



October 5, 2023

Ref: 58982.00

Greg Duggan
Town Manager for the Town of Essex
81 Main Street
Essex Junction, VT 05452

Re: Limited Soil Sampling for the Essex Town Site Assessment
80 & 90 Upper Main Street, Essex VT 05452

Dear Mr. Duggan:

VHB is pleased to present the Town of Essex ("the Client"), with the following summary of a limited soil sampling effort that was recently conducted by VHB at the above-referenced parcel. This limited soil assessment was requested by the Client following completion of the *Phase I Environmental Site Assessment – Vacant Properties 80 and 90 Upper Main Street Essex, Vermont* report ("Phase I ESA"), dated August 1, 2023, during which VHB identified two discarded above ground storage tanks (ASTs) on the 80 Upper Main Street parcel. During the site reconnaissance portion of the Phase I ESA, dense vegetation limited both access and surficial soil observations in the vicinity of the ASTs, and therefore an initial evaluation of potential undocumented release(s) of petroleum product could not be performed at that time. After submittal of the Phase I ESA, the Client requested a limited assessment of the soil underlying both ASTs, be performed by VHB. The field methodology, findings, and conclusions of this limited soil assessment are presented herein.

Site Conditions & Field Methods

On September 12, 2023, VHB located the two aboveground storage tanks ("Tank 1" and "Tank 2") on the 80 Upper Main Street parcel (See Figure 1: Site Map). Tank 1 is in the open field portion of the parcel, approximately 465 northwest of the property boundary that borders Upper Main Street. Tank 2 is located at the edge of a more forested area and is approximately 700-feet northwest Upper Main Street. Significant vegetation was present around the tanks which was cleared by VHB, using hand tools, to allow access to the area surrounding the tanks. Both tanks appeared to be on their sides, and in generally poor condition. The tanks could not be moved as their structural integrity was significantly compromised and, if moved, any residual liquid that may exist in the tank would have likely been released.

40 IDX Drive, Building 100
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Engineers | Scientists | Planners | Designers

South Burlington, Vermont 05403

P 802.497.6100

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Considering the tanks could not be safely moved, VHB advanced two shallow soil borings at an angle using a hand auger at each of the two ASTs present on-Site (totaling four borings) to evaluate soil beneath the former tanks. Soil borings 1 and 2 (SB-1 and SB-2) were advanced at Tank 1 and borings 3 and 4 (SB-3 and SB-4) were advanced at Tank 2. When necessary, the angle utilized allowed field staff to access soil just under the base of the tanks at the soil interface. Borings were extended past the two-foot mark where possible to minimize the depth lost through angulation of the boring and capture the representative soil profile. Borings were advanced to a depth of approximately 24-28 inches depending on refusal. Soil was screened using a photoionization detector (PID) at 8-to-12-inch intervals to field screen the headspace above the soil for the presence of volatile organic compounds (VOCs). General soil characteristics were noted (color, grain size, presence of anthropogenic materials, odors, etc.).

One soil sample was collected from each boring at a depth of elevated PID readings, or at a depth to create a representative soil profile beneath the tank. Soil samples were submitted under chain of custody protocols to Eastern Analytical, Inc. of Concord, New Hampshire for analysis of VOCs via EPA Method 8260C.

Results

Field Parameter Readings

The PID readings from the soil screening on September 12, 2023, ranged from 0.0 to 0.5 parts per million by volume (ppmv). The highest reading occurred from 0-8 inches in SB-2 beneath the southern end of Tank 1; however, the values recorded do not indicate that a release occurred or there is contamination present. These readings instead were likely due to precipitation and high moisture content in the upper soil profiles during the day of sampling, which can influence the PID readings. No staining or petroleum odors were noted at any time during this limited assessment. Soils beneath Tank 1 generally consisted of sand with varying amounts of gravel, with a darker coloration towards the surface, and a more yellow brown to reddish coloration from 16-28 inches depths. Soils beneath Tank 2 generally consisted of fine sands with little to no gravel. In summary, the field screening readings and recorded observations suggested no indications that a petroleum release occurred at either tank location that was evaluated.

Analytical Laboratory Data

Analytical laboratory results for the soil samples collected on September 12, 2023, indicated that no reported concentrations exceeded laboratory reporting limits. All laboratory detection limits were below Vermont soil standards listed in Appendix A of the Investigation and Remediation of Contaminated Properties Rule (IRule), effective as of July 6, 2019.

Conclusions and Recommendations

Based on field observations, screening results, and analytical laboratory results described above, it is VHB's opinion that a significant release of petroleum did not occur at either of the current tank locations on the



