SOIL VAPOUR SAMPLING PROGRAM – MAY 2023
FORMER SEARS FUEL SITE AND ADJACENT HOUNSFIELD HEIGHTS AREA
1620 – 14th AVENUE NW
CALGARY, ALBERTA

SUNCOR OUTLET NO. 9445

ALBERTA ENVIRONMENT AND PROTECTED AREAS (AEPA) FILE NO. 00141934

Prepared for:
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September 7, 2023

SUMMARY

Site	1620 - 14th Avenue NW; the Mall Property; 14th Avenue NW; Lions Park; and the adjacent Hounsfield Heights community
Type of Facility	Former Sears Fuel Site
Applicable Soil Vapour Guidelines	Calculated soil vapour quality guidelines protective of indoor air quality; fine-grained and coarse-grained soils; residential and commercial land use; for various depths.
Date(s) of Soil Vapour Sampling	**May 8, 2023 to May 11, 2023 and July 27, 2023**
Soil Vapour Wells with Soil Vapour Samples that Exceeded Guidelines:	**Semi-Annual Soil Vapour Program:** • None of the wells sampled exceed the calculated guidelines or the 90% trigger threshold. **Risk Management and Contingency Plan:** • None of the wells sampled exceed the calculated guidelines or the 90% trigger threshold.
Changes to Program and Future Work	• Based on a review of the soil vapour analytical results, no changes to the soil vapour program are proposed at this time. • The next soil vapour sampling event is scheduled for August and September 2023.

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1.0 INTRODUCTION

Parsons Inc. (Parsons) was retained by Suncor Energy Products Partnership (Suncor) to perform soil vapour sampling as a part of ongoing risk management related to the Former Sears Fuel Site located at 1620 - 14th Avenue NW; also including the Mall Property; 14th Avenue NW; Lions Park; and the adjacent Hounsfield Heights community (collectively referred to as "the site").

1.1 PURPOSE

Soil vapour sampling was conducted from May 8 to May 11, 2023 and on July 27, 2023 in accordance with the Risk Management and Contingency (RM&C) Plan, which was developed to assess the indoor vapour inhalation pathway. The RM&C plan includes the sampling of specific wells four times a year, and is implemented if concentrations in a well exceed 90% of the guidelines during a specific sampling event, which was used as a trigger threshold. This increased sampling frequency was to continue until five consecutive sampling events indicated concentrations less than 90% of the guidelines, or unless otherwise stipulated by the regulator (Clifton, 2016).

1.2 SCOPE OF WORK

The following site activities were conducted on behalf of Suncor in May and July of 2023:

- Collect soil vapour samples as a part of the RM&C Plan;
- Collect soil vapour samples from the wells that could not be sampled during the January semi-annual soil vapour program;
- Repair selected wells which were previously damaged or inaccessible, where possible; and,
- Prepare a report that describes the field activities and the results of the assessment.

The site location map, also showing municipal zoning, is presented as Drawing No. 1. The grade elevations for the area are shown on Drawing No. 2.

2.0 SITE ACTIVITIES

From May 8 through May 11, 2023 and on July 27, 2023, soil vapour samples were collected from 21 soil vapour monitoring wells, as presented in Table 1. Soil vapour wells that were sampled as part of the RM&C plan included SV32, SV321B, SV322, SV323, SV401, SV402, SV403, SV404, and

SV501. The remainder of the wells sampled were wells that could not be sampled during the January semi-annual monitoring program. Soil vapour wells SV321B and SV322 were inaccessible during the May 2023 sampling event, and instead were sampled on July 27, 2023. Some of the wells could not be sampled on either occasion due to well damages (SV07, SV08, SV20, SV27, and SV500).

Soil Vapour Monitoring Well Locations:	Drawing No. 3: It should be noted that soil vapour wells located on private property within the residential area are not shown on the drawings.
Sampling/Investigation Date(s):	May 8, 2023 to May 11, 2023 and July 27, 2023
Soil Vapour samples analyzed for:	☒Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) ☒Aliphatic and Aromatic Fractions ☒1,2-Dichloroethane (1,2-DCA) ☒Naphthalene ☐Matrix Gases (O_2, N_2, CO_2, and CH_4)
Laboratory:	Bureau Veritas
Field procedures shown in:	Appendix A: The field procedures were conducted in accordance with generally accepted industry practices.
Integrity and Leak Testing Results:	Appendix B
Purging and Sampling Details:	Appendix B

3.0 GUIDELINES REFERENCED

Soil vapour guidelines developed by Intrinsik have been referenced (Intrinsik 2022) and are summarized in Appendix C. These guidelines were developed following the Canadian Council of Minister of the Environment (CCME) protocol (CCME, 2014) and Alberta Environment and Parks (AEP, 2022a,b) guidance. Soil vapour concentrations were also compared to 90% of the calculated soil vapour guidelines, which was used as a trigger threshold to increase the sample frequency as per the RM&C Plan.

4.0 RESULTS OF THE INVESTIGATION

4.1 SOIL VAPOUR ANALYTICAL RESULTS

BTEX, Aliphatic and Aromatic Fractions, 1,2-DCA, and Naphthalene:	As presented in Table 1, none of the soil vapour samples collected and analyzed from the May or July 2023 sampling events exceeded the applicable guidelines or the 90% trigger threshold.
Spatial Summary of Analytical Results:	Presented as Drawing No. 4.
Historical Analytical Results:	Results from 2021 to July 2023 are presented in Appendix D.
Laboratory Certificates:	Presented in Appendix E.

4.2 QUALITY ASSURANCE AND QUALITY CONTROL (QAQC) RESULTS

Laboratory QAQC:	Appendix E	No laboratory QAQC issues were identified that call into question the reliability of the laboratory data reported.
Field QAQC:	Appendix E Table E-1	Three field duplicate soil vapour samples were submitted. No field QAQC issues were identified that call into question the reliability of the lab data reported.
QAQC Summary:	Appendix E	No QAQC issues were identified that would affect the overall conclusions of the assessment work presented in this report.

5.0 SUMMARY

From May 8 through May 11, 2023, and July 27, 2023, soil vapour samples were collected from 21 soil vapour monitoring wells, as part of the RM&C Plan, in addition to wells that could not be sampled during the January event. Soil vapour guidelines developed by Intrinsik have been referenced (Intrinsik 2022); soil vapour concentrations were also compared to 90% of the calculated guidelines, as per the RM&C Plan.

The results of the May 8 through May 11, 2023 and July 27, 2023 soil vapour sampling event are summarized as follows:

- For the Semi-Annual Soil Vapour Program:
    - Soil vapour concentrations for BTEX, aliphatic and aromatic fractions, 1,2-DCA, and naphthalene measured in the soil vapour samples collected from SV09, SV26A/B/C,

SV41, SV101, SV324, SV325, SV326, SV502, SV503, and SV504 were less than calculated guidelines and the 90% trigger threshold.

- For the RM&C Plan:
  - Soil vapour concentrations of BTEX, aliphatic and aromatic fractions, 1,2-DCA and naphthalene measured in the soil vapour samples collected from SV32, SV321B, SV322, SV323, SV401, SV402, SV403, SV404, and SV501 were less than the calculated guidelines and the 90% trigger threshold.

Based on a review of the soil vapour analytical results, no changes to the soil vapour program are proposed at this time.

The next soil vapour sampling event is anticipated to be conducted in September 2023.

6.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD-PARTY RELIANCE

This report has been prepared and the work referred to in this report has been undertaken by Parsons for Suncor Energy Products Partnership (Suncor). It is intended for the sole and exclusive use of Suncor Energy Inc., its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Suncor"). Any use, reliance on or decision made by any person other than Suncor based on this report is the sole responsibility of such other person. Suncor and Parsons make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by Parsons with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed in the report. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by this investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by Suncor, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Parsons. Nothing in this report is intended to constitute or provide a legal opinion.

7.0 CLOSURE

We trust the foregoing information is satisfactory for your requirements. If there are any questions or concerns regarding this report, please do not hesitate to contact the undersigned.

Respectfully submitted,

PARSONS INC.

Rebecca Neufeld, BSc.

Michelle S. Patterson, P.Tech.(Eng.)

PERMIT TO PRACTICE
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RM APEGA ID #: 66441
DATE: 2023-09-08
PERMIT NUMBER: P007013
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

66441
2023-09-08

B. Hann, P.Geol.

8.0 REFERENCES

AEP 2022a. *Alberta Tier 1 Soil and Groundwater Remediation Guidelines.* Land Policy Branch, Policy and Planning Division, Alberta Environment and Parks. August 24, 2022.

AEP 2022b. *Alberta Tier 2 Soil and Groundwater Remediation Guidelines.* Land Policy Branch, Policy and Planning Division, Alberta Environment and Parks. August 24, 2022.

CCME, 2014. *A Protocol for the Derivation of Soil Vapour Quality Guidelines for Protection of Human Exposures via Inhalation of Vapours.* Canadian Council of Ministers of the Environment.

Clifton, 2016. *Sears Canada Inc. Revised Soil Vapour Monitoring Program (Update Fall 2016), Hounsfield Heights and North Hill Mall, Calgary, Alberta.* Prepared by Clifton Associates Ltd. (Clifton) for Sears Canada Inc. Originally issued June 24, 2016, revised October 20, 2016.

