Waite-Heindel
Environmental Management

March 30, 2017

Calderwood Building, LLC
Attn: Managing Member
775 Hills Point Road
Charlotte, VT 05445

RE: Limited Phase II Environmental Site Assessment Report
Calderwood Building #2
72 Eastern Avenue, St. Johnsbury, Vermont

To Whom It May Concern:

Waite-Heindel Environmental Management (WHEM) is pleased to present this Limited Phase II Environmental Site Assessment Report for the Calderwood property (Building #2) at 72 Eastern Avenue in St. Johnsbury, Vermont. This work provides details and results of the soil vapor testing that was conducted by WHEM between February 20, 2017 and March 3, 2017.

As per our discussions, we are copying this report to the State of Vermont Department of Buildings and General Services (BGS), Vermont Department of Environmental Conservation (VT DEC) and your attorney. We are also planning to undertake indoor air sampling inside Building #2 next Tuesday April 4 at your direction.

Do not hesitate to call WHEM at (802) 860-9400 if you have any questions. Thank you for providing the opportunity to be of service.

Sincerely,

Miles E. Waite, Ph.D. (x101)
Senior Hydrogeologist

Enclosure

cc: Robert Ferlazo, BGS
Matt Moran, VT DEC
Diane McCarthy Esq. and Jeff Lively Esq., Sheehey Furlong & Behm P.C.

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

Calderwood Building #2
72 Eastern Avenue
St. Johnsbury, Vermont

March 27, 2017
Revised March 30, 2017

Prepared for:

Calderwood, LLC

Prepared by:

Waite - Heindel
Environmental Management

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WHEM Project # 2017-9

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1.0 INTRODUCTION

Waite-Heindel Environmental Management (WHEM) conducted a limited Phase II Environmental Site Assessment at Calderwood Building #2, located at 72 Eastern Avenue in St. Johnsbury, Vermont (see USGS Map in Appendix A), between February 20 and March 3, 2017. This work was requested by the managing member of Calderwood Building, LLC as part of due diligence for the sale of the property. The objective of the work was to further evaluate a recognized environmental condition (REC) identified by The Verterre Group in their *Phase I Environmental Site Assessment for Calderwood Building LLC Property [February 6, 2017]* report on behalf of a potential buyer of the property. The report identifies the property's historic use as a dry cleaner from circa 1943 to 1972 as an REC.

Elements of this work included the following: 1) installation of three soil vapor points on February 20, 2017 and 2) soil vapor sampling on March 3, 2017. In addition to soil vapor testing, WHEM also collected measurements of differential pressure between the subslab points and the basement, and the basement envelope to outdoor air.

1.1 Building Description

Calderwood Building #2 is a three-story brick office building land on Eastern Avenue in downtown St. Johnsbury, VT. It is connected to Calderwood Buildings #1 and #3; the three buildings comprise 26,173 square feet and, along with associated parking lots, occupy 1.17 acres. The property was purchased by Calderwood Building, LLC in 2008, and is currently occupied by various State of Vermont offices and services, including Vermont Department for Children and Families (DCF), Department of Corrections (DOC), and the Community High School of Vermont (CHSVT). There is a full, finished basement beneath Building #2. Building #1 and Building #3, located immediately south of Building #2, were not included in the Limited Phase II ESA. Building #2 is occupied entirely by the Department of Corrections. All three buildings are connected to municipal water and sewer, and are heated by a boiler, fueled by two propane tanks; the boiler and propane tanks are located along the western edge of the southern parking lot near Building #1. Refer to the USGS Location Map and Plans provided in Appendix A for visual aid.

1.2 Background

The current owner, Calderwood Building, LLC, purchased the Calderwood property in 2008. At that time, the lender (Merchants Bank) ordered a Property Screening Service Evaluation (PSS) and a Stormwater Permit Review, which were conducted by Heindel & Noyes (H&N). In the PSS, H&N identified the historic presence of two (2) underground storage tanks (USTs) on the property. According to the State of Vermont's AST/UST database, a 275-gallon kerosene UST and a 2,000-gallon fuel oil UST were removed from the property in 1990. These tanks served the property's previous boiler, and State records indicate that the tanks were in fair condition upon removal, with no contaminated soils encountered.

There are two high-risk properties located near (< 1,000 feet) and upgradient of the Calderwood property, as identified in the Verterre Phase I ESA report. These properties include The Caledonia Warehouse and Palmer Dry Cleaners. The Caledonia Warehouse is located approximately 500 feet to the west, while Palmer Dry Cleaners is located just beyond (~570 feet to the West). PCE contamination detected at the Caledonia Warehouse was identified and traced to Palmer Dry Cleaners. USTs removed from the Caledonia Warehouse Property appear to have caused only low levels of petroleum contamination to the subsurface. Groundwater monitoring conducted at both sites appears to indicate that sufficient natural attenuation of PCE had occurred, as both sites achieved Sites Management Activities Closure (SMAC) status in 2007 (Caledonia Warehouse) and 2008 (Palmer Dry Cleaners). A *Notice to Land Records* was field for the Palmer Dry Cleaners property prior to its SMAC designation, which indicates that some residual soil or groundwater contamination by PCE remains on-site. There is no indication that either subslab vapor monitoring or indoor air monitoring was included in these investigations.

Calderwood Building #2 appears to have been constructed in 1943; according to Sanborn® Maps (see Appendix E), the building was listed as dry cleaning in 1943, and continues to be called out as a dry cleaning operation up through the 1964 Sanborn® Maps. A directory search conducted by Verterre indicates that the property was occupied by Scotts Super Cleaners from at least 1948 to 1954; the property was also referred to as St. Johnsbury Steam Laundry. Verterre located a building permit dated November 1972 which states that the building would be converted from a dry cleaner to an office building, though it is not clear from the permit that the dry cleaner was still in active operation at that time. We could not establish where in Building #2 the dry cleaning machine was located, but it is assumed to have been in the basement (First Floor as identified on Figure 2).

The following RECs were identified by Verterre in 2017: 1) the historic building use as a dry cleaner from ca. 1943-1972, 2) the previous presence of petroleum USTs, and 3) the presence of two high-risk properties upgradient and less than 1,000 feet from the property. This limited Phase II investigation primarily addresses possible impacts to the property from the first listed REC, by focusing on the presence of volatile organic compounds (VOCs) in subslab soil vapor in the footprint of Building #2, where the dry cleaner was operated.

2.0 SOIL VAPOR EVALUATION

2.1 Soil Vapor Point Installation

On February 20, 2017, WHEM installed three vapor monitoring points through the concrete slab of Building #2, identified on Figures 1 & 2 as VP-1, VP-2, and VP-3. VP-1 was installed in a small office area, temporarily used as storage, along the western wall of the basement. VP-2 was installed through the floor of the sprinkler room, located in the northern portion of the basement. VP-3 was installed in the HVAC room in the southeast corner of the basement, near a sump pit. The sump pit did not contain a sump pump and was dry during the installation, the sump appears to primarily collect condensate from the HVAC system. These points were selected so to provide a simple areal coverage of the Building #2 basement. For a plan of soil vapor point locations in the building, refer to Figures 1 & 2 of Appendix A.

2.1.1 VP-1 Construction

VP-1 was installed in the southwestern corner of a small office and/or storage room, against the western wall of the basement. A hole was advanced using a rotary hammer drill with a decontaminated 1”x18” bit. After the hole was cleared, the drill bit was cleaned with a solution of Alconox and deionized (DI) water. Field staff noted that the slab appeared to be approximately 4” thick; the hole was installed to a total depth of 16”. Soils encountered were described as dark gray silt, dry, with a musty odor. A stainless steel 6” vapor probe was connected securely to a length of inert tubing and installed at the bottom of the hole. As installed, the screened section of the soil vapor probe extends from 16” below the floor to 10” below the floor; with an estimated 4” slab, the vapor point will be screening soils from approximately 12” to 6” below slab. The vapor point was backfilled with clean, coarse sand from 16” to 8” below grade; bentonite powder was then added from 8” to 3” below grade and hydrated with DI water to form an airtight seal. The vapor point was finished with hydraulic cement to grade. The sample tube was capped securely with a vacuum-tube cap to minimize possible introduction of soil vapors to the indoor air and to protect the integrity of the sampling point.

2.1.2 VP-1 Construction

VP-2 was installed through the floor of the sprinkler room, located in the north end of the basement. Again, the hole was advanced with a decontaminated 1"x18" drill bit, which was cleaned following drilling using Alconox and DI water. Field staff determined that the slab was again approximately 4" thick. The hole was advanced to 17" below floor (~13" below the slab). Soils encountered consisted of dark gray silty loam, which was musty and dry. A 6" stainless steel vapor probe was securely connected to a length of inert tubing and set at the bottom of the drilled hole; the vapor point will screen soils from approximately 13" to 7" below the basement slab. The vapor point was backfilled with coarse sand from 17" to 8" below grade, then sealed with bentonite powder from 8" to 3" below grade. The bentonite was hydrated with DI water to form an airtight seal. The vapor point was completed with hydraulic cement to grade, and the tubing was capped securely with a vacuum-tube cap.

2.1.3 VP-3 Construction

VP-3 was installed in the HVAC room of the Building #2 basement, which is located in the southeast corner. The vapor point was installed a few inches about one foot off of the eastern wall of the basement, near what appears to be a large sump pit. The sump pit appears to collect condensate from the HVAC system. A hole was advanced via rotary hammer drill to a total depth of 17.5" below grade. Slab was estimated, once more, to be 4" thick. Underlying soils possessed a slight acetone odor, reminiscent of paint fumes. Soils consisted of gray fine sand and gravel; although no gravel was evident from the tailings, the drilling was very slow and indicated that a dense gravel layer may be present beneath the sand. The probe was securely attached to a length of inert tubing set at the bottom of the hole, at 16.5" below grade (approximately 12.5" below slab); the probe screens soils from approximately 12.5" to 6.5" below the slab. The vapor point was backfilled with coarse sand from 17" to 8" below grade. An airtight seal was constructed by adding bentonite powder from 8" to 3", then hydrating with DI water. Hydraulic cement was utilized to finish the vapor point to grade. The tubing was capped securely with a vacuum-tube cap.

2.2 Soil Screening

Soils recovered from each of the three vapor points were screened via headspace method with a calibrated 10.6 eV IonScience PhoCheck+ Photoionization Detector. This device allows for field-testing of soils and indoor air for non-specific volatile organic compound (VOC) concentrations. Soil from each vapor point was placed in a clean plastic zip-lock bag, and mixed thoroughly. After settling, the headspace of each bag was sampled via PID. Prior to sampling,

background VOC concentrations were measured by PID as well (0.0 ppm). VP-1 soils reported only background VOC concentrations (0.0 ppm). VP-2 reported slightly higher concentrations (0.3 ppm), but not significantly higher than background and possibly a result of soil moisture. Soils from VP-3, which had possessed an acetone or acrylic paint odor, reported a much higher VOC concentration of 11.0 ppm.

The PID is a field tool, and results from PID screening give no indication as to which compounds may be present. Furthermore, certain compounds (such as chlorinated solvents like PCE and TCE) are not easily detected by PID. To that end, laboratory results are far more reliable and comprehensive than PID readings.

2.3 Vapor Point Leak Testing

The three newly installed soil vapor monitoring points were allowed to cure for 2-3 hours prior to leak testing on February 20, 2017. To test each vapor point's airtight seal, an airtight chamber was placed over the vapor point, and the chamber was filled with helium. Samples were drawn first from the helium chamber, then from the vapor point itself, and analyzed by a hand-held helium detector (IonScience GasCheck) to determine whether helium was penetrating through the cement and bentonite seals to the subsurface. If the helium concentration in the vapor point is measured at less than 10% of the concentration in the chamber, the vapor point is considered sufficiently leak-proof for a valid sample. The results are presented in the table below, and provided in the Vapor Sampling Data Sheets in Appendix D.

Vapor Point	Chamber He (ppm)	Vapor Point He (ppm)	% Penetration
VP-1	50,000	390	0.78%
VP-2	58,000	130	0.22%
VP-3	38,000	170	0.45%

Less than 1% Helium penetration was observed at all three of the vapor points, ranging from 0.22% at VP-2 to 0.78% at VP-1. Based on this data, all three vapor points were constructed with adequate leak protection.

2.4 Sub-Slab Soil Vapor Sampling

Sub-slab soil vapor samples were collected on March 3, 2017 from all three installed vapor points. Samples were collected by WHEM using 6-liter stainless steel Silco air canisters. The canisters and flow controllers were procured by WHEM from TestAmerica Laboratory (TA) of South Burlington, Vermont prior to sampling. The flow controllers were all calibrated by TA to

provide a flow rate that allowed a final canister pressure between -7.0 and -2.0 inches of Mercury (in Hg) below ambient pressure at the completion of sampling. March 3, 2017, the samples were collected over a 4-hour run time.

The sampling procedure at each site involved attaching the flow controller to the vapor point using inert tubing, then opening the flow controller and letting it run over the desired run time. Recordings of initial canister pressure, initial ambient pressure and temperature, final canister pressure, and final ambient pressure and temperature were made. Ambient pressure values were obtained using a TSI Micromanometer, and ambient temperature was recorded using a digital thermometer or the thermostat in the sampling location. Barometric pressures were recorded using local weather station data for the date of sampling. Exact times of each sample collection and other recorded field data are shown on the Canister Samples Chain of Custody Record at the end of each lab report in Appendix C.

All samples were delivered by WHEM to TA under chain-of-custody procedures for analysis of VOCs by method TO-15. Results, in micrograms per cubic meter (ug/m^3), are discussed below.

2.5 Sub-Slab Soil Vapor Results

Results for VP-1 through VP-3 are tabulated in the attached Table 2 in Appendix B. Results have been compared to the Vermont Department of Environmental Conservation (VT DEC) Vapor Intrusion (VI) Screening Values[1] for Shallow Soil Gas. For discussion purposes, they were also compared to the VT DEC Target Indoor Air concentrations. Full laboratory reports are presented in Appendix C. These results indicate the following:

- The chlorinated solvent **Tetrachloroethene (PCE)** was detected at all three vapor points in exceedance of VT DEC Shallow Soil Gas standards. Concentrations ranged from a high of 4,900 ug/m^3 in VP-2 to a low of 860 ug/m^3 in VP-1. The VT DEC Shallow Soil Gas standard for PCE is 5.7 ug/m^3, and the Target Indoor Air concentration is 0.57 ug/m^3, so the observed concentrations are two to three orders of magnitude above guideline concentrations.

- PCE breakdown products were also detected in all three vapor points. **Trichloroethene (TCE)** was reported from a range of 440 ug/m^3 in VP-2 to 45 ug/m^3 in VP-3; the VT DEC Shallow Soil Gas Standard for TCE is 5.0 ug/m^3, and the Target Indoor Air concentration is 0.50 ug/m^3, so concentrations of TCE at all three points were reported

[1] VT DEC, Investigation and Remediation of Contaminated Properties Procedure (IROCPP), Table C.7, April 2012.

one to two orders of magnitude in exceedance of VT DEC guidelines. **Chloroform**, another breakdown product of PCE, was detected from 70 ug/m^3 in VP-3 to 5.8 ug/m^3 in VP-1. The VT DEC Shallow Soil Gas Standard for Chloroform is 3.8 ug/m^3, and the Target Indoor Air concentration is 0.38 ug/m^3, so all three points are in exceedance for this compound.

Non-chlorinated compounds were also observed in each of the vapor points, but below applicable regulatory standards, as follows:

- **Trichlorodifluoromethane** (Shallow Soil standard = 562 ug/m^3) was detected in all three vapor points, ranging from 50 ug/m^3 in VP-1 to 120 ug/m^3 in VP-3. This compound is more commonly identified as Freon-11 or CFC-11 and, like other CFCs, was used extensively as a refrigerant until its production was discontinued in January 1996. This compound is ubiquitous in urban environments; based on the concentrations observed, the presence of Trichlorodifluoromethane in subslab vapor does not appear to pose a threat to health or safety.

- Petroleum-related VOC **Toluene** was detected in VP-1 (5.7 ug/m^3) and VP-3 (8.3 ug/m^3); the Shallow Soil Gas standard for Toluene is 300,000 ug/m^3 and the Target Indoor Air concentration is 300 ug/m^3. The reported Toluene concentrations are far below any applicable standards. Based on the concentrations observed, the presence of Toluene in subslab soil vapor does not appear to pose a threat to health or safety.

- Several non-chlorinated compounds were observed below standards in **VP-3**, which notably reported a chemical odor during installation. The compounds detected in this soil vapor include Acetone (120 ug/m^3), Carbon Disulfide (20 ug/m^3), Methyl Ethyl Ketone (31 ug/m^3), Xylenes (170 ug/m^3), Cumene (25 ug/m^3), n-Propylbenzene (58 ug/m^3), 4-Ethyltoluene (82 ug/m^3), 1,3,5-Trimethylbenzene (120 ug/m^3), 1,2,4-Trimethylbenzene (74 ug/m^3), sec-Butylbenzene (13 ug/m^3), and 4-Isopropyltoluene (9.0 ug/m^3). The Shallow Soil Gas standard for Total Xylenes is 100,000 ug/m^3, and the Target Indoor Air concentration is 100 ug/m^3; none of the other compounds listed above have DEC standards associated with them. Based on the concentrations observed, the presence of these compounds in subslab soil vapor does not appear to pose a threat to health or safety.

In summary, three chlorinated VOCs exceeded VT DEC Shallow Soil Vapor standards in all three vapor points. There were no other standards exceedances detected, but a suite of other compounds were detected in VP-3. The compounds in exceedance are Tetrachloroethene (PCE), a dry cleaning solvent, and its degradation byproducts Trichloroethene (TCE) and Chloroform.

Chlorinated concentrations were overall highest at VP-2, which is in the northern portion of the basement. Chlorinated concentrations were generally lowest in VP-1, although concentrations in both VP-1 and VP-2 were similar. The full extent of the subslab vapor plume cannot be established with these three vapor monitoring points, so further testing will be required.

2.6 Differential Pressure Testing

On both February 20 and March 3, 2017, differential pressure measurements were collected from all three vapor points. Additionally, on March 3, the differential pressure between the indoor/basement air and the ambient air was also measured. Differential pressure was measured using a calibrated TSI Micromanometer. Differential pressure can be used to determine air movement from the sub-slab into the building, and from the outdoor (ambient) air into the building. A positive pressure between the sub-slab vapor and basement air indicates a potential for upward vertical vapor intrusion into the building from the subsurface, while negative pressure (vacuum) indicates a potential for downward vertical migration into the subsurface. Similarly, a positive pressure between the outdoor air and the indoor air indicates that air could be flowing in, while a negative pressure indicates that air is leaking out of basement. When building heating systems are active, the "stack effect" tends to be observed as positive differential pressure between the sub-slab and basement air. Differential pressure readings area all shown in Table 1 in Appendix B.

For optimum protection against vapor intrusion from sub-slab contaminants it is desirable to have a negative differential pressure. This can be achieved by achieving a positive pressure inside the building via the HVAC system, or by achieving a negative pressure under the slab using a sub-slab depressurization system (SSDS).

Both dates revealed comparable differential pressure readings from each of the installed vapor points. Weak positive differential pressures were observed at VP-1(0.015" H_2O on February 20, 0.006" H_2O on March 3) and VP-3 (0.002" H_2O on February 20, 0.004" H_2O on March 3). Consistently stronger positive differential pressures were observed at VP-2 (0.020" H_2O on February 20, 0.024" H_2O on March 3). A strongly positive differential pressure was observed from the outdoor air and basement air (0.044" H_2O), which was only measured on March 3. The heating system was active during both monitoring events.

The differential pressure conditions observed at the three vapor points indicate that, at least when the building is heating, there is a possibility that subslab vapors may be entering the building. The strong differential pressure observed at VP-2, which is also the most highly contaminated monitoring point, suggests that intrusion of VOCs from the subslab into the building envelope

may be occurring. The high differential pressure between the outdoor air and the building suggests that significant flow of outdoor air into the basement is likely occurring, which is probably due to the high temperature differential observed on March 3 (approximately 16°F outdoors, compared to 72°F indoors).

As a guideline for preventing vapor mitigation into buildings, the general minimum desired negative pressure under a floor is in the range of -0.025" H_2O.

3.0 CONCLUSIONS AND RECOMMENDATIONS

On February 20, 2017, three subslab soil vapor monitoring points (VP-1, VP-2, and VP-3) were installed through the basement slab of Calderwood Building #2, locate at 72 Eastern Avenue in St. Johnsbury, VT. During vapor point installation, it was determined that Building #2 has a 4-inch slab. The vapor points were installed and leak-checked in accordance with WHEM standard operating procedure. On March 3, 2017, the three vapor points were sampled using 6-liter SUMMA canisters provided by TestAmerica laboratories. The samples were collected over the course of 4 hours, via laboratory-calibrated flow controllers. There were no difficulties or spurious issues encountered during sampling. All samples were analyzed by TestAmerica laboratories via method TO-15 for volatile organic compounds. In addition to vapor sampling, differential pressures were measured from each vapor point and from the outdoor air to estimate air movement into and through the building.

Vapor sampling results indicate the presence of elevated concentrations of the chlorinated solvent Tetrachloroethene (PCE) and its breakdown daughter products Trichloroethene (TCE) and Chloroform. All three of these compounds were detected in exceedance of VT DEC Shallow Soil Standards for assessing vapor intrusion at all three vapor points. PCE was utilized as a dry cleaning solvent, and it is assumed that the presence of this compound in such high concentrations beneath the building slab are a result of the building's historic use as a dry cleaner from approximately 1943 to 1972, per historical research conducted by Verterre and validated by WHEM. In addition to chlorinated VOCs, several other VOCs were detected at low concentrations; in VP-3, VOCs typically associated with old petroleum were detected. However, only the three chlorinated VOCs mentioned exceeded screening standards.