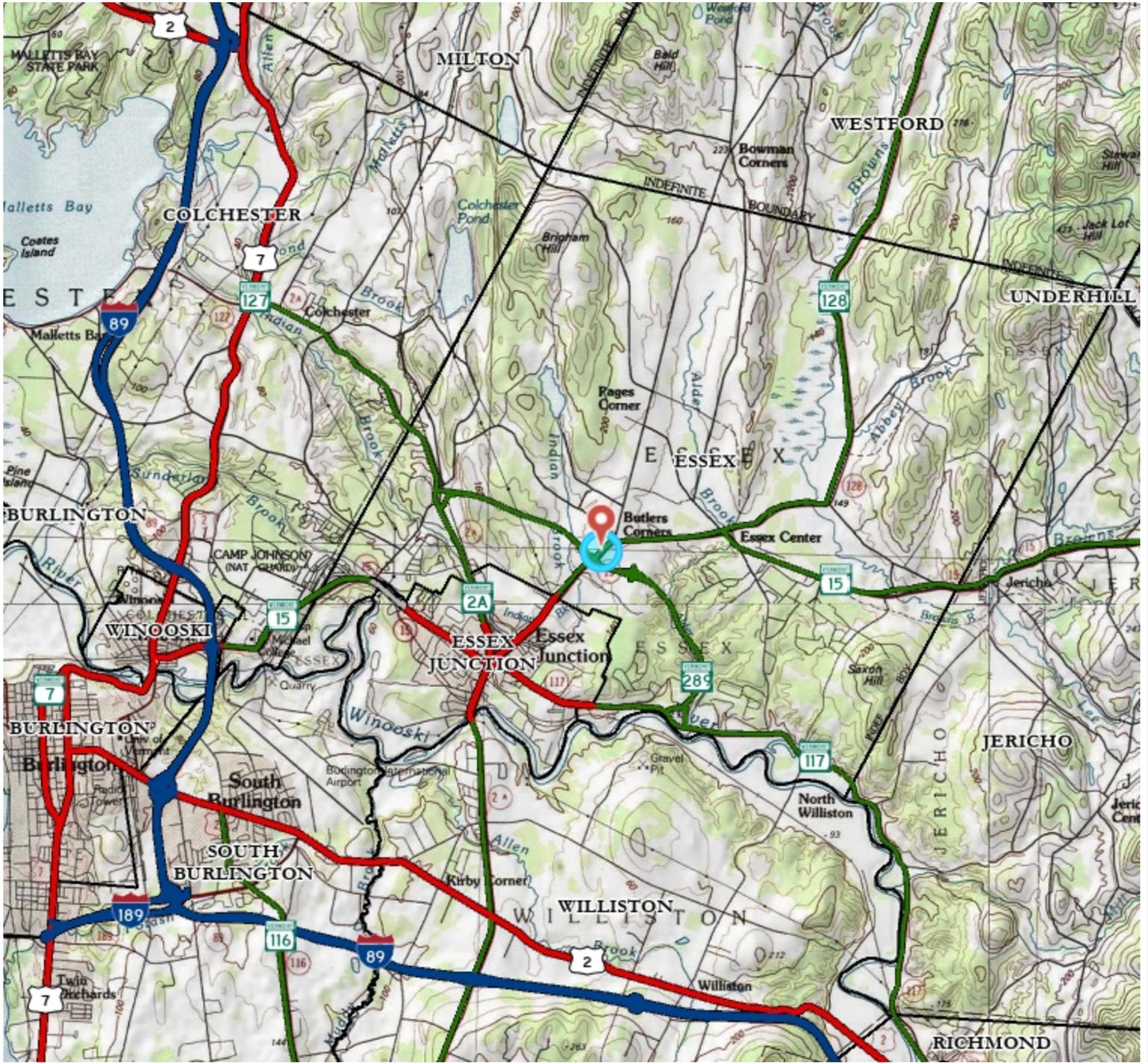
80 Upper Main Street parcel. At this time, VHB does not recommend further investigation be performed related to these tanks.

Kurt Muller, P.E.
Director of Site Investigation and Remediation, VHB-Vermont

Appendix:

Map 1: Site Location Map
Map 2: Site Vicinity Map
Figure 1 – Limited Soil Sampling Site Map

Attachment 1: Laboratory Analytical Data
Attachment 2: Field Notes
Attachment 3: Photographic Documentation



LEGEND

Roads	
	Interstate
	US Highway; 1
	State Highway
	Town Highway (Class 1)
	Town Highway (Class 2,3)
	Town Highway (Class 4)
	State Forest Trail

