



Former Morton Village Cleaners Plainview, New York Site No. 130201

# CONSTRUCTION COMPLETION REPORT SUB-SLAB DEPRESSURIZATION SYSTEM

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VERTEX PROJECT NO. 65720, 66845, 10470.LK

#### TABLE OF CONTENTS

1.0	INTRODUCTION1
1.1	Site Location and Description2
1.2	Site History
1.3	Summary of Previous Investigations
1	.3.1 Topography/Hydrogeology4
1	.3.2 Summary of Environmental Conditions4
1	.3.3 Inactive Hazardous Waste Disposal Site Number 1302015
1	.3.4 Previous Environmental Sampling5
2.0 SU	MMARY OF OBJECTIVES8
2.1	Pilot Study9
2.2	System Design9
3.0 DE	SCRIPTION OF REMEDIAL ACTIONS PERFORMED11
<b>3.0 DE</b> 3.1	SCRIPTION OF REMEDIAL ACTIONS PERFORMED
<b>3.0 DE</b> 3.1 3.2	SCRIPTION OF REMEDIAL ACTIONS PERFORMED
<b>3.0 DE</b> 3.1 3.2 3.3	SCRIPTION OF REMEDIAL ACTIONS PERFORMED       11         Health and Safety Plan       11         Community Air Monitoring Plan       11         Contractors and Consultants       11
3.0 DE 3.1 3.2 3.3 3	SCRIPTION OF REMEDIAL ACTIONS PERFORMED11Health and Safety Plan11Community Air Monitoring Plan11Contractors and Consultants11.3.1 Site Preparation12
<b>3.0 DE</b> 3.1 3.2 3.3 3 3	SCRIPTION OF REMEDIAL ACTIONS PERFORMED11Health and Safety Plan11Community Air Monitoring Plan11Contractors and Consultants11.3.1 Site Preparation12.3.2 Installation of the SSDS13
3.0 DE 3.1 3.2 3.3 3 3 3 3	SCRIPTION OF REMEDIAL ACTIONS PERFORMED11Health and Safety Plan11Community Air Monitoring Plan11Contractors and Consultants11.3.1 Site Preparation12.3.2 Installation of the SSDS13.3.3 SSDS Start up and Commissioning15
3.0 DE 3.1 3.2 3.3 3 3 3 3.4	SCRIPTION OF REMEDIAL ACTIONS PERFORMED11Health and Safety Plan11Community Air Monitoring Plan11Contractors and Consultants11.3.1 Site Preparation12.3.2 Installation of the SSDS13.3.3 SSDS Start up and Commissioning15Performance Documentation and Sampling.16
3.0 DE 3.1 3.2 3.3 3 3 3 3.4 3.4	SCRIPTION OF REMEDIAL ACTIONS PERFORMED11Health and Safety Plan11Community Air Monitoring Plan11Contractors and Consultants11.3.1 Site Preparation12.3.2 Installation of the SSDS13.3.3 SSDS Start up and Commissioning15Performance Documentation and Sampling16.4.1 Indoor Air Results17
3.0 DE 3.1 3.2 3.3 3 3 3.4 3 3.4 3 3	SCRIPTION OF REMEDIAL ACTIONS PERFORMED11Health and Safety Plan11Community Air Monitoring Plan11Contractors and Consultants11.3.1 Site Preparation12.3.2 Installation of the SSDS13.3.3 SSDS Start up and Commissioning15Performance Documentation and Sampling16.4.1 Indoor Air Results17.4.2 Deviations18

#### FIGURES

Figure 1	Site Location
Figure 2	Sub-Slab Depressurization System Design
Figure 3	Indoor Air Sample Locations

#### TABLES

Table 1	Flow and Vacuum Readings
Table 2	Indoor Air Results
Table 3	Effluent Sample Results



#### APPENDICES

Appendix APrevious Environmental ReportsAppendix BPilot StudyAppendix CSSDS DesignAppendix DPhotologAppendix EOM&M and Spec SheetsAppendix FNYSDOH IA Sampling FormAppendix GLab Reports



	LIST OF ACRONYMS
ACRONYM	DEFINITION
CFM	Cubic Feet per Minute
CCR	Construction Completion Report
CVOCs	Chlorinated Volatile Organic Compounds
DAR 1	Division of Air Resources
HASP	Health & Safety Plan
in. WC.	Inches Water Column
IA	Indoor Air
IRM	Interim Remedial Measure
NYSDEC	New York State Department of Environmental Protection
NYSDOH	New York State Department of Health
OSHA	Occupational Health and Safety Administration
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
ROI	Radius of Influence
SSDS	Sub-Slab Depressurization System
UST	Underground Storage Tank
VI	Vapor Intrusion
VOC	Volatile Organic Compound



#### CONSTRUCTION COMPLETION REPORTSUB-SLAB DEPRESSURIZATION SYSTEM

#### Certification

I, Richard J. Tobia, PE, certify that I am currently a New York State registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Remedial Work Plan (or Remedial Design or Plans and Specifications) was implemented and that all construction activities were completed in substantial conformance with the IRM Work Plan and appropriate Design Plans and Specifications provided to the Matteria

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December 20, 2024

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In accordance with New York State Education Law, it is a violation for any person, unless they are acting under the direction of a licensed professional engineer, to alter this report in any way.



#### CONSTRUCTION COMPLETION REPORT – SUB-SLAB DEPRESSURIZATION SYSTEM

#### Morton Village Plaza Plainview, New York VERTEX Project Nos. 65720, 66845, 10470.LK

#### 1.0 INTRODUCTION

Lockwood, Kessler & Bartlett, Inc., (LKB) a subsidiary of The Vertex Companies, LLC and formerly DBA Vertex Engineering, PC (VERTEX) has prepared this Construction Completion Report (CCR) to document the installation and operation of an active sub-slab depressurization system (SSDS) at one of the four buildings located at the Morton Village shopping center site, located at 998-1064 Old Country Road, Plainview, Nassau County, New York (hereinafter referred to as the "Site"). The Site location is depicted on Figure 1. This CCR is a required element of the remedial program for the Site. The Former Morton Village Cleaners entered into the New York State Superfund Program with associated Site Code No. 130201, which is administered by the New York State Department of Environmental Conservation (NYSDEC) through a Consent Decree dated April 29, 1998.

The interim remedial measure (IRM) work was performed at the site in accordance with a draft Remedial Action Work Plan (RAWP) and subsequent design documents provided to the NYSDEC. The purpose of the work was to control vapor intrusion (VI) via an SSDS. This CCR will cover the sub-slab vapor mitigation actions conducted following the SSDS Design.

The proposed IRM included retrofitting portions of the existing Shopping Center building, shown on Figures 2 and 3, with an SSDS capable of creating a negative pressure under the building and collecting potentially contaminated vapor for subsequent discharge to the atmosphere above the roof of the Site building. This IRM is a component of the overall investigation and remediation of the Site and addresses soil VI issues.



#### **1.1** Site Location and Description

The property is occupied by Morton Village Plaza Shopping Center, which consists of four buildings. The on-Site buildings are currently occupied by various professional businesses, retail stores, and restaurants. The property is bordered by Knowles Street to the north, Old Country Road to the south, Lester Place to the east and Rex Place to the west. Only one of the four buildings on the property, identified as 1022 Old Country Road, was found to be impacted by historic dry-cleaning operations, which is the source of VI. The SSDS was installed in this building as depicted on Figure 2.

PROJE	CT LOCATION AND INFORMATION
Property Name	Morton Village Plaza
Property Address	998-1064 Old Country Road
Property Town, County, State	Plainview, Nassau County, New York
Property Tax Identification	Block 555, Lots 10, 86, 88, and 89
Property Topographic Quadrangle	USGS Huntington Quadrangle, New York (1979)
Current Site Zoning	Commercial-Use, 452.14 – Area/Neighborhood Shopping Center
Site Owner	Morton Village Realty Co., Inc.
Property Acreage	9.936 acres
Date of Construction	c. 1956
Basement/Slab-on-Grade	Basement and Slab-on-Grade

The former Cleaners tenant space is currently occupied by a Subway restaurant. Most tenant spaces include a basement area within this site building.



#### 1.2 Site History

The site, identified with Site Number 130201, is listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State with a Classification "2" pursuant to Environmental Conservation Law (ECL) 27-1305. Chlorinated volatile organic compounds (CVOCs) are present in soil vapor beneath portions of the Site and indoor air (IA) in basements of several tenant spaces. The observed impacts are likely due to undocumented historic releases of dry-cleaning chemicals from the Morton Village Cleaners, a/k/a Classic French Cleaners, (former cleaners) tenant space (1022 Old Country Road) that is currently occupied by a Subway restaurant. This SSDS was installed to address soil VI of CVOCs present at the site.

The contaminants of concern include tetrachloroethylene (PCE) and its daughter products, trichloroethylene (TCE), cis-1,2-dichloroethylene (c-1,2-DCE), and vinyl chloride (VC).

#### **1.3** Summary of Previous Investigations

Interim Remedial Measure Work Plan, Morton Village Plaza Shopping Center, 1022 Old Country Road, Plainview, New York (130201), prepared by Roux Environmental Engineering and Geology, D.P.C., (Roux) and dated September 12, 2019.

In November of 2014, Roux was retained by Morton Village to perform a remedial investigation (RI) to identify the nature and extent of contamination resulting from the former Cleaners. An RI conducted by Roux between 2015 and 2017 identified exceedances of PCE and TCE in the basement areas of several tenants, including CVS, Buffalo Grille, Nail and Spa 2000, and the Former Cleaners (current Subway restaurant). It was established that mitigation was required in these areas as required by the New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion. Based on these findings, Roux proposed an SSDS be installed to address soil VI conditions present at the site. A copy of this draft report is available as Appendix A.



#### 1.3.1 Topography/Hydrogeology

The property location is shown on the 1979 USGS Topographic Map of Huntington, New York (Figure 1). The surface elevation of the property is approximately 145 feet above mean sea level. Topography of the property slopes slightly to the south. According to the United States Department of Agriculture (USDA) Web Soil Survey, soil at the Site consist primarily of Urban Land. Urban land soils are those that have been so altered by human activities that the soil has lost its original characteristics and is thus unidentifiable.

Groundwater was encountered at approximately 80 feet below ground surface (ft-bgs) during previous environmental investigations conducted by Roux. Based on the previous environmental investigations, groundwater beneath the Site flows to the south. The site is located within the Upper Glacial Aquifer.

#### **1.3.2 Summary of Environmental Conditions**

Petroleum-related compounds and CVOCs have been identified in the soil, soil vapor, and groundwater at the site, predominant contaminants include PCE and TCE, and are attributed to an underground storage tank (UST) removed from the former Cleaners and possible former cesspools and around the former sump area below the basement of the Former Cleaners. The UST and related impacts were identified during a 2008 site characterization, and spill number 0800596 was assigned to the Site. Contaminated soils were removed, and the case was closed in January of 2009. Previous investigations additionally identified soil, soil vapor, and groundwater impacts in the vicinity of a sump located at the northern edge of the Site building in the basement of the former cleaners. Prior to connecting the Site's sanitary system to the municipal sanitary sewer in the 1970s, cesspools and leaching fields were established in the parking lot area behind the Site building. Sampling conducted in this area did not identify a source for the PCE and TCE detected in soil vapor and the indoor samples collected from the Site.



#### 1.3.3 Inactive Hazardous Waste Disposal Site Number 130201

The site, identified with Site Number 130201, is listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State with a Classification "2" pursuant to Environmental Conservation Law 27-1305. A Class 2 site is a site where hazardous waste presents a threat to public health or the environment, requiring remedial action. In November of 2014 the NYSDEC and Morton Village entered into an Order on Consent to develop and implement an investigation and remedial program at the Site. The goal of the program is to define the nature and extent of contamination resulting from previous activities of the former Cleaners.

#### **1.3.4 Previous Environmental Sampling**

The following includes a summary of previous environmental sampling and reporting conducted at the Site:

- Subsurface Investigation Letter Report Dry Cleaning Operation Morton Village Plaza prepared by Galdun Frankel Environmental dated October 2006 on behalf of Morton Village Realty Co., Inc.;
- Environmental Site Assessment Phase II Report prepared by LBG dated September 2007 on behalf of Morton Village Realty Co., Inc.;
- UST Closure and Remedial Summary Report Former Classic French Cleaners Morton Village Shopping Center prepared by LBG dated September 2008 on behalf of Morton Village Realty Co., Inc.;
- Phase I Environmental Assessment Morton Village Plaza prepared by LBG dated February 2009 on behalf of Morton Village Realty Co., Inc.; and



- Site Characterization Report Former Morton Village Cleaners prepared by HRP Associates, Inc. dated August 2011 on behalf of the NYSDEC.
- Interim Remedial Measure (IRM) Work Plan, Morton Village Plaza Shopping Center, 1022
   Old Country Road, Plainview, New York (130201), prepared by Roux Environmental Engineering and Geology, D.P.C., (Roux) and dated September 12, 2019.

The primary guidance document governing soil vapor work in New York is the Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006; updated September 2013, August 2015 and May 2017). Two decision matrices have been developed as part of this guidance by the NYSDOH as risk management tools that provide specified actions based on the concentrations of individual compounds in the IA and sub-slab soil vapor. Three resulting actions are possible from these matrices; no further action, identify sources resample/monitor, and mitigate.

During RI activities conducted by Roux between 2015 and 2017, a total of 17 sub-slab soil vapor, 16 IA and eight soil vapor samples were collected at the Site. Eleven (11) of the basement IA sample locations are depicted on Figure 3. Below is a summary of the outcomes for the various tenancies based on PCE and TCE concentrations detected in sub-slab soil vapor and corresponding IA samples for each sample location based on the NYSDOH VI guidance decision matrices:

	MATRIX OUTCOMES	
Sample Location	Sample Date	NYSDOH Matrix Action
Card Store*	11/20/2017	No Further Action
Liquor Store**	11/20/2017	No Further Action <sup>1</sup>
Dance Studio**	11/20/2017	No Further Action <sup>1</sup>



	MATRIX OUTCOMES	
Sample Location	Sample Date	NYSDOH Matrix Action
CVS*	3/21/2017 11/20/2017	Mitigate^
CVS**	3/21/2017	No Further Action <sup>1</sup>
Former Cleaners (currently Subway)*	3/22/2016	Mitigate^
Buffalo Grille*	3/21/2017	Mitigate^
Nail and Spa 2000*	11/20/2017	Mitigate^
VisionWorks*	3/21/2017	No Further Action

\* Basement

\*\* Slab-on-Grade

<sup>1</sup> Based on indoor air results

<sup>2</sup> Based on indoor air and sub-slab soil gas sampling results.



#### 2.0 SUMMARY OF OBJECTIVES

Based on a comparison of PCE and TCE concentrations detected in sub-slab soil vapor and IA samples to the NYSDOH Soil Vapor/Indoor Air Matrices, PCE and TCE concentrations detected in sub-slab and IA samples collected within the tenant spaces currently occupied by CVS, former Cleaners (Subway), Buffalo Grille and Nail and Spa 2000 required mitigation. Therefore, the SSDS was designed to mitigate VI in the tenant spaces between Vision Works on the western side of the building and CVS in the central portion of the building.

The scope of work for the IRM consists of the following tasks:

- Site mobilization and Site preparation;
- Installation of the SSDS components;
- Waste disposal; and
- Documentation

The interim remedial action objectives for the Site are to eliminate or reduce to the extent practicable:

- Exposures of persons at or around the Site to CVOCs in IA as a result of VI.
- The release of contaminants from subsurface soil and groundwater into IA via soil vapor.

This CCR addresses only the soil vapor and IA IRM and the corresponding SSDS that was implemented by VERTEX.



#### 2.1 Pilot Study

The SSDS design proposed by Roux in the Draft IRM Work Plan was not based on site-specific data; therefore, VERTEX performed an SSDS pilot study to gather site specific data and determine system performance criteria.

VERTEX conducted the pilot testing on August 21, 2020, which included the installation of two suction points that were drilled through the basement slab. A vacuum was applied to the suction points and pressure (vacuum) data were collected from additional monitoring points that were installed at varying distances from each suction point. The pilot study was performed at varying flow rates and vacuums to provide sufficient data for the evaluation. The data collected were utilized to calculate the site-specific radius of influence (ROI). The data were also utilized to provide design parameters such as air flow rate and vacuum to be utilized in the system design.

Pilot testing indicated that a significant ROI (> 50 feet) could be achieved with an applied vacuum of 5 inches water column (in. WC) and a flow rate of approximately 20 cubic feet per minute (cfm) per extraction point. The SSDS design was based on a conservative ROI of 30 feet at total flow rate of 100 cfm at 5 in. WC for the impacted area of the site building basement.

Figure 2 provides an as-built plan view of the SSDS layout. All deviations from the SSDS Design are noted below.

#### 2.2 System Design

Sub-slab soil vapor samples collected during the RI detected elevated concentrations of PCE and TCE; therefore, an active SSDS was proposed to be installed beneath the portions of the affected Site building to address potential exposure pathways. The proposed active SSDS was designed by VERTEX to address these pathways. The basis for the design was a pilot study performed by VERTEX on August 21, 2020. The pilot study was based on an SSDS design that was to include vertical suction points and horizontal piping laterals to be retrofitted into the existing building



construction. Two suction points were utilized for the pilot study. Pilot study calculations and results are included as Appendix B.

Overall, the pilot study concluded that a minimum 50-foot ROI was achievable at a flow rate of 20 to 30 cfm and a vacuum of approximately 5 in. WC. The overall design was based on a conservative ROI extraction point spacing of 30 feet which required four extraction points to be placed strategically within the basement area with an overall flow rate of approximately 100 cfm and a vacuum of approximately 5.1 in. WC to account for friction losses in the piping.

The active SSDS for the Site consists of a network of vertical suction points creating a vacuum influence beneath the targeted portion of the building basement slab. The SSDS design is provided in Appendix C. The following is an outline of the design:

- Four vertical suction points installed to create the required vacuum influence below the basement slab of portions of the Site building. All suction points consist of 3-inch PVC piping.
- Each suction point riser is fitted with a shut off valve, monitoring port, and vacuum gauge.
- The manifold piping from the suction points was brought to the roof along the exterior of the building. The single header was connected to a single 1 Hp centrifugal blower located on the roof of the building.
- Interior piping was routed around various building infrastructure as needed. Piping was supported appropriately.
- Piping was sloped to drain collected condensate back to the subsurface. Where piping could not be properly sloped due to interference, a condensate drop was installed within the piping run. Two ½-inch condensate drops were installed to drain to the subsurface.
- An audible and visual alarm was installed on the system to notify the property manager of a loss of vacuum within the SSDS.
- The discharge point is located on the roof above the Subway leasehold, 3.5 feet above the roof and 16 and 12 feet from the closest HVAC air inlet and the building edge, respectively.



#### **3.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED**

All work performed during installation and operation of the SSDS at the Morton Village Shopping Center was in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal Occupational Safety and Health Administration (OSHA).

#### 3.1 Health and Safety Plan

The site-specific Health and Safety Plan (HASP) was followed for all remedial and invasive work performed at the Site. Furthermore, a designated Site Safety Officer (SSO) was present at the Site while operations were taking place. The Site Supervisor/SSO directed work operations in accordance with the SSDS Design and provided safety oversight in the field.

#### **3.2** Community Air Monitoring Plan

Based on the scope of work and location of the work in unoccupied basement storerooms and hallways, no CAMP was required for the work performed. A handheld photoionization detector (PID) was utilized during installation for worker health & safety reasons to measure for vapors from the extraction point locations during the opening of the slab. Interval monitoring was not completed as the basement was unoccupied.

#### **3.3 Contractors and Consultants**

The following list provides a summary of key project personnel, contractors, subcontractors, and their associated tasks.



	PROJECT PERSONNEL AND CONTRAC	TORS
Company	Role	Responsibility
VERTEX Engineering, PC	Engineer and Environmental Consultant	Design and consulting services; oversight
CFS Environmental	Installation Contractor	SSDS Installation
Clean Globe	Utility Survey	Geophysical Investigation
Vision Environmental	Waste Disposal Contractor	Removal of Soil Drums
Barrett Company Inc.	Electrician	SSDS Electrical Connections

VERTEX acted as both the environmental consultant and contractor for the project. VERTEX provided design and consulting services, prepared project documents on behalf of the owner and provided field operation oversight for the remedial action installation. Compliance Field Services, Inc. (CFS) performed the SSDS installation.

Clean Globe Environmental, LLC (Clean Globe) performed a sub-slab utility scan using electromagnetic induction and ground-penetrating radar. Barrett Company Inc. connected the SSDS equipment to the 208-volt building electric supply and landlord panel.

#### 3.3.1 Site Preparation

Site preparation activities for the SSDS installation included the following activities:

- Visual survey of building interior to determine constructability and pipe routing;
- Coordination of building owner for building access and clearing of any debris within the work area;
- A utility scan to identify sub-slab utilities and foundation structures.

The sub-slab utility scan was performed by Clean Globe on August 21, 2020. The scan identified sub-slab sewer and electric lines, as well as thickened sections of concrete, and other foundation



features. Some planned vapor extraction point locations were adjusted due to safety concerns based on the results of the utility scan and constructability survey, which did not impact the overall performance goals for the SSDS.

#### 3.3.2 Installation of the SSDS

Installation of the SSDS began on November 2, 2020. The extraction points and piping were installed between this date and November 5, 2020. The concrete varied in thickness throughout the building and was approximately 3 to 4 inches thick in most places. The extraction points were constructed of PVC pipe installed flush with or slightly below the bottom of the slab and sealed with Portland cement at the surface. At each extraction point, approximately one cubic foot of soil was removed, and the evacuated space was backfilled with clean gravel. Each extraction point riser was constructed with a ball valve to adjust the flow. PVC risers were connected to overhead piping runs of 3-inch or 4-inch PVC. Piping was suspended from the ceiling and sloped back towards the extraction points to allow for proper drainage of condensate.

The exhaust from the SSDS is discharged to the atmosphere through a stack which has the following minimum characteristics in accordance with NYSDOH guidance:

- 12 inches above the roof of the building;
- 10 feet above the ground surface;
- 10 feet away from any window or opening that is less than two feet below the exhaust point; and,
- 10 feet from any other building, window, or building intake

Exhaust piping is equipped with a screen to prevent objects/animals from entering the piping system. Vacuum gauges (Dwyer minihelic 0 to 10 in. WC) were installed on the system to allow for monitoring of system performance (Figure 2 – As-Built SSDS Layout) in various critical areas. Tenant spaces target by the SSDS were inspected for fractures that might allow the intrusion of



vapors or decrease system performance; no cracks larger than hairline cracks were observed. Non-shrink caulk was used to seal all readily accessible cracks and eliminate the vapor pathway between the IA and sub-slab vapor.

The SSDS is connected to a dedicated electrical panel inside the Site building. The electrical circuit used to control the SSDS is labeled as "Sub-Slab Depressurization System". Due to manufacturing production delays, the system blower was not received until December 15, 2020. The blower and electric were installed, and final electrical connections were made on January 19, 2021. The electrical work was performed by Barrett Company Inc., Island Park, New York, a licensed electrician. A 110 Volt outlet was installed within the electric room for the system alarm.

System readings were collected upon startup of the blower. Upon initial operation, it was determined that the flow rate and vacuum were below the design parameters. Upon troubleshooting the issue, it was determined that the blower motor supplied was rated for a speed of 1150 rpm versus the required/specified 3450 rpm. The system was left running at the lower flow rate and vacuum as it was determined that it was influencing the sub slab environment. The correct motor was ordered and was replaced on the blower on February 22, 2021. Upon startup of the blower with the new motor, the blower and system operated as expected. Note that the fan with the lower speed motor was able to impart a vacuum over much of the area even though the flow and vacuum were greatly reduced from the design flow and vacuum (Table 1).

