Memo

TO:
Jing Song
Washington State Department of Ecology

SUBJECT

Summary of Soil Vapor and Ambient Air Sampling Events – April and November 2022
Former Texaco Station No. 211577
631 Queen Anne Avenue North, Seattle, WA

DATE
June 16, 2023

cc: James Kiernan, Chevron Environmental Management Company

From:
Ada Hamilton, Arcadis
Ada.Hamilton@Arcadis.com

On behalf of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) has prepared this memorandum to present the results of soil vapor and ambient air monitoring sampling events conducted in April and November 2022 at the Del Roy and Monterey Apartments, located west and southwest of the above-referenced site, respectively (Figure 2). This work was conducted in general accordance with the *Remedial Investigation Work Plan* (RIWP) submitted to the Washington State Department of Ecology (Ecology) on February 8, 2022; pursuant to Agreed Order (AO) No. DE 16537, effective August 21, 2019.

As described in the RIWP and summarized below, soil vapor and indoor air investigation was previously conducted at the Del Roy Apartments (25 West Roy Street) and the Monterey Apartments (622 1st Avenue West) in 2009 to evaluate any potential vapor intrusion concerns at the two apartment buildings. As no soil vapor and indoor air data had been collected since 2009, Arcadis conducted an updated vapor intrusion evaluation for the Del Roy and Monterey Apartments buildings.

2009 Soil Vapor and Indoor Air Investigation

Two sub-slab vapor points (DRVP-1 and DVRP-2) were installed in the basement of the Del Roy Apartments by SAIC in 2008. One sub-slab vapor point (MVP-1) and one temporary sub-slab vapor point (MVPT-1) were installed in the basement of Monterey Apartments. Indoor air samples were also collected from the basement areas of both buildings as well as outdoor air samples. Sampling was performed in January and August 2009 and the results were documented in letter reports dated April 7, 2009 and May 27, 2010. The approximate sample locations are shown on Figure 2. Both sampling events yielded similar results, with the conclusion that near-surface soil vapor concentrations did not indicate a risk to indoor air (SAIC 2010).

The indoor air samples during both events exceeded the MTCA Method B CUL for benzene (0.32 µg/m^3), with concentrations up to 1.4 µg/m^3 in January 2009 and up to 0.65 µg/m^3 in August 2009. However, similar concentrations were detected in the outdoor air samples (1.0 and 0.46 µg/m^3). The study found these concentrations to be within expected urban background levels (SAIC 2010).

2022 Soil Vapor and Indoor Air Investigation

Arcadis conducted an updated vapor intrusion evaluation for the Del Roy and Monterey Apartments buildings. This included installation of a second vapor point in the basement of Monterey Apartments (MVP-2) on April 6, 2022. MVP-2 was advanced using hand auger methods to a depth of 5.5 feet below the basement floor. A 6-inch stainless steel vapor probe screen, attached to a length of 0.25-inch-diameter Teflon tubing, was lowered to a centered depth of 5 feet below the basement floor. A standard sand pack was added to the boring from 5.5 to 4.5 feet followed by 3 to 6 inches of dry granular bentonite to prevent potential moisture from infiltrating the sand pack. Hydrated bentonite was added to within approximately 1 foot of the basement floor. The soil vapor probe tubing was sealed with a compression cap to allow for equilibration with the subsurface.

Two sampling events were conducted, on April 7 and November 17, 2022. Prior to the sampling events, Arcadis conducted a survey of each building to identify potential sources of petroleum hydrocarbon related volatile organic compounds (VOCs) in indoor air. Potential sources of background VOCs observed during the air sampling event included household cleaning products and paint. Note that the identified chemicals were not removed from the building prior to sampling. Building survey results are included as Attachment B.

During each event, soil vapor samples were collected from the existing vapor points (DRVP-1 and DRVP-2) at the Del Roy Apartments, as well as the existing (MVP-1) and newly installed vapor point (MVP-2) at the Monterey Apartments. The approximate soil vapor point locations are shown on Figure 2.

Indoor air samples were also collected at one location in each building during each event using 6-liter stainless steel passivated canisters individually cleaned and 100 percent certified by a Washington certified laboratory. The intake of each canister was placed 3 to 5 feet above the ground surface to represent assumed inhalation height. Indoor air sample locations are shown on Figure 2.

One outdoor air sample location was selected outside each building based on wind direction and accessibility. One outdoor air sample was collected upwind of the buildings, and one outdoor air sample was collected downwind of the buildings. Samples were collected concurrently with indoor air samples using passivated canisters. Outdoor air sample locations are shown on Figure 2.

The soil vapor and indoor/outdoor air sampling was performed twice (in April and November 2022) to evaluate any seasonal variability. During each event, one duplicate soil gas sample and one equipment blank sample (EB-1) were collected for quality control purposes.

The samples were submitted to Friedman & Bruya, Inc. a Washington certified laboratory, under standard chain-of-custody procedures for analysis of the following constituents of concern:

- Total petroleum hydrocarbons (TPH) with carbon chain specific results: EC5-8 (aliphatics), EC9-12 (aliphatics), and EC9-10 (aromatics) by TPH Massachusetts Air Phase Hydrocarbons (MA-APH)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and naphthalene by USEPA Method TO-15

Soil Vapor Analytical Results

Soil vapor analytical results are presented in Table 1. A site-specific cleanup level for TPH in soil vapor was calculated in accordance with Ecology's Guidance for Evaluating Vapor Intrusion in Washington State (Ecology 2022). The site-specific TPH cleanup level calculation is presented in Table 2. The soil vapor results for BTEX

and naphthalene were compared to MTCA Method B screening levels for soil gas. No exceedances of TPH, BTEX, or naphthalene were observed during the April or November 2022 sampling events.

Indoor and Outdoor Air Analytical Results

Indoor and outdoor air analytical results are presented in Table 3. Indoor air results were corrected by subtracting the ambient outdoor air concentrations from outside the buildings, in accordance with Ecology's Guidance for Evaluating Vapor Intrusion in Washington State (Ecology 2022). Results were compared to MTCA Method B Indoor Air CULs for unrestricted use, including the generic TPH CUL. The results are summarized as follows:

April 7, 2022 Sampling Event

The same concentration of benzene (0.37 µg/m^3) was detected in the indoor air samples in both the Monterey and Del Roy Apartments, which slightly exceeded the CUL (0.32 µg/m^3). However, since the soil vapor results at both buildings were either non-detect or below CULs, the results are attributed to background sources and not soil vapor. Potential sources of background VOCs observed during the sampling events included household cleaning products and paint. The results for other analytes (e.g., naphthalene) corrected due to detections in outdoor air did not exceed the MTCA Method B indoor air CULs for unrestricted use.

November 17, 2022 Sampling Event

The indoor air analytical results, when corrected for detections in outdoor air, did not exceed the MTCA Method B indoor air CULs for unrestricted use.

Conclusions and Recommendations

As part of the RI, an updated vapor intrusion evaluation was performed at the Del Roy and Monterey Apartments in April and November 2022, including soil vapor, indoor air, and outdoor air sampling. Although benzene in indoor air during the April 2022 sampling event slightly exceeded the CUL, the corresponding soil vapor results were either non-detect or were below the CUL. As such, the indoor air detections are attributed to background sources and not soil vapor intrusion. The detected concentrations are also within the range of normal background levels for benzene (up to 3.7 µg/m^3). When corrected for detections in outdoor air, and using the site-specific CUL for TPH, there were no other exceedances of the CULs during both events.

From Ecology's Guidance for Evaluating Vapor Intrusion in Washington State: *The background concentrations of certain VOCs in indoor air such as benzene, naphthalene, and TPH may be higher than ambient air levels, and higher than the established indoor air cleanup level, without any significant VI contribution. When addressing situations like these, you may find indoor air background data and information helpful, such as EPA's 2011 "Background indoor air concentrations of VOC's in North American residences (1990-2015): A compilation of statistics for assessment of vapor intrusion."* (Ecology 2022).

