

March 6, 2020

ECI Project Number: 0686-01-05

Nor Properties LLC
2603 43rd Street Southeast
Puyallup, Washington 98374
Attention: Mr. Ron Klein

Re: **Supplemental Vapor Intrusion Investigation – February 2020**
2301 Lincoln Avenue, Tacoma, Washington

Mr. Klein:

Pursuant to your recent request, EcoCon, Inc. (ECI) completed a Supplemental Vapor Intrusion Investigation (SVI) for the property located at 2301 Lincoln Avenue, Tacoma, Washington (Subject Site). This SVI Investigation was conducted to evaluate the potential for adverse impacts to indoor air quality due to previously identified Volatile Organic Compounds (VOCs), specifically, Perchloroethylene (PCE) and Trichloroethylene (TCE) in the soil and groundwater underlying the southern corner of the Subject Site.

This report details site activities and observations, sampling activities, chemical analysis, and provides conclusions and recommendations.

Attached to this report are the following:

- Attachment A: Project Figures,
- Attachment B: Sample Analytical Results and Regulatory Cleanup & Screening Guidance.

Scope of Work

The scope of work for this Supplemental Vapor Intrusion Investigation included:

- Development of a site work plan;
- Preparation of a site-specific Health and Safety Plan (HASP);
- Collection and laboratory analysis of Indoor, Exterior and Crawl Space air samples; and
- Preparation of a detailed report.

Site Location & Description

The Subject Site is located in the City of Tacoma, Pierce County, Washington. The Property is located on the northwest side of Lincoln Avenue approximately 800 feet northeast of the Thorne Road and Lincoln Avenue intersection. The Subject Site consists of one parcel (Pierce County Parcel 6965000470) which is occupied by three warehouse buildings and a wood framed office building. The entire Property is asphalt paved.

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2301 Lincoln Avenue, Tacoma, Washington

Limited Legal Description:

- Parcel No.: 6965000470
- Address: 2301 Lincoln Avenue, Tacoma, Washington
- Abbreviated legal description: Section 34, Township 21, Range 03 Quarter Section 44
Port of Tac. Industrial Dev. Dist. 1-L 11 & 12 B 14

The Subject Property is currently occupied by Sunbelt Rentals, which maintains and rents out construction equipment. Fueling, lubrication and cleaning of that equipment takes place on site. An above-ground storage tank (AST) containing diesel fuel, with a capacity of approximately 500-gallons, is situated inside a concrete secondary containment structure within the western-most building on site. The wash area is located adjacent to the southeastern end of that building, and its associated drains are connected to an oil/water separator unit that drains to the municipal sanitary sewer system.

Physical Setting

Physical setting information for the Subject Site obtained from ECI's site reconnaissance and other sources are summarized below. Geological and hydrogeological conditions can often affect, to some extent, the environmental integrity of a property. Underlying soil and bedrock formations may facilitate or impede the migration of chemical contaminants in groundwater and may even be the source of contaminants such as radon and metals. This section of the report summarizes geologic factors that may affect the Subject Property with regard to environmental concerns.

Topography

The United States Geological Survey (USGS) Tacoma South, WA Quadrangle 7.5-Minute series topographic map was reviewed for this SVI. This map was published by the USGS in 1980. According to the contour lines on the topographic map, the Property elevation is at approximately 10 feet above mean sea level (MSL). The topography of the Property is relatively flat.

Geology & Soils

The Puget Sound Lowland is a broad trough located between the Cascade Range and Olympic Mountains. Continental ice sheets up to 3,000 feet thick covered portions of the Puget Lowland several times during the Quaternary period. Retreating ice carved new landscapes (kames, kettles and hummocks), recessional channels, drained or formed lakes, and deposited Vashon glacial drift including till and outwash (WA DNR, 2002). According to the Geologic Map of Tacoma (Booth, Troost & Wisher, 2004); the vicinity of the Subject Property resides over artificial fill, (Tacoma South DMU, 2006). The artificial fill is characterized as variously consisting of gravel, sand, silt, concrete, garbage, slag and other materials; variable grain size with compaction ranging from loose to dense, depending on degree of compaction required during placement and regrading. These units' range in thickness from three to twenty-five feet.

