22
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-027				

Laboratory Data

SDG ID: GCH06990
Phoenix ID: CH06990

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-12-102920

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Iron	6.23	0.010	mg/L	1	10/31/20	CPP	SW6010D
Manganese	0.201	0.001	mg/L	1	10/31/20	CPP	SW6010D
B.O.D./5 day	< 4.0	4.0	mg/L	2	10/30/20 16:22	RVM/KBD	SM 5210B-11
B.O.D./5 day End Incubation					11/04/20 13:17	RVM/KBD	SM 5210B-11
C.O.D.	17	10	mg/L	1	11/02/20	QH	SM 5220D-11
Dissolved Organic Carbon	3.9	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Nitrite as Nitrogen	< 0.004	0.004	mg/L	1	10/30/20 22:13	BS/GD	E300.0
Nitrate as Nitrogen	< 0.05	0.05	mg/L	1	10/30/20 22:13	B/E/G	E300.0
Sulfate	9.9	3.0	mg/L	1	10/30/20	B/E/G	E300.0
Sulfide	0.34	0.05	mg/L	1	11/04/20	GD	SM4500S-D-11
Total Organic Carbon	5.0	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Semi-Volatile Extraction	Completed				10/30/20	P/CG	SW3520C
Total Metals Digestion	Completed				10/30/20	AG	
Aromatic Volatiles							
Benzene	ND	0.70	ug/L	1	10/30/20	HM	SW8260C
Ethylbenzene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
m&p-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
o-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Toluene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	100		%	1	10/30/20	HM	70 - 130 %
% Bromofluorobenzene	101		%	1	10/30/20	HM	70 - 130 %
% Dibromofluoromethane	97		%	1	10/30/20	HM	70 - 130 %
% Toluene-d8	103		%	1	10/30/20	HM	70 - 130 %

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-12-102920

Phoenix I.D.: CH06990

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthene	9.1	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benz(a)anthracene	0.04	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(a)pyrene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Chrysene	0.03	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluoranthene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluorene	0.67	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Naphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Phenanthrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Pyrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	62		%	1	11/02/20	WB	30 - 130 %
% Nitrobenzene-d5	72		%	1	11/02/20	WB	30 - 130 %
% Terphenyl-d14	75		%	1	11/02/20	WB	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

Semi-Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
November 09, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 09, 2020

FOR: Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		10/29/20	12:05
Location Code:	HALEY-NY	Received by:	B	10/30/20	16:22
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-027				

Laboratory Data

SDG ID: GCH06990
Phoenix ID: CH06991

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-29-102920

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Iron	8.02	0.010	mg/L	1	10/31/20	CPP	SW6010D
Manganese	1.52	0.001	mg/L	1	10/31/20	CPP	SW6010D
B.O.D./5 day	< 4.0	4.0	mg/L	2	10/30/20 16:22	RVM/KBD	SM 5210B-11
B.O.D./5 day End Incubation					11/04/20 13:17	RVM/KBD	SM 5210B-11
C.O.D.	171	10	mg/L	1	11/03/20	QH	SM 5220D-11
Dissolved Organic Carbon	4.1	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Nitrite as Nitrogen	< 0.200	0.200	mg/L	50	10/30/20 22:21	BS/GD	E300.0
Nitrate as Nitrogen	0.10	0.05	mg/L	1	10/30/20 22:21	B/E/G	E300.0
Sulfate	56.9	3.0	mg/L	1	10/30/20	B/E/G	E300.0
Sulfide	< 0.05	0.05	mg/L	1	11/04/20	GD	SM4500S-D-11
Total Organic Carbon	4.2	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Semi-Volatile Extraction	Completed				10/30/20	P/CG	SW3520C
Total Metals Digestion	Completed				10/30/20	AG	
Aromatic Volatiles							
Benzene	ND	0.70	ug/L	1	10/30/20	HM	SW8260C
Ethylbenzene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
m&p-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
o-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Toluene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	102		%	1	10/30/20	HM	70 - 130 %
% Bromofluorobenzene	101		%	1	10/30/20	HM	70 - 130 %
% Dibromofluoromethane	98		%	1	10/30/20	HM	70 - 130 %
% Toluene-d8	103		%	1	10/30/20	HM	70 - 130 %
Client MS/MSD	Completed				11/04/20		

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-29-102920

Phoenix I.D.: CH06991

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benz(a)anthracene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(a)pyrene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Chrysene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluoranthene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluorene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Naphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Phenanthrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Pyrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	70		%	1	11/02/20	WB	30 - 130 %
% Nitrobenzene-d5	84		%	1	11/02/20	WB	30 - 130 %
% Terphenyl-d14	79		%	1	11/02/20	WB	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

Semi-Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

Nitrite Analysis comment:
Due to interference from a large amount of chloride in the sample, a dilution was required causing the reporting level to be elevated.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
November 09, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 09, 2020

FOR: Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		10/29/20	14:15
Location Code:	HALEY-NY	Received by:	B	10/30/20	16:22
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-027				

Laboratory Data

SDG ID: GCH06990
Phoenix ID: CH06992

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-20-102920

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Iron	17.3	0.010	mg/L	1	10/31/20	CPP	SW6010D
Manganese	0.882	0.001	mg/L	1	10/31/20	CPP	SW6010D
B.O.D./5 day	5.4	4.0	mg/L	2	10/30/20 16:22	RVM/KBD	SM 5210B-11
B.O.D./5 day End Incubation					11/04/20 13:17	RVM/KBD	SM 5210B-11
C.O.D.	530	10	mg/L	1	11/02/20	QH	SM 5220D-11
Dissolved Organic Carbon	4.0	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Nitrite as Nitrogen	< 0.200	0.200	mg/L	50	10/30/20 22:44	BS/GD	E300.0
Nitrate as Nitrogen	0.61	0.50	mg/L	10	10/31/20 02:48	B/E/G	E300.0
Sulfate	662	30.0	mg/L	10	10/31/20	B/E/G	E300.0
Sulfide	0.46	0.05	mg/L	1	11/04/20	GD	SM4500S-D-11
Total Organic Carbon	4.2	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Semi-Volatile Extraction	Completed				10/30/20	P/CG	SW3520C
Total Metals Digestion	Completed				10/30/20	AG	
Aromatic Volatiles							
Benzene	ND	0.70	ug/L	1	10/30/20	HM	SW8260C
Ethylbenzene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
m&p-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
o-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Toluene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	100		%	1	10/30/20	HM	70 - 130 %
% Bromofluorobenzene	102		%	1	10/30/20	HM	70 - 130 %
% Dibromofluoromethane	97		%	1	10/30/20	HM	70 - 130 %
% Toluene-d8	103		%	1	10/30/20	HM	70 - 130 %

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-20-102920

Phoenix I.D.: CH06992

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference	
Semivolatiles by SIM, PAH								
2-Methylnaphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Acenaphthene	1.1	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Acenaphthylene	0.69	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Benz(a)anthracene	0.09	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Benzo(a)pyrene	0.08	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Benzo(b)fluoranthene	0.04	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Benzo(ghi)perylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Benzo(k)fluoranthene	0.03	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Chrysene	0.05	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Dibenz(a,h)anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Fluoranthene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Fluorene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Indeno(1,2,3-cd)pyrene	0.05	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Naphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Phenanthrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
Pyrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)	
QA/QC Surrogates								
% 2-Fluorobiphenyl	29		%	1	11/02/20	WB	30 - 130 %	3
% Nitrobenzene-d5	34		%	1	11/02/20	WB	30 - 130 %	
% Terphenyl-d14	32		%	1	11/02/20	WB	30 - 130 %	

3 = This parameter exceeds laboratory specified limits.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

Semi-Volatile Comment:
Poor surrogate recovery was observed for one acid and/or one base surrogate. The other surrogates associated with this sample were within QA/QC criteria. No significant bias suspected.

Nitrite Analysis comment:
Due to interference from a large amount of chloride in the sample, a dilution was required causing the reporting level to be elevated.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
November 09, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

Ver 1

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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 09, 2020

FOR: Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		10/29/20	15:45
Location Code:	HALEY-NY	Received by:	B	10/30/20	16:22
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-027				

Laboratory Data

SDG ID: GCH06990
Phoenix ID: CH06993

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-21-102920

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Iron	0.593	0.010	mg/L	1	10/31/20	CPP	SW6010D
Manganese	0.311	0.001	mg/L	1	10/31/20	CPP	SW6010D
B.O.D./5 day	18	7.8	mg/L	6	10/30/20 16:22	RVM/KBD	SM 5210B-11
B.O.D./5 day End Incubation					11/04/20 13:17	RVM/KBD	SM 5210B-11
C.O.D.	63	10	mg/L	1	11/02/20	QH	SM 5220D-11
Dissolved Organic Carbon	12.8	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Nitrite as Nitrogen	< 0.020	0.020	mg/L	5	10/30/20 22:52	BS/GD	E300.0
Nitrate as Nitrogen	< 0.05	0.05	mg/L	1	10/30/20 22:52	B/E/G	E300.0
Sulfate	99.5	15.0	mg/L	5	11/02/20	BS/GD	E300.0
Sulfide	24.1	5.0	mg/L	100	11/04/20	GD	SM4500S-D-11
Total Organic Carbon	13.6	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Semi-Volatile Extraction	Completed				10/30/20	P/CG	SW3520C
Total Metals Digestion	Completed				10/30/20	AG	
Aromatic Volatiles							
Benzene	ND	0.70	ug/L	1	11/03/20	HM	SW8260C
Ethylbenzene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
m&p-Xylene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
o-Xylene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
Toluene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	99		%	1	11/03/20	HM	70 - 130 %
% Bromofluorobenzene	98		%	1	11/03/20	HM	70 - 130 %
% Dibromofluoromethane	95		%	1	11/03/20	HM	70 - 130 %
% Toluene-d8	101		%	1	11/03/20	HM	70 - 130 %

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-21-102920

Phoenix I.D.: CH06993

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthene	0.54	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benz(a)anthracene	0.05	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(a)pyrene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Chrysene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluoranthene	0.62	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluorene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Naphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Phenanthrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Pyrene	0.64	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	68		%	1	11/02/20	WB	30 - 130 %
% Nitrobenzene-d5	95		%	1	11/02/20	WB	30 - 130 %
% Terphenyl-d14	80		%	1	11/02/20	WB	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Semi-Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

Nitrite Analysis comment:
Due to interference from a large amount of chloride in the sample, a dilution was required causing the reporting level to be elevated.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
November 09, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 09, 2020

FOR: Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		10/29/20	17:35
Location Code:	HALEY-NY	Received by:	B	10/30/20	16:22
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-027				

Laboratory Data

SDG ID: GCH06990
Phoenix ID: CH06994

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-2A-102920

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Iron	5.82	0.010	mg/L	1	10/31/20	CPP	SW6010D
Manganese	0.782	0.001	mg/L	1	10/31/20	CPP	SW6010D
B.O.D./5 day	4.6	4.0	mg/L	2	10/30/20 16:22	RVM/KBD	SM 5210B-11
B.O.D./5 day End Incubation					11/04/20 13:17	RVM/KBD	SM 5210B-11
C.O.D.	407	10	mg/L	1	11/02/20	QH	SM 5220D-11
Dissolved Organic Carbon	3.9	1.0	mg/L	1	11/03/20	ARG	SM5310B-11
Nitrite as Nitrogen	< 0.200	0.200	mg/L	50	10/30/20 22:59	BS/GD	E300.0
Nitrate as Nitrogen	< 0.50	0.50	mg/L	10	10/31/20 02:55	B/E/G	E300.0
Sulfate	615	30.0	mg/L	10	10/31/20	B/E/G	E300.0
Sulfide	0.35	0.05	mg/L	1	11/04/20	GD	SM4500S-D-11
Total Organic Carbon	4.4	1.0	mg/L	1	11/03/20	ARG	SM5310B-11
Semi-Volatile Extraction	Completed				10/30/20	P/CG	SW3520C
Total Metals Digestion	Completed				10/30/20	AG	
Aromatic Volatiles							
Benzene	ND	0.70	ug/L	1	11/03/20	HM	SW8260C
Ethylbenzene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
m&p-Xylene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
o-Xylene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
Toluene	ND	2.0	ug/L	1	11/03/20	HM	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	100		%	1	11/03/20	HM	70 - 130 %
% Bromofluorobenzene	99		%	1	11/03/20	HM	70 - 130 %
% Dibromofluoromethane	96		%	1	11/03/20	HM	70 - 130 %
% Toluene-d8	101		%	1	11/03/20	HM	70 - 130 %