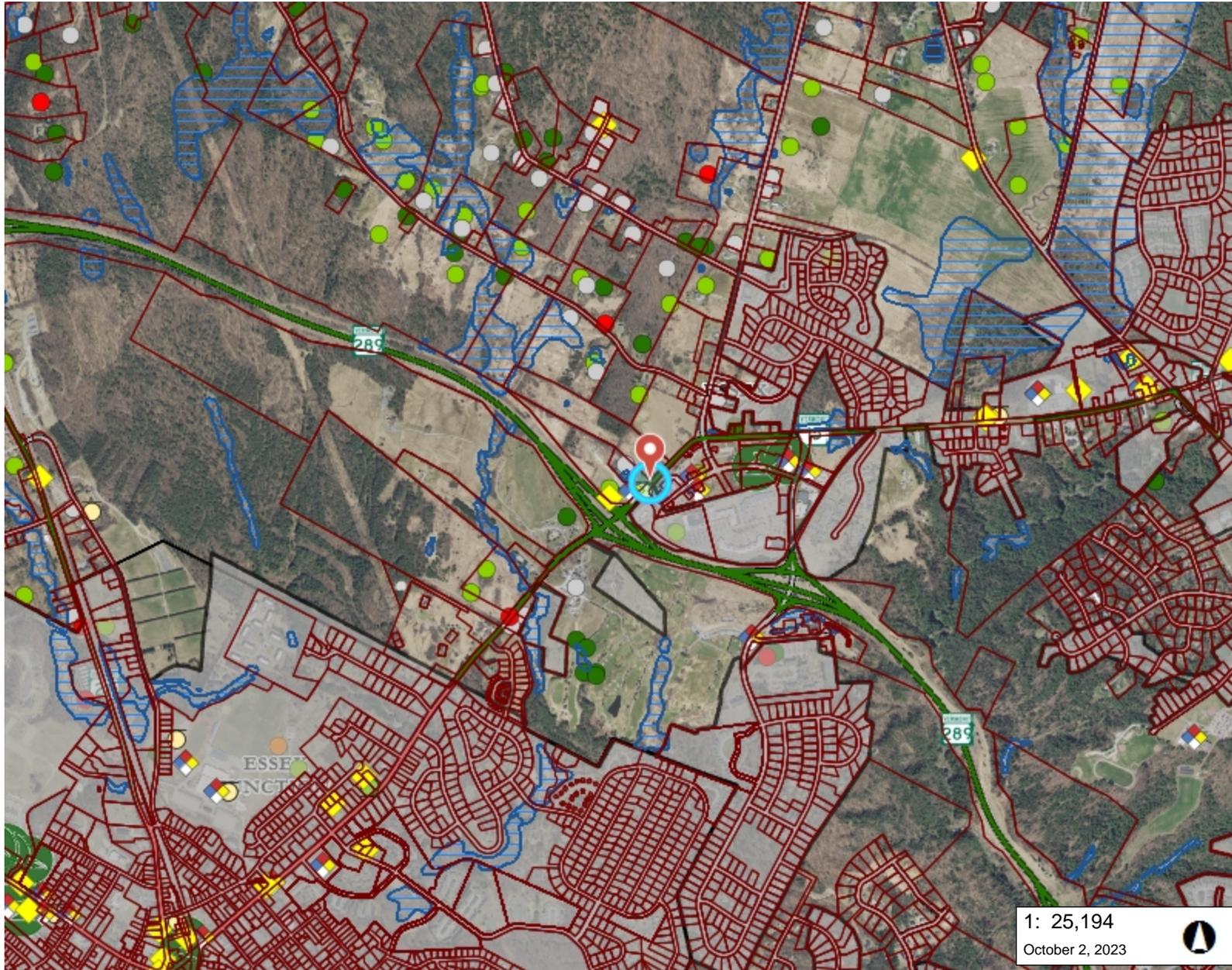
NOTES

Map created using ANR GIS mapping technology.

1: 107,176

September 25, 2023





LEGEND

- Stressed Waters List (Lakes and Rivers)
- Wetlands Advisory Layer
- Hazardous Site
- Hazardous Waste Generators
- Brownfields
- Salvage Yard
- Aboveground Storage Tank
- Underground Storage Tank (with vent)
- Dry Cleaner
- Sewer Service Area
- Public Water Sources**
 - Active
 - Proposed
 - Inactive
 - Non-Public, Previously Permitted
- Private Wells**
 - GPS Located
 - Screen Digitized
 - E911 Address Matched
 - Welldriller/Clarion
 - Unknown Location Method
 - Incorrectly Located
- Parcels (standardized)
- Roads**
 - Interstate
 - US Highway; 1
 - State Highway
 - Town Highway (Class 4)

1: 25,194
October 2, 2023

NOTES

Map created using ANR's Natural Resources Atlas

1,280.0 0 640.00 1,280.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 2100 Ft. 1cm = 252 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.

Figure 1 - Limited Soil Sampling Site Map

Essex Town Site Assessment | Essex, Vermont



October 02, 2023



Path: \\vhb\gis\proj\SBurlington\58982.00 Essex Town Site Assess\Project\PhI\ESA\Phase_I\Figure.aprx (JGrossman, 10/2/2023)

- | | | |
|----------------------------|----------------------------|--------------------------|
| Site (VHB) | 100 Year Flood Zone (FEMA) | Parcel Boundaries (VCGI) |
| Soil Sample Location (VHB) | Road (VTrans) | Town Boundary (VCGI) |
| Stream (ANR) | State Highway | County Boundary (VCGI) |
| Waterbody (ANR) | Town Road | |

Source: Background Imagery by VCGI (2021); ANR (Various Years); VCGI (Various Years); VHB (2023); VTrans (Various Years).

J. Kurt Muller
Vanasse Hangen Brustlin, Inc. (VHB)
40 IDX Drive
South Burlington, VT 05403



Laboratory Report for:

Eastern Analytical, Inc. ID: 267167
Client Identification: Essex Town Site Assessment | 58982.00
Date Received: 9/22/2023

Enclosed are the analytical results per the Chain of Custody for sample(s) in the referenced project. All analyses were performed in accordance with our QA/QC Program, NELAP and other applicable state requirements. All quality control criteria was within acceptance criteria unless noted on the report pages. Results are for the exclusive use of the client named on this report and will not be released to a third party without consent.

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 written approval of the laboratory.

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

- < : "less than" followed by the reporting limit
- > : "greater than" followed by the reporting limit
- %R : % Recovery

Certifications:

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), New York (12072) and West Virginia (9910C). Please refer to our website at www.easternanalytical.com for a copy of our certificates and accredited parameters.

References:

- EPA 600/4-79-020, 1983
- Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd edition or noted revision year.
- Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- Hach Water Analysis Handbook, 4th edition, 1992
- ASTM International

If you have any questions regarding the results contained within, please feel free to contact customer service. Unless otherwise requested, we will dispose of the sample(s) 6 weeks from the sample receipt date.

