Brownfields Phase II Environmental Site Assessment
Brattleboro Museum and Art Center
35, 37-43 Main Street, and 5 Arch Street
Brattleboro, Vermont 05301

DEC SMS Site #20184758
EPA RFA#14113

July 20, 2018

Prepared for:

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LEE Project 17-103

Contents

1.0 EXECUTIVE SUMMARY

LE Environmental LLC (LEE) was retained by the Town of Brattleboro to perform a Brownfields Phase II Environmental Site Assessment (ESA) at 35 and 37-43 Main Street, and 5 Arch Street, Brattleboro, Vermont (Site). The Site is Vermont Department of Environmental Conservation (DEC) Site #20184758. The Phase II ESA was performed as specified in LEE's Site Specific Quality Assurance Project Plan Addendum (SSQAPP Addendum), approved by DEC and the USEPA.

The Site is located at the intersection of Main and Arch Streets in downtown Brattleboro. It is comprised of two separate parcels, totaling approximately 0.12 acres of land, and is known as the "Barrows Block." There are two buildings that adjoin each other on the Site. The buildings cover nearly the entire parcel except for approximately 5' on the east side of the Site, which is covered by a sidewalk, and an irregularly shaped piece of land (exposed bedrock) that extends along the river bank.

LEE performed a Phase II ESA consisting of a soil and soil gas evaluation. No on-Site releases have been reported, and none were identified during this Phase II ESA. Impacts from off-Site activities were detected in the soil gas results, as outlined below.

The results of the laboratory testing of soil samples were that there were no exceedences of regional screening levels or statewide background concentrations. No volatile organic compounds (VOCs) were detected and it appears that the soils have not been impacted by on-Site or by nearby activities.

LEE performed soil gas monitoring using the three installed VAPOR PINS® and indoor air quality monitoring inside the crawl space below 35 Main Street. An outdoor ambient air sample was collected simultaneously for comparison. The soil gas testing results indicate none of the reported sub-slab soil gas VOC concentrations exceeded soil gas screening values except for tetrachloroethene (PCE) in all three samples, and acrolein in two samples. The estimated acrolein concentration in SG-2 and SG-3 exceeded the residential sub-slab soil gas screening value. The results of the ambient air sampling indicated that the total concentration of VOCs in the ambient air sample was about 2 orders of magnitude below those in the soil gas samples. PCE was non-detectable in the ambient air and acrolein was reported at a concentration that was comparable to the sub-slab soil gas results.

The results of the crawl space air sampling indicated that the total concentration of VOCs in the crawl space sample was approximately half those in the soil gas samples. PCE was reported at a concentration 2-3 orders of magnitude below the sub-slab soil gas results and below the indoor air residential screening level. Acrolein was reported at a concentration that was in the same order of magnitude as the sub-slab

soil gas results, below the outdoor air concentration, and above the residential and the industrial air screening levels.

Several petroleum-based compounds were reported in the crawl space sample, including naphthalene, benzene toluene, ethylbenzene, xylenes, trimethylbenzene and butyl benzene. The most likely source for these detections is the nearby fuel oil storage tank and fuel oil boiler.

Concentrations of chloroform and isopropanol were also reported in the crawl space sample above the residential air screening levels. There is no apparent source for the chloroform in the crawl space air. Slightly higher chloroform concentrations were reported in soil gas samples SG-1 and SG-2. One possible source for chloroform in the environment is chlorination of drinking water, according to EPA.[1] It is also present near pulp and paper mills due to chlorination. There are municipal water mains nearby the Site and there was an historic paper mill upstream, behind the Latchis Theater. The likely source of the isopropanol is relic cleaning residue from the laboratory canister cleaning process.

LEE has developed the following recommendations in connection with this Phase II ESA.

1. A round of indoor air quality testing should be performed in the lower level of the 37-43 Main Street building. The purpose is to gauge whether PCE concentrations in the indoor air have been impacted by the sub-slab vapor concentrations.
2. If indoor air quality testing documents elevated PCE concentrations above DEC screening levels then future development should consider incorporating a sub-slab depressurization system in the construction to minimize impact.

[1] https://www.epa.gov/sites/production/files/2016-09/documents/chloroform.pdf

2.0 SITE INFORMATION

LE Environmental LLC of Waterbury, Vermont (LEE) was retained by the Town of Brattleboro to perform a Brownfields Phase II Environmental Site Assessment (ESA) at 35 and 37-43 Main Street, and 5 Arch Street, Brattleboro, Vermont (Site). A Site location map is attached. The Site is Vermont Department of Environmental Conservation (DEC) Site #20184758. The Phase II ESA was performed as specified in LEE's Site Specific Quality Assurance Project Plan Addendum (SSQAPP Addendum) dated April 3, 2018, amended on May 3, 2018. The amended SSQAPP was approved by DEC Site Manager Kimberly Caldwell on May 21, 2018 and by Nora Conlon of the USEPA Quality Assurance Unit on May 22, 2018.

The Site is located at the intersection of Main and Arch Streets in downtown Brattleboro. It is comprised of two separate parcels, totaling approximately 0.12 acres of land, and is known as the "Barrows Block." There are two buildings that adjoin each other on the Site, and the buildings cover almost all of the land associated with the Site. A description of the Site's current and former structures is included in Section 5.

Site Information Table	
Site Owner Name:	Brattleboro Museum and Art Center
Site Owner Address	10 Vernon Street, Brattleboro, VT 05301
Site Owner E-mail	danny@brattleboromuseum.org
Site Owner Phone	(802) 257-0124 x 108

3.0 CURRENT USE OF THE SITE

The Site includes office/retail space in two connected buildings on the east side of Main Street. The basement for 35 Main Street extends approximately 15' beneath 37 Main Street, and there is a dirt floor crawl space under the 35 Main Street building that houses utilities. The building at 37-43 Main and 5 Arch Street has a walkout basement.

The buildings cover nearly the entire parcel except for approximately 5' on the east side of the Site, which is covered by a sidewalk, and an irregularly shaped piece of land (exposed bedrock) that extends along the river bank.

The 35 Main Street portion of the Site includes a one-story brick building with a basement. It hosts vacant office/retail space. The brick building was built in the early 1920s. It has been recently renovated (2014). The 37-43 Main Street and 5 Arch Street portion of the Site hosts a nail salon, a massage parlor, vacant retail space, and a restaurant. The building was constructed in 1985, approximately eight years after a fire destroyed the previous three-story brick building at this address.

The three-story building had been in existence since at least 1885. It hosted retail stores, restaurants, offices and apartments.

4.0 CURRENT ADJOINING PROPERTY USES

Current uses of adjoining properties are as follows, past uses noted as known.

- North: 51 Main Street, a 4-story brick building with retail shops on the ground level and residential apartments upstairs.
- East: 11 Arch Street property, a vacant brick building and parking lot and a former electrical power plant and service center.
- South: Whetstone Brook, Vermont Route 119 (Bridge Street), Brattleboro Museum and Art Center, and a town park. The Brattleboro Museum and Art Center building is a former train station.
- West: Main Street, and a four-story building hosting shops and apartments.

5.0 SITE DESCRIPTION

The 35 Main Street portion of the Site hosts a one-story brick building with a basement. The brick building was built in the early 1920s. It was renovated in 2014 to include approximately 2,000 square feet of finished office space, and is currently vacant. The Site also includes approximately 800 square feet of finished office space in the basement of 37 Main Street. This portion of the Site was constructed in 1985. The Site is served by the municipal water and sewer systems.

The 37-43 Main Street portion of the Site hosts a one-story wood building with a basement. The building was constructed in 1985. The 37-43 Main Street building does not include the basement beneath 37 Main Street, which was deeded to the owner of the 35 Main Street Site in 1986.[2]

Current uses in the surrounding area are a mix of urban commercial, residential, and industrial development. Much of the area is currently developed with 3 and 4-story buildings that date back to the 1800s and the early 1900s. There are many retail stores along Main Street, a theater, offices, and residential apartments. Past uses in the area also included dry cleaners, a paper mill and printing presses.

The overall Site setting is along the north bank of Whetstone Brook. The land slopes sharply southward to the brook. The building foundation is on the north bank of Whetstone Brook. There are extensive bedrock outcrops in the brook visible from the Site and the adjoining properties. No wetland areas were observed. Depth to groundwater, where it exists, is likely to be 10-15 feet below grade (bg) and is likely dependent on the level of the brook. The depth to groundwater on the adjoining

[2] Brattleboro land records at V. 188, Pg. 241.

property to the east (11 Arch Street) was measured at 16.45' bg during the Phase II ESA.[3] The groundwater flow direction is most likely toward the brook during times of low or normal brook level, and possibly away from the brook during high water events. The depth to groundwater and predicted flow direction were not confirmed during this Phase I ESA.

6.0 LATITUDE/LONGITUDE

The Site coordinates are 42° 51' 4.25'' north latitude and 72° 33' 26.44''west longitude.[4]

7.0 PROPERTY HISTORY

35 Main Street

1. The Site was undeveloped until between 1920 and 1925.
2. A one-story brick building was constructed on the Site between 1920 and 1925. The building was used as a barbershop and a plumbing and heating business from the 1920s to 1935, and then as offices for several energy companies from 1940 until after 1989.
3. A fire destroyed the adjoining 3-story brick building to the north in January 1977. The 35 Main Street building sustained substantial damage, but was not destroyed.
4. The office space was renovated in 2014. It has remained vacant since then.

37-43 Main Street and 5 Arch Street

1. The Site was developed with a 3-story brick building in 1885. It was originally known as the Tyler Block, then the Odd Fellows Block, and then the Barrows Block.
2. The 3-story building remained on the Site until January 1977, when a fire destroyed the building.
3. Uses of the 3-story building during its lifetime included retail shops, restaurants, and offices on the first floor, and residential apartments on the second and third floors.
4. After the fire, the building was demolished and the Site sat vacant and unused from 1977 to 1985.
5. In 1985, the current 1-story wood building with full basement was built.
6. Uses of the building since 1985 have included retail shops, salons, and restaurants.

[3] LEE, 2015a, Page 14.
[4] EDR, Environmental Database Radius Report, Page 3.

The Phase I ESA reports completed for the Site in 2017 identified the following Recognized Environmental Condition (REC) as defined by ASTM E1527-13: Adjoining and nearby Site uses including dry cleaning, printing, underground storage tanks. The Site is downhill of much of the downtown Brattleboro area. There are numerous USTs, RCRA generators, historic and recent dry cleaners in the area. There was a paper mill upstream of the Site shown on Sanborn maps from 1906 to 1925. The ANR inventoried approximately 21 hazardous sites and 26 historic dry cleaners within a 2-block distance from the Site.

LEE recommended a Phase II ESA be performed to evaluate the identified RECs' potential to impact the proposed future use of the Site. In particular, the Phase II ESA should address the potential for soil vapor encroachment onto the Site and within the Site. Soils should also be evaluated to the extent that they pose a potential exposure risk to site users and/or potential issues during any future redevelopment and excavation.

8.0 SITE CONTAMINANT BACKGROUND

A. Release Date and Description

No on-Site releases have been reported, and none were identified during this Phase II ESA. The following listings were included in the Phase I ESA EDR Report for Barrows Coal, listed at 35 Main Street:

- State of Vermont Department of Environmental Conservation (DEC) underground storage tank (UST) and above ground storage tank (AST) registry listing;
- DEC hazardous was site listing and Recovered Government Archive (RGA) leaking UST registry and hazardous waste site;
- Vermont Tier 2 hazardous materials inventory database including fuel oil, kerosene and gasoline.

However, review of supplemental information and the fire department interview (Phase I ESA, Section 7.3) indicates that the actual location of the Barrows Coal Site is at the south end of Depot Street in Brattleboro, approximately 1,200 feet to the south of the Site.

B. Release Report Date

Not applicable, no on-Site releases are known to have taken place.

C. Release Response Actions

Not applicable, no on-Site releases are known to have taken place.

D. Previous Environmental Documents

Phase I Environmental Site Assessment

LEE prepared separate Phase I ESAs at the Site in December 2017. [5]At that time, the Site was owned by two different entities and the Town of Brattleboro identified the Site with two separate tax map numbers. The Phase I ESAs included Tax Parcel #00275480.100 (35 Main Street), and Tax Parcel #00275480.210 (37-43 Main Street and 5 Arch Street), Brattleboro, Vermont.

The Phase I ESAs were conducted for the Town of Brattleboro on behalf of the Brattleboro Museum and Art Center (BMAC) using EPA Brownfields Assessment Grant Funding awarded via Grant #BF-00A00112-0.

The Site does not appear on the environmental databases searched during the Phase I ESAs. There is a fuel oil AST in the basement and two propane tanks outside the building. Fuel oil is used to heat the building, and propane is used for restaurant cooking.

The adjoining property to the east (11 Arch Street) is an historic machine shop, leather manufacturing facility, electrical powerhouse, and substation. Phase I and Phase II ESAs were performed and confirmed that the 11 Arch Street Site contains tetrachloroethene (PCE), polycyclic aromatic hydrocarbons (PAHs), petroleum, arsenic, lead and polychlorinated biphenyl compounds (PCBs). A corrective action plan was prepared.

E. Copy of Previous Environmental Documents

Both of the referenced prior Phase I ESA reports are on file with the DEC in Montpelier, Vermont.

F. List of Governmental Records Reviewed

LEE reviewed various governmental records during and preceding this Phase II ESA, including records reviewed during the Phase I ESA:

- Town of Brattleboro Land Records
- State of Vermont Department of Environmental Conservation Hazardous Sites List, Solid Waste Facilities list, Leaking UST and Above-ground Storage Tank database, Brownfields List

[5] LEE, Phase I Environmental Site Assessment Reports, KDC, LLC (35 Main Street) and Brattleboro Real Estate Investments, LP, Brattleboro, Vermont, December 22, 2017.

- EPA National Priorities List (NPL), Proposed NPL, Delisted NPL, CERCLIS, RCRA CORRACTS, RCRA TSDF, RCRA Generators database, Institutional Controls inventory, Emergency Response Notification System

9.0 WORK PLAN PROTOCOL DEVIATIONS

All of the work described in the approved SSQAPP was performed as described, with no deviation.

10.0 SAMPLE COLLECTION DEVIATIONS

No deviations from the sample collection protocols identified in the approved SSQAPP were made.

11.0 CONTAMINATED MEDIA CHARACTERIZATION

LEE performed a Phase II ESA consisting of a soil and soil gas evaluation. The future plans for development of the Site include residential uses; therefore, all laboratory analytical data have been evaluated in the context of state and federal residential Site thresholds for contaminated media. Photos showing the investigation locations are in Appendix A.

A. Soil

LEE performed a soil boring investigation of the Site as described in the approved SSQAPP addendum. Three borings were advanced through the cement basement floor of the building and soil samples were extracted using hand tools. A Site Map depicting the locations of the sampling is attached.

The interior boreholes were advanced to 6-12" below the base of the cement floor slab. Soils encountered in the interior borings generally consisted of dry and loose sand with gravel. Groundwater and wet soils were not encountered. Refusal of the sampling tools on apparent bedrock was noted at SB-1 and SB-2. Soil samples were screened for the presence of volatile organic compounds (VOCs) using a portable photoionization device (PID) with a 10.6 eV bulb. PID readings were 0.0 parts per million (ppm) in the soil samples. No odors or staining were observed.

Three soil samples were collected for laboratory testing. The soil samples, identified as SS-1 through SS-3 were analyzed for VOCs via EPA Method 8260C with Method 5035 methanol preservation, PP13 Metals via EPA Method 6020, and for PAHs via EPA Method 8270D. Each soil sample was submitted to EAI for analysis.

The results of the laboratory testing of soil samples are summarized in Appendix C and the laboratory report is in Appendix D.

- No detectable VOCs were reported in soil samples SS-1 through SS-3 except a trace concentration of styrene was reported in SS-1 (0.38 milligrams per kilogram (mg/kg)), well below the residential screening level of 6,000 mg/kg.
- PAHs were present above reporting limits in one of the three soil samples (SS-3). None of the reported PAH concentrations or the calculated toxicity equivalency quotient as Benzo-a-Pyrene (TEQ B[a]P) exceeded state or federal industrial site soil screening values. No PAHs above detection limits were reported in SS-1 or SS-2.
- Arsenic was not reported at concentrations above statewide background concentrations. None of the other 13 PP Metals tested for during the Phase II ESA were reported at concentrations above regional screening levels or Vermont residential screening levels.

B. Groundwater

Groundwater was not investigated due to the presence of bedrock outcrops near the Site, and the Site is covered with the buildings and bedrock outcrops, thus it appears unlikely there would be sufficient groundwater on the Site to sample. While occasional small quantities of groundwater may be present and could have contributed to contaminant migration onto the Site, the groundwater column is likely not sufficient to collect samples.

C. Drinking Water

The Site and nearby properties are served by the Town of Brattleboro municipal water system. No drinking water wells are nearby, and no drinking water wells were tested during the Phase II ESA. The closest known water supply wells are located approximately 15,000 feet to the west of the Site according to the DEC's on line water supply well locator.[6]

D. Surface Water

The Vermont Natural Resources Atlas does not depict Class 1 or Class 2 Wetlands or Wetlands Advisory areas on or in the vicinity of the Site. The Whetstone Brook abuts the Site on its south side. However, it does not seem likely that the brook would be detectably impacted by contamination observed on the Site. Soil contamination and groundwater contamination were not identified on the Site. Lead was identified as a groundwater contaminant on the adjoining property to the east (11 Arch Street).

[6] Vermont Agency of Natural Resources Private Well Locator

E. Sediment

Sediment was not evaluated during the Phase II ESA because there is no sediment on the Site. Sediment in the adjoining Whetstone Brook was not evaluated. Soil contamination was not found on Site. Contamination, if present in the sediment, could have come from a wide variety of sources proximal to the brook and would not likely reflect contributions from the Site.

F. Soil Gas and Indoor Air

Three soil gas samples, an outdoor ambient air sample, and a crawl space indoor air sample during the Phase II ESA. The locations are shown on the attached Site Map.

Soil Gas Testing

On June 7, 2018, three VAPOR PINS® were installed in 5/8" penetrations of the basement floor slab. The penetrations were made by LEE using an electric rotary hammer drill and 5/8" masonry drill bit. The VAPOR PINS® allow collection of representative soil gas samples from soils below the bottom of the building's foundation. The VAPOR PINS® consist of ¼" ID x 3" brass fitting with a silicon seal. The VAPOR PINS® were pressed into the 5/8" hole to create a tight seal around the pin. The VAPOR PINS® were water tested following installation to insure that no leakage was taking place around the pin.

On June 7, 2018, LEE performed soil gas monitoring using the three installed VAPOR PINS®. An outdoor ambient air sample was collected simultaneously for comparison. The ambient air sample was collected from a point on the east side of the building, along the rear sidewalk.

Approximately 1 liter of air was purged from each VAPOR PIN® prior to sampling using a calibrated air pump at 200 ml/min. The soil gas wells were screened prior to sampling with a PID and readings of 1.3, 2.6, and 2.5 ppm were obtained from SG-1, SG-2 and SG-3, respectively.

Following successful QAQC tests, soil gas samples and the ambient air sample were collected into 1.4-liter stainless steel Summa canisters with 2-hour regulators. The post-sampling PID readings collected from each well were 0.3, 0.6, and 0.1 ppm from SG-1, 2 and 3, respectively.

ALS of Simi Valley, California analyzed the soil gas samples via EPA Method TO-15. A summary of the soil gas results is included in Appendix C, and the laboratory analytical report is included in Appendix D. Detected compounds are presented for reference in this summary table along with the Vapor Intrusion (VI) residential screening values for sub-slab soil gas.

The soil gas testing results indicate approximately equal numbers of detected VOCs in each soil gas sample (32 VOCs in soil gas sample SG-1, 28 VOCs in soil gas sample SG-2, and 31 VOCs in soil gas sample SG-3). The VOCs included petroleum, chlorinated solvents (PCE and trichloroethene), alcohols (isopropyl alcohol, ethanol), Freon, and ketones (acetone, 2-Hexanone, MIBK, MEK).

Total reported VOC concentrations were 1,488 ug/m^3 in SG-1, 1,660 ug/m^3 in SG-2, and 1,553 ug/m^3 in SG-3. Alcohols and acetone appear to comprise the majority of the reported VOC concentrations in all of the samples. These compounds are used in laboratories to clean the soil gas canisters, and their presence may not represent actual subsurface conditions.

None of the reported VOC concentrations exceeded VI residential sub-slab soil gas screening values except for PCE in all three samples, and acrolein in SG-2 and SG-3. The reported PCE concentration in SG-3 (200 micrograms per cubic meter (ug/m^3)) also exceeded the industrial sub-slab soil gas screening value (170 ug/m^3). The estimated acrolein concentration in SG-2 and SG-3 (1.6 ug/m^3 and 0.98 ug/m^3) exceeded the VI residential sub-slab soil gas screening value (0.7 ug/m^3) but did not exceed the industrial sub-slab soil gas screening value (2.9 ug/m^3).

The results of the ambient air sampling indicated that a slightly larger number of VOCs (36) were present in the ambient air and the total concentration of VOCs in the ambient air sample was about 2 orders of magnitude below those in the soil gas samples (43 ug/m^3). PCE was non-detectable in the ambient air sample, and acrolein was reported at a concentration (1.0 ug/m^3), which was comparable to the sub-slab soil gas results. Acrolein, benzene, and trichloroethene were reported at concentrations above the residential air screening levels in the outdoor air sample.

Crawl Space Air Sample

On June 7, 2018, LEE performed indoor air quality monitoring inside the crawl space below 35 Main Street. Weather conditions during the IAQ testing were sunny and little wind, with outdoor temperatures ranging from 65-75 degrees F. The indoor temperatures in both the basement crawl space and first floor were comparable. The basement crawl space is not normally occupied and was unoccupied during the testing. The trap door to the crawl space was closed except for incidental entry and exit for test monitoring purposes.

ALS analyzed the crawl space sample via EPA Method TO-15. A summary of the crawl space results is included in Appendix C, and the laboratory analytical report is included in Appendix D. Detected compounds are presented for reference in this summary table along with the I-Rule air screening values.

The results of the crawl space air sampling indicated that 51 VOCs were present in the crawl space sample, and the total concentration of VOCs in the crawl space sample was approximately half those in the soil gas samples (873 ug/m^3). PCE was

reported at a concentration (0.20 ug/m^3) approximately 2-3 orders of magnitude below the sub-slab soil gas results and below the indoor air residential screening level. Acrolein was reported at a concentration (0.22 ug/m^3), which was in the same order of magnitude as the sub-slab soil gas results, below the outdoor ambient air concentration, and above the residential and the industrial air screening levels.

A concentration of naphthalene was reported in the crawl space sample (0.28 ug/m^3) that exceeded the residential and industrial indoor air screening levels. A concentration of benzene was reported in the crawl space sample (0.56 ug/m^3) that exceeded the residential but not the industrial indoor air screening level. Several other petroleum-based compounds were also reported in the crawl space sample, which were below the residential indoor air screening levels, including toluene, ethylbenzene, xylenes, trimethylbenzene and butyl benzene. The most likely source of these detections is the nearby presence of the fuel oil storage tank and fuel oil boiler.

Concentrations of chloroform and isopropanol were also reported in the crawl space sample above the residential air screening levels. There is no obvious source for the chloroform in the crawl space air. Slightly higher chloroform concentrations were also reported in soil gas samples SG-1 and SG-2. One possible source for chloroform in the environment is chlorination of drinking water, wastewater, and swimming pools according to EPA.[7] It is also present near pulp and paper mills due to chlorination. There are municipal water mains nearby the Site and there was an historic paper mill upstream, behind the Latchis Theater. The likely source of the isopropanol is relic cleaning residue from the laboratory canister cleaning process.

G. Site-Specific Values

No site-specific values were proposed or generated during this ISI.

12.0 SITE-SPECIFIC RISK ASSESSMENT

No site-specific risk assessment was proposed or generated during this ISI.

13.0 MAPS

A Site location map, Site Map, Air Contaminant Map, and a current ANR Natural Resources Atlas map are attached.

[7] https://www.epa.gov/sites/production/files/2016-09/documents/chloroform.pdf

14.0 DISCUSSION

The soils data collected during this Phase II ESA suggest that soils beneath the building do not contain levels of VOCs, metals, or PAHs that would suggest the presence of urban soils or other on-Site contamination. It appears there is very little soil at the Site, and that bedrock is close to the bottom of the building. There are bedrock outcrops along the south side of the building, near Whetstone Brook.

The soil gas data suggest that PCE is present at concentrations above DEC screening values for vapor intrusion into structures. The concentrations at all three soil gas sampling locations exceeded the residential vapor intrusion threshold, while the concentration at SG-3 exceeded the residential and industrial vapor intrusion thresholds. The ambient air sample did not contain a detectable concentration of PCE. Therefore, it appears that it is present in soil gas due to sub-surface conditions, and not as a result of infiltration from the outdoor air due to nearby activities.

The crawl space sample contained PCE at a concentration below the residential air screening threshold. This suggests that soil gas not trapped beneath the cement floor slab is diffusing into the building's air space and is diluted. The crawl space is a closed section of the 35 Main Street building surrounded by foundation walls with no windows or doors except for the 18" square trap door in the first floor. There was minimal disturbance during the sampling, and therefore, the reported concentration of PCE in the crawl space air most likely represents close to equilibrium conditions for the soil gas to indoor air transfer. Since the reported concentration was below the residential air screening level, it appears unlikely that the indoor air in the basement and first floor of 35 Main Street would be impacted with PCE at concentrations over the residential air screening level.

The PCE concentrations in soil gas beneath the 37-43 Main Street building suggest that indoor air could be impacted with PCE above residential screening levels. The 35 Main Street crawl space air testing data are not directly comparable with the 37-43 Main Street indoor air environment because of differences in the way the buildings were constructed. The foundation at 35 Main Street is brick and stone with a dirt floor crawl space built in the 1920s while the foundation at 37-43 Main Street is a poured concrete foundation built in the 1970's. The two foundations are separated by cement walls.

Acrolein was found in soil gas at concentrations above residential sub-slab soil screening values. Acrolein was also found in the outdoor air at comparable concentrations and in the crawl space air. These observations suggest that there is an area wide source of acrolein and that it could be transmitted through outdoor air. According to an EPA summary, acrolein is primarily used as an intermediate in

chemical synthesis, and as a biocide. It also forms from the breakdown of outdoor air pollutants and from burning of organic matter such as tobacco or petroleum.[8]

Updated Site Conceptual Model

The Site consists of an approximately 0.12 acre parcel on the east side of Main Street in downtown Brattleboro. Current uses in the surrounding area are a mix of urban commercial, residential, and industrial development. Much of the area is currently developed with 3 and 4-story buildings that date back to the 1800s and the early 1900s. There are many retail stores along Main Street, a theater, offices, and residential apartments. Past uses in the area also included dry cleaners, a paper mill and printing presses.

The overall Site setting is along the north bank of Whetstone Brook. The land slopes sharply southward to the brook. The building foundation is on the north bank of Whetstone Brook. There are extensive bedrock outcrops in the brook visible from the Site and the adjoining properties. No wetland areas were observed.

Bedrock in the vicinity of the Site consists of phyllite, slate and quartzite of the Devonian-aged Waits River Formation. The overburden deposits in the area of the Site are mapped as glacial lake sand deposits associated with the most recent Pleistocene ice age.[9] Soil boring data suggests that the soils on the Site are not native and that either there were no native soils (e.g., the site was exposed bedrock), or the native soils were removed during development, and later replaced with fill soils.

Geologically, the site is in the Connecticut River Valley with was formerly occupied by the postglacial Connecticut Valley Lake, also known as Lake Hitchcock.[10] The regional shallow overburden in the valley is comprised dominantly of Pleistocene, glaciolacustrine littoral sediments; well-sorted littoral sands are deposited over the bedrock and are overlain by horizontally bedded littoral sands and gravel deposited by the shoaling lake.[11] The regional overburden aquifer is not continuous, but occupies the buried valleys in the bedrock.

Potential Sources

The potential source(s) of contamination at the Site are adjoining and nearby current and historic property uses including dry cleaning, printing, paper mills, and underground storage tanks. No other potential sources are known at this time.

[8] https://www.epa.gov/sites/production/files/2016-08/documents/acrolein.pdf
[9] ANR Natural Resources Atlas.
[10] Stewart and MacClintock, 1969
[11] Doll, 1970.