Start-up flow and vacuum readings were collected on February 22, 2021. Based on these readings, it was determined that three monitoring points were required to be reinstalled, likely due to the condition of the concrete slab and subsurface structures. These points, SSMP-1, SSMP-2, and SSMP-7 were reinstalled on March 12, 2021; one effluent sample and updated system measurements were collected at this time (Tables 1 and 3).

A photographic log of the SSDS installation is presented in Appendix D.



#### 3.3.3 SSDS Start up and Commissioning

Commissioning of the system was performed on February 22, 2021. Commissioning entailed the collection of sub-slab vacuum measurements, a check of proper alarm and blower operation, and collection of flow readings for each riser.

To monitor the vacuum produced by the SSDS, Vapor Pin<sup>®</sup> sub-slab vapor monitoring points were installed at seven locations within the basement area. The monitoring locations were chosen to obtain measurements at varying distances from the extraction points within the treated area. The monitoring point locations are depicted on Figure 2. After installation, vacuum measurements were made with a digital manometer (Velocicalc Model TSI 9565) capable of reading to 0.001 in. WC. Vacuum measurements are presented in Table 1. The vacuum readings in the monitoring points ranged from 0.004 in. WC. to 0.296 in. WC. Point 1 was surmised to be located outside the original footprint of the building on the other side of the footing that may be blocking communication. Point 2 was located outside of the electrical room and Point 7 was located outside of the doorway to the basement of the hair salon; both points were moved from the main hallway areas to inside of the electrical room and inside of the hair salon basement, respectively. After relocation, the vacuum in Point 1 increased from 0.004 to 0.060; the vacuum in Point 2 increased from 0.004 to 0.89, and the vacuum in Point 7 increased from 0.040 to 0.144. All sub-slab vacuum readings in all of the monitoring points were greater than the required 0.004 in WC to show system influence. Sub-slab vacuum readings were confirmed to be sufficient on March 12, 2021. Overall system vacuum readings ranged from 5.55 in. WC. to 6.25 in. WC. The system measurements and vacuum readings taken on March 12, 2021, are presented in Table 1. Additional readings were collected on June 4, 2021, during the first post-installation round of sampling. Vacuum readings improved and ranged at all points from 0.088 to 0.473 in. WC. It is surmised that the continued operation of the system has dried out sub slab soils and increased air flow pathways.



The overall performance of the system closely matches the design parameters (100 cfm @5.1 in. WC). The overall flow rate is measured at 85 to 90 cfm at an overall vacuum ranging from 5.5 to 6.2 in. WC.

A Division of Air Resources (DAR 1) screening analysis was performed for selected compounds identified in the effluent vapor sample to determine if the estimated emissions from the operation of the active SSDS would exceed the permissible limits. Appendix C presents the DAR 1 screening level worksheet for the evaluation of PCE, TCE and c-1,2- DCE, which were identified as the constituents of concern for the evaluation based on the relatively high concentrations observed in the sub-slab soil vapor samples and the low guidance concentrations (i.e., allowable discharge limits). The DAR 1 evaluation was employed using the contaminant emission rate (pounds per hour) based on the effluent vapor samples collected in March 2021. The emission impacts were compared to the annual guidance concentration values and the short-term guidance concentration values from the July 14, 2016 DAR 1 AGC/SGC Tables. Based on the DAR 1 analysis, the estimated contaminant emission rates are below the AGC and SGC values for PCE, TCE and c-1,2-DCE; therefore, vapor treatment was not required prior to discharge (Table 3).

#### 3.4 Performance Documentation and Sampling

IRM performance sampling for VI was performed approximately 100 days following the installation and startup of the SSDS. IA within the basement area was sampled on June 4, 2021, and again on February 14, 2022 (heating season), at six locations. In addition, one exterior ambient air location was also sampled to provide background concentrations during both sampling events.

In accordance with the draft IRM work plan, post mitigation IA sampling was conducted in the targeted areas of the building where the SSDS is installed. As directed by the NYSDOH VI guidance, air sampling was conducted at least 30 days after the completion of the SSDS, but no longer than the end of the next heating season (November 15 through April 15). Six IA samples



and one outdoor ambient air sample were collected in locations consistent with the premitigation sample collection. Samples were collected in 6-liter summa canisters over a 6- to 8hour period. Additionally, one effluent sample was collected from the lateral near the exhaust on March 12, 2021 and on February 14, 2022, using a 1-liter summa canister over a five-minute period (Table 3). All samples were analyzed using EPA Method TO-15. Sample collection methods were consistent with past methods. The results of the IA sampling are tabulated and presented in Table 2 and were compared to the NYSDOH matrix air guidelines.

An Operation & Maintenance (O&M) Manual for the SSDS is provided in Appendix E. In addition, the O&M spec sheets for the equipment installed are also presented in Appendix E. These sheets provide a detailed account of the monitoring and sampling requirements/procedures and operation and maintenance of the SSDS at the Site.

Copies of the NYSDOH Indoor Air Sampling forms are provided in Attachment F.

#### 3.4.1 Indoor Air Results

During the initial June 4, 2021 sampling, PCE, c-1,2-DCE and TCE were detected in all samples collected. Five of the six IA samples were all below the respective NYSDOH VI matrix values for all COCs. One sample, VTX-IA-5, exceeded the lower matrix value for sub-slab soil gas for PCE, TCE, and c-1,2-DCE. This sample was located within the northeast corner of the CVS basement stockroom. Two samples were collected within the CVS basement stockroom, the other sample, VTX-IA-4 was below the matrix values. Although both samples are from the same stock room, the stock room is separated by a wall; however, the door connecting the two rooms was open at the time of sampling. The detection exceeding the matrix values was the most distant point from the suspected source area.

Results of the second round of sampling, performed on February 14, 2022, did not identify any concentrations of PCE, TCE, or c-1,2-DCE above NYSDOH VI matrix values.



Sub-slab samples were not collected during the collection of IA samples. Although the NYSDOH utilizes sub-slab concentration for the evaluation of potential response actions, the IA results collected at the site are within guidelines which demonstrate that the SSDS is successfully mitigating potential VI in the building. Overall, it is concluded that the appropriate response measures have been taken to protect the health of building occupants and that the SSDS is operating as designed and providing the required results.

Copies of the laboratory reports are provided in Appendix G.

#### 3.4.2 Deviations

Overall, the installation of the SSDS were conducted as planned in the SSDS Design. The primary deviations were as follows:

- The exhaust was planned to be run through and interior space or what was thought to be an abandoned boiler chimney located in the Subway tenancy. It was later determined that the chimney was active (water heater exhaust) and that this pathway and an interior pathway to the roof was not available. As an alternative, the exhaust was run along the outside rear wall of Subway from the basement to the roof. The relocation of the exhaust location does not affect the SSDS performance.
- One extraction point location was moved from its initial planned location. The point in the Nail & Spa tenancy was moved more to the interior of the leasehold from the back wall to avoid above and below-slab structures. The relocation of the extraction point did not affect the SSDS performance as all vapor monitoring points registered vacuum readings of greater than the required 0.004 inches WC during system operation.
- Locations of some vapor monitoring points were changed due to access reasons or due to the relocation of the extraction point in Nail & Spa. Vapor monitoring points SSMP-1



and SSMP-2 were relocated within 15 feet from their original installed locations when it was determined there were issues with obtaining measurements.



#### 4.0 CONCLUSIONS/RECOMMENDATIONS

The SSDS installed to control VI within the building is operating as designed and the appropriate response measures have been taken to protect the health of building occupants. Results of IA testing and system effluent testing have shown that CVOC concentrations have improved with time and that the matrix values are being achieved even during the worst-case heating season.

It is recommended that the SSDS be operated until such time it can be shown that continued operation is no longer necessary. The system alarm and vacuum gauges should be checked periodically for proper operation. The blower shall be replaced if failure occurs or if vacuum cannot be maintained.



# **FIGURES**









# **TABLES**



## Flow and Vacuum Readings Morton Village Plaza SSDS VERTEX Project No. 66845

	1/19,	/2021	2/22,	/2021	3/15,	/2021	6/4/	2021	3/9/2022
Dicor ID	Flow	Vacuum	Flow	Vacuum	Flow	Vacuum	Flow	Vacuum	Vacuum
RISELID	(CFM)	(In. H2O)	(In. H2O)						
Α	4	4.6	19	5.785	18	5.549	20	5.9	4.25
В	2	6.5	11	6.070	11	5.823	11	5.9	4.5
С	7	2.0	39	5.765	35	5.558	32	5.9	4.25
D	5	3.5	22	5.675	20	5.641	21	5.9	4.0
Total	17		91		84		84		

Riser vacuum reading check on 2/14/2022, all fluctuating between 4 and 6 in. WC

#### Vacuum Readings

SSMP ID	1/19/2021	2/22/2021	3/15/2021	6/4/2021	3/9/2022
1	0.002*	0.004*	0.06*	0.088	
2	-0.004*	-0.014*	0.004*	0.089	
3	0.017*	0.130	0.143	0.225	
4	0.03*	0.275	0.296	0.473	
5	0.022	0.096	0.13	0.246	
6	0.016	0.129	0.14	0.237	
7	0*	0.005*	0.04*	0.144	
8	not installed	not installed	not installed	not installed	0.018

Measurements reported in Inches Water Column (in. WC).

SSMP 8 installed later at the request of NYSDEC

NOTES:	* Incorrect blower motor	Correct blower motor	*Reinstalled monitoring	
	supplied. Vacuum and flow	installed. *Attempted to	port, readings collected	
	lower than design.	improve readings by	from new SSMP.	
		removing sub-slab port,		
		inserting tubing, and		
		sealing with clay. Results		
		were similar to original		
		readings.		

#### Table 1

# Table 2Indoor Air ResultsMorton Village Plaza SSDSVERTEX Project No. 66845

SAMPLE ID:					Y	X-AAI		-XTV	·IA1		ΚT	(-IA2		VTX-IA	3	^	TX-IA4		>	TX-IA5		>	TX-IA6	
LAB ID:	Ű	٨	٨	٨Y	L213	0400-07		L21304	00-01		L2130	400-02		L2130400	-03	L21	30400-	04	L21	30400-	05	L21	30400-0	6
COLLECTION DATE:	200	IAC-A	IAC-B	IAC-C	6/4	1/2021		6/4/2	021		6/4/:	2021		6/4/202	5	9	/4/2021		6,	14/2021		9	4/2021	
SAMPLE MATRIX:						AIR		AIF	2		A	R		AIR			AIR			AIR			AIR	
ANALYTE		(ng/m3)	(ng/m3)	(ng/m3)	Conc Q	RL MD		nc Q F	SL MI	DL Co	nc Q	RL M	DL Con	c Q RL	MDL	Conc C	ک RL	MDL	Conc Q	i rl	MDL	Conc Q	RL	MDL
<b>VOLATILE ORGANICS I</b>	N AIR BY S	WI																						
cis-1,2-Dichloroethene	156-59-2	0.2	NS	NS	ND	0.08 -	NL	0.	.08	2 -	D	D.08	ND ,	0.0	-	DN	0.08		0.23	0.08		ND	0.08	
Tetrachloroethene	127-18-4	NS	З	NS	0.37	0.14 -	2	0.	14	- 1.	10 12	D.14	- 1.91	0.1	۰ +	1.46	0.14	'	5.47	0.14	'	0.71	0.14	'
Trichloroethene	79-01-6	0.2	NS	NS	ND	0.11 -	0.1	2 0.	11	Z -	D	0.11	ND ,	0.1	, -	0.12	0.11	'	0.31	0.11	,	0.11	0.11	'
Vinyl chloride	75-01-4	NS	NS	0.2	ND	0.05 -	N	0.0	.05	- Z	D	0.05	ND -	0.0		ND	0.05		ND	0.05		ND	0.05	

SAMPLE ID:					7	X-AAI	$\vdash$	-XTV	IA 1		∆TX-IA	\ 2	5	'X-IA 3	$\vdash$	VTX-	IA 4		VTX-IA	5	>	TX-IA 6	
LAB ID:	U V C	Ν	٨	٧	L220	7873-07		L22078	73-01		L220787	3-02	L22(	7873-03		L22078	73-04		L220787:	3-05	L22	07873-06	
COLLECTION DATE:	0	IAC-A	IAC-B	IAC-C	2/1	4/2022		2/14/2	2022		2/14/20	122	2/1	4/2022		2/14/2	2022		2/14/20	22	2/	14/2022	
SAMPLE MATRIX:						AIR		All	2		AIR			AIR		A	2		AIR			AIR	
ANALYTE		(ng/m3)	(ng/m3)	(ng/m3)	Conc Q	RL MI	DL CC	nc Q F	SL MI	DL Col	nc Q RI	- MDL	- Conc Q	RL M	DL C	onc Q	SL MI	DL Con	c Q RL	- MDL	Conc C	RL N	DL
VOLATILE ORGANICS II	N AIR BY S	MIS																					
cis-1,2-Dichloroethene	156-59-2	0.2	NS	NS	ND	0.08	2 ,	ID 0.	.08	- NĽ	0.0	- 8	ΠN	0.08	-	D O	. 08	- ND	0.0	- 8	ND	0.08	,
Tetrachloroethene	127-18-4	NS	3	NS	ND	0.14	- 0.	26 0.	.14	- 0.5	2 0.1	4 -	0.82	0.14	- 0	.19 0	.14	- 1.83	3 0.1	4 -	0.37	0.14	,
Trichloroethene	79-01-6	0.2	NS	NS	ND	0.11	2 ,	ID 0.	.11	- NĽ	0.1	-	ΠN	0.11	-	ID 0	.11	- ND	0.1	-	ND	0.11	
Vinyl chloride	75-01-4	NS	NS	0.2	ND	0.05	Z -	ID 0.	.05	- NI	0.0	- 9	ND	0.05	-	D 0	.05	- ND	0.0	5 -	ND	0.05	
		Í																					ľ

ND - Not Detected

NS - No Standard

AA - Ambient Air IA - Indoor Air

NY-IAC-C: New York DOH Matrix C Indoor Air Concentrations Criteria per Guidance for Evaluating Soil Vapor Intrusion, October 2006, and updated May 2017. NY-IAC-A: New York DOH Matrix A Indoor Air Concentrations Criteria per Guidance for Evaluating Soil Vapor Intrusion, October 2006, and updated May 2017. NY-IAC-B: New York DOH Matrix B Indoor Air Concentrations Criteria per Guidance for Evaluating Soil Vapor Intrusion, October 2006, and updated May 2017.

#### Table 3

#### Effluent Sample Results Morton Village Plaza SSDS VERTEX Project No. 66845

LOCATION	VTX-SSDS-E	FF	VTX-EFFLU	JENT*
SAMPLING DATE	3/12/2021		2/14/202	22
LAB SAMPLE ID	L2112332-0 <sup>-</sup>	1	L2207878	3-01
SAMPLE TYPE	EFFLUENT VA	POR	EFFLUENT	APOR
ABALYTE	Results	Qual	Results	Qual
VOLATILE ORGANICS IN AIR BY SIM				
Dichlorodifluoromethane	2.31			T
Chloromethane	0.964			
reon-114	3.26			+
Vinyl chloride VC	1 19		1 79	
1 3-Butadiene	1.13		1.70	
Bromomethane	1.00			+
Chloroethane	1.01			+
Ethanol	1.23			+
Vinyl bromide	2.04			+
Acetone	/5.8			
Trichlorofluoromethane	2.62			+
Isopropapol	35.4			
1 1 Dichloroothono	1.95			
Tertiony butyl Aleobol	2.55			
Mothylopo chlorido	3.00			
2 Chloropropopo	4.00			
S-Chiloroproperie	1.40			
	1.40			+
1001-113	3.30			
trans-1,2-Dichloroethene	1.85			
1,1-Dicnioroetnane	1.89			
Nethyl tert butyl ether	1.08			
2-Butanone ME	6.75		0.70	
CIS-1,2-DICNIOROETNENE C-1,2-DCE	118		2.78	
Etnyl Acetate	4.22			
Chloroform	2.28			
letrahydrofuran	6.87			
1,2-Dichloroethane	1.89			
n-Hexane	1.65			
1,1,1-Trichloroethane	2.55			
Benzene	1.49			
Carbon tetrachloride	2.94			
Cyclohexane	1.61			
1,2-Dichloropropane	2.16			
Bromodichloromethane	3.13			
1,4-Dioxane	1.68			
Trichloroethene TCE	62.3		3.77	
2,2,4-Trimethylpentane	2.18			
Heptane	1.91			
cis-1,3-Dichloropropene	2.12			
4-Methyl-2-pentanone	4.79			
trans-1,3-Dichloropropene	2.12			
1,1,2-Trichloroethane	2.55			
Toluene	1.76			
2-Hexanone	1.91			
Dibromochloromethane	3.98			
1,2-Dibromoethane	3.59			
Tetrachloroethene PCE	1110		4.75	
Chlorobenzene	2.15			
Ethylbenzene	2.03			
p m-Xylene	4.05			
Bromoform	4.83			
Styrene	1.99			
1,1,2,2-Tetrachloroethane	3.21			
o-Xylene	2.03			1
4-Ethyltoluene	2.3			1
1,3,5-Trimethylbenzene	2.3			1
1,2,4-Trimethylbenzene	2.3			1
Benzyl chloride	2.42			1
1,3-Dichlorobenzene	2.81			
1.4-Dichlorobenzene	2.81			+
1.2-Dichlorobenzene	2.81			+
1.2.4-Trichlorobenzene	3.47			+
Hexachlorobutadiene	4.98			+
riokaoniorobataaiono	4.00			

Contaminants of Concern - PCE and daughter products

Only COCs analyzed for Detections due to system installation PVC primer and glue Sample from 2 14 22 was only analyzed for contaminants of concern



# **APPENDIX A**

# **PREVIOUS ENVIRONMENTAL REPORTS**



Please note: LKB/VERTEX was not provided a title page with this report

## **Table of Contents**

1. INTRODUCTION	
1.1 Objectives and Scope of the IRM Work Plan	3
1.2 Certification	4
2. SITE BACKGROUND	5
<ul><li>2.1 Site Description and History</li><li>2.1.1 Site Operations</li><li>2.1.2 Topography/Hydrogeology</li></ul>	5 6 6
<ul> <li>2.2 Summary of Environmental Conditions</li> <li>2.2.1 Inactive Hazardous Waste Disposal Site Number 130201</li> <li>2.2.2 Previous Environmental Sampling</li> </ul>	6 7 7
3. SCOPE OF WORK	
3.1 Mobilization and Site Preparation	
3.2 SSDS Installation	
3.3 SSDS Startup and Testing	
<ul> <li>3.4 SSDS Operation, Maintenance and Monitoring (O, M &amp;M)</li> <li>3.4.1 System Operation: Routine Operation Procedures</li> <li>3.4.2 System Operation: Routine Equipment Maintenance</li></ul>	
3.5 Waste Disposal	
3.6 Documentation	
4. SOIL/MATERIALS MANAGEMENT PLAN	
4.1 Soil Screening Methods	
4.2 Containerization of Waste	
4.3 Characterization of Excavated Materials	
4.4 Materials Excavation and Load Out	
4.5 Materials Transport Off-Site	
4.6 Materials Disposal Off-Site	
4.7 Materials Reuse On-Site	
4.8 Fluids Management	17
4.9 Backfill from Off-Site Sources	
4.10 Stormwater Pollution Prevention	
4.11 Contingency Plan	
4.12 Community Air Monitoring Plan (CAMP)	
<ul> <li>4.13 Odor, Dust and Nuisance Control Plan</li> <li>4.13.1 Odor Control Plan</li> <li>4.13.2 Dust Control Plan</li> <li>4.13.3 Other Nuisances</li></ul>	
5.0 REPORTING	21

#### DRAFT

	5.1 Week	kly Reporting During Site Activities	21
	5.2 Const	struction Completion Report (CCR)	21
6.0	IRM IMPLE	MENTATION SCHEDULE	22

## **Tables**

1. Summary of Volatile Organic Compounds in Air and Soil Vapor

## **Figures**

- 1. Site Location Map
- 2. Sample Locations

## Appendices (Provided on CD in Bound Copy)

- A. New York State Department of Health Sol Vapor/Indoor Air Matrices
- B. Sub-Slab Depressurization System Design Drawings
- C. Division of Air Resources (DAR 1) Screening Analysis
- D. Sub-Slab Depressurization System Component Specifications
- E. Sub-Slab Depressurization System Operations and Maintenance Log
- F. Health and Safety Plan

## **Plates**

1. Air and Soil Vapor Results
## **1. INTRODUCTION**

Roux Environmental Engineering and Geology, D.P.C. (Roux), has prepared this Interim Remedial Measure (IRM) Work Plan on behalf of the Morton Village Realty Co., Inc. (Morton Village) to detail the scope of work for the installation of an active sub-slab depressurization system (SSDS) beneath portions of the existing building located at the Morton Village Plaza Shopping Center (Shopping Center), 998-1064 Old Country Road, Plainview, New York (Site). The Site location map is provided as Figure 1.

The Site is currently listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 130201 with a Classification "2" pursuant to Environmental Conservation Law (ECL) 27-1305. The SSDS is being installed to address soil vapor intrusion of chlorinated volatile organic compounds (CVOCs) documented to be present in soil vapor beneath portions of the Site and indoor air in the basements of several tenant spaces. The soil vapor and indoor air impacts do not extend across the entire Shopping Center. The extent of impacts exceeding applicable criteria (discussed in Section 2.0), is shown on Plate 1. The observed impacts are likely due to undocumented releases of dry cleaning chemicals from the Morton Village Cleaners, a/k/a Classic French Cleaners, (former Cleaners) tenant space (1022 Old Country Road – currently occupied by a Subway restaurant).

This IRM Work Plan has been prepared in accordance with New York State Department of Environmental Conservation (NYSDEC) procedures set forth in the document titled DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and complies with all applicable Federal, State and local laws, regulations and requirements.

## **1.1 Objectives and Scope of the IRM Work Plan**

The proposed IRM will retrofit portions of the existing Shopping Center building, shown on Figure 2, with an SSDS capable of creating a negative pressure under the building and collecting potentially contaminated vapor for subsequent discharge to the atmosphere above the roof of the Site building. This IRM is a component of the overall investigation and remediation of the Site. It will address soil vapor intrusion issues. Additional remedial measures may be required based upon the results of a Remedial Investigation/Feasibility Study (RI/FS) currently being conducted for the Site, which will be submitted separately.

The remainder of this IRM Work Plan is organized as follows:

- Section 2: Site Background
- Section 3: Scope of Work
- Section 4: Soils/Materials Management Plan
- Section 5: Reporting
- Section 6: IRM Work Plan Implementation Schedule

## **1.2 Certification**

I, Noelle Clarke, certify that I am currently a New York State registered professional engineer as defined in 6 NYCRR Part 375 and that this Interim Remedial Measure Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER-10.

Noelle Clarke

NYS Professional Engineer # 072491

Date

Signature

## 2. SITE BACKGROUND

This section provides relevant Site background information.