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

Sincerely,


Lorraine Olashaw, Lab Director

9.28.23
Date



SAMPLE CONDITIONS PAGE

EAI ID#: 267167

Client: **Vanasse Hangen Brustlin, Inc. (VHB)**

Client Designation: **Essex Town Site Assessment | 58982.00**

Temperature upon receipt (°C): 4.2

Acceptable temperature range (°C): 0-6

Received on ice or cold packs (Yes/No): Y

Lab ID	Sample ID	Date Received	Date/Time Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
267167.01	SB-1 (20-24)	9/22/23	9/19/23 08:55	soil	81.4	Adheres to Sample Acceptance Policy
267167.02	SB-2 (0-8)	9/22/23	9/19/23 08:50	soil	75.4	Adheres to Sample Acceptance Policy
267167.03	SB-3 (8-10)	9/22/23	9/19/23 09:30	soil	74.7	Adheres to Sample Acceptance Policy
267167.04	SB-4 (20-24)	9/22/23	9/19/23 09:35	soil	81.8	Adheres to Sample Acceptance Policy
267167.05	Trip Blank	9/22/23	9/19/23 00:00	soil	100.0	Adheres to Sample Acceptance Policy

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

Unless otherwise noted:

- Hold times, preservation, container types, and sample conditions adhered to EPA Protocol.
- Solid samples are reported on a dry weight basis, unless otherwise noted. pH/Corrosivity, Flashpoint, Ignitability, Paint Filter, Conductivity and Specific Gravity are always reported on an "as received" basis.
- Analysis of pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite were performed at the laboratory outside of the recommended 15 minute hold time.
- Samples collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures.



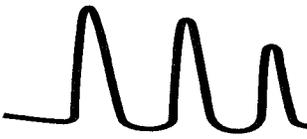
LABORATORY REPORT

EAI ID#: **267167**

Client: **Vanasse Hangen Brustlin, Inc. (VHB)**

Client Designation: **Essex Town Site Assessment | 58982.00**

Sample ID:	SB-1 (20-24)	SB-2 (0-8)	SB-3 (8-10)	SB-4 (20-24)
Lab Sample ID:	267167.01	267167.02	267167.03	267167.04
Matrix:	soil	soil	soil	soil
Date Sampled:	9/19/23	9/19/23	9/19/23	9/19/23
Date Received:	9/22/23	9/22/23	9/22/23	9/22/23
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/25/23	9/25/23	9/25/23	9/25/23
Analyst:	DGM	DGM	DGM	DGM
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1
Dichlorodifluoromethane	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl chloride	< 0.02	< 0.03	< 0.03	< 0.02
Bromomethane	< 0.1	< 0.1	< 0.1	< 0.1
Chloroethane	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	< 0.1	< 0.1	< 0.1	< 0.1
Diethyl Ether	< 0.05	< 0.07	< 0.07	< 0.06
Acetone	< 2	< 3	< 3	< 2
1,1-Dichloroethene	< 0.05	< 0.07	< 0.07	< 0.06
Methylene chloride	< 0.1	< 0.1	< 0.1	< 0.1
Carbon disulfide	< 0.1	< 0.1	< 0.1	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethene	< 0.05	< 0.07	< 0.07	< 0.06
1,1-Dichloroethane	< 0.05	< 0.07	< 0.07	< 0.06
2,2-Dichloropropane	< 0.05	< 0.07	< 0.07	< 0.06
cis-1,2-Dichloroethene	< 0.05	< 0.07	< 0.07	< 0.06
2-Butanone(MEK)	< 0.5	< 0.7	< 0.7	< 0.6
Bromochloromethane	< 0.05	< 0.07	< 0.07	< 0.06
Tetrahydrofuran(THF)	< 0.5	< 0.7	< 0.7	< 0.6
Chloroform	< 0.05	< 0.07	< 0.07	< 0.06
1,1,1-Trichloroethane	< 0.05	< 0.07	< 0.07	< 0.06
Carbon tetrachloride	< 0.05	< 0.07	< 0.07	< 0.06
1,1-Dichloropropene	< 0.05	< 0.07	< 0.07	< 0.06
Benzene	< 0.05	< 0.07	< 0.07	< 0.06
1,2-Dichloroethane	< 0.05	< 0.07	< 0.07	< 0.06
Trichloroethene	< 0.05	< 0.07	< 0.07	< 0.06
1,2-Dichloropropane	< 0.05	< 0.07	< 0.07	< 0.06
Dibromomethane	< 0.05	< 0.07	< 0.07	< 0.06
Bromodichloromethane	< 0.05	< 0.07	< 0.07	< 0.06
4-Methyl-2-pentanone(MIBK)	< 0.5	< 0.7	< 0.7	< 0.6
cis-1,3-Dichloropropene	< 0.05	< 0.07	< 0.07	< 0.06
Toluene	< 0.05	< 0.07	< 0.07	< 0.06
trans-1,3-Dichloropropene	< 0.05	< 0.07	< 0.07	< 0.06
1,1,2-Trichloroethane	< 0.05	< 0.07	< 0.07	< 0.06
2-Hexanone	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.05	< 0.07	< 0.07	< 0.06
1,3-Dichloropropane	< 0.05	< 0.07	< 0.07	< 0.06
Dibromochloromethane	< 0.05	< 0.07	< 0.07	< 0.06
1,2-Dibromoethane(EDB)	< 0.02	< 0.03	< 0.03	< 0.02
Chlorobenzene	< 0.05	< 0.07	< 0.07	< 0.06
1,1,1,2-Tetrachloroethane	< 0.05	< 0.07	< 0.07	< 0.06
Ethylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
mp-Xylene	< 0.05	< 0.07	< 0.07	< 0.06
o-Xylene	< 0.05	< 0.07	< 0.07	< 0.06
Styrene	< 0.05	< 0.07	< 0.07	< 0.06
Bromoform	< 0.05	< 0.07	< 0.07	< 0.06