The United States Department of Agriculture published the Pierce County Soil Survey in 1955. This report describes the soils of the Property as "made land." Made land is composed of artificial fill. The Port of Tacoma area was formed as marshy alluvial outwash land. When the area was developed in the 1950's,

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coarse-grained dredged soil material from the harbor, municipal refuse and other materials from undocumented sources were used to fill in the marshy alluvial outwash areas.

Hydrogeologic Environment

The primary aquifers are typically overlain by relatively impermeable glacial till deposits that are present at or near the ground surface over much of the Puget Sound region. Within these till deposits are localized areas or lenses of water-bearing sands and gravels that may result in a shallow, perched water table. Lateral and vertical migration of shallow groundwater may be impeded by the relatively impermeable nature of the till and by the sometimes-discontinuous nature of the perched water-bearing sands and gravel. Perched and discontinuous zones of shallow groundwater may be seasonally or perennially present, depending on site-specific conditions. The primary water supply for the Tacoma vicinity is obtained from the Green River. Tacoma Water also owns 24 water wells that contribute 15 percent of the annual water supply. The general regional flow of groundwater is toward the west to the Puget Sound. Shallow groundwater flow in the vicinity of the Property appears to be to the northeast towards the Blair Waterway.

According to the Preliminary Environmental Assessment for the Port Business Park, prepared by Hart Crowser in April 1993, there are two water-bearing zones beneath the Subject Property. The two zones are separated by an aquitard. The shallow or upper zone is unconfined and is approximately two to five feet thick. The water thickness of the lower zone varies with the tidally influenced water table. The aquitard zone is approximately eight to eleven feet thick and this zone acts to inhibit vertical migration of ground water. Beneath the aquitard zone is the lower alluvial water-bearing zone, which is confined and is over thirty feet thick.

Flood Plain Information

A review of the Flood Insurance Rate Maps (FIRM), published by the Federal Emergency Management Agency (FEMA), was performed. According to Panel Number 5301480025B, dated December 1, 1983, the Property is located in Flood Zone C. Flood Zone C regions consist of those areas of minimal flooding.

Previous Investigations

PBS – Phase II Environmental Site Assessment - 2018

PBS of Seattle, Washington prepared two reports detailing work completed at 2301 Lincoln Avenue, Tacoma, Washington (Subject Property). The reports are titled Phase II Environmental Site Assessment and Supplemental Phase II Environmental Site Assessment dated February 22, 2018 and May 16, 2018 respectively. These reports detail a series of borings placed throughout the Subject Property at suspect locations as part of a Due Diligence investigation conducted by others. The locations where contaminants were reported exceeding applicable cleanup levels were located near the southwest corner of the Property along the western property boundary and extending to the south off the property boundary into the right-of-way of Lincoln Avenue.

According to the reports, chlorinated volatile organic compounds (cVOCs) were identified in soil samples PB8, PB9 (onsite) and PB13 (offsite), and groundwater sample B2, PB8 (onsite) and PB13 (offsite)

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2301 Lincoln Avenue, Tacoma, Washington

underlying and along the southern property boundary of the Subject Property and adjacent property to the south. Trichloroethylene (TCE) was reported in PBS samples PB8-5' (0.151 µg/L), PB8-6' (0.146 µg/L) and PB13-7' (0.143 µg/L) exceeding the 0.03 µg/L Method A Cleanup Level (CUL). Arsenic was also reported in PBS Sample PB4-1' (24.5 µg/L) exceeding the 20 µg/L Method A CUL. Groundwater sample B2 was reported containing Vinyl Chloride (VC) and TCE at 2.24 µg/L and 9.38 µg/L respectively, exceeding the 0.2 µg/L and 5 µg/L Method A CUL. Groundwater in sample PB8 was reported containing TCE at 6.91 µg/L exceeding the CUL and cis-1,2-Dichloroethylene at 162 µg/L, exceeding the 35 µg/L Method C CUL.