Intrinsik, 2022. *Development of Soil Vapour and Groundwater Quality Guidelines*. Prepared by Intrinsik Corp. for Suncor Energy Products Partnership. December 2022.

Parsons, 2022. Annual Summary Report – 2022, Former Sears Fuel Site and Adjacent Hounsfield Heights Area, 1620 – 14th Avenue NW, Calgary, Alberta, Suncor Outlet No. 9445. Prepared by Parsons Inc. (Parsons) for Suncor Energy Products Partnership. March 31, 2023.

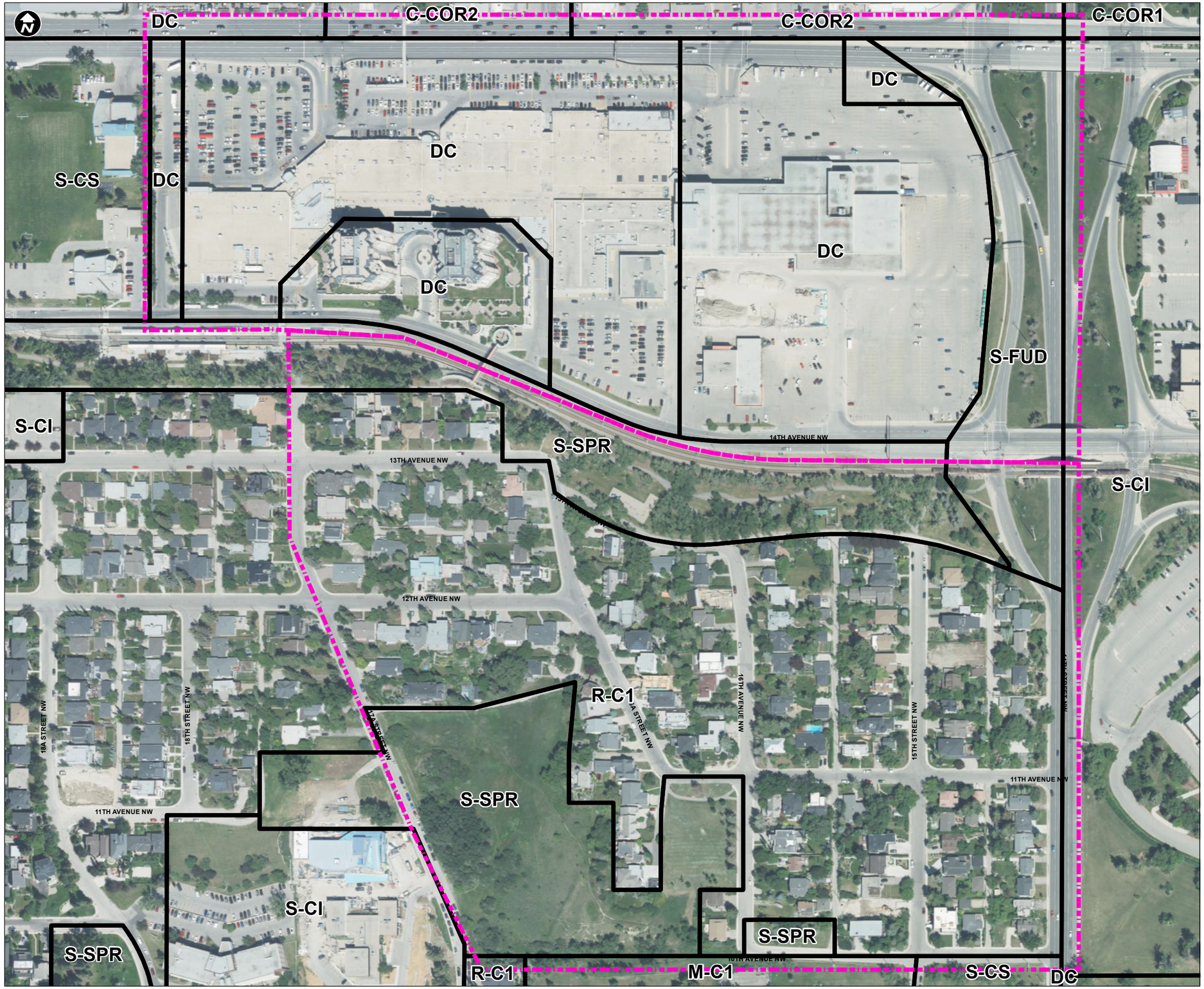
TABLE 1

RESULTS OF SOIL VAPOUR ANALYSES
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

(units in µg/m^3)

Sample Location	Sample Date	CONSTITUENT Total Well Depth (mbgs)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene
Guidelines[a]:																	
Residential: fine or coarse-grained: <1 m beneath foundation			6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation			3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	4.2E+06	5.1E+06	5.1E+06	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation			3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	4.5E+06	5.5E+06	5.5E+06	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation			3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation			3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	5.0E+06	6.1E+06	6.1E+06	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation			3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	5.3E+06	6.5E+06	6.5E+06	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation			4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	6.6E+05	8.1E+05	8.1E+05	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation			4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	8.0E+05	9.9E+05	9.9E+05	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation			5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	9.5E+05	1.2E+06	1.2E+06	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation			6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	1.1E+06	1.3E+06	1.3E+06	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation			6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03
SV09	2023-05-10	4.0	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	7.6	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
	2023-05-10 Dup	4.0	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV26A	2023-05-05	5.0	<0.32	0.76	<0.43	<1.3	<5.0	<5.0	7.5	42.8	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV26B	2023-05-05	3.5	0.50	1.22	<0.43	<1.3	<5.0	5.0	11.1	57.3	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV26C	2023-05-05	2.0	<0.32	0.74	<0.43	<1.3	<5.0	<5.0	5.4	29.6	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV32	2023-05-05	1.0	<0.32	0.50	<0.43	<1.3	<5.0	<5.0	<5.0	6.9	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV41	2023-05-10	1.5	0.33	0.68	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV101	2023-05-08	0.3m below foundation	6.56	2.38	0.69	6.2	<5.0	<5.0	<5.0	76.8	180	<5.0	41.8	12.4	24.5	<0.4	<1.0
SV321B	2023-07-27	1.04 - 1.09	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0
SV322	2023-07-27	1.0	0.44	1.07	1.20	5.6	<5.0	6.4	10.2	70.0	9.2	<5.0	6.0	<5.0	<5.0	<0.40	<1.0
SV323	2023-05-11	1.0	0.53	0.95	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV324	2023-05-10	1.5	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV325	2023-05-05	1.5	<0.32	2.06	0.48	2.3	<5.0	<5.0	8.7	52.7	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV326	2023-05-05	1.5	<0.32	1.36	<0.43	1.8	<5.0	<5.0	10.5	31.7	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV401	2023-05-11	1.5	0.37	1.03	<0.43	<1.3	<5.0	<5.0	<5.0	7.7	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV402	2023-05-05	1.5	<0.32	0.94	<0.43	<1.3	<5.0	<5.0	<5.0	26.8	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV403	2023-05-10	0.95	0.41	0.39	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV404	2023-05-05	1.0	<0.32	0.61	<0.43	<1.3	<5.0	<5.0	<5.0	19.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
	2023-05-05 Dup	1.0	1.32	2.5	0.65	2.9	<5.0	9.6	9.7	48.8	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV501	2023-05-11	1.2	0.51	2.01	1.58	4.1	<5.0	<5.0	<5.0	10.6	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV502	2023-05-11	1.2	<0.32	0.62	0.55	<1.3	<5.0	20.4	5.8	23.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV503	2023-05-11	1.2	0.36	0.49	<0.43	<1.3	<5.0	<5.0	<5.0	14.1	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
	2023-05-11 Dup	1.2	<0.32	0.65	<0.43	<1.3	<5.0	<5.0	<5.0	13.9	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0
SV504	2023-05-11	1.2	<0.32	<0.38	<0.43	<1.3	<5.0	13.5	131	360	10.7	<5.0	5.3	9.1	<5.0	<0.4	<1.0

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsik Corp. for Suncor Energy Products Partnership. December 2022.*
The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).
NG - No guideline.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Italics - Greater than 90% of referenced guidelines (screening threshold).
Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
Results for all parameters are reported in micrograms per metre cubed (µg/m^3), unless otherwise specified.