Indoor air concentrations resulting from sources other than vapor intrusion are commonly referred to as "background". The range of background indoor air concentrations of benzene is listed in the referenced EPA 2011 document are shown in table E-1 below. Indoor sources that may emit VOCs include consumer products (e.g., cleaners, solvents, strippers, polish, adhesives, water repellants, lubricants, air fresheners, aerosols, mothballs, scented candles, insect repellants, plastic products); building materials (e.g., carpet, insulation, paint, wood finishing products); combustion processes (e.g., smoking, cooking, home heating); dry-cleaned clothing or

draperies; or occupant activities (e.g., craft hobbies). Potential sources of background VOCs observed during the sampling events included household cleaning products and paint.

Table E-1: Indoor air cleanup levels and background concentrations for three petroleum compounds.

Compound	Ecology Indoor Air Cleanup Levels ($\mu g/m^3$)	Range of Potential Background Concentrations[131] ($\mu g/m^3$)
Benzene	0.32	<Reporting Limit – 4.7
Naphthalene	0.074	0.18 – 1.7
TPH	140 or a site-specific determination	116 – 594

(USEPA 2011)

Based on the soil vapor and indoor/outdoor air analytical results from the 2022 events, the conclusion from the previous investigation is confirmed that vapor intrusion does not appear to be a concern at the Del Roy and Monterey Apartments, and no further investigation is warranted. The soil vapor and air sampling details and results will be included in the RI report, to be submitted subsequent to the completion of the groundwater investigation as described in the RIWP.

Tables

Table 1 – 2022 Soil Vapor Analytical Results

Table 2 – Site Specific Cleanup Level for TPH

Table 3 – 2022 Indoor and Outdoor Air Analytical Results

Figures

Figure 1 – Site Location Map

Figure 2 – Site Vicinity

Figure 3 – Soil Vapor Points and Air Sampling Locations

Attachments

Attachment A - Laboratory Reports

Attachment B – Building Survey Field Notes

References

Ecology. 2022. Guidance for Evaluating Vapor Intrusion in Washington State, Investigation and Remedial Actions. March.

SAIC. 2010. August 2009 Vapor Sampling Event Sampling Report, Former Texaco Service Station/Chevron Site No. 211577. May 27.

USEPA. 2011. Background indoor air concentrations of VOC's in North American residences (1990-2015): A compilation of statistics for assessment of vapor intrusion.

Tables

Table 1. 2022 Sub-slab Soil Vapor Analytical Results
Monterey and Del Roy Apartments
211577 Queen Anne
Seattle, Washington

DRAFT

Location ID	Alternate ID	Sample Date	Parcel	Sample Location	APH EC5-8 Aliphatics	APH EC9-12 Aliphatics	APH EC9-10 Aromatics	Total Petroleum Hydrocarbons	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Total Xylenes	Naphthalene
MTCA Method B Sub-Slab Soil Vapor Screening Level (µg/m^3)								**1,500**	**10.6**	**76,190**	**15,238**	**--**	**--**	**1,524**	**2.45**
Site-Specific TPH Sub-Slab Soil Vapor Screening Level (µg/m3)^3								**8,032**							
DRVP-1	--	4/7/2022	3879900500	Del Roy Apartments	<430	290	<140	575	<1.8	<110	<2.5	<5.0	<2.5	--	<1.5
DRVP-1	--	11/17/2022	3879900500	Del Roy Apartments	<530	350	<180	705	<2.3	<130	<3.1	<6.2	<3.1	--	<1.9
DRVP-2	--	4/7/2022	3879900500	Del Roy Apartments	480	550	<150	1,105	<1.9	<110	<2.6	<5.3	<2.6	--	<1.6
DRVP-2	--	11/17/2022	3879900500	Del Roy Apartments	<580	420	<190	805	<2.5	<150	<3.3	<6.7	<1.5	--	<2
MVP-1	--	4/7/2022	3879900490	Monterey Apartments	<460	570	<150	590	<1.9	<110	<2.6	<5.3	<2.6	--	<1.6
MVP-1	--	11/17/2022	3879900490	Monterey Apartments	<430	420	<140	705	<1.8	<110	<2.5	<5	<2.5	--	<1.5
MVP-2	--	4/7/2022	3879900490	Monterey Apartments	1100	750	<160	**1,930**	4.3	<120	<2.8	<5.6	<2.8	--	<1.7
MVP-2	--	11/17/2022	3879900490	Monterey Apartments	<390	160	<130	420	<1.7	<98	<2.3	<4.5	<2.3	--	<1.4
MVP-2	DUP-1	4/7/2022	3879900490	Monterey Apartments	990	1000	<140	**2,060**	4.6	<110	<2.5	5.1	<2.5	7.35	<1.5
MVP-1	DUP-1	11/17/2022	3879900490	Monterey Apartments	<400	630	<130	895	<1.7	<100	<2.3	<4.6	<2.3	--	<1.4
EB-1	--	4/7/2022			<430	190	<140	475	<1.8	<110	<2.5	<5.0	<2.5	--	<1.5
EB-1	--	11/17/2022			<420	250	<140	530	<1.8	<110	<2.4	<0.4.9	<2.4	--	<1.5

Notes:
1. Analytical concentrations are in micrograms per cubic meter.
2. The sum of EC5-8 aliphatics, EC9-12 aliphatics, and EC9-10 aromatics is compared to the Generic Sub-Slab Soil Gas Screening Level provided in Implementation Memorandum No. 18 (Washington State Department of Ecology [Ecology] 2018). When a fraction is reported as nondetect, a value of one-half the detection limit is assumed for the purpose of comparing the sum to the screening level.
3. Ecology allows for sub-slab soil vapor concentrations to be adjusted by using a generic indoor air attenuation factor (0.03) to create a site-specific cleanup level for soil vapor
4. **Bold** indicates the analyte detection exceeded MTCA Method B sub-slab soil gas screening levels, but did not exceed the site-specific cleanup level (CUL) calculated for TPH
5. A site-specific CUL for TPH in indoor air was calculated in accordance with Memo 18 guidance (Ecology 2018). The calculation of this CUL is presented in Table 3.

Acronyms and Abbreviations:
-- = Not available
< = Analyte was not detected at the indicated reporting limit
µg/m^3 = micrograms per cubic meter
ft bgs = feet below ground surface

DUP = Duplicate sample
MTCA = Model Toxics Control Act

Reference:
Ecology. 2018. Ecology Implementation Memorandum No. 18, Draft Petroleum Vapor Intrusion (VI): Updated Screening Levels, Cleanup Levels, and Sampling Considerations. August 7.
Ecology. 2022. Guidance for Evaluating Vapor Intrusion in Washington State, Investigation and Remedial Actions. March.

Table 2. Site Specific Cleanup Levels for TPH
Monterey and Del Roy Apartments
211577 Queen Anne
Seattle, Washington

Calculating Site Specific Cleanup Levels for TPH In Indoor Air and Soil Vapor

As discussed in Washington State Department of Ecology, Toxics Cleanup Program Implementation Memo #18, Attachment B: Process for Calculating a Site-Specific TPH Indoor Air Cleanup Level

	Petroleum Fraction or Compound	Input results from highest soil vapor sample on site Measured Concentration Site -Specific Sample ($\mu g/m^3$)	Calculated Indoor Air Concentration (AF = 0.03) Calculated Concentration Site - Specific Sample ($\mu g/m^3$)	Auto Calculated Fraction of Total Concentration (F_i)	From CLARC (confirm prior to use) MTCA Method B Non-carcinogenic CUL ($\mu g/m^3$)	Auto Calculated Fi / CULi
Required for all TPH sites	Aliphatics EC>5-8	1100	33	0.49	2.72E+03	1.80E-04
	Aliphatics EC>9-12	1000	30	0.44	1.36E+02	3.27E-03
	Aromatics EC>9-10[1]	80	2.4	0.04	1.82E+02	1.95E-04
	Benzene[1]	4.6	0.138	0.00	1.37E+01	1.49E-04
	Toluene[1]	55	1.65	0.02	2.24E+03	1.09E-05
	Ethylbenzene[1]	1.4	0.042	0.00	4.58E+02	1.36E-06
	Xylenes	7.35	0.2205	0.00	4.64E+01	7.04E-05
	Naphthalene[1]	0.85	0.0255	0.00	1.38E+00	2.74E-04
Add if present on site*	*EDB*	0	0	0.00	4.11E+00	0.00E+00
	EDC	0	0	0.00	3.20E+00	0.00E+00
	MTBE[1]	0	0	0.00	1.37E+03	0.00E+00
	TOTAL TPH	2249.2	67.476		**SITE-SPECIFIC TPH SOIL VAPOR CLEANUP LEVEL**	8,032

This value can be compared to Ecology's generic indoor air cleanup level of 140 $\mu g/m^3$. If it is <140 $\mu g/m^3$, a site specific cleanup level does not need to be calculated.