LABORATORY REPORT

EAI ID#: **267167**

Client: **Vanasse Hangen Brustlin, Inc. (VHB)**

Client Designation: **Essex Town Site Assessment | 58982.00**

Sample ID:	SB-1 (20-24)	SB-2 (0-8)	SB-3 (8-10)	SB-4 (20-24)
Lab Sample ID:	267167.01	267167.02	267167.03	267167.04
Matrix:	soil	soil	soil	soil
Date Sampled:	9/19/23	9/19/23	9/19/23	9/19/23
Date Received:	9/22/23	9/22/23	9/22/23	9/22/23
Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date of Analysis:	9/25/23	9/25/23	9/25/23	9/25/23
Analyst:	DGM	DGM	DGM	DGM
Method:	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1
IsoPropylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
Bromobenzene	< 0.05	< 0.07	< 0.07	< 0.06
1,1,2,2-Tetrachloroethane	< 0.05	< 0.07	< 0.07	< 0.06
1,2,3-Trichloropropane	< 0.05	< 0.07	< 0.07	< 0.06
n-Propylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
2-Chlorotoluene	< 0.05	< 0.07	< 0.07	< 0.06
4-Chlorotoluene	< 0.05	< 0.07	< 0.07	< 0.06
1,3,5-Trimethylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
tert-Butylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
1,2,4-Trimethylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
sec-Butylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
1,3-Dichlorobenzene	< 0.05	< 0.07	< 0.07	< 0.06
1,2,3-Trimethylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
p-Isopropyltoluene	< 0.05	< 0.07	< 0.07	< 0.06
1,4-Dichlorobenzene	< 0.05	< 0.07	< 0.07	< 0.06
1,2-Dichlorobenzene	< 0.05	< 0.07	< 0.07	< 0.06
n-Butylbenzene	< 0.05	< 0.07	< 0.07	< 0.06
1,2-Dibromo-3-chloropropane	< 0.05	< 0.07	< 0.07	< 0.06
1,2,4-Trichlorobenzene	< 0.05	< 0.07	< 0.07	< 0.06
Hexachlorobutadiene	< 0.05	< 0.07	< 0.07	< 0.06
Naphthalene	< 0.1	< 0.1	< 0.1	< 0.1
1,2,3-Trichlorobenzene	< 0.05	< 0.07	< 0.07	< 0.06
4-Bromofluorobenzene (surr)	89 %R	88 %R	89 %R	89 %R
1,2-Dichlorobenzene-d4 (surr)	107 %R	106 %R	107 %R	106 %R
Toluene-d8 (surr)	93 %R	92 %R	93 %R	93 %R
1,2-Dichloroethane-d4 (surr)	108 %R	108 %R	107 %R	108 %R

The following analytes were assessed down to the listed concentrations, 1,2-Dibromo-3-Chloropropane (0.0053mg/kg), 1,2,3-Trichloropropane (0.00311mg/kg). Detectable analytes are reported as J flags and should be considered estimated values.

Tetrahydrofuran(THF), 1,2-Dibromo-3-chloropropane exhibited recovery below acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).



LABORATORY REPORT

EAI ID#: 267167

Client: **Vanasse Hangen Brustlin, Inc. (VHB)**

Client Designation: **Essex Town Site Assessment | 58982.00**

Sample ID: Trip Blank

Lab Sample ID: 267167.05

Matrix: soil

Date Sampled: 9/19/23

Date Received: 9/22/23

Units: mg/kg

Date of Analysis: 9/25/23

Analyst: DGM

Method: 8260C

Dilution Factor: 1

Dichlorodifluoromethane	< 0.1
Chloromethane	< 0.1
Vinyl chloride	< 0.02
Bromomethane	< 0.1
Chloroethane	< 0.1
Trichlorofluoromethane	< 0.1
Diethyl Ether	< 0.05
Acetone	< 2
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.1
Carbon disulfide	< 0.1
Methyl-t-butyl ether(MTBE)	< 0.1
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
2,2-Dichloropropane	< 0.05
cis-1,2-Dichloroethene	< 0.05
2-Butanone(MEK)	< 0.5
Bromochloromethane	< 0.05
Tetrahydrofuran(THF)	< 0.5
Chloroform	< 0.05
1,1,1-Trichloroethane	< 0.05
Carbon tetrachloride	< 0.05
1,1-Dichloropropene	< 0.05
Benzene	< 0.05
1,2-Dichloroethane	< 0.05
Trichloroethene	< 0.05
1,2-Dichloropropane	< 0.05
Dibromomethane	< 0.05
Bromodichloromethane	< 0.05
4-Methyl-2-pentanone(MIBK)	< 0.5
cis-1,3-Dichloropropene	< 0.05
Toluene	< 0.05
trans-1,3-Dichloropropene	< 0.05
1,1,2-Trichloroethane	< 0.05
2-Hexanone	< 0.1
Tetrachloroethene	< 0.05
1,3-Dichloropropane	< 0.05
Dibromochloromethane	< 0.05
1,2-Dibromoethane(EDB)	< 0.02
Chlorobenzene	< 0.05
1,1,1,2-Tetrachloroethane	< 0.05
Ethylbenzene	< 0.05
mp-Xylene	< 0.05
o-Xylene	< 0.05
Styrene	< 0.05
Bromoform	< 0.05