Differential pressures at each of the vapor points were reported positive on February 20 and March 3, 2017. On both occasions, the building's heating system was active. The highest differential pressure was consistently observed at VP-2, which also contains by far the highest

concentration of chlorinated VOC concentrations. On March 3, differential pressure between the basement and outdoor air was also measured; the result suggested that outdoor/ambient air was likely entering the space, as is typical during the conditions observed (cold ambient air, heated building).

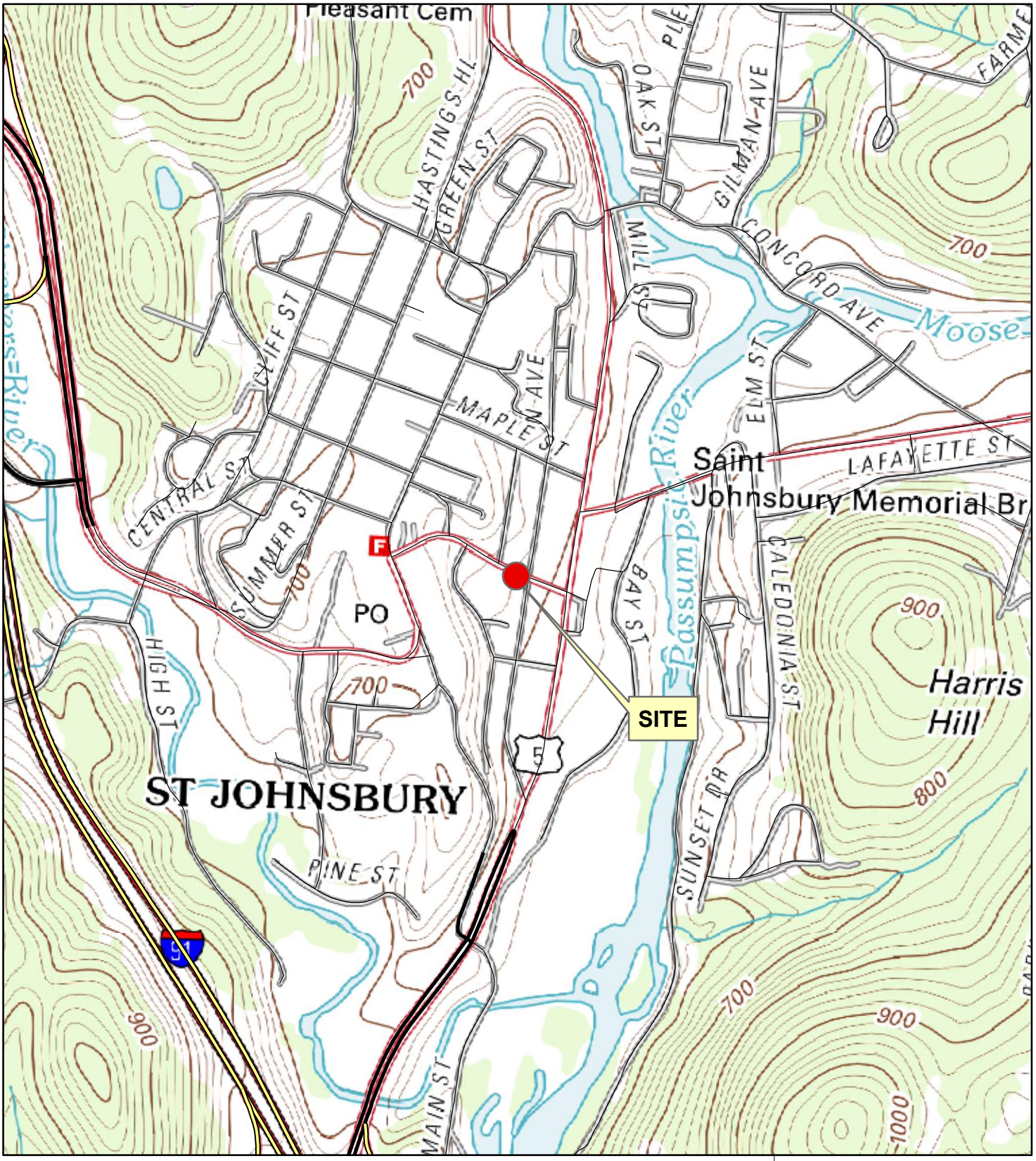
In conclusion, these data lead WHEM to believe that the intrusion of subslab soil vapor contaminated with chlorinated VOCs may be occurring at Building #2. It is also possible that, based on the concentrations observed, contaminated soil vapors extend beneath Building #1 and Building #3. VP-2, which reported the highest concentration, is located near Eastern Avenue, in the northern portion of the building footprint. It is likely that based on topography and suspected groundwater flow that PCE-related contamination would spread in a southeasterly direction, towards and underneath Building #1.

Based on these conclusions, WHEM recommends providing this report and the Phase I ESA report for review by the VT DEC, followed by indoor air quality sampling in Building #2 to evaluate the potential risk to building occupants, since the observed PCE concentrations and differential pressures at VP-2 strongly point to the possibility of PCE, TCE, and possibly Chloroform vapors entering the building envelope. Indoor samples should be collected from the first floor and second floor, with a control sample collected from exterior.

WHEM also recommends expanding the existing network of sub-slab vapor points to include monitoring locations in all three buildings. WHEM recommends the installation of an additional five (5) vapor points; two (2) of these new points would be located in Building #3, and three (3) of them would be in Building #1 (refer to Figure 2). The vapor points locations have been selected by reviewing site plans provided by Calderwood, LLC, and field checked by WHEM with the building superintendent on March 28, 2017. The purpose of soil vapor sampling in the entire building complex will be to attempt to capture the full extent of PCE in soil vapor, and to assess the possible need and appropriateness for mitigation in the affected buildings going forward.

APPENDIX A:
FIGURES

USGS Site Location Map
Figure 1: Site Plan with Soil Vapor Sampling Locations
Figure 2: Calderwood Building Complex First Floor – Existing & Proposed Vapor Sampling Locations



Calderwood Building
72 Eastern Avenue
St. Johnsbury, VT

Feet
0 580 1,160
1 inch = 1,000 feet

N
W E
S

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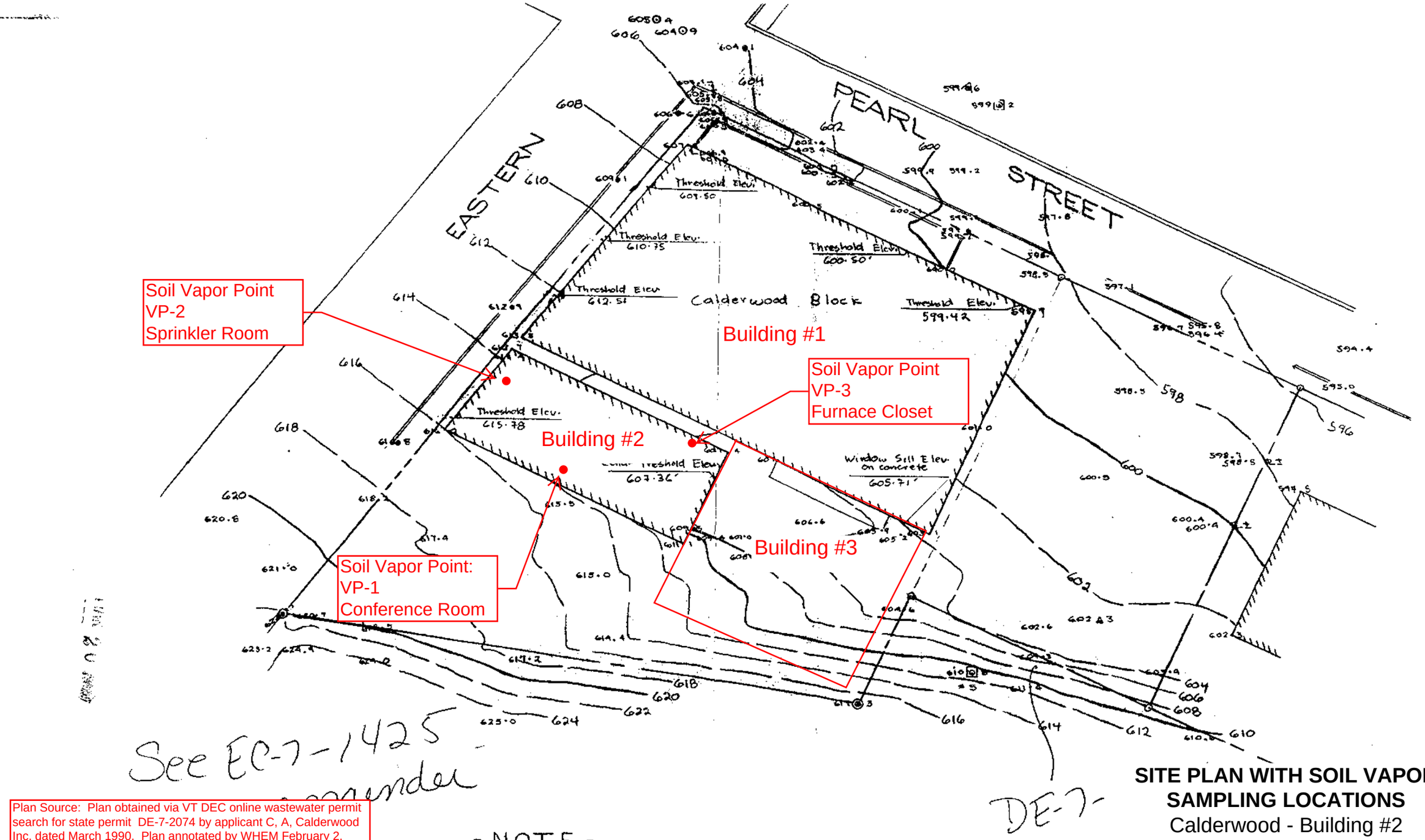
March 22, 2017
Map produced by: Chris Page
\\SERVER\Data\PROJECTS - WHEM\Calderwood St. Johnsbury\Maps Plans

2013 USGS
Easting: -72.017502
Northing: 44.417946



Plan Source: Plan obtained via VT DEC online wastewater permit search for state permit DE-7-2074 by applicant C, A, Calderwood Inc, dated March 1990. Plan annotated by WHEM February 2, 2017. Plan to be used for demonstrative purposes only.

SITE PLAN WITH SOIL VAPOR SAMPLING LOCATIONS

Calderwood - Building #2

72 Eastern Ave, St. Johnsbury

Figure 2: Calderwood Building Complex - First Floor
Existing and Proposed Vapor Sampling Locations
Rev 1:3/29/17

PVP-5

PVP-4

PVP-6

PVP-7

PVP-8

VP-1

VP-2

VP-3

Building 3

Building 2

Building 1

Eastern Avenue

North

LEGEND

VP-3 — Installed Vapor Point

PVP-9 — Proposed Vapor Point

Approximate Scale: 1 inch = 10 feet

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APPENDIX B:
TABLES

Table 1: Vapor Point Parameters
Table 2: Sub-Slab Vapor Quality

TABLE 1
Vapor Point/Physical Parameters
Calderwood Building #2

Date	Barometric Pressure (in Hg)	Differential Pressure (in H_2O)				Temperature (^oF)		Leak Check (% Helium Penetration)			Vapor Sampling?
		VP-1	VP-2	VP-3	Outdoor	Indoor	Outdoor	VP-1	VP-2	VP-3	
27-Feb	30.19	0.015	0.020	0.002	NA	72	31	0.78%	0.22%	0.45%	N
3-Mar	30.18	0.006	0.024	0.004	0.044	72	16	No Check			Y

Notes:

Barometric Pressure reported is Daily Mean from the Fairbanks Museum, K1V4

Outdoor Temperature reported is Daily Mean from the Fairbanks Museum, K1V4

Indoor Temperature is reported from thermostat in Calderwood Building #2 Basement

VP Differential Pressure = Basement to Subslab Air; a positive value means the basement is sucking air from subslab

Outdoor Differential Pressure = Basement to Outdoor Air; a positive value basement is leaking air to outdoors

TABLE 2
Soil Vapor Quality Data
Calderwood Building #2
72 Eastern Avenue, St. Johnsbury, VT

Compound	VT DEC Target Indoor Air (ug/m3)	VT DEC Shallow Soil Gas (ug/m3)	VP-1 3/3/2017 Dilution: 1:4 Method TO-15 Concentration (ug/m3)	VP-2 3/3/2017 Dilution: 1:23 Method TO-15 Concentration (ug/m3)	VP-3 3/3/2017 Dilution: 1:4 Method TO-15 Concentration (ug/m3)
Dichlorodifluoromethane (Freon 12)	200	2,000	ND/ < 9.9	ND/ < 57	ND/ < 9.9
1,2-Dichlorotetrafluoroethane	--	--	ND/ < 5.6	ND/ < 32	ND/ < 5.6
n-Butane	--	--	ND/ < 4.8	ND/ < 27	ND/ < 4.8
Vinyl Chloride	0.11	1.1	ND/ < 2.0	ND/ < 12	ND/ < 2.0
1,3-Butadiene	0.033	0.33	ND/ < 1.8	ND/ < 10	ND/ < 1.8
Trichlorofluoromethane	562	5,620	**50**	**100**	**120**
1,1-Dichloroethene	--	--	ND/ < 3.2	ND/ < 18	ND/ < 3.2
Acetone	315	3,150	ND/ < 48	ND/ < 270	**120**
Isopropyl alcohol	--	--	ND/ < 49	ND/ < 280	ND/ < 49
Carbon Disulfide	657	6,570	ND/ < 6.2	ND/ < 36	**20**
Methylene Chloride	2.1	21	ND/ < 6.9	ND/ < 40	ND/ < 6.9
tert-Butyl Alcohol (TBA)	--	--	ND/ < 61	ND/ < 350	ND/ < 61
Methyl tert-Butyl Ether (MTBE)	--	--	ND/ < 2.9	ND/ < 17	ND/ < 2.9
trans 1,2-Dichloroethene (DCE)	--	--	ND/ < 3.2	ND/ < 18	ND/ < 3.2
n-Hexane	7000	70,000	ND/ < 2.8	ND/ < 16	ND/ < 2.8
1,1-Dichloroethane	50	500	ND/ < 3.2	ND/ < 19	ND/ < 3.2
Methy Ethyl Ketone (MEK)	--	--	ND/ < 5.9	ND/ < 34	**31**
cis-1,2-Dichloroethene (DCE)	--	--	ND/ < 3.2	ND/ < 18	ND/ < 3.2
1,2-Dichloroethene (total)	--	--	ND/ < 6.3	ND/ < 36	ND/ < 6.3
Chloroform	0.38	3.8	**5.8**	**62**	**70**
Tetrahydrofuran	--	--	ND/ < 59	ND/ < 340	ND/ < 59
1,1,1-Trichloroethane	1000	10,000	ND/ < 4.4	ND/ < 25	ND/ < 4.4
Cyclohexane		820	ND/ < 2.8	ND/ < 16	ND/ < 2.8
Carbon Tetrachloride		4.1	ND/ < 5.0	ND/ < 29	ND/ < 5.0
2,2,4-Trimethylpentane	--	--	ND/ < 3.7	ND/ < 21	ND/ < 3.7
Benzene	1.18	1,180	ND/ < 2.6	ND/ < 15	ND/ < 2.6
Trichloroethene (TCE)	0.50	5.0	**82**	**440**	**45**
Bromodichloromethane	0.056	0.56	ND/ < 5.4	ND/ < 31	ND/ < 5.4
methyl isobutyl ketone (MIK)	--	--	ND/ < 8.2	ND/ < 47	ND/ < 8.2
Toluene	300	300,000	**5.7**	ND/ < 17	**8.3**
Tetrachloroethene (PCE)	0.57	5.7	**860**	**4,900**	**930**
Methyl Butyl Ketone	--	--	ND/ < 8.2	ND/ < 47	ND/ < 8.2
Ethylbenzene	100	100,000	ND/ < 3.5	ND/ < 20	ND/ < 3.5
Xylene (m,p)	--	--	ND/ < 8.7	ND/ < 50	**110**
Xylene (o)	--	--	ND/ < 3.5	ND/ < 20	**56**
Xylene (total)	100	100,000	ND/ < 12	ND/ < 70	**170**
Styrene	100	1,000	ND/ < 3.4	ND/ < 20	ND/ < 3.4
Cumene		--	ND/ < 3.9	ND/ < 23	**25**
n-Propylbenzene	--	--	ND/ < 3.9	ND/ < 23	**58**
4-Ethyltoluene	--	--	ND/ < 3.9	ND/ < 23	**82**
1,3,5-Trimethylbenzene	--	--	ND/ < 3.9	ND/ < 23	**120**
1,2,4-Trimethylbenzene	--	--	ND/ < 3.9	ND/ < 23	**74**
sec-Butylbenzene		--	ND/ < 4.4	ND/ < 25	**13**
4-Isopropyltoluene		--	ND/ < 4.4	ND/ < 25	**9.0**
Napthalene	--	3	ND/ < 10	ND/ < 60	ND/ < 10

NOTES:

VT DEC Standards are VI Screeing Values from Table C.7 of the IROCCP, April 2012

EPA RSL = Regional Screening Level for residential air (April 2012)

Bold values are reported above detection limit; Shaded values exceed appropriate standard

ND / < = not detected above laboratory detection limit

"--" = no standard; Blank Cell = no data available

APPENDIX C:
LABORATORY REPORTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
Tel: (802)660-1990

TestAmerica Job ID: 200-37618-1
TestAmerica Sample Delivery Group: 200-37618-1
Client Project/Site: Calderwood

For:
Waite-Heindel Environmental Management
7 Kilburn Street
Suite 301
Burlington, Vermont 05401

Attn: Mr. Miles Waite

Kristine Dusablon

Authorized for release by:
3/17/2017 4:35:08 PM
Kristine Dusablon, Project Manager II
(802)660-1990
kris.dusablon@testamericainc.com

Designee for

Kathryn Kelly, Project Manager I
(802)660-1990
kathryn.kelly@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 200-37618-1

Laboratory: TestAmerica Burlington

Narrative

CASE NARRATIVE

Client: Waite-Heindel Environmental Management

Project: Calderwood

Report Number: 200-37618-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 03/03/2017; the samples arrived in good condition.

VOLATILE ORGANIC COMPOUNDS
Samples VP-1, VP-2 and VP-3 were analyzed for Volatile Organic Compounds in accordance with EPA Method TO-15. The samples were analyzed on 03/10/2017 and 03/14/2017.