Additionally, compounds with a carcinogenic cleanup level must be lower than the MTCA Method B Carcinogenic CUL

Compound with carcinogenic CUL	Measured Concentration - Linked ($\mu g/m^3$)	MTCA Method B Carcinogenic CUL ($\mu g/m^3$)
Benzene	0.138	3.21E-01
Naphthalene	0.0255	7.35E-02
EDB	0	4.17E-03
EDC	0	9.62E-02
MTBE	0	9.62E+00

*EDB, EDC, and MTBE only required for PVI if they are a known COC in soil or groundwater

[1]Compound was not detected in soil vapor samples collected. Half the laboratory reporting limit was used for calculation.

Table 3. 2022 Indoor and Outdoor Air Analytical Results
Monterey and Del Roy Apartments
211577 Queen Anne
Seattle, Washington

Sample ID	Sample Type	Sample Location	Sample Date	EC5-8 Aliphatics	EC9-12 Aliphatics	EC9-10 Aromatics	TPH	Net TPH	Benzene	Net Benzene	Toluene	Ethylbenzene	o-Xylene	m,p-Xylenes	Total Xylenes	Naphthalene	Net Naphthalene
Generic MTCA Method B Indoor Air Cleanup Level				**--**	**--**	**--**	**140**	**140**	**0.32**	**0.32**	**2,290**	**457**	**--**	**--**	**45.7**	**0.0735**	**0.0735**
IA-01-North	Indoor Air	Del Roy Apartments	4/7/2022	<75	<25	<25	<62.5	ND	**0.37**	**0.37**	<19	<0.43	<0.43	1.0	1.21	**0.13**	0.00
IA-01-North	Indoor Air	Del Roy Apartments	11/17/2022	<75	65	<25	115	ND	**0.54**	ND	<19	1.7	1.6	5.8	7.4	0.073 j	ND
IA-02-South	Indoor Air	Monterey Apartments	4/7/2022	<75	26	<25	76	ND	**0.37**	**0.37**	<19	<0.43	<0.43	<0.87	<0.87	**0.15**	0.02
IA-02-South	Indoor Air	Monterey Apartments	11/17/2022	81	76	<25	170	25	**0.56**	ND	<19	1.5	1	5.1	6.5	**0.16 j**	ND
OA-Downwind	Outdoor Air	Downwind Sample	4/7/2022	81	<25	<25	106	--	<0.32	--	<19	<0.43	<0.43	<0.87	<0.87	**0.13**	--
OA-Downwind	Outdoor Air	Downwind Sample	11/17/2022	120	<25	<25	145	--	1.8	--	19	3.6	4.9	13	17.90	**0.26**	--
OA-Upwind	Outdoor Air	Upwind Sample	4/7/2022	79	<25	<25	104	--	<0.32	--	<19	<0.43	0.6	1.7	2.3	**0.12**	--
OA-Upwind	Outdoor Air	Upwind Sample	11/17/2022	<75	<25	<25	<62.5	--	1.1	--	<19	<0.43	<0.43	1.1	1.32	<0.047 j	--

Notes:

1. Analytical concentrations are measured in units of microgram per cubic meter ($\mu g/m^3$).

2. The sum of EC5-8 aliphatics, EC9-12 aliphatics, and EC9-10 aromatics; benzene, toluene, ethylbenzene, and total xylenes, and naphthalene is compared to the indoor air cleanup level (CUL) provided in Memo 18 (Washington State Department of Ecology [Ecology] 2018.) When a fraction is reported as nondetect, a value of one-half the detection limit is assumed for the purpose of comparing the sum to the cleanup level.

3. Total xylenes are the summation of m-, p-, and o-xylenes. If the results are nondetect, one-half the reporting limit was used in the calculation.

4. Net TPH, benzene, and naphthalene concentrations were calculated by subtracting the greater of their respective concentrations detected in the outdoor air samples (upwind or downwind) from the concentrations observed in the indoor air samples.

5. **BOLD** concentrations exceed the generic MTCA Method B indoor air CUL.

Acronyms and Abbreviations:

-- = not analyzed or not applicable
< = not detected at or greater than the laboratory detection limit
CUL = cleanup level
ND = detections in the outdoor air samples, OA-Downwind and OA-Upwind, are greater than concentration detections in the ambient indoor air.
[ ] = duplicate sample results
Memo 18 = Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings, Implementation Memorandum No. 18
MTCA = Model Toxics Control Act
TPH = total petroleum hydrocarbons

Laboratory Qualifiers:

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

Figures

SOURCE: BASE MAP USGS 7.5. MIN. TOPO. SEATTLE NORTH, WA, 2017 AND SEATTLE SOUTH, WA, 2017

N

0 2,000' 4,000'

APPROXIMATE SCALE : 1 in. = 2,000 ft.