## **2.1 Site Description and History**

	Property Location
Property Name:	Morton Village Plaza
Property Description:	The property is occupied by Morton Village Plaza Shopping Center, which consists of four buildings situated on four adjacent lots (Lots 10, 86, 88 and 89). The on-Site buildings are currently occupied by various professional businesses, retail stores, and restaurants. The property is bordered by Knowles Street to the north, Old Country Road to the south, Lester Place to the east and Rex Place to the west.
Property Address:	998-1064 Old Country Road
Property Town, County, State:	Plainview, Nassau County, New York
Property Tax Identification:	Block 555 Lots 10, 86, 88 and 89
Property Topographic Quadrangle:	USGS Huntington Quadrangle, New York (1979)
Nearest Intersection:	Rex Place and Old Country Road
Area Description:	The area surrounding the Site is used mainly for residential purposes. Surrounding properties to the north, east and west are all residential properties. To the south of the Site, there are both residential properties as well as the Plainview-Old Bethpage Public Library.
Current Site Zoning:	Commercial-Use, 452.14 - Area/Neighborhood Shopping Center

	Property Information
Property Acreage:	9.936 acres (total)
Property Shape:	Rectangular
Property Use:	The property is currently occupied by various professional businesses, retail stores, and restaurants.
Number of Buildings:	Four
Number of Stories:	One two-story and three one-story buildings
Date of Construction:	c. 1956
Basement/ Slab-on-Grade:	Basement and Slab-on-grade
Number of Units:	27
Ceiling Finishes:	Acoustic ceiling tiles and exposed structural elements

DRAFT

	Property Information
Floor Finishes:	Carpet, tile and bare concrete
Wall Finishes:	Painted drywall and exposed structural elements
HVAC:	Natural Gas
Renovation Date:	Unknown
Renovation Description:	An extension was added to the northern side of the building A, bringing it to present day configuration
Vehicular Access:	Via Old Country Road, Rex Place, Knowles Street or Lester Place
Other Improvements:	Paved Parking Areas
Property Coverage:	Footprint of the buildings, sidewalks and associated parking areas

#### **2.1.1 Site Operations**

The Site is currently occupied by various professional businesses, retail stores, and restaurants. The former Cleaners tenant space is currently occupied by a Subway restaurant.

### 2.1.2 Topography/Hydrogeology

The property location is shown on the 1979 USGS Topographic Map of Huntington, New York. The surface elevation of the property is approximately 145 feet above mean sea level. Topography of the property slopes slightly to the south.

Groundwater was encountered at approximately 80 feet below ground surface (ft-bgs) during previous environmental investigations conducted by Roux. Based on the previous environmental investigations groundwater beneath the Site flows to the south.

## **2.2 Summary of Environmental Conditions**

Previous investigations (soil, groundwater, and soil vapor sampling) performed at the Site from 2006 to 2011 identified petroleum-related compounds and CVOCs in the soil, soil vapor and groundwater, predominately tetrachloroethene (PCE) and trichloroethene (TCE), at the Site. The petroleum-related compounds were identified to be associated with a former underground storage tank (UST) that was located and removed from the rear of the former Cleaners during Site characterization work in 2008 conducted by Leggette, Brashears & Graham, Inc (LBG). The NYSDEC was notified and spill number 0800596 was assigned to the Site. Based upon a review of closure documentation, the spill number was subsequently closed by the NYSDEC on January 28, 2009. During excavation activities, a total of 250.31 tons of soil was removed from the Site for off-Site disposal. According to previous investigators, operations at the former Cleaners have resulted in contamination of the soil around a sump located at the northern edge of the Site building within the basement of the former Cleaners, as well as the groundwater and soil vapor in the vicinity of the former Cleaners. Based on Remedial Investigations (RI) completed by Roux in 2015 through 2018, groundwater, soil VAOCs, and indoor air (in the basements of some retail spaces) at the Site have been impacted by CVOCs,

predominately PCE and TCE, above applicable regulatory guidance values. Prior to the 1970's, there were cesspools and leaching fields installed in the rear parking lot areas of Site. The Site's sanitary system was not connected to the Municipal sanitary sewer line until the 1970's. Soil samples collected in the vicinity of what is believed to be the former cesspools and around the former sump area below the basement of the Former Cleaners has not identified a source for the PCE and TCE detected in soil vapor and indoor air.

#### 2.2.1 Inactive Hazardous Waste Disposal Site Number 130201

The Site is currently listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site Number 130201 with a Classification "2" pursuant to Environmental Conservation Law (ECL) 27-1305. A Class 2 site is a site where hazardous waste presents a threat to public health or the environment, and a remediation action is required.

The NYSDEC and Morton Village entered into an Order on Consent in November 2014 to develop and implement an investigation and remedial program at the Site to define the nature and extent of any contamination resulting from previous activities of the former Cleaners.

#### **2.2.2 Previous Environmental Sampling**

The following is a brief summary of environmental sampling conducted at the Site, focusing on soil vapor and indoor air results. A complete description of previous environmental sampling conducted at the Site will be included in the RI/FS. A description of previous environmental sampling conducted at the Site by others between 2006 and 2011 is included in the NYSDEC-approved Remedial Investigation Work Plan (RIWP) prepared by Roux, dated September 2015 based on a review of the following reports:

- Subsurface Investigation Letter Report Dry Cleaning Operation Morton Village Plaza prepared by Galdun Frankel Environmental dated October 2006 on behalf of Morton Village Realty Co., Inc.;
- Environmental Site Assessment Phase II Report prepared by LBG dated September 2007 on behalf of Morton Village Realty Co., Inc.;
- UST Closure and Remedial Summary Report Former Classic French Cleaners Morton Village Shopping Center prepared by LBG dated September 2008 on behalf of Morton Village Realty Co., Inc.;
- Phase I Environmental Assessment Morton Village Plaza prepared by LBG dated February 2009 on behalf of Morton Village Realty Co., Inc.; and
- Site Characterization Report Former Morton Village Cleaners prepared by HRP Associates, Inc. dated August 2011 on behalf of the NYSDEC.

During Remedial Investigation (RI) activities conducted by Roux between 2015 and 2017, a total of 17 subslab soil vapor, 16 indoor air and eight soil vapor samples were collected at the Site. All sample locations are shown on Figure 2. Below is a summary of PCE and TCE concentrations only (Tables 1 and 2) detected in sub-slab soil vapor and corresponding indoor air, and soil vapor samples collected at the Site. Additionally, Table 1 below includes the New York State Department of Health (NYSDOH) Matrices Stage, included in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006 and revised in May 2017 (NYSDOH Guidance; Appendix A), for each sample:

Sample Location	Sample Date	PCE Sub-Slab Concentrations / Sample Designation (μg/m³)	PCE Indoor Air Concentrations / Sample Designation (µg/m³)	TCE Sub-Slab Concentrations / Sample Designation (μg/m³)	TCE Indoor Air Concentrations / Sample Designation (μg/m³)	NYSDOH Matrices Stage
Card Store*	11/20/2017	145 (OSV-11) 3.72 (OSV-12)	0.658 (IA-CS-1) 0.80 (IA-CS-2)	4.12 (OSV-11) ND (OSV-12)	0.231 (IA-CS-1) 0.199 (IA-CS-2)	No Further Action
Liquor Store**	11/20/2017	26 (OSV-10)	1.66 (IA-LQ-1)	9.4 (OSV-10)	0.161 (IA-LQ-1)	No Further Action
Dance Studio**	11/20/2017	1.51 (OSV-9)	0.834 (IA-DS-1)	ND (OSV-9)	0.302 (IA-DS-1)	No Further Action
	3/21/2017	12,900 (OSV-3)	160 (IA-CVS-1)	1,210 (OSV-3)	6.56 (IA-CVS-1)	
CVS*	5/21/2017	12,700 (OSV-4)	66.8 (IA-CVS-2)	1,300 (OSV-4)	3.12 (IA-CVS-2)	Mitigate
	11/20/2017	2,470 (OSV-8)	113 (IA-CVS-4)	178 (OSV-8)	4.22 (IA-CVS-4)	
CVS**	3/21/2017	60.80 (OSV-5)	3.47 (IA-CVS-3)	6.18 (OSV-5)	0.167 (IA-CVS-3)	No Further Action
Former Cleaners*	3/22/2016	18,800 (SV-1) 14,200 (SV-2) 1,500 (SV-3 DUP) 1,170 (SV-4)	24.8 (IA-1_Basement)	1,280 (SV-1) 763 (SV-2) 66.6 (SV-3 DUP) 67.7 (SV-4)	0.79 (IA-1_Basement)	Mitigate
Buffalo Grille*	3/21/2017	9,760 (OSV-2)	26.4 (IA-BG)	519 (OSV-2)	1.3 (IA-BG)	Mitigate
Nail and Spa	44/00/0047	104 (OSV-6)	13.4 (IA-NS-1)	4.77 (OSV-6)	0.564 (IA-NS-1)	N diti mete
2000*	11/20/2017	115 (OSV-7)	18.9 (IA-NS-2)	9.3 (OSV-7)	0.785 (IA-NS-2)	wiiligate
VisionWorks*	3/21/2017	21.6 (OSV-1)	7.53 (IA-VW)	ND (OSV-1)	0.355 (IA-VW)	No Further Action

#### Table 1: Sub-Slab Soil Vapor/Indoor Air PCE and TCE Concentrations

\* - Basement

\*\* - Slab-on-grade

µg/m<sup>3</sup> - Micrograms per cubic meter

NYSDOH – New York State Department of Health

ND - Not Detected

DUP - Duplicate sample

Sample Location	Sample Date	PCE Concentrations (µg/m³)	TCE Concentrations (μg/m³)
SV-5	11/2/2016	4.23	12.5
SV-6	11/2/2016	314	114
SV-7	11/4/2016	30,700	2,600
SV-8	11/2/2016	649	5.7
SV-9	11/2/2016	342	11.2
SV-10	3/21/2017	ND	ND
SV-11	3/21/2017	11.7	ND

#### **Table 2: Soil Vapor PCE and TCE Concentrations**

µg/m<sup>3</sup> - Micrograms per cubic meter

Based on a comparison PCE and TCE concentrations detected in sub-slab soil vapor and indoor air samples to the NYSDOH Soil Vapor/Indoor Air Matrices, PCE and TCE concentrations detected in sub-slab and indoor air samples collected within the spaces currently occupied by CVS, former Cleaners, Buffalo Grille and Nail and Spa 2000 require mitigation. Therefore, all tenant spaces between Vision Works on the western side of the Shopping Center and CVS in the central portion of the shopping center will be addressed by the proposed SSDS.

## 3. SCOPE OF WORK

The scope of work for the IRM consists of the following tasks:

- Site mobilization and Site preparation;
- Installation of the SSDS components;
- Waste disposal (assumed to be minimal); and
- Documentation.

Implementation of the IRM will be in accordance with the Soils/Materials Management Plan (SoMP) included in Section 4 of this IRM Work Plan.

## 3.1 Mobilization and Site Preparation

A project kick-off meeting will be conducted with NYSDEC, Morton Village, Roux and the selected Contractor prior to the commencement of any intrusive activities, if requested by NYSDEC. The Contractor will supply any labor (HAZWOPER Certified in accordance with OSHA 1910.120) and materials required for the implementation of the IRM scope of work. In addition, necessary permits, insurance, bonds, and licenses required to complete the work will be obtained and fees necessary to obtain these permits will be paid. Mobilization and Site preparation activities include:

- 1. Mobilization of equipment to the work area;
- 2. Installation of work area delineation zones;
- 3. Installation of sub-slab suction points and laterals;
- 4. Installation of header piping and roof leaders;
- 5. Installation of blowers on roof; and
- 6. Demobilization of equipment.

## **3.2 SSDS Installation**

Sub-slab soil vapor samples collected during the RI detected elevated concentrations of PCE and TCE on-Site; therefore, an active SSDS is proposed to be installed beneath the portions of the Site building shown on Plate 1 to address potential exposure pathways. The proposed active SSDS will include vertical polyvinyl chloride (PVC) suction points and horizontal perforated PVC suction laterals to be retrofitted into the existing building foundation while maintaining the structural integrity of the foundation. The testing of the SSDS will be completed following installation.

The active SSDS for the Site, when complete, will consist of a network of vertical suction points and horizontal suction laterals creating a vacuum influence beneath the portion of the building basement slab shown on Drawing 1 (Appendix B), and two vacuum blowers (one for the east side of the building and one for the west side). The SSDS will be designated SSDS-East and SSDS-West. The SSDS floor plan design and piping details are provided in Appendix B. A description of the proposed active SSDS is provided below.

- All existing interior utility and slab penetrations will be sealed with silicone caulking, to the extent feasible.
- Five vertical suction points and two horizontal suction laterals will be installed to create the required vacuum influence below the basement slab of portions of the Site building. All suction points and laterals will consist of 4-inch PVC piping.
- Each suction point and lateral will have a shut off valve and vacuum gauge.
- The piping from the suction points and laterals will be brought to the roof along the interior of the building and be manifolded to two separate headers. Each header will be connected to a vacuum blower on the roof of the building. A 5.5 horsepower (Hp) explosion proof vacuum blower (East Blower) will be provided for the suction points located on the west side of the building and a second 5.5 Hp explosion proof vacuum blower (West Blower) will be provided for the suction points located on the east side of the building. The drawing in Appendix B shows suction points/laterals and piping associated with Blower B (West) in red and suction points/laterals associated with Blower A (East) in blue. Blowers and piping headers will be located on the roof, as not to interfere with the existing Site use.
- Any interior piping will be routed around existing heating, ventilation, and air conditioning (HVAC) ducts and utility pipes and supported, as needed. Exterior piping will be supported appropriately.
- Extracted vapor evaluation:
  - A Division of Air Resources (DAR 1) screening analysis was performed for selected compounds identified in the sub-slab soil vapor samples to determine if the estimated emissions from the operation of the active SSDS would exceed the permissible limits. Appendix C presents the DAR 1 screening level worksheet for the evaluation of PCE, TCE and 1,2-Dichloroethane (DCE), which were identified as the constituents of concern for the evaluation based on the relatively high concentrations observed in the sub-slab soil vapor samples and the low guidance concentrations (i.e., allowable discharge limits). The DAR 1 evaluation was employed using the contaminant emission rate (pounds per hour) based on the vapor samples collected in March 2016 and March 2017. The emission impacts were compared to the annual guidance concentration (AGC) values and the short-term guidance concentration (SGC) values from the July 14, 2016 DAR 1 AGC/SGC Tables. Based on the DAR 1 analysis, the estimated contaminant emission rates are below the AGC and SGC values for PCE, TCE and DCE and therefore vapor treatment is not required prior to discharge. This will be confirmed during SSDS start-up testing, as described in Section 3.3.
- Each vacuum blower will be installed on the roof on timber supports. The discharge stacks will extend a minimum of 10 feet above the roof line, and will be supported as necessary. The discharge points will be located a minimum of 10 feet from any HVAC air inlets and the building edge.
- Eleven sub-slab soil vapor monitoring points will be used to monitor the performance of the SSDS.
   Four new monitoring points (MP-1 through MP-4) will be installed approximately where shown on Drawing 1 in Appendix B and seven existing sub-slab sampling points (SV-2, OSV-1, OSV-2, OSV-4, OSV-6, OSV-7 and OSV-8) will be used.
- The blowers were designed with excess capacity so additional suction points can be added if adequate depressurization of the sub-slab is not achieved. Capped PVC tees were included in the piping design to facilitate future connection of additional suction points, if necessary.

## 3.3 SSDS Startup and Testing

Performance monitoring will be performed on SSDS-East and SSDS-West as part of the SSDS start-up to verify that the systems are operating properly and will consist of the following for each system:

- Confirm operation of the local alarm warning light and remote alarm;
- Confirm acceptable air flow rate (90 to 180 cubic feet per minute [cfm]) from the SSDS blower by a visual inspection of gauges affixed to each blower;
- Confirm acceptable negative pressure readings (-20 to -50 inches of water column) from the SSDS and suction points by a visual inspection of gauges to each blower and suction point or lateral;
- Confirm acceptable negative differential pressure (a minimum of -0.004 inches of water column) beneath the building from monitoring points by using an appropriate micromanometer;
- Collect photoionization detector (PID) readings; and
- Collect confirmation effluent air samples.

Negative differential pressure measurements will be collected from the soil vapor monitoring points shown on SSDS Drawing 1 included in Appendix B. The negative pressure measurements will be collected using a micromanometer capable of monitoring differential pressure at a minimum of 0.001 inches of water column. If adequate depressurization (e.g., negative differential pressure of at least -0.004 inches of water column) is not occurring, the cause for the lack of depressurization will be investigated and repaired, and measurements will be collected again.

Following the initial start-up, performance monitoring of the SSDS will also include monitoring the system effluent VOC concentrations using a PID. In addition, during start-up of the SSDS, an effluent air sample will be collected from the discharge of each blower using a Summa canister and analyzed using USEPA TO-15 to verify that vapor treatment is not needed. The effluent air sample results will be compared to the DAR-1 Air Guide guidance values. If the sample results indicate that treatment is required, appropriate treatment options will be evaluated and installed.

The system testing described above (excluding effluent air sampling) will be conducted if, in the course of the SSDS lifetime, significant changes are made to the SSDS, or if the system is shut down for an extended period for any reason, and the system must be restarted.

## **3.4 SSDS Operation, Maintenance and Monitoring (O, M & M)**

O, M & M procedures for the SSDS will be included in the Site Management Plan (SMP) for the Site, but are outlined herein for the period prior to the SMP being in place.

## 3.4.1 System Operation: Routine Operation Procedures

Routine operation procedures will consist of monitoring the vacuum at the blower inlet and recording dilution valve setting (i.e., 50% open).

## 3.4.2 System Operation: Routine Equipment Maintenance

The routine maintenance activities include visual inspections, operating data collection and general maintenance. Visual inspection is the routine part of the SSDS operator's activities. The system operator will note any conditions that present a potential hazard or could cause future system shutdown. In the field, special attention will be paid to the condition of the blower and appurtenances, and the above slab discharge piping and supports. Special attention will also be given to any unusual or excessive noise or vibrations from the piping and blower. The piping and valves will be inspected for leaks.

All equipment maintenance and inspections will be performed in accordance with manufacturer's instructions (see Appendix D for specifications). Specific routine maintenance tasks are outlined below:

- Inspect control panel and warning lights/alarms and remote alarm;
- Inspect blower piping to confirm operation of appropriate valves (i.e., dilution valve);
- Inspect vacuum/pressure gauges for proper operation;
- Check and clean air filter on moisture knockout tank; and
- Check for the presence of and remove water in knockout tank.

In the event that a condition warranting system component maintenance is identified, the appropriate reporting and maintenance should be conducted immediately. Manufacturer's recommendations for system component maintenance are included in the component manuals in Appendix D. Any maintenance completed for the SSDS should be documented in the Maintenance Log included in Appendix E.

## 3.4.3 System Operation: Non-Routine Equipment Maintenance

Non-routine equipment maintenance consists of maintenance activities that will be performed with less frequency than the routine maintenance (i.e., semi-annually) on several system components. Specific non-routine maintenance tasks are outlined below:

- Inspect and test local and remote alarms;
- Check float switch in each knockout tank for proper operation;
- Replacement of vacuum/pressure gauges; and
- Change bearings on blowers after 15,000 hours of operation.

Most damage or problems associated with SSDS components will trigger one of the alarms. Damage to any SSDS components will be noted during the routine and detailed system inspections and remedied upon identification.

Accumulated condensate will be containerized in a 55-gallon drum for future off-Site disposal, if necessary based upon sample results from the first batch of drummed condensate and pending NYSDEC Contained-In Determination approval. Manufacturer's recommendations for SSDS component maintenance are included in the component manuals in Appendix D. Any maintenance completed for the SSDS should be documented in the SSDS Log included in Appendix E.

In the event that low SSDS air flow rates or vacuum are observed anywhere in the SSDS, further SSDS balancing may be necessary following moisture removal, to ensure that the combined air flow rates and vacuum in a given area of the Site achieve the minimum design requirements.

## **3.5 Waste Disposal**

All wastes generated during the installation of the SSDS will be handled, transported and disposed of in a manner consistent with Federal, State and local laws and regulations. A limited amount of soil is anticipated to be generated during SSDS installation since the majority of the SSDS piping will be installed above the basement concrete slab/floor. However, based on results of soil samples collected during RI activities, soil containing elevated concentration of CVOCs is not anticipated to be encountered during SSDS installation and is expected to be declassified as non-hazardous waste under the NYSDEC Contained-In Determination Policy and disposed of as non-hazardous waste, pending NYSDEC approval.

## **3.6 Documentation**

Detailed information regarding the IRM (e.g., as-built drawings, waste disposal documentation, backfill documentation, photographs, etc.) will be included in the Construction Completion Report (CCR) described in Section 5.

## 4. SOIL/MATERIALS MANAGEMENT PLAN

Although the amount of earthwork is expected to be very limited, the following sections provide the SoMP to be implemented during the IRM, as necessary.

## 4.1 Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed during SSDS installation activities under the supervision of Roux personnel.

## 4.2 Containerization of Waste

All soil generated during SSDS installation will be containerized in labeled, New York State Department of Transportation (NYSDOT) rated 55-gallon drums or roll-off containers, which will be fitted with tight fitting covers. If waste is determined to be hazardous, it will be disposed of within 90 days of generation at an approved hazardous waste disposal facility.

## 4.3 Characterization of Excavated Materials

Soil/fill or other excavated media that will be transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations.

## 4.4 Materials Excavation and Load Out

Roux will oversee all invasive work and the excavation and load-out of all excavated material. The quantity of waste is expected to be very limited and it will be containerized in drums for disposal. Loadout and trucking of bulk waste is not expected.

Morton Village and its contractors are solely responsible for safe execution of all invasive and other work performed under this SoMP. Support of excavation, though unlikely due to the nature of the work, will be provided, if necessary, based upon Site conditions and local regulations.

## 4.5 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

The proposed inbound truck route to the Site is:

Take I-278 to I-495 (Long Island Expressway) east in New York. Take exit 44 S, NY-135 S toward Seaford. Take exit 10 from NY-135 S and make a left onto Old Country Road (east bound). Entrance to the Site will be on the left.

The proposed outbound truck route from the Site is:

Take Old Country Road (west bound) to NY-135 N toward Syosset. Take exit 13W (I-495 W) to exit 17 (I-278).

These are the most appropriate routes and take into account: (a) limiting transport through residential areas and past sensitive sites; (b) prohibiting off-Site queuing of trucks entering the facility; (c) limiting total distance to major highways; (d) promoting safety in access to highways; and (e) overall safety in transport. To the extent possible, trucks will travel to/from the Site using these approved truck routes.

Trucks will avoid stopping and idling in the neighborhood outside the project Site, to the extent practicable. Queuing of trucks will be performed on-Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during the IRM implementation.

### 4.6 Materials Disposal Off-Site

All soil/fill/solid waste excavated and removed from the Site will be disposed of in accordance with regulatory requirements based on the levels of contamination found to be present in waste characterization samples collected.

The following documentation will be obtained and reported for each disposal location used in this project to demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter or facility-specific waste profile/application from Roux or Morton Village to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter/profile/application will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The letter will provide the project identity and the name and phone number of Roux or Morton Village. The letter will include as an attachment a summary of all chemical data for the material being transported (including Site Characterization data); (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the CCR; and (3) a Contained-In Determination approval from the NYSDEC declassifying the waste as non-hazardous, unless waste characterization sampling indicates the waste is characteristically hazardous.

The CCR will include an accounting of the destination of all material removed from the Site during this IRM. This information will also be presented in a tabular form in the CCR. A Bill of Lading system or equivalent will be used for off-Site movement of non-hazardous wastes and contaminated soils. This information will be reported in the CCR.

Hazardous and non-hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable local, State, and Federal regulations.

Appropriately licensed haulers will be used for material removed from this Site and will be in compliance with all applicable local, State and Federal regulations.

Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

### 4.7 Materials Reuse On-Site

Soil reuse is not anticipated as part of the IRM.

#### 4.8 Fluids Management

Liquids (if any) to be removed from the Site will be handled, transported and disposed in accordance with applicable laws and regulations. Liquid waste manifests will be reported to NYSDEC in the CCR.

Characterization of fluids for off-Site disposal will be performed in a manner suitable to the receiving facility and in conformance with applicable permits.

#### 4.9 Backfill from Off-Site Sources

All materials proposed for import onto the Site will be approved by Roux and will be in compliance with provisions in this IRM prior to receipt at the Site.

Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site.

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. These NYSDEC approved backfill or cover soil quality objectives are the lower of the protection of groundwater or the protection of public health soil cleanup objectives for Commercial or higher use as set forth in Table 375-6.8(b) of 6 NYCRR Part 375. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved IRM Work Plan or its approval by NYSDEC should be construed as an approval for this purpose.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Nothing in this IRM Work Plan should be construed as an approval for this purpose.