Potential Receptors

Buildings in the Vicinity

Based on the results of the Phase II ESA, it does not appear that the Site poses an environmental risk to nearby buildings, although nearby buildings could be susceptible to the same area-wide soil gas concerns that appear to be present at the Site.

Utility Corridors

Utility corridors in the vicinity of the Site include buried water, sewer and storm drain lines. Based on the results of the Phase II ESA, it does not appear that the Site poses an environmental risk to nearby utility lines.

Wetlands and Surface Water Bodies

The Vermont Natural Resources Atlas does not depict Class 1 or Class 2 Wetlands or Wetlands Advisory areas on or in the vicinity of the site. The Whetstone Brook abuts the Site on its east side. Based on the results of the Phase II ESA, it does not appear that the Site poses an environmental risk to the brook.

Public and Private Water Supplies

The Site and surrounding area is served by a municipal water system. The closest known water supply wells is located approximately 15,000 feet to the west of the Site according to the DEC's on line water supply well locator.[12] Based on the results of the Phase II ESA, the Site does not pose risk to water supplies.

Site Users

The Site is currently used by commercial businesses. There is no known impact to Site users at this time. The crawl space data indicate that tenants at 35 Main Street do not appear to be at risk due to PCE contamination below the building. The sub-slab soil gas data indicate that tenants at 37-43 Main Street could be at risk due to PCE contamination below the building.

15.0 DATA PRESENTATION

LEE compiled current and previous analytical data for the Site in tabular format with comparisons to the current state and federal soil screening values presented in the I-Rule. These tables are included in Appendix C, with the supporting laboratory

[12] Vermont Agency of Natural Resources Private Well Locator

data in Appendix D. Observations regarding the data and comparison to current screening values are presented in Section 11.

16.0 QA/QC SAMPLE RESULTS

LEE's quality assurance officer for the Site performed data validation per requirements of LEE's Generic QAPP document, Sections Q, R, and S. The review included field and laboratory data. All data were determined to be acceptable without condition for the purposes of the Phase II ESA. The data validation report and calculations spreadsheet are included in Appendix E.

17.0 INVESTIGATION DERIVED WASTE

Investigation-derived waste associated with this investigation included small amounts of concrete and soils generated during drilling. All of the drill cuttings were returned to the boreholes that they were generated from. No investigation-derived waste was left on Site pending testing or disposal.

18.0 CONCLUSIONS AND RECOMMENDATIONS

LEE has developed the following conclusions following completion of this investigation.

1. LEE was retained by the Town of Brattleboro to perform a Brownfields Phase II at the Site. The Phase II ESA was performed as specified in LEE's Site SSQAPP Addendum dated April 3, 2018, amended on May 3, 2018. The amended SSQAPP was approved by DEC on May 21, 2018 and by USEPA on May 22, 2018.
2. No on-Site releases have been reported, and none were identified during this Phase II ESA.
3. The results of the laboratory testing of soil samples were that no detectable VOCs were reported in soil samples SS-1 through SS-3 except a trace concentration of styrene was reported in SS-1, well below the residential screening level. PAHs were present above reporting limits in one of the three soil samples (SS-3). None of the reported PAH concentrations or the calculated TEQ B[a]P exceeded state or federal industrial site soil screening values. Arsenic was not reported at concentrations above statewide background concentrations. None of the other 13 PP Metals tested for during the Phase II ESA were reported at concentrations above regional screening levels or Vermont residential screening levels.
4. LEE performed soil gas monitoring using the three installed VAPOR PINS® and indoor air quality monitoring inside the crawl space below 35 Main Street. An outdoor ambient air sample was collected simultaneously for comparison. The soil gas testing results indicate approximately equal numbers of detected VOCs in each soil gas sample. Alcohols and acetone comprise the majority of the

reported VOC concentrations in all of the samples. These compounds are used in laboratories to clean the soil gas canisters, and their presence may not represent actual subsurface conditions. None of the reported sub-slab soil gas VOC concentrations exceeded VI residential sub-slab soil gas screening values except for PCE in all three samples, and acrolein in SG-2 and SG-3. The reported PCE concentration in SG-3 also exceeded the industrial sub-slab soil gas screening value. The estimated acrolein concentration in SG-2 and SG-3 exceeded the VI residential sub-slab soil gas screening value but did not exceed the industrial sub-slab soil gas screening value.

5. The results of the ambient air sampling indicated that the total concentration of VOCs in the ambient air sample was about 2 orders of magnitude below those in the soil gas samples. PCE was non-detectable in the ambient air and acrolein was reported at a concentration that was comparable to the sub-slab soil gas results.
6. The results of the crawl space air sampling indicated that the total concentration of VOCs in the crawl space sample was approximately half those in the soil gas samples. PCE was reported at a concentration 2-3 orders of magnitude below the sub-slab soil gas results and below the indoor air residential screening level. Acrolein was reported at a concentration that was in the same order of magnitude as the sub-slab soil gas results, below the outdoor air concentration, and above the residential and the industrial air screening levels.
7. A concentration of naphthalene was reported in the crawl space sample that exceeded the residential and industrial indoor air screening levels. A concentration of benzene was reported in the crawl space sample that exceeded the residential but not the industrial indoor air screening level. Several other petroleum-based compounds were also reported in the crawl space sample, the concentrations of which were below the residential indoor air screening levels, including toluene, ethylbenzene, xylenes, trimethylbenzene and butyl benzene. The most likely explanation for these detections is the nearby presence of the fuel oil storage tank and fuel oil boiler.
8. Concentrations of chloroform and isopropanol were also reported in the crawl space sample above the residential air screening levels. There is no obvious source for the chloroform in the crawl space air. Slightly higher chloroform concentrations were reported in soil gas samples SG-1 and SG-2. One possible source for chloroform in the environment is chlorination of drinking water, wastewater and swimming pools according to EPA.[13] It is also present near pulp and paper mills due to chlorination. There are municipal water mains nearby the Site and there was an historic paper mill upstream, behind the Latchis Theater. The likely source of the isopropanol is relic cleaning residue from the laboratory canister cleaning process.

LEE has developed the following recommendations in connection with this Phase II ESA.

[13] https://www.epa.gov/sites/production/files/2016-09/documents/chloroform.pdf

1. A round of indoor air quality testing should be performed in the lower level of the 37-43 Main Street building. The purpose is to gauge whether PCE concentrations in the indoor air have been impacted by the sub-slab vapor concentrations.
2. If indoor air quality testing documents elevated PCE concentrations above DEC screening levels then future development should consider incorporating a sub-slab depressurization system in the construction to minimize impact.

19.0 SIGNATURE AND CERTIFICATION

"I certify under penalty of perjury that I am an environmental professional and that all content contained within this deliverable is to the best of my knowledge true and correct."

_____
Alan Liptak, Environmental Professional

20.0 STANDARD OPERATING PROCEDURES

A list of consultant standard operating procedures (SOPs) that were used during site investigation shall be listed in the report and provided to the Secretary upon request.

A list of SOPs was included in the approved SSQAPP Addendum.

21.0 MAPS AND APPENDICIES

MAPS

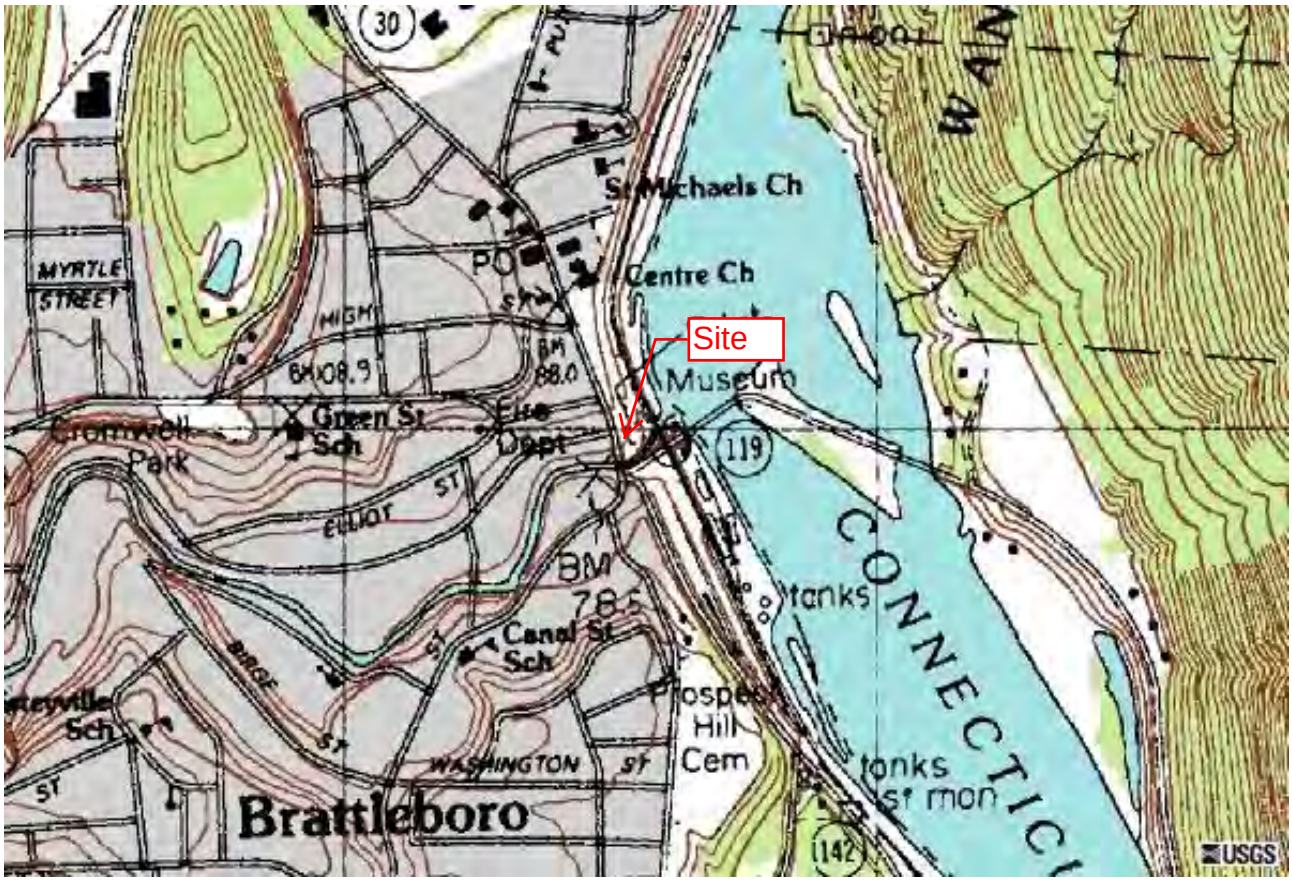
A. Site Location Map
B. Site Map
C. Air Contaminant Map
D. ANR Atlas Map

APPENDIX

A. Photographic Documentation
B. Field Notes
C. Tabular Summary of Assessment Data
D. Laboratory Analytical Reports
E. Data Validation Report

MAPS

Site Location Map
Site Map
Air Contaminant Map
ANR Atlas Map



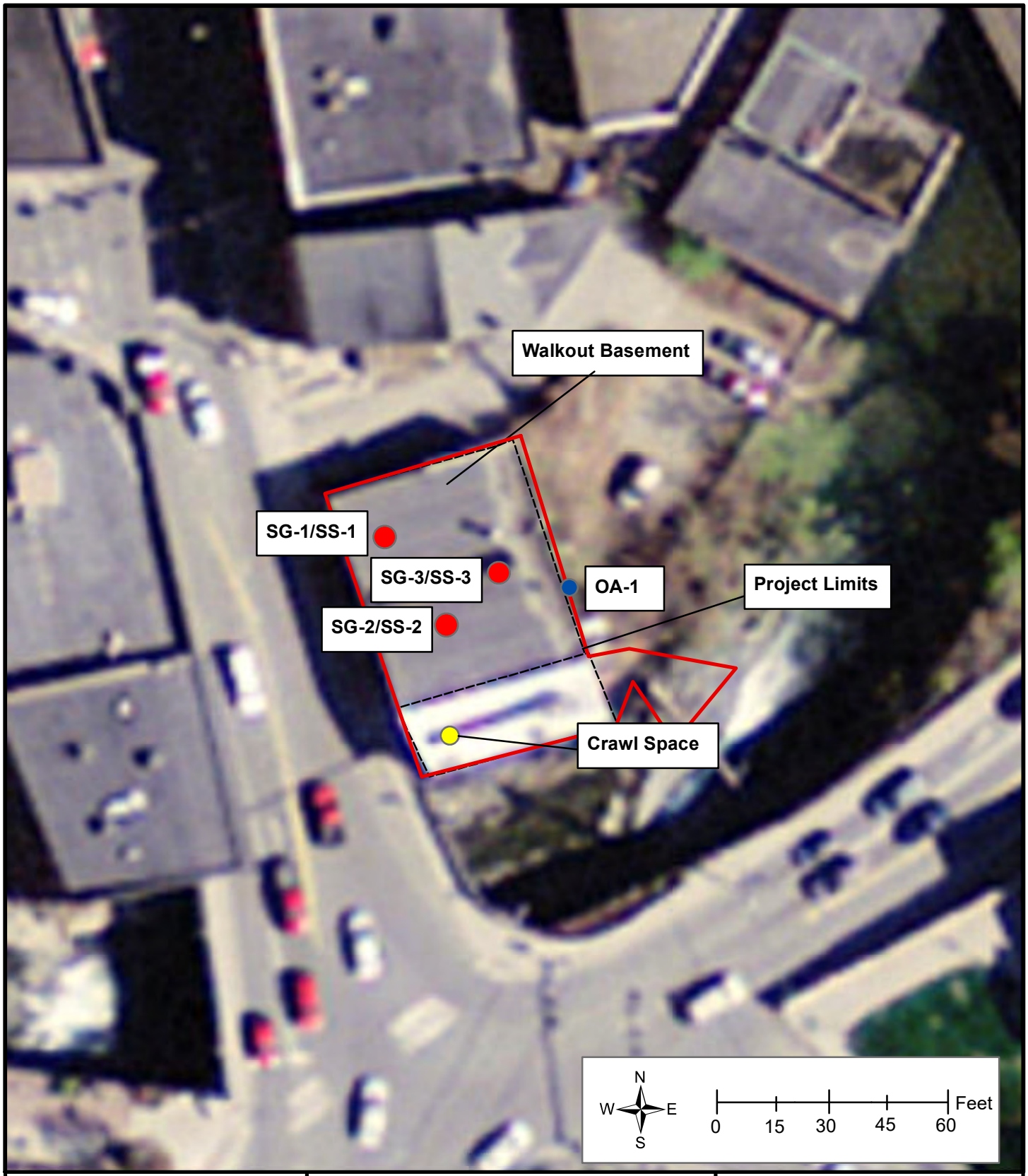
N
W E
S

Barrows Block-Brattleboro Museum and Art Center
35-43 Main Street and 5 Arch Street, Brattleboro, VT

LE-Environmental

1984 USGS Map

LE #: 17-103
Date: July 17, 2018
Source: MSRmaps.com



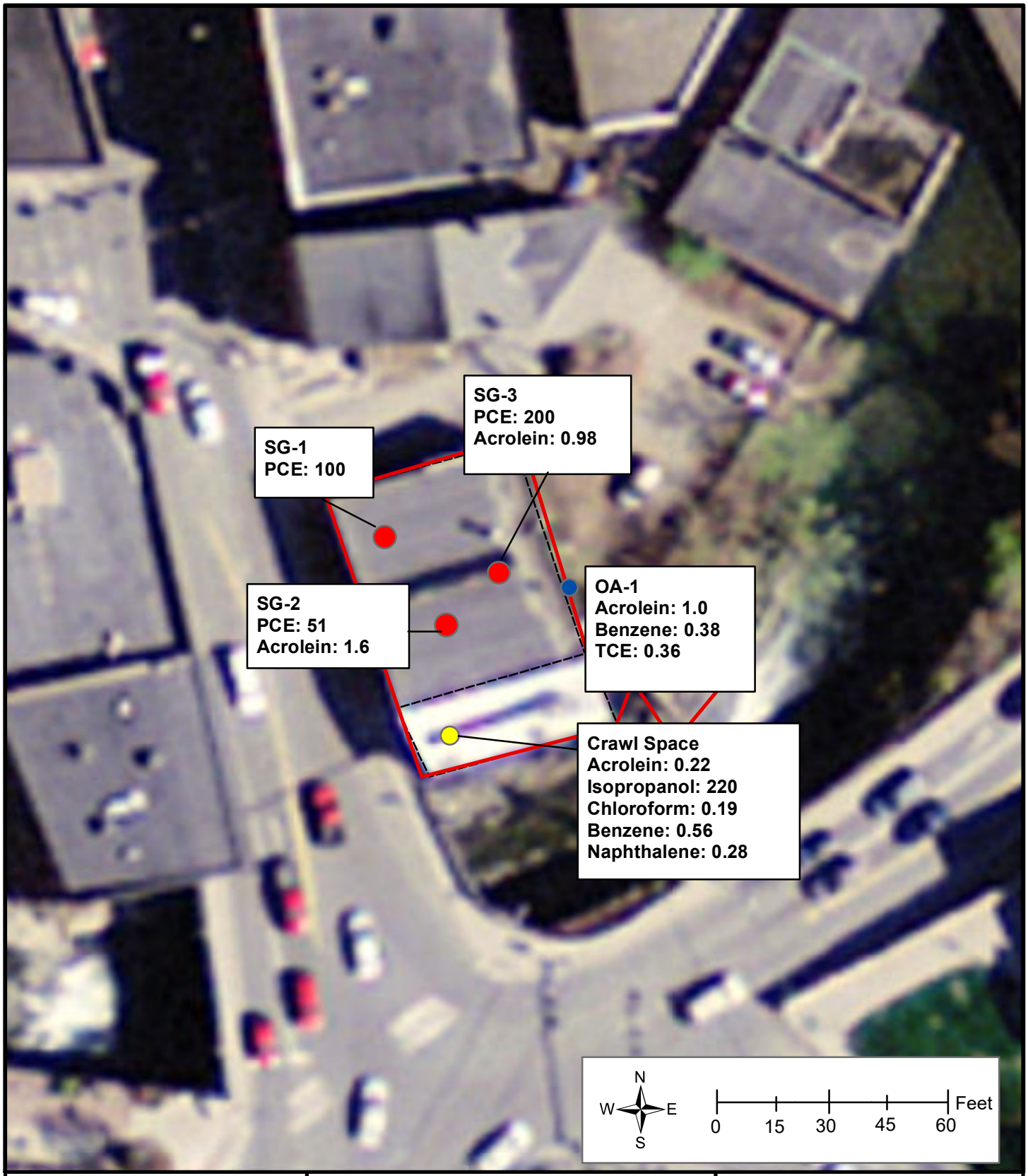
LEE
LE·Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Site Map
Barrows Block
Brattleboro, Vermont

Legend

- Soil/Soil Gas Sample
- Ambient Air Sample
- Crawlspace Air Sample

Drawing Date: 7/17/18
LEE Project #: 17-103



LE Environmental
21 North Main Street Unit #1
Waterbury, Vermont
Phone: 802-917-2001
www.leenv.net

Air Contaminant Concentration Map Barrows Block Brattleboro, Vermont

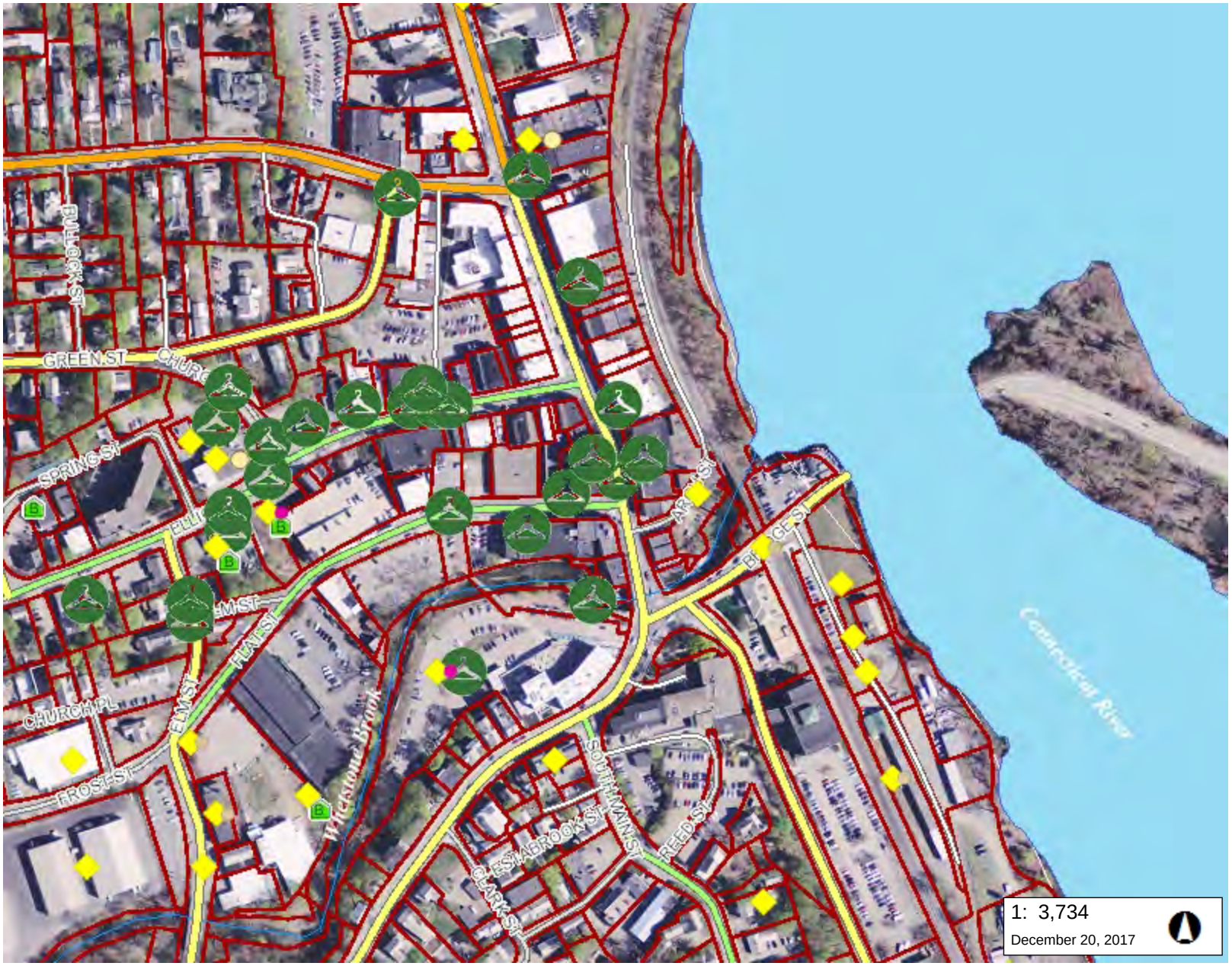
Legend
- Soil Gas Sample
- Ambient Air Sample
- Crawlspace Air Sample

(concentrations in ug/m3)
Residential Screening Value exceedances noted
Sample Date: 6/7/18
Drawing Date: 7/17/18

Natural Resources Atlas

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Landfills
  - OPERATING
  - CLOSED
- Land Use Restrictions
  - Class IV GW Reclass
  - Class VI GW Reclass
  - Deed Restriction
  - Easement
  - Land Record Notice
  - Other
- Hazardous Site
- Brownfields
- Underground Storage Tank (w
- Dry Cleaner
- Roads
  - Interstate
  - Principal Arterial
  - Minor Arterial
  - Major Collector
  - Minor Collector
  - Local
  - Not part of function Classification S
- Waterbody
- Stream
- Parcels (where available)
- Town Boundary

NOTES

Map created using ANR's Natural Resources Atlas

190.0 0 95.00 190.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 311 Ft. 1cm = 37 Meters

© Vermont Agency of Natural Resources

THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

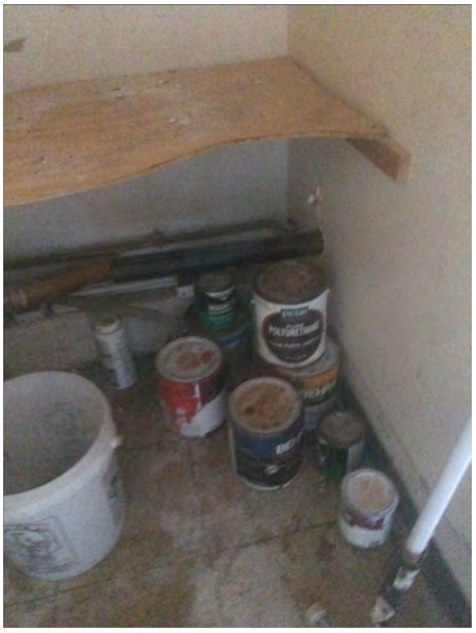
APPENDIX A

Photographic Documentation

Photographic Documentation
Phase II Environmental Site Assessment
Barrows Block
35-43 Main Street and 5 Arch Street
LEE #17-103

Photograph ID: 001 Date: June 7 2018 Location: Soil gas sample SG-1 Direction: Looking west Comments: Showing collection of SG-1 from the VAPOR Pin at SB-1.	
Photograph ID: 002 Date: June 7 2018 Location: Restaurant storeroom, location of SB-2, SS-2 and SG-2 Direction: Looking west Comments: Showing the area where SB-2 was advanced.	

Photographic Documentation
Phase II Environmental Site Assessment
Barrows Block
35-43 Main Street and 5 Arch Street
LEE #17-103

Photograph ID: 003 Date: June 7 2018 Location: Boiler room closet, location of SB-3, SS-3 and SG-3. Direction: Looking north Comments: Showing the closet where SB-3 was advanced.	
Photograph ID: 004 Date: June 7 2018 Location: Crawl space Direction: Looking east Comments: Showing the location of the crawl space indoor air sampling.	

APPENDIX B

Field Notes

35 & 37-43 MAIN ST AND 5 ARCH ST.
BRATTLEBORO, VT
SOIL SAMPLING FIELD FORM
JOB # 17-103

DATE: 6/7/18 INSPECTORS(S): AL / AE

Phase II ESA Equipment Needed: PID; EAI containers/cooler, PPE (hearing protection, dust masks, eye protection) hammer drill, pipe for sample collection, hand auger, decon stuff.