WASHINGTON

FORMER CHEVRON FACILITY #211577
631 QUEEN ANNE AVENUE NORTH
SEATTLE, WA 98109

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

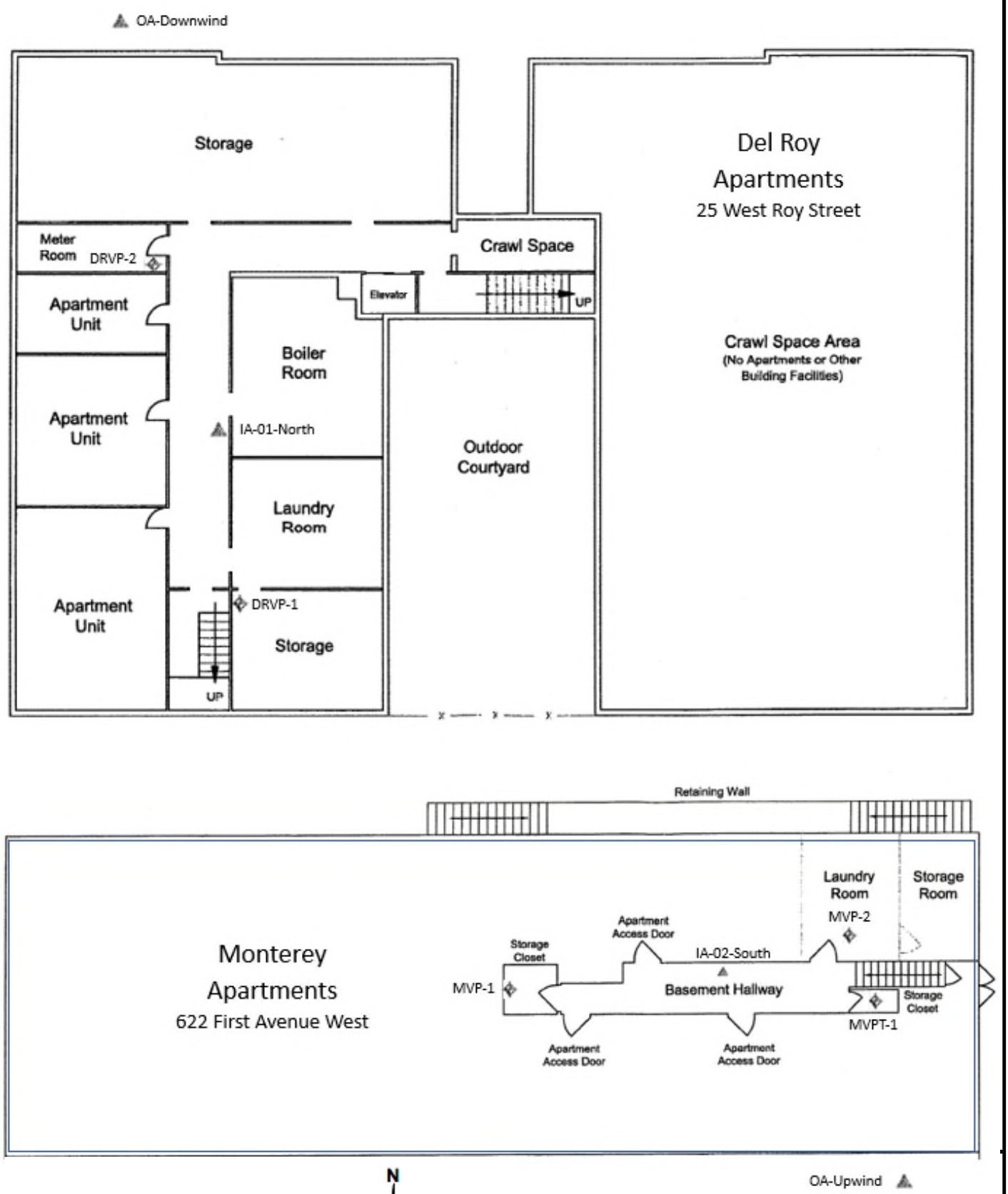
N

FORMER CHEVRON FACILITY #211577
631 QUEEN ANNE AVENUE NORTH
SEATTLE, WA 98109

SITE VICINITY

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2



VAPOR POINT AND AMBIENT AIR SAMPLE LOCATIONS

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3

Attachment A

Laboratory Reports

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 204096
Work Order Number: 2204370

April 28, 2022

Attention Michael Erdahl:

Fremont Analytical, Inc. received 10 sample(s) on 4/21/2022 for the analyses presented in the following report.

Major Gases by EPA Method 3C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *04/28/2022*

CLIENT: Friedman & Bruya
Project: 204096
Work Order: 2204370

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2204370-001	EB-1	04/21/2022 12:00 PM	04/21/2022 2:42 PM
2204370-002	DRVP-2	04/21/2022 12:06 PM	04/21/2022 2:42 PM
2204370-003	DRVP-1	04/21/2022 12:12 PM	04/21/2022 2:42 PM
2204370-004	MVP-1	04/21/2022 12:19 PM	04/21/2022 2:42 PM
2204370-005	DUP-1	04/21/2022 12:26 PM	04/21/2022 2:42 PM
2204370-006	MVP-1	04/21/2022 12:33 PM	04/21/2022 2:42 PM
2204370-007	IA-01-North	04/21/2022 12:40 PM	04/21/2022 2:42 PM
2204370-008	IA-02-South	04/21/2022 12:46 PM	04/21/2022 2:42 PM
2204370-009	OA- upwind	04/21/2022 12:54 PM	04/21/2022 2:42 PM
2204370-010	OA- downwind	04/21/2022 1:01 PM	04/21/2022 2:42 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2204370**
Date: **4/28/2022**

CLIENT: Friedman & Bruya
Project: 204096

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Major gases are reported as % ratio of the Major Gases analyzed (Carbon dioxide, Carbon Monoxide, Methane, Nitrogen, Oxygen and Hydrogen).

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS). The LCS is processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Note: Dilutions provided by the client have been incorporated into calculations.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2204370**
Date Reported: **4/28/2022**

CLIENT: Friedman & Bruya
Project: 204096

Lab ID: 2204370-001 **Collection Date:** 4/21/2022 12:00:00 PM
Client Sample ID: **EB-1** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	ND	0.110	D	%	2.2	4/22/2022 11:05:00 AM
Methane	ND	0.110	D	%	2.2	4/22/2022 11:05:00 AM
Oxygen	1.28	0.110	D	%	2.2	4/22/2022 11:05:00 AM

Lab ID: 2204370-002 **Collection Date:** 4/21/2022 12:06:00 PM
Client Sample ID: **DRVP-2** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	1.05	0.115	D	%	2.3	4/22/2022 11:40:00 AM
Methane	ND	0.115	D	%	2.3	4/22/2022 11:40:00 AM
Oxygen	25.4	0.115	D	%	2.3	4/22/2022 11:40:00 AM

Lab ID: 2204370-003 **Collection Date:** 4/21/2022 12:12:00 PM
Client Sample ID: **DRVP-1** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	0.124	0.100	D	%	2	4/22/2022 3:04:00 PM
Methane	ND	0.100	D	%	2	4/22/2022 3:04:00 PM
Oxygen	24.6	0.100	D	%	2	4/22/2022 3:04:00 PM

Analytical Report

Work Order: **2204370**
Date Reported: **4/28/2022**

CLIENT: Friedman & Bruya
Project: 204096

Lab ID: 2204370-004 **Collection Date:** 4/21/2022 12:19:00 PM
Client Sample ID: **MVP-1** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	0.162	0.115	D	%	2.3	4/22/2022 12:14:00 PM
Methane	ND	0.115	D	%	2.3	4/22/2022 12:14:00 PM
Oxygen	24.3	0.115	D	%	2.3	4/22/2022 12:14:00 PM

Lab ID: 2204370-005 **Collection Date:** 4/21/2022 12:26:00 PM
Client Sample ID: **DUP-1** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	0.158	0.105	D	%	2.1	4/22/2022 3:31:00 PM
Methane	ND	0.105	D	%	2.1	4/22/2022 3:31:00 PM
Oxygen	23.2	0.105	D	%	2.1	4/22/2022 3:31:00 PM

Lab ID: 2204370-006 **Collection Date:** 4/21/2022 12:33:00 PM
Client Sample ID: **MVP-1** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	0.166	0.110	D	%	2.2	4/22/2022 3:45:00 PM
Methane	ND	0.110	D	%	2.2	4/22/2022 3:45:00 PM
Oxygen	25.9	0.110	D	%	2.2	4/22/2022 3:45:00 PM

CLIENT: Friedman & Bruya
Project: 204096

Lab ID: 2204370-007 **Collection Date:** 4/21/2022 12:40:00 PM
Client Sample ID: **IA-01-North** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	ND	0.0950	D	%	1.9	4/22/2022 1:02:00 PM
Methane	ND	0.0950	D	%	1.9	4/22/2022 1:02:00 PM
Oxygen	25.1	0.0950	D	%	1.9	4/22/2022 1:02:00 PM

Lab ID: 2204370-008 **Collection Date:** 4/21/2022 12:46:00 PM
Client Sample ID: **IA-02-South** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	ND	0.120	D	%	2.4	4/22/2022 1:19:00 PM
Methane	ND	0.120	D	%	2.4	4/22/2022 1:19:00 PM
Oxygen	25.1	0.120	D	%	2.4	4/22/2022 1:19:00 PM

Lab ID: 2204370-009 **Collection Date:** 4/21/2022 12:54:00 PM
Client Sample ID: **OA- upwind** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	ND	0.100	D	%	2	4/22/2022 1:37:00 PM
Methane	ND	0.100	D	%	2	4/22/2022 1:37:00 PM
Oxygen	25.8	0.100	D	%	2	4/22/2022 1:37:00 PM

Analytical Report

Work Order: **2204370**
Date Reported: **4/28/2022**

CLIENT: Friedman & Bruya
Project: 204096

Lab ID: 2204370-010 **Collection Date:** 4/21/2022 1:01:00 PM
Client Sample ID: **OA- downwind** **Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R75053		Analyst: MS
Carbon Dioxide	ND	0.0950	D	%	1.9	4/22/2022 1:52:00 PM
Methane	ND	0.0950	D	%	1.9	4/22/2022 1:52:00 PM
Oxygen	25.3	0.0950	D	%	1.9	4/22/2022 1:52:00 PM

Work Order: 2204370
CLIENT: Friedman & Bruya
Project: 204096

QC SUMMARY REPORT

Major Gases by EPA Method 3C

Sample ID: **LCS-R75053** SampType: **LCS** Units: **%** Prep Date: **4/22/2022** RunNo: **75053**
Client ID: **LCSW** Batch ID: **R75053** Analysis Date: **4/22/2022** SeqNo: **1539702**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	100	0.0500	100.0	0	100	70	130				
Methane	100	0.0500	100.0	0	100	70	130				
Oxygen	100	0.0500	100.0	0	100	70	130				