Following the soil and groundwater sampling, PBS completed a Soil Gas sample collection event. PBS sample SB-2 was collected at 4.5 feet below ground surface and reportedly contained TCE at 5,100 micrograms per cubic meter (µg/m³), exceeding the Method C Sub-Slab Soil Gas Screening level of 67 µg/m³.

ECI - Vapor Intrusion Investigation - 2018

Five Vapor Intrusion samples were collected during this investigation. One interior, two crawl space, one exterior (ambient), and one sub-slab. The sample locations were chosen based on proximity to the PBS April 2018 Soil-Gas sample location.

On August 14, 2018, ECI environmental professionals collected three vapor samples. The first was collected from the interior northwest corner of the building within an office (Interior). The second sample was collected near the exterior northwest corner of the building just upwind from the structure (Exterior-Ambient). Wind direction at the time of sampling was to the southwest. The third sample was collected from the crawl space near the northwest corner of the building (Crawl Space 1). The crawl space sample was collected through foundation vents. These locations were selected due to their close proximity to PBS soil gas sample SB2, located approximately 10 feet north of the northwest corner of the building.

The analytical results of the three air samples collected on August 14, 2018, were reported either below their respective laboratory method detection limits or below their respective MTCA Method C Cleanup Levels.

ECI - Vapor Intrusion Investigation – January 2019

On January 15, 2019, ECI environmental professionals collected four vapor samples. Two from the interior northwest corner of the building within an office and break room. The third sample was collected from the crawl space near the northwest corner of the building (Crawl Space 1). The crawl space sample was collected through foundation vents. The fourth sample was collected near the exterior northwest corner of the building just upwind from the structure (Exterior-Ambient). Wind direction at the time of sampling was to the southwest. These locations were selected due to their close proximity to PBS soil gas sample SB2, located approximately 10 feet north of the northwest corner of the building.

The analytical results of the four January 2019 air samples were reported either below their respective laboratory method detection limits or below their respective MTCA Method C Cleanup Levels.

Supplemental Vapor Intrusion Investigation-February-2020

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ECI – Vapor Intrusion Investigation – August 2019

On August 13, 2019, ECI environmental professionals collected four vapor samples. Two from the interior northwest corner of the building within an office and break room. The third sample was collected from the crawl space near the northwest corner of the building (Crawl Space 1). The crawl space sample was collected through foundation vents. The fourth sample was collected near the exterior northwest corner of the building just upwind from the structure (Exterior-Ambient). Wind direction at the time of sampling was to the southeast. These locations were selected due to their close proximity to PBS soil gas sample SB2, located approximately 10 feet north of the northwest corner of the building.

The analytical results of the August 2019 air samples were reported either below their respective laboratory method detection limits or below their respective MTCA Method C Cleanup Levels.

Contaminants of Concern (COCs)

Contaminants of concern (COCs) for soil vapor have been identified based on the previous PBS (April 2018) soil gas sampling event and includes select cVOCs Tetrachloroethylene (PCE) and Trichloroethylene (TCE). Because the Subject Property is listed by the Pierce County Auditor as Industrial, the use of MTCA Method C Cleanup Levels have been derived from the Model Toxics Control Act's (MTCA) MTCA Method C Indoor Air Cleanup and Sub-Slab Soil Gas Screening Levels (Ecology Vapor Intrusion: 2015 changes to toxicity values and screening levels).