ASSESSMENT SOILS CHARACTERIZATION/ Soil Sample Collection

- **Drill access holes through cement slab (5/8" first then 2" if needed).**
- **Collect grab samples for field PID screening and VOC analysis from any elevated PID readings or field evidence of contamination.**
- **Collect soil samples for field screening and laboratory analysis of metals and TPH.**
- **Containers for each sample: 1 VOA and syringe; 1-4 oz clear gl; 1-4 oz amber glass.**
- **Submit 3 soil samples and one duplicate to EAI for analysis of:**
  - **VOCs (Method 8260c w/ 5025 preservation) 20 ml glass vials**
  - **13 PP Metals (1-4 oz clear)**
  - **PAH M8270c (1-4 oz amber)**

ASSESSMENT SOIL SAMPLES

Sample #	Location	Time	PID	
SS-1	SG-1/5 Arch	10:30	0.0	45706
SS-2	SG-2/Storage	14:45	0.0	45708
SS-3	SG-3/Closet	14:04	0.0	45318
Duplicate	SG-2	1445	0.0	45319

LE Environmental LLC
21 North Main Street
Waterbury, Vermont

Soil Gas Sampling Field Sheet

Job #: 17-103 Technician: AL Date: 6/7/18

Soil Gas Well ID: SG-1

Length of probe	Vapor Pin -
Volume of air purged	5mins
Temperature	76°
Relative Humidity	51%
Atmospheric Pressure	30.16 H
Regulator Sampling Duration	2 hr
Sample Start Time	1139
Sample End Time	1339
Canister vacuum level at start	29.71 / 29
Canister vacuum level at end	3.0
PID level at start	1.3
PID level at end	0.3
~~Helium detector reading before adding helium~~	N/A
~~Helium detector reading after adding helium~~	Vapor pin

Canister: 00519
regulator: 0A02096

LE Environmental LLC
21 North Main Street
Waterbury, Vermont

Soil Gas Sampling Field Sheet

Job #: 17-103 Technician: AL Date: 6/7/18

Soil Gas Well ID: SG-2

Length of probe	Vapor Pin
Volume of air purged	5 min 5
Temperature	76°
Relative Humidity	52%
Atmospheric Pressure	30.16 H
Regulator Sampling Duration	2 hr
Sample Start Time	1141
Sample End Time	1341
Canister vacuum level at start	-29
Canister vacuum level at end	-6
PID level at start	2.6
PID level at end	0.6
~~Helium detector reading before adding helium~~	N/A Vapor PID
~~Helium detector reading after adding helium~~	

Canister: AC01019
Regulator: 0A01691

LE Environmental LLC
21 North Main Street
Waterbury, Vermont

Soil Gas Sampling Field Sheet

Job #: 17-103 Technician: AL Date: 6/7/18

Soil Gas Well ID: SG-3

Length of probe	Vapor Pin
Volume of air purged	5 mins
Temperature	76°
Relative Humidity	52%
Atmospheric Pressure	30.16"
Regulator Sampling Duration	2 hr
Sample Start Time	1144
Sample End Time	1344
Canister vacuum level at start	-30
Canister vacuum level at end	-6
PID level at start	2.5
PID level at end	0.1
~~Helium detector reading before adding helium~~	N/A
~~Helium detector reading after adding helium~~	Vapor Pin

Canister: SC00796
regulator: 0A00347

LE Environmental LLC
21 North Main Street
Waterbury, Vermont

Soil Gas Sampling Field Sheet

Job #: 17-103 Technician: AL Date: 6/7/18

Soil Gas Well ID: OA-1

~~Length of probe~~	———
~~Volume of air purged~~	———
Temperature	75°
Relative Humidity	57%
Atmospheric Pressure	30.16
Regulator Sampling Duration	2 hr
Sample Start Time	1125
Sample End Time	1349
Canister vacuum level at start	-29.98 / -29
Canister vacuum level at end	-11.5
PID level at start	0.0
PID level at end	0.0
~~Helium detector reading before adding helium~~	N/A
~~Helium detector reading after adding helium~~	Vapor pin

Regulator: AVG04564
Canister: AC02205

LE Environmental LLC
21 North Main Street
Waterbury, Vermont

Soil Gas Sampling Field Sheet

Job #: ~~17~~ 107 Technician: KL Date: 6/7/18

Soil Gas Well ID: Crawl Space

~~Length of probe~~	~~Vapor Pin~~
~~Volume of air purged~~	
Temperature	74°
Relative Humidity	54%
Atmospheric Pressure	30.16"
Regulator Sampling Duration	2hr
Sample Start Time	1132
Sample End Time	1349
Canister vacuum level at start	-29.93 / >30
Canister vacuum level at end	1.0
PID level at start	0.0
PID level at end	0.0
~~Helium detector reading before adding helium~~	
~~Helium detector reading after adding helium~~	

Regulator: FCA005716
Canister: SC00887

APPENDIX C

Tabular Summary of Laboratory Results

Brownfields Phase II Environmental Site Assessment
Soil Sampling Data Summary
Barrows Block, Main Street
Brattleboro, Vermont

Soil Sample Locations PID reading (ppm) Sample Date	*SS-1 SG-1/5 Arch St. 0.0 6/7/18*	*SS-2 SG-2/Storage 0.0 6/7/18*	*SS-3 SG-3/Storage 0.0 6/7/18*	*Duplicate SG-2 0.0 6/7/18*	EPA Residential RSL (mg/kg)	EPA Industrial RSL (mg/kg)	VSL Residential (mg/kg)
VOCs, EPA Method 8260C (mg/kg)							
Dichlorodifluoromethane	ND<0.1	ND<0.1	ND<0.1	ND<0.1	87	370	NA
Chloromethane	ND<0.1	ND<0.1	ND<0.1	ND<0.1	110	460	NA
Vinyl Chloride	ND<0.1	ND<0.1	ND<0.1	ND<0.1	0.059	1.7	NA
Bromomethane	ND<0.2	ND<0.2	ND<0.2	ND<0.2	6.8	30	NA
Chloroethane (ethyl chloride)	ND<0.1	ND<0.1	ND<0.1	ND<0.1	14,000	57,000	NA
Trichlorofluoromethane	ND<0.1	ND<0.1	ND<0.1	ND<0.1	23,000	350,000	NA
Diethyl Ether	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	NA	NA
Acetone	ND<2	ND<2	ND<2	ND<2	NA	670,000	NA
1 ,1-Dichloroethene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	230	1,000	NA
Methylene chloride	ND<0.1	ND<0.1	ND<0.1	ND<0.1	57	1,000	NA
Carbon disulfide	ND<0.1	ND<0.1	ND<0.1	ND<0.1	770	3,500	NA
MTBE	ND<0.1	ND<0.1	ND<0.1	ND<0.1	47	210	647
trans-1,2-Dichloroethene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	23,000	150
1,1-Dichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	3.6	16	NA
2,2-Dichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	NA	NA
cis-1,2-Dichloroethene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	2,300	135
2-Butanone(MEK)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	190,000	26000
Bromochloromethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	630	129
Tetrahydrofuran(THF)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	NA	NA
Chloroform	ND<0.05	ND<0.05	ND<0.05	ND<0.05	0.32	1.4	NA
1,1,1-Trichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	8,100	36,000	NA
Carbon tetrachloride	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	2.9	0.247
1 ,1-Dichloropropene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	NA	NA
Benzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	5.1	0.442
1,2-Dichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	2	0.175
Trichloroethene (TCE)	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	6	0.442
1,2-Dichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1	4.4	NA
Dibromomethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	24	99	NA
Bromodichloromethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	0.29	1.3	NA
4-Methyl-2-pentanone(MIBK)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	33,000	140,000	NA
cis-1,3-Dichloropropene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1.8	8.2	NA
Toluene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	47,000	4640
trans-1,3-Dichloropropene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1.8	8.2	NA
1,1,2-Trichloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1.1	5	NA
2-Hexanone	ND<0.1	ND<0.1	ND<0.1	ND<0.1	200	1,300	NA
Tetrachloroethene (PCE)	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	100	1.46
1,3-Dichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1,600	23,000	NA
Dibromochloromethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	8.3	39	NA
1,2-Dibromoethane(EDB)	ND<0.05	ND<0.05	ND<0.05	ND<0.05	0.036	0.16	NA
Chlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	1,300	273

NOTES:
Soil Screening Levels (RSL/SSL) from July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
Shaded cell = reporting limit exceeds RSL/VSL.
NA = No RSL/VSL available

Brownfields Phase II Environmental Site Assessment
Soil Sampling Data Summary
Barrows Block, Main Street
Brattleboro, Vermont

Soil Sample Locations / *PID reading (ppm)* / *Sample Date*	*SS-1* 6/7/18	*SS-2* 6/7/18	*SS-3* 6/7/18	*Duplicate* 6/7/18	EPA Residential RSL (mg/kg)	EPA Industrial RSL (mg/kg)	VSL Residential (mg/kg)
VOCs, EPA Method 8260C (mg/kg) (continued)							
1,1,1,2-Tetrachloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	2	8.8	NA
Ethylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	25	2.21
mp-Xylene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	550	2,400	NA
o-Xylene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	650	2,800	NA
Styrene	**0.38**	ND<0.05	ND<0.05	ND<0.05	6,000	35,000	NA
Bromoform	ND<0.05	ND<0.05	ND<0.05	ND<0.05	19	86	NA
IsoPropylbenzene (cumene)	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1900	9900	NA
Bromobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	290	1,800	NA
1,1,2,2-Tetrachloroethane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	0.6	2.7	NA
1,2,3-Trichloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	0.11	0.00324
n-Propylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	3,800	24,000	NA
2-Chlorotoluene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1,600	23,000	NA
4-Chlorotoluene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1,600	23,000	NA
1,3,5-trimethylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	12,000	264*
tert-Butylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	7,800	120,000	NA
1,2,4-trimethylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	240	264*
sec-Butylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	7,800	120,000	NA
1,3-Dichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	NA	NA
p-Isopropyltoluene (p-cymene)	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	NA	NA
1,4-Dichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	2.6	11	NA
1,2-Dichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1,800	9,300	NA
n-Butylbenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	3,900	58,000	NA
1,2-Dibromo-3-chloropropane	ND<0.05	ND<0.05	ND<0.05	ND<0.05	NA	0.064	0.00327
1,2,4-Trichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	24	110	NA
Hexachlorobutadiene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	1.2	5.3	NA
Naphthalene	ND<0.1	ND<0.1	ND<0.1	ND<0.1	NA	17	1.42
1,2,3-Trichlorobenzene	ND<0.05	ND<0.05	ND<0.05	ND<0.05	63	930	NA
Total Reported VOCs	**0.38**	ND	ND	ND	-	-	-

NOTES:
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
Shaded cell = reporting limit exceeds USEPA or Vermont Residential Soil Screening Value
NA = No RSL/VSL available

Brownfields Phase II Environmental Site Assessment
Soil Sampling Data Summary
Barrows Block, Main Street
Brattleboro, Vermont

Soil Sample Locations / *PID reading (ppm)* / *Sample Date*	*SS-1* 6/7/18	*SS-2* 6/7/18	*SS-3* 6/7/18	*Duplicate* 6/7/18	EPA Residential RSL (mg/kg)	EPA Industrial RSL (mg/kg)	VSL Residential (mg/kg)	VT Statewide Background Soil Concentration (mg/kg)
TOTAL METALS, EPA Method 6020 (mg/kg, dry)								
Total Antimony	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	470	27.1	NA
Total Arsenic	**2.6**	**2.7**	**10**	**2.6**	NA	NA	NA	16/16
Total Beryllium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	2,300	36.0	NA
Total Cadmium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	980	7.15	NA
Total Chromium	**24**	**21**	**15**	**24**	NA	NA	NA	NA
Total Copper	**330**	**130**	**39**	**130**	3,100	47,000	NA	NA
Total Lead	**3.6**	**3.2**	**13**	**3.3**	400	800	NA	41/111
Total Mercury	ND<0.1	ND<0.1	ND<0.1	ND<0.1	NA	46	10.9	NA
Total Nickel	**21**	**19**	**18**	**21**	NA	22000	980	NA
Total Selenium	**0.55**	ND<0.5	ND<0.5	ND<0.5	NA	5,800	382	NA
Total Silver	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	5,800	247	NA
Total Thallium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	12	0.764	NA
Total Zinc	**40**	**41**	**62**	**40**	NA	350,000	22,900	NA
PAH EPA Method 8270D (mg/kg)								
Naphthalene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	NA	17	1.42	NA
2-Methylnaphthalene	ND<0.007	ND<0.007	**0.023**	ND<0.007	240	3,000	NA	NA
1-Methylnaphthalene	ND<0.007	ND<0.007	**0.013**	ND<0.007	18	73	NA	NA
Acenaphthylene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	NA	NA	NA	NA
Acenaphthene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	3,600	45,000	NA	NA
Fluorene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	2,400	30,000	NA	NA
Phenanthrene	ND<0.007	ND<0.007	**0.013**	ND<0.007	NA	NA	NA	NA
Anthracene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	18,000	230,000	NA	NA
Fluoranthene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	2,400	30,000	NA	NA
Pyrene	ND<0.007	ND<0.007	**0.0088**	ND<0.007	1,800	23,000	NA	NA
Benzo(a)anthracene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	0.16	2.9	NA	NA
Chrysene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	16	290	NA	NA
Benzo(b)fluoranthene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	0.16	2.9	NA	NA
Benzo(k)fluoranthene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	1.6	29	NA	NA
Benzo(a)pyrene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	NA	NA	0.076/1.54*	NA
Indeno(1,2,3-cd)pyrene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	0.16	2.9	NA	NA
Dibenz(a,h)anthracene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	0.016	0.29	NA	NA
Benzo(g,h,i)perylene	ND<0.007	ND<0.007	ND<0.007	ND<0.007	NA	NA	NA	NA
Total Reported PAHs	ND	ND	**0.058**	ND	--	--	--	--
PAH Toxicity Equivalency as B[a]P	**0.0081**	**0.0081**	**0.0081**	**0.0081**	NA	NA	NA	0.026/0.580

NOTES:
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
Shaded cell = reporting limit exceeds USEPA or Vermont Residential Soil Screening Value
NA = No RSL/VSL available

Toxic Equivalency Calculations- Soil Samples
Barrows Block, Brattleboro, Vermont

Soil Sample SS-1

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	0.0035	0.1	0.00035
Chrysene	0.0035	0.001	0.0000035
Benzo(b)fluoranthene	0.0035	0.1	0.00035
Benzo(k)fluoranthene	0.0035	0.01	0.000035
Benzo(a)pyrene	0.0035	1	0.0035
Indeno(1,2,3-cd)pyrene	0.0035	0.1	0.00035
Dibenz(a,h)anthracene	0.0035	1	0.0035
		Total Benzo(a)pyrene Equivalent =	**0.0081**

Soil Sample SS-2

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	0.0035	0.1	0.00035
Chrysene	0.0035	0.001	0.0000035
Benzo(b)fluoranthene	0.0035	0.1	0.00035
Benzo(k)fluoranthene	0.0035	0.01	0.000035
Benzo(a)pyrene	0.0035	1	0.0035
Indeno(1,2,3-cd)pyrene	0.0035	0.1	0.00035
Dibenz(a,h)anthracene	0.0035	1	0.0035
		Total Benzo(a)pyrene Equivalent =	**0.0081**

Soil Sample SS-3

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	0.0035	0.1	0.00035
Chrysene	0.0035	0.001	0.0000035
Benzo(b)fluoranthene	0.0035	0.1	0.00035
Benzo(k)fluoranthene	0.0035	0.01	0.000035
Benzo(a)pyrene	0.0035	1	0.0035
Indeno(1,2,3-cd)pyrene	0.0035	0.1	0.00035
Dibenz(a,h)anthracene	0.0035	1	0.0035
		Total Benzo(a)pyrene Equivalent =	**0.0081**

Soil Sample: Duplicate

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	0.0035	0.1	0.00035
Chrysene	0.0035	0.001	0.0000035
Benzo(b)fluoranthene	0.0035	0.1	0.00035
Benzo(k)fluoranthene	0.0035	0.01	0.000035
Benzo(a)pyrene	0.0035	1	0.0035
Indeno(1,2,3-cd)pyrene	0.0035	0.1	0.00035
Dibenz(a,h)anthracene	0.0035	1	0.0035
		Total Benzo(a)pyrene Equivalent =	**0.0081**

NOTES:
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Brownfields Phase II Environmental Site Assessment
Soil Gas Sampling Summary
Barrows Block, Main Street, Brattleboro, VT

Analyte Category/Compound	SG-1 Reported Concentration ug/m^3	Data Qualifier	SG-2 Reported Concentration ug/m^3	Data Qualifier	SG-3 Reported Concentration ug/m^3	Data Qualifier	I-Rule VI Screening Values, Sub-Slab Soil Gas (residential, ug/m3)	I-Rule VI Screening Values, Sub-Slab Soil Gas (industrial, ug/m3)
Propene	**4.6**	**J**	**6.9**		**16**		NA	NA
Freon12(Dichlorodifluoromethane)	**4.1**	**J**	**7.0**		**3.1**		3,500	15,000
Chloromethane (methyl chloride)	ND<0.77		ND<0.53		ND<0.50		3,100	13,000
Freon 114 (1,2-Dichloro-1,1,2,2-tetrafluoroethane)	ND<0.76		ND<0.51		ND<0.49		NA	NA
Vinyl Chloride	ND<0.51		ND<0.35		ND<0.33		3.7	62
1,3-Butadiene	ND<0.79		ND<0.54		ND<0.51		3.1	14
Bromomethane	ND<0.67		ND<0.45		ND<0.43		170	730
Chloroethane (ethyl chloride)	ND<0.59		ND<0.40		ND<0.39		350,000	1,500,000
Ethanol	**190**		**390**		**800**		NA	NA
Acetonitrile	**1.9**	**J**	ND<0.80		ND<0.76		2,100	8,800
Acrolein	ND<0.14		**1.6**	**J**	**0.98**	**J**	0.7	2.9
Acetone	**950**		**740**		**340**		1,100,000	4,500,000
Trichlorofluoromethane (Freon 11)	**16**		**260**		**24**		NA	NA
Isopropyl Alcohol (2-Propanol)	**99**		**81**		**120**		7,000	29,000
Acrylonitrile	ND<0.99		ND<0.67		ND<0.64		1.4	6.0
1,1-Dichloroethene	ND<0.67		ND<0.45		ND<0.43		7,000	29,000
Methylene Chloride	ND<1.4		ND<0.92		ND<0.88		3,400	41,000
3-Chloro-1-propene (Allyl Chloride)	ND<0.65		ND<0.44		ND<0.42		16	68
Trichlorotrifluoroethane	ND<0.68		ND<0.47		**0.46**	**J**	1,000,000	4,400,000
Carbon disulfide	**2.7**	**J**	ND<0.98		**3.9**	**J**	24,000	100,000
trans-1,2-Dichloroethene	ND<0.67		ND<0.45		ND<0.43		NA	NA
1,1-Dichloroethane	ND<0.70		ND<0.48		ND<0.46		58	260
Methyl tert-Butyl Ether (MTBE)	ND<0.57		ND<0.39		ND<0.37		360	1,600
Vinyl Acetate	ND<11		ND<7.3		ND<7		7,000	29,000
Methyl Ethyl Ketone (2-butanone)	**5.9**	**J**	**6.0**	**J**	**4.3**	**J**	170,000	730,000
cis-1,2-Dichloroethene	ND<0.68		ND<0.46		ND<0.44		NA	NA
Ethyl Acetate	**5.5**	**J**	ND<1.7		**6.4**		2,400	10,000
n-hexane	ND<0.99		ND<0.67		ND<0.64		24,000	100,000
Chloroform	**1.9**		**0.52**	**J**	ND<0.41		4.1	18
Tetrahydrofuran	**0.87**	**J**	ND<0.41		ND<0.39		70,000	290,000
1,2-Dichloroethane	ND<0.53		ND<0.36		ND<0.34		3.6	16
1,1,1-Trichloroethane	ND<0.59		ND<0.40		ND<0.39		170,000	730,000
Benzene	**0.91**	**J**	ND<0.47		ND<0.45		4.3	35
Carbon Tetrachloride	ND<0.67		ND<0.45		ND<0.43		16	68
Cyclohexane	ND<1.4		ND<0.92		ND<0.88		35,000	150,000
1,2-Dichloropropane	ND<0.59		ND<0.40		ND<0.39		9.4	41
Bromodichloromethane	ND<0.69		ND<0.47		ND<0.45		2.5	11
Trichloroethene	**1.2**		ND<0.44		ND<0.42		6.7	23
1,4-Dioxane (Dioxane)	**0.95**		ND<0.39		**1.8**	**J**	19	82
Methyl Methacrylate	ND<1.7		ND<1.2		ND<1.1		24,000	10,000
n-heptane	ND<0.77		ND<0.52		**0.65**	**J**	NA	NA

Notes:
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Brownfields Phase II Environmental Site Assessment
Soil Gas Sampling Summary
Barrows Block, Main Street, Brattleboro, VT

Analyte Category/Compound	SG-1 Reported Concentration ug/m^3	Data Qualifier	SG-2 Reported Concentration ug/m^3	Data Qualifier	SG-3 Reported Concentration ug/m^3	Data Qualifier	I-Rule VI Screening Values, Sub-Slab Soil Gas (residential, ug/m3)	I-Rule VI Screening Values, Sub-Slab Soil Gas (industrial, ug/m3)
cis-1,3-Dichloropropene	ND<0.75		ND<0.51		ND<0.48		NA	100
Methyl Isobutyl Ketone (4-methyl-2-Pentanone)	**3.8**		**10**		**1.3**	**J**	100,000	440,000
trans-1,3-Dichloropropene	ND<0.99		ND<0.67		ND<0.64		NA	100
1,1,2-Trichloroethane	ND<0.49		ND<0.33		ND<0.32		5.8	26
Toluene	**2.1**		**1.5**	**J**	**2.0**	**J**	170,000	730,000
Methyl Butyl Ketone (2-Hexanone)	**0.84**		**2.1**	**J**	**0.63**	**J**	1,000	4,400
Dibromochloromethane	ND<0.63		ND<0.43		ND<0.41		NA	NA
1,2-Dibromoethane (ethylene dibromide)	ND<0.56		ND<0.38		ND<0.36		0.16	0.68
n-Butyl Acetate	ND<0.66		ND<0.45		ND<0.43		NA	NA
n-Octane	**1.4**	**J**	**22**		**0.96**	**J**	NA	NA
Tetrachloroethene	**100**		**51**		**200**		21	170
Chlorobenzene	ND<0.64		ND<0.43		ND<0.41		1,700	7,300
Ethylbenzene	**2.4**	**J**	**1.1**	**J**	**0.82**	**J**	37	160
m,p- Xylenes	**5.8**	**J**	**4.0**	**J**	**3.5**	**J**	3,500	15,000
Bromoform	ND<0.99		ND<0.67		ND<3.1		85	370
Styrene	**2.7**	**J**	**2.3**	**J**	**0.9**	**J**	35,000	150,000
o- Xylenes	**3.2**	**J**	**2.2**		**1.7**	**J**	3,500	15,000
n-Nonane	**5.0**		**41**		**4.2**		700	2,900
1,1,2,2-Tetrachloroethane	ND<0.67		ND<0.45		ND<0.43		1.6	7.0
Isopropylbenzene (cumene)	**56**		**15**		**0.92**	**J**	14,000	58,000
alpha-Pinene	**4.1**	**J**	**2.7**	**J**	**3.0**	**J**	NA	NA
n-propylbenzene	**2.4**	**J**	**1.2**	**J**	**0.5**	**J**	35,000	150,000
4-Ethyltoluene	**1.3**	**J**	**0.82**	**J**	**0.60**	**J**	NA	NA
1,3,5-Trimethylbenzene	**2.1**	**J**	**1.2**	**J**	**0.96**	**J**	NA	NA
1,2,4-Trimethylbenzene	**5.3**	**J**	**3.7**		**3.4**		240	1,000
Benzyl Chloride	ND<1.1		ND<0.73		ND<0.70		1.9	8.3
1,3-Dichlorobenzene	ND<0.72		**0.51**		ND<0.47		NA	NA
1,4-Dichlorobenzene	ND<0.74		ND<0.50		ND<0.48		8.5	37
1,2-Dichlorobenzene	ND<0.71		ND<0.48		ND<0.46		7,000	29,000
d-Limonene	**4.3**		**4.8**		**5.2**		NA	NA
1,2-Dibromo-3-Chloropropane	ND<0.90		ND<3.2		ND<0.58		0.0056	0.068
1,2,4-Trichlorobenzene	ND<1.2		ND<0.8		ND<0.76		70	290
Naphthalene	ND<1.2		ND<0.8		**0.76**	**J**	1.0	8.0
Hexachlorobutadiene	ND<0.99		ND<0.67		ND<0.64		4.3	19
Total Reported VOCs	**1488**		**1660**		**1553**			

Notes:
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Brownfields Phase II Environmental Site Assessment
Outdoor Air/Crawl Space Air Quality Data Summary
Barrows Block, Main Street, Brattleboro, VT

Analyte Category/Compound	Outdoor Air OA 1 Reported Concentration ug/m^3	Data Qualifier	Crawl Space Reported Concentration ug/m^3	Data Qualifier	I-Rule Air Screening Levels (residential, ug/m3)	I-Rule Air Screening Levels (industrial, ug/m3)
Propene	**1.9**		**110**		NA	NA
Freon12(Dichlorodifluoromethane)	**2.1**		**2.3**		100	440
Chloromethane (methyl chloride)	**0.22**	**J**	**0.18**	**J**	94	390
Freon 114 (1,2-Dichloro-1,1,2,2-tetrafluoroethane)	ND<0.14		ND<0.10		NA	NA
Vinyl Chloride	ND<0.092		ND<0.07		0.11	1.86
1,3-Butadiene	ND<0.14		ND<0.11		0.094	0.41
Bromomethane	ND<0.12		ND<0.090		5.2	22
Chloroethane (ethyl chloride)	ND<0.11		ND<0.081		10,000	44,000
Ethanol	**5.3**	**J**	**4.7**	**J**	NA	NA
Acetonitrile	ND<0.21		**0.27**	**J**	63	260
Acrolein	**1.0**	**J**	**0.22**	**J**	0.021	0.088
Acetone	**11**		**450**		32,000	140,000
Trichlorofluoromethane (Freon 11)	**1.1**		**1.2**		NA	NA
Isopropyl Alcohol (2-Propanol)	**2.2**	**J**	**220**		210	880
Acrylonitrile	ND<0.18		ND<0.13		0.041	0.18
1,1-Dichloroethene	ND<0.12		ND<0.090		210	880
2-Methyl-2-Propanol (Tert-Butyl Alcohol)	ND<0.26		ND<0.20		NA	NA
Methylene Chloride	**0.28**	**J**	**0.27**	**J**	100	1,200
3-Chloro-1-propene (Allyl Chloride)	ND<0.12		ND<0.088		0.47	2
Trichlorotrifluoroethane	**0.45**	**J**	**0.46**	**J**	NA	NA
Carbon disulfide	ND<0.26		**5.2**	**J**	730	3,100
trans-1,2-Dichloroethene	ND<0.12		ND<0.090		NA	NA
1,1-Dichloroethane	ND<0.13		ND<0.095		1.8	7.7
Methyl tert-Butyl Ether (MTBE)	ND<0.10		ND<0.077		11	47
Vinyl Acetate	**2.5**	**J**	**2.4**	**J**	210	880
Methyl Ethyl Ketone (2-butanone)	**1.4**	**J**	**2.3**	**J**	5,200	22,000
cis-1,2-Dichloroethene	ND<0.12		ND<0.092		NA	NA
Diisopropyl Ether	ND<0.11		ND<0.085		730	3,100
Ethyl Acetate	**0.69**	**J**	**12**		73	310
n-hexane	**0.47**	**J**	**0.77**		730	3,100
Chloroform	ND<0.12		**0.19**		0.12	0.53
Tetrahydrofuran	**0.64**	**J**	**0.15**	**J**	2,100	8,800
Ethyl tert-Butyl Ether	ND<0.10		ND<0.078		NA	NA
1,2-Dichloroethane	ND<0.096		ND<0.072		0.11	0.47
1,1,1-Trichloroethane	ND<0.11		ND<0.081		5,200	22,000
Isopropyl Acetate	ND<0.28		**0.72**	**J**	NA	NA
1-Butanol	**1.4**	**J**	**1.7**		NA	NA
Benzene	**0.38**		**0.56**		0.13	1.05
Carbon Tetrachloride	**0.41**		**0.42**		0.47	2.0
Cyclohexane	ND<0.24		**2.6**		6,300	26,000
tert-Amyl Methyl Ether	ND<0.11		ND<0.079		NA	NA
1,2-Dichloropropane	ND<0.11		ND<0.081		0.28	1.2
Bromodichloromethane	ND<0.12		ND<0.094		0.076	0.33
Trichloroethene	**0.36**		ND<0.088		0.2	0.70
1,4-Dioxane (Dioxane)	ND<0.10		**0.37**	**J**	0.56	2.5
2,2,4-Trimethylpentane (Isooctane)	**0.79**	**J**	**0.84**		NA	NA
Methyl Methacrylate	ND<0.31		**27**		730	3,100
n-heptane	**0.24**	**J**	**1.2**		NA	NA

Notes:
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Outdoor Air/Crawl Space Air Quality Data Summary
Barrows Block, Main Street, Brattleboro, VT