LABORATORY REPORT

EAI ID#: 267167

Client: **Vanasse Hangen Brustlin, Inc. (VHB)**

Client Designation: **Essex Town Site Assessment | 58982.00**

Sample ID: Trip Blank

Lab Sample ID: 267167.05

Matrix: soil

Date Sampled: 9/19/23

Date Received: 9/22/23

Units: mg/kg

Date of Analysis: 9/25/23

Analyst: DGM

Method: 8260C

Dilution Factor: 1

IsoPropylbenzene	< 0.05
Bromobenzene	< 0.05
1,1,2,2-Tetrachloroethane	< 0.05
1,2,3-Trichloropropane	< 0.05
n-Propylbenzene	< 0.05
2-Chlorotoluene	< 0.05
4-Chlorotoluene	< 0.05
1,3,5-Trimethylbenzene	< 0.05
tert-Butylbenzene	< 0.05
1,2,4-Trimethylbenzene	< 0.05
sec-Butylbenzene	< 0.05
1,3-Dichlorobenzene	< 0.05
1,2,3-Trimethylbenzene	< 0.05
p-Isopropyltoluene	< 0.05
1,4-Dichlorobenzene	< 0.05
1,2-Dichlorobenzene	< 0.05
n-Butylbenzene	< 0.05
1,2-Dibromo-3-chloropropane	< 0.05
1,2,4-Trichlorobenzene	< 0.05
Hexachlorobutadiene	< 0.05
Naphthalene	< 0.1
1,2,3-Trichlorobenzene	< 0.05
4-Bromofluorobenzene (surr)	90 %R
1,2-Dichlorobenzene-d4 (surr)	106 %R
Toluene-d8 (surr)	93 %R
1,2-Dichloroethane-d4 (surr)	108 %R

The following analytes were assessed down to the listed concentrations, 1,2-Dibromo-3-Chloropropane (0.0053mg/kg), 1,2,3-Trichloropropane (0.00311mg/kg). Detectable analytes are reported as J flags and should be considered estimated values.

Tetrahydrofuran(THF), 1,2-Dibromo-3-chloropropane exhibited recovery below acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).



QC REPORT

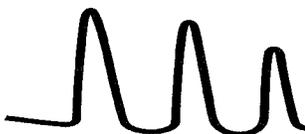
EAI ID#: 267167

Client: Vanasse Hangen Brustlin, Inc. (VHB)