Table 1: Contaminants of Concern & Applicable Cleanup Levels – Air

Primary Contaminant of Concern	Analytical Method	Cleanup / Screening Levels ¹ (CUL) Air - $\mu\text{g}/\text{m}^3$
Tetrachloroethylene (PCE)	TO-15	1,330
Trichloroethylene (TCE)	TO-15	67

$\mu\text{g}/\text{m}^3$ = microgram per cubic meter

Vapor Intrusion Sampling Activities

Three Vapor Intrusion samples were collected during this investigation. Two interior, and one crawl space. The sample locations were chosen based on proximity to the PBS April 2018 Soil-Gas sample location.

On February 26, 2020, ECI environmental professionals collected three vapor samples. The first and second samples were collected from the interior northwest corner of the building within the northwestern office (Interior Office) and breakroom (Interior Breakroom). The third sample was collected from the crawl space through vents near the northwest corner of the building (Exterior Under Structure). These locations were selected due to their close proximity to PBS soil gas sample SB2, located approximately 10 feet north of the northwest corner of the building.

¹ Cleanup & Screening Levels are established to provide threshold concentrations of contaminants of concern establishing a level at which corrective action is required.

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Indoor & Crawl Space Air Sample Collection

The indoor, and crawl space air samples were collected utilizing 6-liter Summa canisters supplied and certified clean by the laboratory, Friedman & Bruya, Inc. The canisters were fitted with flow regulators (chokes) calibrated to a flow rate to allow sample collection over an eight-hour period. The canisters were placed, and the regulators opened per laboratory provided guidance at the start of the day and monitored for eight hours. Following the 8-hour sampling event, each canister was closed, inspected and logged.

Table 2: Collection Parameters for the Indoor and Ambient Air Samples

Sample ID	Interior (Break Room)	Interior (Office)	Exterior (Crawl Space)
Collection Date	2/26/2020	2/26/2020	2/26/2020
Start Time	08:33	08:34	08:43
Finish Time	16:33	16:34	16:43
Ambient Temperature	68° F	68° C	45° F
Sample Canister Volume	6 Liters	6 Liters	6 Liters
Pre-Sample Canister Vacuum	30"Hg	30"Hg	30"Hg
Post-Sample Canister Vacuum	8.5"Hg	6"Hg	6"Hg
Canisters Serial Number	#21437	#18576	#23231
Flow Regulator Number	#06607	#05356	#07854

Analytical Results

Three air samples were submitted to Friedman & Bruya, Inc., Seattle, Washington for analysis of BTEX and VOCs by EPA Method TO-15.

- Three Vapor Intrusion Air samples were collected, two indoor air (Interior Office and Interior Breakroom) and one exterior air (Crawl Space Vented).

Table 3 below provides a summary of the sample analytical results. The laboratory report is included with this report as Attachment B.

Table 3: Summary of Indoor Ambient Air Analytical Results

Sample ID	Trichloroethylene (TCE)	Tetrachloroethylene (PCE)
	Method EPA TO-15 (Sample Results in µg/m³)	
Interior-Breakroom 2	<0.27	<6.8
Interior-Office 2	<0.27	<6.8
Exterior Under Structure 2 (Crawl Space)	0.28	<6.8
MTCA Method C-Indoor Air-Non-Cancer	2	40
MTCA Method C-Indoor Air-Cancer	6.3	96.15

BOLD: Sample reported exceeding laboratory method reporting limits (MRL)
2015 Guidance, toxicity values, and screening levels-Department of Ecology

Summary and Conclusions

At the request of the property owner, ECI completed a Supplemental Vapor Intrusion Investigation for the Property located at 2301 Lincoln Avenue, Tacoma, Washington. Three SVI samples were collected, two indoor air and one exterior air. Of the three SVI samples, two were from the working space within the office building, and one below the building within the crawl space (Figure 3, Appendix A).

The analytical results for the indoor office and indoor breakroom samples were reported below the laboratory method reporting limits (MRL) or non-detect for both contaminants of concern TCE and PCE. Sample Exterior Under Structure 2 (Crawl Space) was reported containing TCE at $0.28 \mu\text{g}/\text{m}^3$, above the $0.27 \mu\text{g}/\text{m}^3$ MRL, but below the most conservative Method-C Screening Level of $2.0 \mu\text{g}/\text{m}^3$.