Sample ID: **2204370-007AREP** SampType: **REP** Units: **%** Prep Date: **4/22/2022** RunNo: **75053**
Client ID: **IA-01-North** Batch ID: **R75053** Analysis Date: **4/22/2022** SeqNo: **1539698**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	ND	0.0950						0		30	D
Methane	ND	0.0950						0		30	D
Oxygen	25.3	0.0950						25.09	0.644	30	D

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2204370**
Logged by:	**Gabrielle Coeuille**	Date Received:	**4/21/2022 2:42:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 2204370

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.: 204096

PO #: C-121

REMARKS: Please Email Results

TURNAROUND TIME
- ☑ Standard TAT
- ☐ RUSH _____

Rush charges authorized by: _____

SAMPLE DISPOSAL
- ☑ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Fixed gasses CO2, CH4, O2						Notes
EB-1		4/21	12:00	Tedlar	1				X						DILUTION FACTOR
DRVP-2			11:06		1				X						2.2
DRVP-1			12:12		1				X						2.3
MVP-1			12:19		1				X						2.0
DUP-1			12:26		1				X						2.3
MVP-1			12:33		1				X						2.1
IA-01-North			12:40		1				X						2.2
IA-02-South			12:46		1				X						1.9
OA-upwind			12:54		1				X						2.4
OA-downwind			13:01		1				X						2.0
															1.9
															4/21

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		~~Michael Erdahl~~ ERIC YOUNG	Friedman & Bruya	4/21	13:15
Received by:	Russell Jones	Elisabeth Saucedo	FAT	4/21	14:42
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 8, 2022

Ada Hamilton, Project Manager
Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98101

Dear Ms Hamilton:

Included are the results from the testing of material submitted on November 18, 2022 from the Chevron 211577 30064319, F&BI 211281 project. There are 14 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ACD1208R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 18, 2022 by Friedman & Bruya, Inc. from the Arcadis Chevron 211577 30064319, F&BI 211281 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Arcadis
211281 -01	OA-Upwind
211281 -02	OA-Downwind
211281 -03	IA-01-North
211281 -04	IA-02-South

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

The samples were sent to Fremont Analytical for major gasses analysis. The report is enclosed.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	OA-Upwind	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-01
Date Analyzed:	11/22/22	Data File:	112215.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	120
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	OA-Downwind	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-02
Date Analyzed:	11/22/22	Data File:	112214.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-01-North	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-03
Date Analyzed:	11/22/22	Data File:	112213.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	65
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-02-South	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-04
Date Analyzed:	11/22/22	Data File:	112212.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	81
APH EC9-12 aliphatics	76
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Arcadis
Date Received:	Not Applicable	Project:	Chevron 211577 30064319
Date Collected:	Not Applicable	Lab ID:	02-2752 MB
Date Analyzed:	11/22/22	Data File:	112211.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

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

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	OA-Upwind	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-01
Date Analyzed:	11/22/22	Data File:	112215.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Benzene	1.8	0.58
Toluene	19	5.1
Ethylbenzene	3.6	0.84
m,p-Xylene	13	3.1
o-Xylene	4.9	1.1
Naphthalene	0.26	0.050

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	OA-Downwind	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-02
Date Analyzed:	11/22/22	Data File:	112214.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Benzene	1.1	0.33
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	1.1	0.26
o-Xylene	<0.43	<0.1
Naphthalene	<0.047 j	<0.0089 j

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-01-North	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-03
Date Analyzed:	11/22/22	Data File:	112213.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Benzene	0.54	0.17
Toluene	<19	<5
Ethylbenzene	1.7	0.39
m,p-Xylene	5.8	1.3
o-Xylene	1.6	0.36
Naphthalene	0.073 j	0.014 j

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-02-South	Client:	Arcadis
Date Received:	11/18/22	Project:	Chevron 211577 30064319
Date Collected:	11/17/22	Lab ID:	211281-04
Date Analyzed:	11/22/22	Data File:	112212.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Benzene	0.56	0.18
Toluene	<19	<5
Ethylbenzene	1.5	0.34
m,p-Xylene	5.1	1.2
o-Xylene	1.4	0.32
Naphthalene	0.16 j	0.031 j

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Arcadis
Date Received:	Not Applicable	Project:	Chevron 211577 30064319
Date Collected:	Not Applicable	Lab ID:	02-2752 MB
Date Analyzed:	11/22/22	Data File:	112211.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	Concentration ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.047 j	<0.0089 j

Date of Report: 12/08/22
Date Received: 11/18/22
Project: Chevron 211577 30064319, F&BI 211281

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 211269-01 1/5.8 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	<430	<430	nm
APH EC9-12 aliphatics	ug/m3	440	470	7
APH EC9-10 aromatics	ug/m3	<140	<140	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	82	70-130
APH EC9-12 aliphatics	ug/m3	67	108	70-130
APH EC9-10 aromatics	ug/m3	67	103	70-130

Date of Report: 12/08/22
Date Received: 11/18/22
Project: Chevron 211577 30064319, F&BI 211281

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

Laboratory Code: 211269-01 1/5.8 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Benzene	ug/m3	<1.9	<1.9	nm
Toluene	ug/m3	<110	<110	nm
Ethylbenzene	ug/m3	2.5	2.5	0
m,p-Xylene	ug/m3	11	11	0
o-Xylene	ug/m3	4.0	4.1	2
Naphthalene	ug/m3	<1.5	<1.5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	98	70-130
Toluene	ug/m3	51	99	70-130
Ethylbenzene	ug/m3	59	97	70-130
m,p-Xylene	ug/m3	120	97	70-130
o-Xylene	ug/m3	59	100	70-130
Naphthalene	ug/m3	71	77	70-130

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.

21128|

SAMPLE CHAIN OF CUSTODY

11/18/22

Report To Ada Hamilton
Company Arcadis
Address 1100 Olive Way Ste 800
City, State, ZIP Seattle, WA 98101
Phone — Email Ada.Hamilton@Arcadis.com

SAMPLERS (signature)

PROJECT NAME & ADDRESS
Chevron ZN577
631 N Queen Anne Ave

PO # 30064319

NOTES:

INVOICE TO

Page # 1 of 1

TURNAROUND TIME
Standard X
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Default:Clean following final report delivery
Hold (Fee may

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	ASTM-1946	CH4,CO2,H2	Notes
OA-Upwind	01	18562	7845	(IA) / SG	11/17/22	-29	8:23				X		X		X		
OA-Downwind	02	18575	6607	(IA) / SG		-30	8:30										
IA-01-North	03	18573	7851	(IA) / SG		-30	8:25										
IA-02-South	04	18565	5347	(IA) / SG		-30	8:28										
				IA / SG													
				IA / SG													
				IA / SG													
				IA / SG													

Friedman & Bruya, Inc.
5500 4th Avenue South
Seattle, WA 98108
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COCTO-15.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Trevor Bryant	Arcadis	11/18/22	11:00
Received by:	ANH PHAN	F&B	11/18/22	11:00
Relinquished by:				
Received by:		Samples received at 19 °C		

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 211281
Work Order Number: 2211579

December 06, 2022

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 11/29/2022 for the analyses presented in the following report.

Major Gases by EPA Method 3C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *12/06/2022*

CLIENT: Friedman & Bruya
Project: 211281
Work Order: 2211579

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2211579-001	OA-Upwind	11/29/2022 10:53 AM	11/29/2022 1:56 PM
2211579-002	OA-Downwind	11/29/2022 10:53 AM	11/29/2022 1:56 PM
2211579-003	IA-01-North	11/29/2022 10:53 AM	11/29/2022 1:56 PM
2211579-004	IA-02-South	11/29/2022 10:53 AM	11/29/2022 1:56 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2211579**
Date: **12/6/2022**

CLIENT: Friedman & Bruya
Project: 211281

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Major gases are reported as % ratio of the Major Gases analyzed (Carbon dioxide, Carbon Monoxide, Methane, Nitrogen, Oxygen and Hydrogen).