Batch ID: 63831232703

Client Designation: Essex Town Site Assessment | 58982.00

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Dichlorodifluoromethane	< 0.1	1.3 (135 %R)	1.3 (129 %R) (4 RPD)	9/25/2023	mg/kg	40 - 160	20	8260C
Chloromethane	< 0.1	1.2 (120 %R)	1.1 (114 %R) (5 RPD)	9/25/2023	mg/kg	40 - 160	20	8260C
Vinyl chloride	< 0.02	0.86 (86 %R)	0.83 (83 %R) (3 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Bromomethane	< 0.1	0.96 (96 %R)	0.93 (93 %R) (3 RPD)	9/25/2023	mg/kg	40 - 160	20	8260C
Chloroethane	< 0.1	1.1 (106 %R)	1.0 (102 %R) (4 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Trichlorofluoromethane	< 0.1	1.1 (108 %R)	1.0 (105 %R) (3 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Diethyl Ether	< 0.05	0.93 (93 %R)	0.90 (90 %R) (4 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Acetone	< 2	< 2 (82 %R)	< 2 (77 %R) (7 RPD)	9/25/2023	mg/kg	40 - 160	20	8260C
1,1-Dichloroethene	< 0.05	1.1 (114 %R)	1.1 (112 %R) (2 RPD)	9/25/2023	mg/kg	59 - 172	20	8260C
Methylene chloride	< 0.1	1.1 (108 %R)	1.1 (107 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Carbon disulfide	< 0.1	0.79 (79 %R)	0.80 (80 %R) (0 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Methyl-t-butyl ether(MTBE)	< 0.1	0.84 (84 %R)	0.82 (82 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
trans-1,2-Dichloroethene	< 0.05	1.0 (101 %R)	1.0 (101 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,1-Dichloroethane	< 0.05	1.1 (113 %R)	1.1 (111 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
2,2-Dichloropropane	< 0.05	0.84 (84 %R)	0.83 (83 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
cis-1,2-Dichloroethene	< 0.05	1.1 (111 %R)	1.1 (109 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
2-Butanone(MEK)	< 0.5	0.74 (74 %R)	0.71 (71 %R) (4 RPD)	9/25/2023	mg/kg	40 - 160	20	8260C
Bromochloromethane	< 0.05	1.1 (114 %R)	1.1 (111 %R) (3 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Tetrahydrofuran(THF)	< 0.5	0.72 (72 %R)	* 0.69 (69 %R) (4 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Chloroform	< 0.05	1.2 (116 %R)	1.1 (113 %R) (3 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,1,1-Trichloroethane	< 0.05	1.0 (104 %R)	1.0 (102 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Carbon tetrachloride	< 0.05	1.1 (107 %R)	1.1 (106 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,1-Dichloropropene	< 0.05	1.1 (110 %R)	1.1 (109 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Benzene	< 0.05	1.2 (116 %R)	1.1 (114 %R) (2 RPD)	9/25/2023	mg/kg	66 - 142	20	8260C
1,2-Dichloroethane	< 0.05	1.1 (106 %R)	1.0 (104 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Trichloroethene	< 0.05	1.2 (115 %R)	1.1 (114 %R) (1 RPD)	9/25/2023	mg/kg	62 - 137	20	8260C
1,2-Dichloropropane	< 0.05	1.0 (103 %R)	1.0 (101 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Dibromomethane	< 0.05	1.0 (104 %R)	1.0 (102 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Bromodichloromethane	< 0.05	0.92 (92 %R)	0.90 (90 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
4-Methyl-2-pentanone(MIBK)	< 0.5	0.80 (80 %R)	0.77 (77 %R) (4 RPD)	9/25/2023	mg/kg	40 - 160	20	8260C
cis-1,3-Dichloropropene	< 0.05	0.81 (81 %R)	0.80 (80 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Toluene	< 0.05	1.1 (109 %R)	1.1 (109 %R) (1 RPD)	9/25/2023	mg/kg	59 - 139	20	8260C
trans-1,3-Dichloropropene	< 0.05	0.76 (76 %R)	0.75 (75 %R) (0 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,1,2-Trichloroethane	< 0.05	1.1 (109 %R)	1.1 (106 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
2-Hexanone	< 0.1	0.66 (66 %R)	0.63 (63 %R) (5 RPD)	9/25/2023	mg/kg	40 - 160	20	8260C
Tetrachloroethene	< 0.05	1.1 (114 %R)	1.1 (113 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,3-Dichloropropane	< 0.05	1.0 (100 %R)	0.99 (99 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Dibromochloromethane	< 0.05	0.91 (91 %R)	0.90 (90 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2-Dibromoethane(EDB)	< 0.02	0.98 (98 %R)	0.97 (97 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Chlorobenzene	< 0.05	1.1 (112 %R)	1.1 (111 %R) (1 RPD)	9/25/2023	mg/kg	60 - 133	20	8260C
1,1,1,2-Tetrachloroethane	< 0.05	0.99 (99 %R)	0.97 (97 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Ethylbenzene	< 0.05	1.1 (112 %R)	1.1 (111 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
mp-Xylene	< 0.05	2.3 (115 %R)	2.3 (114 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
o-Xylene	< 0.05	1.1 (108 %R)	1.1 (107 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Styrene	< 0.05	1.2 (116 %R)	1.1 (114 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Bromoform	< 0.05	0.84 (84 %R)	0.82 (82 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C



QC REPORT

EAI ID#: 267167

Client: Vanasse Hangen Brustlin, Inc. (VHB)

Batch ID: 63831232703

Client Designation: Essex Town Site Assessment | 58982.00

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
IsoPropylbenzene	< 0.05	1.1 (105 %R)	1.0 (104 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Bromobenzene	< 0.05	0.93 (93 %R)	0.94 (94 %R) (0 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,1,1,2-Tetrachloroethane	< 0.05	0.88 (88 %R)	0.88 (88 %R) (0 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2,3-Trichloropropane	< 0.05	0.88 (88 %R)	0.87 (87 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
n-Propylbenzene	< 0.05	0.96 (96 %R)	0.97 (97 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
2-Chlorotoluene	< 0.05	1.0 (100 %R)	1.0 (100 %R) (0 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
4-Chlorotoluene	< 0.05	1.0 (100 %R)	1.0 (101 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,3,5-Trimethylbenzene	< 0.05	0.93 (93 %R)	0.94 (94 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
tert-Butylbenzene	< 0.05	0.93 (93 %R)	0.94 (94 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2,4-Trimethylbenzene	< 0.05	0.99 (99 %R)	1.0 (100 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
sec-Butylbenzene	< 0.05	1.0 (102 %R)	1.0 (104 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,3-Dichlorobenzene	< 0.05	1.0 (102 %R)	1.0 (104 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2,3-Trimethylbenzene	< 0.05	0.97 (97 %R)	0.97 (97 %R) (0 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
p-Isopropyltoluene	< 0.05	0.98 (98 %R)	1.0 (100 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,4-Dichlorobenzene	< 0.05	0.99 (99 %R)	1.0 (100 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2-Dichlorobenzene	< 0.05	1.0 (102 %R)	1.0 (102 %R) (0 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
n-Butylbenzene	< 0.05	1.0 (104 %R)	1.1 (106 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2-Dibromo-3-chloropropane	< 0.05	* 0.68 (68 %R)	* 0.68 (68 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2,4-Trichlorobenzene	< 0.05	1.1 (114 %R)	1.2 (117 %R) (3 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Hexachlorobutadiene	< 0.05	1.1 (107 %R)	1.1 (108 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
Naphthalene	< 0.1	0.91 (91 %R)	0.93 (93 %R) (2 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
1,2,3-Trichlorobenzene	< 0.05	1.2 (117 %R)	1.2 (118 %R) (1 RPD)	9/25/2023	mg/kg	70 - 130	20	8260C
4-Bromofluorobenzene (surr)	89 %R	103 %R	103 %R	9/25/2023	% Rec	70 - 130		8260C
1,2-Dichlorobenzene-d4 (surr)	106 %R	96 %R	96 %R	9/25/2023	% Rec	70 - 130		8260C
Toluene-d8 (surr)	92 %R	96 %R	96 %R	9/25/2023	% Rec	70 - 130		8260C
1,2-Dichloroethane-d4 (surr)	108 %R	101 %R	98 %R	9/25/2023	% Rec	70 - 130		8260C

*! Flagged analyte recoveries deviated from the QA/QC limits. Data that impacts sample results are noted on the sample report.