Based on these results and the results from previous investigations, ECI concludes the following:

- Soil-gas beneath the asphalt tarmac is impacted due to the presence of select volatile organic compounds, specifically TCE confirmed in soil and/or groundwater.
- The ventilated crawl space, while having an elevated concentration of TCE, was reported below both the non-cancer and cancer CUL for all previous air sampling events (Summer 2018, Winter 2019, Summer 2019, and Winter 2020) conducted by ECI.
- Additional interior and crawl space indoor air sampling will be required on an ongoing basis to monitor TCE concentrations.

These findings are representative of current site conditions, any modifications to the Subject Property such as underground utility work or ventilation alternations could potentially change indoor air quality values. Continued monitoring of indoor air quality should be conducted to verify that concentrations remain below the appropriate regulatory thresholds.

ECI appreciates the opportunity to provide environmental consulting services on this project. Should you have any questions, please contact our office at (253) 238-9270.

Respectfully submitted,

Chanel Z. Long
Environmental Scientist
Direct: (253) 432-6586

Qualifications of This Report

Although this Vapor Intrusion Investigation has been a reasonably thorough attempt to investigate the potential presence of contamination, there is always the possibility that additional sources of contamination have escaped detection due to the limitations of this Study, the inaccuracy of governmental records, and the presence of undetected and unreported environmental incidents.

Limitations

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology, and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. ECI includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with ECI if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or Site.

Use of this Report by Others

Our report was prepared for the exclusive use of Mr. Ron Klein (Client) and / or his designated parties. This report may be provided to regulatory agencies for review if requested or required with consent from the Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

This report has been prepared for subsurface investigation/remediation activities at the Subject Property. ECI considered a number of unique, project-specific factors when establishing the scope of services for this project and report. No one except our Client should rely on this environmental report without first conferring with ECI. This report should not be applied for any purpose or project except the one originally contemplated.

Unless ECI specifically indicates otherwise, do not rely on this report if it was:

- Not prepared for you,
- Not prepared for your project,
- Not prepared for the specific site explored, or
- Completed before important site changes were made.

If important changes are made after the date of this report, ECI should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Uncertainty May Remain after Completion of Site Investigation and Remedial Activities

The investigation and remediation activities completed in a portion of a property cannot wholly eliminate uncertainty regarding the potential for contamination in connection with the entire property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from the locations sampled. It is always possible that contamination exists in areas that were not explored, sampled, or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the Site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact ECI before applying this report to determine if it is still applicable.

Soil and Groundwater End Use

The cleanup levels referenced in this report are Site- and situation-specific and could change with time due to regulatory or Site changes. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater).

Note that hazardous substances may be present in some of the Site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. Because these cleanup levels can change, ECI should be contacted to evaluate the potential for associated environmental liabilities prior to the export of soil or groundwater from the Subject Site or reuse of the affected media on the Site. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the Subject Site to another location or its reuse on the Site in instances that we were not aware of or could not control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from the locations sampled at the Site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted, or samples are taken. ECI Inc. reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the Site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