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: MW-2A-102920

Phoenix I.D.: CH06994

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthene	2.9	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthylene	2.1	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benz(a)anthracene	0.74	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(a)pyrene	0.68	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(b)fluoranthene	0.34	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(k)fluoranthene	0.28	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Chrysene	0.45	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluoranthene	0.70	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluorene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	0.36	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Naphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Phenanthrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Pyrene	0.80	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	65		%	1	11/02/20	WB	30 - 130 %
% Nitrobenzene-d5	89		%	1	11/02/20	WB	30 - 130 %
% Terphenyl-d14	61		%	1	11/02/20	WB	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

Nitrite Analysis comment:
Due to interference from a large amount of chloride in the sample, a dilution was required causing the reporting level to be elevated.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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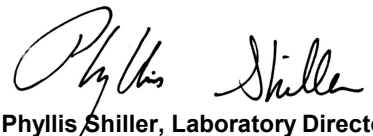

Phyllis Shiller, Laboratory Director
November 09, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 09, 2020

FOR: Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		10/29/20	
Location Code:	HALEY-NY	Received by:	B	10/30/20	16:22
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-027				

Laboratory Data

SDG ID: GCH06990
Phoenix ID: CH06995

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: DUP-102920

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Iron	6.26	0.010	mg/L	1	10/31/20	CPP	SW6010D
Manganese	0.209	0.001	mg/L	1	10/31/20	CPP	SW6010D
B.O.D./5 day	< 4.0	4.0	mg/L	2	10/30/20 16:22	RVM/KBD	SM 5210B-11
B.O.D./5 day End Incubation					11/04/20 13:17	RVM/KBD	SM 5210B-11
C.O.D.	14	10	mg/L	1	11/02/20	QH	SM 5220D-11
Dissolved Organic Carbon	4.3	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Nitrite as Nitrogen	< 0.004	0.004	mg/L	1	10/30/20 23:07	BS/GD	E300.0
Nitrate as Nitrogen	< 0.05	0.05	mg/L	1	10/30/20 23:07	B/E/G	E300.0
Sulfate	10.7	3.0	mg/L	1	10/30/20	B/E/G	E300.0
Sulfide	0.36	0.05	mg/L	1	11/04/20	GD	SM4500S-D-11
Total Organic Carbon	5.6	1.0	mg/L	1	11/02/20	ARG	SM5310B-11
Semi-Volatile Extraction	Completed				10/30/20	P/CG	SW3520C
Total Metals Digestion	Completed				10/30/20	AG	
Aromatic Volatiles							
Benzene	ND	0.70	ug/L	1	10/30/20	HM	SW8260C
Ethylbenzene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
m&p-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
o-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Toluene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	101		%	1	10/30/20	HM	70 - 130 %
% Bromofluorobenzene	102		%	1	10/30/20	HM	70 - 130 %
% Dibromofluoromethane	97		%	1	10/30/20	HM	70 - 130 %
% Toluene-d8	104		%	1	10/30/20	HM	70 - 130 %

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: DUP-102920

Phoenix I.D.: CH06995

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Semivolatiles by SIM, PAH							
2-Methylnaphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Acenaphthene	13	0.09	ug/L	1	11/03/20	WB	SW8270D (SIM)
Acenaphthylene	0.61	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Anthracene	0.49	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benz(a)anthracene	0.05	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(a)pyrene	0.05	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(b)fluoranthene	0.02	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Benzo(k)fluoranthene	0.02	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Chrysene	0.05	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluoranthene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Fluorene	1.8	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	0.04	0.02	ug/L	1	11/02/20	WB	SW8270D (SIM)
Naphthalene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Phenanthrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
Pyrene	ND	0.47	ug/L	1	11/02/20	WB	SW8270D (SIM)
QA/QC Surrogates							
% 2-Fluorobiphenyl	81		%	1	11/03/20	WB	30 - 130 %
% Nitrobenzene-d5	89		%	1	11/03/20	WB	30 - 130 %
% Terphenyl-d14	82		%	1	11/03/20	WB	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

Nitrite Analysis comment:
Due to interference from a large amount of chloride in the sample, a dilution was required causing the reporting level to be elevated.

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Phyllis Shiller, Laboratory Director
November 09, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 09, 2020

FOR: Attn: Jon Babcock
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		10/29/20	7:00
Location Code:	HALEY-NY	Received by:	B	10/30/20	16:22
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-027				

Laboratory Data

SDG ID: GCH06990
Phoenix ID: CH06996

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: TB-102920

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aromatic Volatiles							
Benzene	ND	0.70	ug/L	1	10/30/20	HM	SW8260C
Ethylbenzene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
m&p-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
o-Xylene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
Toluene	ND	2.0	ug/L	1	10/30/20	HM	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	100		%	1	10/30/20	HM	70 - 130 %
% Bromofluorobenzene	101		%	1	10/30/20	HM	70 - 130 %
% Dibromofluoromethane	98		%	1	10/30/20	HM	70 - 130 %
% Toluene-d8	104		%	1	10/30/20	HM	70 - 130 %

Project ID: TARRYTOWN FORMER MGP SITE
Client ID: TB-102920

Phoenix I.D.: CH06996

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

TRIP BLANK INCLUDED.

Volatile Comment:
To achieve client's objectives, where the lowest calibration standard or LOD justifies lowering the RL/PQL, the RL/PQL of some compounds have been lowered to meet criteria.

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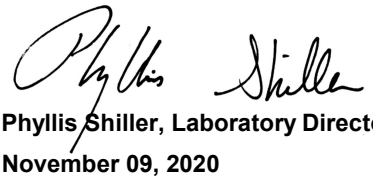

Phyllis Shiller, Laboratory Director
November 09, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

QA/QC Report

November 09, 2020

QA/QC Data

SDG I.D.: GCH06990

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 551682 (mg/L), QC Sample No: CH06991 (CH06990, CH06991, CH06992, CH06993, CH06994, CH06995)													
ICP Metals - Aqueous													
Iron	BRL	0.010	8.02	7.82	2.50	96.4	92.3	4.3	NC	NC	NC	80 - 120	20
Manganese	BRL	0.001	1.52	1.49	2.00	96.6	91.1	5.9	98.1	98.3	0.2	80 - 120	20

Comment:

Additional Criteria: LCS acceptance range is 80-120% MS acceptance range 75-125%.

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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

QA/QC Report

November 09, 2020

QA/QC Data

SDG I.D.: GCH06990

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 551665 (mg/L), QC Sample No: CH06991 (CH06990, CH06991, CH06992, CH06993, CH06994, CH06995)														
B.O.D./5 day	BRL	2.0	<4.0	<4.0	NC	120			115			70 - 130	20	
B.O.D./5 day GGA BOD						102						84 - 115	20	
QA/QC Batch 551780 (mg/L), QC Sample No: CH06991 (CH06990, CH06991, CH06992, CH06993, CH06994, CH06995)														
C.O.D.	BRL	10	171	154	10.5	100			91.6			85 - 115	20	
Comment:														
Additional criteria matrix spike acceptance range is 75-125%.														
QA/QC Batch 552098 (mg/L), QC Sample No: CH06991 (CH06990, CH06991, CH06992, CH06993, CH06994, CH06995)														
Sulfide	BRL	0.05	<0.05	<0.05	NC	107			82.2			90 - 110	20	
QA/QC Batch 551926 (mg/L), QC Sample No: CH06991 (CH06991)														
Total Organic Carbon	BRL	1.0	4.2	4.1	NC	95.0			116			85 - 115	20	
Comment:														
Additional criteria matrix spike acceptance range is 75-125%.														
QA/QC Batch 551929 (mg/L), QC Sample No: CH06991 (CH06991, CH06992, CH06993, CH06995)														
Total Organic Carbon	BRL	1.0	4.2	4.1	NC	95.0			116			85 - 115	20	
Comment:														
Additional criteria matrix spike acceptance range is 75-125%.														
QA/QC Batch 552056 (mg/L), QC Sample No: CH07556 (CH06994)														
Total Organic Carbon	BRL	1.0	<1.0	<1.0	NC	96.0			102			85 - 115	20	
Comment:														
Additional criteria matrix spike acceptance range is 75-125%.														
QA/QC Batch 551854 (mg/L), QC Sample No: CH04691 (CH06991)														
Sulfate	BRL	3.0	<3.0	<3.0	NC	95.5			100			90 - 110	20	
QA/QC Batch 551857 (mg/L), QC Sample No: CH06991 (CH06990, CH06991, CH06992, CH06993, CH06994, CH06995)														
Nitrate as Nitrogen	BRL	0.05	0.10	0.10	NC	106			103			90 - 110	20	
Sulfate	BRL	3.0	56.9	57.0	0.20	95.3			106			90 - 110	20	
QA/QC Batch 551854 (mg/L), QC Sample No: CH04691 (CH06991)														
Nitrate as Nitrogen	BRL	0.05	<0.05	<0.05	NC	106			115			90 - 110	20	m

m = This parameter is outside laboratory MS/MSD specified recovery limits.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

QA/QC Report

November 09, 2020

QA/QC Data

SDG I.D.: GCH06990

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 551626 (ug/L), QC Sample No: CH06991 (CH06990, CH06991, CH06992, CH06993, CH06994, CH06995)											
Semivolatiles by SIM, PAH - Ground Water											
2-Methylnaphthalene	ND	0.50	81	81	0.0	56	65	14.9	30 - 130	20	
Acenaphthene	ND	0.50	74	74	0.0	58	73	22.9	30 - 130	20	r
Acenaphthylene	ND	0.10	39	39	0.0	49	64	26.5	30 - 130	20	r
Anthracene	ND	0.10	71	71	0.0	54	66	20.0	30 - 130	20	
Benz(a)anthracene	ND	0.02	107	107	0.0	76	87	13.5	30 - 130	20	
Benzo(a)pyrene	ND	0.02	28	45	46.6	26	29	10.9	30 - 130	20	l,m,r
Benzo(b)fluoranthene	ND	0.02	109	109	0.0	62	68	9.2	30 - 130	20	
Benzo(ghi)perylene	ND	0.02	41	41	0.0	36	36	0.0	30 - 130	20	
Benzo(k)fluoranthene	ND	0.02	41	41	0.0	28	29	3.5	30 - 130	20	m
Chrysene	ND	0.02	71	71	0.0	48	55	13.6	30 - 130	20	
Dibenz(a,h)anthracene	ND	0.02	91	91	0.0	49	49	0.0	30 - 130	20	
Fluoranthene	ND	0.50	76	76	0.0	60	74	20.9	30 - 130	20	r
Fluorene	ND	0.10	77	77	0.0	58	73	22.9	30 - 130	20	r
Indeno(1,2,3-cd)pyrene	ND	0.02	44	44	0.0	42	42	0.0	30 - 130	20	
Naphthalene	ND	0.50	75	75	0.0	53	63	17.2	30 - 130	20	
Phenanthrene	ND	0.06	72	72	0.0	56	69	20.8	30 - 130	20	r
Pyrene	ND	0.07	45	45	0.0	62	78	22.9	30 - 130	20	r
% 2-Fluorobiphenyl	60	%	70	70	0.0	50	64	24.6	30 - 130	20	r
% Nitrobenzene-d5	66	%	90	90	0.0	61	81	28.2	30 - 130	20	r
% Terphenyl-d14	74	%	90	90	0.0	20	30	40.0	30 - 130	20	m,r

Comment:

Additional 8270 criteria:20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 551801 (ug/L), QC Sample No: CH06991 (CH06990, CH06991, CH06992, CH06995, CH06996)											
Volatiles - Ground Water											
Benzene	ND	0.70	102	103	1.0	109	109	0.0	70 - 130	20	
Ethylbenzene	ND	1.0	105	108	2.8	114	113	0.9	70 - 130	20	
m&p-Xylene	ND	1.0	105	107	1.9	113	113	0.0	70 - 130	20	
Methyl t-butyl ether (MTBE)	ND	1.0	107	109	1.9	109	109	0.0	70 - 130	20	
o-Xylene	ND	1.0	106	107	0.9	112	113	0.9	70 - 130	20	
Toluene	ND	1.0	104	106	1.9	112	112	0.0	70 - 130	20	
% 1,2-dichlorobenzene-d4	100	%	99	101	2.0	101	100	1.0	70 - 130	20	
% Bromofluorobenzene	101	%	105	104	1.0	106	106	0.0	70 - 130	20	
% Dibromofluoromethane	98	%	99	99	0.0	98	99	1.0	70 - 130	20	
% Toluene-d8	102	%	101	102	1.0	102	103	1.0	70 - 130	20	

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%, 25-160% for Chloroethane-HL and Trichlorofluoromethane-HL.