Analyte Category/Compound	Outdoor Air OA 1 Reported Concentration ug/m^3	Data Qualifier	Crawl Space Reported Concentration ug/m^3	Data Qualifier	I-Rule Air Screening Levels (residential, ug/m3)	I-Rule Air Screening Levels (industrial, ug/m3)
cis-1,3-Dichloropropene	ND<0.13		ND<0.10		0.7	3.1
Methyl Isobutyl Ketone (4-methyl-2-Pentanone)	ND<0.12		**0.16**		3,100	13,000
trans-1,3-Dichloropropene	ND<0.18		ND<0.13		0.7	3.1
1,1,2-Trichloroethane	ND<0.087		ND<0.13		0.18	0.77
Toluene	**1.3**		**5.3**		5,200	22,000
Methyl Butyl Ketone (2-Hexanone)	**0.30**	**J**	ND<0.081		31	130
Dibromochloromethane	ND<0.11		ND<0.085		NA	NA
1,2-Dibromoethane (ethylene dibromide)	ND<0.10		ND<0.076		0.0047	0.02
n-Butyl Acetate	**0.24**	**J**	**8.0**		NA	NA
n-Octane	**0.48**	**J**	**0.86**		NA	NA
Tetrachloroethene	ND<0.11		**0.20**		0.63	5.11
Chlorobenzene	ND<0.12		ND<0.087		52	220
Ethylbenzene	**0.19**	**J**	**0.30**	**J**	1.1	4.9
m,p- Xylenes	**0.58**	**J**	**0.90**	**J**	100	440
Bromoform	ND<0.18		ND<0.13		2.6	11
Styrene	ND<0.14		ND<0.10		1,000	4,400
o- Xylenes	**0.23**	**J**	**0.48**	**J**	100	440
n-Nonane	**0.23**	**J**	**0.56**	**J**	21	88
1,1,2,2-Tetrachloroethane	ND<0.12		ND<0.090		0.048	0.21
Isopropylbenzene (cumene)	ND<0.12		ND<0.094		420	1,800
alpha-Pinene	**0.85**		**1.3**		NA	NA
n-propylbenzene	ND<0.12		ND<0.094		1,000	4,400
3-Ethyltoluene	**0.14**	**J**	**0.26**	**J**	NA	NA
4-Ethyltoluene	ND<0.14		**0.12**	**J**	NA	NA
1,3,5-Trimethylbenzene	ND<0.12		**0.12**	**J**	NA	NA
alpha-Methylstyrene	ND<0.14		**0.24**	**J**	NA	NA
2-Ethyltoluene	ND<0.11		**0.11**	**J**	NA	NA
1,2,4-Trimethylbenzene	**0.20**	**J**	**0.51**	**J**	7.3	31
n-Decane	**1.3**		**1.0**		NA	NA
Benzyl Chloride	ND<0.19		ND<0.15		0.057	0.25
1,3-Dichlorobenzene	ND<0.13		ND<0.098		NA	NA
1,4-Dichlorobenzene	ND<0.13		ND<0.010		0.26	1.1
sec-Butylbenzene	ND<0.12		ND<0.089		NA	NA
(4) p-Isopropyltoluene (p-Cymene)	ND<0.13		0.12	**J**	NA	NA
1,2,3-Trimethylbenzene	ND<0.12		**0.14**	**J**	5.2	22
1,2-Dichlorobenzene	ND<0.13		ND<0.096		210	880
d-Limonene	**0.34**	**J**	**0.83**		NA	NA
1,2-Dibromo-3-Chloropropane	ND<0.16		ND<0.12		0.00017	0.002
n-Undecane (hendecane)	ND<0.23		**0.44**	**J**	NA	NA
1,2,4-Trichlorobenzene	ND<0.21		ND<0.16		2.1	8.8
Naphthalene	ND<0.21		**0.28**	**J**	0.03	0.24
n-Dodecane	**1.2**		**2.1**		NA	NA
Hexachlorobutadiene	ND<0.18		ND<0.13		0.13	0.56
Cyclohexanone	**0.31**	**J**	**0.38**	**J**	730	3,100
tert-butylbenzene	ND<0.13		ND<0.098		NA	NA
n-Butylbenzene	ND<0.12		**0.13**	**J**	NA	NA
Total Reported VOCs	**43**		**873**			

Notes:
ND<X means compound not present above MRL indicated; J=estimated concentration less than the MRL but greater than or equal to the MDL.
IROCP = July 2017 Vermont DEC Investigation and Remediation of Contaminated Properties Rule
NA = Not Available (no guidance level)
Reporting limits in excess of DEC residential sub-slab soil gas screening values are shaded

APPENDIX D

Laboratory Analytical Reports

Eastern Analytical, Inc.

professional laboratory and drilling services

Alan Liptak
LE Environmental LLC
21 North Main Street #1
Waterbury , VT 05676

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 182911
Client Identification: Main St. #35, 37-43 | 17-103
Date Received: 6/8/2018

Dear Mr. Liptak :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.easternanalytical.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269), Vermont (VT1012) and New York (12072).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample (s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw — 6.21.18 — 13

Lorraine Olashaw, Lab Director | Date | # of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Temperature upon receipt (°C): 2.3 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
182911.01	SS-1	6/8/18	6/7/18	soil	94.5	Adheres to Sample Acceptance Policy
182911.02	SS-2	6/8/18	6/7/18	soil	95.0	Adheres to Sample Acceptance Policy
182911.03	SS-3	6/8/18	6/7/18	soil	97.9	Adheres to Sample Acceptance Policy
182911.04	Duplicate	6/8/18	6/7/18	soil	94.9	Adheres to Sample Acceptance Policy
182911.05	Trip Blank	6/8/18	6/7/18	soil	100.0	Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.
All results contained in this report relate only to the above listed samples.
References include:
1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Sample ID:	SS-1	SS-2	SS-3	Duplicate	Trip Blank
Lab Sample ID:	182911.01	182911.02	182911.03	182911.04	182911.05
Matrix:	soil	soil	soil	soil	soil
Date Sampled:	6/7/18	6/7/18	6/7/18	6/7/18	6/7/18
Date Received:	6/8/18	6/8/18	6/8/18	6/8/18	6/8/18
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	6/12/18	6/13/18	6/13/18	6/13/18	6/13/18
Analyst:	BAM	BAM	BAM	BAM	BAM
Method:	8260C	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1	1
Dichlorodifluoromethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl chloride	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl Ether	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acetone	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene chloride	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbon disulfide	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,2-Dichloropropane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Butanone(MEK)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrahydrofuran(THF)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon tetrachloride	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloropropene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloroethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibromomethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromodichloromethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methyl-2-pentanone(MIBK)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,3-Dichloropropene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Hexanone	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichloropropane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibromochloromethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dibromoethane(EDB)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
mp-Xylene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
o-Xylene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	**0.38**	< 0.05	< 0.05	< 0.05	< 0.05
Bromoform	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
IsoPropylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

LABORATORY REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Sample ID:	SS-1	SS-2	SS-3	Duplicate	Trip Blank
Lab Sample ID:	182911.01	182911.02	182911.03	182911.04	182911.05
Matrix:	soil	soil	soil	soil	soil
Date Sampled:	6/7/18	6/7/18	6/7/18	6/7/18	6/7/18
Date Received:	6/8/18	6/8/18	6/8/18	6/8/18	6/8/18
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	6/12/18	6/13/18	6/13/18	6/13/18	6/13/18
Analyst:	BAM	BAM	BAM	BAM	BAM
Method:	8260C	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1	1
Bromobenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,3-Trichloropropane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
n-Propylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorotoluene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorotoluene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3,5-Trimethylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
tert-Butylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trimethylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
sec-Butylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
p-Isopropyltoluene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
n-Butylbenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dibromo-3-chloropropane	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,3-Trichlorobenzene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Bromofluorobenzene (surr)	**98 %R**	**97 %R**	**91 %R**	**97 %R**	**100 %R**
1,2-Dichlorobenzene-d4 (surr)	**98 %R**	**100 %R**	**101 %R**	**101 %R**	**101 %R**
2,5-Dibromotoluene (surr)	**90 %R**	**93 %R**	**103 %R**	**129 %R**	**93 %R**
Toluene-d8 (surr)	**105 %R**	**104 %R**	**106 %R**	**103 %R**	**102 %R**

QC REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Dichlorodifluoromethane	< 0.1			6/11/2018	mg/kg			8260C
Chloromethane	< 0.1			6/11/2018	mg/kg			8260C
Vinyl chloride	< 0.1			6/11/2018	mg/kg			8260C
Bromomethane	< 0.2			6/11/2018	mg/kg			8260C
Chloroethane	< 0.1			6/11/2018	mg/kg			8260C
Trichlorofluoromethane	< 0.1			6/11/2018	mg/kg			8260C
Diethyl Ether	< 0.05			6/11/2018	mg/kg			8260C
Acetone	< 2			6/11/2018	mg/kg			8260C
1,1-Dichloroethene	< 0.05	1.1 (106 %R)	1.0 (102 %R) (3 RPD)	6/11/2018	mg/kg	59 - 172	20	8260C
Methylene chloride	< 0.1			6/11/2018	mg/kg			8260C
Carbon disulfide	< 0.1			6/11/2018	mg/kg			8260C
Methyl-t-butyl ether(MTBE)	< 0.1			6/11/2018	mg/kg			8260C
trans-1,2-Dichloroethene	< 0.05			6/11/2018	mg/kg			8260C
1,1-Dichloroethane	< 0.05			6/11/2018	mg/kg			8260C
2,2-Dichloropropane	< 0.05			6/11/2018	mg/kg			8260C
cis-1,2-Dichloroethene	< 0.05			6/11/2018	mg/kg			8260C
2-Butanone(MEK)	< 0.5			6/11/2018	mg/kg			8260C
Bromochloromethane	< 0.05			6/11/2018	mg/kg			8260C
Tetrahydrofuran(THF)	< 0.5			6/11/2018	mg/kg			8260C
Chloroform	< 0.05			6/11/2018	mg/kg			8260C
1,1,1-Trichloroethane	< 0.05			6/11/2018	mg/kg			8260C
Carbon tetrachloride	< 0.05			6/11/2018	mg/kg			8260C
1,1-Dichloropropene	< 0.05			6/11/2018	mg/kg			8260C
Benzene	< 0.05	1.1 (108 %R)	1.1 (107 %R) (1 RPD)	6/11/2018	mg/kg	66 - 142	20	8260C
1,2-Dichloroethane	< 0.05			6/11/2018	mg/kg			8260C
Trichloroethene	< 0.05	1.0 (105 %R)	1.0 (102 %R) (2 RPD)	6/11/2018	mg/kg	62 - 137	20	8260C
1,2-Dichloropropane	< 0.05			6/11/2018	mg/kg			8260C
Dibromomethane	< 0.05			6/11/2018	mg/kg			8260C
Bromodichloromethane	< 0.05			6/11/2018	mg/kg			8260C
4-Methyl-2-pentanone(MIBK)	< 0.5			6/11/2018	mg/kg			8260C
cis-1,3-Dichloropropene	< 0.05			6/11/2018	mg/kg			8260C
Toluene	< 0.05	1.2 (119 %R)	1.2 (116 %R) (2 RPD)	6/11/2018	mg/kg	59 - 139	20	8260C
trans-1,3-Dichloropropene	< 0.05			6/11/2018	mg/kg			8260C
1,1,2-Trichloroethane	< 0.05			6/11/2018	mg/kg			8260C
2-Hexanone	< 0.1			6/11/2018	mg/kg			8260C
Tetrachloroethene	< 0.05			6/11/2018	mg/kg			8260C
1,3-Dichloropropane	< 0.05			6/11/2018	mg/kg			8260C
Dibromochloromethane	< 0.05			6/11/2018	mg/kg			8260C
1,2-Dibromoethane(EDB)	< 0.05			6/11/2018	mg/kg			8260C
Chlorobenzene	< 0.05	1.2 (118 %R)	1.1 (113 %R) (4 RPD)	6/11/2018	mg/kg	60 - 133	20	8260C
1,1,1,2-Tetrachloroethane	< 0.05			6/11/2018	mg/kg			8260C
Ethylbenzene	< 0.05			6/11/2018	mg/kg			8260C
mp-Xylene	< 0.05			6/11/2018	mg/kg			8260C
o-Xylene	< 0.05			6/11/2018	mg/kg			8260C
Styrene	< 0.05			6/11/2018	mg/kg			8260C

QC REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Bromoform	< 0.05			6/11/2018	mg/kg			8260C
IsoPropylbenzene	< 0.05			6/11/2018	mg/kg			8260C
Bromobenzene	< 0.05			6/11/2018	mg/kg			8260C
1,1,2,2-Tetrachloroethane	< 0.05			6/11/2018	mg/kg			8260C
1,2,3-Trichloropropane	< 0.05			6/11/2018	mg/kg			8260C
n-Propylbenzene	< 0.05			6/11/2018	mg/kg			8260C
2-Chlorotoluene	< 0.05			6/11/2018	mg/kg			8260C
4-Chlorotoluene	< 0.05			6/11/2018	mg/kg			8260C
1,3,5-Trimethylbenzene	< 0.05			6/11/2018	mg/kg			8260C
tert-Butylbenzene	< 0.05			6/11/2018	mg/kg			8260C
1,2,4-Trimethylbenzene	< 0.05			6/11/2018	mg/kg			8260C
sec-Butylbenzene	< 0.05			6/11/2018	mg/kg			8260C
1,3-Dichlorobenzene	< 0.05			6/11/2018	mg/kg			8260C
p-Isopropyltoluene	< 0.05			6/11/2018	mg/kg			8260C
1,4-Dichlorobenzene	< 0.05			6/11/2018	mg/kg			8260C
1,2-Dichlorobenzene	< 0.05			6/11/2018	mg/kg			8260C
n-Butylbenzene	< 0.05			6/11/2018	mg/kg			8260C
1,2-Dibromo-3-chloropropane	< 0.05			6/11/2018	mg/kg			8260C
1,2,4-Trichlorobenzene	< 0.05			6/11/2018	mg/kg			8260C
Hexachlorobutadiene	< 0.05			6/11/2018	mg/kg			8260C
Naphthalene	< 0.1			6/11/2018	mg/kg			8260C
1,2,3-Trichlorobenzene	< 0.05			6/11/2018	mg/kg			8260C
4-Bromofluorobenzene (surr)	95 %R	97 %R	93 %R	6/11/2018	% Rec	70 - 130	20	8260C
1,2-Dichlorobenzene-d4 (surr)	96 %R	100 %R	97 %R	6/11/2018	% Rec	70 - 130	20	8260C
2,5-Dibromotoluene (surr)	90 %R	91 %R	97 %R	6/11/2018	% Rec	40 - 160	20	8260C
Toluene-d8 (surr)	104 %R	104 %R	104 %R	6/11/2018	% Rec	70 - 130	20	8260C

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted below, flagged analytes that exceed acceptance limits in the Quality Control sample were not detected in the field samples.
Analytes that exceed limits high but are not detected in the field samples do not impact the data. For analytes that show low recovery and are not detected in the field samples, a low point calibration standard has been analyzed to support the reporting limit.

LABORATORY REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Client Sample ID:	SS-1
Lab Sample ID:	182911.01
Matrix:	soil
Date Sampled:	6/7/18
Date Received:	6/8/18
Date Prepared:	6/11/18
Units	mg/kg
Method	8270D
Analyst	JMR

	Results	Dilution Factor	Date Analyzed	TEF	TEQ
Naphthalene	< 0.007	1	6/11/18		
2-Methylnaphthalene	< 0.007	1	6/11/18		
1-Methylnaphthalene	< 0.007	1	6/11/18		
Acenaphthylene	< 0.007	1	6/11/18		
Acenaphthene	< 0.007	1	6/11/18		
Fluorene	< 0.007	1	6/11/18		
Phenanthrene	< 0.007	1	6/11/18		
Anthracene	< 0.007	1	6/11/18		
Fluoranthene	< 0.007	1	6/11/18		
Pyrene	< 0.007	1	6/11/18		
Benzo[a]anthracene	< 0.007	1	6/11/18	0.1	< .0007
Chrysene	< 0.007	1	6/11/18	0.001	< .00000
Benzo[b]fluoranthene	< 0.007	1	6/11/18	0.1	< .0007
Benzo[k]fluoranthene	< 0.007	1	6/11/18	0.01	< .00007
Benzo[a]pyrene	< 0.007	1	6/11/18	1	< .007
Indeno[1,2,3-cd]pyrene	< 0.007	1	6/11/18	0.1	< .0007
Dibenz[a,h]anthracene	< 0.007	1	6/11/18	1	< .007
Benzo[g,h,i]perylene	< 0.007	1	6/11/18		
p-Terphenyl-D14 (surr)	**87 %R**		6/11/18		

TEF: Toxicity Equivalent Factor

TEQ: Toxicity Equivalence to Benzo[a]pyrene

The TEF factors set forth in this report are taken from the following EPA document: "Mid- Atlantic Risk Assessment User's Guide: November 2013". This guidance document sets forth a recommended, but not mandatory approach based upon currently available information with respect to risk assessment for response actions at CERCLA sites. This document does not establish binding rules. This document contains the most current TEF values per VT IROCP.

LABORATORY REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Client Sample ID:	SS-2
Lab Sample ID:	182911.02
Matrix:	soil
Date Sampled:	6/7/18
Date Received:	6/8/18
Date Prepared:	6/11/18
Units	mg/kg
Method	8270D
Analyst	JMR

	Results	Dilution Factor	Date Analyzed	TEF	TEQ
Naphthalene	< 0.007	1	6/11/18		
2-Methylnaphthalene	< 0.007	1	6/11/18		
1-Methylnaphthalene	< 0.007	1	6/11/18		
Acenaphthylene	< 0.007	1	6/11/18		
Acenaphthene	< 0.007	1	6/11/18		
Fluorene	< 0.007	1	6/11/18		
Phenanthrene	< 0.007	1	6/11/18		
Anthracene	< 0.007	1	6/11/18		
Fluoranthene	< 0.007	1	6/11/18		
Pyrene	< 0.007	1	6/11/18		
Benzo[a]anthracene	< 0.007	1	6/11/18	0.1	< .0007
Chrysene	< 0.007	1	6/11/18	0.001	< .00000
Benzo[b]fluoranthene	< 0.007	1	6/11/18	0.1	< .0007
Benzo[k]fluoranthene	< 0.007	1	6/11/18	0.01	< .00007
Benzo[a]pyrene	< 0.007	1	6/11/18	1	< .007
Indeno[1,2,3-cd]pyrene	< 0.007	1	6/11/18	0.1	< .0007
Dibenz[a,h]anthracene	< 0.007	1	6/11/18	1	< .007
Benzo[g,h,i]perylene	< 0.007	1	6/11/18		
p-Terphenyl-D14 (surr)	**94 %R**		6/11/18		

TEF: Toxicity Equivalent Factor

TEQ: Toxicity Equivalence to Benzo[a]pyrene

The TEF factors set forth in this report are taken from the following EPA document: "Mid- Atlantic Risk Assessment User's Guide: November 2013". This guidance document sets forth a recommended, but not mandatory approach based upon currently available information with respect to risk assessment for response actions at CERCLA sites. This document does not establish binding rules. This document contains the most current TEF values per VT IROCP.

LABORATORY REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Client Sample ID:	SS-3
Lab Sample ID:	182911.03
Matrix:	soil
Date Sampled:	6/7/18
Date Received:	6/8/18
Date Prepared:	6/11/18
Units	mg/kg
Method	8270D
Analyst	JMR

	Results	Dilution Factor	Date Analyzed	TEF	TEQ
Naphthalene	< 0.007	1	6/11/18		
2-Methylnaphthalene	**0.023**	1	6/11/18		
1-Methylnaphthalene	**0.013**	1	6/11/18		
Acenaphthylene	< 0.007	1	6/11/18		
Acenaphthene	< 0.007	1	6/11/18		
Fluorene	< 0.007	1	6/11/18		
Phenanthrene	**0.013**	1	6/11/18		
Anthracene	< 0.007	1	6/11/18		
Fluoranthene	< 0.007	1	6/11/18		
Pyrene	**0.0088**	1	6/11/18		
Benzo[a]anthracene	< 0.007	1	6/11/18	0.1	< .0007
Chrysene	< 0.007	1	6/11/18	0.001	< .00000
Benzo[b]fluoranthene	< 0.007	1	6/11/18	0.1	< .0007
Benzo[k]fluoranthene	< 0.007	1	6/11/18	0.01	< .00007
Benzo[a]pyrene	< 0.007	1	6/11/18	1	< .007
Indeno[1,2,3-cd]pyrene	< 0.007	1	6/11/18	0.1	< .0007
Dibenz[a,h]anthracene	< 0.007	1	6/11/18	1	< .007
Benzo[g,h,i]perylene	< 0.007	1	6/11/18		
p-Terphenyl-D14 (surr)	**84 %R**		6/11/18		

TEF: Toxicity Equivalent Factor

TEQ: Toxicity Equivalence to Benzo[a]pyrene

The TEF factors set forth in this report are taken from the following EPA document: "Mid- Atlantic Risk Assessment User's Guide: November 2013". This guidance document sets forth a recommended, but not mandatory approach based upon currently available information with respect to risk assessment for response actions at CERCLA sites. This document does not establish binding rules. This document contains the most current TEF values per VT IROCP.

LABORATORY REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Client Sample ID:	Duplicate
Lab Sample ID:	182911.04
Matrix:	soil
Date Sampled:	6/7/18
Date Received:	6/8/18
Date Prepared:	6/11/18
Units	mg/kg
Method	8270D
Analyst	JMR

	Results	Dilution Factor	Date Analyzed	TEF	TEQ
Naphthalene	< 0.007	1	6/11/18		
2-Methylnaphthalene	< 0.007	1	6/11/18		
1-Methylnaphthalene	< 0.007	1	6/11/18		
Acenaphthylene	< 0.007	1	6/11/18		
Acenaphthene	< 0.007	1	6/11/18		
Fluorene	< 0.007	1	6/11/18		
Phenanthrene	< 0.007	1	6/11/18		
Anthracene	< 0.007	1	6/11/18		
Fluoranthene	< 0.007	1	6/11/18		
Pyrene	< 0.007	1	6/11/18		
Benzo[a]anthracene	< 0.007	1	6/11/18	0.1	< .0007
Chrysene	< 0.007	1	6/11/18	0.001	< .00000
Benzo[b]fluoranthene	< 0.007	1	6/11/18	0.1	< .0007
Benzo[k]fluoranthene	< 0.007	1	6/11/18	0.01	< .00007
Benzo[a]pyrene	< 0.007	1	6/11/18	1	< .007
Indeno[1,2,3-cd]pyrene	< 0.007	1	6/11/18	0.1	< .0007
Dibenz[a,h]anthracene	< 0.007	1	6/11/18	1	< .007
Benzo[g,h,i]perylene	< 0.007	1	6/11/18		
p-Terphenyl-D14 (surr)	**92 %R**		6/11/18		

TEF: Toxicity Equivalent Factor

TEQ: Toxicity Equivalence to Benzo[a]pyrene

The TEF factors set forth in this report are taken from the following EPA document: "Mid- Atlantic Risk Assessment User's Guide: November 2013". This guidance document sets forth a recommended, but not mandatory approach based upon currently available information with respect to risk assessment for response actions at CERCLA sites. This document does not establish binding rules. This document contains the most current TEF values per VT IROCP.

QC REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Batch ID: 636643-03254/S061118PAH1

Client Designation: **Main St. #35, 37-43 | 17-103**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Naphthalene	< 0.007	1.3 (80 %R)	1.3 (78 %R) (3 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
2-Methylnaphthalene	< 0.007	1.5 (88 %R)	1.4 (85 %R) (4 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
1-Methylnaphthalene	< 0.007	1.4 (82 %R)	1.3 (78 %R) (6 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Acenaphthylene	< 0.007	1.4 (84 %R)	1.4 (81 %R) (4 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Acenaphthene	< 0.007	1.3 (78 %R)	1.3 (77 %R) (2 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Fluorene	< 0.007	1.5 (88 %R)	1.4 (86 %R) (2 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Phenanthrene	< 0.007	1.5 (88 %R)	1.5 (88 %R) (0 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Anthracene	< 0.007	1.4 (86 %R)	1.5 (88 %R) (2 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Fluoranthene	< 0.007	1.5 (89 %R)	1.6 (95 %R) (7 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Pyrene	< 0.007	1.6 (94 %R)	1.6 (97 %R) (2 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Benzo[a]anthracene	< 0.007	1.5 (93 %R)	1.6 (98 %R) (5 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Chrysene	< 0.007	1.6 (93 %R)	1.7 (99 %R) (6 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Benzo[b]fluoranthene	< 0.007	1.5 (93 %R)	1.6 (96 %R) (4 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Benzo[k]fluoranthene	< 0.007	1.5 (90 %R)	1.6 (93 %R) (4 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Benzo[a]pyrene	< 0.007	1.5 (91 %R)	1.6 (95 %R) (3 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Indeno[1,2,3-cd]pyrene	< 0.007	1.5 (91 %R)	1.6 (95 %R) (4 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Dibenz[a,h]anthracene	< 0.007	1.5 (89 %R)	1.5 (92 %R) (4 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
Benzo[g,h,i]perylene	< 0.007	1.5 (88 %R)	1.5 (91 %R) (4 RPD)	6/11/2018	mg/kg	40 - 140	30	8270D
p-Terphenyl-D14 (surr)	91 %R	101 %R	104 %R	6/11/2018	mg/kg	30 - 130		8270D

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted below, flagged analytes that exceed acceptance limits in the Quality Control sample were not detected in the field samples.