List of Appendices

Appendix A: Project Figures

Figure 1: Subject Property Vicinity Map

Figure 2: Subject Property Topographic Map

Figure 3: SVI Sample Location Map

Appendix B: Project Analytical Results

Sample Analytical Results

Regulatory Cleanup & Screening Guidance

Appendix A

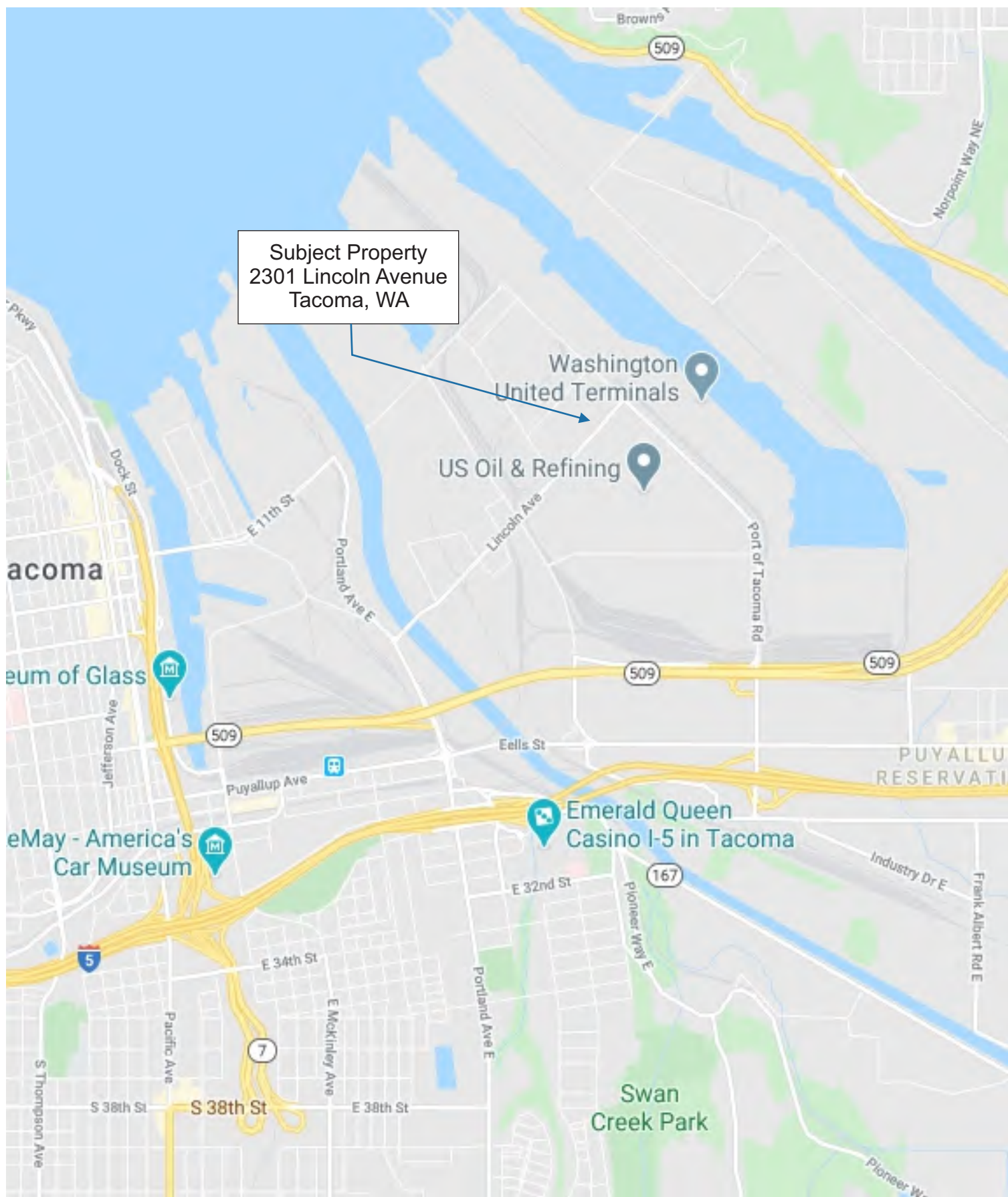
Appendix A: Project Figures

Figure 1: Subject Property Vicinity Map

Figure 2: Subject Property Topographic Map