QA/QC Data

SDG I.D.: GCH06990

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 551931 (ug/L), QC Sample No: CH07090 (CH06993, CH06994)										
Volatiles - Ground Water										
Benzene	ND	0.70	96	97	1.0	107	110	2.8	70 - 130	20
Ethylbenzene	ND	1.0	98	99	1.0	109	107	1.9	70 - 130	20
m&p-Xylene	ND	1.0	97	100	3.0	110	108	1.8	70 - 130	20
Methyl t-butyl ether (MTBE)	ND	1.0	94	92	2.2	98	103	5.0	70 - 130	20
o-Xylene	ND	1.0	97	101	4.0	109	108	0.9	70 - 130	20
Toluene	ND	1.0	96	99	3.1	110	110	0.0	70 - 130	20
% 1,2-dichlorobenzene-d4	100	%	100	100	0.0	99	98	1.0	70 - 130	20
% Bromofluorobenzene	98	%	100	101	1.0	103	103	0.0	70 - 130	20
% Dibromofluoromethane	99	%	99	100	1.0	93	94	1.1	70 - 130	20
% Toluene-d8	101	%	99	99	0.0	101	100	1.0	70 - 130	20

Comment:

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%, 25-160% for Chloroethane-HL and Trichlorofluoromethane-HL.

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.
m = This parameter is outside laboratory MS/MSD specified recovery limits.
r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
November 09, 2020

Monday, November 09, 2020

Criteria: NY: GW

State: NY

Sample Criteria Exceedances Report

GCH06990 - HALEY-NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CH06990	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.04	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.03	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	0.03	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	0.04	0.02	0.002	0.002	ug/L
CH06990	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06990	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	6.23	0.010	0.3	0.3	mg/L
CH06991	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06991	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06991	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	8.02	0.010	0.3	0.3	mg/L
CH06991	MN-WM	Manganese	NY / TOGS - Water Quality / GA Criteria	1.52	0.001	0.3	0.3	mg/L
CH06992	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.04	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.05	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.05	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.03	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.08	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.09	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	0.09	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	0.03	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	0.05	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	0.05	0.02	0.002	0.002	ug/L
CH06992	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	0.04	0.02	0.002	0.002	ug/L
CH06992	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	17.3	0.010	0.3	0.3	mg/L
CH06992	MN-WM	Manganese	NY / TOGS - Water Quality / GA Criteria	0.882	0.001	0.3	0.3	mg/L
CH06992	SO4-IC	Sulfate	NY / TOGS - Water Quality / GA Criteria	662	30.0	250	250	mg/L
CH06993	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L

Monday, November 09, 2020

Criteria: NY: GW

State: NY

Sample Criteria Exceedances Report

GCH06990 - HALEY-NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CH06993	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.05	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	0.05	0.02	0.002	0.002	ug/L
CH06993	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
CH06993	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	0.593	0.010	0.3	0.3	mg/L
CH06993	MN-WM	Manganese	NY / TOGS - Water Quality / GA Criteria	0.311	0.001	0.3	0.3	mg/L
CH06994	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.28	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.45	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.36	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.68	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.74	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.34	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	0.34	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	0.74	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	0.45	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	0.36	0.02	0.002	0.002	ug/L
CH06994	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	0.28	0.02	0.002	0.002	ug/L
CH06994	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	5.82	0.010	0.3	0.3	mg/L
CH06994	MN-WM	Manganese	NY / TOGS - Water Quality / GA Criteria	0.782	0.001	0.3	0.3	mg/L
CH06994	SO4-IC	Sulfate	NY / TOGS - Water Quality / GA Criteria	615	30.0	250	250	mg/L
CH06995	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.04	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.05	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.02	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.02	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.05	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.05	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	0.02	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	0.02	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	0.05	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	0.04	0.02	0.002	0.002	ug/L
CH06995	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	0.05	0.02	0.002	0.002	ug/L
CH06995	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	6.26	0.010	0.3	0.3	mg/L

Monday, November 09, 2020

Criteria: NY: GW

State: NY

Sample Criteria Exceedances Report

GCH06990 - HALEY-NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Comments

November 09, 2020 SDG I.D.: GCH06990

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

NY Temperature Narration

November 09, 2020

SDG I.D.: GCH06990

The samples in this delivery group were received at 2.4°C.
(Note acceptance criteria for relevant matrices is above freezing up to 6°C)

Cooler: Yes ☑ No ☐
Coolant: IPK ☑ ICE ☐ No ☐

NY/NJ/PA CHAIN OF CUSTODY RECORD

Temp 2.4 °C Pg 1 of 1

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Contact Options:
☐ Phone: 585-370-9792
☐ Fax: 585-359-4650
☒ Email:

Customer: HALEY AND ALDRICH INC.
Address: 200 TOWN CENTRE DR. STE#2 ROCHESTER, NY 14623-4269

Project: TARRYTOWN FORMER MGP SITE Project P.O: 28590-027
Report to: JONATHAN BABCOCK
Invoice to: HALEY & ALDRICH, INC.
QUOTE # :

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification
Sampler's Signature: [signature] Date: 10/29/20

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe
OIL=Oil **B**=Bulk **L**=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	VOCs 8260 BTEX	PAHs by 8270	Total Iron/Manganese	BOD by 5210	Sulfate by 375.4	Sulfide by 376.1, 376.2	Nitrate 353.2, Nitrite	COD 5220C/5520D	TOC by 9060	DOC by 415.1	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [X] HCl	GL Amber 1000ml [X] As is [ ] H2SO4	PL As is [ ] 250ml [X] 500ml [ ] 1000ml	PL H2SO4 [X] 250ml [ ] 500ml	PL NaOH 250ml [ ] 500ml	PL HNO3 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
06990	MW-12-102920	GW	10/29/20	1000	X	X	X	X	X	X	X	X	X	X	1				3	2	2	1	1	2		1
06991 (*)	MW-29-102920			1205	X	X	X	X	X	X	X	X	X	X	1				3	2	2	1	1	1		1
06992	MW-20-102920			1415	X	X	X	X	X	X	X	X	X	X	1				3	2	2	1	1	1		1
06993	MW-21-102920			1545	X	X	X	X	X	X	X	X	X	X	1				3	2	2	1	1	1		1
06994	MW-24-102920			1735	X	X	X	X	X	X	X	X	X	X	1				3	2	2	1	1	1		1
06995	DUP-102920			—	X	X	X	X	X	X	X	X	X	X	1				3	2	2	1	1	1		1
06996	TB-102920	TB		0700	X														2							

(*) MS/MSD on MW-29.

GL Amber 8oz as is x3 MS/MSD

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	10/30/20	1405
[signature]		10/30	1622

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ 5 Days
☐ 10 Days
☐ Other
* SURCHARGE APPLIES
STANDARD

NJ
☐ Res. Criteria
☐ Non-Res. Criteria
☐ Impact to GW Soil Cleanup Criteria
☐ Impact to GW soil screen Criteria
☐ GW Criteria

Data Package:
☐ NJ Reduced Deliv. *
☐ NY Enhanced (ASP B) *
☐ Other EXCEL PDF/STAN MED

NY
☒ TOGS GW
☐ CP-51 SOIL
☐ 375SCO Unrestricted Soil
☐ 375SCO Residential Soil
☐ 375SCO Residential Restricted Soil
☐ 375SCO Commercial Soil
☐ 375SCO Industrial Soil
☐ Subpart 5 DW

PA
☐ Clean Fill Limits
☐ PA-GW
☐ Reg Fill Limits
☐ PA Soil Restricted
☐ PA Soil non-restricted

State Samples Collected? NY

Comments, Special Requirements or Regulations:
DETECTION LIMITS PER NYS TOGS 1.1.1. FOR CLASS GA GROUNDWATER CRITERIA.
(*) MS/MSD on MW-29.

Data Format:
☒ Phoenix Std Report ☐ EQuIS
☒ Excel ☐ NJ Hazsite EDD
☒ PDF ☐ NY EZ EDD (ASP)
☐ GIS/Key ☐ Other