LABORATORY REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Sample ID:	SS-1	SS-2	SS-3	Duplicate					
Lab Sample ID:	182911.01	182911.02	182911.03	182911.04					
Matrix:	soil	soil	soil	soil					
Date Sampled:	6/7/18	6/7/18	6/7/18	6/7/18	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Date Received:	6/8/18	6/8/18	6/8/18	6/8/18					
Antimony	< 0.5	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	6/15/18	6020	DS
Arsenic	**2.6**	**2.7**	**10**	**2.6**	SolTotDry	mg/kg	6/15/18	6020	DS
Beryllium	< 0.5	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	6/15/18	6020	DS
Cadmium	< 0.5	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	6/15/18	6020	DS
Chromium	**24**	**21**	**15**	**24**	SolTotDry	mg/kg	6/15/18	6020	DS
Copper	**330**	**130**	**39**	**130**	SolTotDry	mg/kg	6/15/18	6020	DS
Lead	**3.6**	**3.2**	**13**	**3.3**	SolTotDry	mg/kg	6/15/18	6020	DS
Mercury	< 0.1	< 0.1	< 0.1	< 0.1	SolTotDry	mg/kg	6/15/18	6020	DS
Nickel	**21**	**19**	**18**	**21**	SolTotDry	mg/kg	6/15/18	6020	DS
Selenium	**0.55**	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	6/15/18	6020	DS
Silver	< 0.5	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	6/15/18	6020	DS
Thallium	< 0.5	< 0.5	< 0.5	< 0.5	SolTotDry	mg/kg	6/15/18	6020	DS
Zinc	**40**	**41**	**62**	**40**	SolTotDry	mg/kg	6/15/18	6020	DS

QC REPORT

EAI ID#: **182911**

Client: **LE Environmental LLC**

Client Designation: **Main St. #35, 37-43 | 17-103**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Antimony	< 0.5	37 (93 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Arsenic	< 0.5	37 (92 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Beryllium	< 0.5	37 (92 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Cadmium	< 0.5	37 (92 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Chromium	< 0.5	39 (97 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Copper	< 0.5	38 (95 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Lead	< 0.5	36 (89 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Mercury	< 0.1	0.35 (86 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Nickel	< 0.5	37 (92 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Selenium	< 0.5	35 (86 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Silver	< 0.5	40 (101 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Thallium	< 0.5	35 (88 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020
Zinc	< 5	46 (114 %R)	NA	mg/kg	6/15/18	80 - 120	20	6020

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

182911

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

SAMPLE I.D.	SAMPLING DATE / TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE / TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 BTEX; 524.2 MTBE ONLY; 8260 VTICS; 624 BTEX; 624 1,4 DIOXANE; 8021 HALOS; 8015 GRO; MAVPH	SVOC: 8270 625 ABN; SVTICS; EDB (PAH); DBCP; A BN; TPH8100; L1 L2; 8015 DRO; MAEPH; PEST 608 PEST 8081; PCB 608 PCB 8082; OIL & GREASE 1664; TPH 1664	TCLP: TCLP 1311 VOC; ABN PEST; METALS HERB; DISSOLVED METALS (LIST BELOW); TOTAL METALS (LIST BELOW)	INORGANICS: TS TSS TDS SPEC. CON.; BR CL F SO4 NO2 NO3 NO2NO3; BOD CBOD T. ALK.; TKN NH3 T. PHOS. O. PHOS.; pH T. RES. CHLORINE; COD PHENOLS TOC DOC; TOTAL CYANIDE TOTAL SULFIDE; REACTIVE CYANIDE REACTIVE SULFIDE FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI FECAL COLIFORM; ENTEROCOCCI HETEROTROPHIC PLATE COUNT	# OF CONTAINERS	NOTES MEOH VIAL #
SS-1	6/7/18 1030	S	G	X	X	X			2	45706
SS-2	1445	S	G	X	X	X			2	45708
SS-3	1404	S	G	X	X	X			2	45318
Duplicate	1445	S	G	X	X	X			2	45319
Trip Blank TA1										

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: Alan Lyptak
COMPANY: LE Environmental LLC
ADDRESS: 21 N. Main St. #1
CITY: Waterbury **STATE:** VT **ZIP:** 05676
PHONE: (802) 917-2001 **EXT.:**
FAX: none
E-MAIL: alan@leenv.net
SITE NAME: Main St. #35, 37-43
PROJECT #: 17-103
STATE: NH MA ME (VT) **OTHER:**
REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, (BROWNFIELD) OR OTHER:
QUOTE #: **PO #:**

DATE NEEDED: Normal TAT

QA/QC REPORTING LEVEL
A B C
OR
PRESUMPTIVE CERTAINTY

REPORTING OPTIONS
PRELIMS (YES) OR NO

ELECTRONIC OPTIONS
E-MAIL (PDF) EQUIS EXCEL

TEMP. 2.3 °C
ICE? (YES) NO

METALS: 8 RCRA (13 PP) FE, MN PB, CU
OTHER METALS:
SAMPLES FIELD FILTERED? ☐ YES ☐ NO
NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

SAMPLER(S):	DATE:	TIME:	RECEIVED BY:
Alan Lyptak	6/8/18	10:35	T. Thompson
RELINQUISHED BY:	**DATE:**	**TIME:**	**RECEIVED BY:**
T. Thompson	6/8/18	14:15	
RELINQUISHED BY:	**DATE:**	**TIME:**	**RECEIVED BY:**
RELINQUISHED BY:	**DATE:**	**TIME:**	**RECEIVED BY:**

SITE HISTORY: Urban downtown, fieste
SUSPECTED CONTAMINATION: PAH, metals, PCE
FIELD READINGS: 0.0 PPM

Eastern Analytical, Inc.
professional laboratory and drilling services
25 CHENELL DRIVE | CONCORD, NH 03301 | TEL: 603.228.0525 | 1.800.287.0525 | E-MAIL: CUSTOMERSERVICE@EASTERNANALYTICAL.COM | WWW.EASTERNANALYTICAL.COM

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)

Eastern Analytical, Inc.
professional laboratory and drilling services

Alan Liptak
LE Environmental LLC
21 North Main Street #1
Waterbury , VT 05676

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	182913
Client Identification:	35 & 37-41 Main St / 5 Arch St. | 17-103
Date Received:	6/8/2018

Dear Mr. Liptak :

Enclosed please find the report of analysis for the above identified project.
As discussed, analyses were subcontracted and are listed as follows:

Analysis:	Subcontract - Air VOC TO15 Low Level in SUMMA (75 Compound List) ALSCA
Subcontractor Lab:	ALS Environmental

A complete copy of the report is attached. This report may not be reproduced except in full, without the written approval of the laboratory.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director | 6.25.18 Date | 41 # of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **182913**

Client: **LE Environmental LLC**

Client Designation: **35 & 37-41 Main St / 5 Arch St. | 17-103**

Temperature upon receipt (°C): N/A **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
182913.01	OA-1	6/8/18	6/7/18	air		Adheres to Sample Acceptance Policy
182913.02	Crawl Space	6/8/18	6/7/18	air		Adheres to Sample Acceptance Policy
182913.03	SG-1	6/8/18	6/7/18	air		Adheres to Sample Acceptance Policy
182913.04	SG-2	6/8/18	6/7/18	air		Adheres to Sample Acceptance Policy
182913.05	SG-3	6/8/18	6/7/18	air		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

June 22, 2018

Front Office
Eastern Analytical, Inc.
25 Chenell Drive
Concord, NH 03301

RE: 182913

Dear Front Office:

Enclosed are the results of the samples submitted to our laboratory on June 11, 2018. For your reference, these analyses have been assigned our service request number P1802986.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 6:54 pm, Jun 22, 2018

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Eastern Analytical, Inc.
Project: 182913

Service Request No: P1802986

CASE NARRATIVE

The samples were received intact under chain of custody on June 11, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Eastern Analytical, Inc. Service Request: P1802986
Project ID: 182913

Date Received: 6/11/2018
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pil (psig)	Pfl (psig)	TO-15 - VOC Cans
OA-1	P1802986-001	Air	6/7/2018	13:49	AC02205	-3.22	3.91	X
Crawl Space	P1802986-002	Air	6/7/2018	13:49	SC00887	0.76	4.19	X
SG-1	P1802986-003	Air	6/7/2018	13:39	SC00519	-1.02	3.71	X
SG-2	P1802986-004	Air	6/7/2018	13:41	AC01019	-2.36	4.20	X
SG-3	P1802986-005	Air	6/7/2018	13:44	SC00796	-2.04	3.82	X

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) **10 Day-Standard**

ALS Project No. R1802986

ALS Contact:

Company Name & Address (Reporting Information)	Project Name	Analysis Method
Eastern Analytical, Inc. 25 Chenell Drive Concord, NH 03301	Project Number: 182913	TO-15 -75 compound list low level
Project Manager: Customer Service	P.O. # / Billing Information: 48188	
Phone: (603)228-0525 / Fax: (603)228-4591		
Email Address for Result Reporting: customerservice@eailabs.com	Sampler (Print & Sign)	

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15 -75 compound list low level		Comments e.g. Actual Preservative or specific instructions
OA-1	1	6/7/2018	11:25-13:49	AC02205	AVG04564	-29	-11.5		X		
Crawl Space	2	6/7/2018	11:32-13:49	SC00887	FCA00576	-30	-1		X		
SG-1	3	6/7/2018	11:39-13:39	SC00519	0A02096	-29	-3		X		
SG-2	4	6/7/2018	11:41-13:41	AC01019	0A01691	-29	-6		X		
SG-3	5	6/7/2018	11:44-13:44	SC00796	0AV0347	-30	-6		X		

Report Tier Levels - please select

Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) _X___
Tier II (Results + QC Summaries) Tier IV (Data Validation Package) 10% Surcharge ____

EDD required Yes / No
Type:_____ Units:_____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date: 6/8/18	Time: 1530	Received by: (Signature) Fedex	Date: 6/8/18	Time: 1530	Vermont I-Rule
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 6/11/18	Time: 0930	Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Eastern Analytical, Inc. Work order: P1802986

Project: 182913

Sample(s) received on: 6/11/18 Date opened: 6/11/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1802986-001.01	6.0 L Ambient Can					
P1802986-002.01	6.0 L Source Can					
P1802986-003.01	6.0 L Source Can					
P1802986-004.01	6.0 L Ambient Can					
P1802986-005.01	6.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **OA-1**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC02205

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.22 Final Pressure (psig): 3.91

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**1.9**	0.84	0.21	**1.1**	0.49	0.12	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.1**	0.84	0.14	**0.43**	0.17	0.029	
74-87-3	Chloromethane	**0.22**	0.32	0.14	**0.11**	0.16	0.067	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.83	0.14	ND	0.12	0.019	
75-01-4	Vinyl Chloride	ND	0.16	0.092	ND	0.063	0.036	
106-99-0	1,3-Butadiene	ND	0.34	0.14	ND	0.15	0.064	
74-83-9	Bromomethane	ND	0.32	0.12	ND	0.083	0.031	
75-00-3	Chloroethane	ND	0.32	0.11	ND	0.12	0.041	
64-17-5	Ethanol	**5.3**	8.6	0.60	**2.8**	4.6	0.32	**J**
75-05-8	Acetonitrile	ND	0.86	0.21	ND	0.51	0.13	
107-02-8	Acrolein	**1.0**	3.4	0.24	**0.44**	1.5	0.11	**J**
67-64-1	Acetone	**11**	8.6	1.9	**4.6**	3.6	0.82	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.1**	0.86	0.13	**0.20**	0.15	0.023	
67-63-0	2-Propanol (Isopropyl Alcohol)	**2.2**	8.6	0.36	**0.91**	3.5	0.15	**J**
107-13-1	Acrylonitrile	ND	0.86	0.18	ND	0.40	0.082	
75-35-4	1,1-Dichloroethene	ND	0.18	0.12	ND	0.045	0.030	
75-65-0	2-Methyl-2-Propanol(tert-Butyl Alcohol)	ND	1.8	0.26	ND	0.59	0.086	
75-09-2	Methylene Chloride	**0.28**	0.86	0.24	**0.082**	0.25	0.070	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.86	0.12	ND	0.27	0.037	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.45**	0.86	0.12	**0.058**	0.11	0.016	**J**
75-15-0	Carbon Disulfide	ND	8.6	0.26	ND	2.8	0.083	
156-60-5	trans-1,2-Dichloroethene	ND	0.18	0.12	ND	0.045	0.030	
75-34-3	1,1-Dichloroethane	ND	0.16	0.13	ND	0.040	0.031	
1634-04-4	Methyl tert-Butyl Ether	ND	0.87	0.10	ND	0.24	0.028	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Eastern Analytical, Inc.**
Client Sample ID: **OA-1**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC02205

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.22 Final Pressure (psig): 3.91

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	**2.5**	8.6	1.9	**0.72**	2.4	0.55	**J**
78-93-3	2-Butanone (MEK)	**1.4**	8.6	0.18	**0.49**	2.9	0.060	**J**
156-59-2	cis-1,2-Dichloroethene	ND	0.18	0.12	ND	0.045	0.031	
108-20-3	Diisopropyl Ether	ND	0.86	0.11	ND	0.21	0.027	
141-78-6	Ethyl Acetate	**0.69**	1.8	0.45	**0.19**	0.49	0.13	**J**
110-54-3	n-Hexane	**0.47**	0.86	0.18	**0.13**	0.24	0.051	**J**
67-66-3	Chloroform	ND	0.18	0.12	ND	0.037	0.024	
109-99-9	Tetrahydrofuran (THF)	**0.64**	0.86	0.11	**0.22**	0.29	0.037	**J**
637-92-3	Ethyl tert-Butyl Ether	ND	0.86	0.10	ND	0.21	0.025	
107-06-2	1,2-Dichloroethane	ND	0.18	0.096	ND	0.044	0.024	
71-55-6	1,1,1-Trichloroethane	ND	0.18	0.11	ND	0.033	0.020	
108-21-4	Isopropyl Acetate	ND	1.8	0.28	ND	0.43	0.066	
71-36-3	1-Butanol	**1.4**	1.8	0.23	**0.47**	0.59	0.075	**J**
71-43-2	Benzene	**0.38**	0.18	0.12	**0.12**	0.056	0.039	
56-23-5	Carbon Tetrachloride	**0.41**	0.18	0.12	**0.066**	0.028	0.019	
110-82-7	Cyclohexane	ND	1.8	0.24	ND	0.52	0.071	
994-05-8	tert-Amyl Methyl Ether	ND	0.86	0.11	ND	0.21	0.025	
78-87-5	1,2-Dichloropropane	ND	0.18	0.11	ND	0.039	0.023	
75-27-4	Bromodichloromethane	ND	0.18	0.12	ND	0.027	0.019	
79-01-6	Trichloroethene	**0.36**	0.18	0.12	**0.068**	0.033	0.022	
123-91-1	1,4-Dioxane	ND	0.86	0.10	ND	0.24	0.028	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	**0.79**	0.86	0.13	**0.17**	0.18	0.028	**J**
80-62-6	Methyl Methacrylate	ND	1.8	0.31	ND	0.44	0.075	
142-82-5	n-Heptane	**0.24**	0.86	0.14	**0.058**	0.21	0.034	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **OA-1**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC02205

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.22 Final Pressure (psig): 3.91

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
10061-01-5	cis-1,3-Dichloropropene	ND	0.91	0.13	ND	0.20	0.030	
108-10-1	4-Methyl-2-pentanone	ND	0.86	0.12	ND	0.21	0.029	
10061-02-6	trans-1,3-Dichloropropene	ND	0.86	0.18	ND	0.19	0.039	
79-00-5	1,1,2-Trichloroethane	ND	0.18	0.087	ND	0.033	0.016	
108-88-3	Toluene	**1.3**	0.86	0.11	**0.34**	0.23	0.028	
591-78-6	2-Hexanone	**0.30**	0.86	0.11	**0.073**	0.21	0.026	**J**
124-48-1	Dibromochloromethane	ND	0.18	0.11	ND	0.021	0.013	
106-93-4	1,2-Dibromoethane	ND	0.18	0.10	ND	0.023	0.013	
123-86-4	n-Butyl Acetate	**0.24**	0.86	0.12	**0.050**	0.18	0.025	**J**
111-65-9	n-Octane	**0.48**	0.86	0.19	**0.10**	0.18	0.042	**J**
127-18-4	Tetrachloroethene	ND	0.18	0.11	ND	0.026	0.016	
108-90-7	Chlorobenzene	ND	0.86	0.12	ND	0.19	0.025	
100-41-4	Ethylbenzene	**0.19**	0.86	0.12	**0.045**	0.20	0.028	**J**
179601-23-1	m,p-Xylenes	**0.58**	1.8	0.23	**0.13**	0.41	0.052	**J**
75-25-2	Bromoform	ND	0.86	0.18	ND	0.083	0.017	
100-42-5	Styrene	ND	0.86	0.14	ND	0.20	0.033	
95-47-6	o-Xylene	**0.23**	0.86	0.12	**0.053**	0.20	0.029	**J**
111-84-2	n-Nonane	**0.23**	0.86	0.14	**0.044**	0.16	0.027	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.18	0.12	ND	0.026	0.017	
98-82-8	Cumene	ND	0.86	0.12	ND	0.17	0.025	
80-56-8	alpha-Pinene	**0.85**	0.84	0.13	**0.15**	0.15	0.024	
103-65-1	n-Propylbenzene	ND	0.86	0.12	ND	0.17	0.025	
620-14-4	3-Ethyltoluene	**0.14**	0.86	0.12	**0.028**	0.17	0.024	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
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J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **OA-1**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC02205

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.22 Final Pressure (psig): 3.91

Container Dilution Factor: 1.62

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
622-96-8	4-Ethyltoluene	ND	0.84	0.14	ND	0.17	0.028	
108-67-8	1,3,5-Trimethylbenzene	ND	0.84	0.12	ND	0.17	0.025	
98-83-9	alpha-Methylstyrene	ND	0.84	0.14	ND	0.17	0.028	
611-14-3	2-Ethyltoluene	ND	0.86	0.11	ND	0.17	0.022	
95-63-6	1,2,4-Trimethylbenzene	**0.20**	0.86	0.12	**0.041**	0.17	0.024	**J**
124-18-5	n-Decane	**1.3**	0.86	0.12	**0.23**	0.15	0.020	
100-44-7	Benzyl Chloride	ND	1.8	0.19	ND	0.34	0.038	
541-73-1	1,3-Dichlorobenzene	ND	0.87	0.13	ND	0.15	0.022	
106-46-7	1,4-Dichlorobenzene	ND	0.86	0.13	ND	0.14	0.022	
135-98-8	sec-Butylbenzene	ND	0.86	0.12	ND	0.16	0.022	
99-87-6	4-Isopropyltoluene (p-Cymene)	ND	0.83	0.13	ND	0.15	0.024	
526-73-8	1,2,3-Trimethylbenzene	ND	0.83	0.12	ND	0.17	0.024	
95-50-1	1,2-Dichlorobenzene	ND	0.87	0.13	ND	0.15	0.021	
5989-27-5	d-Limonene	**0.34**	0.81	0.18	**0.062**	0.15	0.032	**J**
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.86	0.16	ND	0.089	0.017	
1120-21-4	n-Undecane	ND	0.86	0.23	ND	0.13	0.035	
120-82-1	1,2,4-Trichlorobenzene	ND	0.89	0.21	ND	0.12	0.028	
91-20-3	Naphthalene	ND	0.86	0.21	ND	0.16	0.040	
112-40-3	n-Dodecane	**1.2**	0.86	0.24	**0.17**	0.12	0.035	
87-68-3	Hexachlorobutadiene	ND	0.86	0.18	ND	0.081	0.017	
108-94-1	Cyclohexanone	**0.31**	0.84	0.13	**0.078**	0.21	0.034	**J**
98-06-6	tert-Butylbenzene	ND	0.86	0.13	ND	0.16	0.024	
104-51-8	n-Butylbenzene	ND	0.86	0.12	ND	0.16	0.023	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Crawl Space**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00887

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.76 Final Pressure (psig): 4.19

Container Dilution Factor: 1.22

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**110**	0.63	0.16	**62**	0.37	0.092	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.3**	0.63	0.11	**0.46**	0.13	0.021	
74-87-3	Chloromethane	**0.18**	0.24	0.10	**0.086**	0.12	0.051	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.62	0.10	ND	0.089	0.015	
75-01-4	Vinyl Chloride	ND	0.12	0.070	ND	0.048	0.027	
106-99-0	1,3-Butadiene	ND	0.26	0.11	ND	0.12	0.049	
74-83-9	Bromomethane	ND	0.24	0.090	ND	0.063	0.023	
75-00-3	Chloroethane	ND	0.24	0.081	ND	0.093	0.031	
64-17-5	Ethanol	**4.7**	6.5	0.45	**2.5**	3.4	0.24	**J**
75-05-8	Acetonitrile	**0.27**	0.65	0.16	**0.16**	0.39	0.095	**J**
107-02-8	Acrolein	**0.22**	2.6	0.18	**0.097**	1.1	0.080	**J**
67-64-1	Acetone	**450**	6.5	1.5	**190**	2.7	0.62	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.2**	0.65	0.099	**0.21**	0.12	0.018	
67-63-0	2-Propanol (Isopropyl Alcohol)	**220**	6.5	0.27	**91**	2.6	0.11	
107-13-1	Acrylonitrile	ND	0.65	0.13	ND	0.30	0.062	
75-35-4	1,1-Dichloroethene	ND	0.13	0.090	ND	0.034	0.023	
75-65-0	2-Methyl-2-Propanol(tert-Butyl Alcohol)	ND	1.3	0.20	ND	0.44	0.064	
75-09-2	Methylene Chloride	**0.27**	0.65	0.18	**0.077**	0.19	0.053	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.65	0.088	ND	0.21	0.028	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.46**	0.65	0.093	**0.060**	0.084	0.012	**J**
75-15-0	Carbon Disulfide	**5.2**	6.5	0.20	**1.7**	2.1	0.063	**J**
156-60-5	trans-1,2-Dichloroethene	ND	0.13	0.090	ND	0.034	0.023	
75-34-3	1,1-Dichloroethane	ND	0.12	0.095	ND	0.030	0.024	
1634-04-4	Methyl tert-Butyl Ether	ND	0.66	0.077	ND	0.18	0.021	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
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J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Crawl Space**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00887

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.76 Final Pressure (psig): 4.19

Container Dilution Factor: 1.22

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	**2.4**	6.5	1.5	**0.70**	1.8	0.42	**J**
78-93-3	2-Butanone (MEK)	**2.3**	6.5	0.13	**0.78**	2.2	0.046	**J**
156-59-2	cis-1,2-Dichloroethene	ND	0.13	0.092	ND	0.034	0.023	
108-20-3	Diisopropyl Ether	ND	0.65	0.085	ND	0.15	0.020	
141-78-6	Ethyl Acetate	**12**	1.3	0.34	**3.4**	0.37	0.095	
110-54-3	n-Hexane	**0.77**	0.65	0.13	**0.22**	0.18	0.038	
67-66-3	Chloroform	**0.19**	0.13	0.087	**0.038**	0.027	0.018	
109-99-9	Tetrahydrofuran (THF)	**0.15**	0.65	0.082	**0.049**	0.22	0.028	**J**
637-92-3	Ethyl tert-Butyl Ether	ND	0.65	0.078	ND	0.15	0.019	
107-06-2	1,2-Dichloroethane	ND	0.13	0.072	ND	0.033	0.018	
71-55-6	1,1,1-Trichloroethane	ND	0.13	0.081	ND	0.025	0.015	
108-21-4	Isopropyl Acetate	**0.72**	1.3	0.21	**0.17**	0.32	0.050	**J**
71-36-3	1-Butanol	**1.7**	1.3	0.17	**0.57**	0.44	0.056	
71-43-2	Benzene	**0.56**	0.13	0.094	**0.17**	0.042	0.029	
56-23-5	Carbon Tetrachloride	**0.42**	0.13	0.090	**0.067**	0.021	0.014	
110-82-7	Cyclohexane	**2.6**	1.3	0.18	**0.77**	0.39	0.053	
994-05-8	tert-Amyl Methyl Ether	ND	0.65	0.079	ND	0.15	0.019	
78-87-5	1,2-Dichloropropane	ND	0.13	0.081	ND	0.029	0.017	
75-27-4	Bromodichloromethane	ND	0.13	0.094	ND	0.020	0.014	
79-01-6	Trichloroethene	ND	0.13	0.088	ND	0.025	0.016	
123-91-1	1,4-Dioxane	**0.37**	0.65	0.077	**0.10**	0.18	0.021	**J**
540-84-1	2,2,4-Trimethylpentane (Isooctane)	**0.84**	0.65	0.098	**0.18**	0.14	0.021	
80-62-6	Methyl Methacrylate	**27**	1.3	0.23	**6.6**	0.33	0.057	
142-82-5	n-Heptane	**1.2**	0.65	0.10	**0.29**	0.16	0.025	

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Crawl Space** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-002

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC00887

Initial Pressure (psig): 0.76 Final Pressure (psig): 4.19

Container Dilution Factor: 1.22

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
10061-01-5	cis-1,3-Dichloropropene	ND	0.68	0.10	ND	0.15	0.022	
108-10-1	4-Methyl-2-pentanone	**0.16**	0.65	0.089	**0.039**	0.16	0.022	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	0.65	0.13	ND	0.14	0.030	
79-00-5	1,1,2-Trichloroethane	ND	0.13	0.066	ND	0.025	0.012	
108-88-3	Toluene	**5.3**	0.65	0.079	**1.4**	0.17	0.021	
591-78-6	2-Hexanone	ND	0.65	0.081	ND	0.16	0.020	
124-48-1	Dibromochloromethane	ND	0.13	0.085	ND	0.016	0.010	
106-93-4	1,2-Dibromoethane	ND	0.13	0.076	ND	0.017	0.0098	
123-86-4	n-Butyl Acetate	**8.0**	0.65	0.089	**1.7**	0.14	0.019	
111-65-9	n-Octane	**0.86**	0.65	0.15	**0.19**	0.14	0.031	
127-18-4	Tetrachloroethene	**0.20**	0.13	0.084	**0.029**	0.020	0.012	
108-90-7	Chlorobenzene	ND	0.65	0.087	ND	0.14	0.019	
100-41-4	Ethylbenzene	**0.30**	0.65	0.092	**0.070**	0.15	0.021	**J**
179601-23-1	m,p-Xylenes	**0.90**	1.3	0.17	**0.21**	0.31	0.039	**J**
75-25-2	Bromoform	ND	0.65	0.13	ND	0.063	0.013	
100-42-5	Styrene	ND	0.65	0.10	ND	0.15	0.025	
95-47-6	o-Xylene	**0.48**	0.65	0.094	**0.11**	0.15	0.022	**J**
111-84-2	n-Nonane	**0.56**	0.65	0.11	**0.11**	0.12	0.021	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.13	0.090	ND	0.020	0.013	
98-82-8	Cumene	ND	0.65	0.094	ND	0.13	0.019	
80-56-8	alpha-Pinene	**1.3**	0.63	0.10	**0.24**	0.11	0.018	
103-65-1	n-Propylbenzene	ND	0.65	0.094	ND	0.13	0.019	
620-14-4	3-Ethyltoluene	**0.26**	0.65	0.088	**0.053**	0.13	0.018	**J**

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J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Crawl Space**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00887

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.76 Final Pressure (psig): 4.19

Container Dilution Factor: 1.22

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
622-96-8	4-Ethyltoluene	**0.12**	0.63	0.10	**0.024**	0.13	0.021	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.12**	0.63	0.094	**0.025**	0.13	0.019	**J**
98-83-9	alpha-Methylstyrene	**0.24**	0.63	0.10	**0.049**	0.13	0.021	**J**
611-14-3	2-Ethyltoluene	**0.11**	0.65	0.083	**0.023**	0.13	0.017	**J**
95-63-6	1,2,4-Trimethylbenzene	**0.51**	0.65	0.090	**0.10**	0.13	0.018	**J**
124-18-5	n-Decane	**1.0**	0.65	0.088	**0.18**	0.11	0.015	
100-44-7	Benzyl Chloride	ND	1.3	0.15	ND	0.26	0.028	
541-73-1	1,3-Dichlorobenzene	ND	0.66	0.098	ND	0.11	0.016	
106-46-7	1,4-Dichlorobenzene	ND	0.65	0.10	ND	0.11	0.017	
135-98-8	sec-Butylbenzene	ND	0.65	0.089	ND	0.12	0.016	
99-87-6	4-Isopropyltoluene (p-Cymene)	**0.12**	0.62	0.099	**0.021**	0.11	0.018	**J**
526-73-8	1,2,3-Trimethylbenzene	**0.14**	0.62	0.089	**0.029**	0.13	0.018	**J**
95-50-1	1,2-Dichlorobenzene	ND	0.66	0.096	ND	0.11	0.016	
5989-27-5	d-Limonene	**0.83**	0.61	0.13	**0.15**	0.11	0.024	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.65	0.12	ND	0.067	0.013	
1120-21-4	n-Undecane	**0.44**	0.65	0.17	**0.069**	0.10	0.027	**J**
120-82-1	1,2,4-Trichlorobenzene	ND	0.67	0.16	ND	0.090	0.021	
91-20-3	Naphthalene	**0.28**	0.65	0.16	**0.054**	0.12	0.030	**J**
112-40-3	n-Dodecane	**2.1**	0.65	0.18	**0.30**	0.093	0.026	
87-68-3	Hexachlorobutadiene	ND	0.65	0.13	ND	0.061	0.013	
108-94-1	Cyclohexanone	**0.38**	0.63	0.10	**0.095**	0.16	0.025	**J**
98-06-6	tert-Butylbenzene	ND	0.65	0.098	ND	0.12	0.018	
104-51-8	n-Butylbenzene	**0.13**	0.65	0.094	**0.023**	0.12	0.017	**J**

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-1** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-003

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes:
Container ID: SC00519

Initial Pressure (psig): -1.02 Final Pressure (psig): 3.71

Container Dilution Factor: 1.35

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**4.6**	4.7	1.2	**2.7**	2.7	0.68	**J**
75-71-8	Dichlorodifluoromethane (CFC 12)	**4.1**	4.7	0.78	**0.83**	0.95	0.16	**J**
74-87-3	Chloromethane	ND	1.8	0.77	ND	0.87	0.37	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	4.6	0.76	ND	0.66	0.11	
75-01-4	Vinyl Chloride	ND	0.90	0.51	ND	0.35	0.20	
106-99-0	1,3-Butadiene	ND	1.9	0.79	ND	0.85	0.36	
74-83-9	Bromomethane	ND	1.8	0.67	ND	0.46	0.17	
75-00-3	Chloroethane	ND	1.8	0.59	ND	0.68	0.23	
64-17-5	Ethanol	**190**	48	3.3	**100**	25	1.8	
75-05-8	Acetonitrile	**1.9**	4.8	1.2	**1.1**	2.8	0.70	**J**
107-02-8	Acrolein	ND	19	1.4	ND	8.2	0.59	
67-64-1	Acetone	**950**	48	11	**400**	20	4.5	
75-69-4	Trichlorofluoromethane (CFC 11)	**16**	4.8	0.73	**2.8**	0.85	0.13	
67-63-0	2-Propanol (Isopropyl Alcohol)	**99**	48	2.0	**40**	19	0.81	
107-13-1	Acrylonitrile	ND	4.8	0.99	ND	2.2	0.46	
75-35-4	1,1-Dichloroethene	ND	0.99	0.67	ND	0.25	0.17	
75-09-2	Methylene Chloride	ND	4.8	1.4	ND	1.4	0.39	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	4.8	0.65	ND	1.5	0.21	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	4.8	0.68	ND	0.62	0.089	
75-15-0	Carbon Disulfide	**2.7**	48	1.4	**0.86**	15	0.46	**J**
156-60-5	trans-1,2-Dichloroethene	ND	0.99	0.67	ND	0.25	0.17	
75-34-3	1,1-Dichloroethane	ND	0.90	0.70	ND	0.22	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	4.9	0.57	ND	1.3	0.16	
108-05-4	Vinyl Acetate	ND	48	11	ND	14	3.1	
78-93-3	2-Butanone (MEK)	**5.9**	48	0.99	**2.0**	16	0.34	**J**