Samples VP-1[4X], VP-2[23X] and VP-3[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Waite-Heindel Environmental Management
Project/Site: Calderwood

TestAmerica Job ID: 200-37618-1
SDG: 200-37618-1

Client Sample ID: VP-1 — Lab Sample ID: 200-37618-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	9.0		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Chloroform	1.2		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Trichloroethene	15		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Toluene	1.5		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Tetrachloroethene	130		0.80	0.80	ppb v/v	4		TO-15	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	50		4.5	4.5	ug/m3	4		TO-15	Total/NA
Chloroform	5.8		3.9	3.9	ug/m3	4		TO-15	Total/NA
Trichloroethene	82		4.3	4.3	ug/m3	4		TO-15	Total/NA
Toluene	5.7		3.0	3.0	ug/m3	4		TO-15	Total/NA
Tetrachloroethene	860		5.4	5.4	ug/m3	4		TO-15	Total/NA

Client Sample ID: VP-2 — Lab Sample ID: 200-37618-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	18		4.6	4.6	ppb v/v	23		TO-15	Total/NA
Chloroform	13		4.6	4.6	ppb v/v	23		TO-15	Total/NA
Trichloroethene	83		4.6	4.6	ppb v/v	23		TO-15	Total/NA
Tetrachloroethene	720		4.6	4.6	ppb v/v	23		TO-15	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	100		26	26	ug/m3	23		TO-15	Total/NA
Chloroform	62		22	22	ug/m3	23		TO-15	Total/NA
Trichloroethene	440		25	25	ug/m3	23		TO-15	Total/NA
Tetrachloroethene	4900		31	31	ug/m3	23		TO-15	Total/NA

Client Sample ID: VP-3 — Lab Sample ID: 200-37618-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	21		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Acetone	49		20	20	ppb v/v	4		TO-15	Total/NA
Carbon disulfide	6.4		2.0	2.0	ppb v/v	4		TO-15	Total/NA
Methyl Ethyl Ketone	10		2.0	2.0	ppb v/v	4		TO-15	Total/NA
Chloroform	14		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Trichloroethene	8.3		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Toluene	2.2		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Tetrachloroethene	140		0.80	0.80	ppb v/v	4		TO-15	Total/NA
m,p-Xylene	26		2.0	2.0	ppb v/v	4		TO-15	Total/NA
Xylene, o-	13		0.80	0.80	ppb v/v	4		TO-15	Total/NA
Xylene (total)	39		2.8	2.8	ppb v/v	4		TO-15	Total/NA
Cumene	5.2		0.80	0.80	ppb v/v	4		TO-15	Total/NA
n-Propylbenzene	12		0.80	0.80	ppb v/v	4		TO-15	Total/NA
4-Ethyltoluene	17		0.80	0.80	ppb v/v	4		TO-15	Total/NA
1,3,5-Trimethylbenzene	24		0.80	0.80	ppb v/v	4		TO-15	Total/NA
1,2,4-Trimethylbenzene	15		0.80	0.80	ppb v/v	4		TO-15	Total/NA
sec-Butylbenzene	2.3		0.80	0.80	ppb v/v	4		TO-15	Total/NA
4-Isopropyltoluene	1.6		0.80	0.80	ppb v/v	4		TO-15	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	120		4.5	4.5	ug/m3	4		TO-15	Total/NA
Acetone	120		48	48	ug/m3	4		TO-15	Total/NA
Carbon disulfide	20		6.2	6.2	ug/m3	4		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Burlington

Client Sample ID: VP-3 (Continued)

Lab Sample ID: 200-37618-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Methyl Ethyl Ketone	31		5.9	5.9	ug/m3	4		TO-15	Total/NA
Chloroform	70		3.9	3.9	ug/m3	4		TO-15	Total/NA
Trichloroethene	45		4.3	4.3	ug/m3	4		TO-15	Total/NA
Toluene	8.3		3.0	3.0	ug/m3	4		TO-15	Total/NA
Tetrachloroethene	930		5.4	5.4	ug/m3	4		TO-15	Total/NA
m,p-Xylene	110		8.7	8.7	ug/m3	4		TO-15	Total/NA
Xylene, o-	56		3.5	3.5	ug/m3	4		TO-15	Total/NA
Xylene (total)	170		12	12	ug/m3	4		TO-15	Total/NA
Cumene	25		3.9	3.9	ug/m3	4		TO-15	Total/NA
n-Propylbenzene	58		3.9	3.9	ug/m3	4		TO-15	Total/NA
4-Ethyltoluene	82		3.9	3.9	ug/m3	4		TO-15	Total/NA
1,3,5-Trimethylbenzene	120		3.9	3.9	ug/m3	4		TO-15	Total/NA
1,2,4-Trimethylbenzene	74		3.9	3.9	ug/m3	4		TO-15	Total/NA
sec-Butylbenzene	13		4.4	4.4	ug/m3	4		TO-15	Total/NA
4-Isopropyltoluene	9.0		4.4	4.4	ug/m3	4		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: VP-1
Date Collected: 03/03/17 14:20
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-1
Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Freon 22	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
1,2-Dichlorotetrafluoroethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Chloromethane	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
n-Butane	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Vinyl chloride	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,3-Butadiene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Bromomethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Chloroethane	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Bromoethene(Vinyl Bromide)	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Trichlorofluoromethane	**9.0**		0.80	0.80	ppb v/v			03/10/17 07:44	4
Freon TF	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,1-Dichloroethene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Acetone	20	U	20	20	ppb v/v			03/10/17 07:44	4
Isopropyl alcohol	20	U	20	20	ppb v/v			03/10/17 07:44	4
Carbon disulfide	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
3-Chloropropene	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Methylene Chloride	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
tert-Butyl alcohol	20	U	20	20	ppb v/v			03/10/17 07:44	4
Methyl tert-butyl ether	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
trans-1,2-Dichloroethene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
n-Hexane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,1-Dichloroethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Methyl Ethyl Ketone	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
cis-1,2-Dichloroethene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,2-Dichloroethene, Total	1.6	U	1.6	1.6	ppb v/v			03/10/17 07:44	4
Chloroform	**1.2**		0.80	0.80	ppb v/v			03/10/17 07:44	4
Tetrahydrofuran	20	U	20	20	ppb v/v			03/10/17 07:44	4
1,1,1-Trichloroethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Cyclohexane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Carbon tetrachloride	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
2,2,4-Trimethylpentane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Benzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,2-Dichloroethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
n-Heptane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Trichloroethene	**15**		0.80	0.80	ppb v/v			03/10/17 07:44	4
Methyl methacrylate	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
1,2-Dichloropropane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,4-Dioxane	20	U	20	20	ppb v/v			03/10/17 07:44	4
Bromodichloromethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
cis-1,3-Dichloropropene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
methyl isobutyl ketone	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Toluene	**1.5**		0.80	0.80	ppb v/v			03/10/17 07:44	4
trans-1,3-Dichloropropene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,1,2-Trichloroethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Tetrachloroethene	**130**		0.80	0.80	ppb v/v			03/10/17 07:44	4
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Dibromochloromethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4

Client Sample ID: VP-1
Date Collected: 03/03/17 14:20
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-1
Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Chlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Ethylbenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
m,p-Xylene	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Xylene, o-	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Xylene (total)	2.8	U	2.8	2.8	ppb v/v			03/10/17 07:44	4
Styrene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Bromoform	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Cumene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,1,2,2-Tetrachloroethane	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
n-Propylbenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
4-Ethyltoluene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,3,5-Trimethylbenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
2-Chlorotoluene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
tert-Butylbenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,2,4-Trimethylbenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
sec-Butylbenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
4-Isopropyltoluene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,3-Dichlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,4-Dichlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Benzyl chloride	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
n-Butylbenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,2-Dichlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
1,2,4-Trichlorobenzene	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4
Hexachlorobutadiene	0.80	U	0.80	0.80	ppb v/v			03/10/17 07:44	4
Naphthalene	2.0	U	2.0	2.0	ppb v/v			03/10/17 07:44	4

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	9.9	U	9.9	9.9	ug/m3			03/10/17 07:44	4
Freon 22	7.1	U	7.1	7.1	ug/m3			03/10/17 07:44	4
1,2-Dichlorotetrafluoroethane	5.6	U	5.6	5.6	ug/m3			03/10/17 07:44	4
Chloromethane	4.1	U	4.1	4.1	ug/m3			03/10/17 07:44	4
n-Butane	4.8	U	4.8	4.8	ug/m3			03/10/17 07:44	4
Vinyl chloride	2.0	U	2.0	2.0	ug/m3			03/10/17 07:44	4
1,3-Butadiene	1.8	U	1.8	1.8	ug/m3			03/10/17 07:44	4
Bromomethane	3.1	U	3.1	3.1	ug/m3			03/10/17 07:44	4
Chloroethane	5.3	U	5.3	5.3	ug/m3			03/10/17 07:44	4
Bromoethene(Vinyl Bromide)	3.5	U	3.5	3.5	ug/m3			03/10/17 07:44	4
Trichlorofluoromethane	**50**		4.5	4.5	ug/m3			03/10/17 07:44	4
Freon TF	6.1	U	6.1	6.1	ug/m3			03/10/17 07:44	4
1,1-Dichloroethene	3.2	U	3.2	3.2	ug/m3			03/10/17 07:44	4
Acetone	48	U	48	48	ug/m3			03/10/17 07:44	4
Isopropyl alcohol	49	U	49	49	ug/m3			03/10/17 07:44	4
Carbon disulfide	6.2	U	6.2	6.2	ug/m3			03/10/17 07:44	4
3-Chloropropene	6.3	U	6.3	6.3	ug/m3			03/10/17 07:44	4
Methylene Chloride	6.9	U	6.9	6.9	ug/m3			03/10/17 07:44	4
tert-Butyl alcohol	61	U	61	61	ug/m3			03/10/17 07:44	4
Methyl tert-butyl ether	2.9	U	2.9	2.9	ug/m3			03/10/17 07:44	4
trans-1,2-Dichloroethene	3.2	U	3.2	3.2	ug/m3			03/10/17 07:44	4

Client Sample ID: VP-1
Date Collected: 03/03/17 14:20
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-1
Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
n-Hexane	2.8	U	2.8	2.8	ug/m3			03/10/17 07:44	4
1,1-Dichloroethane	3.2	U	3.2	3.2	ug/m3			03/10/17 07:44	4
Methyl Ethyl Ketone	5.9	U	5.9	5.9	ug/m3			03/10/17 07:44	4
cis-1,2-Dichloroethene	3.2	U	3.2	3.2	ug/m3			03/10/17 07:44	4
1,2-Dichloroethene, Total	6.3	U	6.3	6.3	ug/m3			03/10/17 07:44	4
Chloroform	**5.8**		3.9	3.9	ug/m3			03/10/17 07:44	4
Tetrahydrofuran	59	U	59	59	ug/m3			03/10/17 07:44	4
1,1,1-Trichloroethane	4.4	U	4.4	4.4	ug/m3			03/10/17 07:44	4
Cyclohexane	2.8	U	2.8	2.8	ug/m3			03/10/17 07:44	4
Carbon tetrachloride	5.0	U	5.0	5.0	ug/m3			03/10/17 07:44	4
2,2,4-Trimethylpentane	3.7	U	3.7	3.7	ug/m3			03/10/17 07:44	4
Benzene	2.6	U	2.6	2.6	ug/m3			03/10/17 07:44	4
1,2-Dichloroethane	3.2	U	3.2	3.2	ug/m3			03/10/17 07:44	4
n-Heptane	3.3	U	3.3	3.3	ug/m3			03/10/17 07:44	4
Trichloroethene	**82**		4.3	4.3	ug/m3			03/10/17 07:44	4
Methyl methacrylate	8.2	U	8.2	8.2	ug/m3			03/10/17 07:44	4
1,2-Dichloropropane	3.7	U	3.7	3.7	ug/m3			03/10/17 07:44	4
1,4-Dioxane	72	U	72	72	ug/m3			03/10/17 07:44	4
Bromodichloromethane	5.4	U	5.4	5.4	ug/m3			03/10/17 07:44	4
cis-1,3-Dichloropropene	3.6	U	3.6	3.6	ug/m3			03/10/17 07:44	4
methyl isobutyl ketone	8.2	U	8.2	8.2	ug/m3			03/10/17 07:44	4
Toluene	**5.7**		3.0	3.0	ug/m3			03/10/17 07:44	4
trans-1,3-Dichloropropene	3.6	U	3.6	3.6	ug/m3			03/10/17 07:44	4
1,1,2-Trichloroethane	4.4	U	4.4	4.4	ug/m3			03/10/17 07:44	4
Tetrachloroethene	**860**		5.4	5.4	ug/m3			03/10/17 07:44	4
Methyl Butyl Ketone (2-Hexanone)	8.2	U	8.2	8.2	ug/m3			03/10/17 07:44	4
Dibromochloromethane	6.8	U	6.8	6.8	ug/m3			03/10/17 07:44	4
1,2-Dibromoethane	6.1	U	6.1	6.1	ug/m3			03/10/17 07:44	4
Chlorobenzene	3.7	U	3.7	3.7	ug/m3			03/10/17 07:44	4
Ethylbenzene	3.5	U	3.5	3.5	ug/m3			03/10/17 07:44	4
m,p-Xylene	8.7	U	8.7	8.7	ug/m3			03/10/17 07:44	4
Xylene, o-	3.5	U	3.5	3.5	ug/m3			03/10/17 07:44	4
Xylene (total)	12	U	12	12	ug/m3			03/10/17 07:44	4
Styrene	3.4	U	3.4	3.4	ug/m3			03/10/17 07:44	4
Bromoform	8.3	U	8.3	8.3	ug/m3			03/10/17 07:44	4
Cumene	3.9	U	3.9	3.9	ug/m3			03/10/17 07:44	4
1,1,2,2-Tetrachloroethane	5.5	U	5.5	5.5	ug/m3			03/10/17 07:44	4
n-Propylbenzene	3.9	U	3.9	3.9	ug/m3			03/10/17 07:44	4
4-Ethyltoluene	3.9	U	3.9	3.9	ug/m3			03/10/17 07:44	4
1,3,5-Trimethylbenzene	3.9	U	3.9	3.9	ug/m3			03/10/17 07:44	4
2-Chlorotoluene	4.1	U	4.1	4.1	ug/m3			03/10/17 07:44	4
tert-Butylbenzene	4.4	U	4.4	4.4	ug/m3			03/10/17 07:44	4
1,2,4-Trimethylbenzene	3.9	U	3.9	3.9	ug/m3			03/10/17 07:44	4
sec-Butylbenzene	4.4	U	4.4	4.4	ug/m3			03/10/17 07:44	4
4-Isopropyltoluene	4.4	U	4.4	4.4	ug/m3			03/10/17 07:44	4
1,3-Dichlorobenzene	4.8	U	4.8	4.8	ug/m3			03/10/17 07:44	4
1,4-Dichlorobenzene	4.8	U	4.8	4.8	ug/m3			03/10/17 07:44	4
Benzyl chloride	4.1	U	4.1	4.1	ug/m3			03/10/17 07:44	4

Client Sample ID: VP-1

Lab Sample ID: 200-37618-1

Date Collected: 03/03/17 14:20
Matrix: Air
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butylbenzene	4.4	U	4.4	4.4	ug/m3			03/10/17 07:44	4
1,2-Dichlorobenzene	4.8	U	4.8	4.8	ug/m3			03/10/17 07:44	4
1,2,4-Trichlorobenzene	15	U	15	15	ug/m3			03/10/17 07:44	4
Hexachlorobutadiene	8.5	U	8.5	8.5	ug/m3			03/10/17 07:44	4
Naphthalene	10	U	10	10	ug/m3			03/10/17 07:44	4

Client Sample ID: VP-2

Lab Sample ID: 200-37618-2

Date Collected: 03/03/17 14:26
Matrix: Air
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	12	U	12	12	ppb v/v			03/10/17 08:33	23
Freon 22	12	U	12	12	ppb v/v			03/10/17 08:33	23
1,2-Dichlorotetrafluoroethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Chloromethane	12	U	12	12	ppb v/v			03/10/17 08:33	23
n-Butane	12	U	12	12	ppb v/v			03/10/17 08:33	23
Vinyl chloride	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,3-Butadiene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Bromomethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Chloroethane	12	U	12	12	ppb v/v			03/10/17 08:33	23
Bromoethene(Vinyl Bromide)	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Trichlorofluoromethane	**18**		4.6	4.6	ppb v/v			03/10/17 08:33	23
Freon TF	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,1-Dichloroethene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Acetone	120	U	120	120	ppb v/v			03/10/17 08:33	23
Isopropyl alcohol	120	U	120	120	ppb v/v			03/10/17 08:33	23
Carbon disulfide	12	U	12	12	ppb v/v			03/10/17 08:33	23
3-Chloropropene	12	U	12	12	ppb v/v			03/10/17 08:33	23
Methylene Chloride	12	U	12	12	ppb v/v			03/10/17 08:33	23
tert-Butyl alcohol	120	U	120	120	ppb v/v			03/10/17 08:33	23
Methyl tert-butyl ether	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
trans-1,2-Dichloroethene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
n-Hexane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,1-Dichloroethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Methyl Ethyl Ketone	12	U	12	12	ppb v/v			03/10/17 08:33	23
cis-1,2-Dichloroethene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,2-Dichloroethene, Total	9.2	U	9.2	9.2	ppb v/v			03/10/17 08:33	23
Chloroform	**13**		4.6	4.6	ppb v/v			03/10/17 08:33	23
Tetrahydrofuran	120	U	120	120	ppb v/v			03/10/17 08:33	23
1,1,1-Trichloroethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Cyclohexane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Carbon tetrachloride	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
2,2,4-Trimethylpentane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Benzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,2-Dichloroethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
n-Heptane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Trichloroethene	**83**		4.6	4.6	ppb v/v			03/10/17 08:33	23

Client Sample ID: VP-2

Date Collected: 03/03/17 14:26
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-2

Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl methacrylate	12	U	12	12	ppb v/v			03/10/17 08:33	23
1,2-Dichloropropane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,4-Dioxane	120	U	120	120	ppb v/v			03/10/17 08:33	23
Bromodichloromethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
cis-1,3-Dichloropropene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
methyl isobutyl ketone	12	U	12	12	ppb v/v			03/10/17 08:33	23
Toluene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
trans-1,3-Dichloropropene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,1,2-Trichloroethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Tetrachloroethene	**720**		4.6	4.6	ppb v/v			03/10/17 08:33	23
Methyl Butyl Ketone (2-Hexanone)	12	U	12	12	ppb v/v			03/10/17 08:33	23
Dibromochloromethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,2-Dibromoethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Chlorobenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Ethylbenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
m,p-Xylene	12	U	12	12	ppb v/v			03/10/17 08:33	23
Xylene, o-	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Xylene (total)	16	U	16	16	ppb v/v			03/10/17 08:33	23
Styrene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Bromoform	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Cumene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,1,2,2-Tetrachloroethane	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
n-Propylbenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
4-Ethyltoluene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,3,5-Trimethylbenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
2-Chlorotoluene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
tert-Butylbenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,2,4-Trimethylbenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
sec-Butylbenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
4-Isopropyltoluene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,3-Dichlorobenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,4-Dichlorobenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Benzyl chloride	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
n-Butylbenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,2-Dichlorobenzene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
1,2,4-Trichlorobenzene	12	U	12	12	ppb v/v			03/10/17 08:33	23
Hexachlorobutadiene	4.6	U	4.6	4.6	ppb v/v			03/10/17 08:33	23
Naphthalene	12	U	12	12	ppb v/v			03/10/17 08:33	23

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	57	U	57	57	ug/m3			03/10/17 08:33	23
Freon 22	41	U	41	41	ug/m3			03/10/17 08:33	23
1,2-Dichlorotetrafluoroethane	32	U	32	32	ug/m3			03/10/17 08:33	23
Chloromethane	24	U	24	24	ug/m3			03/10/17 08:33	23
n-Butane	27	U	27	27	ug/m3			03/10/17 08:33	23
Vinyl chloride	12	U	12	12	ug/m3			03/10/17 08:33	23
1,3-Butadiene	10	U	10	10	ug/m3			03/10/17 08:33	23
Bromomethane	18	U	18	18	ug/m3			03/10/17 08:33	23
Chloroethane	30	U	30	30	ug/m3			03/10/17 08:33	23

Client Sample ID: VP-2

Date Collected: 03/03/17 14:26
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-2

Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoethene(Vinyl Bromide)	20	U	20	20	ug/m3			03/10/17 08:33	23
Trichlorofluoromethane	**100**		26	26	ug/m3			03/10/17 08:33	23
Freon TF	35	U	35	35	ug/m3			03/10/17 08:33	23
1,1-Dichloroethene	18	U	18	18	ug/m3			03/10/17 08:33	23
Acetone	270	U	270	270	ug/m3			03/10/17 08:33	23
Isopropyl alcohol	280	U	280	280	ug/m3			03/10/17 08:33	23
Carbon disulfide	36	U	36	36	ug/m3			03/10/17 08:33	23
3-Chloropropene	36	U	36	36	ug/m3			03/10/17 08:33	23
Methylene Chloride	40	U	40	40	ug/m3			03/10/17 08:33	23
tert-Butyl alcohol	350	U	350	350	ug/m3			03/10/17 08:33	23
Methyl tert-butyl ether	17	U	17	17	ug/m3			03/10/17 08:33	23
trans-1,2-Dichloroethene	18	U	18	18	ug/m3			03/10/17 08:33	23
n-Hexane	16	U	16	16	ug/m3			03/10/17 08:33	23
1,1-Dichloroethane	19	U	19	19	ug/m3			03/10/17 08:33	23
Methyl Ethyl Ketone	34	U	34	34	ug/m3			03/10/17 08:33	23
cis-1,2-Dichloroethene	18	U	18	18	ug/m3			03/10/17 08:33	23
1,2-Dichloroethene, Total	36	U	36	36	ug/m3			03/10/17 08:33	23
Chloroform	**62**		22	22	ug/m3			03/10/17 08:33	23
Tetrahydrofuran	340	U	340	340	ug/m3			03/10/17 08:33	23
1,1,1-Trichloroethane	25	U	25	25	ug/m3			03/10/17 08:33	23
Cyclohexane	16	U	16	16	ug/m3			03/10/17 08:33	23
Carbon tetrachloride	29	U	29	29	ug/m3			03/10/17 08:33	23
2,2,4-Trimethylpentane	21	U	21	21	ug/m3			03/10/17 08:33	23
Benzene	15	U	15	15	ug/m3			03/10/17 08:33	23
1,2-Dichloroethane	19	U	19	19	ug/m3			03/10/17 08:33	23
n-Heptane	19	U	19	19	ug/m3			03/10/17 08:33	23
Trichloroethene	**440**		25	25	ug/m3			03/10/17 08:33	23
Methyl methacrylate	47	U	47	47	ug/m3			03/10/17 08:33	23
1,2-Dichloropropane	21	U	21	21	ug/m3			03/10/17 08:33	23
1,4-Dioxane	410	U	410	410	ug/m3			03/10/17 08:33	23
Bromodichloromethane	31	U	31	31	ug/m3			03/10/17 08:33	23
cis-1,3-Dichloropropene	21	U	21	21	ug/m3			03/10/17 08:33	23
methyl isobutyl ketone	47	U	47	47	ug/m3			03/10/17 08:33	23
Toluene	17	U	17	17	ug/m3			03/10/17 08:33	23
trans-1,3-Dichloropropene	21	U	21	21	ug/m3			03/10/17 08:33	23
1,1,2-Trichloroethane	25	U	25	25	ug/m3			03/10/17 08:33	23
Tetrachloroethene	**4900**		31	31	ug/m3			03/10/17 08:33	23
Methyl Butyl Ketone (2-Hexanone)	47	U	47	47	ug/m3			03/10/17 08:33	23
Dibromochloromethane	39	U	39	39	ug/m3			03/10/17 08:33	23
1,2-Dibromoethane	35	U	35	35	ug/m3			03/10/17 08:33	23
Chlorobenzene	21	U	21	21	ug/m3			03/10/17 08:33	23
Ethylbenzene	20	U	20	20	ug/m3			03/10/17 08:33	23
m,p-Xylene	50	U	50	50	ug/m3			03/10/17 08:33	23
Xylene, o-	20	U	20	20	ug/m3			03/10/17 08:33	23
Xylene (total)	70	U	70	70	ug/m3			03/10/17 08:33	23
Styrene	20	U	20	20	ug/m3			03/10/17 08:33	23
Bromoform	48	U	48	48	ug/m3			03/10/17 08:33	23
Cumene	23	U	23	23	ug/m3			03/10/17 08:33	23