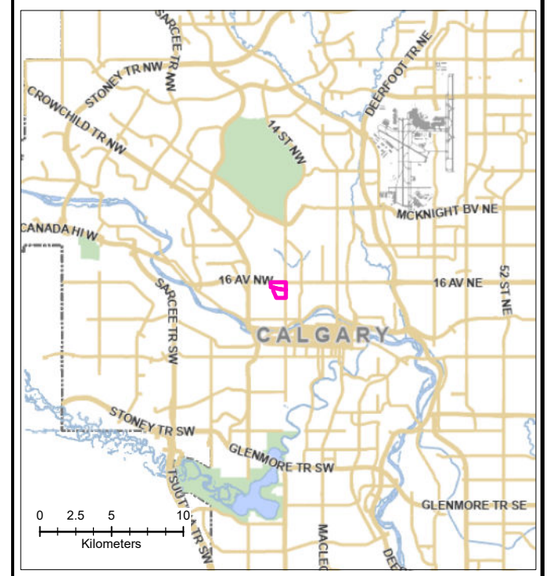
Document Path: C:\Z_Drive\10-12832\MXD\GW_Report\20231\12832_SiteLocation_March2023.mxd Coordinate System: NAD83 UTM 114 Longitude Meter Province of Alberta Canada

LEGEND

- Site Boundary
- City Of Calgary Zoning

Land Use Districts:

R-C1 (Residential - Contextual One Dwelling)
M-C1 (Multi-Residential - Contextual Low Profile)
M-CG (Multi-Residential - Contextual Ground Oriented)
C-COR1 (Commercial - Corridor 1)
C-COR2 (Commercial - Corridor 2)
S-SPR (Special Purpose - School, Park and Community Reserve)
S-CI (Special Purpose - Community Institution)
S-CS (Special Purpose - Community Service)
S-FUD (Special Purpose - Future Urban Development)
DC (Direct Control District)



0 50 100 200
Metres

Notes:..
- The ArcGIS Map Service based on City of Calgary Basemap (WMASP).
- The orthophoto based on City of Calgary Basemap (WMASP), July-August 2022.
- Land Use District data based on City of Calgary's Open Data Portal, City Online, Base Map Data service. Downloaded March 2023.

Site Location Map

Hounsfield Heights And Lion's Park
1620-14th Ave NW, Calgary, Alberta

	Drawn By: JDC	Ref. No.: 10-12832
	Reviewed By: MP	Date: 26-Mar-2023
PARSONS		Drawing No.: 1

LEGEND

- Grade Elevation Contour (masl) (1m
- Site Boundary

0 25 50 100
Metres

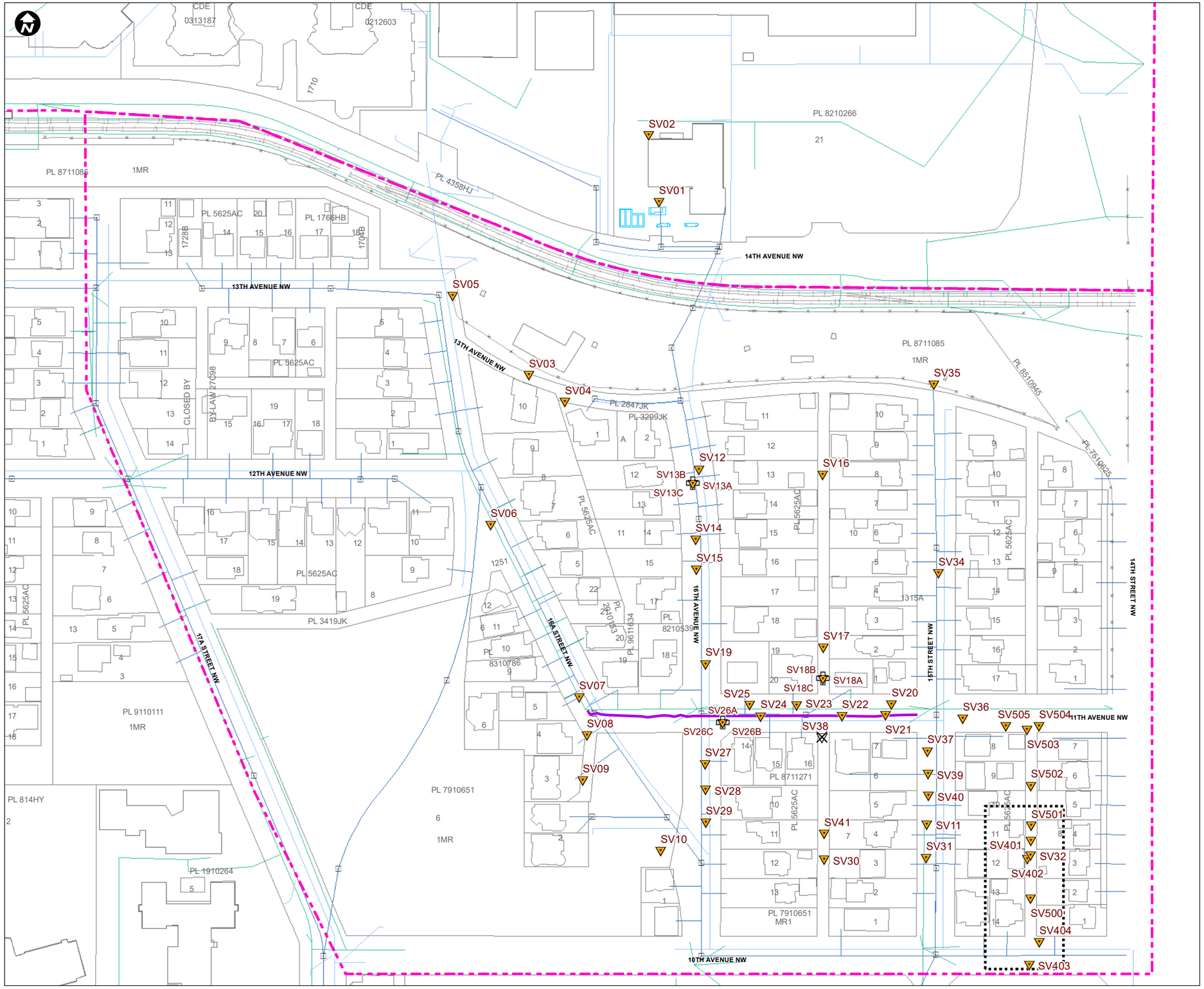
Notes:
- The orthophoto based on City of Calgary Basemap (WMASP), July-August 2022.
- Elevation data based on City of Calgary's Open Data Portal, City Online, Base Map Data service. Downloaded January 2023.

Site Topography

Hounsfield Heights And Lion's Park
1620-14th Ave NW, Calgary, Alberta

	Drawn By: JDC	Ref. No.: 10-12832
	Reviewed By: MP	Date: 29-Mar-2023
PARSONS		Drawing No.: 2

Document Path: C:\Z_Drive\10-12832\MXD\GW_Report\2023\12832_SiteTopo_March2023.mxd Coordinate System: NAD83 UTM 114 Longitude Meter Province of Alberta Canada



LEGEND

- Soil Vapour Monitoring Well
- Soil Vapour Monitoring Well (Nested)
- Soil Vapour Well (Destroyed/Abandoned)
- Former Facility/Feature
- LRT Tracks
- Water
- Storm Sewer
- Sanitary Sewer
- Permeable Reactive Barrier (Dec. 2019)
- Risk Management & Contingency (RM&C) Program Area
- Site Boundary

0 25 50 100
Metres

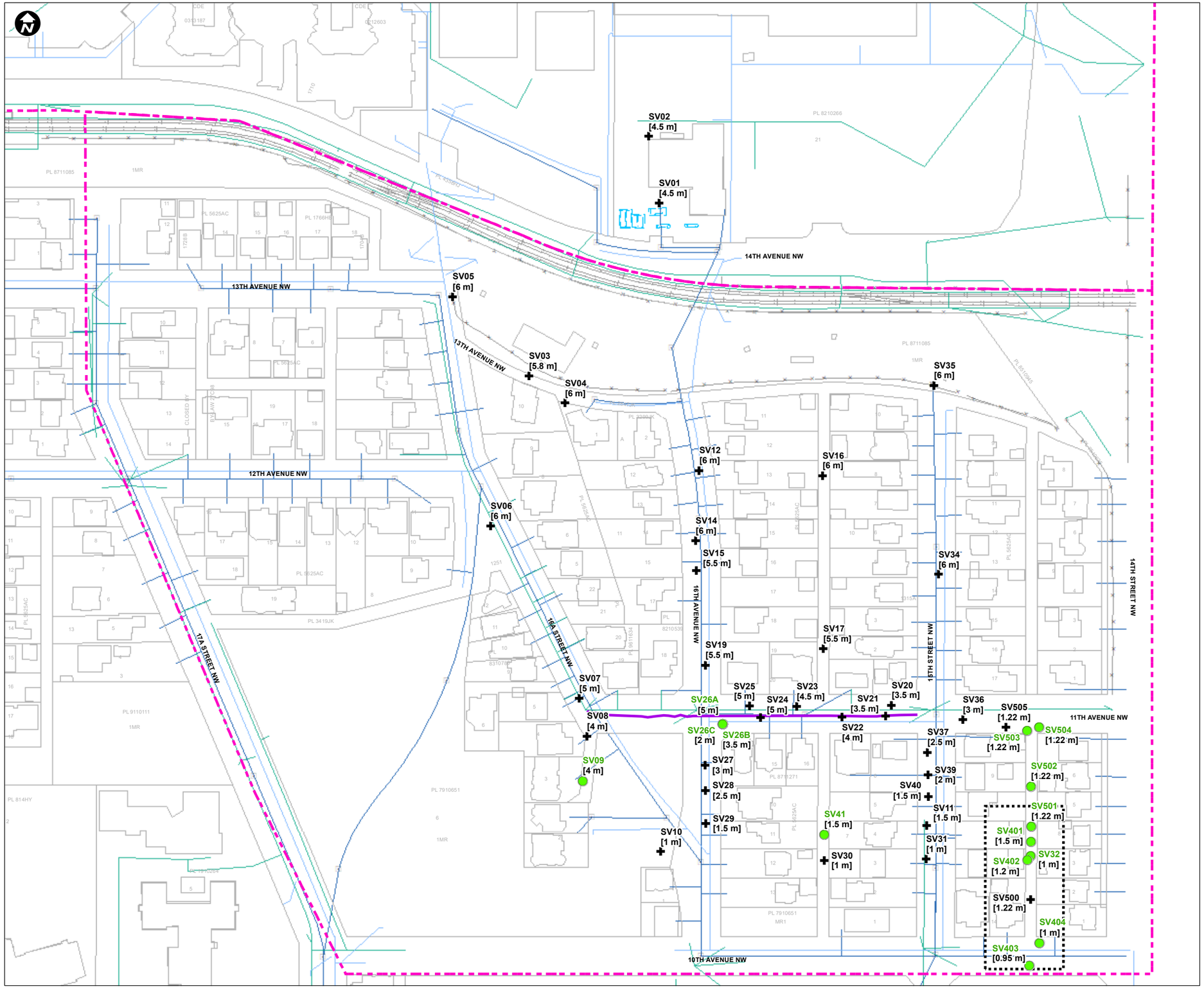
Notes:
- Well locations, site features provided as AutoCAD file by Clifton Engineering Group Inc..
- Property parcel and utility data based on City of Calgary's Open Data Portal, City Online, Geospatial Data service. Downloaded March 2023 ; note only City utilities are shown.
- Building based on City of Calgary's Open Data Portal, City Online, Base Map Data service. Downloaded January 2023.
- Soil vapour well locations on private property are not shown.