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-1**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00519

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 0.15 Liter(s)

Initial Pressure (psig): -1.02 Final Pressure (psig): 3.71

Container Dilution Factor: 1.35

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.99	0.68	ND	0.25	0.17	
141-78-6	Ethyl Acetate	**5.5**	9.9	2.5	**1.5**	2.7	0.70	**J**
110-54-3	n-Hexane	ND	4.8	0.99	ND	1.4	0.28	
67-66-3	Chloroform	**1.9**	0.99	0.64	**0.38**	0.20	0.13	
109-99-9	Tetrahydrofuran (THF)	**0.87**	4.8	0.60	**0.30**	1.6	0.20	**J**
107-06-2	1,2-Dichloroethane	ND	0.99	0.53	ND	0.24	0.13	
71-55-6	1,1,1-Trichloroethane	ND	0.99	0.59	ND	0.18	0.11	
71-43-2	Benzene	**0.91**	0.99	0.69	**0.28**	0.31	0.22	**J**
56-23-5	Carbon Tetrachloride	ND	0.99	0.67	ND	0.16	0.11	
110-82-7	Cyclohexane	ND	9.9	1.4	ND	2.9	0.39	
78-87-5	1,2-Dichloropropane	ND	0.99	0.59	ND	0.21	0.13	
75-27-4	Bromodichloromethane	ND	0.99	0.69	ND	0.15	0.10	
79-01-6	Trichloroethene	**1.2**	0.99	0.65	**0.22**	0.18	0.12	
123-91-1	1,4-Dioxane	**0.95**	4.8	0.57	**0.26**	1.3	0.16	**J**
80-62-6	Methyl Methacrylate	ND	9.9	1.7	ND	2.4	0.42	
142-82-5	n-Heptane	ND	4.8	0.77	ND	1.2	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	0.75	ND	1.1	0.16	
108-10-1	4-Methyl-2-pentanone	**3.8**	4.8	0.66	**0.92**	1.2	0.16	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	4.8	0.99	ND	1.1	0.22	
79-00-5	1,1,2-Trichloroethane	ND	0.99	0.49	ND	0.18	0.089	
108-88-3	Toluene	**2.1**	4.8	0.59	**0.55**	1.3	0.16	**J**
591-78-6	2-Hexanone	**0.84**	4.8	0.59	**0.20**	1.2	0.15	**J**
124-48-1	Dibromochloromethane	ND	0.99	0.63	ND	0.12	0.074	
106-93-4	1,2-Dibromoethane	ND	0.99	0.56	ND	0.13	0.073	
123-86-4	n-Butyl Acetate	ND	4.8	0.66	ND	1.0	0.14	

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-1** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-003

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes:
Container ID: SC00519

Initial Pressure (psig): -1.02 Final Pressure (psig): 3.71

Container Dilution Factor: 1.35

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**1.4**	4.8	1.1	**0.31**	1.0	0.23	**J**
127-18-4	Tetrachloroethene	**100**	0.99	0.62	**15**	0.15	0.092	
108-90-7	Chlorobenzene	ND	4.8	0.64	ND	1.0	0.14	
100-41-4	Ethylbenzene	**2.4**	4.8	0.68	**0.55**	1.1	0.16	**J**
179601-23-1	m,p-Xylenes	**5.8**	9.9	1.3	**1.3**	2.3	0.29	**J**
75-25-2	Bromoform	ND	4.8	0.99	ND	0.46	0.096	
100-42-5	Styrene	**2.7**	4.8	0.77	**0.64**	1.1	0.18	**J**
95-47-6	o-Xylene	**3.2**	4.8	0.69	**0.74**	1.1	0.16	**J**
111-84-2	n-Nonane	**5.0**	4.8	0.80	**0.95**	0.91	0.15	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.99	0.67	ND	0.14	0.097	
98-82-8	Cumene	**56**	4.8	0.69	**11**	0.97	0.14	
80-56-8	alpha-Pinene	**4.1**	4.7	0.74	**0.73**	0.84	0.13	**J**
103-65-1	n-Propylbenzene	**2.4**	4.8	0.69	**0.49**	0.97	0.14	**J**
622-96-8	4-Ethyltoluene	**1.3**	4.7	0.77	**0.27**	0.95	0.16	**J**
108-67-8	1,3,5-Trimethylbenzene	**2.1**	4.7	0.69	**0.44**	0.95	0.14	**J**
95-63-6	1,2,4-Trimethylbenzene	**5.3**	4.8	0.67	**1.1**	0.97	0.14	
100-44-7	Benzyl Chloride	ND	9.9	1.1	ND	1.9	0.21	
541-73-1	1,3-Dichlorobenzene	ND	4.9	0.72	ND	0.81	0.12	
106-46-7	1,4-Dichlorobenzene	ND	4.8	0.74	ND	0.79	0.12	
95-50-1	1,2-Dichlorobenzene	ND	4.9	0.71	ND	0.81	0.12	
5989-27-5	d-Limonene	**4.3**	4.5	0.99	**0.77**	0.81	0.18	**J**
96-12-8	1,2-Dibromo-3-chloropropane	ND	4.8	0.90	ND	0.49	0.093	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	1.2	ND	0.67	0.16	
91-20-3	Naphthalene	ND	4.8	1.2	ND	0.91	0.22	
87-68-3	Hexachlorobutadiene	ND	4.8	0.99	ND	0.45	0.093	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-2**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: AC01019

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 0.25 Liter(s)

Initial Pressure (psig): -2.36 Final Pressure (psig): 4.20

Container Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**6.9**	3.2	0.80	**4.0**	1.8	0.46	
75-71-8	Dichlorodifluoromethane (CFC 12)	**7.0**	3.2	0.53	**1.4**	0.64	0.11	
74-87-3	Chloromethane	ND	1.2	0.53	ND	0.59	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	3.1	0.51	ND	0.45	0.074	
75-01-4	Vinyl Chloride	ND	0.61	0.35	ND	0.24	0.14	
106-99-0	1,3-Butadiene	ND	1.3	0.54	ND	0.58	0.24	
74-83-9	Bromomethane	ND	1.2	0.45	ND	0.32	0.12	
75-00-3	Chloroethane	ND	1.2	0.40	ND	0.46	0.15	
64-17-5	Ethanol	**390**	32	2.3	**210**	17	1.2	
75-05-8	Acetonitrile	ND	3.2	0.80	ND	1.9	0.47	
107-02-8	Acrolein	**1.6**	13	0.92	**0.68**	5.6	0.40	**J**
67-64-1	Acetone	**740**	32	7.3	**310**	14	3.1	
75-69-4	Trichlorofluoromethane (CFC 11)	**260**	3.2	0.50	**46**	0.58	0.088	
67-63-0	2-Propanol (Isopropyl Alcohol)	**81**	32	1.3	**33**	13	0.55	
107-13-1	Acrylonitrile	ND	3.2	0.67	ND	1.5	0.31	
75-35-4	1,1-Dichloroethene	ND	0.67	0.45	ND	0.17	0.11	
75-09-2	Methylene Chloride	ND	3.2	0.92	ND	0.93	0.26	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	3.2	0.44	ND	1.0	0.14	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	3.2	0.47	ND	0.42	0.061	
75-15-0	Carbon Disulfide	ND	32	0.98	ND	10	0.31	
156-60-5	trans-1,2-Dichloroethene	ND	0.67	0.45	ND	0.17	0.11	
75-34-3	1,1-Dichloroethane	ND	0.61	0.48	ND	0.15	0.12	
1634-04-4	Methyl tert-Butyl Ether	ND	3.3	0.39	ND	0.92	0.11	
108-05-4	Vinyl Acetate	ND	32	7.3	ND	9.2	2.1	
78-93-3	2-Butanone (MEK)	**6.0**	32	0.67	**2.0**	11	0.23	**J**

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J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-2** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-004

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.25 Liter(s)
Test Notes:
Container ID: AC01019

Initial Pressure (psig): -2.36 Final Pressure (psig): 4.20

Container Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.67	0.46	ND	0.17	0.12	
141-78-6	Ethyl Acetate	ND	6.7	1.7	ND	1.9	0.48	
110-54-3	n-Hexane	ND	3.2	0.67	ND	0.92	0.19	
67-66-3	Chloroform	**0.52**	0.67	0.43	**0.11**	0.14	0.089	**J**
109-99-9	Tetrahydrofuran (THF)	ND	3.2	0.41	ND	1.1	0.14	
107-06-2	1,2-Dichloroethane	ND	0.67	0.36	ND	0.17	0.089	
71-55-6	1,1,1-Trichloroethane	ND	0.67	0.40	ND	0.12	0.074	
71-43-2	Benzene	ND	0.67	0.47	ND	0.21	0.15	
56-23-5	Carbon Tetrachloride	ND	0.67	0.45	ND	0.11	0.072	
110-82-7	Cyclohexane	ND	6.7	0.92	ND	2.0	0.27	
78-87-5	1,2-Dichloropropane	ND	0.67	0.40	ND	0.15	0.087	
75-27-4	Bromodichloromethane	ND	0.67	0.47	ND	0.10	0.070	
79-01-6	Trichloroethene	ND	0.67	0.44	ND	0.13	0.082	
123-91-1	1,4-Dioxane	ND	3.2	0.39	ND	0.90	0.11	
80-62-6	Methyl Methacrylate	ND	6.7	1.2	ND	1.6	0.28	
142-82-5	n-Heptane	ND	3.2	0.52	ND	0.79	0.13	
10061-01-5	cis-1,3-Dichloropropene	ND	3.4	0.51	ND	0.76	0.11	
108-10-1	4-Methyl-2-pentanone	**10**	3.2	0.45	**2.5**	0.79	0.11	
10061-02-6	trans-1,3-Dichloropropene	ND	3.2	0.67	ND	0.71	0.15	
79-00-5	1,1,2-Trichloroethane	ND	0.67	0.33	ND	0.12	0.061	
108-88-3	Toluene	**1.5**	3.2	0.40	**0.41**	0.86	0.11	**J**
591-78-6	2-Hexanone	**2.1**	3.2	0.40	**0.52**	0.79	0.099	**J**
124-48-1	Dibromochloromethane	ND	0.67	0.43	ND	0.079	0.050	
106-93-4	1,2-Dibromoethane	ND	0.67	0.38	ND	0.088	0.049	
123-86-4	n-Butyl Acetate	ND	3.2	0.45	ND	0.68	0.094	

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-2** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-004

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.25 Liter(s)
Test Notes:
Container ID: AC01019

Initial Pressure (psig): -2.36 Final Pressure (psig): 4.20

Container Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**22**	3.2	0.73	**4.7**	0.69	0.16	
127-18-4	Tetrachloroethene	**51**	0.67	0.42	**7.5**	0.099	0.062	
108-90-7	Chlorobenzene	ND	3.2	0.43	ND	0.70	0.094	
100-41-4	Ethylbenzene	**1.1**	3.2	0.46	**0.25**	0.75	0.11	**J**
179601-23-1	m,p-Xylenes	**4.0**	6.7	0.86	**0.91**	1.6	0.20	**J**
75-25-2	Bromoform	ND	3.2	0.67	ND	0.31	0.065	
100-42-5	Styrene	**2.3**	3.2	0.53	**0.55**	0.76	0.12	**J**
95-47-6	o-Xylene	**2.2**	3.2	0.47	**0.50**	0.75	0.11	**J**
111-84-2	n-Nonane	**41**	3.2	0.54	**7.8**	0.62	0.10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.67	0.45	ND	0.098	0.066	
98-82-8	Cumene	**15**	3.2	0.47	**3.0**	0.66	0.096	
80-56-8	alpha-Pinene	**2.7**	3.2	0.50	**0.48**	0.57	0.090	**J**
103-65-1	n-Propylbenzene	**1.2**	3.2	0.47	**0.25**	0.66	0.096	**J**
622-96-8	4-Ethyltoluene	**0.82**	3.2	0.52	**0.17**	0.65	0.11	**J**
108-67-8	1,3,5-Trimethylbenzene	**1.2**	3.2	0.47	**0.25**	0.65	0.096	**J**
95-63-6	1,2,4-Trimethylbenzene	**3.7**	3.2	0.45	**0.75**	0.66	0.092	
100-44-7	Benzyl Chloride	ND	6.7	0.73	ND	1.3	0.14	
541-73-1	1,3-Dichlorobenzene	**0.51**	3.3	0.49	**0.085**	0.55	0.081	**J**
106-46-7	1,4-Dichlorobenzene	ND	3.2	0.50	ND	0.54	0.084	
95-50-1	1,2-Dichlorobenzene	ND	3.3	0.48	ND	0.55	0.080	
5989-27-5	d-Limonene	**4.8**	3.1	0.67	**0.86**	0.55	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.2	0.61	ND	0.34	0.063	
120-82-1	1,2,4-Trichlorobenzene	ND	3.4	0.80	ND	0.45	0.11	
91-20-3	Naphthalene	ND	3.2	0.80	ND	0.62	0.15	
87-68-3	Hexachlorobutadiene	ND	3.2	0.67	ND	0.30	0.063	

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-3**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00796

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 0.25 Liter(s)

Initial Pressure (psig): -2.04 Final Pressure (psig): 3.82

Container Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**16**	3.0	0.76	**9.0**	1.8	0.44	
75-71-8	Dichlorodifluoromethane (CFC 12)	**3.1**	3.0	0.51	**0.63**	0.61	0.10	
74-87-3	Chloromethane	ND	1.2	0.50	ND	0.57	0.24	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	3.0	0.49	ND	0.43	0.070	
75-01-4	Vinyl Chloride	ND	0.58	0.33	ND	0.23	0.13	
106-99-0	1,3-Butadiene	ND	1.2	0.51	ND	0.55	0.23	
74-83-9	Bromomethane	ND	1.2	0.43	ND	0.30	0.11	
75-00-3	Chloroethane	ND	1.2	0.39	ND	0.44	0.15	
64-17-5	Ethanol	**800**	31	2.2	**430**	16	1.1	
75-05-8	Acetonitrile	ND	3.1	0.76	ND	1.8	0.45	
107-02-8	Acrolein	**0.98**	12	0.88	**0.43**	5.4	0.38	**J**
67-64-1	Acetone	**340**	31	7.0	**140**	13	3.0	
75-69-4	Trichlorofluoromethane (CFC 11)	**24**	3.1	0.47	**4.3**	0.55	0.084	
67-63-0	2-Propanol (Isopropyl Alcohol)	**120**	31	1.3	**48**	13	0.52	
107-13-1	Acrylonitrile	ND	3.1	0.64	ND	1.4	0.30	
75-35-4	1,1-Dichloroethene	ND	0.64	0.43	ND	0.16	0.11	
75-09-2	Methylene Chloride	ND	3.1	0.88	ND	0.89	0.25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	3.1	0.42	ND	0.99	0.13	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.46**	3.1	0.44	**0.060**	0.40	0.058	**J**
75-15-0	Carbon Disulfide	**3.9**	31	0.93	**1.3**	9.9	0.30	**J**
156-60-5	trans-1,2-Dichloroethene	ND	0.64	0.43	ND	0.16	0.11	
75-34-3	1,1-Dichloroethane	ND	0.58	0.46	ND	0.14	0.11	
1634-04-4	Methyl tert-Butyl Ether	ND	3.2	0.37	ND	0.88	0.10	
108-05-4	Vinyl Acetate	ND	31	7.0	ND	8.8	2.0	
78-93-3	2-Butanone (MEK)	**4.3**	31	0.64	**1.5**	10	0.22	**J**

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-3**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00796

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 0.25 Liter(s)

Initial Pressure (psig): -2.04 Final Pressure (psig): 3.82

Container Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.64	0.44	ND	0.16	0.11	
141-78-6	Ethyl Acetate	**6.4**	6.4	1.6	**1.8**	1.8	0.45	**J**
110-54-3	n-Hexane	ND	3.1	0.64	ND	0.88	0.18	
67-66-3	Chloroform	ND	0.64	0.41	ND	0.13	0.085	
109-99-9	Tetrahydrofuran (THF)	ND	3.1	0.39	ND	1.0	0.13	
107-06-2	1,2-Dichloroethane	ND	0.64	0.34	ND	0.16	0.085	
71-55-6	1,1,1-Trichloroethane	ND	0.64	0.39	ND	0.12	0.071	
71-43-2	Benzene	ND	0.64	0.45	ND	0.20	0.14	
56-23-5	Carbon Tetrachloride	ND	0.64	0.43	ND	0.10	0.069	
110-82-7	Cyclohexane	ND	6.4	0.88	ND	1.9	0.25	
78-87-5	1,2-Dichloropropane	ND	0.64	0.39	ND	0.14	0.083	
75-27-4	Bromodichloromethane	ND	0.64	0.45	ND	0.096	0.067	
79-01-6	Trichloroethene	ND	0.64	0.42	ND	0.12	0.078	
123-91-1	1,4-Dioxane	**1.8**	3.1	0.37	**0.51**	0.86	0.10	**J**
80-62-6	Methyl Methacrylate	ND	6.4	1.1	ND	1.6	0.27	
142-82-5	n-Heptane	**0.65**	3.1	0.50	**0.16**	0.76	0.12	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	3.3	0.48	ND	0.72	0.11	
108-10-1	4-Methyl-2-pentanone	**1.3**	3.1	0.43	**0.32**	0.76	0.10	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	3.1	0.64	ND	0.68	0.14	
79-00-5	1,1,2-Trichloroethane	ND	0.64	0.32	ND	0.12	0.058	
108-88-3	Toluene	**2.0**	3.1	0.38	**0.54**	0.82	0.10	**J**
591-78-6	2-Hexanone	**0.63**	3.1	0.39	**0.15**	0.76	0.094	**J**
124-48-1	Dibromochloromethane	ND	0.64	0.41	ND	0.075	0.048	
106-93-4	1,2-Dibromoethane	ND	0.64	0.36	ND	0.084	0.047	
123-86-4	n-Butyl Acetate	ND	3.1	0.43	ND	0.65	0.090	

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-3**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P1802986-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00796

Date Collected: 6/7/18
Date Received: 6/11/18
Date Analyzed: 6/16/18
Volume(s) Analyzed: 0.25 Liter(s)

Initial Pressure (psig): -2.04 Final Pressure (psig): 3.82

Container Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.96**	3.1	0.70	**0.21**	0.66	0.15	**J**
127-18-4	Tetrachloroethene	**200**	0.64	0.40	**29**	0.095	0.059	
108-90-7	Chlorobenzene	ND	3.1	0.41	ND	0.67	0.090	
100-41-4	Ethylbenzene	**0.82**	3.1	0.44	**0.19**	0.71	0.10	**J**
179601-23-1	m,p-Xylenes	**3.5**	6.4	0.82	**0.81**	1.5	0.19	**J**
75-25-2	Bromoform	ND	3.1	0.64	ND	0.30	0.062	
100-42-5	Styrene	**0.86**	3.1	0.50	**0.20**	0.73	0.12	**J**
95-47-6	o-Xylene	**1.7**	3.1	0.45	**0.39**	0.71	0.10	**J**
111-84-2	n-Nonane	**4.2**	3.1	0.52	**0.81**	0.59	0.099	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.64	0.43	ND	0.094	0.063	
98-82-8	Cumene	**0.92**	3.1	0.45	**0.19**	0.63	0.092	**J**
80-56-8	alpha-Pinene	**3.0**	3.0	0.48	**0.54**	0.55	0.086	**J**
103-65-1	n-Propylbenzene	**0.47**	3.1	0.45	**0.096**	0.63	0.092	**J**
622-96-8	4-Ethyltoluene	**0.60**	3.0	0.50	**0.12**	0.62	0.10	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.96**	3.0	0.45	**0.20**	0.62	0.092	**J**
95-63-6	1,2,4-Trimethylbenzene	**3.4**	3.1	0.43	**0.68**	0.63	0.088	
100-44-7	Benzyl Chloride	ND	6.4	0.70	ND	1.2	0.14	
541-73-1	1,3-Dichlorobenzene	ND	3.2	0.47	ND	0.52	0.078	
106-46-7	1,4-Dichlorobenzene	ND	3.1	0.48	ND	0.52	0.080	
95-50-1	1,2-Dichlorobenzene	ND	3.2	0.46	ND	0.52	0.077	
5989-27-5	d-Limonene	**5.2**	2.9	0.64	**0.93**	0.52	0.12	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.1	0.58	ND	0.32	0.060	
120-82-1	1,2,4-Trichlorobenzene	ND	3.2	0.76	ND	0.43	0.10	
91-20-3	Naphthalene	**0.76**	3.1	0.76	**0.14**	0.59	0.14	**J**
87-68-3	Hexachlorobutadiene	ND	3.1	0.64	ND	0.29	0.060	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P180615-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/15/18
Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.52	0.13	ND	0.30	0.076	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.52	0.087	ND	0.11	0.018	
74-87-3	Chloromethane	ND	0.20	0.086	ND	0.097	0.042	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.51	0.084	ND	0.073	0.012	
75-01-4	Vinyl Chloride	ND	0.10	0.057	ND	0.039	0.022	
106-99-0	1,3-Butadiene	ND	0.21	0.088	ND	0.095	0.040	
74-83-9	Bromomethane	ND	0.20	0.074	ND	0.052	0.019	
75-00-3	Chloroethane	ND	0.20	0.066	ND	0.076	0.025	
64-17-5	Ethanol	ND	5.3	0.37	ND	2.8	0.20	
75-05-8	Acetonitrile	ND	0.53	0.13	ND	0.32	0.077	
107-02-8	Acrolein	ND	2.1	0.15	ND	0.92	0.065	
67-64-1	Acetone	ND	5.3	1.2	ND	2.2	0.51	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.53	0.081	ND	0.094	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.3	0.22	ND	2.2	0.090	
107-13-1	Acrylonitrile	ND	0.53	0.11	ND	0.24	0.051	
75-35-4	1,1-Dichloroethene	ND	0.11	0.074	ND	0.028	0.019	
75-65-0	2-Methyl-2-Propanol(tert-Butyl Alcohol)	ND	1.1	0.16	ND	0.36	0.053	
75-09-2	Methylene Chloride	ND	0.53	0.15	ND	0.15	0.043	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	0.072	ND	0.17	0.023	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.53	0.076	ND	0.069	0.0099	
75-15-0	Carbon Disulfide	ND	5.3	0.16	ND	1.7	0.051	
156-60-5	trans-1,2-Dichloroethene	ND	0.11	0.074	ND	0.028	0.019	
75-34-3	1,1-Dichloroethane	ND	0.10	0.078	ND	0.025	0.019	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.063	ND	0.15	0.017	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P180615-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/15/18
Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
108-05-4	Vinyl Acetate	ND	5.3	1.2	ND	1.5	0.34	
78-93-3	2-Butanone (MEK)	ND	5.3	0.11	ND	1.8	0.037	
156-59-2	cis-1,2-Dichloroethene	ND	0.11	0.075	ND	0.028	0.019	
108-20-3	Diisopropyl Ether	ND	0.53	0.070	ND	0.13	0.017	
141-78-6	Ethyl Acetate	ND	1.1	0.28	ND	0.31	0.078	
110-54-3	n-Hexane	ND	0.53	0.11	ND	0.15	0.031	
67-66-3	Chloroform	ND	0.11	0.071	ND	0.023	0.015	
109-99-9	Tetrahydrofuran (THF)	ND	0.53	0.067	ND	0.18	0.023	
637-92-3	Ethyl tert-Butyl Ether	ND	0.53	0.064	ND	0.13	0.015	
107-06-2	1,2-Dichloroethane	ND	0.11	0.059	ND	0.027	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.11	0.066	ND	0.020	0.012	
108-21-4	Isopropyl Acetate	ND	1.1	0.17	ND	0.26	0.041	
71-36-3	1-Butanol	ND	1.1	0.14	ND	0.36	0.046	
71-43-2	Benzene	ND	0.11	0.077	ND	0.034	0.024	
56-23-5	Carbon Tetrachloride	ND	0.11	0.074	ND	0.017	0.012	
110-82-7	Cyclohexane	ND	1.1	0.15	ND	0.32	0.044	
994-05-8	tert-Amyl Methyl Ether	ND	0.53	0.065	ND	0.13	0.016	
78-87-5	1,2-Dichloropropane	ND	0.11	0.066	ND	0.024	0.014	
75-27-4	Bromodichloromethane	ND	0.11	0.077	ND	0.016	0.011	
79-01-6	Trichloroethene	ND	0.11	0.072	ND	0.020	0.013	
123-91-1	1,4-Dioxane	ND	0.53	0.063	ND	0.15	0.017	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	ND	0.53	0.080	ND	0.11	0.017	
80-62-6	Methyl Methacrylate	ND	1.1	0.19	ND	0.27	0.046	
142-82-5	n-Heptane	ND	0.53	0.085	ND	0.13	0.021	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P180615-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/15/18
Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
10061-01-5	cis-1,3-Dichloropropene	ND	0.56	0.083	ND	0.12	0.018	
108-10-1	4-Methyl-2-pentanone	ND	0.53	0.073	ND	0.13	0.018	
10061-02-6	trans-1,3-Dichloropropene	ND	0.53	0.11	ND	0.12	0.024	
79-00-5	1,1,2-Trichloroethane	ND	0.11	0.054	ND	0.020	0.0099	
108-88-3	Toluene	ND	0.53	0.065	ND	0.14	0.017	
591-78-6	2-Hexanone	ND	0.53	0.066	ND	0.13	0.016	
124-48-1	Dibromochloromethane	ND	0.11	0.070	ND	0.013	0.0082	
106-93-4	1,2-Dibromoethane	ND	0.11	0.062	ND	0.014	0.0081	
123-86-4	n-Butyl Acetate	ND	0.53	0.073	ND	0.11	0.015	
111-65-9	n-Octane	ND	0.53	0.12	ND	0.11	0.026	
127-18-4	Tetrachloroethene	ND	0.11	0.069	ND	0.016	0.010	
108-90-7	Chlorobenzene	ND	0.53	0.071	ND	0.12	0.015	
100-41-4	Ethylbenzene	ND	0.53	0.075	ND	0.12	0.017	
179601-23-1	m,p-Xylenes	ND	1.1	0.14	ND	0.25	0.032	
75-25-2	Bromoform	ND	0.53	0.11	ND	0.051	0.011	
100-42-5	Styrene	ND	0.53	0.086	ND	0.12	0.020	
95-47-6	o-Xylene	ND	0.53	0.077	ND	0.12	0.018	
111-84-2	n-Nonane	ND	0.53	0.089	ND	0.10	0.017	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.11	0.074	ND	0.016	0.011	
98-82-8	Cumene	ND	0.53	0.077	ND	0.11	0.016	
80-56-8	alpha-Pinene	ND	0.52	0.082	ND	0.093	0.015	
103-65-1	n-Propylbenzene	ND	0.53	0.077	ND	0.11	0.016	
620-14-4	3-Ethyltoluene	ND	0.53	0.072	ND	0.11	0.015	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P180615-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/15/18
Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
622-96-8	4-Ethyltoluene	ND	0.52	0.085	ND	0.11	0.017	
108-67-8	1,3,5-Trimethylbenzene	ND	0.52	0.077	ND	0.11	0.016	
98-83-9	alpha-Methylstyrene	ND	0.52	0.085	ND	0.11	0.018	
611-14-3	2-Ethyltoluene	ND	0.53	0.068	ND	0.11	0.014	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	0.074	ND	0.11	0.015	
124-18-5	n-Decane	ND	0.53	0.072	ND	0.091	0.012	
100-44-7	Benzyl Chloride	ND	1.1	0.12	ND	0.21	0.023	
541-73-1	1,3-Dichlorobenzene	ND	0.54	0.080	ND	0.090	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.53	0.082	ND	0.088	0.014	
135-98-8	sec-Butylbenzene	ND	0.53	0.073	ND	0.097	0.013	
99-87-6	4-Isopropyltoluene (p-Cymene)	ND	0.51	0.081	ND	0.093	0.015	
526-73-8	1,2,3-Trimethylbenzene	ND	0.51	0.073	ND	0.10	0.015	
95-50-1	1,2-Dichlorobenzene	ND	0.54	0.079	ND	0.090	0.013	
5989-27-5	d-Limonene	ND	0.50	0.11	ND	0.090	0.020	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.53	0.10	ND	0.055	0.010	
1120-21-4	n-Undecane	ND	0.53	0.14	ND	0.083	0.022	
120-82-1	1,2,4-Trichlorobenzene	ND	0.55	0.13	ND	0.074	0.018	
91-20-3	Naphthalene	ND	0.53	0.13	ND	0.10	0.025	
112-40-3	n-Dodecane	ND	0.53	0.15	ND	0.076	0.022	
87-68-3	Hexachlorobutadiene	ND	0.53	0.11	ND	0.050	0.010	
108-94-1	Cyclohexanone	ND	0.52	0.083	ND	0.13	0.021	
98-06-6	tert-Butylbenzene	ND	0.53	0.080	ND	0.097	0.015	
104-51-8	n-Butylbenzene	ND	0.53	0.077	ND	0.097	0.014	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Eastern Analytical, Inc.**
Client Project ID: **182913** ALS Project ID: P1802986