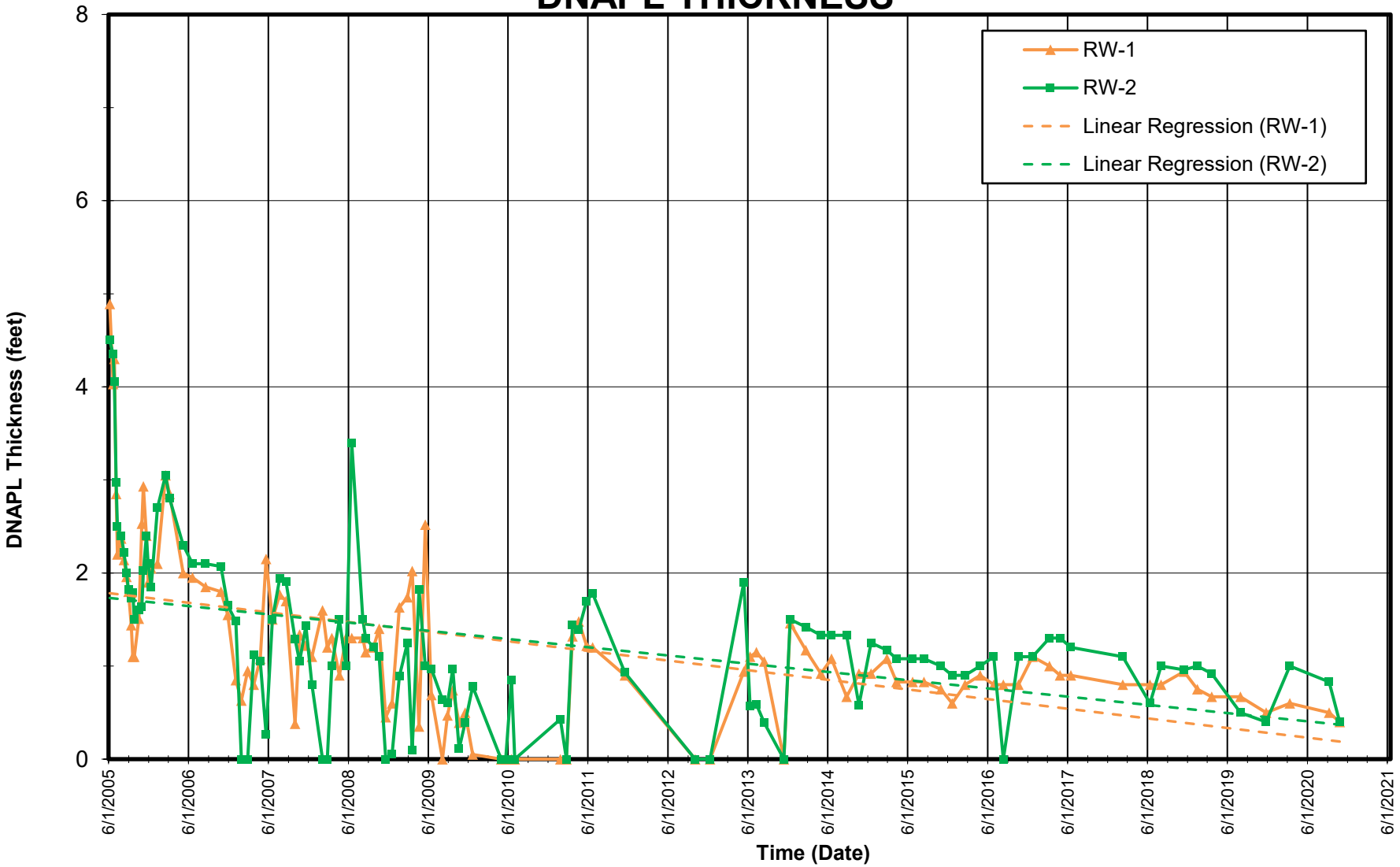
Page 2 of 2

APPENDIX D

DNAPL Monitoring and Extraction Summary

HALEY ALDRICH

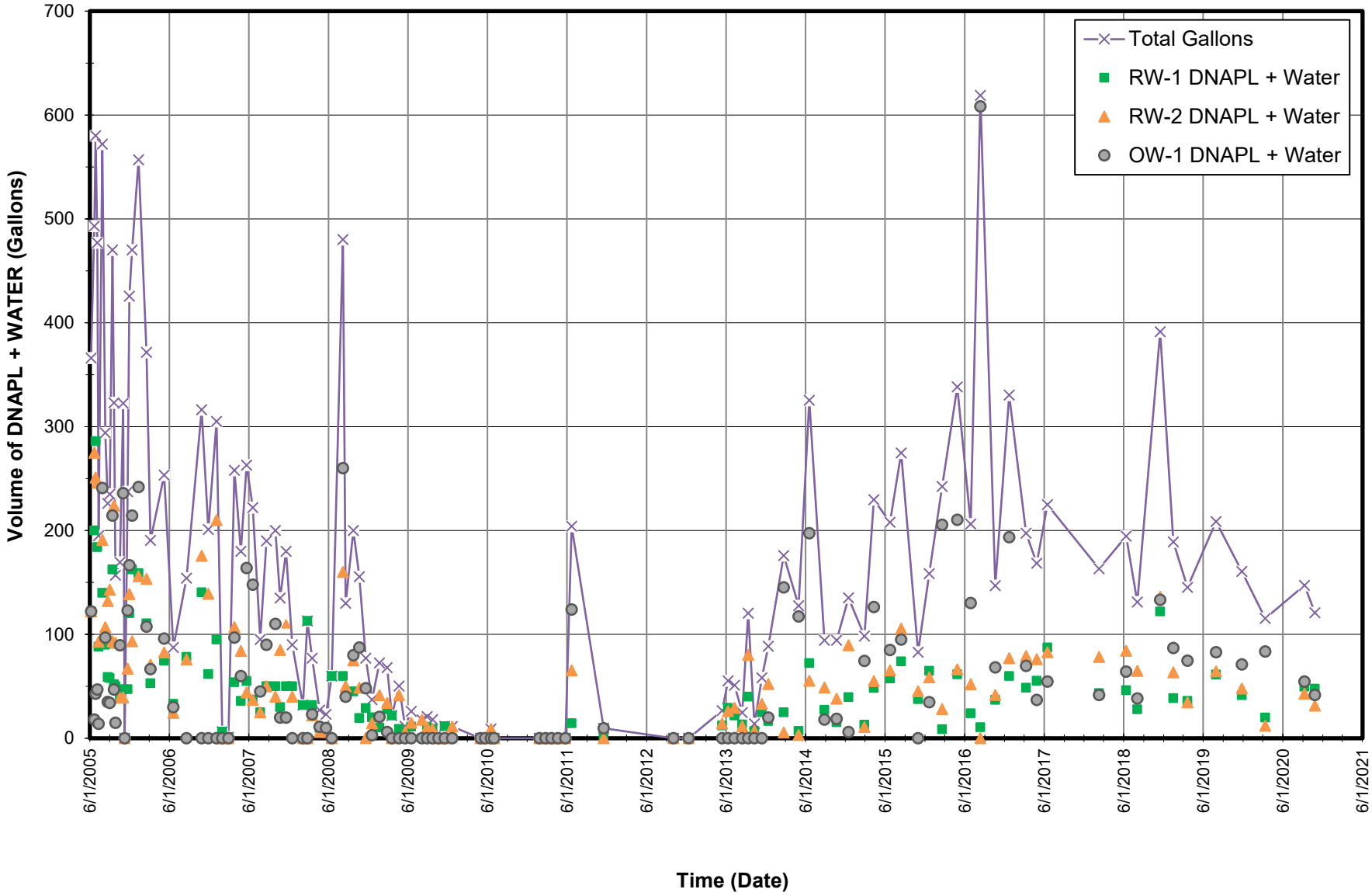
FIGURE 1
WESTERN DNAPL RECOVERY SYSTEM
DNAPL THICKNESS



NOTES:
1. Lines illustrate data trends only and should not be used to interpolate data.

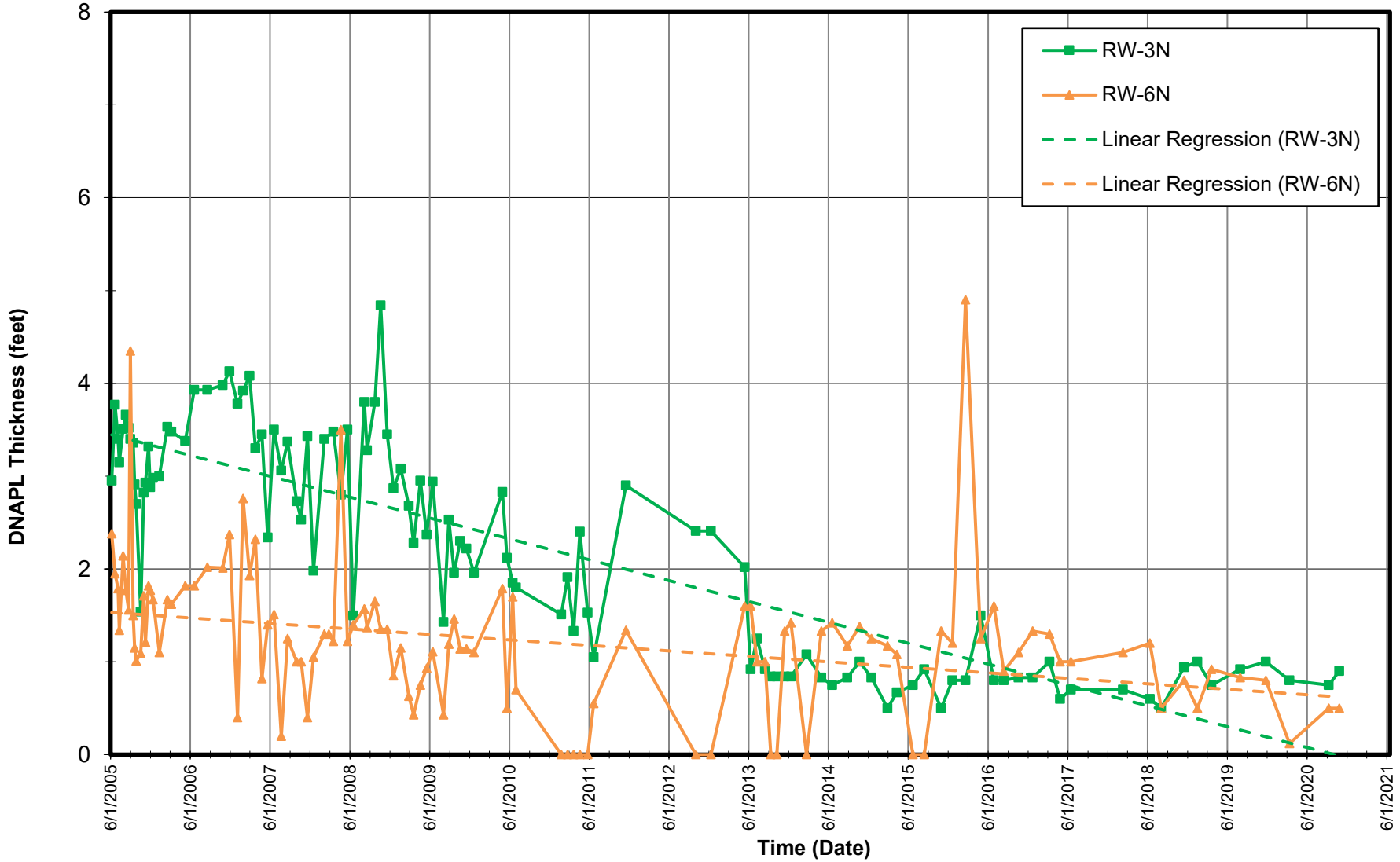
G:\Projects\28590 Hudson Harbor - National Resources\DNAPL Systems\2020 DNAPL\2020-HAI-DNAPL Master Data_updated 11192020.xlsx

FIGURE 2
WESTERN DNAPL RECOVERY SYSTEM
FLUID VOLUME EXTRACTED



G:\Projects\28590 Hudson Harbor - National Resources\DNAPL Systems\2020 DNAPL\2020-HAI-DNAPL Master Data_updated 11192020.xlsx

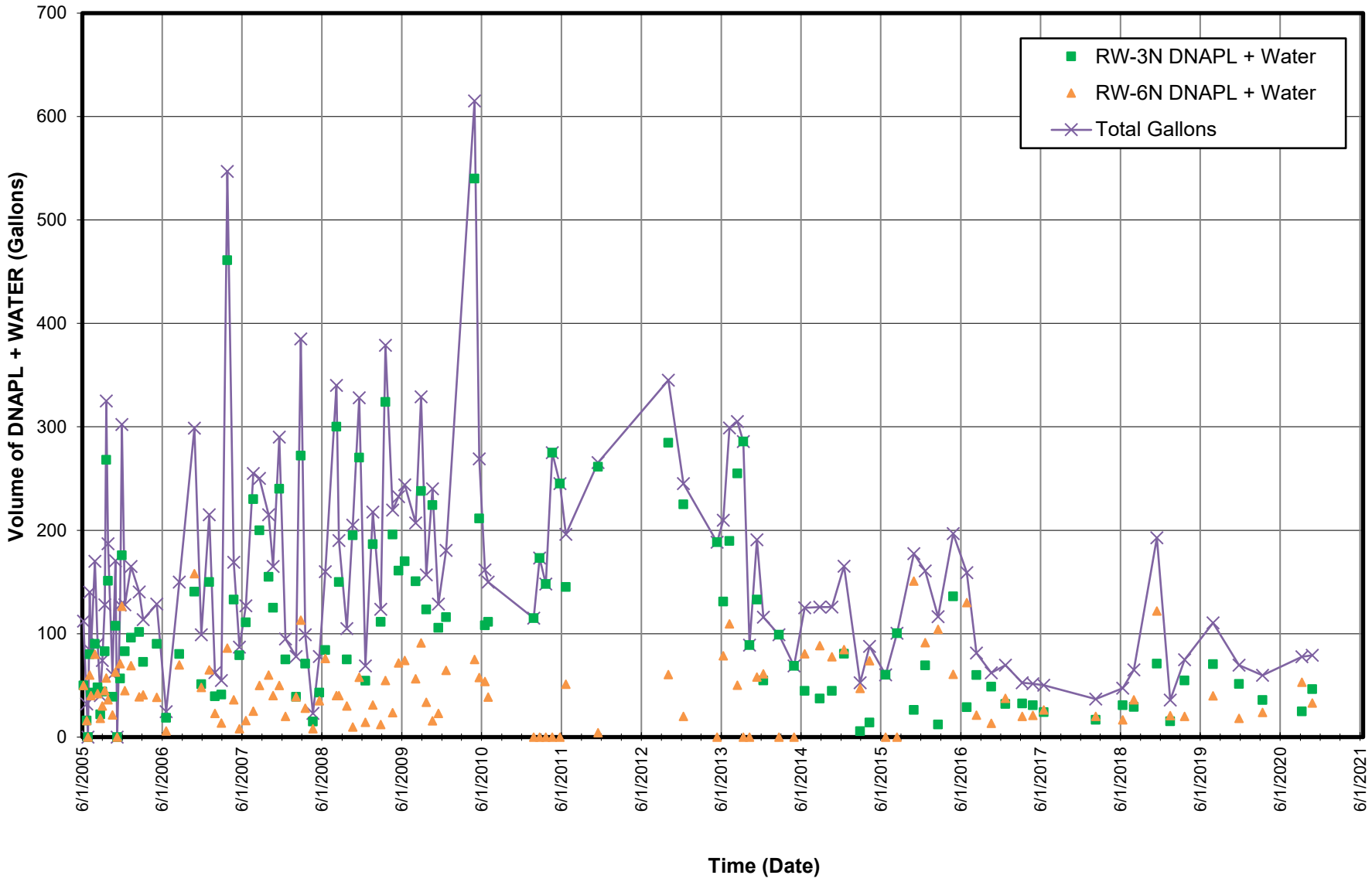
FIGURE 3
NORTHERN DNAPL RECOVERY SYSTEM
DNAPL THICKNESS



NOTES:
1. Lines illustrate data trends only and should not be used to interpolate data.