Figure 3: SVI Sample Location Map

Appendix A Project Figures



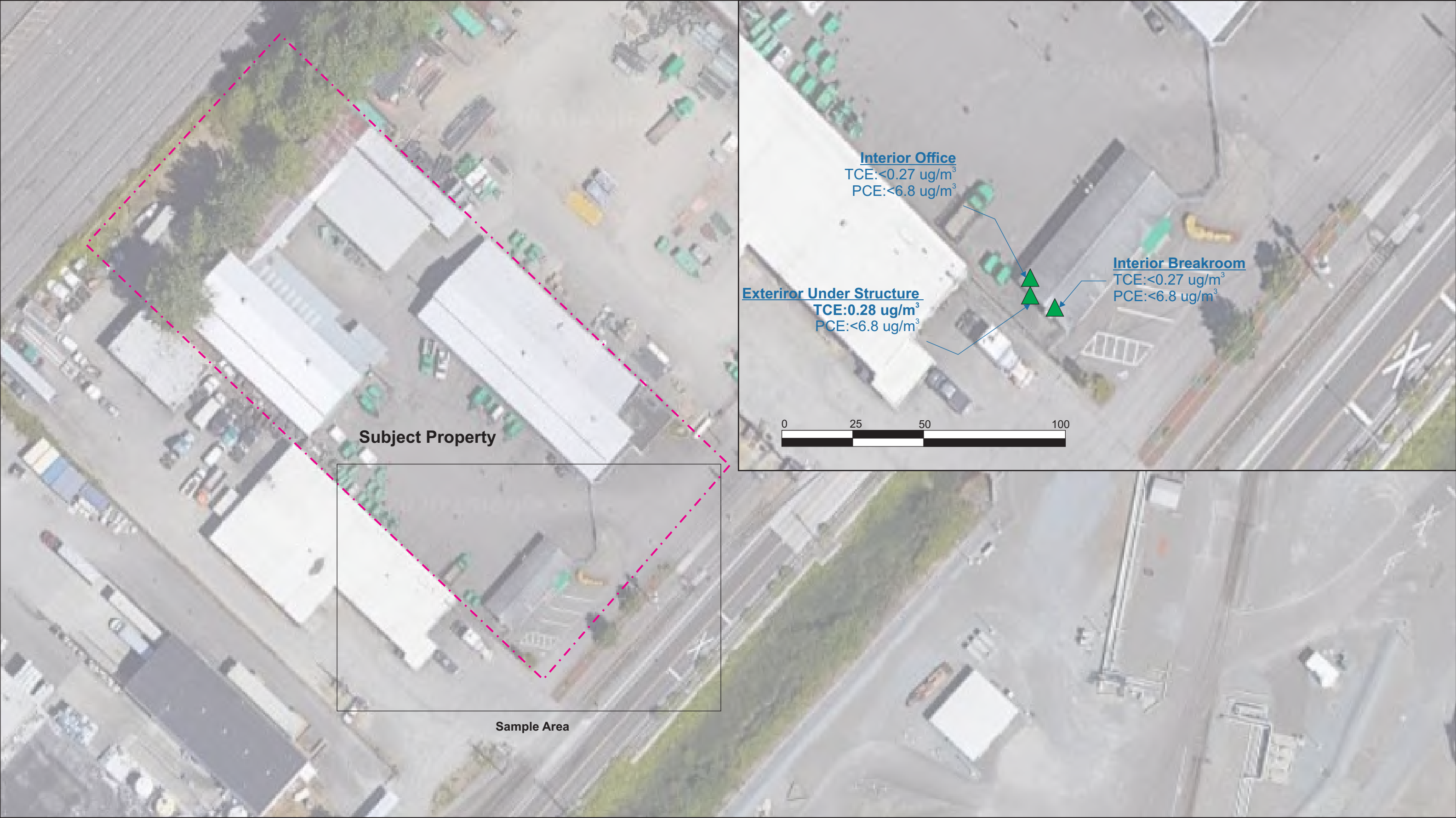


Subject Property
2301 Lincoln Avenue
Tacoma, WA



Subject Property Topographic Map
Vapor Intrusion Investigation
2301 Lincoln Avenue
Tacoma, Washington

Date:	March 9, 2020	Figure No.:
Completed By:	C.Long	02
Reviewed By.:	S. Spencer	
Version:	ECI-001	
Project No.:	0686-01-05	
		Sheet 02 of 03