CHAIN-OF-CUSTODY RECORD
BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

VOC SVOC TCIP INORGANICS MICRO METALS

SAMPLE I.D.	SAMPLING DATE/TIME	*IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC		SVOC		TCIP	INORGANICS	MICRO METALS	# of CONTAINERS	NOTE MEOH VIA																																		
					524.2 524.2 MTBE ONLY 260 1, 4 DIOXANE	624 VTICS	8021	8015 GRO MAVPH						8270 ABN	625 PAH	EDB	DBCP	TPH8100	LI	L2	8015 DRO MAEPH	PEST 608 PCB 608	PEST 8081 PCB 8082	OIL & GREASE 1664 TPH 1664	TCCLP 1311 VOC	ABN PEST	METALS HERB	BOD TS	CBOD TSS	TDS	Br NO ₂	Cl NO ₃	F NH ₃	SO ₄ TN	NO ₂	NO ₃	T. PHOS. O. PHOS.	pH SPEC. CON.	T. RES. T. ALK.	CHLORINE	COD	PHENOLS	TOC	DOC	TOTAL CYANIDE	TOTAL SULFIDE	REACTIVE CYANIDE
SB-1 (20-27)	9/19/13	8:55	G	G								2	6066																																		
SB-2 (0-8)		8:50										1	6066																																		
SB-3 (8-10)		9:30										1	6065																																		
SB-4 (20-24)		9:35										1	6065																																		
Trip Blank																																															

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER;
 WW-WASTE WATER
 PRESERVATIVE: H-HCL; N-HNO₃; S-H₂SO₄; Na-NaOH; M-MEOH

PROJECT MANAGER: Kurt Muller

COMPANY: VHR

ADDRESS: 40 IDX Drive

CITY: South Burlington STATE: VT ZIP: 05403

PHONE: 802-778-1278/802-341-5554 EXT:

E-MAIL: kmuller@vhr.com/Smarrin@vhr.com

SITE NAME: Essex Town Site Assessment

PROJECT #: 58982.00

STATE: NH MA ME VT OTHER:

REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR
 GWP, OIL FUND, BROWNFIELD OR OTHER:

QUOTE #: P.O. #:

QA/QC REPORTING

A B C

MA MCP

TEMP: 4.2 °C
 ICE? YES NO

REPORTING OPTIONS

PELIMS: YES OR NO

ELECTRONIC OPTIONS
 PDF EXCEL EQUIP OTHER

TURN AROUND TIME

24hr* 48hr*

3-4 Days*

5 Day 7 Day

10 Day

*Pre-approval Required

METALS: 8 RCRA 13 PP FE, MN F

OTHER METALS:

SAMPLES FIELD FILTERED? YES NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFF FOR SAMPLES + TB, C
 Sample kit was unused → returned in cooler bag

SITE HISTORY:

SUSPECTED CONTAMINATION:

FIELD READINGS:

Location Essex Town Site

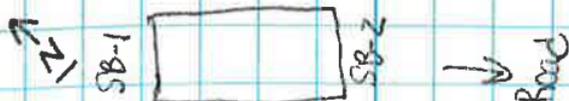
Date 9/19/23

7

Project / Client _____

TANK 1

- NOTES:
- refusal / rocky obstruction ~27/28" depth
 - Tank found on side
 - cloudy light precipitation



	<u>Depth</u>	<u>Sample</u>	<u>TID</u>	<u>Description</u>
SB-1	8"		0.1	Dark brown Sand + org. material
	18"		0.0	dark brown Sand w. gravel
	24"	⊗	0.0	yellow-brown Sand w. gravel
	27"		0.0	yellow-brown gravelly sand
SB-2	8"	⊗	0.5	Dark brown Sand w. org. material
	16"		0.0	yellow-brown Sand w. gravel
	24"		0.0	yellow-brown Sand w. gravel
	28"		0.0	reddish-brown Sand w. gravel

Location Essex Town SiteDate 9/19/23

Project / Client _____

TANK 2

- NOTES:
- Forested area, right next to mounded area w. some rocks
 - Tank found on side
 - rainy & cloudy / precipitation
 - rocky obstruction ~ 24" depth



	<u>Depth (in)</u>	<u>Sample</u>	<u>PID</u>	<u>Description</u>
SB-3	8"	⊗	0.0	Dark brown Sandy w. org.
	16"		0.0	Fine sand
	21"		0.2	Fine sand
	24"		0.1	Fine sand

SB-4	8"		0.1	Dark brown Sandy w. org.
	16"		0.1	Sandy soil
	20"		0.1	Yellow-brown fine sandy soil
	24"	⊗	0.4	Yellow-brown silty sandy soil



Photo 1: View of Tank 1 (southeast facing)



Photo 2: View of Tank 2 (east facing)