In accordance with DER-10, the following material may be imported, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the final Site cover, provided that it contains less than 10% by weight material which would pass through a size 80 sieve and consists of:

- Gravel, rock or stone, consisting of virgin material from a NYSDEC permitted mine or quarry; or
- Recycled concrete or brick from a NYSDEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the New York State Department of Transportation *Standard Specifications Construction and Materials Volume 1* (2002).

Trucks entering the Site with imported soils will be securely covered with tight fitting covers.

## 4.10 Stormwater Pollution Prevention

Although disturbance of soil outside the building footprint is not expected to be part of the scope, if changes to the scope require soil disturbance outside the building footprint, applicable laws and regulations pertaining to stormwater pollution prevention will be addressed. If necessary, erosion and sediment control measures (silt fences and/or barriers, and/or hay bale checks) will be installed, as appropriate, around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs to erosion and sediment controls shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence anchor will be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

## 4.11 Contingency Plan

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during implementation of the IRM. Due to the nature of the proposed work, discovery of previously unknown USTs is extremely unlikely.

If previously unidentified contaminant sources are found during implementation of the IRM, sampling will be performed on potentially contaminated source material and surrounding soils and reported to NYSDEC. Chemical analytical work will be for full suite of parameters (target compound list [TCL] VOCs, TCL semivolatile organic compounds [SVOCs], target analyte list [TAL] metals, TCL polychlorinated biphenyls [PCBs], pesticides and herbicides).

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. These findings will also be included in weekly and periodic electronic reports.

#### **4.12 Community Air Monitoring Plan (CAMP)**

Due to the nature of the work, with no intrusive work occurring outside the footprint of the building, community air monitoring is not required. If the scope changes, NYSDEC will be notified and a CAMP will be prepared. Health and safety monitoring for workers will be performed in accordance with the Health and Safety Plan (HASP; Appendix F).

#### 4.13 Odor, Dust and Nuisance Control Plan

The CCR will include the following certification by the certifying professional engineer: "I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology defined in the IRM Work Plan."

#### 4.13.1 Odor Control Plan

In addition to the health and safety monitoring described in the HASP (Appendix F), Roux will closely monitor the presence of odors emanating from the work area within the building. This odor control plan is capable of controlling emissions of nuisance odors on-Site. Due to the nature of the project, with all intrusive work occurring in the basement of the existing building, t nuisance odor will not be generated at the sidewalk level surrounding the Site. The HASP will contain specific measures to address potential worker exposure to airborne contaminants during the IRM implementation. Specific odor control methods to be used on a routine basis will include limiting open excavation areas, keeping excavations covered, and covering excavated soil (i.e., in covered drums). If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of Roux, who is responsible for certifying the CCR and its subcontractors.

Odor controls will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of odor suppressants to cover exposed odorous soils.

#### 4.13.2 Dust Control Plan

Due to the nature of the project, with excavation occurring in the basement of the existing building, generation of nuisance dust at the sidewalk level surrounding the Site will not occur. The HASP will contain specific

measures to address potential worker exposure to airborne particulates during the IRM implementation. A dust suppression plan that addresses dust management during invasive on-Site work, will include, at a minimum, the items listed below:

• Dust suppression will be achieved through the use of water for wetting excavation areas. Water will be available on-Site at suitable supply and pressure for use in dust control.

### 4.13.3 Other Nuisances

Noise control will be exercised during the remedial program.

## 5.0 REPORTING

## 5.1 Weekly Reporting During Site Activities

Weekly reports to NYSDEC and NYSDOH will be submitted during the weeks when IRM activities take place. Weekly reports will include an update of progress made during the reporting period; locations of work and quantities of material imported and exported from the Site; a summary of any and all complaints with relevant details (names, phone numbers); a summary of CAMP readings, if implemented, and an explanation of notable Site conditions, etc. If any issues arise (i.e., issues with the CAMP, if implemented) then daily notification will be provided to NYSDOH and NYSDEC.

## **5.2 Construction Completion Report (CCR)**

Detailed information regarding the IRM (e.g., general description of the construction activities, as-built of the SSDS, waste disposal documentation, backfill documentation, photographs, etc.) will be included in the CCR. The CCR will be submitted within 60 days after the data usability summary report (DUSR) is complete for any vapor samples collected during the SSDS start-up.

## 6.0 IRM IMPLEMENTATION SCHEDULE

This IRM Work Plan is anticipated to begin in the third quarter of 2018 and will require approximately four to six weeks to complete. It is anticipated that the actual on-Site duration of major remedial construction tasks will be completed as follows (time frames are not necessarily consecutive):

•	Site Mobilization and Preparation	one day
•	SSDS Installation	four to five weeks
•	SSDS Startup and Testing	two days
•	Transportation and Off-Site Disposal	one day
•	Site Restoration and Demobilization	one day
•	Submittal of CCR After Startup and Testing Completed	60 days



- Date: April 26, 2019
- To: Mr. Joseph Jones
- From: Jeff Wills, Roux Environmental Engineering and Geology, D.P.C.
- CC: John Patrick Curran, Esq., Sive Paget & Riesel P.C. Joseph Duminuco, Roux Environmental Engineering and Geology, D.P.C. Alex Schoenbart, NYSDEC Robert Corcoran, NYSDEC Walter Parish, RHWRE Alali Tamuno, NYSDEC Dawn Hettrick, NYSDOH Charlotte Bethoney, NYSDOH
- Subject: Site No. 130201, Former Morton Village Cleaners, IRM Work Plan Response Letter 1022 Old Country Road Plainview, New York

Roux Environmental Engineering and Geology, D.P.C. (Roux), on behalf of Morton Village Realty Co., Inc., has prepared this memorandum in response to the New York State Department of Environmental Conservation's (NYSDEC) comment letter dated February 19, 2019 for the disapproval of the June 2018 Interim Remedial Measure (IRM) Work Plan. The NYSDEC comments are italicized below followed by Roux's responses.

## February 19, 2019 NYSDEC Letter:

1. Suction laterals of the sub-slab depressurization system (SSDS) should be pitched away from extraction points to prevent pooling of condensate in the bottom of vertical risers. If sufficient water accumulates in the bottom of a riser, the section will fail to provide negative pressure under that portion of the building serviced by that section of the SSDS.

<u>Roux's Response</u>: Suction laterals of the SSDS will be pitched away from the extraction points to the extent feasible. The SSDS drawing, included in the IRM Work Plan, will be updated to include this information.

2. No community Air Monitoring Program (CAMP) has been proposed because all the work is presumed to be contained inside a building. This is acceptable if the work area is vacant and will only be occupied by workers doing remedial work. However, if there are any people within the area where the SSDS or any of its elements are being installed, measures will be needed to monitor air quality and prevent exposures. Please clarify and/or provide a CAMP that considers the actual conditions where work is to be performed.

Roux's Response: The IRM Work Plan will be revised to include CAMP during all invasive work.

3. Daily reports (not weekly reports) are to be submitted during the IRM installation.

<u>Roux's Response</u>: The IRM Work Plan will be revised to include daily report submittals in place of weekly reports.





V:/CAD/PROJECTS/2811/Y1000/Y718S/2T31090/94/040/:V







# APPENDIX B

**PILOT STUDY** 



## **APPENDIX C**

## **SSDS DESIGN**











Note		General:		
Contractor shall:		The Vapor Mitigation System (VMS) preser	ted in these plans and	
Comply with all 0	OSHA requirements and training in accordance with 1910:120	specifications shall be utilized to prevent vo The basis of design is an active sub-slah des	apor intrusion into the building.	
Follow their own     protective. VER	n H&S plan or the Site-Specific H&S plan, whichever is more TEX is not responsible for contractor H&S	these plans.	יו באמו ולפרוחון אלארבוון מבארוחבת ווו	
Obtain local perr	mits for all work, as required	The VMS construction shall consist of, but	not be limited to, the following:	
Verify site condit	itions prior to the start of work	a. Supply and install vapor vent risers w	th ancillary monitoring equipment	
Be responsible for     the limits of dist	or identifying and verifying the location of all utilities within turbance	b. Supply and install exhaust fan		
Be responsible ft     of work	or the means and methods for implementation of the scope	Vapor Vent System:		
Coordinate work     demarcated work	k and schedule with Engineer and Owner and provide a safe rk area	<ul> <li>A vapor vent system snall be installed bene drawing set.</li> </ul>	ath the slab as detailed in this	
Perform all work     provided by Engi	k in accordance with all drawings and other information ineer and Owner	<ul> <li>Ine exhaust shall be located at least 10 fee</li> <li>All vent piping shall be sloped to a sub-grad</li> </ul>	t from air intakes. le drainage point.	
Install all materia     instructions	ials and appurtenances in accordance with manufacturer's	<ul> <li>Materials of construction shall comply with Mechanical Codes.</li> </ul>	the applicable Plumbing and	
Coordinate deliv     Restore area to	very of all materials and support equipment pre-construction conditions	<ul> <li>Riser pipe sample ports and gauges shall be sections.</li> </ul>	e installed within accessible	
Submittals:		<ul> <li>The riser pipes shall be fully supported through building such that no downward force is ex</li> </ul>	ugh the entire height of the erted on the sub-slab venting	
Provide material     specified	l cut sheets for Engineer approval if different than that	piping.		
Proposed change     approval	es to plans shall be submitted in writing for Engineer/Owner	Materials:		
Provide a sketch	n of staging areas for Engineer/Owner approval	All materials are to be delivered to the pro- packages bearing the manufacturer's label	ect site in their original unbroken showing brand, weight, volume,	
Installation: Install vertical ve	ent risers flush with basement walls	<ul> <li>Materials are to be stored at the project sit manufacturer's instructions</li> </ul>	e in strict compliance with the	
Install monitorin     Install 4 sub-slab     Provide 115V jur     for alarm in the	ig port on each vertical riser o monitoring points below building slab nction box at roof for in-line exhaust fan operation and one meter room.	Blower: Cincinnati Fan, HPA, 10° wheel diamet Alarm: Radon Away Checkpoint 11 a Vacuum Gauge: Dwyer Minihelic 2-5010 0-10' Pipe: Schedule 40 PVC	ır, 1/2 HP, Arrangement 4) 'W∶L	SEAL & SIGNATURE:
Construct all abo	ove grade vent piping and fittings to be gas tight.			
IT IS A VIOLATION OF NY STATE LAW FOR ANY PERSON, UNLESS ACTING UNDEF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY	R THE DIRECTION OF X.			Richard J. Tobia, PE PE License No.: 095039-1
	SSDS NOTES		FIGURE NO. 5	
	MORTON VILLAG 1022 OLD COUNTRY ROAD, PI	e AINVIEW, NY	VERTEX Project No. 65720	VERTEX ENGINEERING, PC

## **APPENDIX D**

## PHOTOLOG



Photographic Documentation - SSDS Morton Village – 1022 Old Country Road Plainview, NY VERTEX Project No. 65720, 66845



**Photo #1:** Typical Extraction pit prior to installation of riser.



**Photo #2:** Typical riser with valve and piping run.



Photo #3: Basement penetration for riser to roof.



**Photo #4:** Pipe through wall with firestop insulation.



Photo #5: Typical riser with cement seal.



Photo #6: Typical riser with ball valve and vacuum gauge.



Photographic Documentation - SSDS Morton Village – 1022 Old Country Road Plainview, NY VERTEX Project No. 65720, 66845



Photo #7: Typical vapor monitoring point (Vapor Pin)



Photo #8: Installation of blower on roof.



Photo #9: Landlord electrical panel.



Photo #10: Blower local disconnect switch.



Photo #9: Condensate drain.



Photo #10: Alarm.


# **APPENDIX E**

# **OM&M PLAN AND SPEC**

SHEETS



# OPERATION MAINTENANCE & MONITORING PLAN (OM&M)

Sub-Slab Depressurization System (SSDS)

Morton Village

Plainview, NY

# 1.0 SSDS OM&M PLAN

Site Management is the last phase of the remedial process. It is the responsibility of the property owner to ensure that all Site Management responsibilities are performed. A Site Management Plan (SMP) provides a detailed description of procedures required to manage residual material at the Site following the completion of remedial construction. This includes: (1) operation and maintenance of Engineering Controls (ECs); (2) inspection of ECs; and (3) certification of performance of ECs.

ECs in the form of a Sub-slab Depressurization System (SSDS) have been incorporated into this remedial action to remediate vapor intrusion and ensure that the Site remains protective of public health and the environment. As the site does not yet have a SMP, the following

### ENGINEERING CONTROLS

A sub-slab depressurization system (SSDS) was employed in the remedial action to address residual materials remaining at the Site and to prevent vapor intrusion.

## **Operation and Maintenance of Active Sub-Slab Depressurization Systems**

The active SSDS will be inspected, and its performance certified at specified intervals that will be defined in a SMP. The active SSDS will be operated and maintained as prescribed below. The SSDS is comprised of one roof-mounted blower, four extraction points, and interconnecting PVC pipe runs. SSDS components to be evaluated include, but are not limited to, the following:

- Cincinnati Fan, HPA, 10" wheel diameter, 1/2 horsepower (HP), Arrangement 4 installed on roof on the northern side of the building above the Subway leasehold;
- Exposed system piping within the building basement and on the roof;
- Radonaway Checkpoint IIR Radon System Alarm; and

• Dwyer Magnehelic Manometer (Range of 0-10 inches of water).

Each leg of the SSDS system is equipped with a Dwyer Magnehelic pressure gauge (Range of 0-10 inches of water) and a single Radonaway Checkpoint IIR Radon System Alarm connected to the extraction manifold piping is located within the utility room of the basement.

No maintenance of the system is required unless the system blower is non-operational or producing more noise than usual, the loss of vacuum alarm sounds, the alarm fails, or piping is damaged.

### INSPECTIONS

The SSDS will be inspected by a qualified environmental professional (QEP) on an annual basis. An inspection shall be performed in 2024 and every year thereafter. In addition to these inspections, a building superintendent will inspect the active SSDS operation and alarm monthly.

### Monthly

Monthly inspections of the active SSDS are to be performed by the building superintendent and a record of each inspection is to be kept by completing the SSDS Inspection Checklist included in this SMP. All completed monthly SSDS Inspection Checklists are to be kept on-Site for the annual inspection to be performed by the QEP. The building superintendent must check to make sure the audible/visual alarm has not been triggered, and that the vacuum gauge(s) depicts a vacuum reading consistent (+- 20%) with the commissioning value.

For monthly inspections, vacuum gauge reading using the installed Magnahelic pressure gauges shall be recorded on the Inspection Checklist and compared to the original startup (commissioning) readings. The alarm, if operational, will sound on a loss of system vacuum. If the blower is found to be non-operational by the building superintendent during a monthly inspection, or if the blower is operating, but no vacuum reading is observed on the vacuum gauge, the blower must be inspected, replaced and/or repaired. The Owner's representative(s) shall immediately contact the appropriate parties from the contact list provided below. These emergency contact lists will be maintained by the building superintendent and in a package secured in the electrical room near the alarm and circuit breaker for the blower.

The vacuum gauges and alarm are installed in the basement. In addition, the Cincinnati Fan blower located on the roof must be inspected if an alarm sounds or if vacuum cannot be restored to determine if the blower is operational by checking for air flow at the exhaust. If the blower is found to be non-operational by the building superintendent during a monthly inspection, or if the blower is operating, but no vacuum reading is observed on the vacuum gauge, the blower must be replaced and/or repaired. The Owner's representative(s) shall immediately contact the appropriate parties from the contact list provided on the monthly SSDS Inspection Checklist.

## <u>Annual</u>

The annual EC inspection performed by the QEP will evaluate the following:

- If ECs employed at the Site (SSDS) continue to perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of the ECs to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this OM&M has been maintained;
- If Site records are complete and up to date; and
- General Site conditions at the time of inspection.

In an addition, if an emergency occurs, such as a natural disaster, or if an unforeseen failure of any of the ECs occurs, an inspection of the Site will be performed within 30 days to evaluate the ECs and a letter report of findings will be submitted to the NYSDEC.

The completed monthly Inspection Checklists are to be maintained by the building superintendent and in a package secured in the electrical room or in the building maintenance office. A complete list of components to be checked is provided in the Inspection Checklist, presented in this plan. The monthly inspections will be reviewed by the QEP suring the annual inspection process. The components of the active SSDS will be inspected by a QEP once annually to assure that the active SSDS is functioning properly. A walkthrough of the system will be performed and will include accessing the roof and visually inspecting the blower. In addition, subslab vacuum readings at installed points, where access is allowed, will be taken and recorded annually. Flow readings will be taken and recorded where possible. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSDS has been reported or an emergency occurs that is deemed likely to affect the operation of the system. A visual inspection of the complete system will be conducted. SSDS components to be monitored include, but are not limited to, the following:

- Cincinnati Fan, HPA, 10" wheel diameter, 1/2 HP, Arrangement 4, TEFC installed on roof on the northern side of the building;
- Exposed system piping within the building and on the roof;
- Extraction points;
- Condensate drops;
- Radonaway Checkpoint IIR Radon System Alarm; and
- Dwyer Magnehelic Manometer (Range of 0-10 inches of water).

# **Inspection And Certification Letter Report**

System readings will be compared to initial or previous year(s) readings where applicable. Results of inspections performed during a reporting period and certification of performance of the SSDS will be included in an Inspection and Certification Letter Report to be submitted by July 31, 2025, (for calendar year 2024) and July 31 of every year thereafter for the prior calendar year. Inspection and Certification Letter Reports will be submitted to the NYSDEC in digital format. The letter report will include, at a minimum:

- Date of inspections;
- Personnel conducting inspections;
- Description of the inspection activities performed;
- Any observations, conclusions, or recommendations;
- Copy of any inspection forms with system readings;
- Certification of the performance of ECs, as discussed below; and
- Confirmation of regular periodic inspection of ECs by building superintendent.

The certification of the performance of EC's will establish:

- If ECs employed at the Site continue to be in place and perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of ECs to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this SMP has been maintained;
- If the Site has been used for a higher level of use other than the commercial use addressed by the Remedial Action;
- If Site records are complete and up to date;

• NYSDEC may enter the Site upon notice for the purpose of evaluating the performance of EC's.

# Notifications

Notifications are to be submitted by the property owner to NYSDEC as described below:

- 60-day advance notice of any proposed changes in Site use to a Use that is not contemplated by the Remedial Action.
- Notice within 30 days of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the Site.

# **Contingency Plan**

# Emergency Telephone Numbers

In the event of any emergency condition pertaining to this remedial system, or if the building slab is disturbed, removed or altered, the Owner's representative(s) should contact the appropriate parties from the contact list below. Prompt contact should also be made to VERTEX. These emergency contact lists must be maintained in an easily accessible location at the Site.

Medical, Fire, and Police: 911 One Call Center: 811 Poison Control Center: (800) 222-1222 National Response Center Pollution Toxic Chemical Oil Spills: (800) 424-8802 NYSDEC Spills Hotline (800) 457-7362 LKB, Inc. (908) 448-2627

# Appendix A – Inspection Form

# MORTON VILLAGE SSDS MONTHLY INSPECTION FORM

Month:	Year:					
Date:						
Inspector Name:						
Employed by:						
Is the green light on the vacuu	m alarm lit:	Yes	No	(if no call LKB)		
Is the red light on the vacuum	alarm lit:	Yes	No	(if yes call LKB)		
Is the alarm sounding:		Yes	No	(if yes call LKB)		
Vacuum Gauge Reading						
Gauge A						
Gauge B						
Gauge C						
Gauge D						
Are any of the vacuum reading	gs less than 3	.5 inch	es wate	er column (in WC)	Yes	No
(if yes call LKB)						

The alarm, if operational, will sound on a loss of system vacuum. If the blower is found to be nonoperational during a monthly inspection, or if the blower is operating, but no or low vacuum reading is observed on the vacuum gauge, the blower must be inspected, replaced and/or repaired. The Owner's representative(s) shall immediately contact the appropriate party below. This monthly report shall be maintained in the maintenance office and/or the electrical room.

In the event of an alarm condition or loss of vacuum, contact Richard Tobia or the office manager at LKB, Inc. at (908) 448-2627.

# MORTON VILLAGE SSDS ANNUAL INSPECTION FORM

Month:	Year:						
Date:							
Inspector Name:							
Employed by:							
Is the green light on the vacuum a	alarm lit:	Yes	No				
Is the red light on the vacuum ala	rm lit:	Yes	No				
Is the alarm sounding:		Yes	No				
Vacuum Gauge Reading							
Gauge A		Gaug	e C				
Gauge B		Gaug	e D				
Are any of the vacuum readings le	ess than 3	.5 inch	es wat	er column (in '	WC)	Yes	No

# Sub Slab Readings

Monitoring Point	Reading (in WC)	Monitoring Point	Reading (in WC)
1		5	
2		6	
3		7	
4		8	

# **Blower Inspection**

Is blower and components intact	Yes	No	
Is blower making excessive noise	Yes	No	
Is blower secure	Yes	No	

<u>Piping</u>

ls piping intact	Yes	No			
Are condensate drops	intact		Yes	No	
Are condensate drops	holdin	g water	Yes	No	





# HP SERIES I

HIGH PRESSURE BLOWERS

7697 Snider Road, Mason, OH 45040-9135 Telephone: 513-573-0600

Visit us at www.cincinnatifan.com for more information.

Cat. No. HP-I-107 Supersedes HP-1-803

# **EXAMPLE 1** CINCINAL FAN A Company That Stands Behind Its Product

Since the founding of **Cincinnati Fan** in 1956, the company's mission has been to provide quality products at competitive prices, backed by dependable service.

This mission is carried out by specializing in the market for industrial air handling products up to 125 HP. But specialization does not mean the product line is small. Cincinnati Fan offers a wide variety of standard and customized products, production flexibility, and customer responsiveness.

Cincinnati Fan has over 170 experienced sales engineers across the U.S. and Canada ready to serve your air handling needs.

- Technical evaluation for correct performance conditions.
- Review of air stream and ambient conditions that require special attention.
- Selection of proper components to meet required design specifications.
- Selection of proper accessories.
- System analysis for proper fan design.

Cincinnati Fan operates in a modern facility specifically designed for world class manufacturing enabling us to build standard products to order, including accessories, and ship within 10 working days.

With support like this, you can be sure your Cincinnati Fan product will be well-built and will provide maximum dependability and longevity.

Visit us at www.cincinnatifan.com for more information.

# SPECIFICATIONS FOR HP SERIES I BLOWERS

Radial bladed pressure blowers shall be Cincinnati Fan HP, Series I, Model , Arrangement Capacity: Static Pressure at standard conditions. Operating CFM, °F. Ft. Altitude. conditions:

Wheels shall be 319 cast aluminum with integral cast hub and blades. Wheels shall be dynamically balanced to assure smooth operation. Fan motor and bearing vibration levels shall not exceed 1.5 mils displacement at 3450 RPM. Shafts shall be turned, ground and polished steel (or stainless steel). All fan shafts shall receive a rust preventive coating prior to shipment. All fans shall be test run at factory before shipping.

Construction gauges shall be as shown in Cincinnati Fan's HP, Series I catalog. The blower housing shall be continuously welded and supported to prevent pulsation at all conditions. Fan bearings shall be greaselubricated, heavy-duty, self-aligning ball bearings mounted in cast iron pillow blocks. V-belt drives shall be selected for a minimum of 1.3 times nominal horsepower.

All parts in contact with airstream shall be standard steel, aluminum or stainless steel as specified.

Before painting, steel parts shall be cleaned by detergent wash, phosphatized and painted with oven cured gray enamel.

The following accessories shall be included: (See page 4 for available accessories).

# THREE STANDARD ARRANGEMENTS



# **ARRANGEMENT 1 (V-BELT DRIVE)**

- Motor not mounted on bearing base.
- Turned, ground and polished shafting assures smooth operation. A rust preventive coating is applied prior to shipment.
- Heavy-duty, self-aligning ball bearings in relubricatable cast-iron pillow blocks. Bearings are selected for optimal performance.
- Maximum temperature of standard design: 200°F; high temperature design up to 400°F.