Client Sample ID: VP-2

Lab Sample ID: 200-37618-2

Date Collected: 03/03/17 14:26

Matrix: Air

Date Received: 03/03/17 16:34

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	32	U	32	32	ug/m3			03/10/17 08:33	23
n-Propylbenzene	23	U	23	23	ug/m3			03/10/17 08:33	23
4-Ethyltoluene	23	U	23	23	ug/m3			03/10/17 08:33	23
1,3,5-Trimethylbenzene	23	U	23	23	ug/m3			03/10/17 08:33	23
2-Chlorotoluene	24	U	24	24	ug/m3			03/10/17 08:33	23
tert-Butylbenzene	25	U	25	25	ug/m3			03/10/17 08:33	23
1,2,4-Trimethylbenzene	23	U	23	23	ug/m3			03/10/17 08:33	23
sec-Butylbenzene	25	U	25	25	ug/m3			03/10/17 08:33	23
4-Isopropyltoluene	25	U	25	25	ug/m3			03/10/17 08:33	23
1,3-Dichlorobenzene	28	U	28	28	ug/m3			03/10/17 08:33	23
1,4-Dichlorobenzene	28	U	28	28	ug/m3			03/10/17 08:33	23
Benzyl chloride	24	U	24	24	ug/m3			03/10/17 08:33	23
n-Butylbenzene	25	U	25	25	ug/m3			03/10/17 08:33	23
1,2-Dichlorobenzene	28	U	28	28	ug/m3			03/10/17 08:33	23
1,2,4-Trichlorobenzene	85	U	85	85	ug/m3			03/10/17 08:33	23
Hexachlorobutadiene	49	U	49	49	ug/m3			03/10/17 08:33	23
Naphthalene	60	U	60	60	ug/m3			03/10/17 08:33	23

Client Sample ID: VP-3

Lab Sample ID: 200-37618-3

Date Collected: 03/03/17 14:33

Matrix: Air

Date Received: 03/03/17 16:34

Sample Container: Summa Canister 6L

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
Freon 22	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
1,2-Dichlorotetrafluoroethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Chloromethane	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
n-Butane	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
Vinyl chloride	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,3-Butadiene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Bromomethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Chloroethane	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
Bromoethene(Vinyl Bromide)	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Trichlorofluoromethane	**21**		0.80	0.80	ppb v/v			03/14/17 23:32	4
Freon TF	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,1-Dichloroethene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Acetone	**49**		20	20	ppb v/v			03/14/17 23:32	4
Isopropyl alcohol	20	U	20	20	ppb v/v			03/14/17 23:32	4
Carbon disulfide	**6.4**		2.0	2.0	ppb v/v			03/14/17 23:32	4
3-Chloropropene	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
Methylene Chloride	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
tert-Butyl alcohol	20	U	20	20	ppb v/v			03/14/17 23:32	4
Methyl tert-butyl ether	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
trans-1,2-Dichloroethene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
n-Hexane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,1-Dichloroethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Methyl Ethyl Ketone	**10**		2.0	2.0	ppb v/v			03/14/17 23:32	4

Client Sample ID: VP-3
Date Collected: 03/03/17 14:33
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-3
Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,2-Dichloroethene, Total	1.6	U	1.6	1.6	ppb v/v			03/14/17 23:32	4
Chloroform	**14**		0.80	0.80	ppb v/v			03/14/17 23:32	4
Tetrahydrofuran	20	U	20	20	ppb v/v			03/14/17 23:32	4
1,1,1-Trichloroethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Cyclohexane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Carbon tetrachloride	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
2,2,4-Trimethylpentane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Benzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,2-Dichloroethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
n-Heptane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Trichloroethene	**8.3**		0.80	0.80	ppb v/v			03/14/17 23:32	4
Methyl methacrylate	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
1,2-Dichloropropane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,4-Dioxane	20	U	20	20	ppb v/v			03/14/17 23:32	4
Bromodichloromethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
cis-1,3-Dichloropropene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
methyl isobutyl ketone	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
Toluene	**2.2**		0.80	0.80	ppb v/v			03/14/17 23:32	4
trans-1,3-Dichloropropene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,1,2-Trichloroethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Tetrachloroethene	**140**		0.80	0.80	ppb v/v			03/14/17 23:32	4
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4
Dibromochloromethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,2-Dibromoethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Chlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Ethylbenzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
m,p-Xylene	**26**		2.0	2.0	ppb v/v			03/14/17 23:32	4
Xylene, o-	**13**		0.80	0.80	ppb v/v			03/14/17 23:32	4
Xylene (total)	**39**		2.8	2.8	ppb v/v			03/14/17 23:32	4
Styrene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Bromoform	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Cumene	**5.2**		0.80	0.80	ppb v/v			03/14/17 23:32	4
1,1,2,2-Tetrachloroethane	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
n-Propylbenzene	**12**		0.80	0.80	ppb v/v			03/14/17 23:32	4
4-Ethyltoluene	**17**		0.80	0.80	ppb v/v			03/14/17 23:32	4
1,3,5-Trimethylbenzene	**24**		0.80	0.80	ppb v/v			03/14/17 23:32	4
2-Chlorotoluene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
tert-Butylbenzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,2,4-Trimethylbenzene	**15**		0.80	0.80	ppb v/v			03/14/17 23:32	4
sec-Butylbenzene	**2.3**		0.80	0.80	ppb v/v			03/14/17 23:32	4
4-Isopropyltoluene	**1.6**		0.80	0.80	ppb v/v			03/14/17 23:32	4
1,3-Dichlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,4-Dichlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Benzyl chloride	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
n-Butylbenzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,2-Dichlorobenzene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
1,2,4-Trichlorobenzene	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4

Client Sample ID: VP-3
Date Collected: 03/03/17 14:33
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-3
Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	0.80	U	0.80	0.80	ppb v/v			03/14/17 23:32	4
Naphthalene	2.0	U	2.0	2.0	ppb v/v			03/14/17 23:32	4

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	9.9	U	9.9	9.9	ug/m3			03/14/17 23:32	4
Freon 22	7.1	U	7.1	7.1	ug/m3			03/14/17 23:32	4
1,2-Dichlorotetrafluoroethane	5.6	U	5.6	5.6	ug/m3			03/14/17 23:32	4
Chloromethane	4.1	U	4.1	4.1	ug/m3			03/14/17 23:32	4
n-Butane	4.8	U	4.8	4.8	ug/m3			03/14/17 23:32	4
Vinyl chloride	2.0	U	2.0	2.0	ug/m3			03/14/17 23:32	4
1,3-Butadiene	1.8	U	1.8	1.8	ug/m3			03/14/17 23:32	4
Bromomethane	3.1	U	3.1	3.1	ug/m3			03/14/17 23:32	4
Chloroethane	5.3	U	5.3	5.3	ug/m3			03/14/17 23:32	4
Bromoethene(Vinyl Bromide)	3.5	U	3.5	3.5	ug/m3			03/14/17 23:32	4
Trichlorofluoromethane	**120**		4.5	4.5	ug/m3			03/14/17 23:32	4
Freon TF	6.1	U	6.1	6.1	ug/m3			03/14/17 23:32	4
1,1-Dichloroethene	3.2	U	3.2	3.2	ug/m3			03/14/17 23:32	4
Acetone	**120**		48	48	ug/m3			03/14/17 23:32	4
Isopropyl alcohol	49	U	49	49	ug/m3			03/14/17 23:32	4
Carbon disulfide	**20**		6.2	6.2	ug/m3			03/14/17 23:32	4
3-Chloropropene	6.3	U	6.3	6.3	ug/m3			03/14/17 23:32	4
Methylene Chloride	6.9	U	6.9	6.9	ug/m3			03/14/17 23:32	4
tert-Butyl alcohol	61	U	61	61	ug/m3			03/14/17 23:32	4
Methyl tert-butyl ether	2.9	U	2.9	2.9	ug/m3			03/14/17 23:32	4
trans-1,2-Dichloroethene	3.2	U	3.2	3.2	ug/m3			03/14/17 23:32	4
n-Hexane	2.8	U	2.8	2.8	ug/m3			03/14/17 23:32	4
1,1-Dichloroethane	3.2	U	3.2	3.2	ug/m3			03/14/17 23:32	4
Methyl Ethyl Ketone	**31**		5.9	5.9	ug/m3			03/14/17 23:32	4
cis-1,2-Dichloroethene	3.2	U	3.2	3.2	ug/m3			03/14/17 23:32	4
1,2-Dichloroethene, Total	6.3	U	6.3	6.3	ug/m3			03/14/17 23:32	4
Chloroform	**70**		3.9	3.9	ug/m3			03/14/17 23:32	4
Tetrahydrofuran	59	U	59	59	ug/m3			03/14/17 23:32	4
1,1,1-Trichloroethane	4.4	U	4.4	4.4	ug/m3			03/14/17 23:32	4
Cyclohexane	2.8	U	2.8	2.8	ug/m3			03/14/17 23:32	4
Carbon tetrachloride	5.0	U	5.0	5.0	ug/m3			03/14/17 23:32	4
2,2,4-Trimethylpentane	3.7	U	3.7	3.7	ug/m3			03/14/17 23:32	4
Benzene	2.6	U	2.6	2.6	ug/m3			03/14/17 23:32	4
1,2-Dichloroethane	3.2	U	3.2	3.2	ug/m3			03/14/17 23:32	4
n-Heptane	3.3	U	3.3	3.3	ug/m3			03/14/17 23:32	4
Trichloroethene	**45**		4.3	4.3	ug/m3			03/14/17 23:32	4
Methyl methacrylate	8.2	U	8.2	8.2	ug/m3			03/14/17 23:32	4
1,2-Dichloropropane	3.7	U	3.7	3.7	ug/m3			03/14/17 23:32	4
1,4-Dioxane	72	U	72	72	ug/m3			03/14/17 23:32	4
Bromodichloromethane	5.4	U	5.4	5.4	ug/m3			03/14/17 23:32	4
cis-1,3-Dichloropropene	3.6	U	3.6	3.6	ug/m3			03/14/17 23:32	4
methyl isobutyl ketone	8.2	U	8.2	8.2	ug/m3			03/14/17 23:32	4
Toluene	**8.3**		3.0	3.0	ug/m3			03/14/17 23:32	4
trans-1,3-Dichloropropene	3.6	U	3.6	3.6	ug/m3			03/14/17 23:32	4
1,1,2-Trichloroethane	4.4	U	4.4	4.4	ug/m3			03/14/17 23:32	4

Client Sample ID: VP-3
Date Collected: 03/03/17 14:33
Date Received: 03/03/17 16:34
Sample Container: Summa Canister 6L

Lab Sample ID: 200-37618-3
Matrix: Air

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	**930**		5.4	5.4	ug/m3			03/14/17 23:32	4
Methyl Butyl Ketone (2-Hexanone)	8.2	U	8.2	8.2	ug/m3			03/14/17 23:32	4
Dibromochloromethane	6.8	U	6.8	6.8	ug/m3			03/14/17 23:32	4
1,2-Dibromoethane	6.1	U	6.1	6.1	ug/m3			03/14/17 23:32	4
Chlorobenzene	3.7	U	3.7	3.7	ug/m3			03/14/17 23:32	4
Ethylbenzene	3.5	U	3.5	3.5	ug/m3			03/14/17 23:32	4
m,p-Xylene	**110**		8.7	8.7	ug/m3			03/14/17 23:32	4
Xylene, o-	**56**		3.5	3.5	ug/m3			03/14/17 23:32	4
Xylene (total)	**170**		12	12	ug/m3			03/14/17 23:32	4
Styrene	3.4	U	3.4	3.4	ug/m3			03/14/17 23:32	4
Bromoform	8.3	U	8.3	8.3	ug/m3			03/14/17 23:32	4
Cumene	**25**		3.9	3.9	ug/m3			03/14/17 23:32	4
1,1,2,2-Tetrachloroethane	5.5	U	5.5	5.5	ug/m3			03/14/17 23:32	4
n-Propylbenzene	**58**		3.9	3.9	ug/m3			03/14/17 23:32	4
4-Ethyltoluene	**82**		3.9	3.9	ug/m3			03/14/17 23:32	4
1,3,5-Trimethylbenzene	**120**		3.9	3.9	ug/m3			03/14/17 23:32	4
2-Chlorotoluene	4.1	U	4.1	4.1	ug/m3			03/14/17 23:32	4
tert-Butylbenzene	4.4	U	4.4	4.4	ug/m3			03/14/17 23:32	4
1,2,4-Trimethylbenzene	**74**		3.9	3.9	ug/m3			03/14/17 23:32	4
sec-Butylbenzene	**13**		4.4	4.4	ug/m3			03/14/17 23:32	4
4-Isopropyltoluene	**9.0**		4.4	4.4	ug/m3			03/14/17 23:32	4
1,3-Dichlorobenzene	4.8	U	4.8	4.8	ug/m3			03/14/17 23:32	4
1,4-Dichlorobenzene	4.8	U	4.8	4.8	ug/m3			03/14/17 23:32	4
Benzyl chloride	4.1	U	4.1	4.1	ug/m3			03/14/17 23:32	4
n-Butylbenzene	4.4	U	4.4	4.4	ug/m3			03/14/17 23:32	4
1,2-Dichlorobenzene	4.8	U	4.8	4.8	ug/m3			03/14/17 23:32	4
1,2,4-Trichlorobenzene	15	U	15	15	ug/m3			03/14/17 23:32	4
Hexachlorobutadiene	8.5	U	8.5	8.5	ug/m3			03/14/17 23:32	4
Naphthalene	10	U	10	10	ug/m3			03/14/17 23:32	4

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 200-114780/4
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Freon 22	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
1,2-Dichlorotetrafluoroethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Chloromethane	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
n-Butane	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Vinyl chloride	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,3-Butadiene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Bromomethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Chloroethane	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Bromoethene(Vinyl Bromide)	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Trichlorofluoromethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Freon TF	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,1-Dichloroethene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Acetone	5.0	U	5.0	5.0	ppb v/v			03/09/17 15:27	1
Isopropyl alcohol	5.0	U	5.0	5.0	ppb v/v			03/09/17 15:27	1
Carbon disulfide	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
3-Chloropropene	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Methylene Chloride	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
tert-Butyl alcohol	5.0	U	5.0	5.0	ppb v/v			03/09/17 15:27	1
Methyl tert-butyl ether	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
trans-1,2-Dichloroethene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
n-Hexane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,1-Dichloroethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Methyl Ethyl Ketone	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
cis-1,2-Dichloroethene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,2-Dichloroethene, Total	0.40	U	0.40	0.40	ppb v/v			03/09/17 15:27	1
Chloroform	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Tetrahydrofuran	5.0	U	5.0	5.0	ppb v/v			03/09/17 15:27	1
1,1,1-Trichloroethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Cyclohexane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Carbon tetrachloride	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
2,2,4-Trimethylpentane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Benzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,2-Dichloroethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
n-Heptane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Trichloroethene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Methyl methacrylate	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
1,2-Dichloropropane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,4-Dioxane	5.0	U	5.0	5.0	ppb v/v			03/09/17 15:27	1
Bromodichloromethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
cis-1,3-Dichloropropene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
methyl isobutyl ketone	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Toluene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
trans-1,3-Dichloropropene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,1,2-Trichloroethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Tetrachloroethene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Dibromochloromethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 200-114780/4
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Chlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Ethylbenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
m,p-Xylene	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Xylene, o-	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Xylene (total)	0.70	U	0.70	0.70	ppb v/v			03/09/17 15:27	1
Styrene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Bromoform	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Cumene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
n-Propylbenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
4-Ethyltoluene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,3,5-Trimethylbenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
2-Chlorotoluene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
tert-Butylbenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,2,4-Trimethylbenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
sec-Butylbenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
4-Isopropyltoluene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,3-Dichlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,4-Dichlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Benzyl chloride	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
n-Butylbenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,2-Dichlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1
Hexachlorobutadiene	0.20	U	0.20	0.20	ppb v/v			03/09/17 15:27	1
Naphthalene	0.50	U	0.50	0.50	ppb v/v			03/09/17 15:27	1

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	2.5	U	2.5	2.5	ug/m3			03/09/17 15:27	1
Freon 22	1.8	U	1.8	1.8	ug/m3			03/09/17 15:27	1
1,2-Dichlorotetrafluoroethane	1.4	U	1.4	1.4	ug/m3			03/09/17 15:27	1
Chloromethane	1.0	U	1.0	1.0	ug/m3			03/09/17 15:27	1
n-Butane	1.2	U	1.2	1.2	ug/m3			03/09/17 15:27	1
Vinyl chloride	0.51	U	0.51	0.51	ug/m3			03/09/17 15:27	1
1,3-Butadiene	0.44	U	0.44	0.44	ug/m3			03/09/17 15:27	1
Bromomethane	0.78	U	0.78	0.78	ug/m3			03/09/17 15:27	1
Chloroethane	1.3	U	1.3	1.3	ug/m3			03/09/17 15:27	1
Bromoethene(Vinyl Bromide)	0.87	U	0.87	0.87	ug/m3			03/09/17 15:27	1
Trichlorofluoromethane	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
Freon TF	1.5	U	1.5	1.5	ug/m3			03/09/17 15:27	1
1,1-Dichloroethene	0.79	U	0.79	0.79	ug/m3			03/09/17 15:27	1
Acetone	12	U	12	12	ug/m3			03/09/17 15:27	1
Isopropyl alcohol	12	U	12	12	ug/m3			03/09/17 15:27	1
Carbon disulfide	1.6	U	1.6	1.6	ug/m3			03/09/17 15:27	1
3-Chloropropene	1.6	U	1.6	1.6	ug/m3			03/09/17 15:27	1
Methylene Chloride	1.7	U	1.7	1.7	ug/m3			03/09/17 15:27	1
tert-Butyl alcohol	15	U	15	15	ug/m3			03/09/17 15:27	1
Methyl tert-butyl ether	0.72	U	0.72	0.72	ug/m3			03/09/17 15:27	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 200-114780/4
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.79	U	0.79	0.79	ug/m3			03/09/17 15:27	1
n-Hexane	0.70	U	0.70	0.70	ug/m3			03/09/17 15:27	1
1,1-Dichloroethane	0.81	U	0.81	0.81	ug/m3			03/09/17 15:27	1
Methyl Ethyl Ketone	1.5	U	1.5	1.5	ug/m3			03/09/17 15:27	1
cis-1,2-Dichloroethene	0.79	U	0.79	0.79	ug/m3			03/09/17 15:27	1
1,2-Dichloroethene, Total	1.6	U	1.6	1.6	ug/m3			03/09/17 15:27	1
Chloroform	0.98	U	0.98	0.98	ug/m3			03/09/17 15:27	1
Tetrahydrofuran	15	U	15	15	ug/m3			03/09/17 15:27	1
1,1,1-Trichloroethane	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
Cyclohexane	0.69	U	0.69	0.69	ug/m3			03/09/17 15:27	1
Carbon tetrachloride	1.3	U	1.3	1.3	ug/m3			03/09/17 15:27	1
2,2,4-Trimethylpentane	0.93	U	0.93	0.93	ug/m3			03/09/17 15:27	1
Benzene	0.64	U	0.64	0.64	ug/m3			03/09/17 15:27	1
1,2-Dichloroethane	0.81	U	0.81	0.81	ug/m3			03/09/17 15:27	1
n-Heptane	0.82	U	0.82	0.82	ug/m3			03/09/17 15:27	1
Trichloroethene	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
Methyl methacrylate	2.0	U	2.0	2.0	ug/m3			03/09/17 15:27	1
1,2-Dichloropropane	0.92	U	0.92	0.92	ug/m3			03/09/17 15:27	1
1,4-Dioxane	18	U	18	18	ug/m3			03/09/17 15:27	1
Bromodichloromethane	1.3	U	1.3	1.3	ug/m3			03/09/17 15:27	1
cis-1,3-Dichloropropene	0.91	U	0.91	0.91	ug/m3			03/09/17 15:27	1
methyl isobutyl ketone	2.0	U	2.0	2.0	ug/m3			03/09/17 15:27	1
Toluene	0.75	U	0.75	0.75	ug/m3			03/09/17 15:27	1
trans-1,3-Dichloropropene	0.91	U	0.91	0.91	ug/m3			03/09/17 15:27	1
1,1,2-Trichloroethane	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
Tetrachloroethene	1.4	U	1.4	1.4	ug/m3			03/09/17 15:27	1
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0	2.0	ug/m3			03/09/17 15:27	1
Dibromochloromethane	1.7	U	1.7	1.7	ug/m3			03/09/17 15:27	1
1,2-Dibromoethane	1.5	U	1.5	1.5	ug/m3			03/09/17 15:27	1
Chlorobenzene	0.92	U	0.92	0.92	ug/m3			03/09/17 15:27	1
Ethylbenzene	0.87	U	0.87	0.87	ug/m3			03/09/17 15:27	1
m,p-Xylene	2.2	U	2.2	2.2	ug/m3			03/09/17 15:27	1
Xylene, o-	0.87	U	0.87	0.87	ug/m3			03/09/17 15:27	1
Xylene (total)	3.0	U	3.0	3.0	ug/m3			03/09/17 15:27	1
Styrene	0.85	U	0.85	0.85	ug/m3			03/09/17 15:27	1
Bromoform	2.1	U	2.1	2.1	ug/m3			03/09/17 15:27	1
Cumene	0.98	U	0.98	0.98	ug/m3			03/09/17 15:27	1
1,1,2,2-Tetrachloroethane	1.4	U	1.4	1.4	ug/m3			03/09/17 15:27	1
n-Propylbenzene	0.98	U	0.98	0.98	ug/m3			03/09/17 15:27	1
4-Ethyltoluene	0.98	U	0.98	0.98	ug/m3			03/09/17 15:27	1
1,3,5-Trimethylbenzene	0.98	U	0.98	0.98	ug/m3			03/09/17 15:27	1
2-Chlorotoluene	1.0	U	1.0	1.0	ug/m3			03/09/17 15:27	1
tert-Butylbenzene	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
1,2,4-Trimethylbenzene	0.98	U	0.98	0.98	ug/m3			03/09/17 15:27	1
sec-Butylbenzene	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
4-Isopropyltoluene	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
1,3-Dichlorobenzene	1.2	U	1.2	1.2	ug/m3			03/09/17 15:27	1
1,4-Dichlorobenzene	1.2	U	1.2	1.2	ug/m3			03/09/17 15:27	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 200-114780/4
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzyl chloride	1.0	U	1.0	1.0	ug/m3			03/09/17 15:27	1
n-Butylbenzene	1.1	U	1.1	1.1	ug/m3			03/09/17 15:27	1
1,2-Dichlorobenzene	1.2	U	1.2	1.2	ug/m3			03/09/17 15:27	1
1,2,4-Trichlorobenzene	3.7	U	3.7	3.7	ug/m3			03/09/17 15:27	1
Hexachlorobutadiene	2.1	U	2.1	2.1	ug/m3			03/09/17 15:27	1
Naphthalene	2.6	U	2.6	2.6	ug/m3			03/09/17 15:27	1