Site Plan
Soil Vapour Sample Locations

Hounsfield Heights And Lion's Park
1620-14th Ave NW, Calgary, Alberta

	Drawn By: JDC	Ref. No.: 10-12832
	Reviewed By: MP	Date: 22-Jun-2023
PARSONS		Drawing No.: 3

Document Path: C:\Z_Drive\10-12832\MXD\MaySoilVapour\12832_SitePlan_SV_June2023 - NoPrivate.mxd Coordinate System: NAD83 UTM 114 Longitude Meter Province of Alberta Canada



LEGEND

- One or more analytes exceeds referenced guidelines during the May 2023 sampling event
- All analytes less than referenced guidelines during the May 2023 sampling event
- Soil vapour monitoring well not sampled in May 2023
- Former Facility/Feature
- LRT Tracks
- Water
- Storm Sewer
- Sanitary Sewer
- Permeable Reactive Barrier (Dec. 2019)
- Risk Management & Contingency (RM&C) Program
- Site Boundary

[1.2 m] Total well depth (mbgs, unless otherwise specified)

0 25 50 100
Metres

Notes:
- Well locations, site features provided as AutoCAD file by Clifton Engineering Group Inc..
- Property parcel and utility data based on City of Calgary's Open Data Portal, City Online, Geospatial Data service. Downloaded March 2023; note only City utilities are shown.
- Building based on City of Calgary's Open Data Portal, City Online, Base Map Data service. Downloaded January 2023.
- Soil vapour well locations on private property are not shown.

Summary of Soil Vapour Analytical Results (May and July 2023 Sampling Events)

Hounsfield Heights And Lion's Park
1620-14th Ave NW, Calgary, Alberta

	Drawn By: JDC	Ref. No.: 10-12832
	Reviewed By: MP	Date: 16-Jun-2023
PARSONS		Drawing No.: 4

Document Path: C:\Z_Drive\10-12832\MXD\MaySoilVapour\12832_SV_ExceedNoPrivate_May2023.mxd Coordinate System: NAD83 UTM 114 Longitude Meter Province of Alberta Canada

APPENDIX A

SOIL VAPOUR SAMPLING PROCEDURES

APPENDIX A
LEAK TESTING AND SAMPLING PROCEDURES

HEALTH AND SAFETY

Consistent with Parsons' policy and its client's policy, the completed work was carried out consistent with a site-specific health and safety plan. This plan, as a minimum, complied with provincial requirements as well as Parsons and its client's guidelines, whichever were more stringent.

APPROVALS

Prior to doing any site work, approval to proceed was obtained from the client. When monitoring or investigative work was required on public or third-party lands, the necessary approvals were obtained from the municipality or the property owner, respectively, prior to commencing any work.

LEAK TESTING PROCEDURE

Prior to sampling, the integrity of the soil vapour wells was tested. Leak testing with helium was conducted at the soil vapour wells to evaluate the integrity of the monitoring well seal and sampling equipment.

Each soil vapour well was leak tested immediately before sample collection. Leak testing consisted of placing a shroud with two valves (one with a connector that can be attached to the well and the other to the empty space within the shroud) over each well and flooding it with 99.999% Helium via the valve to the open space. The Helium Canister was connected to the shroud and the valve was opened fully for three seconds allowing the helium to saturate the space.

Using an SKC pump and lung sampler, the pump was connected to the well via tubing connected inside the shroud and run for five minutes at a rate of 70 millilitres (mL) per minute to fill one clean new tedlar bag connected inside the lung sampler. A separate clean new tedlar bag was used for each well.

The pump was turned off and the well was closed. The tedlar bag was then removed from the lung sampler, and the end of the helium detector was inserted inside to take a reading to ensure that no helium had entered the bag through a leak in the well.

As a check that the helium detector was working, the helium detector end was placed in the shroud containing helium to ensure helium remained in the casing during the test. This was always confirmed; however, no numbers from this were recorded.

APPENDIX A
LEAK TESTING AND SAMPLING PROCEDURES

The shroud was then removed from the casing to release the helium to the atmosphere, and it was unscrewed/detached from the closed well.

As required, the bentonite seals were re-hydrated if leak testing was unsuccessful. Soil vapour samples were collected once the pre-sampling leak test indicated that the integrity of the soil vapour monitoring wells was adequate.

SOIL VAPOUR SAMPLING PROCEDURE

Soil vapour sampling and leak testing were completed in accordance with the guidelines outlined in the CCME Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment, Volume 3 (2016).

Soil vapour samples are collected using stainless steel vacuum canisters (1.4 L Summa canisters) provided by Bureau Veritas. The vacuum within each canister is checked prior to mobilization to the field. A shut-in leak test is performed to verify that leakage within the sampling train is within acceptable limits. The sampling train is then only used if the shut-in leak testing is found to be within the acceptable limits. The soil vapour wells were purged for 25 minutes, consistent with historical sampling procedure, using an air sampling pump prior to sampling. Following purging, the well shut-off valve is closed prior to sampling to allow any vacuum to dissipate. For sampling, the canisters are connected to the soil vapour monitoring well with a flow controller wherein the sample is collected directly into the canister over a pre-determined time interval by opening the valve at the wellhead. The sample is collected until the vacuum within the canister is depleted. Collected samples are then shipped to the laboratory utilizing the appropriate chain of custody documentation. A duplicate sample was collected subsequently once every 10 samples.

APPENDIX B

SOIL VAPOUR WELL INTEGRITY INSPECTION, LEAK TESTING, AND SAMPLING RECORD

TABLE B-1

SOIL VAPOUR WELL INTEGRITY INSPECTION AND LEAK TESTING

BH ID	Date (yyyy-mm-dd)	Condition upon arrival (bentonite seal, repairs required)	Leak Test Results (Helium in % or ppm)[a]	Repairs Required	Date of Re-Test (yyy-mm-dd)	Re-Test Results (Helium in % or ppm)[a]	Leak Test Results
SV07	2023-05-10	Water in the well	NA	Yes	NA	NA	NA
SV08	2023-05-10	Water in the well	NA	Yes	NA	NA	NA
SV09	2023-05-10	Good condition	6175 ppm	No	NA	NA	Pass
SV20	2023-05-10	No valve, appears plugged	NA	Yes	NA	NA	NA
SV22	2023-05-10	Good condition	2.7%	Yes	NA	NA	Fail
SV25	2023-05-10	Good condition	7.5%	Yes	2023-05-11	20.3%	Fail
SV26A	2023-05-05	Good condition	NA	No	NA	NA	NA
SV26B	2023-05-05	Good condition	NA	No	NA	NA	NA
SV26C	2023-05-05	Good condition	NA	No	NA	NA	NA
SV27	2023-05-10	No valve, water in the well	NA	Yes	NA	NA	NA
SV30	2023-05-10	Good condition	7%	Yes	NA	NA	Fail
SV32	2023-05-05	Good condition	NA	No	NA	NA	NA
SV38	2023-05-04	Destroyed	NA	Yes	NA	NA	NA
SV41	2023-05-10	Good condition	25 ppm	No	NA	NA	Pass
SV101	2023-05-08	Good condition	NA	No	NA	NA	NA
SV321B	2023-05-11	Inaccessible	NA	NA	NA	NA	NA
SV321B	2023-07-27	Good condition	0 ppm	No	NA	NA	Pass
SV322	2023-05-11	Inaccessible	NA	NA	NA	NA	NA
SV322	2023-07-27	Good condition	0 ppm	No	NA	NA	Pass
SV323	2023-05-11	Good condition	NA	No	NA	NA	NA
SV324	2023-05-10	Good condition	NA	No	NA	NA	NA
SV325	2023-05-05	Good condition	NA	No	NA	NA	NA
SV326	2023-05-05	Good condition	NA	No	NA	NA	NA
SV401	2023-05-11	Good condition	125 ppm	No	NA	NA	Pass
SV402	2023-05-05	Good condition	NA	No	NA	NA	NA
SV403	2023-05-10	Good condition	NA	No	NA	NA	NA
SV404	2023-05-05	Good condition	NA	No	NA	NA	NA
SV500	2023-05-05	Water in the well	NA	Yes	NA	NA	NA
SV501	2023-05-11	Good condition	NA	No	NA	NA	NA
SV502	2023-05-11	Good condition	ND	No	NA	NA	Pass
SV503	2023-05-11	Good condition	ND	No	NA	NA	Pass
SV504	2023-05-11	Good condition	ND	No	NA	NA	Pass

a - >1% or > 10,000 ppm = fail

ND - Not detected.