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date(s) Collected: 6/7/18
Analyst: Wida Ang Date(s) Received: 6/11/18
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 6/15 - 6/16/18
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P180615-MB	**95**	**97**	**104**	70-130	
Lab Control Sample	P180615-LCS	**93**	**96**	**106**	70-130	
OA-1	P1802986-001	**94**	**99**	**104**	70-130	
Crawl Space	P1802986-002	**93**	**98**	**104**	70-130	
SG-1	P1802986-003	**95**	**97**	**106**	70-130	
SG-1	P1802986-003DUP	**94**	**95**	**106**	70-130	
SG-2	P1802986-004	**95**	**94**	**104**	70-130	
SG-3	P1802986-005	**96**	**98**	**104**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P180615-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 6/15/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	210	**175**	**83**	54-133	
75-71-8	Dichlorodifluoromethane (CFC 12)	213	**171**	**80**	64-115	
74-87-3	Chloromethane	210	**158**	**75**	47-140	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	211	**176**	**83**	60-112	
75-01-4	Vinyl Chloride	211	**166**	**79**	63-127	
106-99-0	1,3-Butadiene	210	**184**	**88**	57-149	
74-83-9	Bromomethane	210	**178**	**85**	63-132	
75-00-3	Chloroethane	210	**174**	**83**	68-129	
64-17-5	Ethanol	1,040	**859**	**83**	62-131	
75-05-8	Acetonitrile	210	**170**	**81**	56-136	
107-02-8	Acrolein	209	**177**	**85**	60-132	
67-64-1	Acetone	1,050	**828**	**79**	63-124	
75-69-4	Trichlorofluoromethane (CFC 11)	208	**168**	**81**	65-113	
67-63-0	2-Propanol (Isopropyl Alcohol)	422	**357**	**85**	62-135	
107-13-1	Acrylonitrile	212	**180**	**85**	68-138	
75-35-4	1,1-Dichloroethene	213	**182**	**85**	72-118	
75-65-0	2-Methyl-2-Propanol(tert-Butyl Alcohol)	427	**365**	**85**	61-128	
75-09-2	Methylene Chloride	213	**175**	**82**	67-116	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	**188**	**89**	61-143	
76-13-1	Trichlorotrifluoroethane (CFC 113)	214	**182**	**85**	68-113	
75-15-0	Carbon Disulfide	214	**184**	**86**	68-120	
156-60-5	trans-1,2-Dichloroethene	214	**180**	**84**	71-125	
75-34-3	1,1-Dichloroethane	212	**175**	**83**	68-118	
1634-04-4	Methyl tert-Butyl Ether	213	**179**	**84**	60-123	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P180615-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 6/15/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
108-05-4	Vinyl Acetate	1,060	**987**	**93**	73-135	
78-93-3	2-Butanone (MEK)	212	**179**	**84**	70-129	
156-59-2	cis-1,2-Dichloroethene	212	**174**	**82**	69-121	
108-20-3	Diisopropyl Ether	213	**179**	**84**	65-117	
141-78-6	Ethyl Acetate	426	**366**	**86**	66-140	
110-54-3	n-Hexane	213	**178**	**84**	61-124	
67-66-3	Chloroform	212	**173**	**82**	69-113	
109-99-9	Tetrahydrofuran (THF)	212	**175**	**83**	66-121	
637-92-3	Ethyl tert-Butyl Ether	212	**181**	**85**	69-120	
107-06-2	1,2-Dichloroethane	212	**168**	**79**	62-120	
71-55-6	1,1,1-Trichloroethane	212	**181**	**85**	65-116	
108-21-4	Isopropyl Acetate	426	**363**	**85**	70-126	
71-36-3	1-Butanol	426	**368**	**86**	62-141	
71-43-2	Benzene	213	**174**	**82**	66-111	
56-23-5	Carbon Tetrachloride	214	**186**	**87**	64-122	
110-82-7	Cyclohexane	425	**367**	**86**	69-115	
994-05-8	tert-Amyl Methyl Ether	212	**182**	**86**	68-119	
78-87-5	1,2-Dichloropropane	212	**180**	**85**	69-121	
75-27-4	Bromodichloromethane	214	**188**	**88**	69-123	
79-01-6	Trichloroethene	212	**188**	**89**	69-112	
123-91-1	1,4-Dioxane	213	**185**	**87**	74-123	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	212	**179**	**84**	67-120	
80-62-6	Methyl Methacrylate	424	**389**	**92**	75-125	
142-82-5	n-Heptane	213	**181**	**85**	68-118	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **182913**

ALS Project ID: P1802986
ALS Sample ID: P180615-LCS

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 6/15/18
Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
10061-01-5	cis-1,3-Dichloropropene	208	**193**	**93**	74-129	
108-10-1	4-Methyl-2-pentanone	213	**184**	**86**	66-138	
10061-02-6	trans-1,3-Dichloropropene	213	**201**	**94**	75-130	
79-00-5	1,1,2-Trichloroethane	212	**187**	**88**	73-117	
108-88-3	Toluene	211	**195**	**92**	66-114	
591-78-6	2-Hexanone	211	**187**	**89**	58-146	
124-48-1	Dibromochloromethane	212	**207**	**98**	67-130	
106-93-4	1,2-Dibromoethane	211	**200**	**95**	70-127	
123-86-4	n-Butyl Acetate	215	**195**	**91**	62-140	
111-65-9	n-Octane	212	**191**	**90**	65-121	
127-18-4	Tetrachloroethene	212	**202**	**95**	62-119	
108-90-7	Chlorobenzene	212	**194**	**92**	66-115	
100-41-4	Ethylbenzene	212	**192**	**91**	69-117	
179601-23-1	m,p-Xylenes	424	**378**	**89**	67-117	
75-25-2	Bromoform	212	**221**	**104**	67-135	
100-42-5	Styrene	211	**201**	**95**	70-128	
95-47-6	o-Xylene	211	**191**	**91**	67-118	
111-84-2	n-Nonane	212	**187**	**88**	61-127	
79-34-5	1,1,2,2-Tetrachloroethane	212	**194**	**92**	70-125	
98-82-8	Cumene	212	**196**	**92**	68-116	
80-56-8	alpha-Pinene	213	**196**	**92**	69-122	
103-65-1	n-Propylbenzene	214	**196**	**92**	70-118	
620-14-4	3-Ethyltoluene	212	**200**	**94**	68-117	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Eastern Analytical, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P180615-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 6/15/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
622-96-8	4-Ethyltoluene	211	**194**	**92**	69-124	
108-67-8	1,3,5-Trimethylbenzene	212	**193**	**91**	65-117	
98-83-9	alpha-Methylstyrene	212	**204**	**96**	71-132	
611-14-3	2-Ethyltoluene	214	**192**	**90**	67-119	
95-63-6	1,2,4-Trimethylbenzene	212	**191**	**90**	67-124	
124-18-5	n-Decane	213	**194**	**91**	63-129	
100-44-7	Benzyl Chloride	212	**222**	**105**	75-142	
541-73-1	1,3-Dichlorobenzene	212	**201**	**95**	70-124	
106-46-7	1,4-Dichlorobenzene	214	**197**	**92**	63-124	
135-98-8	sec-Butylbenzene	213	**195**	**92**	68-119	
99-87-6	4-Isopropyltoluene (p-Cymene)	213	**195**	**92**	65-122	
526-73-8	1,2,3-Trimethylbenzene	213	**197**	**92**	66-128	
95-50-1	1,2-Dichlorobenzene	214	**203**	**95**	66-125	
5989-27-5	d-Limonene	213	**191**	**90**	64-135	
96-12-8	1,2-Dibromo-3-chloropropane	210	**220**	**105**	73-136	
1120-21-4	n-Undecane	214	**215**	**100**	67-135	
120-82-1	1,2,4-Trichlorobenzene	218	**224**	**103**	70-141	
91-20-3	Naphthalene	209	**199**	**95**	71-146	
112-40-3	n-Dodecane	215	**224**	**104**	69-152	
87-68-3	Hexachlorobutadiene	212	**211**	**100**	63-126	
108-94-1	Cyclohexanone	209	**183**	**88**	58-138	
98-06-6	tert-Butylbenzene	212	**193**	**91**	65-121	
104-51-8	n-Butylbenzene	213	**194**	**91**	71-125	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-1** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-003DUP

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes:
Container ID: SC00519

Initial Pressure (psig): -1.02 Final Pressure (psig): 3.71

Container Dilution Factor: 1.35

Compound	Sample Result		Duplicate Sample Result		Average	% RPD	RPD	Data
	µg/m³	ppbV	µg/m³	ppbV	µg/m³		Limit	Qualifier
Propene	4.64	2.69	4.15	2.41	4.395	**11**	25	**J**
Dichlorodifluoromethane (CFC 12)	4.10	0.830	4.13	0.836	4.115	**0.7**	25	**J**
Chloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Ethanol	189	100	188	99.9	188.5	**0.5**	25	
Acetonitrile	1.89	1.13	1.85	1.10	1.87	**2**	25	**J**
Acrolein	ND	ND	1.51	0.660	-	-	25	**J**
Acetone	947	399	938	395	942.5	**1**	25	
Trichlorofluoromethane	15.8	2.81	15.5	2.77	15.65	**2**	25	
2-Propanol (Isopropyl Alcohol)	99.3	40.4	100	40.8	99.65	**0.7**	25	
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	ND	ND	-	-	25	
Trichlorotrifluoroethane	ND	ND	ND	ND	-	-	25	
Carbon Disulfide	2.68	0.862	2.66	0.853	2.67	**0.7**	25	**J**
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
Methyl tert-Butyl Ether	ND	ND	ND	ND	-	-	25	
Vinyl Acetate	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	5.90	2.00	5.92	2.01	5.91	**0.3**	25	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-1** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-003DUP

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes:
Container ID: SC00519

Initial Pressure (psig): -1.02 Final Pressure (psig): 3.71

Container Dilution Factor: 1.35

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Ethyl Acetate	5.53	1.53	5.72	1.59	5.625	3	25	J
n-Hexane	ND	ND	ND	ND	-	-	25	
Chloroform	1.87	0.383	1.87	0.383	1.87	0	25	
Tetrahydrofuran (THF)	0.873	0.296	0.837	0.284	0.855	4	25	J
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	0.909	0.285	0.918	0.287	0.9135	1	25	J
Carbon Tetrachloride	ND	ND	ND	ND	-	-	25	
Cyclohexane	ND	ND	ND	ND	-	-	25	
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	1.18	0.219	1.22	0.226	1.2	3	25	
1,4-Dioxane	0.945	0.262	0.945	0.262	0.945	0	25	J
Methyl Methacrylate	ND	ND	ND	ND	-	-	25	
n-Heptane	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	3.75	0.916	3.78	0.923	3.765	0.8	25	J
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	2.07	0.550	2.04	0.542	2.055	1	25	J
2-Hexanone	0.837	0.204	0.864	0.211	0.8505	3	25	J
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
1,2-Dibromoethane	ND	ND	ND	ND	-	-	25	
n-Butyl Acetate	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **Eastern Analytical, Inc.**
Client Sample ID: **SG-1** ALS Project ID: P1802986
Client Project ID: **182913** ALS Sample ID: P1802986-003DUP

Test Code: EPA TO-15 Date Collected: 6/7/18
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 6/11/18
Analyst: Wida Ang Date Analyzed: 6/16/18
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.15 Liter(s)
Test Notes:
Container ID: SC00519

Initial Pressure (psig): -1.02 Final Pressure (psig): 3.71

Container Dilution Factor: 1.35

Compound	Sample Result		Duplicate Sample Result		Average	% RPD	RPD	Data
	µg/m³	ppbV	µg/m³	ppbV	µg/m³		Limit	Qualifier
n-Octane	1.43	0.306	1.18	0.252	1.305	**19**	25	**J**
Tetrachloroethene	99.7	14.7	99.5	14.7	99.6	**0.2**	25	
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	2.38	0.547	2.39	0.549	2.385	**0.4**	25	**J**
m,p-Xylenes	5.80	1.33	5.79	1.33	5.795	**0.2**	25	**J**
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	2.75	0.645	2.81	0.660	2.78	**2**	25	**J**
o-Xylene	3.20	0.736	3.16	0.728	3.18	**1**	25	**J**
n-Nonane	4.99	0.951	5.00	0.954	4.995	**0.2**	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	
Cumene	56.1	11.4	55.6	11.3	55.85	**0.9**	25	
alpha-Pinene	4.08	0.732	4.00	0.717	4.04	**2**	25	**J**
n-Propylbenzene	2.40	0.489	2.39	0.485	2.395	**0.4**	25	**J**
4-Ethyltoluene	1.34	0.273	1.32	0.269	1.33	**2**	25	**J**
1,3,5-Trimethylbenzene	2.14	0.436	2.11	0.429	2.125	**1**	25	**J**
1,2,4-Trimethylbenzene	5.26	1.07	5.27	1.07	5.265	**0.2**	25	
Benzyl Chloride	ND	ND	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	ND	ND	-	-	25	
d-Limonene	4.30	0.772	4.30	0.772	4.3	**0**	25	**J**
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	ND	ND	-	-	25	
Naphthalene	ND	ND	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Method Path : I:\MS16\METHODS\
Method File : R16051818.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Fri May 18 10:36:37 2018
Response Via : Initial Calibration

LH 5/18/18

Calibration Files
0.10=05181802.D 0.20=05181803.D 0.40=05181804.D 1.0 =05181805.D 5.0 =05181806.D 25 =05181
100 =05181809.D

		Compound	0.10	0.20	0.40	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene		1.946	1.925	1.712	1.827	1.626	1.591	1.595	1.746	8.77
3)	T	Dichlorodifluo...	3.333	3.040	3.123	2.744	2.791	2.631	2.426	2.147	2.779	13.87
4)	T	Chloromethane	3.196	2.889	2.755	2.612	2.314	2.411	2.084	1.523	2.473	20.94
5)	T	1,2-Dichloro-1...	1.841	1.594	1.672	1.478	1.491	1.429	1.344	1.257	1.513	12.30
6)	T	Vinyl Chloride	2.933	2.617	2.739	2.438	2.460	2.321	2.163	1.988	2.457	12.47
7)	T	1,3-Butadiene	2.057	1.841	1.820	1.765	1.768	1.742	1.616	1.459	1.759	9.86
8)	T	Bromomethane	1.609	1.477	1.510	1.366	1.369	1.336	1.267	1.218	1.394	9.34
9)	T	Chloroethane	1.348	1.212	1.261	1.140	1.141	1.102	1.051	1.020	1.159	9.46
10)	T	Ethanol	1.435	1.262	1.241	1.206	1.179	1.172	1.080	0.984	1.195	11.09
11)	T	Acetonitrile	3.738	3.302	3.330	3.082	3.076	2.975	2.834	2.731	3.134	10.20
12)	T	Acrolein	1.152	1.046	1.048	1.000	1.036	0.973	0.930	0.895	1.010	7.90
13)	T	Acetone	1.597	1.351	1.366	1.224	1.221	1.122	1.003	0.856	1.218	18.87
14)	T	Trichlorofluor...	2.875	2.509	2.594	2.233	2.321	2.181	2.074	2.015	2.350	12.37
15)	T	2-Propanol (Is...	4.598	4.155	4.215	3.952	3.863	3.960	3.433	2.531	3.838	16.24
16)	T	Acrylonitrile	2.283	2.131	2.240	2.132	2.164	2.117	2.013	1.955	2.129	5.06
17)	T	1,1-Dichloroet...	1.614	1.463	1.541	1.373	1.416	1.383	1.318	1.291	1.425	7.72
18)	T	2-Methyl-2-Pro...	4.366	3.954	4.065	3.781	3.925	3.783	3.527	2.708	3.764	13.04
19)	T	Methylene Chlo...	1.900	1.698	1.706	1.512	1.520	1.473	1.403	1.343	1.569	11.77
20)	T	3-Chloro-1-pro...	2.660	2.244	2.180	2.098	2.182	2.188	2.089	2.010	2.206	8.94
21)	T	Trichlorotrifl...	1.553	1.348	1.417	1.245	1.258	1.216	1.166	1.141	1.293	10.72
22)	T	Carbon Disulfide		6.032	6.165	5.533	5.647	5.482	5.144	4.873	5.554	8.21
23)	T	trans-1,2-Dich...	2.499	2.206	2.284	2.124	2.153	2.089	1.999	1.920	2.159	8.25
24)	T	1,1-Dichloroet...	3.093	2.865	2.940	2.643	2.682	2.570	2.455	2.373	2.703	9.13
25)	T	Methyl tert-Bu...	5.196	4.576	4.743	4.261	4.352	4.148	3.952	3.759	4.373	10.49
26)	T	Vinyl Acetate	0.337	0.314	0.329	0.315	0.332	0.335	0.314	0.276	0.319	6.22
27)	T	2-Butanone (MEK)	1.180	1.104	1.141	1.008	1.066	1.018	0.972	0.938	1.053	8.00
28)	T	cis-1,2-Dichlo...	2.408	2.197	2.273	2.071	2.080	2.013	1.911	1.835	2.099	8.99
29)	T	Diisopropyl Ether	1.444	1.318	1.316	1.149	1.154	1.094	1.019	0.910	1.175	14.91
30)	T	Ethyl Acetate	0.650	0.573	0.630	0.554	0.591	0.563	0.521	0.454	0.567	10.89
31)	T	n-Hexane		2.746	2.849	2.347	2.461	2.179	2.037	1.831	2.350	15.67
32)	T	Chloroform	3.010	2.656	2.758	2.461	2.500	2.402	2.270	2.170	2.529	10.76
33)	S	1,2-Dichloroet...	1.462	1.436	1.435	1.401	1.421	1.396	1.383	1.371	1.413	2.18
34)	T	Tetrahydrofura...	1.309	1.116	1.108	0.991	1.032	1.008	0.965	0.938	1.059	11.28
35)	T	Ethyl tert-But...	1.988	1.754	1.875	1.651	1.693	1.639	1.568	1.502	1.709	9.35
36)	T	1,2-Dichloroet...	2.189	1.935	1.993	1.777	1.794	1.710	1.623	1.555	1.822	11.42
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.561	0.506	0.510	0.478	0.468	0.462	0.437	0.424	0.481	9.17
39)	T	Isopropyl Acetate	0.261	0.241	0.246	0.227	0.228	0.225	0.209	0.191	0.229	9.61
40)	T	1-Butanol	0.387	0.350	0.368	0.407	0.426	0.394	0.361	0.308	0.375	9.82
41)	T	Benzene	1.911	1.667	1.546	1.409	1.365	1.315	1.219	1.057	1.436	18.65
42)	T	Carbon Tetrach...	0.477	0.418	0.428	0.408	0.404	0.407	0.385	0.374	0.412	7.58
43)	T	Cyclohexane	0.606	0.547	0.557	0.518	0.505	0.495	0.456	0.404	0.511	12.23
44)	T	tert-Amyl Meth...	1.175	1.029	1.047	0.982	0.971	0.963	0.907	0.849	0.990	9.88
45)	T	1,2-Dichloropr...	0.424	0.377	0.379	0.349	0.348	0.340	0.325	0.317	0.358	9.73
46)	T	Bromodichlorom...	0.493	0.444	0.456	0.438	0.442	0.443	0.419	0.400	0.442	6.05
47)	T	Trichloroethene	0.423	0.378	0.379	0.356	0.350	0.346	0.328	0.317	0.360	9.34
48)	T	1,4-Dioxane	0.321	0.300	0.309	0.288	0.289	0.288	0.273	0.259	0.291	6.73
49)	T	2,2,4-Trimethy...	1.821	1.628	1.637	1.541	1.493	1.461	1.338	1.191	1.514	12.78
50)	T	Methyl Methacr...	0.150	0.136	0.140	0.133	0.136	0.135	0.128	0.121	0.135	6.18
51)	T	n-Heptane	0.410	0.361	0.364	0.321	0.315	0.299	0.283	0.274	0.328	14.07
52)	T	cis-1,3-Dichlo...	0.569	0.529	0.543	0.525	0.547	0.551	0.525	0.505	0.537	3.73
53)	T	4-Methyl-2-pen...	0.375	0.354	0.358	0.343	0.342	0.338	0.318	0.295	0.340	7.24
54)	T	trans-1,3-Dich...	0.471	0.438	0.459	0.453	0.483	0.494	0.476	0.465	0.467	3.81

55)	T	1,1,2-Trichlor...	0.377	0.339	0.350	0.327	0.326	0.322	0.306	0.296	0.330	7.64
56)	IR	Chlorobenzene-d5 (...	----------	----------	----------	ISTD	----------	----------	----------	----------	----------	
57)	S	Toluene-d8 (SS2)	2.160	2.168	2.169	2.161	2.182	2.170	2.173	2.183	2.171	0.40
58)	T	Toluene		3.317	3.252	2.946	2.897	2.811	2.624	2.402	2.893	11.22
59)	T	2-Hexanone	2.046	1.827	1.834	1.763	1.751	1.693	1.582	1.475	1.747	9.86
60)	T	Dibromochlorom...	0.835	0.763	0.804	0.769	0.815	0.831	0.791	0.767	0.797	3.61
61)	T	1,2-Dibromoethane	0.890	0.811	0.831	0.791	0.802	0.804	0.765	0.747	0.805	5.37
62)	T	n-Butyl Acetate	2.275	1.980	2.015	1.934	1.950	1.927	1.809	1.687	1.947	8.70
63)	T	n-Octane	0.738	0.665	0.688	0.627	0.628	0.612	0.575	0.538	0.634	9.98
64)	T	Tetrachloroethene	0.920	0.832	0.858	0.781	0.787	0.783	0.744	0.722	0.803	7.97
65)	T	Chlorobenzene	2.304	2.043	2.056	1.923	1.905	1.865	1.759	1.666	1.940	10.16
66)	T	Ethylbenzene	4.091	3.511	3.529	3.289	3.308	3.249	2.993	2.592	3.320	13.07
67)	T	m- & p-Xylenes	3.369	2.685	2.680	2.513	2.492	2.431	2.202	1.829	2.525	17.46
68)	T	Bromoform	0.629	0.605	0.628	0.626	0.682	0.723	0.689	0.669	0.656	6.17
69)	T	Styrene	2.260	2.025	2.078	2.015	2.063	2.057	1.898	1.712	2.014	7.81
70)	T	o-Xylene	3.094	2.714	2.794	2.626	2.572	2.509	2.270	1.930	2.564	13.60
71)	T	n-Nonane	1.719	1.572	1.593	1.510	1.491	1.430	1.289	1.098	1.463	13.22
72)	T	1,1,2,2-Tetrac...	1.449	1.368	1.412	1.357	1.351	1.338	1.220	1.052	1.319	9.60
73)	S	Bromofluoroben...	0.689	0.690	0.686	0.691	0.693	0.696	0.685	0.683	0.689	0.61
74)	T	Cumene	3.808	3.490	3.514	3.296	3.280	3.221	2.906	2.423	3.242	13.00
75)	T	alpha-Pinene	1.937	1.784	1.798	1.682	1.744	1.713	1.585	1.412	1.707	9.16
76)	T	n-Propylbenzene	4.642	4.249	4.255	4.046	3.986	3.872	3.435	2.646	3.891	15.71
77)	T	3-Ethyltoluene	3.660	3.376	3.464	3.319	3.300	3.419	2.956	2.341	3.229	12.69
78)	T	4-Ethyltoluene	3.554	3.161	3.220	3.151	3.097	2.811	2.601	2.235	2.979	13.84
79)	T	1,3,5-Trimethy...	3.001	2.734	2.793	2.718	2.695	2.622	2.358	2.027	2.618	11.40
80)	T	alpha-Methylst...	1.466	1.381	1.464	1.427	1.475	1.448	1.318	1.163	1.393	7.67
81)	T	2-Ethyltoluene	3.806	3.328	3.425	3.308	3.209	3.096	2.740	2.276	3.149	14.71
82)	T	1,2,4-Trimethy...	3.357	2.800	2.834	2.781	2.737	2.647	2.262	1.821	2.655	16.96
83)	T	n-Decane	1.653	1.519	1.551	1.586	1.557	1.487	1.333	1.113	1.475	11.74
84)	T	Benzyl Chloride				2.025	2.307	2.440	2.235	1.890	2.179	10.11
85)	T	1,3-Dichlorobe...	1.908	1.664	1.668	1.626	1.606	1.581	1.411	1.240	1.588	12.34
86)	T	1,4-Dichlorobe...	1.971	1.706	1.716	1.690	1.655	1.599	1.456	1.296	1.636	12.15
87)	T	sec-Butylbenzene	4.151	3.781	3.863	3.732	3.655	3.509	3.054	2.411	3.519	15.54
88)	T	4-Isopropyltol...	3.683	3.426	3.534	3.472	3.428	3.200	2.681	2.073	3.187	17.02
89)	T	1,2,3-Trimethy...	3.006	2.757	2.854	2.805	2.776	2.657	2.271	1.820	2.618	14.76
90)	T	1,2-Dichlorobe...	1.786	1.576	1.596	1.569	1.558	1.494	1.303	1.083	1.496	14.24
91)	T	d-Limonene	1.213	1.129	1.181	1.152	1.175	1.136	0.968	0.759	1.089	14.00
92)	T	1,2-Dibromo-3-...	0.516	0.486	0.537	0.545	0.587	0.593	0.560	0.529	0.544	6.59
93)	T	n-Undecane	1.359	1.248	1.325	1.645	1.671	1.610	1.443	1.184	1.435	13.07
94)	T	1,2,4-Trichlor...	1.203	1.031	1.075	1.163	1.202	1.190	1.124	1.048	1.130	6.26
95)	T	Naphthalene	4.456	3.825	3.942	4.082	4.183	3.886	3.441	2.663	3.810	14.40
96)	T	n-Dodecane			0.949	1.612	1.688	1.556	1.423	1.182	1.402	20.27
97)	T	Hexachlorobuta...	0.778	0.736	0.741	0.728	0.743	0.759	0.720	0.676	0.735	4.08
98)	T	Cyclohexanone	1.382	1.220	1.244	1.221	1.204	1.171	1.093	1.016	1.194	9.07
99)	T	tert-Butylbenzene	3.009	2.758	2.780	2.665	2.649	2.500	2.124	1.717	2.525	16.42
100)	T	n-Butylbenzene	3.347	3.054	3.133	3.076	3.054	2.916	2.568	2.077	2.903	13.78

(#) = Out of Range

R16051818.M Fri May 18 11:30:26 2018

Evaluate Continuing Calibration Report

Data File: I:\MS16\DATA\2018 06\15\06151801.D
Acq On : 15 Jun 2018 17:25 Operator: WA
Sample : CCV R16061518 25ng
Misc : S31-04201801/S31-06041804 (7/2)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 07:34:06 2018
Quant Method : I:\MS16\METHODS\R16051818.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 18 12:13:28 2018
Response via : Initial Calibration
DataAcq Meth:TO15.M