# **ARRANGEMENT 4 (DIRECT DRIVE)**

- Motor mounted on motor base.
- Wheel mounted on motor shaft.
- Maximum temperature of standard design: 200°F; high temperature design not available.



# **ARRANGEMENT 9 (V-BELT DRIVE)**

- Motor mounted on an adjustable slide base on the side of the bearing base.
- Turned, ground and polished shafting assures smooth operation. A rust preventive coating is applied prior to shipment.
- Heavy-duty, self-aligning ball bearings in relubricatable cast-iron pillow blocks. Bearings are selected for optimal performance.
- Maximum temperature of standard design: 200°F; high temperature design up to 400°F.

# STANDARD FEATURES FOR ALL HP's



Teflon Shaft Seal



Discharge Flange Standard ANSI-125/ASA-150 pound hole pattern furnished. See pages 10 or 11 for dimensions.







Belt Guard (Arrangement 9 only) Painted safety yellow.



Cast Aluminum Wheel (Non-Sparking)

# + PLUS +

- Continuously welded fan housings with removable inlet and drive side plates.
- Blower housings are reversible and rotatable in 45° increments.
- All fans receive a mechanical run test to assure proper balance and alignment before shipping. Arrangements #1 and #9 (less motor) have driveend key furnished.



- Arrangement #1 fans offer easy field conversion to arrangement #9 by the addition of a motor slide base.
- Bearings are relubricatable, cast iron, pillow blocks sized for 150,000 hours average life under normal operating conditions. (Excessive belt tension will shorten bearing life).

# **OPTIONAL ACCESSORIES**



# Shaft Guard

Shaft guard available on arrangement 1 and 9. Covers bearings and shaft between fan housing and belt guard. **Painted safety yellow**.



Inlet Filter Wire mesh or paper cartridge available.



# Drain Connection

%" pipe coupling welded to lowest point of housing.



**Inlet Flange** 

Standard ANSI-125/ASA-150 pound hole pattern furnished. See page 10 for dimensions.

# **SPARK-RESISTANT CONSTRUCTION**

Type A: All parts in contact with airstream are of nonferrous material. Consult factory.

**Type B:** The standard wheels are cast aluminum. With the addition of an aluminum ring around the housing shaft opening, the fan will be AMCA type "B" spark resistant. **Maximum Temperature 200°F.** 

# WARNING

The use of aluminum or aluminum alloys in the presence of steel which has been allowed to rust requires special consideration. Research by the U.S. Bureau of Mines and others has shown that aluminum impellers rubbing on rusty steel may cause high intensity sparking.

The use of the above Standard in no way implies a guarantee of safety for any level of spark resistance. Spark resistant construction also does not protect against ignition of explosive gases caused by catastrophic failure or from any airstream material that may be present in a system.

# **TEMPERATURE - ALTITUDE CONVERSIONS**

**Standard Construction:** All arrangements suitable to 200°F. **201°- 300°F. Construction:** Standard fan with steel wheel. Arrangements 1 and 9 only.

**301°- 400°F. Construction:** Standard fan with steel wheel, heat slinger and slinger guard. Arrangements 1 and 9 only.

## **TEMPERATURE - ALTITUDE CONVERSION FACTORS**

AIR	ALTITUDE IN FEET ABOVE SEA LEVEL										
DEG. F.	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
0°	.87	.91	.94	.98	1.01	1.05	1.09	1.13	1.17	1.22	1.26
40°	.94	.98	1.02	1.06	1.10	1.14	1.19	1.23	1.28	1.32	1.36
70°	1.00	1.04	1.08	1.12	1.16	1.20	1.25	1.30	1.35	1.40	1.45
80°	1.02	1.06	1.10	1.14	1.19	1.23	1.28	1.33	1.38	1.43	1.48
100°	1.06	1.10	1.14	1.19	1.23	1.28	1.33	1.38	1.43	1.48	1.54
120°	1.09	1.14	1.18	1.23	1.28	1.32	1.38	1.43	1.48	1.53	1.58
140°	1.13	1.18	1.22	1.27	1.32	1.37	1.42	1.48	1.54	1.58	1.65
160°	1.17	1.22	1.26	1.31	1.36	1.42	1.47	1.53	1.59	1.64	1.70
180°	1.21	1.26	1.30	1.36	1.41	1.46	1.52	1.58	1.64	1.70	1.75
200°	1.25	1.29	1.34	1.40	1.45	1.51	1.57	1.63	1.69	1.75	1.81

Fan performance tables are developed using standard air which is 70°F., 29.92" barometric pressure and .075 lbs. per cubic foot. Density changes resulting from temperature or barometric pressure variations (such as high altitudes) must be corrected to standard conditions before selecting a fan based on standard performance data.

Temperature and/or altitude conversion factors are used in making corrections to standard conditions.

## EXAMPLE:

Select a belt driven HPE to deliver 500 CFM at 18" SP at 160°F., and 7000' altitude.

**STEP 1.** From the table, conversion factor is 1.53.

**STEP 2.** Correct static pressure is: 1.53 x 18" SP = 27.5" SP at standard conditions.

**STEP 3.** Check HP catalog for 500 CFM at 27.5" SP. We select a belt driven HPE and interpolation gives 3463 RPM and 5.61 BHP.

**STEP 4.** Correct the BHP for the lighter air:  $5.61 \div 1.53 = 3.67$  BHP. A 5 HP motor will suffice at 160° F., and 7000' but not at standard conditions. Special motor insulation may be required above 3500 feet altitude. Consult factory.

# SUCTION PRESSURE CORRECTIONS

Rarefication: When air is pulled into a blower inlet (negative pressure) the air molecules are "stretched out", or rarefied, and become less dense than at the blower discharge where the air is compressed.

Catalog ratings may be used directly, without correction, for static pressures defined at the fan discharge. For static pressures defined at the fan inlet (i.e., negative pressures), a correction is typically only made for inlet suction pressures greater than 15" W.G. The table at the right gives corrected static pressures for suction pressure (rarefication). These corrected static pressures are for standard air (70°F., 29.92" Hg barometric pressure and .075 lbs. per cubic foot density) at the blower inlet.

If the inlet air temperature and/or altitude are different, make those corrections as shown above and then correct for rarefication.

Suction Pressure in Inches W.G.	Corrected Static Pressure
16	16.7
18	18.8
20	21.0
22	23.3
24	25.5
26	27.8
28	30.1
30	32.4



# ☑ DIMENSIONS and SPECIFICATIONS

Arrangement #4, Direct Drive



CW BH (Clockwise Bottom Horizontal)

Discharge flange not available with Down Blast Discharge on Models HPA, HPB and HPC.

Note: On some models motor may extend past end of motor base.

# **DIMENSIONS IN INCHES ±1/8"**

MODEL	MOTOR FRAME	G	н	J	м	о	v	вв	EE	FF	JJ	SHIP WT. LESS MTR.							
HPA	56-143T	3 %	5	2	5 %	8 1/8	5½	14 1⁄4	15	11	7 ½	60							
HPB	56-145T	3 %	5	2	7 %	9 %	5½	14 ¼	18	12 ½	7 ½	70							
	56-145T	0.5/	2.5/	25/	25/	<b>9</b> 5/	<b>9</b> 5/	2 5/	2 5/	F		0.7/	4 4 1/	71/	14 ¼	01	14	0.1/	90
TPC	182T-184T	3%	Э	5	5	5	2	0 78	1178	1 /2	16¼ 21	14	9 /2	93					
HPD	56-184T	3 %	5	2	9%	11%	7 ½	16 1⁄4	23	15	9 ½	123							
	56-184T	0.5/	5	2	4 4 7/	10.5/	8	16 ¼	07	17	10	140							
	213T-215T	3%	9	2	1178	13%	9	18 1/16	21	17	11	150							

# ★ NOTE

Discharge flange not available with downblast discharge on models HPA, HPB and HPC.

# INLET FLANGE DIMENSIONS FOR ALL HP's



### 

All fans & blowers shown have rotating parts and pinch points. Severe personal injury can result if operated without guards. Stay away from rotating equipment unless it is disconnected from its power source. Read operating instructions.

### **HP MATERIAL GAUGES**

HOUSING	10
INLET SIDE PLATE	10
DRIVE SIDE PLATE	7
BASE	10
FLANGES	10











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Static Pressure (in. wg)



### INSTALLATION & OPERATING INSTRUCTIONS Instruction P/N IN015 Rev E FOR CHECKPOINT IIa <sub>TM</sub> P/N 28001-2 & 28001-3 RADON SYSTEM ALARM

# **INSTALLATION INSTRUCTIONS** (WALL MOUNTING)

Select a suitable wall location near a vertical section of the suction pipe. The unit should be mounted about four or five feet above the floor and as close to the suction pipe as possible. Keep in mind that with the plug-in transformer provided, the unit must also be within six feet of a 120V receptacle. **NOTE: The Checkpoint IIa is calibrated for vertical mounting, horizontal mounting will affect switchpoint calibration.** 

Drill two  $\frac{1}{4}$ " holes 4" apart horizontally where the unit is to be mounted.

Install the two 1/4" wall anchors provided.

Hang the CHECKPOINT IIa from the two mouting holes located on the mounting bracket. Tighten the mounting screws so the unit

fits snugly and securely against the wall.

Drill a 5/16" hole into the side of the vent pipe about 6" higher than the top of the unit.

Insert the vinyl tubing provided about 1" inside the suction pipe.



Cut a suitable length of vinyl tubing and attach it to the pressure switch connector on the CHECKPOINT IIa.

## CALIBRATION AND OPERATION.

The CHECKPOINT IIa units are calibrated and sealed at the factory to alarm when the vacuum pressure falls below the factory setting and should not normally require field calibration. Factory Settings are: **28001-2** -.25" WC Vacuum **28001-3** -.10" WC Vacuum

# **To Verify Operation:**

With the exhaust fan off or the pressure tubing disconnected and the CHECKPOINT IIa plugged in, both the red indicator light and the audible alarm should be on.

Turn the fan system on or connect the pressure tubing to the fan piping. The red light and the audible alarm should go off. The green light should come on.

Now turn the fan off. The red light and audible alarm should come on in about two or three seconds and the green light should go out.

### WARRANTY INFORMATION

Subject to applicable consumer protection legislation, RadonAway warrants that the CHECKPOINT IIa will be free from defective material and workmanship for a period of (1) year from the date of purchase. Warranty is contingent on installation in accordance with the instructions provided. This warranty does not apply where repairs or alterations have been made or attempted by others; or the unit has been abused or misused. Warranty does not include damage in shipment unless the damage is due to the negligence of RadonAway. All other warranties, expressed or written, are not valid. To make a claim under these limited warranties, you must return the defective item to RadonAway with a copy of the purchase receipt. RadonAway is not responsible for installation or removal cost associated with this warranty. In no case is RadonAway liable beyond the repair or replacement of the defective product FOB RadonAway.

### THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO WARRANTY OF MERCHANTIBILITY. ALL OTHER WARRANTIES, EXPRESSED OR WRITTEN, ARE NOT VALID.

For service under these warranties, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. **No returns can be accepted without an RMA.** If factory return is required, the customer assumes all shipping costs to and from factory.

> Manufactured by: RadonAway Ward Hill, MA





Project Name: Morton Village Plaza Project Number: 10470.LK Site Management Reporting Period: Inspection Date: Inspector and Certifier: Report Submittal Date: Report Preparer:

# Site Inspection and Certification Letter Report

Morton Village Realty Co., Inc. hereby submits a Site Management Inspection and Certification Report for the property located at 998-1064 Old Country Road, Plainview, Nassau County, New York for the reporting period, \_\_\_\_\_ to \_\_\_\_, pursuant to the Operation and Maintenance Plan (O&M Plan) dated July 2024. The Site is identified as Block 555, Lots 10, 86, 88, and 89.

# **1.0 ENGINEERING CONTROLS**

Engineering Controls were employed in the Remedial Action to assure permanent protection of public health by eliminating human exposure to residual materials remaining at the site. The Site has three Engineering Control Systems. Engineering Controls for this property are:

# Active/Passive Sub-Slab Depressurization System

The active SSDS for the Site consists of a network of vertical suction points creating a vacuum influence beneath the targeted portion of the building basement slab. The following is an outline of the design:

- Four vertical suction points installed to create the required vacuum influence below the basement slab of portions of the Site building. All suction points consist of 3-inch PVC piping.
- Each suction point riser is fitted with a shut off valve, monitoring port, and vacuum gauge.

- The manifold piping from the suction points was brought to the roof along the exterior of the building. The single header was connected to a single 1 horsepower (Hp) centrifugal blower located on the roof of the building.
- Interior piping was routed around various building infrastructure as needed. Piping was supported appropriately.
- Piping was sloped to drain collected condensate back to the subsurface. Where piping could not be properly sloped due to interference, a condensate drop was installed within the piping run. Two <sup>1</sup>/<sub>2</sub>-inch condensate drops were installed to drain to the subsurface.
- An audible and visual alarm was installed on the system to notify the property manager of a loss of vacuum within the SSDS.
- The discharge point is located 3.5 feet above the roof and located 16 and 12 feet from the closest HVAC air inlet and the building edge, respectively.

The PE for the remedial action or a person under his direct supervision has inspected the system and confirmed that the effluent discharge point is a minimum of 10 feet from any operable window or air intake for any building. The blower was hardwired to dedicated circuit breakers and a pressure gauge for each leg of the SSDS and an alarm were located in an accessible area in the cellar. The design engineer for the Active SSDS is Richard J. Tobia.

# **3.0 INSPECTION NARRATIVE**

The site inspection was performed by \_\_\_\_\_. The date of the inspection was \_\_\_\_\_.

- Description of the inspection activities performed on each Engineering and Institutional Control;
- Description of the performance of each Engineering and Institutional Control;
- Description of findings, conclusions, or recommendations;
- Narrative that refers liberally to an addendum with photos of inspection;
- Description of any deficiencies that were identified during the inspection and how they were (or will be) corrected;
- Copy of any periodic maintenance inspection forms prepared by the building staff.

# 4.0 STATUS of ENGINEERING CONTROLS

- Are the Engineering Controls employed at the Site continuing to perform as designed and continuing to be protective of human health and the environment? Response:
- Has anything occurred that impairs the ability of the Engineering Controls to protect public health and the environment?
   Response:
- Are any changes needed to the remedial systems or controls? Response:
- Has compliance with this SMP been maintained during this reporting period? Response:
- Are site records complete and up to date? Response:
- Have monthly SSDS inspections by building superintendents been performed, certified on inspection checklists, and maintained on file on site? Response:

# 5.0 DEVIATIONS in PERFORMANCE of ENGINEERING and INSTITUTIONAL CONTROLS

# 6.0 NEXT INSPECTION

The next Site Management Inspection will be performed \_\_\_\_\_, and the Site Inspection and Certification Letter Report will be submitted by July 30,\_\_\_\_.

# 7.0 CERTIFICATION

I, Richard J. Tobia, certify the following:

- I am a Professional Engineer;
- I inspected Morton Village Plaza site, site number 130201 on \_\_\_\_;
- I prepared this Site Inspection and Certification Letter Report;
- Engineering Controls employed at the Site continue to be in place and perform as designed and continue to be protective of human health and the environment;
- Site records are complete and up to date;

- Nothing has occurred on the Site that impairs the ability of Engineering to protect public health and the environment;
- No changes are needed to the remedial systems or engineering controls;
- Compliance with the Site Management Plan has been maintained;
- The Site has not been used for a higher level of use other than the restricted commercial use addressed by the Remedial Action;

QEP Name

QEP Signature

Date



# APPENDIX F

**NYSDOH IA SAMPLING FORM** 



# NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name		Date/Time Prepared	
Preparer's Affiliation	ERTEX/LKB	Phone No. 908-448-2627	
Purpose of Investigation_	Post-Installation Sa	ampling - Event 1	
1. OCCUPANT:			
Interviewed: Y / N			
Last Name:	F	irst Name:	
Address:			
County:			
Home Phone:	Office	e Phone:	
Number of Occupants/per	sons at this location	Age of Occupants	
2. OWNER OR LANDL	<b>ORD:</b> (Check if sar	me as occupant )	
Interviewed: Y / N			
Last Name:	F	irst Name:	
Address:			
County:			
Home Phone:	Office	e Phone:	
3. BUILDING CHARAC	TERISTICS		
Type of Building: (Circle	appropriate respons	se)	
Residential Industrial	School Church	Commercial/Multi-use Other:	

If the property is residential, type? (Circle appropriate response)

R C C N	Canch Caised Ranch Cape Cod Duplex Aodular	2-Family Split Level Contemporary Apartment Hou Log Home	se	3-Fami Colonia Mobile Townho Other:_	ily al Home Jouses/Condos			
If multip	le units, how many?							
If the pro	operty is commercial,	, type?						
Busi	ness Type(s)							
Does	it include residences (	(i.e., multi-use)?	Y / 🕥	)	If yes, how many?			
Other ch	aracteristics:							
Num	ber of floors		Buildir	ng age				
Is the	building insulated? Y	/ N	How ai	r tight?	Tight / Average / Not Tight			
4. AIR Use air c Airflow b	4. AIRFLOW Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe: Airflow between floors							
Airflow r	near source							
Outdoor a	Outdoor air infiltration							
Infiltratio	n into air ducts							

\_\_\_\_

\_\_\_\_

# 5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick			
b. Basement type:	full	crawlspace	slab	other			
c. Basement floor:	concrete	dirt	stone	other			
d. Basement floor:	uncovered	covered	covered with	·			
e. Concrete floor:	unsealed	sealed	sealed with _				
f. Foundation walls:	poured	block	stone	other			
g. Foundation walls:	unsealed	sealed	sealed with _				
h. The basement is:	wet	damp	dry	moldy			
i. The basement is:	finished	unfinished	partially finis	shed			
j. Sump present?	Y / N						
k. Water in sump? Y /	N / not applicable						
Basement/Lowest level depth below grade:(feet)							

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

# 6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

# Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation Space Heaters Electric baseboard	Heat p Strean Wood	oump n radiation stove	Hot water baseboard Radiant floor Outdoor wood boiler	Other			
The primary type of fuel used	d is:						
Natural Gas Electric Wood	Fuel Oil Propane Coal		Kerosene Solar				
Domestic hot water tank fueled by:							
Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other			
Air conditioning:	Central Air	Window units	Open Windows	None			

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPA	ANCY				
Is basement/l	owest level occupied?	Full-time	Occasionally	Seldom	Almost Never
Level	<b>General Use of Each</b>	Floor (e.g., fa	amilyroom, bedro	oom, laundry	, workshop, storage)
Basement					
1 <sup>st</sup> Floor					
2 <sup>nd</sup> Floor					
3 <sup>rd</sup> Floor					

# 8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

4<sup>th</sup> Floor

a. Is there an attached garage?		Y / N
b. Does the garage have a separate heating unit?		Y / N / NA
c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)		Y / N / NA Please specify
d. Has the building ever had a fire?		Y / N When?
e. Is a kerosene or unvented gas space heater present?		Y / N Where?
f. Is there a workshop or hobby/craft area?	Y / N	Where & Type?
g. Is there smoking in the building?	Y / N	How frequently?
h. Have cleaning products been used recently?	Y / N	When & Type?
i. Have cosmetic products been used recently?	Y / N	When & Type?

j. Has painting/staining been done in the last 6 months?			onths? Y / N	Where & Wh	en?	
k. Is there new carpet, drapes or other textiles?			Y / N	Where & When?		
l. Have air fresheners been used recently?			Y / N	When & Type?		
m. Is there a kitchen exhaust fan?				If yes, where vented?		
n. Is there a bathr	oom exhaust far	?	Y / N	If yes, where vented?		
o. Is there a clothes dryer? Y / Y				If yes, is it ve	ented outside? Y / N	
p. Has there been	a pesticide appli	cation?	Y / N	When & Type?		
Are there odors in If yes, please desc	<b>the building?</b> ribe:		Y / N			
<b>Do any of the buildir</b> (e.g., chemical manufaboiler mechanic, pesti	<b>ag occupants use</b> acturing or labora cide application,	solvents at wor tory, auto mech cosmetologist	r <b>k?</b> Y / N anic or auto body	/ shop, painting	, fuel oil delivery,	
If yes, what types o	f solvents are use	d?				
If yes, are their clot	hes washed at wo	rk?	Y / N			
<b>Do any of the buildir</b> response)	ig occupants reg	ularly use or w	ork at a dry-clea	aning service?	(Circle appropriate	
Yes, use dry-cleaning regularly (weekly) Yes, use dry-cleaning infrequently (monthly or less) Yes, work at a dry-cleaning service			No Unknown			
Is there a radon miti Is the system active o	gation system fo or passive?	r the building/s Active/Passive	e <b>tructure?</b> Y / N	Date of Instal	llation:	
9. WATER AND SE	WAGE					
Water Supply:	Public Water	Drilled Well	Driven Well	Dug Well	Other:	
Sewage Disposal:	Public Sewer	Septic Tank	Leach Field	Dry Well	Other:	
10. RELOCATION	INFORMATION	l (for oil spill re	esidential emerg	gency)		
a. Provide reasor	ns why relocation	ı is recommend	led:			
b. Residents choo	ose to: remain in I	home reloca	ate to friends/fam	nily reloc	ate to hotel/motel	
c. Responsibility	for costs associa	ted with reimb	ursement explai	ned? Y / N	[	
d. Relocation package provided and explained to residents? Y / N					ſ	

## **11. FLOOR PLANS**

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

## **Basement:**



# **First Floor:**


Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



#### **13. PRODUCT INVENTORY FORM**

Make & Model of field instrument used: \_\_\_\_\_

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** <u>Y / N</u>

\* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)** \*\* Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

## APPENDIX G





#### ANALYTICAL REPORT

Lab Number:	L2207878
Client:	The Vertex Companies, Inc.
	3322 US Highway 22 West
	Suite 907
	Branchburg, NJ 08876
ATTN:	Richard Tobia
Phone:	(908) 458-9604
Project Name:	MORTON VILLAGE
Project Number:	66845
Report Date:	03/02/22

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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



				Serial_No	03022215:25
Project Name: Project Number:	MORTON VILLAGE 66845			Lab Number: Report Date:	L2207878 03/02/22
<b>Alpha Sample ID</b> L2207878-01	<b>Client ID</b> VTX-EFFLUENT	<b>Matrix</b> SOIL_VAPOR	Sample Location 1022 OLD COUNTRY RD, PLAINVIEW, NY	Collection Date/Time 02/14/22 17:30	<b>Receive Date</b> 02/15/22



Ацяна

Project Name: MORTON VILLAGE Project Number: 66845 Lab Number: L2207878 Report Date: 03/02/22

#### **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: MORTON VILLAGE Project Number: 66845 
 Lab Number:
 L2207878

 Report Date:
 03/02/22

#### **Case Narrative (continued)**

Volatile Organics in Air

Canisters were released from the laboratory on February 10, 2022. The canister certification results are provided as an addendum.

L2207878-01D: Prior to sample analysis, the canisters were pressurized with UHP Nitrogen in order to perform a screen analysis. The pressurization resulted in a dilution of the samples. The reporting limits have been elevated accordingly.

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.