G:\Projects\28590 Hudson Harbor - National Resources\DNAPL Systems\2020 DNAPL\2020-HAI-DNAPL Master Data_updated 11192020.xlsx

FIGURE 4
NORTHERN DNAPL RECOVERY SYSTEM
FLUID VOLUME EXTRACTED



G:\Projects\28590 Hudson Harbor - National Resources\DNAPL Systems\2020 DNAPL\2020-HAI-DNAPL Master Data_updated 11192020.xlsx

DNAPL EXTRACTION REPORT

PROJECT Tarrytown Former MGP Site
LOCATION Tarrytown, New York

Well ID#	Date	DNAPLTime (seconds)	Total Time (seconds)	DNAPL Extracted	Total Extracted	Units	Extraction Method	Performed By	
OW-1	3/12/2020	22	24	29.2	31.82	Gallons	vac truck	SLF	
RW-1	3/12/2020	13	15	17.2	19.89	Gallons	vac truck	SLF	
RW-2	3/12/2020	7	9	9.3	11.93	Gallons	vac truck	SLF	
OW-1	3/12/2020	7	12	9.3	15.91	Gallons	vac truck	SLF	
OW-1	3/12/2020	9	11	11.9	14.58	Gallons	vac truck	SLF	
RW-6N	3/12/2020	16	18	21.2	23.86	Gallons	vac truck	SLF	
RW-3N	3/12/2020	10	12	13.3	15.91	Gallons	vac truck	SLF	
OW-1	3/12/2020	11	16	14.6	21.21	Gallons	vac truck	SLF	
RW-3N	3/12/2020	4	15	5.3	19.89	Gallons	vac truck	SLF	
Total Time		99	132						
Total Volume Extracted				131.3	175				

Total Volume Removed From Site: 225 gals.

REMARKS: See Section 2 of Operation, Maintenance and Monitoring Plan for DNAPL extraction instructions

Product encountered in RW-6N appears to be more viscous than that in other wells.

"Jay" plug in southern offset recovery straw was replaced during this event.

All wells producing DNAPL contain 2-inch PVC risers for collection.

DNAPL MONITORING REPORT

PROJECT Tarrytown Former MGP Site
LOCATION Tarrytown, New York

Well ID#	Date	Time	Depth of Water from Stick Down*	Top of LNAPL	Top of DNAPL	Bottom of DNAPL	Thickness of DNAPL	Depth of Well	Thickness of Sediment in Bottom of Well	Read By
Northern DNAPL Area										
OW-1N	3/12/2020	10:35	6.8	N/A	N/A	N/A	0	23.5 * *	0	SLF
RW-1N	3/12/2020	10:45	7.67	N/A	N/A	N/A	0	18.77 * *	0	SLF
RW-2N	3/12/2020	10:55	6.7	N/A	N/A	N/A	0	18.55	0	SLF
RW-3N	3/12/2020	13:45	6	N/A	18.03	Bottom of well	0.8	18.83	0	SLF
RW-4N	Well decomissioned and grouted closed on 7/14/2017									
RW-5N	Well decomissioned and grouted closed on 7/14/2017									
RW-6N	3/12/2020	13:15	N/R	N/A	23.2	Bottom of well	0.12	23.6 * * * *	0	SLF
OW-2N	3/12/2020	14:15	8.5	N/A	N/A	N/A	0	22.5 * * * *	1	SLF
RW-3N	3/12/2020	14:20	8	N/A	18.58	Bottom of well	< 0.08	18.83	0	SLF
Western DNAPL Area										
OW-1	3/12/2020	8:30	7.85	N/A	28.24	Bottom of well	0.5	28.74	0	SLF
RW-1	3/12/2020	8:40	7.25	N/A	27.05	Bottom of well	0.6	27.65	0	SLF
RW-2	3/12/2020	8:45	8.1	N/A	26.59	Bottom of well	1	27.59	0	SLF
OW-2	3/12/2020	8:20	7.94	N/A	N/A	N/A	0	31.22	0	SLF
OW-1	3/12/2020	11:05	7.85	N/A	27.54	Bottom of well	1.2	28.74	0	SLF
RW-1	3/12/2020	11:15	7.7	N/A	27.65	Bottom of well	< 0.08	27.65	0	SLF
RW-2	3/12/2020	11:20	N/R	N/A	27.65	Bottom of well	< 0.08	27.59	0	SLF
OW-1	3/12/2020	13:30	7.5	N/A	27.89	N/A	0.85	28.74	0	SLF
OW-1	3/12/2020	14:05	8	N/A	27.65	Bottom of well	< .08	27.65	0	SLF

REMARKS: **Criteria to note in remarks: 1. Thickness of Sediment within the well. 2. Describe any soils on the probe (color, type) 3. Note color of DNAPL on probe or tape.**

* Depth measurements taken from top of riser.

* * New depth of well(s) due to addition of riser installed with new manhole(s). OW-1N NEW STICK-UP = El 9.37. RW-1N NEW STICK-UP = El 10.07.

* * * * Depths of wells RW-4N, RW-5N, RW-6N and OW-2N changed recently due to riser and well head extensions.

RW-4N NEW STICK-UP = EL 11.19 (**CONFIRMED 04/27/2017**). RW-5N NEW STICK-UP = EL 11.23. RW-6N NEW STICK-UP = EL 11.17. OW-2N NEW STICK-UP = EL 11.15.

See Table I in Operation, Maintenance and Monitoring Plan for frequency of monitoring and inspection.

ANNUAL INSPECTION NOTES:

DNAPL EXTRACTION REPORT

PROJECT Tarrytown Former MGP Site
LOCATION Tarrytown, New York

Well ID#	Date	DNAPLTime (seconds)	Total Time (seconds)	DNAPL Extracted	Total Extracted	Units	Extraction Method	Performed By	
OW-1	9/8/2020	14	18	23.2	29.78	Gallons	vac truck	DXM	
RW-1	9/8/2020	9	13	14.9	21.51	Gallons	vac truck	DXM	
RW-2	9/8/2020	10	13	16.5	21.51	Gallons	vac truck	DXM	
RW-6N	9/8/2020	13	16	21.5	26.47	Gallons	vac truck	DXM	
RW-3N	9/8/2020	12	15	19.9	24.82	Gallons	vac truck	DXM	
OW-1	9/8/2020	5	8	8.3	13.24	Gallons	vac truck	DXM	
RW-1	9/8/2020	3	9	5.0	14.89	Gallons	vac truck	DXM	
RW-2	9/8/2020	4	7	6.6	11.58	Gallons	vac truck	DXM	
OW-1	9/8/2020	4	7	6.6	11.58	Gallons	vac truck	DXM	
RW-1	9/8/2020	5	8	8.3	13.24	Gallons	vac truck	DXM	
RW-2	9/8/2020	4	6	6.6	9.93	Gallons	vac truck	DXM	
RW-6N	9/8/2020	12	16	19.9	26.47	Gallons	vac truck	DXM	
Total Time		95	136						
Total Volume Extracted				157.2	225				

Total Volume Removed From Site: 225 gals.

REMARKS: See Section 2 of Operation, Maintenance and Monitoring Plan for DNAPL extraction instructions

Product encountered in RW-6N appears to be more viscous than that in other wells.

"Jay" plug in southern offset recovery straw was replaced during this event.

All wells producing DNAPL contain 2-inch PVC risers for collection.

DNAPL MONITORING REPORT

PROJECT Tarrytown Former MGP Site
LOCATION Tarrytown, New York

Well ID#	Date	Time	Depth of Water from Stick Down*	Top of LNAPL	Top of DNAPL	Bottom of DNAPL	Thickness of DNAPL	Depth of Well	Thickness of Sediment in Bottom of Well	Read By
Northern DNAPL Area										
OW-1N	9/8/2020	9:35	7.41	N/A	N/A	N/A	0	23.5 * *	0	DXM
RW-1N	9/8/2020	9:43	7.83	N/A	N/A	N/A	0	18.77 * *	0	DXM
RW-2N	9/8/2020	9:50	7.03	N/A	N/A	N/A	0	18.55	0	DXM
RW-3N	9/8/2020	10:10	6.8	N/A	18.08	Bottom of well	0.75	18.83	0	DXM
RW-4N	Well decomissioned and grouted closed on 7/14/2017									
RW-5N	Well decomissioned and grouted closed on 7/14/2017									
RW-6N	9/8/2020	10:25	6.55	N/A	23.1	Bottom of well	0.5	23.6 * * * *	0	DXM
OW-2N	9/8/2020	10:35	8.71	N/A	N/A	N/A	0	22.5 * * * *	1	DXM
RW-3N	9/8/2020	10:45	8.13	N/A	18.58	Bottom of well	0.42	18.83	0	DXM
RW-6N	9/8/2020	14:25	6.61	N/A	23.6	Bottom of well	0	23.6 * * * *	0	DXM
RW-3N	9/8/2020	14:30	8.13	N/A	18.75	Bottom of well	0.08	18.83	0	DXM
Western DNAPL Area										
OW-1	9/8/2020	8:35	8.4	N/A	27.95	Bottom of well	0.79	28.74	0	DXM
RW-1	9/8/2020	8:40	8	N/A	27.15	Bottom of well	0.5	27.65	0	DXM
RW-2	9/8/2020	8:45	8.6	N/A	26.76	Bottom of well	0.83	27.59	0	DXM
OW-2	9/8/2020	8:50	8.2	N/A	N/A	N/A	0	31.22	0	DXM
OW-1	9/8/2020	11:00	8.3	N/A	28.41	Bottom of well	0.33	28.74	0	DXM
RW-1	9/8/2020	11:05	8	N/A	27.4	Bottom of well	0.25	27.65	0	DXM
RW-2	9/8/2020	11:10	8.5	N/A	27.17	Bottom of well	0.42	27.59	0	DXM
OW-1	9/8/2020	12:15	8.3	N/A	28.43	Bottom of well	0.31	28.74	0	DXM
RW-1	9/8/2020	12:20	8.1	N/A	27.6	Bottom of well	0.05	27.65	0	DXM
RW-2	9/8/2020	12:25	8.6	N/A	27.59	Bottom of well	0	27.59	0	DXM

REMARKS: **Criteria to note in remarks: 1. Thickness of Sediment within the well. 2. Describe any soils on the probe (color, type) 3. Note color of DNAPL on probe or tape.**

* Depth measurements taken from top of riser.

* * New depth of well(s) due to addition of riser installed with new manhole(s). OW-1N NEW STICK-UP = El 9.37. RW-1N NEW STICK-UP = El 10.07.

* * * * Depths of wells RW-4N, RW-5N, RW-6N and OW-2N changed recently due to riser and well head extensions.

RW-4N NEW STICK-UP = EL 11.19 (**CONFIRMED 04/27/2017**). RW-5N NEW STICK-UP = EL 11.23. RW-6N NEW STICK-UP = EL 11.17. OW-2N NEW STICK-UP = EL 11.15.

See Table I in Operation, Maintenance and Monitoring Plan for frequency of monitoring and inspection.

ANNUAL INSPECTION NOTES:

DNAPL EXTRACTION REPORT

PROJECT Tarrytown Former MGP Site
LOCATION Tarrytown, New York

Well ID#	Date	DNAPLTime (seconds)	Total Time (seconds)	DNAPL Extracted	Total Extracted	Units	Extraction Method	Performed By	
OW-1	10/26/2020	14	19	20.9	28.36	Gallons	vac truck	DXM	
RW-1	10/26/2020	13	17	19.4	25.37	Gallons	vac truck	DXM	
RW-2	10/26/2020	8	13	11.9	19.40	Gallons	vac truck	DXM	
OW-1	10/26/2020	5	9	7.5	13.43	Gallons	vac truck	DXM	
RW-1	10/26/2020	10	15	14.9	22.39	Gallons	vac truck	DXM	
RW-2	10/26/2020	6	8	9.0	11.94	Gallons	vac truck	DXM	
RW-6N	10/26/2020	10	22	14.9	32.84	Gallons	vac truck	DXM	
RW-3N	10/26/2020	17	19	25.4	28.36	Gallons	vac truck	DXM	
RW-3N	10/26/2020	8	12	11.9	17.91	Gallons	vac truck	DXM	
Total Time		91	134						
Total Volume Extracted				135.8	200				

Total Volume Removed From Site: 200 gals.

REMARKS: See Section 2 of Operation, Maintenance and Monitoring Plan for DNAPL extraction instructions

Product encountered in RW-6N appears to be more viscous than that in other wells.

"Jay" plug in southern offset recovery straw was replaced during this event.

All wells producing DNAPL contain 2-inch PVC risers for collection.