6/16/18

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	105	0.00
2	T	Propene	1.746	1.459	16.4	94	0.00
3	T	Dichlorodifluoromethane (CF	2.779	2.375	14.5	95	0.00
4	T	Chloromethane	2.473	2.126	14.0	93	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.513	1.338	11.6	98	0.00
6	T	Vinyl Chloride	2.457	2.031	17.3	92	0.00
7	T	1,3-Butadiene	1.759	1.617	8.1	98	0.00
8	T	Bromomethane	1.394	1.260	9.6	99	-0.01
9	T	Chloroethane	1.159	1.021	11.9	97	0.00
10	T	Ethanol	1.195	1.042	12.8	94	-0.07
11	T	Acetonitrile	3.134	2.692	14.1	95	-0.04
12	T	Acrolein	1.010	0.885	12.4	96	-0.02
13	T	Acetone	1.218	1.004	17.6	94	-0.03
14	T	Trichlorofluoromethane	2.350	1.997	15.0	96	-0.01
15	T	2-Propanol (Isopropanol)	3.838	3.566	7.1	95	-0.04
16	T	Acrylonitrile	2.129	1.935	9.1	96	-0.03
17	T	1,1-Dichloroethene	1.425	1.306	8.4	99	-0.01
18	T	2-Methyl-2-Propanol (tert-B	3.764	3.444	8.5	96	-0.04
19	T	Methylene Chloride	1.569	1.375	12.4	98	-0.01
20	T	3-Chloro-1-propene (Allyl C	2.206	2.035	7.8	98	-0.02
21	T	Trichlorotrifluoroethane	1.293	1.187	8.2	103	0.00
22	T	Carbon Disulfide	5.554	5.173	6.9	99	-0.01
23	T	trans-1,2-Dichloroethene	2.159	1.942	10.1	98	-0.01
24	T	1,1-Dichloroethane	2.703	2.391	11.5	98	-0.01
25	T	Methyl tert-Butyl Ether	4.373	3.926	10.2	100	-0.01
26	T	Vinyl Acetate	0.319	0.316	0.9	99	-0.02
27	T	2-Butanone (MEK)	1.053	0.960	8.8	99	-0.02
28	T	cis-1,2-Dichloroethene	2.099	1.851	11.8	97	0.00
29	T	Diisopropyl Ether	1.175	1.031	12.3	99	-0.01
30	T	Ethyl Acetate	0.567	0.522	7.9	97	-0.02
31	T	n-Hexane	2.350	2.071	11.9	100	0.00
32	T	Chloroform	2.529	2.227	11.9	97	-0.02
33	S	1,2-Dichloroethane-d4(SS1)	1.413	1.319	6.7	99	-0.01
34	T	Tetrahydrofuran (THF)	1.059	0.943	11.0	98	0.00
35	T	Ethyl tert-Butyl Ether	1.709	1.550	9.3	99	-0.01
36	T	1,2-Dichloroethane	1.822	1.562	14.3	96	-0.01
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	105	0.00
38	T	1,1,1-Trichloroethane	0.481	0.435	9.6	99	0.00
39	T	Isopropyl Acetate	0.229	0.211	7.9	99	0.00
40	T	1-Butanol	0.375	0.349	6.9	93	-0.03
41	T	Benzene	1.436	1.248	13.1	100	0.00
42	T	Carbon Tetrachloride	0.412	0.383	7.0	99	0.00
43	T	Cyclohexane	0.511	0.466	8.8	99	-0.01
44	T	tert-Amyl Methyl Ether	0.990	0.908	8.3	99	0.00
45	T	1,2-Dichloropropane	0.358	0.323	9.8	100	0.00
46	T	Bromodichloromethane	0.442	0.415	6.1	99	0.00
47	T	Trichloroethene	0.360	0.340	5.6	103	0.00
48	T	1,4-Dioxane	0.291	0.273	6.2	100	-0.01
49	T	2,2,4-Trimethylpentane (Iso	1.514	1.352	10.7	97	0.00
50	T	Methyl Methacrylate	0.135	0.133	1.5	103	-0.01
51	T	n-Heptane	0.328	0.294	10.4	103	0.00
52	T	cis-1,3-Dichloropropene	0.537	0.524	2.4	100	0.00
53	T	4-Methyl-2-pentanone	0.340	0.314	7.6	98	-0.01
54	T	trans-1,3-Dichloropropene	0.467	0.471	-0.9	100	0.00

Evaluate Continuing Calibration Report

Data File: I:\MS16\DATA\2018 06\15\06151801.D
Acq On : 15 Jun 2018 17:25 Operator: WA
Sample : CCV R16061518 25ng
Misc : S31-04201801/S31-06041804 (7/2)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 07:34:06 2018
Quant Method : I:\MS16\METHODS\R16051818.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Fri May 18 12:13:28 2018
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	1,1,2-Trichloroethane	0.330	0.311	5.8	102	0.00
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	99	0.00
57	S	Toluene-d8 (SS2)	2.171	2.119	2.4	97	0.00
58	T	Toluene	2.893	2.909	-0.6	103	0.00
59	T	2-Hexanone	1.747	1.687	3.4	99	-0.01
60	T	Dibromochloromethane	0.797	0.851	-6.8	102	0.00
61	T	1,2-Dibromoethane	0.805	0.826	-2.6	102	0.00
62	T	n-Butyl Acetate	1.947	1.914	1.7	98	0.00
63	T	n-Octane	0.634	0.619	2.4	100	0.00
64	T	Tetrachloroethene	0.803	0.832	-3.6	105	0.00
65	T	Chlorobenzene	1.940	1.932	0.4	103	0.00
66	T	Ethylbenzene	3.320	3.317	0.1	101	0.00
67	T	m- & p-Xylenes	2.525	2.462	2.5	100	0.00
68	T	Bromoform	0.656	0.758	-15.5	104	0.00
69	T	Styrene	2.014	2.115	-5.0	102	0.00
70	T	o-Xylene	2.564	2.522	1.6	100	0.00
71	T	n-Nonane	1.463	1.411	3.6	98	0.00
72	T	1,1,2,2-Tetrachloroethane	1.319	1.335	-1.2	99	0.00
73	S	Bromofluorobenzene (SS3)	0.689	0.719	-4.4	102	0.00
74	T	Cumene	3.242	3.270	-0.9	101	0.00
75	T	alpha-Pinene	1.707	1.731	-1.4	100	0.00
76	T	n-Propylbenzene	3.891	3.910	-0.5	100	0.00
77	T	3-Ethyltoluene	3.229	3.439	-6.5	100	0.00
78	T	4-Ethyltoluene	2.979	2.878	3.4	102	0.00
79	T	1,3,5-Trimethylbenzene	2.618	2.640	-0.8	100	0.00
80	T	alpha-Methylstyrene	1.393	1.507	-8.2	103	0.00
81	T	2-Ethyltoluene	3.149	3.108	1.3	100	0.00
82	T	1,2,4-Trimethylbenzene	2.655	2.628	1.0	98	-0.01
83	T	n-Decane	1.475	1.458	1.2	97	0.00
84	T	Benzyl Chloride	2.179	2.465	-13.1	100	0.00
85	T	1,3-Dichlorobenzene	1.588	1.623	-2.2	102	0.00
86	T	1,4-Dichlorobenzene	1.636	1.650	-0.9	102	0.00
87	T	sec-Butylbenzene	3.519	3.535	-0.5	100	0.00
88	T	4-Isopropyltoluene (p-Cymen	3.187	3.233	-1.4	100	0.00
89	T	1,2,3-Trimethylbenzene	2.618	2.641	-0.9	99	0.00
90	T	1,2-Dichlorobenzene	1.496	1.528	-2.1	101	-0.01
91	T	d-Limonene	1.089	1.122	-3.0	98	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.544	0.617	-13.4	103	0.00
93	T	n-Undecane	1.435	1.549	-7.9	95	0.00
94	T	1,2,4-Trichlorobenzene	1.130	1.238	-9.6	103	0.00
95	T	Naphthalene	3.810	3.989	-4.7	102	0.00
96	T	n-Dodecane	1.402	1.386	1.1	88	0.00
97	T	Hexachlorobutadiene	0.735	0.792	-7.8	103	0.00
98	T	Cyclohexanone	1.194	1.146	4.0	97	-0.01
99	T	tert-Butylbenzene	2.525	2.505	0.8	99	0.00
100	T	n-Butylbenzene	2.903	2.904	-0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Air - Chain of Custody Record & Analytical Service Request

182913

41

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (0-Day-Standard)

ALS Project No:

Company Name & Address (Reporting Information)
LE Environmental LLC
21 N. Main Street #1
Waterbury Vt 05676

Project Name: 35 & 37-41 Main St / 5 Arch St.

Project Number: 17-103

Project Manager: Alan Liptak

P.O. # / Billing Information

Phone: 802-917-2001

Fax: none

Email Address for Result Reporting: alan@leenvi.net

Sampler (Print & Sign)

ALS Contact:

Analysis Method: VOCs TO-15

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method	Comments e.g. Actual Preservative or specific instructions
OA-1		6/7/18	1125-1349	AC02205	AVG04564	-29	-11.5		✓	
Crawl Space			1132-1349	SC00887	FC00576	>-30	-1.0		✓	
SC-1			1139-1339	00519	OA02096	-29	-3		✓	
SC-2			1141-1341	AC01019	OA01691	-29	-6		✓	
SC-3			1144-1344	SC00796	OAV02[illegible]	-30	-6		✓	

Report Tier Levels - please select

Tier I - Results (Default in not specified) ____ Tier III (Results + QC & Calibration Summaries) ✓

Tier II (Results + QC Summaries ____ Tier IV (Date Validation Package) 10% Surcharge ____

EDD required YES / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)
Vermont
I-Rule Soil Gas

Relinquished by: (Signature)	Date: 6/8/18	Time: 10:30	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Date: 6/8/18	Time: 14:15	Received by: (Signature)	Date:	Time:	Cooler / Blank Temperature N/A °C

APPENDIX E

Data Validation Report

LE·Environmental

21 North Main Street • Waterbury, Vermont 05676
Phone: (802) 917-2001 • www.leenv.net

Data Validation Report
Barrows Block
Brattleboro, Vermont
July 19, 2018

Project Description

This data validation report applies to soil, soil vapor, and ambient air samples collected at the Barrows Block, located at 35, 37-43 Main Street, and 5 Arch Street in Brattleboro, Vermont. Samples were collected using the scope of work according to the approved Site Specific Quality Assurance Project Plan (SSQAPP) Addendum (EPA RFA#14113) for a Brownfields Phase II Environmental Site Assessment (Phase II ESA) dated May 3, 2018.

Sampling Summary

The project scope included collection of soil, soil vapor, and ambient air samples. Soil sampling took place on June 7, 2018. Field quality control samples included a duplicate soil sample and a trip blank. Eastern Analytical, Inc. (EAI) of Concord, NH performed laboratory analysis of the soil samples. Three soil samples, and one duplicate soil sample were collected and analyzed.

Three sub-slab vapor samples, one crawl space sample, and one outside ambient air sample were collected on June 7, 2018. ALS Environmental of Simi Valley, California (ALS) performed laboratory analysis of the air samples.

- Three soil samples (SS-1, SS-2, and SS-3s), one duplicate sample, and a trip blank were analyzed for volatile organic compounds (VOCs) via EPA Method 8260C, Priority Pollutant metals via EPA Method 6020, and, polycyclic aromatic hydrocarbons (PAHs) via EPA Method 8270D.
- Three sub-slab vapor samples (SG-1, SG-2, and SG-3), one crawl space sample, and one outside ambient air sample were analyzed VOCs via EPA Method TO-15.

Sampling Procedures and Protocols

Sampling was performed in accordance with the procedures specified in the SSQAPP addendum.

Field data sheets and the field notebooks were reviewed to ensure proper documentation of the sampling conditions. All entries were made with permanent ink. Entries included the identity of the sampler, sampling location, time, and date. All entries and equipment used were recorded on the daily work report.

The chain of custody forms were reviewed to ensure the sample identification, number, type and size of sample containers, preservatives used; and signatures were properly recorded and were in accordance with the SSQAPP addendum.

The laboratory cover sheets, sample acceptance forms and case narratives were reviewed. All samples adhered to the laboratories' acceptance policies. All samples were analyzed in accordance with the laboratory's SOPs. No deviations from laboratory protocols were noted on the laboratory cover sheets or case narrative except as follows:

- ALS Environmental: It was noted that no custody seal was present upon arrival at the laboratory, due to the transfer of the samples between laboratories.

Soil samples arrived at EAI at 2.3°C on June 8, 2018, which is within the acceptable range. All samples were analyzed within EPA holding times.

Blanks

A methanol trip blank was submitted with the soil samples. The trip blank was brought into the field and handled with the other samples obtained during the assessment. No contaminants were detected in the blank, which indicates there was no contamination of samples resulting from handling in the field or while in transit. Method blanks were prepared by the laboratory for all analyses performed and reported no detection of compounds, indicating that there was no contamination of samples while at the laboratories.

MS/MSD and LCS/LCSD

Matrix spike/matrix spike duplicate (MS/MSD) and laboratory control samples/laboratory control sample duplicate (LCS/LCSD) analysis was performed by the laboratory. All MS and LCS analysis laboratory acceptance criteria.

RPD

Relative percent difference (RPD) values were calculated for the duplicate samples obtained in the field and for the MS/MSD and LCS/LCSD data obtained at the laboratory.

- Soils: A soil sample (SS-2) and duplicate soil sample were collected from SB-2. All RPDs were within the 50% allowable range.

Surrogate Recovery

Surrogate recovery analyses performed by the laboratories are within acceptable ranges.

Reporting Limits

Laboratory reporting limits were compared with applicable regulatory criteria for each tested compound as published in the Department of Environmental Conservation Investigation and Remediation of Contaminated Properties Rule. All laboratory reporting limits were below the appropriate regulatory threshold criteria except for the following:

- Four VOC reporting limit exceedances were noted in the soil data, including vinyl chloride, 1,2-dibromoethane (EDB), 1,2,3-trichloropropane, and 1,2-dibromo 3-chloropropane. These were noted in QAPP form K. None of these are contaminants of concern in the absence of other VOCs.
- Soil gas reporting limits for TO-15 analyses varied above and below those predicated in QAPP form K. Form K reporting limited indicated ranged from a low of 0.50 micrograms per cubic meter to 5.0 micrograms per cubic meter. The majority of form K reporting limits were 0.50 micrograms per cubic meter.
- Soil gas reporting limits were below relevant screening levels for all TO-15 compounds in the sub-slab samples except for 1,2-dibromo-chloropropane and 1,2-Dibromoethane. None of these are contaminants of concern in the absence of other VOCs and these reporting limit exceedances do not impact the conclusions of the assessment.
- Reporting limits were below relevant screening levels for all TO-15 compounds in the crawl space and outdoor ambient air sample except for 1,2-dibromo-chloropropane, 1,2-Dibromoethane, Acrylonitrile, Bromodichloromethane, Benzyl Chloride, 1,1,2,2-Tetrachloroethane, Naphthalene, and Hexachlorobutane. None of these are contaminants of concern in the absence of other VOCs and these reporting limit exceedances do not impact the conclusions of the assessment.

Deviations

There were no deviations from the site-specific QAPP addendum work scope.

Conclusion

Based on the findings presented above, all data should be accepted without condition.

Respectfully Submitted,

Angela Emerson, EP
Project Quality Assurance Officer

Data Validation Summary Table
Barrows Block
Brattleboro, Vermont
LEE #17-103

Sample Name	SS-1	SS-2	SS-3	Duplicate	Trip Blank
Lab sample number	182911.01	182911.02	182911.03	182911.04	182911.05
Date Sampled	6/7/18	6/7/18	6/7/18	6/7/18	6/7/18
Date of Analysis	6/13/18 (VOCs); 6/11/18 (PAH); 6/15/18 (Metals)				
Sample Type	Soil	Soil	Soil	Soil	Soil
Was analysis completed within EPA Method specified holding time?	Y	Y	Y	Y	Y
Were the samples properly handled under COC guidelines?	Y	Y	Y	Y	Y
Were the samples properly chilled? (0-6 degrees C)	Y	Y	Y	Y	Y
Were any compounds detected in blanks?	N	N	N	N	N
Were the samples properly labeled?	Y	Y	Y	Y	Y
Relative Percent Difference (RPD) acceptable? (<=50% RPD)	N/A	Y	N/A	Y	N/A
Were laboratory surrogate recovery concentrations acceptable?	Y	Y	Y	Y	Y
Were laboratory control samples and duplicates acceptable?	Y	Y	Y	Y	Y
Reporting limits meet Form K values	VOCs -Y, Metals -Y	VOCs -Y, Metals -Y	VOCs -Y, Metals -Y	VOCs -Y, Metals -Y	VOCs -Y, Metals -Y
Reporting limits do not meet Form K values	PAHs	PAHs	PAHs	PAHs	PAHs
Are reporting limits below applicable standards?	Y(1)	Y(1)	Y(1)	Y(1)	Y(1)

Notes:
Y=Yes, N=No, N/A=Not applicable to sample
Y(2) = Yes except vinyl chloride, 1,2-dibromoethane, 1,2,3-trichloropropane and 1,2-dibromo-3-chloropropane in all samples as noted in form K.

Relative Percent Difference Calculations
Barrows Block
Brattleboro, Vermont

Soil Sample	*SS-2*	*Duplicate*	*Relative*
Sample Depth (ft.)	*0.5-1*		*Percent*
PID reading (ppm)	*0.0*		*Difference*
Sample Date	*6/7/18*		*(%)*
VOCs, EPA Method 8260C (mg/kg)			
Dichlorodifluoromethane	ND<0.1	ND<0.1	-
Chloromethane	ND<0.1	ND<0.1	-
Vinyl Chloride	ND<0.1	ND<0.1	-
Bromomethane	ND<0.2	ND<0.2	-
Chloroethane	ND<0.1	ND<0.1	-
Trichlorofluoromethane	ND<0.1	ND<0.1	-
Diethyl Ether	ND<0.05	ND<0.05	-
Acetone	ND<2	ND<2	-
1 ,1-Dichloroethene	ND<0.05	ND<0.05	-
Methylene chloride	ND<0.1	ND<0.1	-
Carbon disulfide	ND<0.1	ND<0.1	-
MTBE	ND<0.1	ND<0.1	-
trans-1,2-Dichloroethene	ND<0.05	ND<0.05	-
1,1-Dichloroethane	ND<0.05	ND<0.05	-
2,2-Dichloropropane	ND<0.05	ND<0.05	-
cis-1,2-Dichloroethene	ND<0.05	ND<0.05	-
2-Butanone(MEK)	ND<0.5	ND<0.5	-
Bromochloromethane	ND<0.05	ND<0.05	-
Tetrahydrofuran(THF)	ND<0.5	ND<0.5	-
Chloroform	ND<0.05	ND<0.05	-
1,1,1-Trichloroethane	ND<0.05	ND<0.05	-
Carbon tetrachloride	ND<0.05	ND<0.05	-
1 ,1-Dichloropropene	ND<0.05	ND<0.05	-
Benzene	ND<0.05	ND<0.05	-
1,2-Dichloroethane	ND<0.05	ND<0.05	-
Trichloroethene (TCE)	ND<0.05	ND<0.05	-
1,2-Dichloropropane	ND<0.05	ND<0.05	-
Dibromomethane	ND<0.05	ND<0.05	-
Bromodichloromethane	ND<0.05	ND<0.05	-
4-Methyl-2-pentanone(MIBK)	ND<0.5	ND<0.5	-
cis-1,3-Dichloropropene	ND<0.05	ND<0.05	-
Toluene	ND<0.05	ND<0.05	-
trans-1,3-Dichloropropene	ND<0.05	ND<0.05	-

Relative Percent Difference Calculations
Barrows Block
Brattleboro, Vermont

Soil Sample	*SS-2*	*Duplicate*	*Relative*
Sample Depth (ft.)	*0.5-1*		*Percent*
PID reading (ppm)	*0.0*		*Difference*
Sample Date	*6/7/18*		*(%)*
VOCs, EPA Method 8260C (mg/kg)			
1,1,2-Trichloroethane	ND<0.05	ND<0.05	-
2-Hexanone	ND<0.1	ND<0.1	-
Tetrachloroethene (PCE)	ND<0.05	ND<0.05	-
1,3-Dichloropropane	ND<0.05	ND<0.05	-
Dibromochloromethane	ND<0.05	ND<0.05	-
1,2-Dibromoethane(EDB)	ND<0.05	ND<0.05	-
Chlorobenzene	ND<0.05	ND<0.05	-
1,1,1,2-Tetrachloroethane	ND<0.05	ND<0.05	-
Ethylbenzene	ND<0.05	ND<0.05	-
mp-Xylene	ND<0.05	ND<0.05	-
o-Xylene	ND<0.05	ND<0.05	-
Styrene	ND<0.05	ND<0.05	-
Bromoform	ND<0.05	ND<0.05	-
IsoPropylbenzene	ND<0.05	ND<0.05	-
Bromobenzene	ND<0.05	ND<0.05	-
1,1,2,2-Tetrachloroethane	ND<0.05	ND<0.05	-
1,2,3-Trichloropropane	ND<0.05	ND<0.05	-
n-Propylbenzene	ND<0.05	ND<0.05	-
2-Chlorotoluene	ND<0.05	ND<0.05	-
4-Chlorotoluene	ND<0.05	ND<0.05	-
1,3,5-trimethylbenzene	ND<0.05	ND<0.05	-
tert-Butylbenzene	ND<0.05	ND<0.05	-
1,2,4-trimethylbenzene	ND<0.05	ND<0.05	-
sec-Butylbenzene	ND<0.05	ND<0.05	-
1,3-Dichlorobenzene	ND<0.05	ND<0.05	-
p-Isopropyltoluene	ND<0.05	ND<0.05	-
1,4-Dichlorobenzene	ND<0.05	ND<0.05	-
1,2-Dichlorobenzene	ND<0.05	ND<0.05	-
n-Butylbenzene	ND<0.05	ND<0.05	-
1,2-Dibromo-3-chloropropane	ND<0.05	ND<0.05	-
1,2,4-Trichlorobenzene	ND<0.05	ND<0.05	-
Hexachlorobutadiene	ND<0.05	ND<0.05	-
Naphthalene	ND<0.1	ND<0.1	-
1,2,3-Trichlorobenzene	ND<0.05	ND<0.05	-

Relative Percent Difference Calculations
Barrows Block
Brattleboro, Vermont

Soil Sample	*SS-2*	*Duplicate*	*Relative*
Sample Depth (ft.)	*0.5-1*		*Percent*
PID reading (ppm)	*0.0*		*Difference*
Sample Date	*6/7/18*		*(%)*
PAH EPA Method 8270 (mg/kg)			
Naphthalene	ND<0.007	ND<0.007	-
2-Methylnaphthalene	ND<0.007	ND<0.007	-
1-Methylnaphthalene	ND<0.007	ND<0.007	-
Acenaphthylene	ND<0.007	ND<0.007	-
Acenaphthene	ND<0.007	ND<0.007	-
Fluorene	ND<0.007	ND<0.007	-
Phenanthrene	ND<0.007	ND<0.007	-
Anthracene	ND<0.007	ND<0.007	-
Fluoranthene	ND<0.007	ND<0.007	-
Pyrene	ND<0.007	ND<0.007	-
Benzo(a)anthracene	ND<0.007	ND<0.007	-
Chrysene	ND<0.007	ND<0.007	-
Benzo(b)fluoranthene	ND<0.007	ND<0.007	-
Benzo(k)fluoranthene	ND<0.007	ND<0.007	-
Benzo(a)pyrene	ND<0.007	ND<0.007	-
Indeno(1,2,3-cd)pyrene	ND<0.007	ND<0.007	-
Dibenz(a,h)anthracene	ND<0.007	ND<0.007	-
Benzo(g,h,i)perylene	ND<0.007	ND<0.007	-
Total Reported PAHs	ND	ND	-

Soil Sample	*SS-2*	*Duplicate*	Relative
Sample Depth (ft.)	*0.5-1*		Percent
PID reading (ppm)	*0.0*		Difference
Sample Date	*6/7/18*		(%)
TOTAL METALS, EPA Method 6020 (mg/kg, dry)			
Total Antimony	ND<0.5	ND<0.5	-
Total Arsenic	**2.7**	**2.6**	1.9
Total Beryllium	ND<0.5	ND<0.5	-
Total Cadmium	ND<0.5	ND<0.5	-
Total Chromium	**21**	**24**	6.7
Total Copper	**130**	**130**	0.0
Total Lead	**3.2**	**3.3**	1.5
Total Mercury	ND<0.1	ND<0.1	-

Surrogate Recovery Summary Table
Barows Block
Brattleboro, Vermont

Sample Name	Surrogate Recovery Limits	SS-1	SS-2	SS-3	Duplicate	Trip Blank
Lab sample number		182911.01	182911.02	182911.03	182911.04	182911.05
Date Sampled		6/7/18	6/7/18	6/7/18	6/7/18	6/7/18
Date of Analysis		6/13/18 (VOCs); 6/11/18 (PAH); 6/15/18 (Metals)				
Sample Type		Soil	Soil	Soil	Soil	Soil
4-Bromofluorobenzene (VOC)	70-130%	98	97	95	95	97
1,2-Dichlorobenzene-d4 (VOC)	70-130%	98	100	98	101	101
2.5-Dibromotoluene (VOC)	70-130%	90	93	113	100	111
Toluene-d8 (VOC)	30-130%	105	104	102	102	102
P-Terphenyl-D14 (SVOC)	30-130%	87	94	84	92	91

Notes:
Surrogate recoveries in (%) recovered
Shaded cells = surrogate recovery not within specified range.

Data Validation Summary Table
Barrows Block
Brattleboro, Vermont

Sample Name	OA-1	Crawl Space	SG-1	SG-2	SG-3
Lab sample number	P1802986-001	P1802986-002	P1802986-003	P1802986-004	P1802986-005
Date Sampled	6/7/18	6/7/18	6/7/18	6/7/18	6/7/18
Date of Analysis	6/16/18	6/16/18	6/16/18	6/16/18	6/16/18
Sample Type	Air	Air	Air	Air	Air
Was analysis completed within EPA Method specified holding time?	Y	Y	Y	Y	Y
Were the samples properly handled under COC guidelines?	Y	Y	Y	Y	Y
Were the samples properly chilled? (0-6 degrees C)	Y	Y	Y	Y	Y
Were any compounds detected in blanks?	N	N	N	N	N
Were the samples properly labeled?	Y	Y	Y	Y	Y
Field Duplicate Relative Percent Difference (RPD) acceptable? (<=30% RPD)	N/A	N/A	N/A	N/A	N/A
Were laboratory surrogate recovery concentrations acceptable?	Y	Y	Y	Y	Y
Were laboratory control samples, and respective duplicates acceptable?	Y	Y	Y	Y	Y
Do laboratory reporting limits meet Form K values?	N(1)	N(1)	N(1)	N(1)	N(1)
Are laboratory reporting limits below applicable standards?	Y(2,3)	Y (2,3)	Y (2)	Y (2)	Y (2)

Notes:
Y=Yes, N=No, N/A=Not applicable to sample
N(1) = Lab reporting limits varied above and below those predicted in form K
Y(2) = Yes except 1,2-Dibromo-3-Chloropropane as noted in Form K and 1,2-Dibromoethane (ethylene dibromide)

Surrogate Recovery Summary Table
Barrows Block
Brattleboro, Vermont

LEE
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Sample Name	Surrogate Recovery	Method Blank	Lab Control Sample	OA-1	Crawl Space	SG-1	SG-1-DUP	SG-2	SG-3
Lab sample number	Limits	P180615-MB	P180615-LCS	P1802986-001	P1802986-002	P1802986-003	P1802986-003	P1802986-004	P1802986-005
Date Sampled		6/7/18	6/7/18	6/7/18	6/7/18	6/7/18	6/7/18	6/7/18	6/7/18
Date of Analysis		6/16/18	6/16/18	6/16/18	6/16/18	6/16/18	6/16/18	6/16/18	6/16/18
Sample Type		Air	Air	Air	Air	Air	Air	Air	Air
1,2-Dichlorobenzene-d4	70-130%	95	93	94%	93%	95%	94%	95%	96%
Toluene-d8	70-130%	97	96	99%	98%	97%	95%	94%	98%
Bromofluorobenzene	70-130%	104	106	104%	104%	106%	106%	104%	104%

Notes:
N/A=Not applicable to sample
Surrogate recoveries in (%) recovered