Lab Sample ID: LCS 200-114780/3
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	10.0	10.9		ppb v/v		109	68 - 128
Freon 22	10.0	10.9		ppb v/v		109	64 - 128
1,2-Dichlorotetrafluoroethane	10.0	11.7		ppb v/v		117	78 - 138
Chloromethane	10.0	10.2		ppb v/v		102	57 - 126
n-Butane	10.0	10.4		ppb v/v		104	56 - 130
Vinyl chloride	10.0	10.3		ppb v/v		103	62 - 125
1,3-Butadiene	10.0	10.0		ppb v/v		100	59 - 125
Bromomethane	10.0	10.4		ppb v/v		104	68 - 128
Chloroethane	10.0	10.1		ppb v/v		101	65 - 125
Bromoethene(Vinyl Bromide)	10.0	10.3		ppb v/v		103	67 - 127
Trichlorofluoromethane	10.0	10.5		ppb v/v		106	67 - 127
Freon TF	10.0	10.3		ppb v/v		103	68 - 128
1,1-Dichloroethene	10.0	10.0		ppb v/v		100	67 - 127
Acetone	10.0	10.4		ppb v/v		104	64 - 136
Isopropyl alcohol	10.0	9.28		ppb v/v		93	55 - 124
Carbon disulfide	10.0	12.0		ppb v/v		120	81 - 141
3-Chloropropene	10.0	7.98		ppb v/v		80	53 - 133
Methylene Chloride	10.0	10.1		ppb v/v		101	62 - 122
tert-Butyl alcohol	10.0	9.83		ppb v/v		98	64 - 124
Methyl tert-butyl ether	10.0	10.5		ppb v/v		105	67 - 127
trans-1,2-Dichloroethene	10.0	11.0		ppb v/v		110	72 - 132
n-Hexane	10.0	10.7		ppb v/v		108	71 - 131
1,1-Dichloroethane	10.0	10.3		ppb v/v		103	66 - 126
Methyl Ethyl Ketone	10.0	10.4		ppb v/v		104	62 - 122
cis-1,2-Dichloroethene	10.0	10.1		ppb v/v		101	67 - 127
Chloroform	10.0	10.6		ppb v/v		106	69 - 129
Tetrahydrofuran	10.0	10.6		ppb v/v		106	61 - 136
1,1,1-Trichloroethane	10.0	10.8		ppb v/v		108	70 - 130
Cyclohexane	10.0	10.5		ppb v/v		105	69 - 129
Carbon tetrachloride	10.0	11.2		ppb v/v		112	62 - 143
2,2,4-Trimethylpentane	10.0	10.0		ppb v/v		100	67 - 127
Benzene	10.0	9.87		ppb v/v		99	67 - 127
1,2-Dichloroethane	10.0	11.0		ppb v/v		110	67 - 132
n-Heptane	10.0	9.92		ppb v/v		99	62 - 130
Trichloroethene	10.0	10.2		ppb v/v		102	68 - 128
Methyl methacrylate	10.0	10.6		ppb v/v		106	70 - 130

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-114780/3
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloropropane	10.0	9.65		ppb v/v		96	67 - 127
1,4-Dioxane	10.0	10.1		ppb v/v		101	66 - 132
Bromodichloromethane	10.0	10.4		ppb v/v		104	69 - 129
cis-1,3-Dichloropropene	10.0	10.4		ppb v/v		104	70 - 130
methyl isobutyl ketone	10.0	10.4		ppb v/v		104	62 - 130
Toluene	10.0	10.3		ppb v/v		103	67 - 127
trans-1,3-Dichloropropene	10.0	10.7		ppb v/v		107	69 - 129
1,1,2-Trichloroethane	10.0	10.5		ppb v/v		105	69 - 129
Tetrachloroethene	10.0	10.7		ppb v/v		107	70 - 130
Methyl Butyl Ketone (2-Hexanone)	10.0	10.6		ppb v/v		106	61 - 127
Dibromochloromethane	10.0	9.90		ppb v/v		99	66 - 130
1,2-Dibromoethane	10.0	10.5		ppb v/v		105	70 - 130
Chlorobenzene	10.0	10.4		ppb v/v		104	68 - 128
Ethylbenzene	10.0	10.3		ppb v/v		103	68 - 128
m,p-Xylene	20.0	21.0		ppb v/v		105	68 - 128
Xylene, o-	10.0	10.3		ppb v/v		103	67 - 127
Styrene	10.0	10.9		ppb v/v		109	68 - 128
Bromoform	10.0	8.93		ppb v/v		89	34 - 170
Cumene	10.0	10.3		ppb v/v		103	67 - 127
1,1,2,2-Tetrachloroethane	10.0	10.2		ppb v/v		102	69 - 129
n-Propylbenzene	10.0	10.4		ppb v/v		104	67 - 127
4-Ethyltoluene	10.0	10.8		ppb v/v		108	69 - 129
1,3,5-Trimethylbenzene	10.0	10.7		ppb v/v		107	65 - 125
2-Chlorotoluene	10.0	10.4		ppb v/v		104	67 - 127
tert-Butylbenzene	10.0	10.7		ppb v/v		107	63 - 125
1,2,4-Trimethylbenzene	10.0	10.7		ppb v/v		107	65 - 125
sec-Butylbenzene	10.0	10.6		ppb v/v		106	66 - 126
4-Isopropyltoluene	10.0	10.9		ppb v/v		109	67 - 129
1,3-Dichlorobenzene	10.0	11.2		ppb v/v		112	67 - 127
1,4-Dichlorobenzene	10.0	11.3		ppb v/v		113	66 - 126
Benzyl chloride	10.0	10.0		ppb v/v		100	54 - 135
n-Butylbenzene	10.0	11.4		ppb v/v		114	67 - 127
1,2-Dichlorobenzene	10.0	11.0		ppb v/v		110	67 - 127
1,2,4-Trichlorobenzene	10.0	11.8		ppb v/v		118	59 - 126
Hexachlorobutadiene	10.0	11.0		ppb v/v		110	62 - 130
Naphthalene	10.0	10.3		ppb v/v		103	50 - 121

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	49	53.9		ug/m3		109	68 - 128
Freon 22	35	38.4		ug/m3		109	64 - 128
1,2-Dichlorotetrafluoroethane	70	82.1		ug/m3		117	78 - 138
Chloromethane	21	21.1		ug/m3		102	57 - 126
n-Butane	24	24.8		ug/m3		104	56 - 130
Vinyl chloride	26	26.4		ug/m3		103	62 - 125
1,3-Butadiene	22	22.2		ug/m3		100	59 - 125
Bromomethane	39	40.4		ug/m3		104	68 - 128
Chloroethane	26	26.6		ug/m3		101	65 - 125

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-114780/3
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoethene(Vinyl Bromide)	44	45.0		ug/m3		103	67 - 127
Trichlorofluoromethane	56	59.3		ug/m3		106	67 - 127
Freon TF	77	79.1		ug/m3		103	68 - 128
1,1-Dichloroethene	40	39.8		ug/m3		100	67 - 127
Acetone	24	24.7		ug/m3		104	64 - 136
Isopropyl alcohol	25	22.8		ug/m3		93	55 - 124
Carbon disulfide	31	37.2		ug/m3		120	81 - 141
3-Chloropropene	31	25.0		ug/m3		80	53 - 133
Methylene Chloride	35	35.0		ug/m3		101	62 - 122
tert-Butyl alcohol	30	29.8		ug/m3		98	64 - 124
Methyl tert-butyl ether	36	38.0		ug/m3		105	67 - 127
trans-1,2-Dichloroethene	40	43.7		ug/m3		110	72 - 132
n-Hexane	35	37.9		ug/m3		108	71 - 131
1,1-Dichloroethane	40	41.6		ug/m3		103	66 - 126
Methyl Ethyl Ketone	29	30.8		ug/m3		104	62 - 122
cis-1,2-Dichloroethene	40	40.0		ug/m3		101	67 - 127
Chloroform	49	51.6		ug/m3		106	69 - 129
Tetrahydrofuran	29	31.4		ug/m3		106	61 - 136
1,1,1-Trichloroethane	55	58.8		ug/m3		108	70 - 130
Cyclohexane	34	36.0		ug/m3		105	69 - 129
Carbon tetrachloride	63	70.7		ug/m3		112	62 - 143
2,2,4-Trimethylpentane	47	46.7		ug/m3		100	67 - 127
Benzene	32	31.5		ug/m3		99	67 - 127
1,2-Dichloroethane	40	44.5		ug/m3		110	67 - 132
n-Heptane	41	40.7		ug/m3		99	62 - 130
Trichloroethene	54	54.9		ug/m3		102	68 - 128
Methyl methacrylate	41	43.5		ug/m3		106	70 - 130
1,2-Dichloropropane	46	44.6		ug/m3		96	67 - 127
1,4-Dioxane	36	36.6		ug/m3		101	66 - 132
Bromodichloromethane	67	69.6		ug/m3		104	69 - 129
cis-1,3-Dichloropropene	45	47.2		ug/m3		104	70 - 130
methyl isobutyl ketone	41	42.7		ug/m3		104	62 - 130
Toluene	38	39.0		ug/m3		103	67 - 127
trans-1,3-Dichloropropene	45	48.4		ug/m3		107	69 - 129
1,1,2-Trichloroethane	55	57.3		ug/m3		105	69 - 129
Tetrachloroethene	68	72.5		ug/m3		107	70 - 130
Methyl Butyl Ketone (2-Hexanone)	41	43.6		ug/m3		106	61 - 127
Dibromochloromethane	85	84.3		ug/m3		99	66 - 130
1,2-Dibromoethane	77	80.9		ug/m3		105	70 - 130
Chlorobenzene	46	47.8		ug/m3		104	68 - 128
Ethylbenzene	43	44.8		ug/m3		103	68 - 128
m,p-Xylene	87	91.3		ug/m3		105	68 - 128
Xylene, o-	43	44.7		ug/m3		103	67 - 127
Styrene	43	46.3		ug/m3		109	68 - 128
Bromoform	100	92.3		ug/m3		89	34 - 170
Cumene	49	50.6		ug/m3		103	67 - 127
1,1,2,2-Tetrachloroethane	69	70.1		ug/m3		102	69 - 129

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-114780/3
Matrix: Air
Analysis Batch: 114780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
n-Propylbenzene	49	51.2		ug/m3		104	67 - 127
4-Ethyltoluene	49	53.3		ug/m3		108	69 - 129
1,3,5-Trimethylbenzene	49	52.5		ug/m3		107	65 - 125
2-Chlorotoluene	52	53.7		ug/m3		104	67 - 127
tert-Butylbenzene	55	58.6		ug/m3		107	63 - 125
1,2,4-Trimethylbenzene	49	52.8		ug/m3		107	65 - 125
sec-Butylbenzene	55	58.3		ug/m3		106	66 - 126
4-Isopropyltoluene	55	59.8		ug/m3		109	67 - 129
1,3-Dichlorobenzene	60	67.2		ug/m3		112	67 - 127
1,4-Dichlorobenzene	60	68.1		ug/m3		113	66 - 126
Benzyl chloride	52	51.8		ug/m3		100	54 - 135
n-Butylbenzene	55	62.7		ug/m3		114	67 - 127
1,2-Dichlorobenzene	60	66.0		ug/m3		110	67 - 127
1,2,4-Trichlorobenzene	74	87.9		ug/m3		118	59 - 126
Hexachlorobutadiene	110	118		ug/m3		110	62 - 130
Naphthalene	52	53.9		ug/m3		103	50 - 121

Lab Sample ID: MB 200-114907/5
Matrix: Air
Analysis Batch: 114907

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Freon 22	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
1,2-Dichlorotetrafluoroethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Chloromethane	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
n-Butane	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Vinyl chloride	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,3-Butadiene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Bromomethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Chloroethane	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Bromoethene(Vinyl Bromide)	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Trichlorofluoromethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Freon TF	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,1-Dichloroethene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Acetone	5.0	U	5.0	5.0	ppb v/v			03/14/17 14:58	1
Isopropyl alcohol	5.0	U	5.0	5.0	ppb v/v			03/14/17 14:58	1
Carbon disulfide	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
3-Chloropropene	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Methylene Chloride	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
tert-Butyl alcohol	5.0	U	5.0	5.0	ppb v/v			03/14/17 14:58	1
Methyl tert-butyl ether	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
trans-1,2-Dichloroethene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
n-Hexane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,1-Dichloroethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Methyl Ethyl Ketone	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
cis-1,2-Dichloroethene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,2-Dichloroethene, Total	0.40	U	0.40	0.40	ppb v/v			03/14/17 14:58	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 200-114907/5
Matrix: Air
Analysis Batch: 114907

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Tetrahydrofuran	5.0	U	5.0	5.0	ppb v/v			03/14/17 14:58	1
1,1,1-Trichloroethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Cyclohexane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Carbon tetrachloride	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
2,2,4-Trimethylpentane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Benzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,2-Dichloroethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
n-Heptane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Trichloroethene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Methyl methacrylate	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
1,2-Dichloropropane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,4-Dioxane	5.0	U	5.0	5.0	ppb v/v			03/14/17 14:58	1
Bromodichloromethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
cis-1,3-Dichloropropene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
methyl isobutyl ketone	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Toluene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
trans-1,3-Dichloropropene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,1,2-Trichloroethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Tetrachloroethene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Dibromochloromethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,2-Dibromoethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Chlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Ethylbenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
m,p-Xylene	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Xylene, o-	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Xylene (total)	0.70	U	0.70	0.70	ppb v/v			03/14/17 14:58	1
Styrene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Bromoform	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Cumene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,1,2,2-Tetrachloroethane	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
n-Propylbenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
4-Ethyltoluene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,3,5-Trimethylbenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
2-Chlorotoluene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
tert-Butylbenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,2,4-Trimethylbenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
sec-Butylbenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
4-Isopropyltoluene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,3-Dichlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,4-Dichlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Benzyl chloride	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
n-Butylbenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,2-Dichlorobenzene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1
Hexachlorobutadiene	0.20	U	0.20	0.20	ppb v/v			03/14/17 14:58	1
Naphthalene	0.50	U	0.50	0.50	ppb v/v			03/14/17 14:58	1

QC Sample Results

Client: Waite-Heindel Environmental Management
Project/Site: Calderwood

TestAmerica Job ID: 200-37618-1
SDG: 200-37618-1

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	2.5	U	2.5	2.5	ug/m3			03/14/17 14:58	1
Freon 22	1.8	U	1.8	1.8	ug/m3			03/14/17 14:58	1
1,2-Dichlorotetrafluoroethane	1.4	U	1.4	1.4	ug/m3			03/14/17 14:58	1
Chloromethane	1.0	U	1.0	1.0	ug/m3			03/14/17 14:58	1
n-Butane	1.2	U	1.2	1.2	ug/m3			03/14/17 14:58	1
Vinyl chloride	0.51	U	0.51	0.51	ug/m3			03/14/17 14:58	1
1,3-Butadiene	0.44	U	0.44	0.44	ug/m3			03/14/17 14:58	1
Bromomethane	0.78	U	0.78	0.78	ug/m3			03/14/17 14:58	1
Chloroethane	1.3	U	1.3	1.3	ug/m3			03/14/17 14:58	1
Bromoethene(Vinyl Bromide)	0.87	U	0.87	0.87	ug/m3			03/14/17 14:58	1
Trichlorofluoromethane	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
Freon TF	1.5	U	1.5	1.5	ug/m3			03/14/17 14:58	1
1,1-Dichloroethene	0.79	U	0.79	0.79	ug/m3			03/14/17 14:58	1
Acetone	12	U	12	12	ug/m3			03/14/17 14:58	1
Isopropyl alcohol	12	U	12	12	ug/m3			03/14/17 14:58	1
Carbon disulfide	1.6	U	1.6	1.6	ug/m3			03/14/17 14:58	1
3-Chloropropene	1.6	U	1.6	1.6	ug/m3			03/14/17 14:58	1
Methylene Chloride	1.7	U	1.7	1.7	ug/m3			03/14/17 14:58	1
tert-Butyl alcohol	15	U	15	15	ug/m3			03/14/17 14:58	1
Methyl tert-butyl ether	0.72	U	0.72	0.72	ug/m3			03/14/17 14:58	1
trans-1,2-Dichloroethene	0.79	U	0.79	0.79	ug/m3			03/14/17 14:58	1
n-Hexane	0.70	U	0.70	0.70	ug/m3			03/14/17 14:58	1
1,1-Dichloroethane	0.81	U	0.81	0.81	ug/m3			03/14/17 14:58	1
Methyl Ethyl Ketone	1.5	U	1.5	1.5	ug/m3			03/14/17 14:58	1
cis-1,2-Dichloroethene	0.79	U	0.79	0.79	ug/m3			03/14/17 14:58	1
1,2-Dichloroethene, Total	1.6	U	1.6	1.6	ug/m3			03/14/17 14:58	1
Chloroform	0.98	U	0.98	0.98	ug/m3			03/14/17 14:58	1
Tetrahydrofuran	15	U	15	15	ug/m3			03/14/17 14:58	1
1,1,1-Trichloroethane	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
Cyclohexane	0.69	U	0.69	0.69	ug/m3			03/14/17 14:58	1
Carbon tetrachloride	1.3	U	1.3	1.3	ug/m3			03/14/17 14:58	1
2,2,4-Trimethylpentane	0.93	U	0.93	0.93	ug/m3			03/14/17 14:58	1
Benzene	0.64	U	0.64	0.64	ug/m3			03/14/17 14:58	1
1,2-Dichloroethane	0.81	U	0.81	0.81	ug/m3			03/14/17 14:58	1
n-Heptane	0.82	U	0.82	0.82	ug/m3			03/14/17 14:58	1
Trichloroethene	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
Methyl methacrylate	2.0	U	2.0	2.0	ug/m3			03/14/17 14:58	1
1,2-Dichloropropane	0.92	U	0.92	0.92	ug/m3			03/14/17 14:58	1
1,4-Dioxane	18	U	18	18	ug/m3			03/14/17 14:58	1
Bromodichloromethane	1.3	U	1.3	1.3	ug/m3			03/14/17 14:58	1
cis-1,3-Dichloropropene	0.91	U	0.91	0.91	ug/m3			03/14/17 14:58	1
methyl isobutyl ketone	2.0	U	2.0	2.0	ug/m3			03/14/17 14:58	1
Toluene	0.75	U	0.75	0.75	ug/m3			03/14/17 14:58	1
trans-1,3-Dichloropropene	0.91	U	0.91	0.91	ug/m3			03/14/17 14:58	1
1,1,2-Trichloroethane	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
Tetrachloroethene	1.4	U	1.4	1.4	ug/m3			03/14/17 14:58	1
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0	2.0	ug/m3			03/14/17 14:58	1
Dibromochloromethane	1.7	U	1.7	1.7	ug/m3			03/14/17 14:58	1
1,2-Dibromoethane	1.5	U	1.5	1.5	ug/m3			03/14/17 14:58	1
Chlorobenzene	0.92	U	0.92	0.92	ug/m3			03/14/17 14:58	1
Ethylbenzene	0.87	U	0.87	0.87	ug/m3			03/14/17 14:58	1
m,p-Xylene	2.2	U	2.2	2.2	ug/m3			03/14/17 14:58	1
Xylene, o-	0.87	U	0.87	0.87	ug/m3			03/14/17 14:58	1
Xylene (total)	3.0	U	3.0	3.0	ug/m3			03/14/17 14:58	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 200-114907/5
Matrix: Air
Analysis Batch: 114907