Appendix B

Project Analytical Results

Sample Analytical Results

Regulatory Cleanup & Screening Guidance

Appendix B

Project Analytical Results

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 5, 2020

Kaden Reed, Project Manager
EcoCon, Inc.
P.O. Box 153
Fox Island, WA 98333

Dear Mr Reed:

Included are the results from the testing of material submitted on February 27, 2020 from the 0686-01-05, F&BI 002424 project. There are 7 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: chanel@alleci.com
EMS0305R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2020 by Friedman & Bruya, Inc. from the EcoCon 0686-01-05, F&BI 002424 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>EcoCon</u>
002424 -01	Interior Breakroom
002424 -02	Interior Office
002424 -03	Exterior under Structure

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Interior Breakroom	Client:	EcoCon
Date Received:	02/27/20	Project:	0686-01-05, F&BI 002424
Date Collected:	02/26/20	Lab ID:	002424-01
Date Analyzed:	03/03/20	Data File:	030227.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	100	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Trichloroethene	<0.27	<0.05
Tetrachloroethene	<6.8	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Interior Office	Client:	EcoCon
Date Received:	02/27/20	Project:	0686-01-05, F&BI 002424
Date Collected:	02/26/20	Lab ID:	002424-02
Date Analyzed:	03/03/20	Data File:	030228.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	98	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Trichloroethene	<0.27	<0.05
Tetrachloroethene	<6.8	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Exterior under Structure	Client:	EcoCon
Date Received:	02/27/20	Project:	0686-01-05, F&BI 002424
Date Collected:	02/26/20	Lab ID:	002424-03
Date Analyzed:	03/03/20	Data File:	030229.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	85	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Trichloroethene	0.28	0.052
Tetrachloroethene	<6.8	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	EcoCon
Date Received:	Not Applicable	Project:	0686-01-05, F&BI 002424
Date Collected:	Not Applicable	Lab ID:	00-0492 mb
Date Analyzed:	03/02/20	Data File:	030215.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	102	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Trichloroethene	<0.27	<0.05
Tetrachloroethene	<6.8	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/05/20

Date Received: 02/27/20

Project: 0686-01-05, F&BI 002424

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES
FOR VOLATILES BY METHOD TO-15**

Laboratory Code: 002466-02 1/3.1 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Trichloroethene	ug/m3	<0.83	<0.83	nm
Tetrachloroethene	ug/m3	21	21	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Trichloroethene	ug/m3	73	85	70-130
Tetrachloroethene	ug/m3	92	84	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

ME 02/27/20

Page # of

002434

SAMPLE# (signature)

TURNAROUND TIME

of

Page #

of

Page #

of

Report To Kaden Reed

Company ECI

Address P.O. Box 153

City, State, ZIP Fox Island, WA 98333

Phone Email kaden@allegi.com

Chanel@allegi.com

PROJECT NAME & ADDRESS

PO #

NOTES:

INVOICE TO

☒ Standard

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Default: Clean after 3 days

☐ Archive (Fee may apply)

SAMPLE INFORMATION

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	TO-15 PCE+TCE only	Notes
Interior Breakroom	01	21437	06607	(IA) / SG	2/26/20	30	0833	8.5	1633						X	PCE+TCE only
Interior Office	02	185710	05356	(IA) / SG	2/26/20	30	0834	10	1634						X	↓
Exterior Under Structure	03	23231	07854	(IA) / SG	2/26/20	30	0843	10	1643						X	
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

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FORMS: COC, COCTO-15.DOC

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Requested by: Kelly Melland

Kelly Melland

FEDEx

2/27

11:22AM

Accepted by: Kerry Patricia

Kerry Patricia

FEDEx

2/27

11:22AM

Relinquished by:

Jadvis Boys

F&B.

2/27

1250

Received by: Jadvis Boys

Jadvis Boys

F&B.

2/27

1250

Samples received at 16°C