Chutch Christopher J. Anderson

Authorized Signature:

Title: Technical Director/Representative

Date: 03/02/22



### AIR



Project Name:	MORTON VILLAGE	Lab Number:	L2207878
Project Number:	66845	Report Date:	03/02/22

#### SAMPLE RESULTS

Lab ID:	L2207878-01 D	Date Collected:	02/14/22 17:30
Client ID:	VTX-EFFLUENT	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:Matrix:Soil\_VaporAnaytical Method:48,TO-15Analytical Date:03/02/22 01:43Analyst:TS

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield	Lab							
Vinyl chloride	ND	0.701		ND	1.79			3.504
cis-1,2-Dichloroethene	ND	0.701		ND	2.78			3.504
Trichloroethene	ND	0.701		ND	3.77			3.504
Tetrachloroethene	ND	0.701		ND	4.75			3.504

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	90		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	91		60-140



**Report Date:** 03/02/22

#### Method Blank Analysis Batch Quality Control

Analytical Method:48,TO-15Analytical Date:03/01/22 18:01

		ppbV		U	ıg/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield L	ab for samp	ole(s): 01	Batch:	WG1610434-4				
Vinyl chloride	ND	0.200		ND	0.511			1
cis-1,2-Dichloroethene	ND	0.200		ND	0.793			1
Trichloroethene	ND	0.200		ND	1.07			1
Tetrachloroethene	ND	0.200		ND	1.36			1



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Serial

## Lab Control Sample Analysis Batch Quality Control

Project Name:MORTON VILLAGEProject Number:66845

 Lab Number:
 L2207878

 Report Date:
 03/02/22

	rcs		<b>LCSD</b>		%Recovery			RPD	
Parameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits	
Volatile Organics in Air - Mansfield Lab	Associated sample(s):	01 Batch:	WG1610434-3						
Vinyl chloride	96				70-130				
cis-1,2-Dichloroethene	96		I		70-130				
Trichloroethene	113		I		70-130	ı			
Tetrachloroethene	108		I		70-130	I			



Project Name: Project Number:	MORTON VILLAGE 66845		Lab Duplicate Batch Quality	e <b>Analysis</b> / control		Lab Numb Report Da	ler: L220 te: 03/0;
Parameter	Na	<u>ative Samp</u>	vie Duplicate Samp	ole Units	RPD	Qual	RPD Limits
Volatile Organics in Air -	Mansfield Lab Associated samp	ple(s): 01	QC Batch ID: WG1610434	5 QC Sample:	L2207878-01	Client ID:	VTX-EFFLUEN
Vinyl chloride		ND	ND	Vdqq	NC		25
cis-1,2-Dichloroethene		ND	QN	Vdqq	NC		25
Trichloroethene		ND	DN	Vdqq	NC		25
Tetrachloroethene		ND	QN	Vdqq	NC		25



Project Name: MORTON VILLAGE

Project Number: 66845

Serial\_No:03022215:25 Lab Number: L2207878

Report Date: 03/02/22

# **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
L2207878-01	VTX-EFFLUENT	0947	Flow 2	02/10/22	378571				ı	Pass	200	185	8
L2207878-01	VTX-EFFLUENT	822	1.0L Can	02/10/22	378571	L2202190-07	Pass	-28.7	1.3				



Project Number:	CANISTER QC E	BAT				R	leport D	Date: 0	3/02/22
		Air Can	ister Cer	tificati	on Results				
Lab ID: Client ID: Sample Location:	L2202190-07 CAN 3555 SHE	LF 16				Date Date Field	Collecte Receive Prep:	ed: ed:	01/14/22 08:00 01/14/22 Not Specified
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15 01/15/22 00:40 TS								
Devementer		Deculto	ррву		Posults	ug/m3	MDI	Qualifier	Dilution Factor
Volatile Organics in A	Air - Mansfield I ab	Results	RL	MDL	Results	RL	NDL	Quaimer	
Chlorodifluoromethane		ND	0.200		ND	0 707			1
Propylene		ND	0.200		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



Serial\_No:03022215:25

Lab Number: L2202190

Serial_No:0	3022215:25
Lab Number:	L2202190

**Report Date:** 03/02/22

#### **Air Canister Certification Results**

Lab ID:	L2202190-07	Date Collected:	01/14/22 08:00
Client ID:	CAN 3555 SHELF 16	Date Received:	01/14/22
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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



Serial_No:03	8022215:25
Lab Number:	L2202190

**Report Date:** 03/02/22

#### **Air Canister Certification Results**

Lab ID:	L2202190-07	Date Collected:	01/14/22 08:00
Client ID:	CAN 3555 SHELF 16	Date Received:	01/14/22
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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



Serial_No:03	3022215:25
Lab Number:	L2202190

Project Name:BATCH CANISTER CERTIFICATIONProject Number:CANISTER QC BAT

**Report Date:** 03/02/22

#### **Air Canister Certification Results**

Lab ID:	L2202190-07	Date Collected:	01/14/22 08:00
Client ID:	CAN 3555 SHELF 16	Date Received:	01/14/22
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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



							Serial_No:03022215:25			
Project Name:	BATCH CANIST	ER CERTI	FICATION			Lal	b Num	ber:	L2202190	
Project Number:	CANISTER QC	ЗАТ				Re	port D	ate:	03/02/22	
		Air Can	ister Ce	rtification	Results					
Lab ID: Client ID: Sample Location:	L2202190-07 CAN 3555 SHE	LF 16				Date C Date R Field P	collecte leceive Prep:	ed: ed:	01/14/22 08:00 01/14/22 Not Specified	
Sample Depth:			ppbV			ug/m3			Dilution	
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifie	r Factor	
Volatile Organics in	Air - Mansfield Lab									
Toptatively Identified Com	nnoundo	Re	sults	Qualifier	Units	RDL		Dilutio Facto	n r	
I entatively Identified Con	npounds									

No Tentatively Identified Compounds

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



		Air Can	ister Cer	tificatio	on Results	;				
Lab ID: Client ID: Sample Location:	L2202190-07 CAN 3555 SHE	LF 16	F 16			Date Collected Date Received Field Prep:			ed: 01/14/22 08:00 ed: 01/14/22 Not Specified	
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15-SIM 01/15/22 00:40 TS									
_			ppbV		-	ug/m3			Dilution	
Parameter	in her Old Marriel	Results	RL	MDL	Results	RL	MDL	Qualifier		
Volatile Organics in A	Ar by SIM - Manstie	eld 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



Serial\_No:03022215:25

L2202190

03/02/22

Lab Number:

Report Date:

Serial_No:03	8022215:25
Lab Number:	L2202190

**Report Date:** 03/02/22

#### **Air Canister Certification Results**

Lab ID:	L2202190-07	Date Collected:	01/14/22 08:00
Client ID:	CAN 3555 SHELF 16	Date Received:	01/14/22
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Man	sfield 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	0.100		ND	0.377			1
Dibromochloromethane	ND	0.020		ND	0.170			1
1,2-Dibromoethane	ND	0.020		ND	0.154			1
Tetrachloroethene	0.030	0.020		0.203	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



		Serial_No:03	022215:25
Project Name:	BATCH CANISTER CERTIFICATION	Lab Number:	L2202190
Project Number:	CANISTER QC BAT	Report Date:	03/02/22

#### **Air Canister Certification Results**

Lab ID:	L2202190-07	Date Collected:	01/14/22 08:00
Client ID:	CAN 3555 SHELF 16	Date Received:	01/14/22
Sample Location:		Field Prep:	Not Specified

Sample Depth:

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	field Lab							
sec-Butylbenzene	ND	0.200		ND	1.10			1
p-lsopropyltoluene	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	95		60-140
bromochloromethane	95		60-140
chlorobenzene-d5	97		60-140



# Sample Receipt and Container Information

YES

## **Cooler Information**

Were project specific reporting limits specified?

Custody Seal	Present/Intact
Cooler	NA

## **Container Information**

Container Type	Canister - 1 Liter
Container ID	1 2207878-01A

ΔA

Frozen Date/Time Absent Initial Final Temp Cooler pH pH deg C Pres Seal ≻ AN

TO15-LL(30)

Analysis(\*)



#### Project Name: MORTON VILLAGE

Project Number: 66845

#### Lab Number: L2207878

#### **Report Date:** 03/02/22

#### GLOSSARY

#### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



#### Project Name: MORTON VILLAGE

Project Number: 66845

#### Lab Number: L2207878

**Report Date:** 03/02/22

#### Footnotes

1

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

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 Waterpreserved 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(a)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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 concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank. 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. For NJ-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- **D** Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. 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

Report Format: Data Usability Report



#### Serial\_No:03022215:25

#### Project Name: MORTON VILLAGE

Project Number: 66845

Lab Number: L2207878

#### **Report Date:** 03/02/22

#### Data Qualifiers

the identification is based on a mass spectral library search.

- **P** The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- **S** Analytical results are from modified screening analysis.
- V The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report



Project Name: MORTON VILLAGE Project Number: 66845 
 Lab Number:
 L2207878

 Report Date:
 03/02/22

#### 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, Naphthalene

EPA 625/625.1: alpha-Terpineol

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

**EPA 8270D/8270E:** <u>NPW:</u> Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; <u>SCM</u>: Dimethylnaphthalene,1,4-Diphenylhydrazine. **SM4500**: <u>NPW</u>: Amenable Cyanide; <u>SCM</u>: Total Phosphorus, TKN, NO2, NO3.

#### Mansfield Facility

**SM 2540D:** TSS **EPA 8082A:** <u>NPW:</u> 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, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene. **Biological Tissue Matrix:** EPA 3050B

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

#### Westborough Facility:

#### **Drinking Water**

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP. Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

#### Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics, EPA 608 3: Chlordane Toxanbene Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

**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, SM9222D.

#### Mansfield Facility:

#### **Drinking Water**

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn. **EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn. **EPA 245.1** Hg. **SM2340B** 

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

16 #: L2207878	lient info PO #. Requirements/Report Limits Program Res / Comm	E'C-DC'N	2	Aample Comments (i.e. PID)	Please print clearly, legibly and completely. Samoles can not be	logged in and turnaround time clock will not start until any ambi- guittes are resolved. All samples submitted are subject to Alpha's Terms and Conditions.
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#### ANALYTICAL REPORT

Lab Number:	L2207873
Client:	The Vertex Companies, Inc.
	3322 US Highway 22 West
	Suite 907
	Branchburg, NJ 08876
ATTN:	Richard Tobia
Phone:	(908) 458-9604
Project Name:	MORTON VILLAGE
Project Number:	66845
Report Date:	03/01/22

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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



MORTON VILLA	66845
Project Name:	<b>Project Number:</b>

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L2207873	03/01/22
Lab Number:	Report Date:

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2207873-01	VTX-IA 1	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	02/14/22 16:50	02/15/22
L2207873-02	VTX-IA 2	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	02/14/22 17:11	02/15/22
L2207873-03	VTX-IA 3	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	02/14/22 17:22	02/15/22
L2207873-04	VTX-IA 4	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	02/14/22 17:49	02/15/22
L2207873-05	VTX-IA 5	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	02/14/22 16:41	02/15/22
L2207873-06	VTX-IA 6	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	02/14/22 16:31	02/15/22
L2207873-07	VTX-AAI	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	02/14/22 17:40	02/15/22



Project Name: MORTON VILLAGE Project Number: 66845 Lab Number: L2207873 Report Date: 03/01/22

#### **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: MORTON VILLAGE Project Number: 66845

 Lab Number:
 L2207873

 Report Date:
 03/01/22

**Case Narrative (continued)** 

Volatile Organics in Air

Canisters were released from the laboratory on February 10, 2022. The canister certification results are provided as an addendum.

The WG1609900-4 Method Blank, associated with L2207873-01 through -07, has a concentration above the reporting limit for Trichloroethane. Since the associated sample concentrations are either greater than 10X the blank concentration or non-detect to the reporting limit for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

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.

Church Gulun Christopher J. Anderson

Authorized Signature:

Title: Technical Director/Representative

Date: 03/01/22



### AIR



Project Name:	MORTON VILLAGE		Lab Number:	L2207873
Project Number:	66845		Report Date:	03/01/22
		SAMPLE RESULTS		

Lab ID:	L2207873-01	Date Collected:	02/14/22 16:50
Client ID:	VTX-IA 1	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	03/01/22 05:01
Analyst:	RY

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.039	0.020		0.264	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	95		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	101		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2207873
Project Number:	66845		Report Date:	03/01/22
		SAMPLE RESULTS		

Lab ID:	L2207873-02	Date Collected:	02/14/22 17:11
Client ID:	VTX-IA 2	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	03/01/22 05:45
Analyst:	RY

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.135	0.020		0.915	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	94		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	97		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2207873
Project Number:	66845		Report Date:	03/01/22
		SAMPLE RESULTS		

Lab ID:	L2207873-03	Date Collected:	02/14/22 17:22
Client ID:	VTX-IA 3	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	03/01/22 07:15
Analyst:	RY

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.121	0.020		0.821	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	93		60-140
bromochloromethane	96		60-140
chlorobenzene-d5	96		60-140


Project Name:	MORTON VILLAGE		Lab Number:	L2207873
Project Number:	66845		Report Date:	03/01/22
		SAMPLE RESULTS		

Lab ID:	L2207873-04	Date Collected:	02/14/22 17:49
Client ID:	VTX-IA 4	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	03/01/22 07:55
Analyst:	RY

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.028	0.020		0.190	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	96		60-140
chlorobenzene-d5	94		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2207873
Project Number:	66845		Report Date:	03/01/22
		SAMPLE RESULTS		

Lab ID:	L2207873-05	Date Collected:	02/14/22 16:41
Client ID:	VTX-IA 5	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	03/01/22 08:37
Analyst:	RY

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.270	0.020		1.83	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	94		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	100		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2207873
Project Number:	66845		Report Date:	03/01/22
		SAMPLE RESULTS		

Lab ID:	L2207873-06	Date Collected:	02/14/22 16:31
Client ID:	VTX-IA 6	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	03/01/22 06:28
Analyst:	RY

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.055	0.020		0.373	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	95		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	96		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2207873
Project Number:	66845		Report Date:	03/01/22
		<b>SAMPLE RESULTS</b>		

#### SAMPLE RESULTS

Lab ID:	L2207873-07	Date Collected:	02/14/22 17:40
Client ID:	VTX-AAI	Date Received:	02/15/22
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	03/01/22 03:37
Analyst:	RY

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Man	sfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			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	92		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	92		60-140



**Report Date:** 03/01/22

# Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM Analytical Date: 02/28/22 20:57

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	sfield Lab f	or sample	(s): 01-07	Batch: W	G160990	0-4		
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	0.032	0.020		0.172	0.107			1
Tetrachloroethene	ND	0.020		ND	0.136			1



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# Lab Control Sample Analysis Batch Quality Control

Project Name:MORTON VILLAGEProject Number:66845

 Lab Number:
 L2207873

 Report Date:
 03/01/22

Parameter	LCS %Recovery	Qual	LCSD %Recover	y Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics in Air by SIM - Mansfield La	b Associated se	ample(s): 0	1-07 Batch:	WG1609900-3					
Vinyl chloride	113		ı		70-130	ı		25	
cis-1,2-Dichloroethene	66				70-130			25	
Trichloroethene	91				70-130			25	
Tetrachloroethene	79				70-130			25	





Project Name: Project Number:	MORTON VILLAGE 66845	_	.ab Duplicate / Batch Quality C	Analysis <sub>ontrol</sub>		Lab Numbe Report Dat	e: 03	207873 /01/22
Parameter		Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Volatile Organics in Air t	y SIM - Mansfield Lab	Associated sample(s): 01-07	QC Batch ID: WG1	1609900-5	QC Sample: L	2207873-07 (	Client ID: V	-X-AAI
Vinyl chloride		ND	ND	Vdqq	NC		25	
cis-1,2-Dichloroethene		ND	QN	Vdqq	NC		25	
Trichloroethene		ND	QN	Vdqq	NC		25	
Tetrachloroethene		ND	ND	Vdqq	NC		25	

Serial\_No:03012216:13



Project Name: MORTON VILLAGE

Project Number: 66845

Serial\_No:03012216:13 Lab Number: L2207873

Report Date: 03/01/22

# **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
L2207873-01	VTX-IA 1	01583	Flow 4	02/10/22	378571					Pass	10.0	6.6	-
L2207873-01	VTX-IA 1	1825	6.0L Can	02/10/22	378571	L2205332-05	Pass	-29.0	-9.8				1
L2207873-02	VTX-IA 2	6060	Flow 4	02/10/22	378571					Pass	10.0	9.5	5
L2207873-02	VTX-IA 2	1580	6.0L Can	02/10/22	378571	L2205332-05	Pass	-29.3	-11.0	ı			
L2207873-03	VTX-IA 3	01774	Flow 4	02/10/22	378571					Pass	10.0	6.6	-
L2207873-03	VTX-IA 3	2829	6.0L Can	02/10/22	378571	L2205085-09	Pass	-29.3	-11.2	ı			
L2207873-04	VTX-IA 4	01825	Flow 4	02/10/22	378571					Pass	10.0	8.1	21
L2207873-04	VTX-IA 4	638	6.0L Can	02/10/22	378571	L2205332-05	Pass	-29.0	-9.0				
L2207873-05	VTX-IA 5	0724	Flow 4	02/10/22	378571					Pass	10.0	6.6	-
L2207873-05	VTX-IA 5	2292	6.0L Can	02/10/22	378571	L2205085-09	Pass	-29.0	-9.6				
L2207873-06	VTX-IA 6	01944	Flow 4	02/10/22	378571					Pass	10.0	9.1	6
L2207873-06	VTX-IA 6	964	6.0L Can	02/10/22	378571	L2205085-09	Pass	-29.1	-9.2				
L2207873-07	VTX-AAI	01770	Flow 4	02/10/22	378571					Pass	10.0	9.4	9
L2207873-07	VTX-AAI	3645	6.0L Can	02/10/22	378571	L2205332-05	Pass	-29.1	-7.7				



**Project Number:** CANISTER QC BAT **Report Date:** 03/01/22 Air Canister Certification Results Lab ID: L2205085-09 Date Collected: 02/01/22 09:00 Client ID: CAN 966 SHELF 43 Date Received: 02/01/22 Sample Location: Field Prep: Not Specified Sample Depth: Matrix: Air 48,TO-15 Anaytical Method: Analytical Date: 02/02/22 20:43 TS Analyst: ppbV ug/m3 Dilution Factor RL Qualifier Parameter Results RL Results MDL MDL Volatile Organics in Air - Mansfield Lab Chlorodifluoromethane ND 0.200 ND 0.707 1 ------Propylene ND 0.500 1 ND 0.861 ------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 1 ND 0.200 ND 0.874 ------Acrolein ND 0.500 ND 1 ---1.15 ---Acetone ND 1.00 ---ND 2.38 ---1 Acetonitrile ND 0.200 ND 0.336 1 ------Trichlorofluoromethane 0.200 1 ND ND 1.12 ------Isopropanol ND 0.500 ND 1.23 1 ------Acrylonitrile ND 0.500 ND 1.09 ---1 ---Pentane 1 ND 0.200 ND 0.590 ------Ethyl ether 1 ND 0.200 ND 0.606 ------1,1-Dichloroethene ND 0.200 ND 0.793 1 ------



Serial\_No:03012216:13

L2205085

Lab Number:

**Project Name:** 

BATCH CANISTER CERTIFICATION

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

# **Air Canister Certification Results**

Lab ID:	L2205085-09	Date Collected:	02/01/22 09:00
Client ID:	CAN 966 SHELF 43	Date Received:	02/01/22
Sample Location:		Field Prep:	Not Specified

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

# **Air Canister Certification Results**

Lab ID:	L2205085-09	Date Collected:	02/01/22 09:00
Client ID:	CAN 966 SHELF 43	Date Received:	02/01/22
Sample Location:		Field Prep:	Not Specified

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

# **Air Canister Certification Results**

Lab ID:	L2205085-09	Date Collected:	02/01/22 09:00
Client ID:	CAN 966 SHELF 43	Date Received:	02/01/22
Sample Location:		Field Prep:	Not Specified

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



							Serial	_No:030	12216:13	
Project Name:	BATCH CANIST	ER CERT	IFICATION	I		Lal	b Num	ber:	L2205085	5
Project Number:	CANISTER QC E	ВАТ				Re	port D	ate:	03/01/22	
		Air Can	ister Ce	rtification	Results					
Lab ID: Client ID: Sample Location:	L2205085-09 CAN 966 SHEL	F 43				Date C Date R Field P	ollecte eceive rep:	ed: ed:	02/01/22 02/01/22 Not Spec	09:00
Sample Depth:										
Demonster			ppbV		Deculto	ug/m3	MDI	Qualifia	Dilutio . Facto	n Pr
Volatile Organics in	Air - Mansfield Lab	Results		MDL		RL	MDL	Dilutio	n	
Tentatively Identified Con	npounds	i te	554115	Quaimer	Chits	RDE				

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	91		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	92		60-140



Air Canister Certification Results Lab ID: L2205085-09 Date Collected: 02/01/22 09:00 Client ID: CAN 966 SHELF 43 Date Received: 02/01/22 Sample Location: Field Prep: Not Specified Sample Depth: Matrix: Air 48,TO-15-SIM Anaytical Method: Analytical Date: 02/02/22 20:43 TS Analyst: ppbV ug/m3 Dilution Factor RL Qualifier RL Results MDL Parameter Results MDL Volatile Organics in Air by SIM - Mansfield Lab Dichlorodifluoromethane 0.200 ND 0.989 1 ND ------Chloromethane 0.200 1 ND ND 0.413 ------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 1 ND 0.020 ND 0.078 ------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 0.281 ND 0.050 ND 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 1 ---0.383 --trans-1,2-Dichloroethene 1 ND 0.020 ND 0.079 ------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 1 ---ND 1.47 --cis-1,2-Dichloroethene 1 ND 0.020 ND 0.079 ------Chloroform ND 0.020 ND 0.098 1 ------1,2-Dichloroethane ND 0.020 ND 0.081 ---1 ---1,1,1-Trichloroethane 1 ND 0.020 ND ---0.109 ---Benzene ND 0.100 ND 0.319 1 ------Carbon tetrachloride ND 0.020 ND 0.126 1 ------



Serial\_No:03012216:13

L2205085

03/01/22

Lab Number:

**Report Date:** 

**Project Name:** 

**Project Number:** 

BATCH CANISTER CERTIFICATION

CANISTER QC BAT

# **Air Canister Certification Results**

Lab ID:	L2205085-09	Date Collected:	02/01/22 09:00
Client ID:	CAN 966 SHELF 43	Date Received:	02/01/22
Sample Location:		Field Prep:	Not Specified

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mansfi	eld 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	0.100		ND	0.377			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	0.100		ND	0.518			1
1,3-Dichlorobenzene	ND	0.020		ND	0.120			1
1,4-Dichlorobenzene	ND	0.020		ND	0.120			1



		Serial_No:030	)12216:13
Project Name:	BATCH CANISTER CERTIFICATION	Lab Number:	L2205085
Project Number:	CANISTER QC BAT	Report Date:	03/01/22

# **Air Canister Certification Results**

Lab ID:	L2205085-09	Date Collected:	02/01/22 09:00
Client ID:	CAN 966 SHELF 43	Date Received:	02/01/22
Sample Location:		Field Prep:	Not Specified

Sample Depth:

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	field Lab							
sec-Butylbenzene	ND	0.200		ND	1.10			1
p-lsopropyltoluene	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	91		60-140
chlorobenzene-d5	96		60-140



Project Number:	CANISTER QC	ЗАТ				R	eport D	Date: (	)3/01/22
		Air Can	ister Cei	rtificatio	on Results	6			
Lab ID: Client ID: Sample Location:	L2205332-05 CAN 2935 SHE	ELF 63 Date Collect ELF 63 Date Receiv Field Prep:		Collecte Receive Prep:	ed: ed:	02/01/22 17:00 02/02/22 Not Specified			
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15 02/02/22 23:59 TS								
_			ppbV			ug/m3		•	Dilution Factor
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifier	
volatile Organics in a	Air - Mansheid Lad								
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	9	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



Serial\_No:03012216:13

L2205332

Lab Number:

	Serial_No:03	3012216:13
l	Lab Number:	L2205332

Report Date: 03/01/22

# **Air Canister Certification Results**

Lab ID:	L2205332-05	Date Collected:	02/01/22 17:00
Client ID:	CAN 2935 SHELF 63	Date Received:	02/02/22
Sample Location:		Field Prep:	Not Specified

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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



	Serial_No:03	3012216:13
N	Lab Number:	L2205332

Report Date: 03/01/22

# **Air Canister Certification Results**

Lab ID:	L2205332-05	Date Collected:	02/01/22 17:00
Client ID:	CAN 2935 SHELF 63	Date Received:	02/02/22
Sample Location:		Field Prep:	Not Specified

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



Serial_No:03	3012216:13
Lab Number:	L2205332

**Report Date:** 03/01/22

# **Air Canister Certification Results**

Lab ID:	L2205332-05	Date Collected:	02/01/22 17:00
Client ID:	CAN 2935 SHELF 63	Date Received:	02/02/22
Sample Location:		Field Prep:	Not Specified

ppbV			ug/m3			Dilution		
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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



							Serial	_No:030	12216:13	
Project Name:	BATCH CANIST	ER CERTI	FICATION	N		La	b Num	ber:	L2205332	
Project Number:	CANISTER QC	ВАТ				Re	port D	ate:	03/01/22	
		Air Can	ister Ce	rtification	Results					
Lab ID: Client ID: Sample Location:	L2205332-05 CAN 2935 SHE	LF 63				Date C Date F Field F	Collecte Receive Prep:	ed: ed:	02/01/22 17:00 02/02/22 Not Specified	0
Sample Depth:										
Parameter		Booulto	vaqq	MDI	Posulte	ug/m3	MDI	Qualifio	Dilution Factor	
Volatile Organics in	Air - Mansfield Lab	Results	NL.	MDL	Results		MDE	quanto		
		Re	sults	Qualifier	Units	RDL		Dilutio Facto	n r	
Tentatively Identified Cor	npounds									

No Tentatively Identified Compounds

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



Project Number:	CANISTER QC E	BAT				R	Report D	ate: (	)3/01/22
		Air Ca	nister Cer	tificati	ion Results				
Lab ID: Client ID: Sample Location:	L2205332-05 CAN 2935 SHE	LF 63				Date Date Field	Collecte Receive Prep:	ed: ed:	02/01/22 17:00 02/02/22 Not Specified
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15-SIM 02/02/22 23:59 TS								
			ppbV		<u> </u>	ug/m3		o	Dilution Factor
Parameter	Air by SIM Monofic	Results	RL	MDL	Results	RL	MDL	Qualifier	
	3	ND	0.200		ND	0.989			1
		ND	0.200		ND	0.413			1
Freon-114		ND	0.050		ND	0.349			1
		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	9	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



Serial\_No:03012216:13

L2205332

Lab Number:

Serial_No:0	3012216:13
Lab Number:	L2205332

Report Date: 03/01/22

# **Air Canister Certification Results**

Lab ID:	L2205332-05	Date Collected:	02/01/22 17:00
Client ID:	CAN 2935 SHELF 63	Date Received:	02/02/22
Sample Location:		Field Prep:	Not Specified

		ppbV		ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	field 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	0.100		ND	0.377			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	0.100		ND	0.518			1
1,3-Dichlorobenzene	ND	0.020		ND	0.120			1
1,4-Dichlorobenzene	ND	0.020		ND	0.120			1



		Serial_No:03	3012216:13
Project Name:	BATCH CANISTER CERTIFICATION	Lab Number:	L2205332
Project Number:	CANISTER QC BAT	Report Date:	03/01/22
	Air Canister Certification Results		

Lab ID:	L2205332-05	Date Collected:	02/01/22 17:00
Client ID:	CAN 2935 SHELF 63	Date Received:	02/02/22
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	field 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	94		60-140
bromochloromethane	93		60-140
chlorobenzene-d5	99		60-140



# Sample Receipt and Container Information

YES

# **Cooler Information**

Were project specific reporting limits specified?