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.85	U	0.85	0.85	ug/m3			03/14/17 14:58	1
Bromoform	2.1	U	2.1	2.1	ug/m3			03/14/17 14:58	1
Cumene	0.98	U	0.98	0.98	ug/m3			03/14/17 14:58	1
1,1,2,2-Tetrachloroethane	1.4	U	1.4	1.4	ug/m3			03/14/17 14:58	1
n-Propylbenzene	0.98	U	0.98	0.98	ug/m3			03/14/17 14:58	1
4-Ethyltoluene	0.98	U	0.98	0.98	ug/m3			03/14/17 14:58	1
1,3,5-Trimethylbenzene	0.98	U	0.98	0.98	ug/m3			03/14/17 14:58	1
2-Chlorotoluene	1.0	U	1.0	1.0	ug/m3			03/14/17 14:58	1
tert-Butylbenzene	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
1,2,4-Trimethylbenzene	0.98	U	0.98	0.98	ug/m3			03/14/17 14:58	1
sec-Butylbenzene	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
4-Isopropyltoluene	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
1,3-Dichlorobenzene	1.2	U	1.2	1.2	ug/m3			03/14/17 14:58	1
1,4-Dichlorobenzene	1.2	U	1.2	1.2	ug/m3			03/14/17 14:58	1
Benzyl chloride	1.0	U	1.0	1.0	ug/m3			03/14/17 14:58	1
n-Butylbenzene	1.1	U	1.1	1.1	ug/m3			03/14/17 14:58	1
1,2-Dichlorobenzene	1.2	U	1.2	1.2	ug/m3			03/14/17 14:58	1
1,2,4-Trichlorobenzene	3.7	U	3.7	3.7	ug/m3			03/14/17 14:58	1
Hexachlorobutadiene	2.1	U	2.1	2.1	ug/m3			03/14/17 14:58	1
Naphthalene	2.6	U	2.6	2.6	ug/m3			03/14/17 14:58	1

Lab Sample ID: LCS 200-114907/3
Matrix: Air
Analysis Batch: 114907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	10.0	11.5		ppb v/v		115	68 - 128
Freon 22	10.0	11.5		ppb v/v		115	64 - 128
1,2-Dichlorotetrafluoroethane	10.0	12.4		ppb v/v		124	78 - 138
Chloromethane	10.0	10.6		ppb v/v		106	57 - 126
n-Butane	10.0	11.1		ppb v/v		111	56 - 130
Vinyl chloride	10.0	10.9		ppb v/v		109	62 - 125
1,3-Butadiene	10.0	10.4		ppb v/v		104	59 - 125
Bromomethane	10.0	10.8		ppb v/v		108	68 - 128
Chloroethane	10.0	10.4		ppb v/v		105	65 - 125
Bromoethene(Vinyl Bromide)	10.0	10.8		ppb v/v		108	67 - 127
Trichlorofluoromethane	10.0	11.1		ppb v/v		111	67 - 127
Freon TF	10.0	10.7		ppb v/v		107	68 - 128
1,1-Dichloroethene	10.0	10.5		ppb v/v		105	67 - 127
Acetone	10.0	10.9		ppb v/v		109	64 - 136
Isopropyl alcohol	10.0	9.22		ppb v/v		92	55 - 124
Carbon disulfide	10.0	12.5		ppb v/v		125	81 - 141
3-Chloropropene	10.0	8.42		ppb v/v		84	53 - 133
Methylene Chloride	10.0	10.5		ppb v/v		105	62 - 122
tert-Butyl alcohol	10.0	9.76		ppb v/v		98	64 - 124
Methyl tert-butyl ether	10.0	11.1		ppb v/v		111	67 - 127
trans-1,2-Dichloroethene	10.0	11.4		ppb v/v		114	72 - 132
n-Hexane	10.0	11.2		ppb v/v		112	71 - 131

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-114907/3
Matrix: Air
Analysis Batch: 114907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	10.0	10.7		ppb v/v		107	66 - 126
Methyl Ethyl Ketone	10.0	11.0		ppb v/v		110	62 - 122
cis-1,2-Dichloroethene	10.0	10.5		ppb v/v		105	67 - 127
Chloroform	10.0	11.1		ppb v/v		111	69 - 129
Tetrahydrofuran	10.0	11.3		ppb v/v		113	61 - 136
1,1,1-Trichloroethane	10.0	11.4		ppb v/v		114	70 - 130
Cyclohexane	10.0	10.9		ppb v/v		109	69 - 129
Carbon tetrachloride	10.0	11.9		ppb v/v		119	62 - 143
2,2,4-Trimethylpentane	10.0	10.5		ppb v/v		105	67 - 127
Benzene	10.0	10.4		ppb v/v		104	67 - 127
1,2-Dichloroethane	10.0	11.7		ppb v/v		117	67 - 132
n-Heptane	10.0	10.5		ppb v/v		105	62 - 130
Trichloroethene	10.0	10.8		ppb v/v		108	68 - 128
Methyl methacrylate	10.0	11.4		ppb v/v		114	70 - 130
1,2-Dichloropropane	10.0	10.1		ppb v/v		101	67 - 127
1,4-Dioxane	10.0	10.3		ppb v/v		103	66 - 132
Bromodichloromethane	10.0	10.9		ppb v/v		109	69 - 129
cis-1,3-Dichloropropene	10.0	10.9		ppb v/v		109	70 - 130
methyl isobutyl ketone	10.0	11.0		ppb v/v		110	62 - 130
Toluene	10.0	10.9		ppb v/v		109	67 - 127
trans-1,3-Dichloropropene	10.0	11.4		ppb v/v		114	69 - 129
1,1,2-Trichloroethane	10.0	11.2		ppb v/v		112	69 - 129
Tetrachloroethene	10.0	11.4		ppb v/v		114	70 - 130
Methyl Butyl Ketone (2-Hexanone)	10.0	11.2		ppb v/v		112	61 - 127
Dibromochloromethane	10.0	10.5		ppb v/v		105	66 - 130
1,2-Dibromoethane	10.0	11.2		ppb v/v		112	70 - 130
Chlorobenzene	10.0	11.0		ppb v/v		110	68 - 128
Ethylbenzene	10.0	11.0		ppb v/v		110	68 - 128
m,p-Xylene	20.0	22.3		ppb v/v		112	68 - 128
Xylene, o-	10.0	11.0		ppb v/v		110	67 - 127
Styrene	10.0	11.7		ppb v/v		117	68 - 128
Bromoform	10.0	9.36		ppb v/v		94	34 - 170
Cumene	10.0	11.0		ppb v/v		110	67 - 127
1,1,2,2-Tetrachloroethane	10.0	10.8		ppb v/v		108	69 - 129
n-Propylbenzene	10.0	11.1		ppb v/v		111	67 - 127
4-Ethyltoluene	10.0	11.6		ppb v/v		116	69 - 129
1,3,5-Trimethylbenzene	10.0	11.3		ppb v/v		113	65 - 125
2-Chlorotoluene	10.0	11.0		ppb v/v		110	67 - 127
tert-Butylbenzene	10.0	11.3		ppb v/v		113	63 - 125
1,2,4-Trimethylbenzene	10.0	11.4		ppb v/v		114	65 - 125
sec-Butylbenzene	10.0	11.3		ppb v/v		113	66 - 126
4-Isopropyltoluene	10.0	11.6		ppb v/v		116	67 - 129
1,3-Dichlorobenzene	10.0	11.8		ppb v/v		118	67 - 127
1,4-Dichlorobenzene	10.0	11.9		ppb v/v		119	66 - 126
Benzyl chloride	10.0	10.2		ppb v/v		102	54 - 135
n-Butylbenzene	10.0	12.0		ppb v/v		120	67 - 127
1,2-Dichlorobenzene	10.0	11.5		ppb v/v		115	67 - 127

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-114907/3
Matrix: Air
Analysis Batch: 114907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	10.0	11.2		ppb v/v		112	59 - 126
Hexachlorobutadiene	10.0	11.4		ppb v/v		114	62 - 130
Naphthalene	10.0	9.95		ppb v/v		100	50 - 121

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	49	56.9		ug/m3		115	68 - 128
Freon 22	35	40.7		ug/m3		115	64 - 128
1,2-Dichlorotetrafluoroethane	70	86.9		ug/m3		124	78 - 138
Chloromethane	21	21.8		ug/m3		106	57 - 126
n-Butane	24	26.5		ug/m3		111	56 - 130
Vinyl chloride	26	27.9		ug/m3		109	62 - 125
1,3-Butadiene	22	23.0		ug/m3		104	59 - 125
Bromomethane	39	41.8		ug/m3		108	68 - 128
Chloroethane	26	27.6		ug/m3		105	65 - 125
Bromoethene(Vinyl Bromide)	44	47.2		ug/m3		108	67 - 127
Trichlorofluoromethane	56	62.3		ug/m3		111	67 - 127
Freon TF	77	82.2		ug/m3		107	68 - 128
1,1-Dichloroethene	40	41.7		ug/m3		105	67 - 127
Acetone	24	26.0		ug/m3		109	64 - 136
Isopropyl alcohol	25	22.7		ug/m3		92	55 - 124
Carbon disulfide	31	38.9		ug/m3		125	81 - 141
3-Chloropropene	31	26.4		ug/m3		84	53 - 133
Methylene Chloride	35	36.3		ug/m3		105	62 - 122
tert-Butyl alcohol	30	29.6		ug/m3		98	64 - 124
Methyl tert-butyl ether	36	40.2		ug/m3		111	67 - 127
trans-1,2-Dichloroethene	40	45.4		ug/m3		114	72 - 132
n-Hexane	35	39.6		ug/m3		112	71 - 131
1,1-Dichloroethane	40	43.3		ug/m3		107	66 - 126
Methyl Ethyl Ketone	29	32.4		ug/m3		110	62 - 122
cis-1,2-Dichloroethene	40	41.8		ug/m3		105	67 - 127
Chloroform	49	54.2		ug/m3		111	69 - 129
Tetrahydrofuran	29	33.4		ug/m3		113	61 - 136
1,1,1-Trichloroethane	55	62.3		ug/m3		114	70 - 130
Cyclohexane	34	37.5		ug/m3		109	69 - 129
Carbon tetrachloride	63	74.6		ug/m3		119	62 - 143
2,2,4-Trimethylpentane	47	49.1		ug/m3		105	67 - 127
Benzene	32	33.2		ug/m3		104	67 - 127
1,2-Dichloroethane	40	47.5		ug/m3		117	67 - 132
n-Heptane	41	43.2		ug/m3		105	62 - 130
Trichloroethene	54	57.8		ug/m3		108	68 - 128
Methyl methacrylate	41	46.7		ug/m3		114	70 - 130
1,2-Dichloropropane	46	46.6		ug/m3		101	67 - 127
1,4-Dioxane	36	37.3		ug/m3		103	66 - 132
Bromodichloromethane	67	73.2		ug/m3		109	69 - 129
cis-1,3-Dichloropropene	45	49.5		ug/m3		109	70 - 130
methyl isobutyl ketone	41	44.9		ug/m3		110	62 - 130
Toluene	38	41.0		ug/m3		109	67 - 127
trans-1,3-Dichloropropene	45	51.6		ug/m3		114	69 - 129

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 200-114907/3
Matrix: Air
Analysis Batch: 114907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	55	61.3		ug/m3		112	69 - 129
Tetrachloroethene	68	77.0		ug/m3		114	70 - 130
Methyl Butyl Ketone (2-Hexanone)	41	45.8		ug/m3		112	61 - 127
Dibromochloromethane	85	89.2		ug/m3		105	66 - 130
1,2-Dibromoethane	77	85.7		ug/m3		112	70 - 130
Chlorobenzene	46	50.4		ug/m3		110	68 - 128
Ethylbenzene	43	47.7		ug/m3		110	68 - 128
m,p-Xylene	87	96.9		ug/m3		112	68 - 128
Xylene, o-	43	47.8		ug/m3		110	67 - 127
Styrene	43	49.7		ug/m3		117	68 - 128
Bromoform	100	96.8		ug/m3		94	34 - 170
Cumene	49	54.0		ug/m3		110	67 - 127
1,1,2,2-Tetrachloroethane	69	74.1		ug/m3		108	69 - 129
n-Propylbenzene	49	54.4		ug/m3		111	67 - 127
4-Ethyltoluene	49	56.9		ug/m3		116	69 - 129
1,3,5-Trimethylbenzene	49	55.7		ug/m3		113	65 - 125
2-Chlorotoluene	52	57.0		ug/m3		110	67 - 127
tert-Butylbenzene	55	62.1		ug/m3		113	63 - 125
1,2,4-Trimethylbenzene	49	56.0		ug/m3		114	65 - 125
sec-Butylbenzene	55	61.9		ug/m3		113	66 - 126
4-Isopropyltoluene	55	63.5		ug/m3		116	67 - 129
1,3-Dichlorobenzene	60	70.9		ug/m3		118	67 - 127
1,4-Dichlorobenzene	60	71.5		ug/m3		119	66 - 126
Benzyl chloride	52	52.6		ug/m3		102	54 - 135
n-Butylbenzene	55	65.8		ug/m3		120	67 - 127
1,2-Dichlorobenzene	60	68.9		ug/m3		115	67 - 127
1,2,4-Trichlorobenzene	74	82.8		ug/m3		112	59 - 126
Hexachlorobutadiene	110	122		ug/m3		114	62 - 130
Naphthalene	52	52.2		ug/m3		100	50 - 121

QC Association Summary

Client: Waite-Heindel Environmental Management
Project/Site: Calderwood

TestAmerica Job ID: 200-37618-1
SDG: 200-37618-1

Air - GC/MS VOA

Analysis Batch: 114780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-37618-1	VP-1	Total/NA	Air	TO-15	
200-37618-2	VP-2	Total/NA	Air	TO-15	
MB 200-114780/4	Method Blank	Total/NA	Air	TO-15	
LCS 200-114780/3	Lab Control Sample	Total/NA	Air	TO-15	

Analysis Batch: 114907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-37618-3	VP-3	Total/NA	Air	TO-15	
MB 200-114907/5	Method Blank	Total/NA	Air	TO-15	
LCS 200-114907/3	Lab Control Sample	Total/NA	Air	TO-15	

Lab Chronicle

Client: Waite-Heindel Environmental Management
Project/Site: Calderwood

TestAmerica Job ID: 200-37618-1
SDG: 200-37618-1

Client Sample ID: VP-1
Date Collected: 03/03/17 14:20
Date Received: 03/03/17 16:34

Lab Sample ID: 200-37618-1
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		4	114780	03/10/17 07:44	P1M	TAL BUR

Client Sample ID: VP-2
Date Collected: 03/03/17 14:26
Date Received: 03/03/17 16:34

Lab Sample ID: 200-37618-2
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		23	114780	03/10/17 08:33	P1M	TAL BUR

Client Sample ID: VP-3
Date Collected: 03/03/17 14:33
Date Received: 03/03/17 16:34

Lab Sample ID: 200-37618-3
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		4	114907	03/14/17 23:32	K1P	TAL BUR

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Certification Summary

Client: Waite-Heindel Environmental Management
Project/Site: Calderwood

TestAmerica Job ID: 200-37618-1
SDG: 200-37618-1

Laboratory: TestAmerica Burlington

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-17
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-18
Florida	NELAP	4	E87467	06-30-17
L-A-B	DoD ELAP		L2336	03-25-17 *
Maine	State Program	1	VT00008	04-17-17 *
Minnesota	NELAP	5	050-999-436	12-31-17
New Hampshire	NELAP	1	2006	12-18-17
New Jersey	NELAP	2	VT972	06-30-17
New York	NELAP	2	10391	04-01-17 *
Pennsylvania	NELAP	3	68-00489	04-30-17 *
Rhode Island	State Program	1	LAO00298	12-30-17
US Fish & Wildlife	Federal		LE-058448-0	10-31-17
USDA	Federal		P330-11-00093	12-05-19
Vermont	State Program	1	VT-4000	12-31-17
Virginia	NELAP	3	460209	12-14-17

* Certification renewal pending - certification considered valid.

Method Summary

Client: Waite-Heindel Environmental Management
Project/Site: Calderwood

TestAmerica Job ID: 200-37618-1
SDG: 200-37618-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Waite-Heindel Environmental Management
Project/Site: Calderwood

TestAmerica Job ID: 200-37618-1
SDG: 200-37618-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
200-37618-1	VP-1	Air	03/03/17 14:20	03/03/17 16:34
200-37618-2	VP-2	Air	03/03/17 14:26	03/03/17 16:34
200-37618-3	VP-3	Air	03/03/17 14:33	03/03/17 16:34

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Miles Waite, PhD	Samples Collected By: Chris Page, WHEM	1 of 1 COCs
Company: Waite-Heindel Environmental Management	Phone: 802 860 9400 x 101		
Address: 7 Kilburn Street, Suite 301	Email: mwaite@waiteenv.com		
City/State/Zip: Burlington, VT 05401			
Phone: 802-860-9400	Site Contact: Miles Waite		
FAX: 802-860-9410	TA Contact: Kathryn Kelly		
Project Name: Calderwood	Analysis Turnaround Time		
Site:	Standard (Specify) TO-15		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	MA-APH	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
VP-1	3/3/2017	1035	1420	-28.4	-8.3	3683	3517	X											
VP-2	↓	1042	1426	-28.8	-6.9	5193	5615	X											
VP-3	↓	1052	1433	-29.9	-7.5	2995	2784	X											

Temperature (Fahrenheit)	Interior	Ambient
Start	72	20°F
Stop	72	24°F

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

200-37618 Chain of Custody

Special Instructions/QC Requirements & Comments:

Samples Shipped by:	Date/Time:	Samples Received by:
Samples Relinquished by:	Date/Time: 3/3/17 16:34	Received by: 3/3/17 1634
Relinquished by:	Date/Time:	Received by:

Lab Use Only Shipper Name: Opened by: Condition:

3/17/2017

Login Sample Receipt Checklist

Client: Waite-Heindel Environmental Management

Job Number: 200-37618-1
SDG Number: 200-37618-1

Login Number: 37618
List Number: 1
Creator: Johnson, Eleanor E

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	076874
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	CP
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Pre-Shipment Clean Canister Certification Report

Canister Cleaning & Pre-Shipment Leak Test

System ID	# Cycles	Cleaning Date	Technician	Canister Size		Certification Type:	
Oven 3/4	23	2/23/2017	EJE	1L	6L	Batch	Individual

Port	Can ID	Initial[1] ("Hg)	Final ("Hg)	Adj. Initial[2] ("Hg)	Diff.[3]	Initial Reading Gauge:	Initial Reading Date:	Initial Reading Time:	Initial Reading Tech:	Initial Reading BP:	Initial Reading Temp:	Final Reading Gauge:	Final Reading Date:	Final Reading Time:	Final Reading Tech:	Final Reading BP:	Final Reading Temp:
1	5615	-29.4	-29.9	-29.6	-0.3	G17	2/24/17	1320	—	29.3	22	G17	2-27-17	14:30	CG	29.5	23
2	5438	↓	-30.0	↓	-0.4	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
3	2784	↓	-29.9	↓	-0.3	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
4	5069	↓	-30.0	↓	-0.4	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
5	4913	↓	-29.8	↓	-0.2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
6	~~2546~~																
7	4342	↓	-29.8	↓	-0.2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
8	3517	↓	-29.6	↓	0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
9	4338	-29.6	-29.9	-29.9	0	G17	2/28/17	1015	←	29.5	22	↓	2/28/17	1015	←	29.8	23
10	4447	-29.4	-30.0	-29.4	-0.4	G17	2/24/17	1320	←	29.3	22	G17	2-27-17	14:30	CG	29.5	23
11	4317	↓	-30.0	↓	-0.4	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
12	5065	↓	-30.1	↓	-0.5	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

[1] Batch Certification: The reading is taken on the "batch" canister and this value is used as the initial pressure for all canisters in the batch.

[2] Adjusted Initial Pressure = Initial Pressure + (Initial BP - Final BP).

[3] Difference = Final Pressure - Adjusted Initial Pressure . Acceptance Criteria: (1) The difference must be less than or equal to + 0.5. (2) Pressure readings must be at least 24 hours apart.

If time frame was not met, the PM must authorize shipment of canister **PM Authorization Signature:** **Date:**

Clean Canister Certification Analysis & Authorization of Release to Inventory

Test Method: ≤ TO15 Routine ≤ TO15 LL ≤ NJDEP-LL TO15

Can ID	Date	Sequence	Analyst	Inventory Level 1	2	3	4	Limited	Secondary Review: Review Date	Rev
4338	2/27/17	24076	~~GSS~~ Barry Kot		✓				B. 2/27/17	GSS

Inventory Level 1: Individual Canister Certification (TO15LL 0.01).

Inventory Level 2: Individual or Batch Certification (TO15 0.04 ppbv).

Inventory Level 3: Individual or Batch Certification (TO15 0.2 ppbv).

Inventory Level 4: Individual or Batch Certification (TO15LLNJ 0.08 ppbv).

Inventory Level Limited: Canisters may only be used for certain projects.