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS). The LCS is processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Note: The estimated BTU calculation is based off of the methane result.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2211579**
Date Reported: **12/6/2022**

CLIENT: Friedman & Bruya
Project: 211281

Lab ID: 2211579-001 **Collection Date:** 11/29/2022 10:53:00 AM
Client Sample ID: **OA-Upwind** **Matrix:** SVE

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R80298		Analyst: SG
Carbon Dioxide	ND	0.0500		%	1	11/30/2022 5:39:00 PM
Carbon Monoxide	ND	0.0500		%	1	11/30/2022 5:39:00 PM
Methane	ND	0.0500		%	1	11/30/2022 5:39:00 PM
Nitrogen	84.4	0.0500		%	1	11/30/2022 5:39:00 PM
Oxygen	15.6	0.0500		%	1	11/30/2022 5:39:00 PM
Hydrogen	ND	0.0500		%	1	11/30/2022 5:39:00 PM
BTU	ND			BTU/ft^3	1	11/30/2022 5:39:00 PM

Lab ID: 2211579-002 **Collection Date:** 11/29/2022 10:53:00 AM
Client Sample ID: **OA-Downwind** **Matrix:** SVE

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R80299		Analyst: SG
Carbon Dioxide	ND	0.0500		%	1	12/1/2022 3:19:00 PM
Carbon Monoxide	ND	0.0500		%	1	12/1/2022 3:19:00 PM
Methane	ND	0.0500		%	1	12/1/2022 3:19:00 PM
Nitrogen	84.4	0.0500		%	1	12/1/2022 3:19:00 PM
Oxygen	15.6	0.0500		%	1	12/1/2022 3:19:00 PM
Hydrogen	ND	0.0500		%	1	12/1/2022 3:19:00 PM
BTU	ND			BTU/ft^3	1	12/1/2022 3:19:00 PM

CLIENT: Friedman & Bruya
Project: 211281

Lab ID: 2211579-003 **Collection Date:** 11/29/2022 10:53:00 AM
Client Sample ID: **IA-01-North** **Matrix:** SVE

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R80299		Analyst: SG
Carbon Dioxide	ND	0.0500		%	1	12/1/2022 3:49:00 PM
Carbon Monoxide	ND	0.0500		%	1	12/1/2022 3:49:00 PM
Methane	ND	0.0500		%	1	12/1/2022 3:49:00 PM
Nitrogen	84.6	0.0500		%	1	12/1/2022 3:49:00 PM
Oxygen	15.3	0.0500		%	1	12/1/2022 3:49:00 PM
Hydrogen	ND	0.0500		%	1	12/1/2022 3:49:00 PM
BTU	ND			BTU/ft^3	1	12/1/2022 3:49:00 PM

Lab ID: 2211579-004 **Collection Date:** 11/29/2022 10:53:00 AM
Client Sample ID: **IA-02-South** **Matrix:** SVE

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Major Gases by EPA Method 3C				Batch ID: R80299		Analyst: SG
Carbon Dioxide	ND	0.0500		%	1	12/1/2022 4:08:00 PM
Carbon Monoxide	ND	0.0500		%	1	12/1/2022 4:08:00 PM
Methane	ND	0.0500		%	1	12/1/2022 4:08:00 PM
Nitrogen	84.0	0.0500		%	1	12/1/2022 4:08:00 PM
Oxygen	15.9	0.0500		%	1	12/1/2022 4:08:00 PM
Hydrogen	ND	0.0500		%	1	12/1/2022 4:08:00 PM
BTU	ND			BTU/ft^3	1	12/1/2022 4:08:00 PM

Work Order: 2211579
CLIENT: Friedman & Bruya
Project: 211281

QC SUMMARY REPORT

Major Gases by EPA Method 3C

Sample ID: **LCS-R80298** SampType: **LCS** Units: **%** Prep Date: **11/30/2022** RunNo: **80298**
Client ID: **LCSW** Batch ID: **R80298** Analysis Date: **11/30/2022** SeqNo: **1658919**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	99.7	0.0500	100.0	0	99.7	70	130				
Carbon Monoxide	99.6	0.0500	100.0	0	99.6	70	130				
Methane	99.6	0.0500	100.0	0	99.6	70	130				
Nitrogen	100	0.0500	100.0	0	100	70	130				
Oxygen	100	0.0500	100.0	0	100	70	130				
Hydrogen	99.5	0.0500	100.0	0	99.5	70	130				

Sample ID: **2211549-001AREP** SampType: **REP** Units: **%** Prep Date: **11/30/2022** RunNo: **80298**
Client ID: **BATCH** Batch ID: **R80298** Analysis Date: **11/30/2022** SeqNo: **1658913**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	38.4	0.0500						38.43	0.00644	30	
Carbon Monoxide	ND	0.0500						0		30	
Methane	59.9	0.0500						60.00	0.124	30	
Nitrogen	1.26	0.0500						1.194	5.45	30	
Oxygen	0.382	0.0500						0.3716	2.64	30	
Hydrogen	ND	0.0500						0		30	
BTU	606							606.8	0.123		

Sample ID: **LCS-R80299** SampType: **LCS** Units: **%** Prep Date: **12/1/2022** RunNo: **80299**
Client ID: **LCSW** Batch ID: **R80299** Analysis Date: **12/1/2022** SeqNo: **1658940**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	100	0.0500	100.0	0	100	70	130				
Carbon Monoxide	101	0.0500	100.0	0	101	70	130				
Methane	100	0.0500	100.0	0	100	70	130				
Nitrogen	102	0.0500	100.0	0	102	70	130				
Oxygen	99.8	0.0500	100.0	0	99.8	70	130				
Hydrogen	99.9	0.0500	100.0	0	99.9	70	130				

Work Order: 2211579
CLIENT: Friedman & Bruya
Project: 211281

QC SUMMARY REPORT

Major Gases by EPA Method 3C

Sample ID: **2211579-002AREP** SampType: **REP** Units: **%** Prep Date: **12/1/2022** RunNo: **80299**
Client ID: **OA-Downwind** Batch ID: **R80299** Analysis Date: **12/1/2022** SeqNo: **1658931**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide	ND	0.0500						0		30	
Carbon Monoxide	ND	0.0500						0		30	
Methane	ND	0.0500						0		30	
Nitrogen	84.4	0.0500						84.38	0.0675	30	
Oxygen	15.5	0.0500						15.59	0.359	30	
Hydrogen	ND	0.0500						0		30	
BTU	ND							0	0		

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2211579
Logged by:	Clare Griggs	Date Received:	11/29/2022 1:56:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		Air Samples		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

221579

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
211281	D-28

REMARKS

Please Email Results

TURNAROUND TIME

X Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Major Gases 3C							Notes
																Dilution
OA-Upwind		1053	11/28/12	Air Vapor	1				X							1.51
OA-Downwind					1				X							1.56
IA-01-North					1				X							1.59
IA-02-South					1				X							1.51

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	11/29/12	1100 AM.
Received by:	Katherine Porter	Katherine Porter	FAI	11/29/12	13:56
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

May 3, 2022

Ada Hamilton, Project Manager
Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98101

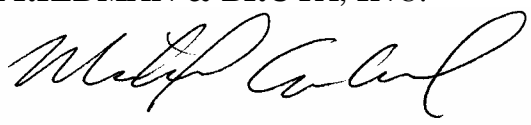
Dear Ms Hamilton:

Included are the results from the testing of material submitted on April 7, 2022 from the Chevron 211577 30064319, F&BI 204096 project. There are 26 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: ada.hamilton@arcadis.com
ACD0503R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 7, 2022 by Friedman & Bruya, Inc. from the Arcadis Chevron 211577 30064319, F&BI 204096 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Arcadis
204096 -01	EB-1
204096 -02	DRVP-2
204096 -03	DRVP-1
204096 -04	MVP-2
204096 -05	DUP-1
204096 -06	MVP-1
204096 -07	IA-01-North
204096 -08	IA-02-South
204096 -09	OA-Upwind
204096 -10	OA-Downwind

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

The samples were sent to Fremont Analytical for fixed gasses analysis. The report is enclosed.