Custody Seal	Present/Intact
Cooler	NA

# **Container Information**

			lini
Container ID	Container Type	Cooler	Ηd
L2207873-01A	Canister - 6 Liter	NA	NA
L2207873-02A	Canister - 6 Liter	NA	NA
L2207873-03A	Canister - 6 Liter	NA	NA
L2207873-04A	Canister - 6 Liter	NA	NA
L2207873-05A	Canister - 6 Liter	NA	NA
L2207873-06A	Canister - 6 Liter	NA	NA
L2207873-07A	Canister - 6 Liter	NA	NA

Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
A			≻	Absent		TO15-SIM(30)
A			≻	Absent		TO15-SIM(30)
A			≻	Absent		TO15-SIM(30)
A			≻	Absent		TO15-SIM(30)
Ā			≻	Absent		TO15-SIM(30)
A			≻	Absent		TO15-SIM(30)
Ā			≻	Absent		TO15-SIM(30)



# Project Name: MORTON VILLAGE

Project Number: 66845

# Lab Number: L2207873

## **Report Date:** 03/01/22

### GLOSSARY

#### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when
	those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



## Project Name: MORTON VILLAGE

Project Number: 66845

# Lab Number: L2207873

**Report Date:** 03/01/22

#### Footnotes

1

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

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 Waterpreserved 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(a)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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 concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank. 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. For NJ-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- **D** Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- **F** The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. 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

Report Format: Data Usability Report



# Serial\_No:03012216:13

# Project Name: MORTON VILLAGE

Project Number: 66845

Lab Number: L2207873

**Report Date:** 03/01/22

## Data Qualifiers

the identification is based on a mass spectral library search.

- **P** The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- **S** Analytical results are from modified screening analysis.
- V The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report



Project Name: MORTON VILLAGE Project Number: 66845 
 Lab Number:
 L2207873

 Report Date:
 03/01/22

### 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, Naphthalene

EPA 625/625.1: alpha-Terpineol

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

EPA 8270D/8270E: <u>NPW</u>: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; <u>SCM</u>: Dimethylnaphthalene,1,4-Diphenylhydrazine. SM4500: <u>NPW</u>: Amenable Cyanide; <u>SCM</u>: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility SM 2540D: TSS EPA 8082A: <u>NPW:</u> PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187. EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene. Biological Tissue Matrix: EPA 3050B

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

#### Westborough Facility:

#### Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP. Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

#### Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics, EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

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, SM9222D.

Mansfield Facility:

#### **Drinking Water**

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

#### Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn. EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn. EPA 245.1 Hg. SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

erial_No:03012216:13	PHA JOB #: L2207873	ling Information	ume as Client info PO #		julatory Requirements/Report Limits	oH Program Res / Comm		ANALYSIS	SCE.		Para Contraction	Sample Comments (i.e. PID)	4 7	c 7	. *	*	×	×	Separak sheet		Please print clearly, legibly and completely. Samples can not be	organ in and turnerround time clock will not start until any ambi- guities are resolved. All samples submitted are subject to Alphe's Terms and Conditions.
Se	Date Rec'd in Lab: 2-16-22 ALP	Report Information - Data Deliverables Billi	a FAX a ADEx	Criteria Checker. (Default based on Regulatory Criteria Indicated)	Cuther Formats: KEMAIL (standard pdf report) D Additional Deliverables:	Report to: (# different than Project (Annaper)				Be Filled Out	Sample Sampler's Can ID ID-Flow 0.0 2 2	AA AT 10L 1825 UIG83	AA AT WLISSO UPOR	AA AT LOL 2829 01244	AA AT 10 L 108 01825	AA AT 6 LEPT CHRY	AA AT LL 944 01944	AA AT LOL BUIS OI THE	W IF		Container Type	Received By: Date/Time:
	INALYSIS PAGE 1 OF 1	Project Information	Project Name: Morton Villoge	Project # 100 Plainvion 100	A-Project Manager. Aion Tabua ALPHA Quote #:	Turn-Around Time	Standard     DRUSH (anti-continued # pro-summer)	Date Due: Time:	-	Il Columns Below Must	COLLECTION End Date   Start Time   End Time   Vacuum	2/14 10:51 16:50 -29.40 -0.95	\$1'21-55'06- 11:E1 55:01	11:16 122-30.42-12.19	11:30-HEK- 64:40-10:11	15:01- JEOC- 11: 11 10:01	10:10 10:21 - 12:21 - 10:23	87.01-15.05-04: FI 25:11	14.22 14:30 -21:10 -0.11	A = Ambient Air (Indood/Outdoor) V = Soil Vapor/Landfill Gar/SVE	ther = Please Specify	Autor As 2112 822 691
	ALPHA CHAIN OF CUSTODY	320 Forbes Blvd, Mansfield, MA 02048	Client Information	Client VEPTEX	DIGITONDURA, NJ	Phone: 0	Emailt	These samples have been previously analyzed by Apha Other Project Specific Requirements/Com	Project-Specific Target Compound List: 1	A PHILA LA IN	(Lab Use Only) Sample ID	07873-01 VTX- TA 1	2 AT-XIV 20	US VTY-TA 23	P AT-XTV NO	5 AT- XIN S	9 TT-XIX	THE YIA		*SAMPLE MATRIX CODES SI	0	m No. 101-02 Pay, (25-Sep-16)



## ANALYTICAL REPORT

Lab Number:	L2130400
Client:	The Vertex Companies Inc.
onorte.	3322 LIS Highway 22 West
	Suite 907
	Branchburg, NJ 08876
ATTN:	Richard Tobia
Phone:	(908) 458-9604
Project Name:	MORTON VILLAGE
Project Number:	66845
Report Date:	06/14/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-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



MORTON VILLA	: 66845
Project Name:	<b>Project Number</b>

Serial\_No:06142111:06

 Lab Number:
 L2130400

 Report Date:
 06/14/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2130400-01	VTX-IA1	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	06/04/21 14:33	06/07/21
L2130400-02	VTX-IA2	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	06/04/21 16:25	06/07/21
L2130400-03	VTX-IA3	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	06/04/21 16:22	06/07/21
L2130400-04	VTX-IA4	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	06/04/21 15:30	06/07/21
L2130400-05	VTX-IA5	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	06/04/21 15:28	06/07/21
L2130400-06	VTX-IA6	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	06/04/21 14:43	06/07/21
L2130400-07	VTX-AAI	AIR	1022 OLD COUNTRY RD, PLAINVIEW, NY	06/04/21 14:50	06/07/21



Project Name: MORTON VILLAGE Project Number: 66845 Lab Number: L2130400 Report Date: 06/14/21

#### **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:MORTON VILLAGEProject Number:66845

 Lab Number:
 L2130400

 Report Date:
 06/14/21

### **Case Narrative (continued)**

Volatile Organics in Air

Canisters were released from the laboratory on June 3, 2021. 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.

Chutch Gulun Christopher J. Anderson

Authorized Signature:

Title: Technical Director/Representative

Date: 06/14/21



# AIR


Project Name:	MORTON VILLAGE		Lab Number:	L2130400
Project Number:	66845		Report Date:	06/14/21
		SAMPLE RESULTS		

Lab ID:	L2130400-01	Date Collected:	06/04/21 14:33
Client ID:	VTX-IA1	Date Received:	06/07/21
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	06/11/21 22:03
Analyst:	TS

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	0.022	0.020		0.118	0.107			1
Tetrachloroethene	0.295	0.020		2.00	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	96		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2130400
Project Number:	66845		Report Date:	06/14/21
		SAMPLE RESULTS		

Lab ID:	L2130400-02	Date Collected:	06/04/21 16:25
Client ID:	VTX-IA2	Date Received:	06/07/21
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	06/11/21 22:54
Analyst:	TS

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.260	0.020		1.76	0.136			1

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



Project Name:	MORTON VILLAGE		Lab Number:	L2130400
Project Number:	66845		Report Date:	06/14/21
		SAMPLE RESULTS		

Lab ID:	L2130400-03	Date Collected:	06/04/21 16:22
Client ID:	VTX-IA3	Date Received:	06/07/21
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	06/11/21 23:45
Analyst:	TS

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.282	0.020		1.91	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	92		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2130400
Project Number:	66845		Report Date:	06/14/21
		SAMPLE RESULTS		

Lab ID:	L2130400-04	Date Collected:	06/04/21 15:30
Client ID:	VTX-IA4	Date Received:	06/07/21
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	06/12/21 00:28
Analyst:	TS

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	0.022	0.020		0.118	0.107			1
Tetrachloroethene	0.215	0.020		1.46	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	93		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	94		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2130400
Project Number:	66845		Report Date:	06/14/21
		SAMPI E RESULTS		

### SAMPLE RESULTS

Lab ID:	L2130400-05	Date Collected:	06/04/21 15:28
Client ID:	VTX-IA5	Date Received:	06/07/21
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	06/12/21 01:12
Analyst:	TS

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Ma	insfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	0.058	0.020		0.230	0.079			1
Trichloroethene	0.058	0.020		0.312	0.107			1
Tetrachloroethene	0.806	0.020		5.47	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	94		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2130400
Project Number:	66845		Report Date:	06/14/21
		SAMPLE RESULTS		

Lab ID:	L2130400-06	Date Collected:	06/04/21 14:43
Client ID:	VTX-IA6	Date Received:	06/07/21
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	06/12/21 01:58
Analyst:	TS

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Ma	nsfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	0.020	0.020		0.107	0.107			1
Tetrachloroethene	0.105	0.020		0.712	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	94		60-140



Project Name:	MORTON VILLAGE		Lab Number:	L2130400
Project Number:	66845		Report Date:	06/14/21
		SAMPLE RESULTS		

### SAMPLE RESULTS

Lab ID:	L2130400-07	Date Collected:	06/04/21 14:50
Client ID:	VTX-AAI	Date Received:	06/07/21
Sample Location:	1022 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:	
Matrix:	Air
Anaytical Method:	48,TO-15-SIM
Analytical Date:	06/11/21 17:19
Analyst:	TS

	ppbV		ug/m3				Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mar	sfield Lab							
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	0.055	0.020		0.373	0.136			1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	88		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	91		60-140



### Method Blank Analysis Batch Quality Control

Analytical Method:48,TO-15-SIMAnalytical Date:06/11/21 15:12

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	sfield Lab f	or sample	(s): 01-07	Batch: W	G151108	81-4		
Vinyl chloride	ND	0.020		ND	0.051			1
cis-1,2-Dichloroethene	ND	0.020		ND	0.079			1
Trichloroethene	ND	0.020		ND	0.107			1
Tetrachloroethene	ND	0.020		ND	0.136			1



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## Lab Control Sample Analysis Batch Quality Control

Project Name:MORTON VILLAGEProject Number:66845

 Lab Number:
 L2130400

 Report Date:
 06/14/21

Parameter	LCS %Recovery	Qual	LC: %Reco	SD overy Qua	I %F	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield La	lb Associated sa	mple(s): 0	1-07 Bai	tch: WG15110	81-3				
Vinyl chloride	93					70-130	ı		25
cis-1,2-Dichloroethene	108					70-130			25
Trichloroethene	109					70-130			25
Tetrachloroethene	111					70-130			25



Project Name: MORTON VILLAGE

Project Number: 66845

Serial\_No:06142111:06 Lab Number: L2130400

Report Date: 06/14/21

## **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
L2130400-01	VTX-IA1	01882	Flow 5	06/03/21	353762					Pass	10.0	9.3	2
L2130400-01	VTX-IA1	3012	6.0L Can	06/03/21	353762	L2127874-03	Pass	-29.1	-10.8	,	ı		
L2130400-02	VTX-IA2	0058	Flow 5	06/03/21	353762			ı		Pass	10.0	9.3	2
L2130400-02	VTX-IA2	1680	6.0L Can	06/03/21	353762	L2127874-03	Pass	-29.5	-14.0				
L2130400-03	VTX-IA3	01059	Flow 5	06/03/21	353762			ı		Pass	10.0	9.5	ى ك
L2130400-03	VTX-IA3	3354	6.0L Can	06/03/21	353762	L2127874-03	Pass	-29.3	-14.0				
L2130400-04	VTX-IA4	01720	Flow 5	06/03/21	353762					Pass	10.0	9.7	e
L2130400-04	VTX-IA4	2946	6.0L Can	06/03/21	353762	L2127270-05	Pass	-29.4	-10.4		1		
L2130400-05	VTX-IA5	01209	Flow 5	06/03/21	353762			1		Pass	10.0	9.8	5
L2130400-05	VTX-IA5	3144	6.0L Can	06/03/21	353762	L2127874-03	Pass	-29.5	-10.6				
L2130400-06	VTX-IA6	0140	Flow 5	06/03/21	353762			ı		Pass	10.0	0.0	11
L2130400-06	VTX-IA6	3125	6.0L Can	06/03/21	353762	L2127270-05	Pass	-29.4	-12.3				
L2130400-07	VTX-AAI	0969	Flow 5	06/03/21	353762					Pass	10.0	10.2	5
L2130400-07	VTX-AAI	1544	6.0L Can	06/03/21	353762	L2127874-03	Pass	-29.5	-10.5				



Project Number:	CANISTER QC E	BAT				R	Report D	)ate: (	06/14/21
		Air Can	ister Cer	tificati	on Results				
Lab ID: Client ID: Sample Location:	L2127270-05 CAN 1642 SHE	LF 67				Date Date Field	Collecte Receive Prep:	ed: ed:	05/21/21 16:00 05/22/21 Not Specified
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15 05/24/21 00:13 TS								
			ppbV		<u> </u>	ug/m3		o	Dilution Factor
Parameter	Nir Monofield Loh	Results	RL	MDL	Results	RL	MDL	Qualifier	
volatile Organics in A	AIr - Mansheid 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



Serial\_No:06142111:06

L2127270

Lab Number:

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

Serial\_No:06142111:06
Lab Number: L2127270
Report Date: 06/14/21

### **Air Canister Certification Results**

Lab ID:	L2127270-05	Date Collected:	05/21/21 16:00
Client ID:	CAN 1642 SHELF 67	Date Received:	05/22/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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

Serial\_No:06142111:06
Lab Number: L2127270
Report Date: 06/14/21

### **Air Canister Certification Results**

Lab ID:	L2127270-05	Date Collected:	05/21/21 16:00
Client ID:	CAN 1642 SHELF 67	Date Received:	05/22/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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

Serial\_No:06142111:06 Lab Number: L2127270 Report Date: 06/14/21

### **Air Canister Certification Results**

Lab ID:	L2127270-05	Date Collected:	05/21/21 16:00
Client ID:	CAN 1642 SHELF 67	Date Received:	05/22/21
Sample Location:		Field Prep:	Not Specified

		ppbV		ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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



			Serial_No:06142111:06						
Project Name:	BATCH CANIST	ER CERTI	FICATION			Lab Number:			L2127270
Project Number:	CANISTER QC	BAT				Re	eport D	ate:	06/14/21
		Air Can	ister Ce	rtification	Results				
Lab ID: Client ID: Sample Location:	L2127270-05 CAN 1642 SHE	LF 67				Date ( Date F Field F	Collecte Receive Prep:	ed: ed:	05/21/21 16:00 05/22/21 Not Specified
Sample Depth:			ppbV			ug/m3			Dilution
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifie	r Factor
Volatile Organics in	Air - Mansfield Lab								
		Re	sults	Qualifier	Units	RDL		Dilutic Facto	on or
Tentatively Identified Con	npounds								

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	86		60-140
Bromochloromethane	92		60-140
chlorobenzene-d5	82		60-140



Project Number:	CANISTER QC E	BAT				R	eport D	Date: (	06/14/21
		Air Ca	nister Cer	tificati	on Results				
Lab ID: Client ID: Sample Location:	L2127270-05 CAN 1642 SHE	_F 67			Date Date Field	Collecte Receive Prep:	ed: ed:	05/21/21 16:00 05/22/21 Not Specified	
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15-SIM 05/24/21 00:13 TS								
			ppbV		<u> </u>	ug/m3		0	Dilution Factor
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifier	
Dichlorodifluoromethane	9	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	9	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



Serial\_No:06142111:06
Lab Number: L2127270

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

Serial\_No:06142111:06
Lab Number: L2127270
Report Date: 06/14/21

### **Air Canister Certification Results**

Lab ID:	L2127270-05	Date Collected:	05/21/21 16:00
Client ID:	CAN 1642 SHELF 67	Date Received:	05/22/21
Sample Location:		Field Prep:	Not Specified

		ppbV		ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	field 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



		Serial_No:06142111:06		
Project Name:	BATCH CANISTER CERTIFICATION	Lab Number:	L2127270	
Project Number:	CANISTER QC BAT	Report Date:	06/14/21	
	Air Canister Certification Results			

Lab ID:	L2127270-05	Date Collected:	05/21/21 16:00
Client ID:	CAN 1642 SHELF 67	Date Received:	05/22/21
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Man	sfield 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	87		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	80		60-140



Project Number:	CANISTER QC E	BAT				R	eport D	Date: (	06/14/21
		Air Can	ister Cer	tificati	on Results				
Lab ID: Client ID: Sample Location:	L2127874-03 CAN 1621 SHE	LF 35				Date Date Field	Collecte Receive Prep:	ed: ed:	05/25/21 16:00 05/26/21 Not Specified
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15 05/26/21 23:22 EW								
			ppbV			ug/m3			Dilution Eactor
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifier	
Volatile Organics in A	Air - Manstield Lad								
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



Serial\_No:06142111:06

L2127874

Lab Number:

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Project Name:	BATCH CANISTER CERTIFICATION	Lab N
Project Number:	CANISTER QC BAT	Repo

Serial\_No:06142111:06
Lab Number: L2127874
Report Date: 06/14/21

### Air Canister Certification Results

Lab ID:	L2127874-03	Date Collected:	05/25/21 16:00
Client ID:	CAN 1621 SHELF 35	Date Received:	05/26/21
Sample Location:		Field Prep:	Not Specified

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



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

Serial\_No:06142111:06
Lab Number: L2127874
Report Date: 06/14/21

### **Air Canister Certification Results**

Lab ID:	L2127874-03	Date Collected:	05/25/21 16:00
Client ID:	CAN 1621 SHELF 35	Date Received:	05/26/21
Sample Location:		Field Prep:	Not Specified

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



	Serial_No:06	6142111:06
TION	Lab Number:	L2127874
	Report Date:	06/14/21

L2127874 06/14/21

### **Air Canister Certification Results**

Lab ID:	L2127874-03	Date Collected:	05/25/21 16:00
Client ID:	CAN 1621 SHELF 35	Date Received:	05/26/21
Sample Location:		Field Prep:	Not Specified

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield Lab	1							
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



							Serial	_No:061	42111:06
Project Name:	BATCH CANIST	ER CERTI	FICATION			La	b Num	L2127874	
Project Number:	CANISTER QC	ВАТ				Re	port D	Date:	06/14/21
		Air Can	ister Cer	tification	Results				
Lab ID: Client ID: Sample Location:	L2127874-03 CAN 1621 SHE	LF 35				Date C Date F Field F	Collecte Receive Prep:	ed: ed:	05/25/21 16:00 05/26/21 Not Specified
Sample Depth:			ppbV			ug/m3			Dilution
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifie	r Factor
Volatile Organics in a	Air - Mansfield Lab								
		Re	sults	Qualifier	Units	RDL		Dilutic Facto	on or
Tentatively Identified Con	npounds								

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	89		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	86		60-140



Project Number:	CANISTER QC E	BAT				R	eport D	)ate: (	06/14/21
Air Canister Certification Results									
Lab ID: Client ID: Sample Location:	L2127874-03 CAN 1621 SHE	LF 35 Date Colle Field Prep			Collecte Receive Prep:	ed: ed:	05/25/21 16:00 05/26/21 Not Specified		
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15-SIM 05/26/21 23:22 EW								
			ppbV			ug/m3			Dilution Eactor
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in A	Air by SIM - Mansfie	eld Lab							
Dichlorodifluoromethane	9	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	9	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



Serial\_No:06142111:06
Lab Number: L2127874

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	Report D

Serial\_No:06142111:06 \_ab Number: L2127874 Report Date: 06/14/21

### Air Canister Certification Results

Lab ID:	L2127874-03	Date Collected:	05/25/21 16:00
Client ID:	CAN 1621 SHELF 35	Date Received:	05/26/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	sfield 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
lsopropylbenzene	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



		Serial_No:06	6142111:06
Project Name:	BATCH CANISTER CERTIFICATION	Lab Number:	L2127874
Project Number:	CANISTER QC BAT	Report Date:	06/14/21
	Air Canister Certification Results		

Lab ID:	L2127874-03	Date Collected:	05/25/21 16:00
Client ID:	CAN 1621 SHELF 35	Date Received:	05/26/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Man	sfield Lab							
sec-Butylbenzene	ND	0.200		ND	1.10			1
p-lsopropyltoluene	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	89		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	87		60-140



# Sample Receipt and Container Information

YES

## **Cooler Information**

Were project specific reporting limits specified?