Comments:

3/17/2017

FAI023:04.13.16:9
TestAmerica Burlington

200-37486-A-9
4338
Location: Air-Storage
Bottle: Summa Canister 6L
Sampled: 2/23/2017 12:00 AM 200-1018285
Loc: 200
37486
#9
A

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-37486-1

SDG No.:

Client Sample ID: 4338 Lab Sample ID: 200-37486-9

Matrix: Air Lab File ID: 24076_16.D

Analysis Method: TO-15 Date Collected: 02/23/2017 00:00

Sample wt/vol: 1000(mL) Date Analyzed: 02/25/2017 01:20

Soil Aliquot Vol: Dilution Factor: 0.2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 114394 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
115-07-1	Propylene	1.0	U	1.0	1.0
75-71-8	Dichlorodifluoromethane	0.10	U	0.10	0.10
75-45-6	Freon 22	0.10	U	0.10	0.10
76-14-2	1,2-Dichlorotetrafluoroethane	0.040	U	0.040	0.040
74-87-3	Chloromethane	0.10	U	0.10	0.10
106-97-8	n-Butane	0.10	U	0.10	0.10
75-01-4	Vinyl chloride	0.040	U	0.040	0.040
106-99-0	1,3-Butadiene	0.040	U	0.040	0.040
74-83-9	Bromomethane	0.040	U	0.040	0.040
75-00-3	Chloroethane	0.10	U	0.10	0.10
593-60-2	Bromoethene(Vinyl Bromide)	0.040	U	0.040	0.040
75-69-4	Trichlorofluoromethane	0.040	U	0.040	0.040
64-17-5	Ethanol	1.0	U	1.0	1.0
76-13-1	Freon TF	0.040	U	0.040	0.040
75-35-4	1,1-Dichloroethene	0.040	U	0.040	0.040
67-64-1	Acetone	1.0	U	1.0	1.0
67-63-0	Isopropyl alcohol	1.0	U	1.0	1.0
75-15-0	Carbon disulfide	0.10	U	0.10	0.10
107-05-1	3-Chloropropene	0.10	U	0.10	0.10
75-09-2	Methylene Chloride	0.10	U	0.10	0.10
75-65-0	tert-Butyl alcohol	1.0	U	1.0	1.0
1634-04-4	Methyl tert-butyl ether	0.040	U	0.040	0.040
156-60-5	trans-1,2-Dichloroethene	0.040	U	0.040	0.040
110-54-3	n-Hexane	0.040	U	0.040	0.040
75-34-3	1,1-Dichloroethane	0.040	U	0.040	0.040
108-05-4	Vinyl acetate	1.0	U	1.0	1.0
141-78-6	Ethyl acetate	1.0	U	1.0	1.0
78-93-3	Methyl Ethyl Ketone	0.10	U	0.10	0.10
156-59-2	cis-1,2-Dichloroethene	0.040	U	0.040	0.040
540-59-0	1,2-Dichloroethene, Total	0.080	U	0.080	0.080
67-66-3	Chloroform	0.040	U	0.040	0.040
109-99-9	Tetrahydrofuran	1.0	U	1.0	1.0
71-55-6	1,1,1-Trichloroethane	0.040	U	0.040	0.040
110-82-7	Cyclohexane	0.040	U	0.040	0.040
56-23-5	Carbon tetrachloride	0.040	U	0.040	0.040
540-84-1	2,2,4-Trimethylpentane	0.040	U	0.040	0.040

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-37486-1

SDG No.:

Client Sample ID: 4338 Lab Sample ID: 200-37486-9

Matrix: Air Lab File ID: 24076_16.D

Analysis Method: TO-15 Date Collected: 02/23/2017 00:00

Sample wt/vol: 1000(mL) Date Analyzed: 02/25/2017 01:20

Soil Aliquot Vol: Dilution Factor: 0.2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 114394 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
71-43-2	Benzene	0.040	U	0.040	0.040
107-06-2	1,2-Dichloroethane	0.040	U	0.040	0.040
142-82-5	n-Heptane	0.040	U	0.040	0.040
79-01-6	Trichloroethene	0.040	U	0.040	0.040
80-62-6	Methyl methacrylate	0.10	U	0.10	0.10
78-87-5	1,2-Dichloropropane	0.040	U	0.040	0.040
123-91-1	1,4-Dioxane	1.0	U	1.0	1.0
75-27-4	Bromodichloromethane	0.040	U	0.040	0.040
10061-01-5	cis-1,3-Dichloropropene	0.040	U	0.040	0.040
108-10-1	methyl isobutyl ketone	0.10	U	0.10	0.10
108-88-3	Toluene	0.040	U	0.040	0.040
10061-02-6	trans-1,3-Dichloropropene	0.040	U	0.040	0.040
79-00-5	1,1,2-Trichloroethane	0.040	U	0.040	0.040
127-18-4	Tetrachloroethene	0.040	U	0.040	0.040
591-78-6	Methyl Butyl Ketone (2-Hexanone)	0.10	U	0.10	0.10
124-48-1	Dibromochloromethane	0.040	U	0.040	0.040
106-93-4	1,2-Dibromoethane	0.040	U	0.040	0.040
108-90-7	Chlorobenzene	0.040	U	0.040	0.040
100-41-4	Ethylbenzene	0.040	U	0.040	0.040
179601-23-1	m,p-Xylene	0.10	U	0.10	0.10
95-47-6	Xylene, o-	0.040	U	0.040	0.040
1330-20-7	Xylene (total)	0.14	U	0.14	0.14
100-42-5	Styrene	0.040	U	0.040	0.040
75-25-2	Bromoform	0.040	U	0.040	0.040
98-82-8	Cumene	0.040	U	0.040	0.040
79-34-5	1,1,2,2-Tetrachloroethane	0.040	U	0.040	0.040
103-65-1	n-Propylbenzene	0.040	U	0.040	0.040
622-96-8	4-Ethyltoluene	0.040	U	0.040	0.040
108-67-8	1,3,5-Trimethylbenzene	0.040	U	0.040	0.040
95-49-8	2-Chlorotoluene	0.040	U	0.040	0.040
98-06-6	tert-Butylbenzene	0.040	U	0.040	0.040
95-63-6	1,2,4-Trimethylbenzene	0.040	U	0.040	0.040
135-98-8	sec-Butylbenzene	0.040	U	0.040	0.040
99-87-6	4-Isopropyltoluene	0.040	U	0.040	0.040
541-73-1	1,3-Dichlorobenzene	0.040	U	0.040	0.040
106-46-7	1,4-Dichlorobenzene	0.040	U	0.040	0.040

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 200-37486-1

SDG No.:

Client Sample ID: 4338 Lab Sample ID: 200-37486-9

Matrix: Air Lab File ID: 24076_16.D

Analysis Method: TO-15 Date Collected: 02/23/2017 00:00

Sample wt/vol: 1000(mL) Date Analyzed: 02/25/2017 01:20

Soil Aliquot Vol: Dilution Factor: 0.2

Soil Extract Vol.: GC Column: RTX-624 ID: 0.32(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 114394 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
100-44-7	Benzyl chloride	0.040	U	0.040	0.040
104-51-8	n-Butylbenzene	0.040	U	0.040	0.040
95-50-1	1,2-Dichlorobenzene	0.040	U	0.040	0.040
120-82-1	1,2,4-Trichlorobenzene	0.10	U	0.10	0.10
87-68-3	Hexachlorobutadiene	0.040	U	0.040	0.040
91-20-3	Naphthalene	0.10	U	0.10	0.10

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20170224-24076.b\24076_16.D
Lims ID: 200-37486-A-9
Client ID: 4338
Sample Type: Client
Inject. Date: 25-Feb-2017 01:20:30 ALS Bottle#: 16 Worklist Smp#: 16
Purge Vol: 200.000 mL Dil. Factor: 0.2000
Sample Info: 200-0024076-016
Misc. Info.: 37486-09
Operator ID: wrd Instrument ID: CHX.i

Method: \\ChromNA\Burlington\ChromData\CHX.i\20170224-24076.b\TO15_MasterMethod_X.m.m
Limit Group: AI_TO15_ICAL
Last Update: 27-Feb-2017 13:30:55 Calib Date: 19-Feb-2017 19:03:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Burlington\ChromData\CHX.i\20170219-23993.b\23993_11.D

Column 1 : RTX-624 (0.32 mm) Det: MS SCAN
Process Host: XAWRK020

First Level Reviewer: maheseep Date: 27-Feb-2017 13:30:55

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	1 Propene	41		3.060				ND	
	2 Dichlorodifluoromethane	85		3.129				ND	
	3 Chlorodifluoromethane	51		3.178				ND	
	4 1,2-Dichloro-1,1,2,2-tetra	85		3.381				ND	
	5 Chloromethane	50		3.515				ND	
	6 Butane	43		3.702				ND	
	7 Vinyl chloride	62		3.745				ND	
	8 Butadiene	54		3.820				ND	
	10 Bromomethane	94		4.467				ND	
	11 Chloroethane	64		4.686				ND	
	13 Vinyl bromide	106		5.061				ND	
	14 Trichlorofluoromethane	101		5.152				ND	
	17 Ethanol	45		5.751				ND	
	20 1,1,2-Trichloro-1,2,2-trif	101		6.184				ND	
	21 1,1-Dichloroethene	96		6.238				ND	
	22 Acetone	43		6.516				ND	
	23 Carbon disulfide	76	6.628	6.628	0.000	94	1101	0.0315	
	24 Isopropyl alcohol	45		6.821				ND	
	25 3-Chloro-1-propene	41		7.019				ND	
	27 Methylene Chloride	49		7.318				ND	
	28 2-Methyl-2-propanol	59		7.596				ND	
	29 Methyl tert-butyl ether	73		7.741				ND	
	31 trans-1,2-Dichloroethene	61		7.746				ND	
	33 Hexane	57		8.121				ND	
	34 1,1-Dichloroethane	63		8.645				ND	
	35 Vinyl acetate	43		8.731				ND	
S	30 1,2-Dichloroethene, Total	61		9.665				ND	
	37 cis-1,2-Dichloroethene	96		9.790				ND	
	38 2-Butanone (MEK)	72		9.881				ND	
	39 Ethyl acetate	88		9.908				ND	
*	40 Chlorobromomethane	128	10.277	10.277	0.000	92	161396	10.0	

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
	41 Tetrahydrofuran	42		10.325				ND	
	42 Chloroform	83		10.416				ND	
	43 Cyclohexane	84		10.646				ND	
	44 1,1,1-Trichloroethane	97		10.694				ND	
	45 Carbon tetrachloride	117		10.951				ND	
	46 Isooctane	57		11.405				ND	
	47 Benzene	78		11.459				ND	
	48 1,2-Dichloroethane	62		11.668				ND	
	49 n-Heptane	43		11.817				ND	
*	50 1,4-Difluorobenzene	114	12.363	12.363	0.000	94	897219	10.0	
	53 Trichloroethene	95		12.855				ND	
	54 1,2-Dichloropropane	63		13.465				ND	
	55 Methyl methacrylate	69		13.663				ND	
	57 Dibromomethane	174		13.733				ND	
	56 1,4-Dioxane	88		13.738				ND	
	58 Dichlorobromomethane	83		14.043				ND	
	60 cis-1,3-Dichloropropene	75		15.022				ND	
	61 4-Methyl-2-pentanone (MIBK	43		15.364				ND	
	65 Toluene	92	15.626	15.626	-0.006	92	1132	0.0270	M
	66 trans-1,3-Dichloropropene	75		16.279				ND	
	67 1,1,2-Trichloroethane	83		16.675				ND	
	68 Tetrachloroethene	166		16.755				ND	
	69 2-Hexanone	43		17.183				ND	
	71 Chlorodibromomethane	129		17.472				ND	
	72 Ethylene Dibromide	107		17.756				ND	
*	74 Chlorobenzene-d5	117	18.697	18.697	0.000	88	813885	10.0	
	75 Chlorobenzene	112		18.761				ND	
	76 Ethylbenzene	91		18.927				ND	
	78 m-Xylene & p-Xylene	106		19.189				ND	
S	73 Xylenes, Total	106		19.600				ND	
	79 o-Xylene	106		20.088				ND	
	80 Styrene	104		20.152				ND	
	81 Bromoform	173		20.612				ND	
	82 Isopropylbenzene	105		20.837				ND	
	84 1,1,2,2-Tetrachloroethane	83		21.554				ND	
	85 N-Propylbenzene	91		21.613				ND	
	88 4-Ethyltoluene	105		21.816				ND	
	89 2-Chlorotoluene	91		21.821				ND	
	90 1,3,5-Trimethylbenzene	105		21.934				ND	
	92 tert-Butylbenzene	119		22.442				ND	
	93 1,2,4-Trimethylbenzene	105		22.544				ND	
	94 sec-Butylbenzene	105		22.784				ND	
	95 4-Isopropyltoluene	119		22.998				ND	
	96 1,3-Dichlorobenzene	146		23.025				ND	
	97 1,4-Dichlorobenzene	146		23.169				ND	
	98 Benzyl chloride	91		23.378				ND	
	100 n-Butylbenzene	91		23.592				ND	
	101 1,2-Dichlorobenzene	146		23.720				ND	
	103 1,2,4-Trichlorobenzene	180		26.315				ND	
	104 Hexachlorobutadiene	225		26.502				ND	
	105 Naphthalene	128		26.823				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

ATTO15XISs_00002 Amount Added: 20.00 Units: mL Run Reagent

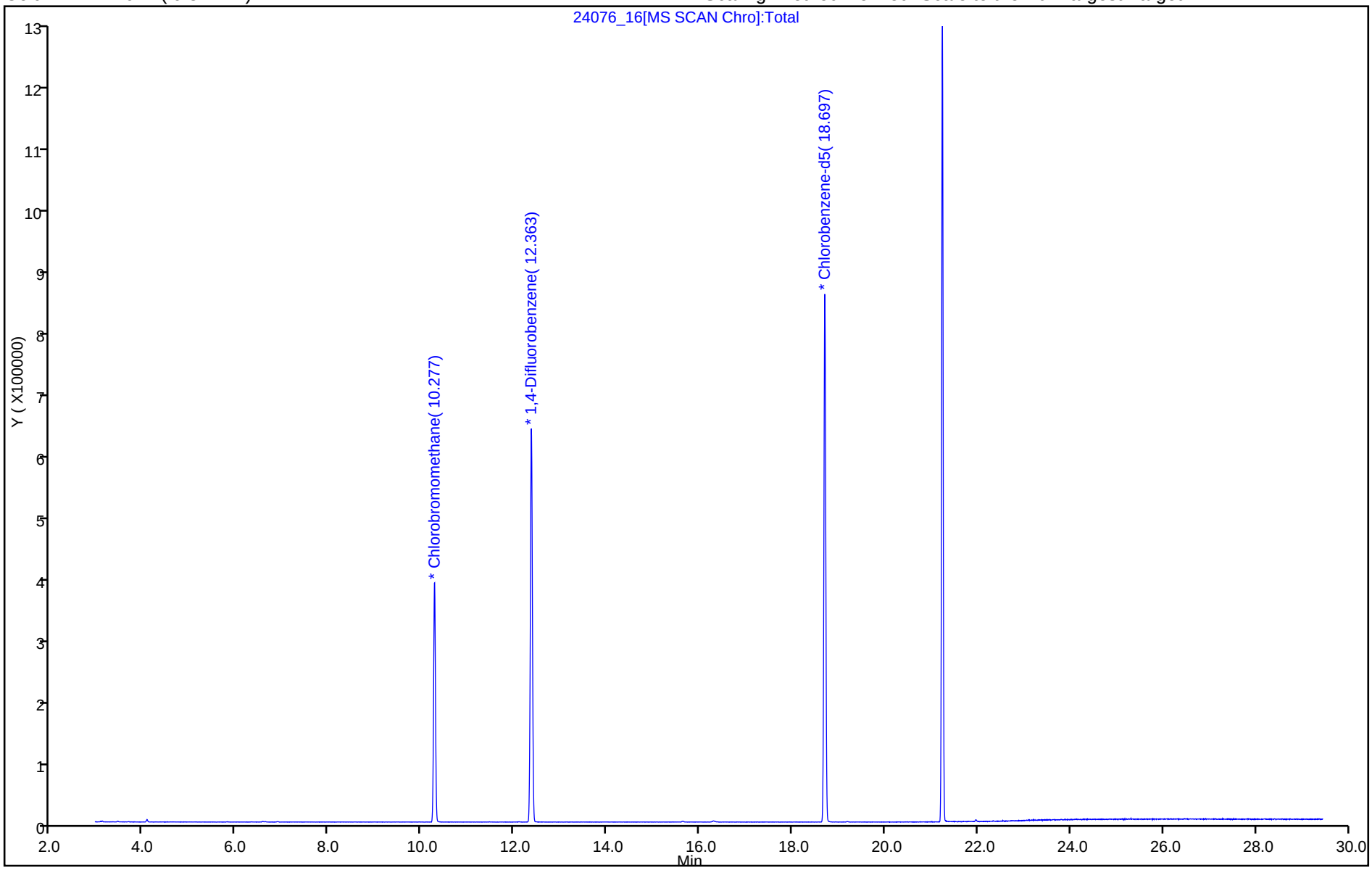
Report Date: 27-Feb-2017 13:30:56 Chrom Revision: 2.2 10-Jan-2017 11:26:10

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\CHX.i\20170224-24076.b\24076_16.D

Injection Date:	25-Feb-2017 01:20:30	Instrument ID:	CHX.i	Operator ID:	wrd
Lims ID:	200-37486-A-9	Lab Sample ID:	200-37486-9	Worklist Smp#:	16
Client ID:	4338				
Purge Vol:	200.000 mL	Dil. Factor:	0.2000	ALS Bottle#:	16
Method:	TO15_MasterMethod_X.m	Limit Group:	AI_TO15_ICAL		

Column: RTX-624 (0.32 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

TestAmerica Burlington

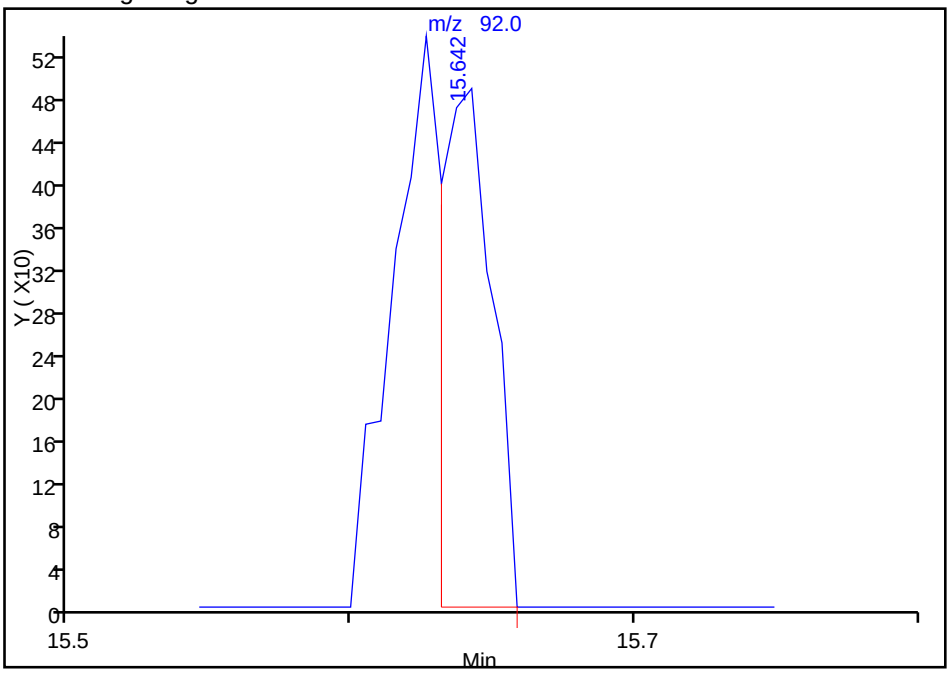
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20170224-24076.b\24076_16.D				
Injection Date:	25-Feb-2017 01:20:30	Instrument ID:	CHX.i		
Lims ID:	200-37486-A-9	Lab Sample ID:	200-37486-9		
Client ID:	4338				
Operator ID:	wrd	ALS Bottle#:	16	Worklist Smp#:	16
Purge Vol:	200.000 mL	Dil. Factor:	0.2000		
Method:	TO15_MasterMethod_X.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