NA - Not applicable.

Note: Only one leak test is required for each soil vapour well per calendar year.
Only 10% of soil vapour wells need to be leak tested per sampling event.

TABLE B-2

SAMPLING FIELD RECORDS

BH ID	Sampled (Yes/No)	Date (yyyy-mm-dd)	Canister ID	Flow Regulator ID	Initial Vacuum ("Hg)	Vacuum ("H_2O) (>10"H_2O=Fail)	Time Well Purged Before Sampling (min)	Purging Flow Rate (mL/min)	Start Time (hh:mm)	End Time (hh:mm)	Duration (min)	Residual Vacuum ("Hg)
SV07	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV08	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV09	Yes	2023-05-10	2473	FX0425	-27	0.3	20	77	9:15	9:33	18	-3.5
Dup-02 (SV09)	Yes	2023-05-10	9772	FX0180	-25	0.3	20	77	9:34	9:57	23	-1
SV20	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV22	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV25	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV26A	Yes	2023-05-05	1401	FX0242	-25	0.3	22	75	10:10	10:31	21	-3
SV26B	Yes	2023-05-05	2557	FX0581	-25	0.2	20	72	10:11	10:42	31	-4
SV26C	Yes	2023-05-05	2460	FX1510	-28	0.4	20	82	10:33	10:53	20	-4
SV27	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV30	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV32	Yes	2023-05-05	9878	FX0782	-25	0.5	20	78	12:20	12:40	20	-2
SV38	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV41	Yes	2023-05-10	1301	FX0183	-26	0.4	20	84	12:04	12:15	11	-3
SV101	Yes	2023-05-08	9879	FX1498	-25	0.2	20	83	2:43	3:06	23	-3
SV321B	Yes	2023-07-27	1366	FX0782	-26	0.7	20	70	11:18	11:35	17	-4
SV322	Yes	2023-07-27	9790	FX1589	-26	0.7	20	70	12:54	13:13	19	-4
SV323	Yes	2023-05-11	9697	FX0248	-25	0.3	21	86	10:25	10:46	21	-1
SV324	Yes	2023-05-10	9919	FX0886	-27	0.3	20	68	12:40	12:58	18	-4
SV325	Yes	2023-05-05	1450	FX0427	-26	0.4	20	84	8:49	9:07	18	-1
SV326	Yes	2023-05-05	9753	FX1181	-24	0.2	20	83	8:50	9:10	20	-1
SV401	Yes	2023-05-11	1920	FX0576	-26	0.8	22	83	9:47	9:57	10	-3
SV402	Yes	2023-05-05	10903	FX1463	-26	1.4	21	79	12:23	12:44	21	-3
SV403	Yes	2023-05-10	1167	FX0218	-26	0.3	20	82	12:29	12:45	16	-1
SV404	Yes	2023-05-05	1895	FX0406	-25	0.6	21	80	11:48	12:02	14	-2
Dup-01 (SV404)	Yes	2023-05-05	1379	FX0385	-26	0.2	21	80	12:02	12:37	35	-3
SV500	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SV501	Yes	2023-05-11	6320	FX1098	-27	0.3	16	69	9:24	9:43	19	-4
SV502	Yes	2023-05-11	3008	FX0884	-25	0.4	16	91	9:19	9:36	17	-4
SV503	Yes	2023-05-11	2057	FX1509	-28	0.1	16	85	8:43	9:17	34	-2
Dup-03 (SV503)	Yes	2023-05-11	1486	FX1099	-25	0.1	16	85	9:19	9:32	13	-4
SV504	Yes	2023-05-11	1917	FX0395	-26	0.3	16	86	8:51	9:14	23	-4

NA - Not applicable.
NR - Not recorded.
Note: Sampling flow rate set to 70 mL/min.