Naphthalene was detected in the TO-15 method blank at a level greater than one tenth the concentration detected in samples IA-01-North, IA-02-South, OA-Upwind, and OA-Downwind. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	EB-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-01 1/5.7
Date Analyzed:	04/20/22	Data File:	041927.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<430
APH EC9-12 aliphatics	190
APH EC9-10 aromatics	<140

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	DRVP-2	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-02 1/6.1
Date Analyzed:	04/20/22	Data File:	041926.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	480
APH EC9-12 aliphatics	550
APH EC9-10 aromatics	<150

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	DRVP-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-03 1/5.7
Date Analyzed:	04/20/22	Data File:	041925.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<430
APH EC9-12 aliphatics	290
APH EC9-10 aromatics	<140

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	MVP-2	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-04 1/6.4
Date Analyzed:	04/20/22	Data File:	041924.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	94	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,100
APH EC9-12 aliphatics	750
APH EC9-10 aromatics	<160

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	DUP-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-05 1/5.8
Date Analyzed:	04/20/22	Data File:	041923.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	990
APH EC9-12 aliphatics	1,000
APH EC9-10 aromatics	<140

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	MVP-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-06 1/6.1
Date Analyzed:	04/20/22	Data File:	041922.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<460
APH EC9-12 aliphatics	570
APH EC9-10 aromatics	<150

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-01-North	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-07
Date Analyzed:	04/20/22	Data File:	041921.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	IA-02-South	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-08
Date Analyzed:	04/20/22	Data File:	041920.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	26
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	OA-Upwind	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-09
Date Analyzed:	04/20/22	Data File:	041919.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	79
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	OA-Downwind	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/07/22	Lab ID:	204096-10
Date Analyzed:	04/20/22	Data File:	041918.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	81
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Arcadis
Date Received:	Not Applicable	Project:	Chevron 211577 30064319
Date Collected:	Not Applicable	Lab ID:	02-0936 MB
Date Analyzed:	04/19/22	Data File:	041913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	EB-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-01 1/5.7
Date Analyzed:	04/20/22	Data File:	041927.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.8	<0.57
Toluene	<110	<28
Ethylbenzene	<2.5	<0.57
m,p-Xylene	<5	<1.1
o-Xylene	<2.5	<0.57
Naphthalene	<1.5	<0.28

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	DRVP-2	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-02 1/6.1
Date Analyzed:	04/20/22	Data File:	041926.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.9	<0.61
Toluene	<110	<30
Ethylbenzene	<2.6	<0.61
m,p-Xylene	<5.3	<1.2
o-Xylene	<2.6	<0.61
Naphthalene	<1.6	<0.3

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	DRVP-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-03 1/5.7
Date Analyzed:	04/20/22	Data File:	041925.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.8	<0.57
Toluene	<110	<28
Ethylbenzene	<2.5	<0.57
m,p-Xylene	<5	<1.1
o-Xylene	<2.5	<0.57
Naphthalene	<1.5	<0.28

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	MVP-2	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-04 1/6.4
Date Analyzed:	04/20/22	Data File:	041924.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	4.3	1.3
Toluene	<120	<32
Ethylbenzene	<2.8	<0.64
m,p-Xylene	<5.6	<1.3
o-Xylene	<2.8	<0.64
Naphthalene	<1.7	<0.32

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	DUP-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-05 1/5.8
Date Analyzed:	04/20/22	Data File:	041923.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	4.6	1.4
Toluene	<110	<29
Ethylbenzene	<2.5	<0.58
m,p-Xylene	5.1	1.2
o-Xylene	<2.5	<0.58
Naphthalene	<1.5	<0.29

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	MVP-1	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-06 1/6.1
Date Analyzed:	04/20/22	Data File:	041922.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1.9	<0.61
Toluene	<110	<30
Ethylbenzene	<2.6	<0.61
m,p-Xylene	<5.3	<1.2
o-Xylene	<2.6	<0.61
Naphthalene	<1.6	<0.3

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-01-North	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-07
Date Analyzed:	04/20/22	Data File:	041921.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.37	0.11
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	1.0	0.23
o-Xylene	<0.43	<0.1
Naphthalene	0.13 fb	0.024 fb

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	IA-02-South	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-08
Date Analyzed:	04/20/22	Data File:	041920.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.37	0.11
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	0.15 fb	0.029 fb

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	OA-Upwind	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-09
Date Analyzed:	04/20/22	Data File:	041919.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	0.32	0.10
Toluene	<19	<5
Ethylbenzene	0.49	0.11
m,p-Xylene	1.7	0.39
o-Xylene	0.60	0.14
Naphthalene	0.13 fb	0.024 fb

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	OA-Downwind	Client:	Arcadis
Date Received:	04/07/22	Project:	Chevron 211577 30064319
Date Collected:	04/06/22	Lab ID:	204096-10
Date Analyzed:	04/20/22	Data File:	041918.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	91	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	0.12 fb	0.023 fb

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Arcadis
Date Received:	Not Applicable	Project:	Chevron 211577 30064319
Date Collected:	Not Applicable	Lab ID:	02-0936 MB
Date Analyzed:	04/19/22	Data File:	041913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	0.099 lc j	0.019 lc j

Date of Report: 05/03/22
Date Received: 04/07/22
Project: Chevron 211577 30064319, F&BI 204096

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 204096-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	<430	<430	nm
APH EC9-12 aliphatics	ug/m3	190	200	5
APH EC9-10 aromatics	ug/m3	<140	<140	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	87	70-130
APH EC9-12 aliphatics	ug/m3	67	121	70-130
APH EC9-10 aromatics	ug/m3	67	95	70-130

Date of Report: 05/03/22
Date Received: 04/07/22
Project: Chevron 211577 30064319, F&BI 204096

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

Laboratory Code: 204096-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Benzene	ug/m3	<1.8	<1.8	nm
Toluene	ug/m3	<110	<110	nm
Ethylbenzene	ug/m3	<2.5	<2.5	nm
m,p-Xylene	ug/m3	<5	<5	nm
o-Xylene	ug/m3	<2.5	<2.5	nm
Naphthalene	ug/m3	<1.5	<1.5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	96	70-130
Toluene	ug/m3	51	101	70-130
Ethylbenzene	ug/m3	59	88	70-130
m,p-Xylene	ug/m3	120	93	70-130
o-Xylene	ug/m3	59	94	70-130
Naphthalene	ug/m3	71	95	70-130

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.

2040916

SAMPLE CHAIN OF CUSTODY

04-07-22

Page # 1 of 2

Report To Ada Hamilton
Company Arcadis
Address 1100 Olive Way Suite 800
City, State, ZIP Seattle, WA
Phone 2063213783 Email Ada.Hamilton@arcadis.com

SAMPLERS (signature) Shad Brooks

PROJECT NAME & ADDRESS: Chevron 211577, 622 1st Ave W, Seattle, WA

PO # 30049319

NOTES:

INVOICE TO

TURNAROUND TIME
☒ 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 Naphthalene	M4 - APH	Helium	Fixed gasses ASTM-1946 (CH4, O2, CO2)	Notes
EB-1	01	41181	230	IA / (SG)	4/7/22	-30	1224	-5	1228		X	X	X		X	
DRVP-2	02	8255	203	IA / (SG)	4/7/22	-29	1332	-5	1338		↓	↓	↓		↓	
DRVP-1	03	3390	220	IA / (SG)	4/7/22	-30	1418	-5	1424		↓	↓	↓		↓	
MVP-2	04	8527	228	IA / (SG)	4/7/22	-29	1454	-5	1502		↓	↓	↓		↓	
DUP-1	05	3251	201	IA / (SG)	4/7/22	-30	—	-5	—		↓	↓	↓		↓	
MVP-1	06	3249	206	IA / (SG)	4/7/22	-29	1523	-5	1529		↓	↓	↓		↓	
IA-01-North	07	37083	0784	(IA) / SG	4/6/22	-29.5	0936	-6.5	1736		↓	↓	↓		↓	
IA-02-South	08	40719	06605	(IA) / SG	4/6/22	-30	0947	-10	1747		↓	↓	↓		↓	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Shad Brooks	Shad Brooks	Arcadis	4/7/22	1630
Received by:	Eric Power	F+B	4/7/22	1630
Relinquished by:				
Received by:				

Samples received at 17 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

204096

SAMPLE CHAIN OF CUSTODY 04-07-22

Report To Adri Hamilton
Company Arcadis
Address 1100 Olive Way Ste 800
City, State, ZIP Seattle, WA
Phone 206 321 3782 Email Adri.Hamilton@arcadis.com

SAMPLERS (signature) [signature]