65 Toluene, CAS: 108-88-3

Signal: 1

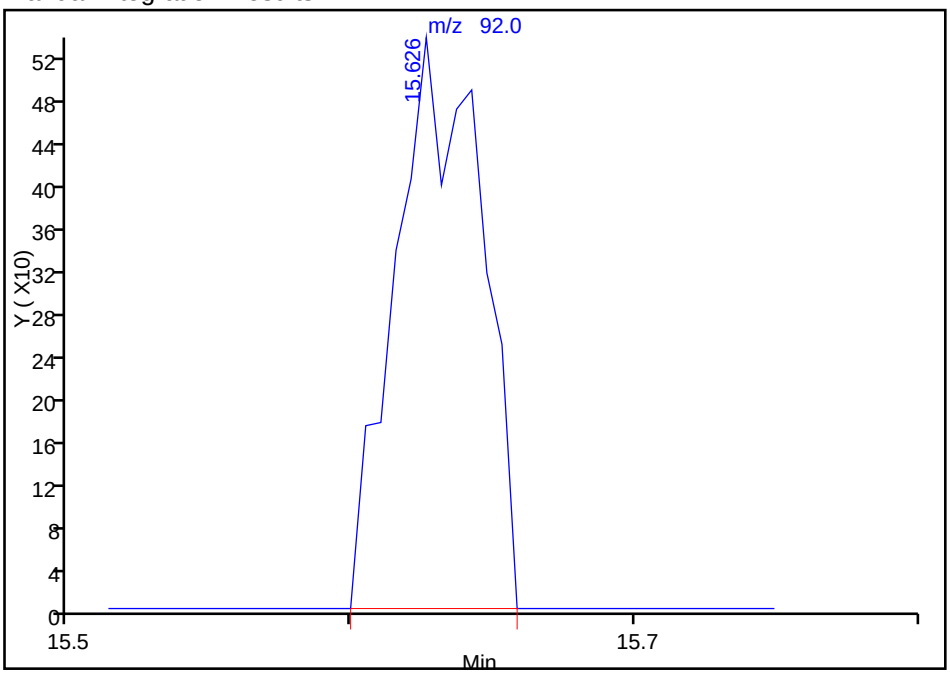
Processing Integration Results

RT: 15.64
Area: 613
Amount: 0.014629
Amount Units: ppb v/v



Manual Integration Results

RT: 15.63
Area: 1132
Amount: 0.027014
Amount Units: ppb v/v



Reviewer: maheseep, 27-Feb-2017 13:30:55

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Burlington

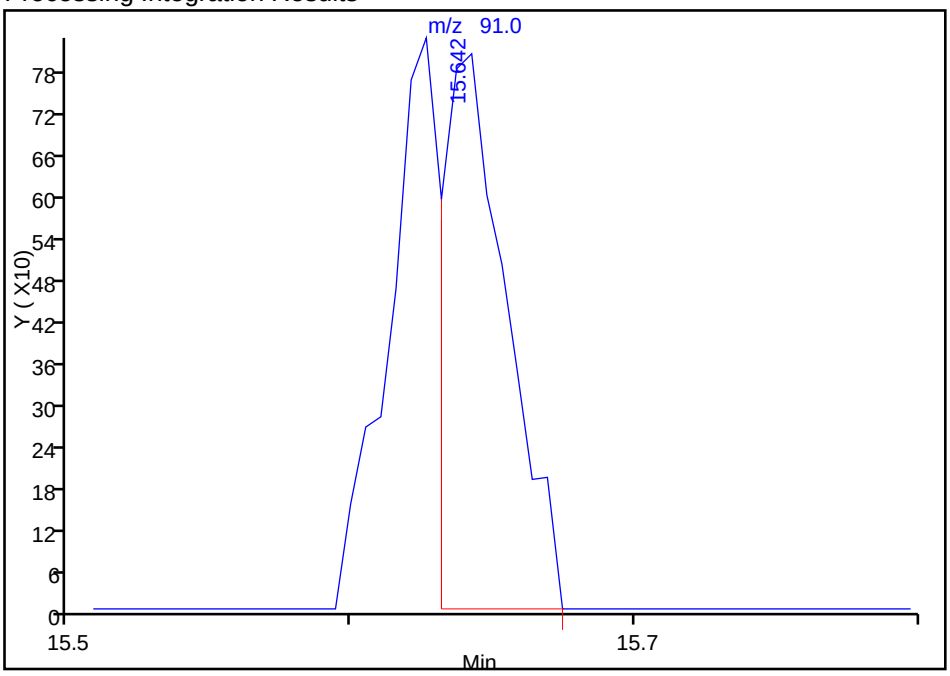
Data File:	\\ChromNA\Burlington\ChromData\CHX.i\20170224-24076.b\24076_16.D				
Injection Date:	25-Feb-2017 01:20:30	Instrument ID:	CHX.i		
Lims ID:	200-37486-A-9	Lab Sample ID:	200-37486-9		
Client ID:	4338				
Operator ID:	wrd	ALS Bottle#:	16	Worklist Smp#:	16
Purge Vol:	200.000 mL	Dil. Factor:	0.2000		
Method:	TO15_MasterMethod_X.m	Limit Group:	AI_TO15_ICAL		
Column:	RTX-624 (0.32 mm)	Detector	MS SCAN		

65 Toluene, CAS: 108-88-3

Signal: 2

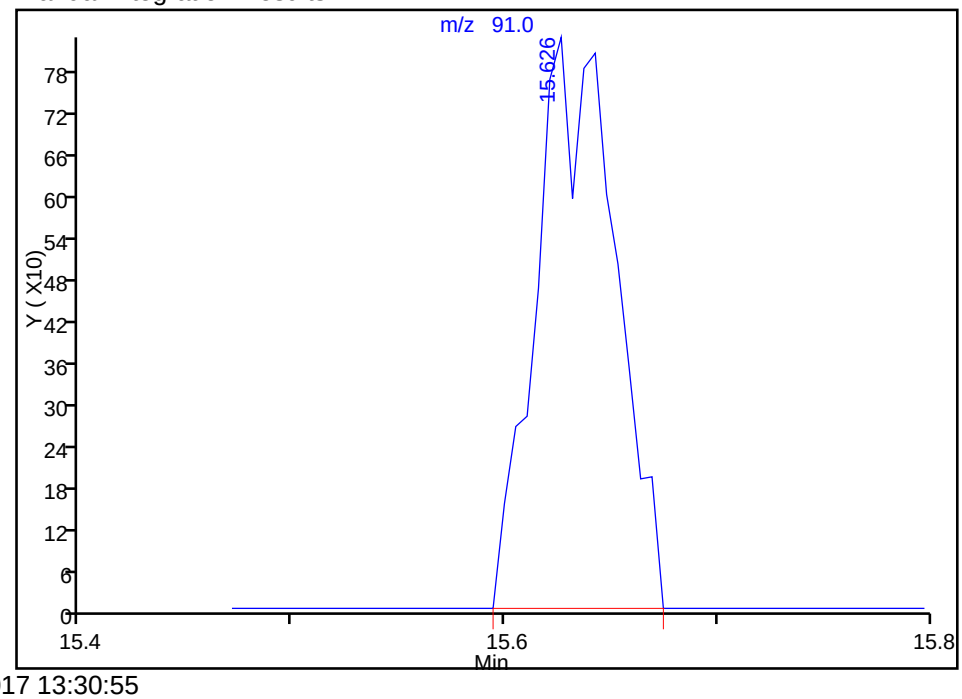
Processing Integration Results

RT: 15.64
Area: 1288
Amount: 0.014629
Amount Units: ppb v/v



Manual Integration Results

RT: 15.63
Area: 2173
Amount: 0.027014
Amount Units: ppb v/v



Reviewer: maheseep, 27-Feb-2017 13:30:55

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

APPENDIX D:
FIELD DATA SHEETS

VAPOR SAMPLING DATA SHEET

PROJECT: Calderwood DATE: 3/3/2017 PERSONNEL: CP

VAPOR POINT ID: VP-1 INDOOR X OR OUTDOOR _____

VAPOR POINT LOCATION / HEIGHT (FT): Conference Rm / Temporary Storage

WEATHER: Clear + Cold TEMP INSIDE: 72 TEMP OUTSIDE: 16°

BAROMETRIC PRESSURE: 30.18 (in Hg) SOURCE Fairbanks Museum

VAPOR POINT INTSTALLATION NOTES: Vapor point installed + leak-checked on 2/20/2017. see field notes for more details

LEAK TESTING DONE? (Y) / N on 2/20/17 HELIUM? (Y) / N HELIUM METER Rental Gas Check

CHAMBER HELIUM 50,000 UNITS ppm VP HELIUM 390 UNITS ppm PASS (Y) / N

CHAMBER HELIUM _____ UNITS _____ VP HELIUM _____ UNITS _____ PASS Y / N

DIFFERENTIAL PRESSURE READINGS (" H2O/ "Hg):

METER USED: TSI Micromanometer

Time: 1030 Time: +0.006 / _____ Subslab and basement

Time: 1030 Time: NA / _____ Subslab and outdoor air

NA / _____ Subslab and first floor

-0.044 / _____ Basement air space and outdoor - Basement "sucking" air

CANISTER INFORMATION READINGS:

CANISTER ID: 3517 (6 L) / 1L FLOW CONTROLER ID: 3683 (4 HR) / 8 HR / 24 HR

START TIME: 1035
RECORDED VAC: _____ ANALOG GAUGE VAC: -30.0 DIGIATAL GUAGE VAC: -28.4

STOP TIME: 1420
RECORDED VAC: _____ ANALOG GAUGE VAC: -9.9 DIGIATAL GUAGE VAC: -8.3

NOTES: _____

SAMPLE LOCATION CHECKLIST

Windows	☐ Open	☒ Closed	
Doors	☐ Open	☒ Closed	
Air System	☒ On	☐ Off	
Carpets	☒ Yes	☐ No	
Tobacco Use	☐ Yes	☒ No	
Unusual Odors	☐ Yes	☒ No	

List activities or materials present in vicinity of sampling location that could result in volatile emissions: No activities or matls present in space.

VAPOR SAMPLING DATA SHEET

PROJECT: Calderwood DATE: 3/3/2017 PERSONNEL: CP

VAPOR POINT ID: VP-2 INDOOR X OR OUTDOOR _____

VAPOR POINT LOCATION / HEIGHT (FT): sprinkler room

WEATHER: Clear + Cold TEMP INSIDE: 72° TEMP OUTSIDE: 16°

BAROMETRIC PRESSURE: 30.18 (in Hg) SOURCE Fairbanks Museum

VAPOR POINT INTSTALLATION NOTES: VP installed + leak-checked on 2/20/17 see field notes for more details.

LEAK TESTING DONE? (Y) or on 2/20 / N HELIUM? (Y) / N HELIUM METER Rental IonSc. GasCheck

CHAMBER HELIUM 58,000 UNITS ppm VP HELIUM 130 UNITS ppm PASS (Y) / N

CHAMBER HELIUM _____ UNITS _____ VP HELIUM _____ UNITS _____ PASS Y / N

DIFFERENTIAL PRESSURE READINGS (" H2O/ "Hg):

METER USED: TSI Micromanometer

Time: 1040	Time:	Time:	Time:	
+0.024 /	_____	Subslab and basement	_____ / _____	Subslab and outdoor air
_____ /	_____	Subslab and first floor	-0.044 / _____	Basement air space and outdoor

CANISTER INFORMATION READINGS:

CANISTER ID: 5615 (6 L / 1L FLOW CONTROLER ID: 5193 (4 HR/8 HR/24 HR

START TIME: 1042
RECORDED VAC: -28.8 ANALOG GAUGE VAC: -30.0 DIGIATAL GUAGE VAC: -28.8

STOP TIME: 1420
RECORDED VAC: -6.9 ANALOG GAUGE VAC: -8.5 DIGIATAL GUAGE VAC: -6.9

NOTES: _____

SAMPLE LOCATION CHECKLIST

Windows	☐	Open	☒	Closed
Doors	☐	Open	☒	Closed
Air System	☒	On	☐	Off
Carpets	☒	Yes	☐	No
Tobacco Use	☐	Yes	☒	No
Unusual Odors	☐	Yes	☒	No

List activities or materials present in vicinity of sampling location that could result in volatile emissions: salt staining on floor – Not a likely source of VOCs, though.

VAPOR SAMPLING DATA SHEET

PROJECT: Calbervood DATE: 3/3/2017 PERSONNEL: CP

VAPOR POINT ID: VP-3 INDOOR X OR OUTDOOR ____

VAPOR POINT LOCATION / HEIGHT (FT): furnace closet

WEATHER: Clear & Cold TEMP INSIDE: 72 TEMP OUTSIDE: 46°

BAROMETRIC PRESSURE: 30.18 (in Hg) SOURCE Fairbanks Museum

VAPOR POINT INTSTALLATION NOTES: Installed and leak-tested on 2/20/17
→ see field notes for more details.

LEAK TESTING DONE? (Y) / N HELIUM? (Y) / N (on 2/20/17) HELIUM METER Rental Ion Sci GasCheck

CHAMBER HELIUM 38,000 UNITS ppm VP HELIUM 170 UNITS ppm PASS (Y) / N

CHAMBER HELIUM ____ UNITS ____ VP HELIUM ____ UNITS ____ PASS Y / N

DIFFERENTIAL PRESSURE READINGS (" H2O/ "Hg):

METER USED: TSI MicroManometer

Time:	Time: 1050		Time:	Time:	
+0.004	/ ●	Subslab and basement	____	/ ____	Subslab and outdoor air
____	/ ____	Subslab and first floor	-0.044	/ ____	Basement air space and outdoor

CANISTER INFORMATION READINGS:

CANISTER ID: 2784 (6 L) / 1L FLOW CONTROLER ID: 2995 (4 HR/8 HR/24 HR)

START TIME: 1052
RECORDED VAC: -29.9 ANALOG GAUGE VAC: -30.0 DIGIATAL GUAGE VAC: -29.9

STOP TIME: 1433
RECORDED VAC: -7.4 ANALOG GAUGE VAC: -7.5 DIGIATAL GUAGE VAC: -7.4

NOTES: ____

SAMPLE LOCATION CHECKLIST

Windows	☐ Open	☒ Closed	
Doors	☐ Open	☒ Closed	
Air System	☒ On	☐ Off	
Carpets	☒ Yes	☐ No	
Tobacco Use	☐ Yes	☒ No	
Unusual Odors	☒ Yes (CP)	~~☒ No~~	faint odor, source not clear.

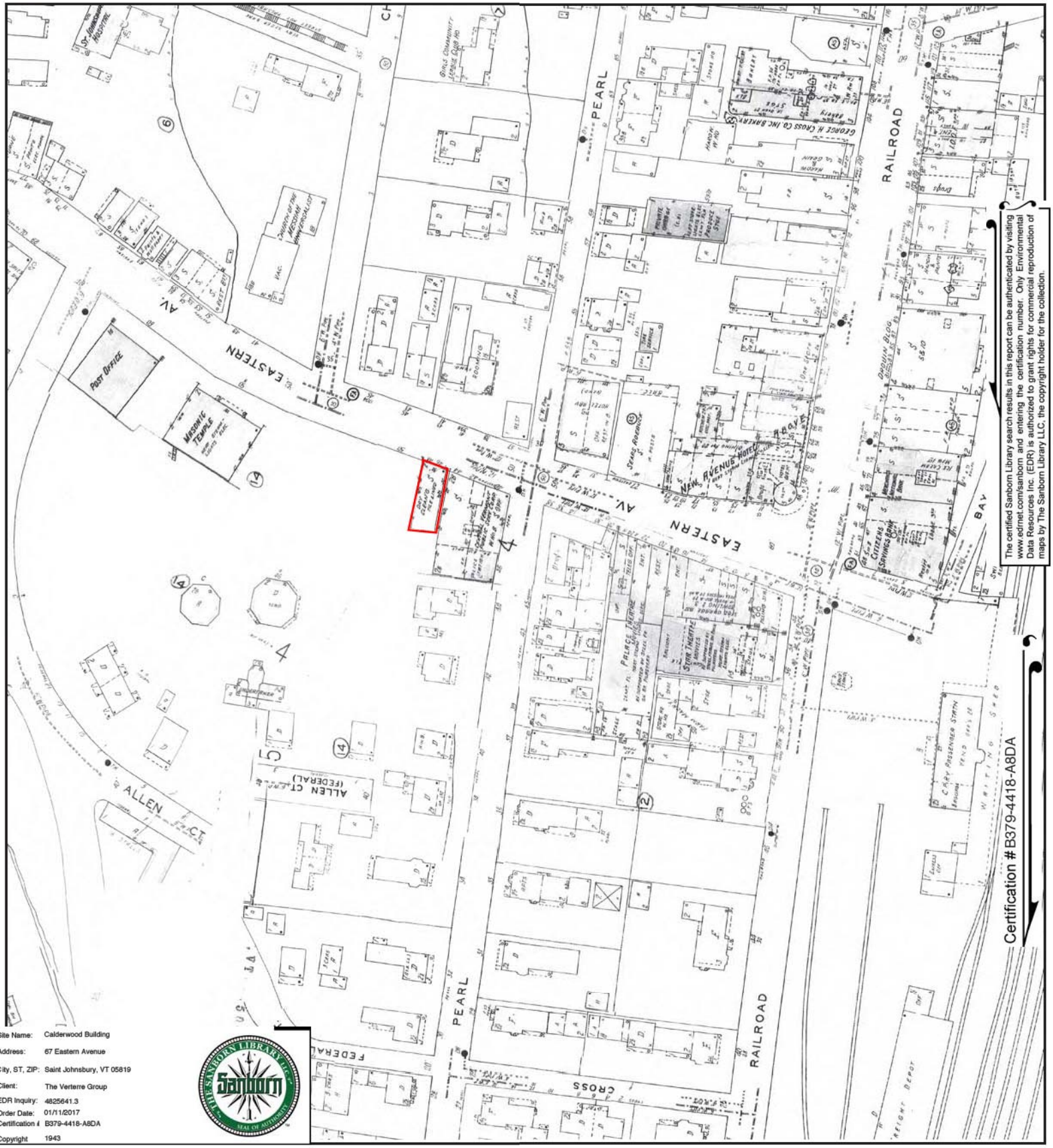
List activities or materials present in vicinity of sampling location that could result in volatile emissions: V. faint odor, but no clear indication of source.

APPENDIX E:
PHASE I ESA SANBORN® MAPS

1943 Sanborn® Map (WHEM Markup)
1964 Sanborn® Map (WHEM Markup)

Certified Sanborn® Map

1943



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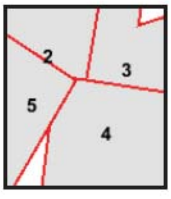
Site Name:	Calderwood Building
Address:	67 Eastern Avenue
City, ST, ZIP:	Saint Johnsbury, VT 05819
Client:	The Verterre Group
EDR Inquiry:	4825641.3
Order Date:	01/11/2017
Certification #	B379-4418-A8DA
Copyright	1943

This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

0 Feet 150 300 600



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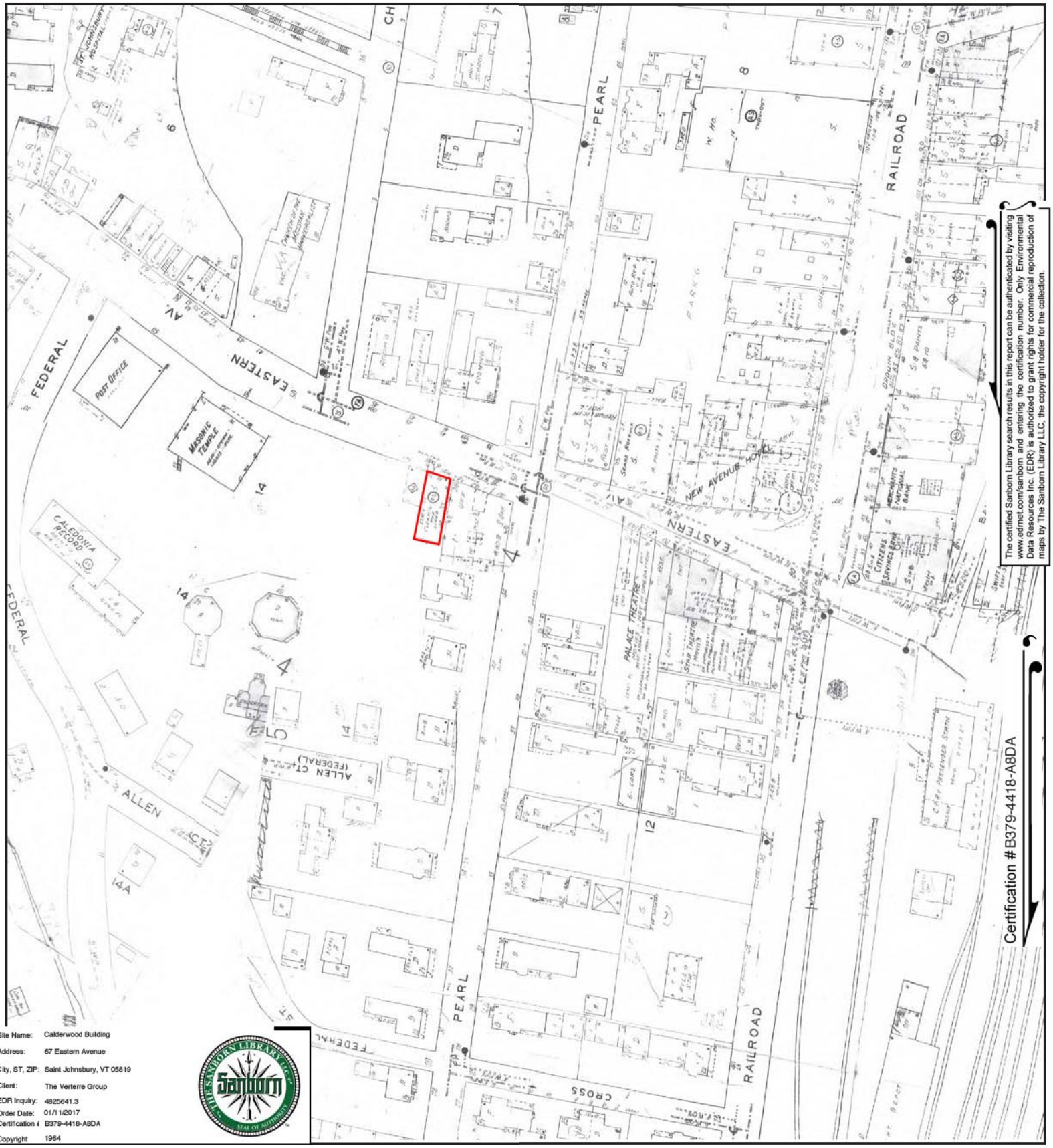
Volume 1, Sheet 4
Volume 1, Sheet 3
Volume 1, Sheet 2

N

Certified Sanborn® Map

1964



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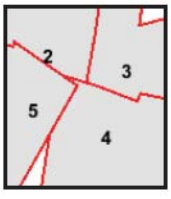
0 Feet 150 300 600



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Volume 1, Sheet 4
Volume 1, Sheet 3
Volume 1, Sheet 2

N