APPENDIX C

GUIDELINE SUMMARY

TABLE C-1

SUMMARY OF SOIL VAPOUR GUIDELINES

Reference	Land Use	Grain Size	Depth (cm)	Benzene	Toluene	Ethylbenzene	Xylenes	1,2-DCA	Naphthalene	F1 Aliphatic C6-C8	F1 Aliphatic >C8-C10	F1 Aromatic >C8-C10	F2 Aliphatic >C10-C12	F2 Aromatic >C10-C12	F2 Aliphatic >C12-C16	F2 Aromatic >C12-C16
Intrinsik, 2022, Table 6.1	Residential	Fine	<100(1)	6.3E+01	1.1E+05	1.0E+05	4.9E+03	3.8E+01	4.5E+02	9.2E+05	4.8E+04	8.1E+03	5.0E+04	1.0E+04	5.0E+04	1.0E+04
			100	3.0E+04	5.5E+07	4.9E+07	2.4E+06	1.8E+03	2.3E+04	4.7E+08	2.5E+07	4.2E+06	2.6E+07	5.1E+06	2.6E+07	5.1E+06
			150	3.2E+04	5.7E+07	5.1E+07	2.5E+06	1.9E+03	2.4E+04	5.0E+08	2.6E+07	4.5E+06	2.7E+07	5.5E+06	2.7E+07	5.5E+06
			200	3.3E+04	5.9E+07	5.3E+07	2.6E+06	1.9E+03	2.5E+04	5.3E+08	2.8E+07	4.7E+06	2.9E+07	5.8E+06	2.9E+07	5.8E+06
			250	3.4E+04	6.1E+07	5.6E+07	2.7E+06	2.0E+03	2.7E+04	5.6E+08	2.9E+07	5.0E+06	3.1E+07	6.1E+06	3.1E+07	6.1E+06
			300	3.5E+04	6.3E+07	5.8E+07	2.8E+06	2.0E+03	2.8E+04	5.9E+08	3.1E+07	5.3E+06	3.2E+07	6.5E+06	3.2E+07	6.5E+06
			350	3.6E+04	6.5E+07	6.0E+07	2.9E+06	2.1E+03	2.9E+04	6.2E+08	3.3E+07	5.5E+06	3.4E+07	6.8E+06	3.4E+07	6.8E+06
			400	3.7E+04	6.8E+07	6.2E+07	3.0E+06	2.2E+03	3.0E+04	6.5E+08	3.4E+07	5.8E+06	3.6E+07	7.1E+06	3.6E+07	7.1E+06
			450	3.9E+04	7.0E+07	6.4E+07	3.1E+06	2.2E+03	3.2E+04	6.8E+08	3.6E+07	6.1E+06	3.7E+07	7.4E+06	3.7E+07	7.4E+06
			500	4.0E+04	7.2E+07	6.7E+07	3.2E+06	2.3E+03	3.3E+04	7.1E+08	3.7E+07	6.3E+06	3.9E+07	7.8E+06	3.9E+07	7.8E+06
			550	4.1E+04	7.4E+07	6.9E+07	3.3E+06	2.3E+03	3.4E+04	7.4E+08	3.9E+07	6.6E+06	4.1E+07	8.1E+06	4.1E+07	8.1E+06
			600	4.2E+04	7.6E+07	7.1E+07	3.4E+06	2.4E+03	3.5E+04	7.7E+08	4.1E+07	6.9E+06	4.2E+07	8.4E+06	4.2E+07	8.4E+06
Intrinsik, 2022, Table 6.2	Residential	Coarse	<100(1)	6.3E+01	1.1E+05	1.0E+05	4.9E+03	3.8E+01	4.5E+02	9.2E+05	4.8E+04	8.1E+03	5.0E+04	1.0E+04	5.0E+04	1.0E+04
			100	4.1E+03	7.4E+06	6.8E+06	3.3E+05	2.3E+02	3.4E+03	7.4E+07	3.9E+06	6.6E+05	4.0E+06	8.1E+05	4.0E+06	8.1E+05
			150	4.7E+03	8.5E+06	8.0E+06	3.9E+05	2.7E+02	4.1E+03	9.0E+07	4.7E+06	8.0E+05	4.9E+06	9.9E+05	4.9E+06	9.9E+05
			200	5.3E+03	9.7E+06	9.2E+06	4.5E+05	3.0E+02	4.8E+03	1.1E+08	5.6E+06	9.5E+05	5.8E+06	1.2E+06	5.8E+06	1.2E+06
			250	6.0E+03	1.1E+07	1.0E+07	5.0E+05	3.3E+02	5.5E+03	1.2E+08	6.5E+06	1.1E+06	6.7E+06	1.3E+06	6.7E+06	1.3E+06
			300	6.6E+03	1.2E+07	1.2E+07	5.6E+05	3.6E+02	6.1E+03	1.4E+08	7.3E+06	1.2E+06	7.6E+06	1.5E+06	7.6E+06	1.5E+06
			350	7.2E+03	1.3E+07	1.3E+07	6.1E+05	4.0E+02	6.8E+03	1.6E+08	8.2E+06	1.4E+06	8.5E+06	1.7E+06	8.5E+06	1.7E+06
			400	7.9E+03	1.4E+07	1.4E+07	6.7E+05	4.3E+02	7.5E+03	1.7E+08	9.0E+06	1.5E+06	9.4E+06	1.9E+06	9.4E+06	1.9E+06
			450	8.5E+03	1.5E+07	1.5E+07	7.3E+05	4.6E+02	8.2E+03	1.9E+08	9.9E+06	1.7E+06	1.0E+07	2.1E+06	1.0E+07	2.1E+06
			500	9.2E+03	1.7E+07	1.6E+07	7.8E+05	4.9E+02	8.9E+03	2.0E+08	1.1E+07	1.8E+06	1.1E+07	2.2E+06	1.1E+07	2.2E+06
			550	9.8E+03	1.8E+07	1.8E+07	8.4E+05	5.3E+02	9.6E+03	2.2E+08	1.2E+07	2.0E+06	1.2E+07	2.4E+06	1.2E+07	2.4E+06
			600	1.0E+04	1.9E+07	1.9E+07	9.0E+05	5.6E+02	1.0E+04	2.4E+08	1.2E+07	2.1E+06	1.3E+07	2.6E+06	1.3E+07	2.6E+06
Intrinsik, 2022, Table 6.3	Commercial	Fine	<100(1)	2.3E+02	4.1E+05	3.6E+05	1.8E+04	1.4E+02	1.6E+03	3.3E+06	1.7E+05	3.0E+04	1.8E+05	3.6E+04	1.8E+05	3.6E+04
			100	3.2E+05	5.7E+08	5.2E+08	2.5E+07	1.8E+04	2.4E+05	5.1E+09	2.7E+08	4.5E+07	2.8E+08	5.5E+07	2.8E+08	5.5E+07
			150	3.3E+05	5.9E+08	5.4E+08	2.6E+07	1.9E+04	2.6E+05	5.4E+09	2.8E+08	4.8E+07	2.9E+08	5.9E+07	2.9E+08	5.9E+07
			200	3.4E+05	6.1E+08	5.6E+08	2.7E+07	2.0E+04	2.7E+05	5.7E+09	3.0E+08	5.0E+07	3.1E+08	6.2E+07	3.1E+08	6.2E+07
			250	3.5E+05	6.4E+08	5.8E+08	2.8E+07	2.0E+04	2.8E+05	5.9E+09	3.1E+08	5.3E+07	3.2E+08	6.5E+07	3.2E+08	6.5E+07
			300	3.6E+05	6.6E+08	6.1E+08	2.9E+07	2.1E+04	2.9E+05	6.2E+09	3.3E+08	5.5E+07	3.4E+08	6.8E+07	3.4E+08	6.8E+07
			350	3.7E+05	6.8E+08	6.3E+08	3.1E+07	2.1E+04	3.1E+05	6.5E+09	3.4E+08	5.8E+07	3.6E+08	7.1E+07	3.6E+08	7.1E+07
			400	3.9E+05	7.0E+08	6.5E+08	3.2E+07	2.2E+04	3.2E+05	6.8E+09	3.6E+08	6.1E+07	3.7E+08	7.5E+07	3.7E+08	7.5E+07
			450	4.0E+05	7.2E+08	6.7E+08	3.3E+07	2.3E+04	3.3E+05	7.1E+09	3.7E+08	6.3E+07	3.9E+08	7.8E+07	3.9E+08	7.8E+07
			500	4.1E+05	7.4E+08	6.9E+08	3.4E+07	2.3E+04	3.4E+05	7.4E+09	3.9E+08	6.6E+07	4.1E+08	8.1E+07	4.1E+08	8.1E+07
			550	4.2E+05	7.6E+08	7.1E+08	3.5E+07	2.4E+04	3.6E+05	7.7E+09	4.1E+08	6.9E+07	4.2E+08	8.4E+07	4.2E+08	8.4E+07
			600	4.3E+05	7.8E+08	7.3E+08	3.6E+07	2.4E+04	3.7E+05	8.0E+09	4.2E+08	7.1E+07	4.4E+08	8.8E+07	4.4E+08	8.8E+07
Intrinsik, 2022, Table 6.4	Commercial	Coarse	<100(1)	2.3E+02	4.1E+05	3.6E+05	1.8E+04	1.4E+02	1.6E+02	3.3E+06	1.7E+05	3.0E+04	1.8E+05	3.6E+04	1.8E+05	3.6E+04
			100	4.3E+04	7.8E+07	7.2E+07	3.5E+06	2.5E+03	3.6E+04	7.7E+08	4.0E+07	6.8E+06	4.2E+07	8.4E+06	4.2E+07	8.4E+06
			150	4.9E+04	8.9E+07	8.4E+07	4.1E+06	2.8E+03	4.2E+04	9.3E+08	4.9E+07	8.3E+06	5.1E+07	1.0E+07	5.1E+07	1.0E+07
			200	5.6E+04	1.0E+08	9.5E+07	4.6E+06	3.1E+03	4.9E+04	1.1E+09	5.7E+07	9.7E+06	6.0E+07	1.2E+07	6.0E+07	1.2E+07
			250	6.2E+04	1.1E+08	1.1E+08	5.2E+06	3.4E+03	5.6E+04	1.3E+09	6.6E+07	1.1E+07	6.8E+07	1.4E+07	6.8E+07	1.4E+07
			300	6.8E+04	1.2E+08	1.2E+08	5.7E+06	3.8E+03	6.3E+04	1.4E+09	7.4E+07	1.3E+07	7.7E+07	1.5E+07	7.7E+07	1.5E+07
			350	7.4E+04	1.3E+08	1.3E+08	6.3E+06	4.1E+03	6.9E+04	1.6E+09	8.3E+07	1.4E+07	8.6E+07	1.7E+07	8.6E+07	1.7E+07
			400	8.1E+04	1.5E+08	1.4E+08	6.8E+06	4.4E+03	7.6E+04	1.7E+09	9.1E+07	1.5E+07	9.5E+07	1.9E+07	9.5E+07	1.9E+07
			450	8.7E+04	1.6E+08	1.5E+08	7.4E+06	4.7E+03	8.3E+04	1.9E+09	9.9E+07	1.7E+07	1.0E+08	2.1E+07	1.0E+08	2.1E+07
			500	9.3E+04	1.7E+08	1.7E+08	7.9E+06	5.0E+03	8.9E+04	2.1E+09	1.1E+08	1.8E+07	1.1E+08	2.2E+07	1.1E+08	2.2E+07
			550	9.9E+04	1.8E+08	1.8E+08	8.5E+06	5.4E+03	9.6E+04	2.2E+09	1.2E+08	2.0E+07	1.2E+08	2.4E+07	1.2E+08	2.4E+07
			600	1.1E+05	1.9E+08	1.9E+08	9.0E+06	5.7E+03	1.0E+05	2.4E+09	1.2E+08	2.1E+07	1.3E+08	2.6E+07	1.3E+08	2.6E+07

Notes:

Highlighted value indicates calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

(1) Based on default attenuation coefficient of 0.01 (AEP 2022b).