DNAPL MONITORING REPORT

PROJECT Tarrytown Former MGP Site
LOCATION Tarrytown, New York

Well ID#	Date	Time	Depth of Water from Stick Down*	Top of LNAPL	Top of DNAPL	Bottom of DNAPL	Thickness of DNAPL	Depth of Well	Thickness of Sediment in Bottom of Well	Read By
Northern DNAPL Area										
OW-1N	10/26/2020	9:15	6.8	N/A	N/A	N/A	0	23.5 * *	0	DXM
RW-1N	10/26/2020	9:20	7.67	N/A	N/A	N/A	0	18.77 * *	0	DXM
RW-2N	10/26/2020	9:25	6.7	N/A	N/A	N/A	0	18.55	0	DXM
RW-3N	10/26/2020	12:15	6	N/A	17.93	Bottom of well	0.9	18.83	0	DXM
RW-4N	Well decomissioned and grouted closed on 7/14/2017									
RW-5N	Well decomissioned and grouted closed on 7/14/2017									
RW-6N	10/26/2020	12:25	N/R	N/A	23.1	Bottom of well	0.5	23.6 * * * *	0	DXM
OW-2N	10/26/2020	12:35	8.5	N/A	N/A	N/A	0	22.5 * * * *	1	DXM
RW-3N	10/26/2020	14:30	8	N/A	18.43	Bottom of well	0.4	18.83	0	DXM
Western DNAPL Area										
OW-1	10/26/2020	8:05	7.85	N/A	28.24	Bottom of well	0.5	28.74	0	DXM
RW-1	10/26/2020	8:10	7.25	N/A	27.25	Bottom of well	0.4	27.65	0	DXM
RW-2	10/26/2020	8:15	8.1	N/A	27.19	Bottom of well	0.4	27.59	0	DXM
OW-2	10/26/2020	8:20	7.94	N/A	N/A	N/A	0	31.22	0	DXM
OW-1	10/26/2020	10:10	7.85	N/A	28.44	Bottom of well	0.3	28.74	0	DXM
RW-1	10/26/2020	10:15	7.7	N/A	27.65	Bottom of well	0.2	27.65	0	DXM
RW-2	10/26/2020	10:20	N/R	N/A	27.65	Bottom of well	0.2	27.59	0	DXM
OW-1	10/26/2020	13:05	7.5	N/A	28.68	N/A	0.06	28.74	0	DXM
RW-1	10/26/2020	13:10	7.25	N/A	27.62	Bottom of well	0.03	27.65	0	DXM
RW-2	10/26/2020	13:15	8.1	N/A	27.52	Bottom of well	0.07	27.59	0	DXM

REMARKS: **Criteria to note in remarks: 1. Thickness of Sediment within the well. 2. Describe any soils on the probe (color, type) 3. Note color of DNAPL on probe or tape.**

* Depth measurements taken from top of riser.

* * New depth of well(s) due to addition of riser installed with new manhole(s). OW-1N NEW STICK-UP = El 9.37. RW-1N NEW STICK-UP = El 10.07.

* * * * Depths of wells RW-4N, RW-5N, RW-6N and OW-2N changed recently due to riser and well head extensions.

RW-4N NEW STICK-UP = EL 11.19 (**CONFIRMED 04/27/2017**). RW-5N NEW STICK-UP = EL 11.23. RW-6N NEW STICK-UP = EL 11.17. OW-2N NEW STICK-UP = EL 11.15.

See Table I in Operation, Maintenance and Monitoring Plan for frequency of monitoring and inspection.

ANNUAL INSPECTION NOTES:

SHIPPING DOCUMENT

IN THE EVENT OF AN EMERGENCY CALL **24-Hr-Number** 1-800-468-1760(Safety-Kleen)

REFERENCE NBR.

CUSTOMER#/GENERATOR: FE18257 Ferry Landings Llc 82662819-2001356443
120 Main Street
Tarrytown NY 10591-0000
PHONE 203-661-0055
GENERATOR USEPA ID. GENERATOR STATE
MANIFEST#: FORM CD: NR SHIP# 230937085
TRANSPORTER 1 TXR000081205 Safety Kleen
TRANSPORTER 2

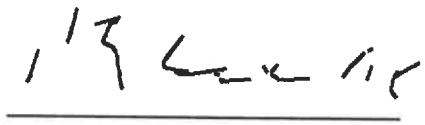
US DOT DESCRIPTION (INCLUDING PROPER SHIPPING NAME, HAZARD CLASS, AND ID)

OILY WATER
(NOT USDOT OR USEPA REGULATED) (VAC)
FEDERAL WASTE CODES NONE
STATE WASTE CODES
TOTAL CONT 1 TYPE TT WT/VOL G SKDOT 7008471
CNT#: 200312308536 SZ: BULK VOLUME CONTAINER QTY: 175 PROF# 150451

DESIGNATED FACILITY NAME/ADDRESS:
ENVIRO WASTE OIL RECOVERY LL
279 RTE 6
MAHOPAC NY 10541
TSD PHONE: 845-279-0263

FACILITY USEPA ID NO NYD044825636
FACILITY STATE ID NO

Per BOG M420-001 the halogen detecting instrument has been zeroed and validated.
GENERATOR STATUS
CESQG: Vehicle



Signature

CUSTOMER / GENERATOR: mike

Signature

TRANSPORTER: Richard B Delahanty

TRANSPORTER 2:

2600 North Central Expressway, Suite 200
Richardson, TX 75080
800-669-5740
www.safety-kleen.com

CUSTOMER NO. FE18257

CUSTOMER / GENERATOR
Ferry Landings
129 Main St
Tarrytown NY

BILL TO

FOR SERVICE CALL	BRANCH MANAGER	DOC. EXP.	SCHEDULED SERVICE WEEK	SCHEDULED TERRITORY	REFERENCE NUMBER

DUNS NO. 05-397-6551 FED. ID NO. 396090019

CREDIT CODE	PREVIOUS BALANCE	BAL. OVER 60 DAYS

CUSTOMER SEGMENT	CHAIN	OUTER COUNTY	SVC. P/C	PROD. P/C

LOCATION	TAX EXEMPTION NUMBER

SERVICE DATE	SALES REP NO.	CUSTOMER P.O. NUMBER	CUSTOMER PHONE #	TAX CODE	DATE EQPT/PROD ORDERED	SERVICE TAX	C.O.M.S. TAX	PRODUCT TAX
9/8/20	049168	8414 1995						

	DEPT	SERVICE/ PRODUCT	SURVEY NUMBER	UNIT PRICE	QUANTITY	CHARGE	SALES TAX	TOTAL CHARGE	CHLORINE TEST RESULTS: HALOGEN TESTER PASS	HALOGEN TESTER FAIL	CHLOR-D-TECT RESULTS (PPM)	CHLOR-D-TECT TESTERS INITIALS	SK DOT NUMBER	CC	SERVICE TERM	CHANGE SERVICE TERM (WEEKS)	CHANGE SERVICE TERM (INITIAL)	CHANGE SCH. DATE (YY WW)	PROMO NO.	RELEASE NO.
1		109107							☐	☐										
2		100030							☐	☐										
3		666667							☐	☐										
4									☐	☐										
5									☐	☐										
6									☐	☐										
7									☐	☐										
8									☐	☐										
9									☐	☐										

TOTAL-SERVICE/PRODUCTS

TANK CAPACITY

TRANSPORTER — DATE 9 / 18 / 20
Kirk Carroll — PRINT NAME
X — SIGNATURE

FACILITY — DATE / /
PRINT NAME
X — SIGNATURE

GENERATOR STATUS: CHECK ONLY ONE BOX BELOW

GENERATOR: HAZARDOUS WASTE CLASSIFICATION *	VEHICLE FLUIDS ONLY	OTHER NON-VEHICLE FLUIDS
CESQG	☐ 1	☐ 3
SQG/LQG	☐ 2	☐ 4

1 NO PREQUAL REQUIRED, NO HALOGEN TEST
2 NO PREQUAL REQUIRED, HALOGEN TEST AT PICK-UP
3 PREQUAL REQUIRED, NO HALOGEN TEST
4 PREQUAL REQUIRED, HALOGEN TEST AT PICK-UP
* REFER TO REVERSE SIDE FOR DEFINITIONS

MANIFEST NO.	USEPA TRANSPORTER ID NO.
	TXR000081205
GENERATOR USEPA ID NO.	GENERATOR STATE ID NO.

	11. US DOT DESCRIPTION (INCLUDING PROPER SHIPPING NAME, HAZARD CLASS, AND ID.)	12. CONTAINERS NO.	12. CONTAINERS TYPE	13. TOTAL QUANTITY	14. UNIT WT/VOL	SK DOT NUMBER
1.	Petroleum Contaminated Water Non DOT, Non RCRA	1	TT	225	G	
3.						
2.						
4.						

We Recycle!
WE CARE.

INTERMEDIATE FACILITY NAME AND ADDRESS
Enviro Waste Oil 279 RT 6 Mahopac NY 10541

USA EPA ID NO. NYD044825636
STATE ID NO.

OIL RECOVERY SERVICE/

PAYMENT RECEIVED SECTION

CASH ☐	TOTAL RECEIVED	APPLY PAYMENT TO:
CHECK NUMBER		☐ TODAY'S SERVICE/SALE ☐ PREVIOUS BALANCE AS FOLLOWS

INVOICE #	AMOUNT $	INVOICE #	AMOUNT $

PREVIOUS CREDIT CARD NO →

MANIFEST CODE	SEQ #

CREDIT CARD NO.
AMEX VISA MC
EXP. DATE

CUSTOMER REFERENCE INFORMATION

IN THE EVENT OF AN EMERGENCY CALL
1-800-468-1760 (24 hours)

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT RECEIVED SECTION.

Customer certifies that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the U.S. Environmental Protection Agency and the U.S. Department of Transportation.

ADDITIONAL TERMS AND CONDITIONS ON THE REVERSE SIDE OF THIS DOCUMENT ARE INCORPORATED HEREWITH MADE A PART HEREOF.

Print Name MICHAEL COONEY
X Michael Cooney
GENERATOR/SHIPPER DESIGNATED REPRESENTATIVE SIGNATURE

SEE REVERSE SIDE FOR IMPORTANT INFORMATION

TOTAL DUE

DO NOT WRITE IN THE AREA BELOW

CSG SK-EWN-VAC-41 Cancel,Kirk E 10-26-2020 15:06

SHIPPING DOCUMENT

IN THE EVENT OF AN EMERGENCY CALL **24-Hr-Number** 1-800-468-1760 (SAFETY-KLEEN SYSTEMS, INC.)

REFERENCE NBR.
84350309 - 200490316

CUSTOMER / GENERATOR: FE18257 Ferry Landings Llc
129 Main Street
Tarrytown NY 10591-0000
PHONE: 203-661-0055

GENERATOR USEPA ID.
GENERATOR STATE:
MANIFEST#: FORM CD : NR SHIP# 292477625

TRANSPORTER 1 TXR000081205 SAFETY-KLEEN SYSTEMS INC.
TRANSPORTER 2
US DOT DESCRIPTION (INCLUDING PROPER SHIPPING NAME, HAZARD CLASS, AND ID)
OILY WATER
(NOT USDOT OR USEPA REGULATED)(VAC)
FEDERAL WASTE CODES NONE
STATE WASTE CODES
TOTAL CONT 1 TYPE: TT WT/VOL G SKDOT 7008471
CNT# 200923695639 SZ: BULK VOLUME CONTAINER QTY: 200 PROF# 150451

DESIGNATED FACILITY NAME/ADDRESS:
ENVIRO WASTE OIL RECOVERY LLC
279 RTE 6
MAHOPAC
NY 10541
TSD PHONE: 845-279-0263

FACILITY USEPA ID NO NYD044825636
FACILITY STATE ID NO

GENERATOR STATUS CESQG: Vehicle

CUSTOMER / GENERATOR: mike

TRANSPORTER: Cancel,Kirk E

TRANSPORTER 2:

LAST PAGE

APPENDIX E

Underwater Cap Inspection Report

HALEY & ALDRICH OF NEW YORK
200 Town Centre Drive
Suite 2
Rochester, NY 14623
585.359.9000

23 December 2020
File No. 134976-002

Ferry Landings, LLC
485 West Putnam Avenue
Greenwich, CT 06830

Attention: Carl Monheit
Senior Director of Development and Chief Engineer

Subject: Tarrytown Former MGP Site
2019 Underwater Cap Inspection Report
Tarrytown, NY
BCP Site No. C360064

Ladies and Gentlemen:

We are pleased to submit this report which documents the 12 December 2019 underwater cap inspection at the Tarrytown Former Manufactured Gas Plant (MGP) Site (the Site). See Figure 1 for the Site Locus, Figure 2 for the Site Plan showing the location of the underwater cap, and Figure 3 for a typical cross-section. Based on this inspection, the cap continues to be protective of human health and the environment.