Cooler Custody Seal NA Absent

## ontainer Information

Analysis(\*) T015-SIM(30) T015-SIM(30) T015-SIM(30) T015-SIM(30) T015-SIM(30) T015-SIM(30)

Frozen Date/Time

Temp deg C Pres Seal Absent Absent Absent Absent Absent Absent

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Container Into	ormation		Initial	Final
Container ID	Container Type	Cooler	Нd	Нd
L2130400-01A	Canister - 6 Liter	NA	NA	
L2130400-02A	Canister - 6 Liter	NA	NA	
L2130400-03A	Canister - 6 Liter	NA	NA	
L2130400-04A	Canister - 6 Liter	NA	NA	
L2130400-05A	Canister - 6 Liter	NA	NA	
L2130400-06A	Canister - 6 Liter	NA	NA	
L2130400-07A	Canister - 6 Liter	NA	NA	

# \*Values in parentheses indicate holding time in days



### Project Name: MORTON VILLAGE

Project Number: 66845

### Lab Number: L2130400

### **Report Date:** 06/14/21

### 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
EDL	<ul> <li>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 PAHu using Solid Phase Microartexterion (SDME).</li> </ul>
EMPC	<ul> <li>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.</li> </ul>
EPA	- Environmental Protection Agency
LCS	<ul> <li>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.</li> </ul>
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



### Project Name: MORTON VILLAGE

Project Number: 66845

### Lab Number: L2130400

### **Report Date:** 06/14/21

### Footnotes

1

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

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 Waterpreserved 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(a)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). 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 concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank. 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. For NJ-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- **D** Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. 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

Report Format: Data Usability Report



### Serial\_No:06142111:06

### Project Name: MORTON VILLAGE

Project Number: 66845

Lab Number: L2130400

**Report Date:** 06/14/21

### Data Qualifiers

the identification is based on a mass spectral library search.

- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.

Report Format: Data Usability Report



Project Name: MORTON VILLAGE Project Number: 66845 
 Lab Number:
 L2130400

 Report Date:
 06/14/21

### 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, Naphthalene

EPA 625/625.1: alpha-Terpineol

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

EPA 8270D/8270E: <u>NPW</u>: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; <u>SCM</u>: Dimethylnaphthalene,1,4-Diphenylhydrazine. SM4500: <u>NPW</u>: Amenable Cyanide; <u>SCM</u>: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility SM 2540D: TSS EPA 8082A: <u>NPW:</u> PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187. EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene. Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP. Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics, EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan 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, SM9222D.

Mansfield Facility:

Drinking Water EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1. Non-Potable Water EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Z 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.

			Serial_No:06142111:06
ALPHA CHAIN OF CUSTODY	NALYSIS MAGE OF 1	Date Rec'd in Lab: 6 (8 12/	ALPHA JOD #: L2130400
20 Forbes Blvd, Mansfield, MA 02048	Project Information	Report Information - Data Deliverables	Billing Information
EL: 508-822-9300 FAX: 508-822-3288 lient information	Project Name Mortes Village Project to cation 1022 old Contro Rd Plann	LO FAX LO ADEx Criteria Chartear	A Same as Client info PO#
ient Vertox	Project #. 66 8 45	(Calkul Based on Repúblicy Criteria Indumted) Calhari Envirote	
Branchhur NS	Project Manager Rich Toloich	SEMAIL (standard pdf report) Claditional Deliverables	Regulatory Requirements/Report Limits State/Fed Program Res / Comm
ohe:	Turn-Around Time	Report to: a dilevent tree Project Manageria	WY IVH
X	Standard D RUSH International International		
These samples have been previously analyzed by Alpha These samples have been previously analyzed by Alpha Other Project Specific Requirements/Com	Date Due: Time: Time: Time:		ANALYSIS Analysis Analysis Analysis
roject-Specific Target Compound List: L			LAU RUNDA
A	Il Columns Below Must I	Be Filled Out	A MARTER A
Lab Use Only) Sample ID	COLLECTION End Date Start Time End Time Vacuum Vacuum	Sample Sampler's Can ID ID-Flow 0	C Z B B W Sample Comments (i.e. PID)
SOVOO-CI VTX-IAZ	6/4/21 0812 1433 -2448 -1175	AA EG G 3012 01862	X
OR VTX-IA2	1102 1625 - 3012 - 1522	1690 0055	×
es VTX-IA3	1056 1622 -29-29 - 148H	3354 01054	×
PAT-XTV 40	8911-1842-0251 5060	2946 01720	×
OS VTX- INS	09004 1528 -24.45 -11.82	SHH URDA	X
OL VTX-IAG	0818 1443 -3073-13,92	342 0140	X (44 EN 3125
07 VTX-AAI	N 08-28 1450 - 30'01-10'20	P30 H49 1 1 1 1	×
×	A = Ambient Air (tadioer Outdoor)		
SAMPLE MATRIX CODES 0	V = Soil Vapor/Landfill Gas/SVE ther = Please Specify	Container Type CS	C5 Please print clearly, legibly and completely. Samples can not be bound in and transmission to be bound in and transmission to be bound in and the bound in a
	Relinquished By: Date/Time	All Received By	te/Time: clock will not start until any amb-
E. S. C.	Buch Att. Alphones 18-18-	they stare Att 6 app	1 11-0 D submitted are subject to Alpha's 2.0.0 Terms and Conditions
ge 38 af 38 (25 Sep 15)	A46 6/8/108:30 0	San Call	1 C33C See reverse side.



### ANALYTICAL REPORT

Lab Number:	L2112332
Client:	The Vertex Companies, Inc.
	3322 US Highway 22 West
	Suite 907
	Branchburg, NJ 08876
ATTN:	Matthew Urm
Phone:	(908) 458-9475
Project Name:	MORTON VILLAGE
Project Number:	66845
Report Date:	03/19/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-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



				Serial_No	:03192114:52
Project Name: Project Number:	MORTON VILLAGE 66845			Lab Number: Report Date:	L2112332 03/19/21
Alpha Sample ID L2112332-01	<b>Client ID</b> VTX-SSDS-EFF	<b>Matrix</b> SOIL_VAPOR	Sample Location 1026 OLD COUNTRY RD, PLAINVIEW, NY	Collection Date/Time 03/12/21 10:30	<b>Receive Date</b> 03/12/21



Project Name: MORTON VILLAGE Project Number: 66845 Lab Number: L2112332 Report Date: 03/19/21

### **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: MORTON VILLAGE Project Number: 66845

 Lab Number:
 L2112332

 Report Date:
 03/19/21

#### **Case Narrative (continued)**

Volatile Organics in Air

Canisters were released from the laboratory on March 11, 2021. The canister certification results are provided as an addendum.

L2112332-01D: Prior to sample analysis, the canisters were pressurized with UHP Nitrogen due to canister size. The pressurization resulted in a dilution of the sample. The reporting limits have been elevated accordingly.

The WG1476101-3 LCS recoveries for bromoform (131%), 1,2,4-trichlorobenzene (135%) and hexachlorobutadiene (132%) are above the upper 130% acceptance limit. All samples associated with this LCS do not have reportable amounts of these analytes.

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.

Church Gulun Christopher J. Anderson

Authorized Signature:

Title: Technical Director/Representative

Date: 03/19/21



# AIR



Project Name:	MORTON VILLAGE
Project Number:	66845

 Lab Number:
 L2112332

 Report Date:
 03/19/21

#### SAMPLE RESULTS

Lab ID:	L2112332-01 D	Date Collected:	03/12/21 10:30
Client ID:	VTX-SSDS-EFF	Date Received:	03/12/21
Sample Location:	1026 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

Sample Depth:Matrix:Soil\_VaporAnaytical Method:48,TO-15Analytical Date:03/18/21 23:08Analyst:RY

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield	l Lab							
Dichlorodifluoromethane	ND	0.467		ND	2.31			2.333
Chloromethane	ND	0.467		ND	0.964			2.333
Freon-114	ND	0.467		ND	3.26			2.333
Vinyl chloride	ND	0.467		ND	1.19			2.333
1,3-Butadiene	ND	0.467		ND	1.03			2.333
Bromomethane	ND	0.467		ND	1.81			2.333
Chloroethane	ND	0.467		ND	1.23			2.333
Ethanol	235	11.7		443	22.0			2.333
Vinyl bromide	ND	0.467		ND	2.04			2.333
Acetone	19.3	2.33		45.8	5.53			2.333
Trichlorofluoromethane	ND	0.467		ND	2.62			2.333
Isopropanol	14.4	1.17		35.4	2.88			2.333
1,1-Dichloroethene	ND	0.467		ND	1.85			2.333
Tertiary butyl Alcohol	ND	1.17		ND	3.55			2.333
Methylene chloride	ND	1.17		ND	4.06			2.333
3-Chloropropene	ND	0.467		ND	1.46			2.333
Carbon disulfide	ND	0.467		ND	1.45			2.333
Freon-113	ND	0.467		ND	3.58			2.333
trans-1,2-Dichloroethene	ND	0.467		ND	1.85			2.333
1,1-Dichloroethane	ND	0.467		ND	1.89			2.333
Methyl tert butyl ether	ND	0.467		ND	1.68			2.333
2-Butanone	2.29	1.17		6.75	3.45			2.333
cis-1,2-Dichloroethene	29.7	0.467		118	1.85			2.333



# Project Name:MORTON VILLAGEProject Number:66845

 Lab Number:
 L2112332

 Report Date:
 03/19/21

#### SAMPLE RESULTS

Lab ID:	L2112332-01 D	Date Collected:	03/12/21 10:30
Client ID:	VTX-SSDS-EFF	Date Received:	03/12/21
Sample Location:	1026 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield	Lab							
Ethyl Acetate	ND	1.17		ND	4.22			2.333
Chloroform	ND	0.467		ND	2.28			2.333
Tetrahydrofuran	2.33	1.17		6.87	3.45			2.333
1,2-Dichloroethane	ND	0.467		ND	1.89			2.333
n-Hexane	ND	0.467		ND	1.65			2.333
1,1,1-Trichloroethane	ND	0.467		ND	2.55			2.333
Benzene	ND	0.467		ND	1.49			2.333
Carbon tetrachloride	ND	0.467		ND	2.94			2.333
Cyclohexane	ND	0.467		ND	1.61			2.333
1,2-Dichloropropane	ND	0.467		ND	2.16			2.333
Bromodichloromethane	ND	0.467		ND	3.13			2.333
1,4-Dioxane	ND	0.467		ND	1.68			2.333
Trichloroethene	11.6	0.467		62.3	2.51			2.333
2,2,4-Trimethylpentane	ND	0.467		ND	2.18			2.333
Heptane	ND	0.467		ND	1.91			2.333
cis-1,3-Dichloropropene	ND	0.467		ND	2.12			2.333
4-Methyl-2-pentanone	ND	1.17		ND	4.79			2.333
trans-1,3-Dichloropropene	ND	0.467		ND	2.12			2.333
1,1,2-Trichloroethane	ND	0.467		ND	2.55			2.333
Toluene	ND	0.467		ND	1.76			2.333
2-Hexanone	ND	0.467		ND	1.91			2.333
Dibromochloromethane	ND	0.467		ND	3.98			2.333
1,2-Dibromoethane	ND	0.467		ND	3.59			2.333
Tetrachloroethene	163	0.467		1110	3.17			2.333
Chlorobenzene	ND	0.467		ND	2.15			2.333
Ethylbenzene	ND	0.467		ND	2.03			2.333



# Project Name:MORTON VILLAGEProject Number:66845

 Lab Number:
 L2112332

 Report Date:
 03/19/21

#### SAMPLE RESULTS

Lab ID:	L2112332-01 D	Date Collected:	03/12/21 10:30
Client ID:	VTX-SSDS-EFF	Date Received:	03/12/21
Sample Location:	1026 OLD COUNTRY RD, PLAINVIEW, NY	Field Prep:	Not Specified

		ppbV ug/m3		ug/m3			Dilution	
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfiel	d Lab							
p/m-Xylene	ND	0.933		ND	4.05			2.333
Bromoform	ND	0.467		ND	4.83			2.333
Styrene	ND	0.467		ND	1.99			2.333
1,1,2,2-Tetrachloroethane	ND	0.467		ND	3.21			2.333
o-Xylene	ND	0.467		ND	2.03			2.333
4-Ethyltoluene	ND	0.467		ND	2.30			2.333
1,3,5-Trimethylbenzene	ND	0.467		ND	2.30			2.333
1,2,4-Trimethylbenzene	ND	0.467		ND	2.30			2.333
Benzyl chloride	ND	0.467		ND	2.42			2.333
1,3-Dichlorobenzene	ND	0.467		ND	2.81			2.333
1,4-Dichlorobenzene	ND	0.467		ND	2.81			2.333
1,2-Dichlorobenzene	ND	0.467		ND	2.81			2.333
1,2,4-Trichlorobenzene	ND	0.467		ND	3.47			2.333
Hexachlorobutadiene	ND	0.467		ND	4.98			2.333

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	100		60-140
Bromochloromethane	109		60-140
chlorobenzene-d5	115		60-140



**Report Date:** 03/19/21

# Method Blank Analysis Batch Quality Control

Analytical Method:48,TO-15Analytical Date:03/18/21 15:13

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfie	eld Lab for sampl	e(s): 01	Batch:	WG1476101-4	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
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



**Report Date:** 03/19/21

# Method Blank Analysis Batch Quality Control

Analytical Method:48,TO-15Analytical Date:03/18/21 15:13

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield L	ab for sampl	e(s): 01	Batch:	WG1476101-4				
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



**Report Date:** 03/19/21

# Method Blank Analysis Batch Quality Control

Analytical Method:48,TO-15Analytical Date:03/18/21 15:13

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfiel	d Lab for samp	ole(s): 01	Batch:	WG1476101-4	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



I ah Control Samula Analysis



Lab Control Sample Analysis       Lab Number:       L2112332         Batch Quality Control       Lab Number:       03/19/21         Report Date:       03/19/21	LCS LCSD %Recovery RPD %Recovery Qual Limits RPD Qual Limits	iated sample(s): 01 Batch: WG1476101-3	- 70-130 -	106 - 70-130 -	95 - 70-130 -	- 70-130 -	80 - 70-130 -	95 - 70-130 -	82 - 70-130 -	103 - 70-130 -	80 - 70-130 -	88 - 70-130 -	92 - 70-130 -	80 - 70-130 -	93 - 70-130 -	82 - 70-130 -	86 - 70-130 -	91 - 70-130 -	82 - 70-130 -	80 - 70-130 -	98 - 70-130 -	96 - 70-130 -	88 - 70-130 -	- 70-130 -	
MORTON VILLAGE 66845	%R	Air - Mansfield Lab Associate						E		Φ		۵	ane			ane		Jene	he	ropene	e			lane	
Project Name: Project Number	Parameter	Volatile Organics in	Ethyl Acetate	Chloroform	Tetrahydrofuran	1,2-Dichloroethane	n-Hexane	1,1,1-Trichloroethar	Benzene	Carbon tetrachlorid	Cyclohexane	1,2-Dichloropropane	Bromodichlorometh	1,4-Dioxane	Trichloroethene	2,2,4-Trimethylpent	Heptane	cis-1,3-Dichloroprop	4-Methyl-2-pentano	trans-1,3-Dichlorop	1,1,2-Trichloroethar	Toluene	2-Hexanone	Dibromochlorometh	1 0 Dibromothono





Project Name: Project Number:	MORTON VILLAGE 66845		Lal	o Control Sa Batch Qua	Ity Contro	nalysis I	Lab N Repo	lumber: rt Date:	L2112332 03/19/21
Parameter		LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Ai	ir - Mansfield Lab Asso	ociated sample(s):	01 Batch:	WG1476101-3					
Tetrachloroethene		108				70-130			
Chlorobenzene		108		ı		70-130			
Ethylbenzene		108		T		70-130			
p/m-Xylene		111		I		70-130	ı		
Bromoform		131	Ø	I		70-130	ı		
Styrene		113		I		70-130	ı		
1,1,2,2-Tetrachloroeth	ane	107		I		70-130			
o-Xylene		113		I		70-130	ı		
4-Ethyltoluene		118		I		70-130	ı		
1,3,5-Trimethylbenzen	υ	120		ı		70-130	I		
1,2,4-Trimethylbenzen	υ	126		I		70-130	ı		
Benzyl chloride		110		I		70-130			
1,3-Dichlorobenzene		126		I		70-130	ı		
1,4-Dichlorobenzene		127		I		70-130	ı		
1,2-Dichlorobenzene		127				70-130	ı		
1,2,4-Trichlorobenzene	0	135	ø			70-130			
Hexachlorobutadiene		132	Ø			70-130			

Page 14 of 30



Project Name: MORTON VILLAGE

Project Number: 66845

Serial\_No:03192114:52 Lab Number: L2112332

Report Date: 03/19/21

# **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	6 RPD
L2112332-01	VTX-SSDS-EFF	0601	SV200	03/11/21	345133					Pass	220	222	-
L2112332-01	VTX-SSDS-EFF	840	1.0L Can	03/11/21	345133	L2110928-07	Pass	-29.7	-1.9				



Project Number:	CANISTER QC E	BAT				R	eport D	Date: (	3/19/21
		Air Can	ister Cer	tificati	on Results				
Lab ID: Client ID: Sample Location:	L2110928-07 CAN 2396 SHE	LF 17				Date Date Field	Collecte Receive Prep:	ed: ed:	03/05/21 09:00 03/05/21 Not Specified
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15 03/07/21 03:06 TS								
Parameter		Results	ppp v	MDI	Results	RI	MDI	Qualifier	Dilution Factor
Volatile Organics in A	Air - Mansfield Lab	Results	IXE					4.4.11101	
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	1	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



Serial\_No:03192114:52

Lab Number: L2110928

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

Serial\_No:03192114:52 Lab Number: L2110928 Report Date: 03/19/21

# **Air Canister Certification Results**

Lab ID:	L2110928-07	Date Collected:	03/05/21 09:00
Client ID:	CAN 2396 SHELF 17	Date Received:	03/05/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield L	.ab							
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	l
Project Number:	CANISTER QC BAT	I

Serial\_No:03192114:52 Lab Number: L2110928 Report Date: 03/19/21

# **Air Canister Certification Results**

Lab ID:	L2110928-07	Date Collected:	03/05/21 09:00
Client ID:	CAN 2396 SHELF 17	Date Received:	03/05/21
Sample Location:		Field Prep:	Not Specified

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



	Serial_No:03	3192114:52
TION	Lab Number:	L2110928
	Report Date:	03/10/21

er: L2110928 03/19/21 Report Date:

# **Air Canister Certification Results**

Lab ID:	L2110928-07	Date Collected:	03/05/21 09:00
Client ID:	CAN 2396 SHELF 17	Date Received:	03/05/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	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



							Serial	_No:031	92114:52
Project Name:	BATCH CANIST	ER CERTI	FICATION	I		La	b Num	ber:	L2110928
Project Number:	CANISTER QC	ВАТ				Re	port D	Date:	03/19/21
		Air Can	ister Ce	rtification	Results				
Lab ID: Client ID: Sample Location:	L2110928-07 CAN 2396 SHE	LF 17				Date C Date R Field P	collecte leceive Prep:	ed: ed:	03/05/21 09:00 03/05/21 Not Specified
Sample Depth:			ppbV			ug/m3			Dilution
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifie	r Factor
Volatile Organics in	Air - Mansfield Lab								
Tontatively Identified Con	anaunda	Re	sults	Qualifier	Units	RDL		Dilutio Facto	n r
I entatively Identified Con	npounds								

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	94		60-140



		Air Can	ister Cer	tificatio	on Results	5			
Lab ID: Client ID: Sample Location:	L2110928-07 CAN 2396 SHE	LF 17				Date Date Field	Collecte Receive Prep:	ed: ed:	03/05/21 09:00 03/05/21 Not Specified
Sample Depth: Matrix: Anaytical Method: Analytical Date: Analyst:	Air 48,TO-15-SIM 03/07/21 03:06 TS								
			ppbV			ug/m3			Dilution
Parameter		Results	RL	MDL	Results	RL	MDL	Qualifier	. Factor
Volatile Organics in A	Air by SIM - Mansfie	eld 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	3	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



Serial\_No:03192114:52

L2110928

03/19/21

Lab Number:

Report Date:

# Project Name:BATCH CANISTER CERTIFICATIONProject Number:CANISTER QC BAT

Serial\_No:03192114:52 Lab Number: L2110928 Report Date: 03/19/21

# **Air Canister Certification Results**

Lab ID:	L2110928-07	Date Collected:	03/05/21 09:00
Client ID:	CAN 2396 SHELF 17	Date Received:	03/05/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	field 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



		Serial_No:03	3192114:52
Project Name:	BATCH CANISTER CERTIFICATION	Lab Number:	L2110928
Project Number:	CANISTER QC BAT	Report Date:	03/19/21
	Air Canister Certification Results		

# Air Canister Certification Results

Lab ID:	L2110928-07	Date Collected:	03/05/21 09:00
Client ID:	CAN 2396 SHELF 17	Date Received:	03/05/21
Sample Location:		Field Prep:	Not Specified

		ppbV			ug/m3			Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mans	field Lab							
sec-Butylbenzene	ND	0.200		ND	1.10			1
p-lsopropyltoluene	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	93		60-140



MORTON VILLAGE Project Number: 66845 Project Name:

Lab Number: L2112332 Serial\_No:03192114:52 Report Date: 03/19/21

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

**Cooler Information** 

**Custody Seal** Absent Cooler AN

**Container Information** 

Container Type Canister - 1 Liter **Container ID** L2112332-01A

Frozen Date/Time Absent ≻ AN

ΔA

TO15-LL(30)

Analysis(\*)



## Project Name: MORTON VILLAGE

Project Number: 66845

# Lab Number: L2112332

#### **Report Date:** 03/19/21

#### GLOSSARY

#### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



#### Project Name: MORTON VILLAGE

Project Number: 66845

## Lab Number: L2112332

#### **Report Date:** 03/19/21

#### Footnotes

1

- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

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 Waterpreserved 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(a)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. (Note: 'PFAS, Total (6)' is applicable to MassDEP DW compliance analysis only.). 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 concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank. 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. For NJ- 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 NJ- Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- **D** Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. 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

Report Format: Data Usability Report



## Project Name: MORTON VILLAGE

Project Number: 66845

Lab Number: L2112332

#### **Report Date:** 03/19/21

#### Data Qualifiers

the identification is based on a mass spectral library search.

- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.

Report Format: Data Usability Report



Project Name: MORTON VILLAGE Project Number: 66845 
 Lab Number:
 L2112332

 Report Date:
 03/19/21

#### 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, Naphthalene

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

**EPA** 8270D/8270E: <u>NPW</u>: Dimethylnaphthalene,1,4-Diphenylhydrazine; <u>SCM</u>: Dimethylnaphthalene,1,4-Diphenylhydrazine. **SM4500**: <u>NPW</u>: Amenable Cyanide; <u>SCM</u>: Total Phosphorus, TKN, NO2, NO3.

#### Mansfield Facility

SM 2540D: TSS

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

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene. Biological Tissue Matrix: EPA 3050B

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

#### Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP. Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan 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, SM9222D.

#### Mansfield Facility:

Drinking Water EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water **EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn. **EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn. **EPA 245.1** Hg. **SM2340B** 

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

12112332	tion	into PO#	quirements/Report Limits rogram Res/Comm	2	Sample Comments (i.e. PID)		Please print clearly, legbly and completely Samples can not be	logged in any unreconstant clock will not start until any amb- guites are resolved. All samples submitted are subject to Apha's Terms and Conditions.
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