TABLE C-1

SUMMARY OF SOIL VAPOUR GUIDELINES

Reference	Land Use	Grain Size	Depth (cm)	Benzene	Toluene	Ethylbenzene	Xylenes	1,2-DCA	Naphthalene	F1 Aliphatic C6-C8	F1 Aliphatic >C8-C10	F1 Aromatic >C8-C10	F2 Aliphatic >C10-C12	F2 Aromatic >C10-C12	F2 Aliphatic >C12-C16	F2 Aromatic >C12-C16
Intrinsik, 2016, Table 8.1	Residential	Fine	<100(2)	3.0E+02	1.9E+05	5.0E+04	8.9E+03	4.0E+01	1.0E+02	9.2E+05	4.8E+04	8.1E+03	5.0E+04	1.0E+04	5.0E+04	1.0E+04
			100	1.5E+05	9.1E+07	2.4E+07	4.4E+06	1.8E+03	5.2E+03	NGR	2.5E+07	4.2E+06	NGR	NGR	NGR	NGR
			150	1.5E+05	9.5E+07	2.6E+07	4.6E+06	1.9E+03	5.5E+03	NGR	2.6E+07	4.5E+06	NGR	NGR	NGR	NGR
			200	1.6E+05	9.8E+07	2.7E+07	4.7E+06	1.9E+03	5.7E+03	NGR	2.8E+07	4.7E+06	NGR	NGR	NGR	NGR
			250	1.6E+05	1.0E+08	2.8E+07	4.9E+06	2.0E+03	6.0E+03	NGR	2.9E+07	5.0E+06	NGR	NGR	NGR	NGR
			300	1.7E+05	1.1E+08	2.9E+07	5.1E+06	2.0E+03	6.3E+03	NGR	3.1E+07	5.3E+06	NGR	NGR	NGR	NGR
			350	1.8E+05	1.1E+08	3.0E+07	5.3E+06	2.1E+03	6.6E+03	NGR	3.3E+07	5.5E+06	NGR	NGR	NGR	NGR
			400	1.8E+05	1.1E+08	3.1E+07	5.5E+06	2.2E+03	6.9E+03	NGR	3.4E+07	5.8E+06	NGR	NGR	NGR	NGR
			450	1.9E+05	1.2E+08	3.2E+07	5.7E+06	2.2E+03	7.2E+03	NGR	NGR	6.1E+06	NGR	NGR	NGR	NGR
			500	1.9E+05	1.2E+08	3.3E+07	5.9E+06	2.3E+03	7.5E+03	NGR	NGR	6.3E+06	NGR	NGR	NGR	NGR
			550	2.0E+05	1.2E+08	3.4E+07	6.1E+06	2.3E+03	7.7E+03	NGR	NGR	6.6E+06	NGR	NGR	NGR	NGR
			600	2.0E+05	1.3E+08	3.5E+07	6.2E+06	2.4E+03	8.0E+03	NGR	NGR	6.9E+06	NGR	NGR	NGR	NGR
Intrinsik, 2016, Table 8.2	Residential	Coarse	<100(2)	3.0E+02	1.9E+05	5.0E+04	8.9E+03	4.0E+01	1.0E+02	9.2E+05	4.8E+04	8.1E+03	5.0E+04	1.0E+04	5.0E+04	1.0E+04
			100	2.0E+04	1.2E+07	3.4E+06	6.0E+05	2.3E+02	7.7E+02	7.4E+07	3.9E+06	6.6E+05	4.0E+06	8.1E+05	NGR	NGR
			150	2.3E+04	1.4E+07	4.0E+06	7.1E+05	2.7E+02	9.3E+02	9.0E+07	4.7E+06	8.0E+05	NGR	9.9E+05	NGR	NGR
			200	2.6E+04	1.6E+07	4.6E+06	8.1E+05	3.0E+02	1.1E+03	1.1E+08	5.6E+06	9.5E+05	NGR	1.2E+06	NGR	NGR
			250	2.9E+04	1.8E+07	5.2E+06	9.1E+05	3.3E+02	1.2E+03	1.2E+08	6.5E+06	1.1E+06	NGR	1.3E+06	NGR	NGR
			300	3.2E+04	2.0E+07	5.8E+06	1.0E+06	3.6E+02	1.4E+03	1.4E+08	7.3E+06	1.2E+06	NGR	1.5E+06	NGR	NGR
			350	3.5E+04	2.2E+07	6.4E+06	1.1E+06	4.0E+02	1.5E+03	1.6E+08	8.2E+06	1.4E+06	NGR	1.7E+06	NGR	NGR
			400	3.8E+04	2.4E+07	7.0E+06	1.2E+06	4.3E+02	1.7E+03	1.7E+08	9.0E+06	1.5E+06	NGR	1.9E+06	NGR	NGR
			450	4.1E+04	2.6E+07	7.5E+06	1.3E+06	4.6E+02	1.9E+03	1.9E+08	9.9E+06	1.7E+06	NGR	2.1E+06	NGR	NGR
			500	4.4E+04	2.8E+07	8.1E+06	1.4E+06	4.9E+02	2.0E+03	2.0E+08	1.1E+07	1.8E+06	NGR	2.2E+06	NGR	NGR
			550	4.7E+04	3.0E+07	8.7E+06	1.5E+06	5.3E+02	2.2E+03	2.2E+08	1.2E+07	2.0E+06	NGR	2.4E+06	NGR	NGR
			600	5.1E+04	3.2E+07	9.3E+06	1.6E+06	5.6E+02	2.3E+03	2.4E+08	1.2E+07	2.1E+06	NGR	2.6E+06	NGR	NGR
Intrinsik, 2016, Table 8.3	Commercial	Fine	<100(2)	1.1E+03	6.8E+05	1.8E+05	3.2E+04	1.5E+02	3.7E+02	3.3E+06	1.7E+05	3.0E+04	1.8E+05	3.6E+04	1.8E+05	3.6E+04
			100	1.5E+06	NGR	NGR	4.6E+07	1.8E+04	5.5E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			150	1.6E+06	NGR	NGR	4.8E+07	1.9E+04	5.8E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			200	1.6E+06	NGR	NGR	5.0E+07	2.0E+04	6.1E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			250	1.7E+06	NGR	NGR	NGR	2.0E+04	6.4E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			300	1.8E+06	NGR	NGR	NGR	2.1E+04	6.7E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			350	1.8E+06	NGR	NGR	NGR	2.1E+04	6.9E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			400	1.9E+06	NGR	NGR	NGR	2.2E+04	7.2E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			450	1.9E+06	NGR	NGR	NGR	2.3E+04	7.5E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			500	2.0E+06	NGR	NGR	NGR	2.3E+04	7.8E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			550	2.0E+06	NGR	NGR	NGR	2.4E+04	8.1E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			600	2.1E+06	NGR	NGR	NGR	2.4E+04	8.3E+04	NGR	NGR	NGR	NGR	NGR	NGR	NGR
Intrinsik, 2016, Table 8.4	Commercial	Coarse	<100(2)	1.1E+03	6.8E+05	1.8E+05	3.2E+04	1.5E+02	3.7E+02	3.3E+06	1.7E+05	3.0E+04	1.8E+05	3.6E+04	1.8E+05	3.6E+04
			100	2.1E+05	1.3E+08	3.6E+07	6.4E+06	2.5E+03	8.1E+03	NGR	NGR	6.8E+06	NGR	NGR	NGR	NGR
			150	2.4E+05	NGR	4.2E+07	7.4E+06	2.8E+03	9.6E+03	NGR	NGR	8.3E+06	NGR	NGR	NGR	NGR
			200	2.7E+05	NGR	4.8E+07	8.4E+06	3.1E+03	1.1E+04	NGR	NGR	9.7E+06	NGR	NGR	NGR	NGR
			250	3.0E+05	NGR	5.3E+07	9.4E+06	3.4E+03	1.3E+04	NGR	NGR	1.1E+07	NGR	NGR	NGR	NGR
			300	3.3E+05	NGR	NGR	1.0E+07	3.8E+03	1.4E+04	NGR	NGR	1.3E+07	NGR	NGR	NGR	NGR
			350	3.6E+05	NGR	NGR	1.1E+07	4.1E+03	1.6E+04	NGR	NGR	1.4E+07	NGR	NGR	NGR	NGR
			400	3.9E+05	NGR	NGR	1.2E+07	4.4E+03	1.7E+04	NGR	NGR	1.5E+07	NGR	NGR	NGR	NGR
			450	4.2E+05	NGR	NGR	1.3E+07	4.7E+03	1.9E+04	NGR	NGR	1.7E+07	NGR	NGR	NGR	NGR
			500	4.5E+05	NGR	NGR	1.4E+07	5.0E+03	2.0E+04	NGR	NGR	1.8E+07	NGR	NGR	NGR	NGR
			550	4.8E+05	NGR	NGR	1.5E+07	5.4E+03	2.2E+04	NGR	NGR	2.0E+07	NGR	NGR	NGR	NGR
			600	5.1E+05	NGR	NGR	1.6E+07	5.7E+03	2.3E+04	NGR	NGR	2.1E+07	NGR	NGR	NGR	NGR

Notes:

NGR No guideline required, as calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

(2) Based on default attenuation coefficient of 0.01 (AEP 2016b).