PROJECT NAME & ADDRESS: Chevron 211577, 622 1st Ave W Seattle, WA
PO #: 30264519
NOTES:
INVOICE TO

TURNAROUND TIME
☒ 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~~ Naphthalene	MA - APH	Helium	Fixed Gasses ASTM-1946 (CH4, O2, CO2)	Notes
OA - Upwind	09	35331	06608	(IA) / SG	4/6/22	-30	0957	-8	1757		X	X	X		X	
OA - downwind	10	40704	07871	(IA) / SG	4/6/22	-29	0941	-7	1741		X	X	X		X	
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Shad Brooks	Arcadis	4/7/22	1630
Received by: [signature]	Eric Young	F&BI	4/7/22	1630
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

Samples received at 17 °C

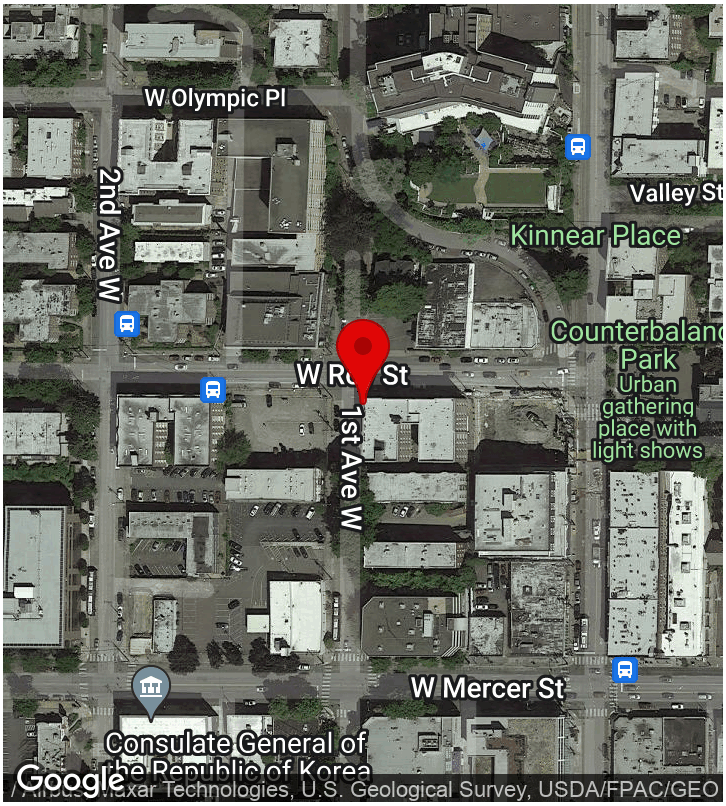
Attachment B

Building Survey Field Notes

FieldNow - DSCP Building Survey Form (Tier 1)

Trevor Bryant , April 6, 2022, Chevron Environmental Management Company

4/6/2022, 4:19:02 PM UTC



CREATED

4/6/2022, 4:02:27 PM UTC
by Trevor Bryant

UPDATED

4/6/2022, 4:19:02 PM UTC
by Trevor Bryant

LOCATION

47.625608, -122.357954

ASSIGNED TO

Trevor Bryant

Select Project Number	Chevron Environmental Management Company, 30064319, COP5_West_211577_WA_Seattle
Client	Chevron Environmental Management Company
Project Number	30064319
Preparer's Name	Trevor Bryant
Date	April 6, 2022
Time	09:02
Preparer's Affiliation	--
Phone Number	--
Purpose of Investigation	--
Building Address/Number/ID	--

Occupant

Occupant Interviewed	No

Owner or Landlord

Owner Interviewed	No
Who provided answers to this questionnaire?	--
Given access to building?	Yes

Building Characteristics

Type of Building	Residential
If Multiple Units, how many?	N/A
Does it include residences?	Yes
How many residences?	50
Number of floors	4
Number of rooms	40
Building age (in years)	N/A
Is the building insulated?	Yes
How air-tight?	Unknown

Basement and Construction Characteristics (select all that apply)

Above grade construction	concrete
Basement type	Full
Basement floor	Concrete

Concrete floor	Sealed
Concrete floor sealed with	Concrete seal
Foundation walls	Unknown
Basement moisture	Damp
Basement finish	Finished
Sump present?	No
Perimeter drainage system present?	No
Basement/lowest level depth below grade (feet)	3
Identify potential soil vapor entry points and size (e.g. cracks, utility ports, drains)	N/A
Are the basement walls or floor sealed with waterproof paint or epoxy coatings?	Yes

Please provide representative photos

Crack Measurements and PID Results

Heating, Ventilating, and Air Conditioning

Type of heating system(s) in building (select all that apply)	Unknown, Electric baseboard
Primary type of fuel used	Unknown
Domestic hot water tank fueled by	N/A
Boiler/furnace location	Basement
Air Conditioning	None
Are there air distribution ducts present?	No
Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.	N/A

Occupancy

Is basement/lowest level occupied?	Full-time
Number of hours basement/lowest level occupied per day	24
General Use of Each Floor (e.g., family room, bedroom, laundry, workshop, storage)	--
Basement Use	Laundry, living storage
First Floor Use	Living
Second Floor Use	living
Third Floor Use	Living
Fourth Floor Use	living

Factors That May Influence Indoor Air Quality

Is there an attached garage?	No
Does the garage have a separate heating unit?	N/A
Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, ATV, car)?	No
Has the building ever had a fire?	N/A
Is a kerosene or unvented gas space heater present?	N/A
Is there a workshop or hobby/craft area?	No
Is there smoking in the building?	No
Have cleaning products been used recently?	N/A
Have cosmetic products been used recently?	N/A
Has painting/staining been done in the last 6 months?	N/A
Is there new carpet, drapes or other textiles?	N/A
Have air fresheners been used recently?	N/A
Is there a kitchen exhaust fan?	N/A
Is there a bathroom exhaust fan?	N/A
Is there a clothes dryer?	Yes
Is the clothes dryer vented outside?	Yes
Has there been a pesticide application?	N/A
Are there odors in the building?	No
Do any of the building occupants use solvents (e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist) at work?	N/A
Do any of the building occupants regularly use or work at a dry-cleaning service?	Unknown
Is there a radon mitigation system for the building/structure?	N/A
Is there a vapor intrusion mitigation system for the building/structure?	No
Outside Contaminant Sources	--
Contaminated site within 1000-foot radius?	Yes
Specify contaminated site(s)	Gas station

Is building within a current contaminant plume?	Yes
Specify contaminant plume detail	Petroleum impacted soil and gw
Other stationary sources nearby (e.g., gas stations, emission stacks, etc.)	N/A
Heavy vehicle traffic nearby (or other mobile sources)	N/A
Other factors influencing indoor air	N/A

Water and Sewage

Water Supply	Public Water
Sewage Disposal	Public Sewer

Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the building survey?	Yes
Describe the general weather conditions	Sunny cold

General Observations

Please add any other general observations	N/A

Sample Locations Map

Please include a map showing suggested sample locations for the future, if necessary. Include on map any locations where sampling cannot be completed due to owner request or other issue.	--

Sample Locations Map

--

Floor Plans

Basement Floor Plan

--

First Floor Plan

--

Outdoor Plot

Outdoor Plot Sketch

--

Product Inventory Form

Make and model of field instrument used	Ppb Rae 3000
List specific products found in the residence or area that have the potential to affect indoor air quality (e.g., gasoline or kerosene storage cans, glues, paints, cleaning solvents/products, polishes/waxes, new furniture/ carpet, nail polish/hairspray/cologne).	--

Product Inventory Form Details (2 Items)

Product Inventory Form Details - 1. Household Cleaners (non-solvent)

Potential Source	Household Cleaners (non-solvent)
Location of Source	Meter room
Size and Condition of Source	Spray bottle
Chemical Ingredients	N/A
Field Instrument Reading	159
Field Instrument Units	ppb

Photos of Potential Source

Product Inventory Form Details - 2. Paints/Thinners/Strippers

Potential Source	Paints/Thinners/Strippers
Location of Source	Storage room
Size and Condition of Source	Sealed 5 gal buckets
Chemical Ingredients	N/A
Field Instrument Reading	155

Field Instrument Units	ppb

Photos of Potential Source