Purpose

The Site Management Plan (SMP) dated 10 August 2010 and approved by the New York State Department of Environmental Conservation (NYSDEC) on 26 August 2010 requires the underwater cap in the Hudson River to be inspected. Currently the inspection frequency is every five years, however we recommend the frequency be extended to every seven years given the results of this and previous inspection reports.

This report summarizes the condition of the underwater cap in the Hudson River, beneath the relieving platform where residual sediment contamination was capped in place, as reported in the 2005 *Final Engineering Report Tarrytown Former MGP Site, Tarrytown, NY*, and described in the SMP.

UNDERWATER CAP

The underwater cap was installed in 2004 and consists of the following materials, in descending order:

- 2 feet of granular fill - gravel (habitat material)
- 1 foot of medium stone (armor stone – rip rap)
- 1 foot of sand-cement-bentonite (cap overlying in-situ residually contaminated sediment)

The underwater cap is approximately 20 ft wide and 160 ft long. It is situated beneath the relieving platform which is oriented north-south along the Hudson River waterfront of the Site (Figure 2). The relieving platform is approximately 20 ft wide and is supported by timber piles that are arranged in east-west rows (called bents) containing 5-7 piles each (Figure 3). The bents are spaced approximately 5-6 feet apart.

The western limit of the underwater cap is formed by the steel sheet pile barrier for the Western DNAPL Recovery System. After installation, the sheet piles were cut off close to the top of the river bottom sediments on the west and cap materials on the east. The eastern limit of the underwater cap is bounded by the pre-existing vertical timber retaining wall

UNDERWATER INSPECTION

Seaway Diving and Salvage Company, Inc. of Waterford New York performed the inspection on 12 December 2019. The work was monitored by a Haley & Aldrich representative. The inspection was performed by a 3-man dive team consisting of a professional diver, dive tender, and dive supervisor. A summary of the underwater cap inspection is included as Table 1. The diver's report is attached as Appendix A.

The diver used gear equipped with a closed-circuit video camera, spotlight, 2-way communication system, and a steel rod to probe the cover thickness. The cap was completely submerged during the inspection. Underwater visibility during the inspection was very poor (near zero visibility) due to high turbidity. The diver reported (based on experience) that the visibility was typical of that portion of the Hudson River.

The diver used a 4 ft long metal rod marked with 1 ft increments starting at 6 in. increments and his hands to probe and determine bottom material. The dive started at the north end and was conducted in rows oriented west to east with a probing attempt at 4-6 places in each row as conditions would allow. The diver then moved south approximately 8-10 ft and started another row.

INSPECTION RESULTS

Table 1 shows the results of the inspection and indicates the type of material observed on the surface of the river bottom. As shown on the table, the top habitat layer was present at the cap surface throughout most of the underwater cap. The diver commonly noted that the gravel layer was dense. As a result, the habitat layer thickness was difficult to penetrate using a steel rod and the full layer thickness could not be determined.

In localized areas, the habitat material had eroded, and the armor stone was present at the cap surface. The armor stone layer could not be penetrated using a steel rod nor the thickness measured.

Based on the diver's inspection, the cover had not been compromised exposing underlying sediment.

RIVER DYNAMICS

Changes to the underwater cap compared to the previous inspection are a result of natural river processes. There have been no operations associated with the site development that disturbed the cap or sheet piles. This portion of the Hudson River is subject to natural river scour and deposition as described in our June 2004 report titled *Tarrytown Former MGP Site, Hudson River Navigation Channel, River Deposition and Scour Evaluation, Tarrytown New York*. It should be noted that severe events, such as Hurricane Sandy in October 2012, can cause large amounts of scour and/or deposition. Periodic dredging of the nearby Tarrytown Marina and the navigation channel located adjacent to the relieving platform has been performed over many years, which suggests that this portion of the river is an area of net deposition.

Summary

The underwater inspection was performed on 12 December 2019. Underwater visibility during the inspection was poor due to high turbidity of the river water. The inspection was performed primarily by repeated manual probing of the cap and sheet piles.

The top habitat layer was present at the cap surface throughout most of the underwater cap. In some places, the habitat material had eroded, and the armor stone was present at the cap surface. Based on the diver's inspection, the cover had not been compromised exposing underlying sediment.

The underwater cap and sheet pile appeared to be in a similar condition compared the previous inspection, performed in 2014. The cover remains effective in preventing exposure to the buried residual contaminated sediment beneath the relieving platform.

Based on the 2019 inspection, we recommend that the underwater cover is to be inspected every seven years. The next underwater cap inspection is tentatively scheduled for 2026.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Vincent B. Dick
Principal

Jonathan D. Babcock, P.E. (NY)
Senior Technical Specialist

Attachments:

Table 1: Underwater Cap Observations December 2019
Figure 1: Site Locus
Figure 2: Site Cover Plan 2020
Figure 3: Typical Section of Relieving Platform
Appendix A – Diver Report

TABLE

TABLE 1
UNDERWATER CAP INSPECTION - OBSERVATIONS DECEMBER 2019
Tarrytown Former MGP Site
Tarrytown, New York

Approximately 10 ft spacing

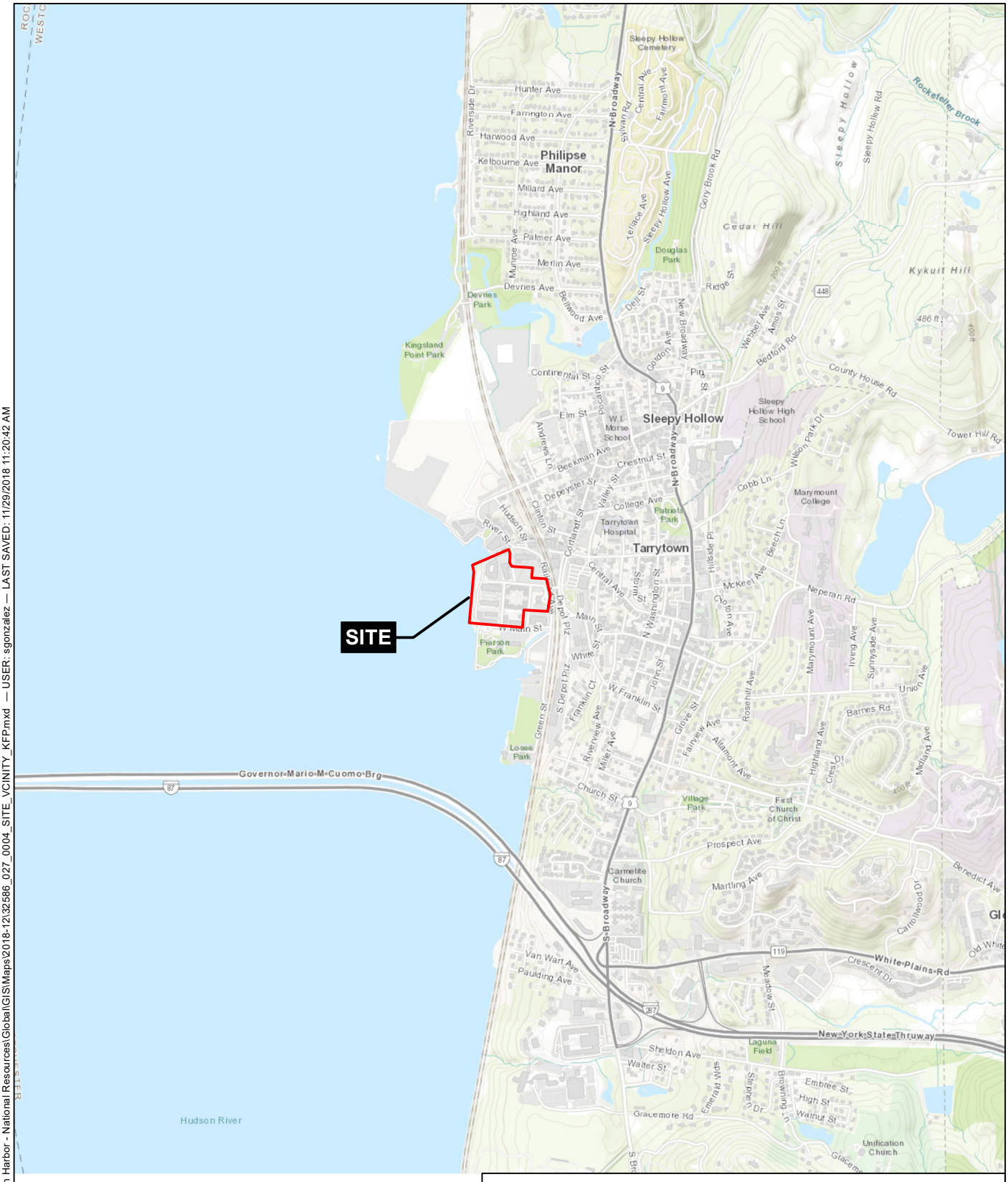
	Column	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
EAST	Row															
Approximately 5 ft spacing	E	AS	SS	SS	AS	SS	AS	AS	SS	SS	SS	AS	AS	AS	SS	SS
	D	AS	SS	AS	SS	AS	SS	SS	AS	SS	SS	AS	AS	AS	AS/SS	SS
	C	SS	AS	AS	1-2" Stone	SS	AS	SS, sand & mud	nm	SS	SS	SS	SS	AS	AS/SS	SS
	B	AS	AS	SS	AS	AS	SS	SS	SS	AS	SS	SS	SS	AS/SS	SS	Sand
WEST	A	SS	Sand	AS	SS	SS	AS	SS	SS	SS	SS	SS	SS	AS	AS/SS	SS
Sheet Pile Exposure - East Side			nm	2.5'	Rock	nm	4"	flush	flush	flush	nm	nm	flush			
Sheet Pile Exposure - West Side		covered	visible	3'	flush	4"	12"	4"	flush	3"	12"	24"	flush	covered	covered	covered
River Bottom West of Sheet Pile		SS	Mud/Rock	Mud	nm	Mud	Mud	Mud/Rock	SS	Mud/SS	Mud/SS	SS	Rock	AS/SS	SS	nm

Note: In general, the steel probe penetrated 3-4 inches into river bottom mud west of the cap area and 1 inch or less into the materials within the cap area.

Mud = typical river bottom mud
Rock = typical river bottom rock/stone
SS = Small stone (gravel typical of habitat material placed on underwater cap)
AS = Armor stone (typical of protection layer placed on underwater soil/cement/bentontite cap)
nm = not measured

General: This table was developed from information provided in the Seaway Diving & Salvage report dated 12/12/19, on hand written notes taken during the inspection, and in consulation with Seaway Diving & Salvage.

FIGURES



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MAP SOURCE: ESRI
USGS QUAD: WHITEPLAINS, NEW YORK
SITE COORDINATES: 41°4'42.9"N, 73°52'3.6"W

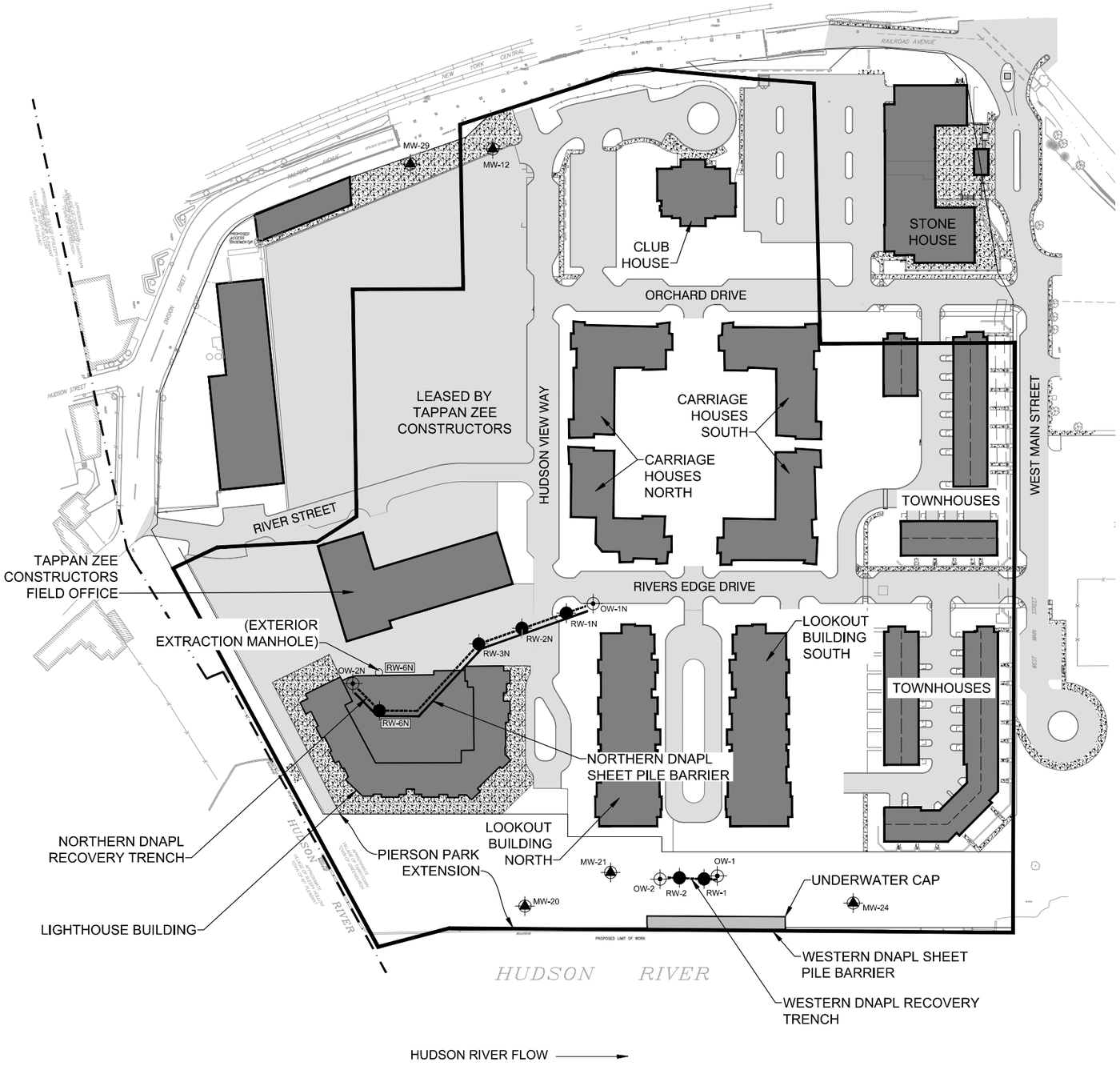
HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
DECEMBER 2020

FIGURE 1



LEGEND

- GROUNDWATER MONITORING WELL
- DNAPL RECOVERY WELL
- EXTERIOR EXTRACTION MANHOLE
- DNAPL OBSERVATION WELL
- APPROXIMATE AREA ENCOMPASSED BY THE BROWNFIELD CLEAN-UP AGREEMENT #C36OO64
- LANDSCAPED AREAS (THESE AREAS CONTAIN DEMARCATION LAYER BELOW CLEAN FILL AND LANDSCAPING)
- PAVED WALKS, PATIOS, OR COURTYARDS
- EXISTING BUILDINGS
- ROADS AND PARKING AREAS

NOTES

1. BASE MAP IS BASED ON CAD DRAWING ENTTILED "PH1_10399-08_PHASE.DWG," DATED 1 JULY 2009 FROM CHAZEN COMPANIES OF GLENN FALLS, NEW YORK AND "PARKING ALLOCATION DIAGRAM," DATED 7 MARCH 2013 FROM LESSARD GROUP, INC., VIENNA, VIRGINIA.

N

0 80 160 240 320
SCALE IN FEET

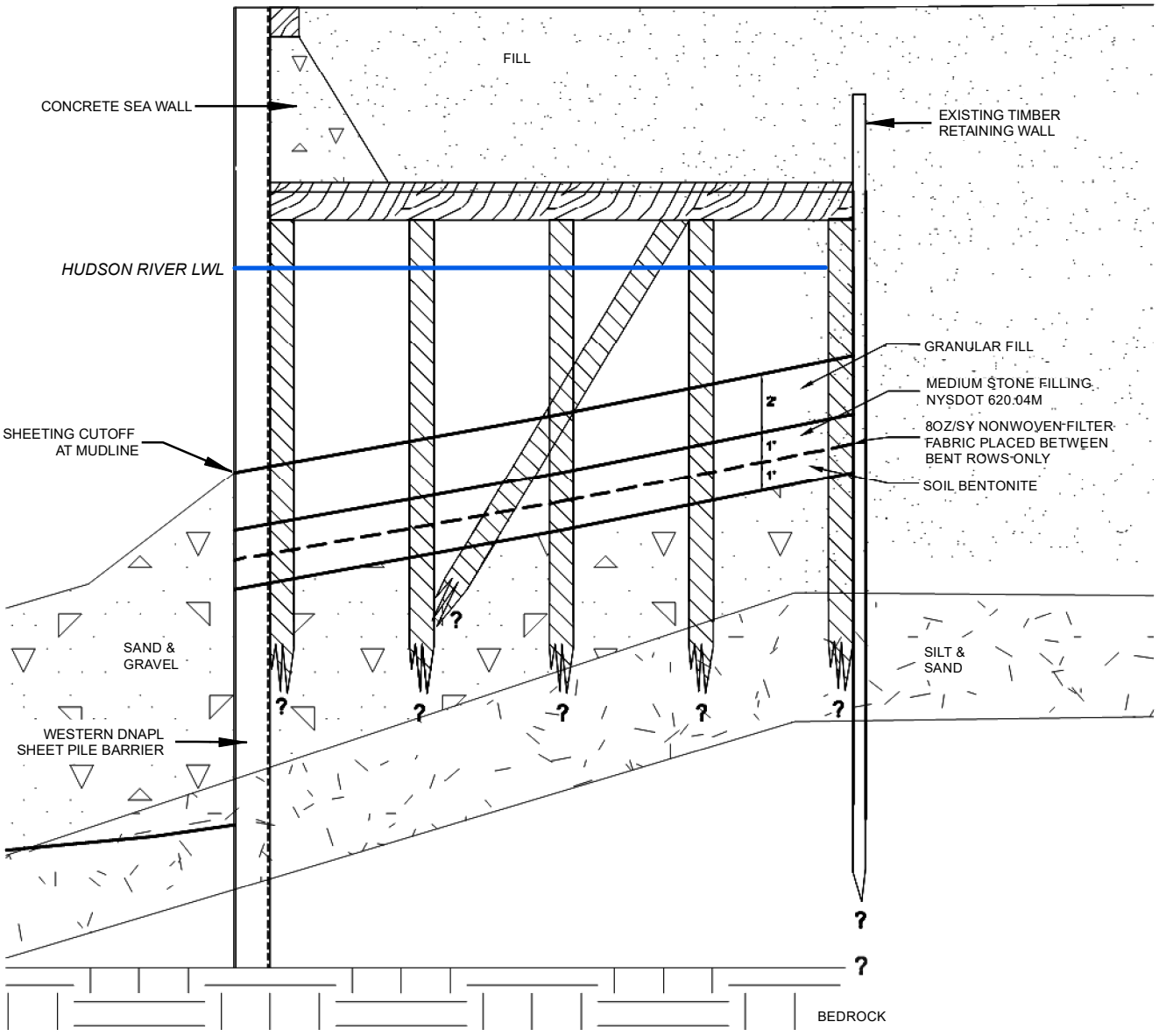
HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE COVER PLAN 2020

SCALE: AS SHOWN
DECEMBER 2020

FIGURE 2



BACKFILL DETAIL BENEATH RELIEVING PLATFORM

0 5 10

VERTICAL SCALE IN FEET

SOURCE:
THIS DETAIL IS FROM HALEY & ALDRICH DRAWING C-8 SEDIMENT EXCAVATION PROFILE, TARRYTOWN FORMER MGP SITE, 25 JULY 2004.
ANNOTATIONS ADDED IN 2020.

HALEY ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C3600064

TYPICAL SECTION OF RELIEVING PLATFORM SHOWING UNDERWATER CAP

APPROXIMATE SCALE AS SHOWN
DECEMBER 2020

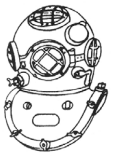
FIGURE 3

APPENDIX A

Diver Report

HALEY ALDRICH

Seaway Diving & Salvage Co., Inc.



10 Guideboard Road Waterford, NY 12188
(518) 238-2632, Fax: (518) 238-2834
Website: www.seawaydivers.com
Email: tim@seawaydivers.com

Underwater Cap Inspection

Ferry Landings, Tarrytown NY

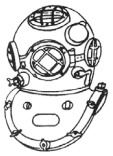
December 12, 2019

On Thursday, December 12, 2019, Seaway Divers along with David Nostrant of Haley & Aldrich, Inc. conducted an underwater inspection of the environmental cap installed beneath the Pierson Park Relieving Platform. The capped area is approximately 160' long and extends approximately 20' under the wooden pier. During this dive the visibility was limited to 6-12". Diver, Nick Leveilee used a 4' metal rod marked with 1' increments starting at 6" and his hands to probe and determine bottom material.

The capped area is defined by a row of sheet piles running north to south just outside of the pier, it continues to the east until it stops at what we refer to as the backwall. The dive was conducted in rows moving west to east with a probing attempt at 4-6 places as conditions would allow. The diver then moved south approximately 8-10' and started another row.

No scouring or loss of cap material was observed. Armor stone and gravel/small stone covered in a layer of river mud make up the cap. A chart/map is attached detailing the location and details of the diver's observations.

Seaway Diving & Salvage Co., Inc.



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Underwater Cap Inspection

Ferry Landings, Tarrytown NY

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
A	NM	NM	NM	NM	SS	AS	AS	NM	SS	NM	SS	AS	AS	AS	NM
B	AS	SS	SS	AS	NM	SS	SS	SS	AS	SS	AS	NM	NM	SS	NM
C	NM	SS	AS	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	AS	SS
D	AS	AS	NM	SS	AS	AS	SS	SS	NM	NM	NM	AS	AS	NM	NM
E	NM	NM	NM	NM	NM	NM	NM	NM	SS	SS	SS	NM	NM	AS	NM
F	SS	NM	NM	NM	NM	NM	SS	NM	NM	NM	NM	AS	AS	SS	SS
G	AS	SS	AS	NM	NM	SS	SAND IN BTWN. MUD	NM	NM	NM	SS	SS	NM	NM	NM
H	SS	AS	SS	1-2" STONE	SS	NM	NM	SS	SS	NM	NM	NM	AS	SS	SS
I	NM	NM	NM	AS	NM	NM	NM	NM	NM	AS	SS	SS	SS	NM	NM
J	NM	NM	AS	SS	AS	AS	NM	NM	SS	SS	AS	NM	NM	AS	S
K	SS	SAND	2.5'	ROCK	SS	4"	0"	SS	FLUSH	NM	NM	SS	AS	SS	SS

EAST

Sheet Pile

River Bottom 5' approx.

		Sheet Pile visible	3'	level	4" mud	12" mud	4" mud stone	SS	3" mud SS	12" mud SS	24" SS	Flush Rock Rock	AS SS	SS	
	SS	mud stone													
							3" penetration			4" penetration					

WEST

SS = SMALL STONE
AS = ARMOR STONE
S = SAND
NM = NOT MEASURED

APPENDIX F

Annual Site Inspection Form

HALEY ALDRICH

SMP - ANNUAL SITE INSPECTION

PROJECT	Tarrytown Former MGP Site	**Prepared By:** Dibyendu Mukherjee	**Routine/Nonroutine Inspection:** Routine Annual
LOCATION	Tarrytown, NY	**Company:** Haley & Aldrich	**Weather:** Cloudy 50s F
DATE(s)	10/27/2020	**Title:** Senior Scientist	**Other Noteworthy Conditions:** None

Attach sketches and/or photographs, as needed.

1. SITE COVER - SOIL, CONCRETE, ASPHALT, STRUCTURES

A. Visual Inspection and Observations:

During the 12/1/19 - 11/30/20 reporting period, Haley & Aldrich performed environmental monitoring and other services as needed under the Site Management Plan. The site cover is in place and effective. There were no changes in the site cover plan.

B. Maintenance, repairs, or changes to site cover completed since previous inspection(s):

No repairs or changes to the site cover was completed in the reporting period 12/1/19 - 11/30/20.

C. Deficiencies noted, if any:

None related to site cover.

D. Recommended actions:

None related to site engineering controls.

2. OTHER SITE OBSERVATIONS (include any incidents, repairs, maintenance, or other observations affecting site management plan and reporting):

DNAPL monitoring and extractions were performed several times during the reporting period.

3. SITE / OWNER PERSONNEL CONTACTED:

a. Michael Cooney, Ferry Landings, LLC

b. Carlos Jimenez, Ferry Landings, LLC