TABLE C-1

SUMMARY OF SOIL VAPOUR GUIDELINES

Reference	Land Use	Grain Size	Depth (cm)	Benzene	Toluene	Ethylbenzene	Xylenes	1,2-DCA	Naphthalene	F1 Aliphatic C6-C8	F1 Aliphatic >C8-C10	F1 Aromatic >C8-C10	F2 Aliphatic >C10-C12	F2 Aromatic >C10-C12	F2 Aliphatic >C12-C16	F2 Aromatic >C12-C16
Intrinsik, 2016, Table 8.5	Outdoor	Fine	100	8.1E+06	NGR	NGR	NGR	8.6E+04	4.1E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			150	1.2E+07	NGR	NGR	NGR	1.3E+05	6.2E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			200	1.6E+07	NGR	NGR	NGR	1.7E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			250	2.0E+07	NGR	NGR	NGR	2.1E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			300	2.4E+07	NGR	NGR	NGR	2.6E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			350	2.8E+07	NGR	NGR	NGR	3.0E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			400	3.3E+07	NGR	NGR	NGR	3.4E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			450	3.7E+07	NGR	NGR	NGR	3.9E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			500	4.1E+07	NGR	NGR	NGR	4.3E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			550	4.5E+07	NGR	NGR	NGR	4.7E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			600	4.9E+07	NGR	NGR	NGR	5.1E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
Intrinsik, 2016, Table 8.6	Outdoor	Coarse	100	4.4E+06	NGR	NGR	NGR	4.7E+04	2.2E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			150	6.6E+06	NGR	NGR	NGR	7.0E+04	3.4E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			200	8.9E+06	NGR	NGR	NGR	9.3E+04	4.5E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			250	1.1E+07	NGR	NGR	NGR	1.2E+05	5.6E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			300	1.3E+07	NGR	NGR	NGR	1.4E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			350	1.5E+07	NGR	NGR	NGR	1.6E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			400	1.8E+07	NGR	NGR	NGR	1.9E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			450	2.0E+07	NGR	NGR	NGR	2.1E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			500	2.2E+07	NGR	NGR	NGR	2.3E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			550	2.4E+07	NGR	NGR	NGR	2.6E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR
			600	2.7E+07	NGR	NGR	NGR	2.8E+05	NGR	NGR	NGR	NGR	NGR	NGR	NGR	NGR

Notes:
NGR – Indicates no guideline required as calculated SVQG exceeds maximum theoretical vapour concentration.

APPENDIX D

HISTORICAL SOIL VAPOUR TABLES

TABLE D-1

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Area	Original Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	1,2-Dichloro-ethane	Naphthalene
Guidelines[a]:																									
Residential: fine or coarse-grained; <1 m beneath foundation							6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	NG	NG	NG	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation							3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	NG	4.2E+06	5.1E+06	5.1E+06	NG	NG	NG	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation							3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.5E+06	5.5E+06	5.5E+06	NG	NG	NG	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation							3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	NG	NG	NG	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation							3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	NG	5.0E+06	6.1E+06	6.1E+06	NG	NG	NG	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation							3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.3E+06	6.5E+06	6.5E+06	NG	NG	NG	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation							4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	NG	6.6E+05	8.1E+05	8.1E+05	NG	NG	NG	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation							4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.9E+05	9.9E+05	NG	NG	NG	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation							5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	NG	9.5E+05	1.2E+06	1.2E+06	NG	NG	NG	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation							6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	NG	1.1E+06	1.3E+06	1.3E+06	NG	NG	NG	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation							6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	NG	NG	NG	3.6E+02	6.1E+03
SV01		4.5	27-Jun-22		Commercial	1	<0.50	6.56	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
SV07		5.0	12-Jul-21		Residential	7	<0.64	2.37	2.26	6.8	-	<15	<15	<15	<15	34	-	<15	<15	<15	34	23	<15	<0.41	<5.2
		5.0	1-Oct-22		Residential	7	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
SV08		4.0	12-Jul-21		Residential	8	<0.64	3.09	<0.87	<2.2	-	<15	20	18	<15	<15	-	<15	<15	<15	20	15	18	<0.41	<5.2
		4.0	14-Feb-22		Residential	8	1.09	<0.75	<0.87	<2.2	-	24	<15	<15	<15	<15	-	<15	<15	<15	24	23	<15	<0.41	<5.2
	Dup	4.0	14-Feb-22		Residential	98	1.05	<0.75	<0.87	<2.2	-	23	<15	<15	<15	<15	-	<15	<15	<15	23	22	<15	<0.41	<5.2
		4.0	30-Sep-22		Residential	8	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
	Dup	4.0	30-Sep-22		Residential	98	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
SV09	Dup	4.0	12-Jul-21		Residential	99	<0.64	5.24	2.08	4.5	-	<15	15	17	<15	<15	-	<15	<15	<15	15	<15	17	<0.41	<5.2
		4.0	12-Jul-21		Residential	9	0.73	3.32	<0.87	<2.2	-	<15	<15	16	<15	<15	-	<15	<15	<15	<15	<15	16	0.45	<5.2
		4.0	14-Feb-22		Residential	9	0.93	<0.75	<0.87	<2.2	-	18	<15	<15	<15	<15	-	<15	<15	<15	18	17	<15	<0.41	<5.2
		4.0	30-Sep-22		Residential	9	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		4.0	10-May-23		Residential	09	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	7.6	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
	Dup	4.0	10-May-23		Residential	Dup-02	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV10		1.0	12-Jul-21		Residential	10	<0.64	0.83	<0.87	<2.2	-	<15	<15	19	<15	<15	-	<15	<15	<15	<15	<15	19	<0.41	<5.2
		1.0	10-Feb-22		Residential	10	1.02	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	26-Sep-22		Residential	10	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	25-Jan-23		Residential	10	<0.64	1.21	<0.87	<2.2	-	35	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV11		1.5	15-Jul-21		Residential	11	<0.64	2.60	<0.87	<2.2	-	<15	<15	21	<15	<15	-	<15	<15	<15	<15	<15	21	<0.41	<5.2
		1.5	17-Feb-22		Residential	11	1.66	<0.75	<0.87	<2.2	-	27	<15	<15	<15	<15	-	<15	<15	<15	27	25	<15	<0.41	<5.2
		1.5	6-Oct-22		Residential	11	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	23-Jan-23		Residential	11	<0.64	<0.75	<0.87	<2.2	-	25	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV20		3.5	14-Jul-21		Residential	20	0.67	3.69	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		3.5	15-Feb-22		Residential	20	54.9	1.66	5.21	10.7	-	3001	33	<15	<15	<15	-	<15	<15	<15	3030	2960	<15	<0.41	<5.2
		3.5	28-Sep-22		Residential	20	0.80	1.92	<0.87	<1.8	-	29	404	1138	<15	<15	-	<15	<15	<15	433	430	1140	<0.41	<5.2
SV21		3.5	14-Jul-21		Residential	21	1.21	1.02	<0.87	<2.2	-	67	19	15	<15	<15	-	<15	<15	<15	86	84	15	<0.41	<5.2
		3.5	15-Feb-22		Residential	21	15.2	0.75	1.43	3.0	-	44	<15	<15	<15	<15	-	<15	<15	<15	44	24	<15	<0.41	<5.2
		3.5	28-Sep-22		Residential	21	<0.50	<0.75	<0.87	<1.8	-	21	<15	<15	<15	<15	-	<15	<15	<15	21	21	<15	<0.41	<5.2
		3.5	24-Jan-23		Residential	21	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV22		4.0	14-Jul-21		Residential	22	0.86	1.85	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		4.0	15-Feb-22		Residential	22	1.15	<0.75	<0.87	<2.2	-	25	<15	<15	<15	<15	-	<15	<15	<15	25	24	<15	<0.41	<5.2
		4.0	28-Sep-22		Residential	22	1.63	4.97	<0.87	2.1	-	40	<15	<15	<15	<15	-	<15	<15	<15	40	31	<15	<0.41	<5.2

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsik Corp. for Suncor Energy Products Partnership. December 2022.*
The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).
b - Awaiting confirmation of analytical data for all analytes.
c - Awaiting well depth confirmation.
d - Data appears to be anomalous and is inconsistent with prior and subsequent sampling events; additional sampling is recommended.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Italics - Greater than 90% of referenced guidelines (screening threshold).
Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
Results for all parameters are reported in micrograms per metre cubed (µg/m^3), unless otherwise specified.
Notes: All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Area	Original Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	1,2-Dichloro-ethane	Naphthalene
Guidelines[a]:																									
Residential: fine or coarse-grained; <1 m beneath foundation							6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	NG	NG	NG	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation							3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	NG	4.2E+06	5.1E+06	5.1E+06	NG	NG	NG	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation							3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.5E+06	5.5E+06	5.5E+06	NG	NG	NG	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation							3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	NG	NG	NG	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation							3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	NG	5.0E+06	6.1E+06	6.1E+06	NG	NG	NG	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation							3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.3E+06	6.5E+06	6.5E+06	NG	NG	NG	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation							4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	NG	6.6E+05	8.1E+05	8.1E+05	NG	NG	NG	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation							4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.9E+05	9.9E+05	NG	NG	NG	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation							5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	NG	9.5E+05	1.2E+06	1.2E+06	NG	NG	NG	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation							6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	NG	1.1E+06	1.3E+06	1.3E+06	NG	NG	NG	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation							6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	NG	NG	NG	3.6E+02	6.1E+03
SV23		4.5	14-Jul-21		Residential	23	<0.64	2.41	1.87	4.2	-	118	144	53	32	85	-	<15	<15	<15	347	339	85	<0.41	<5.2
		4.5	15-Feb-22		Residential	23	1.12	<0.75	<0.87	<2.2	-	22	<15	<15	<15	<15	-	<15	<15	<15	22	21	<15	<0.41	<5.2
		4.5	28-Sep-22		Residential	23	<0.50	<0.75	<0.87	<1.8	-	16	<15	<15	<15	<15	-	<15	<15	<15	16	16	<15	<0.41	<5.2
		4.5	25-Jan-23		Residential	23	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV24		5.0	14-Jul-21		Residential	24	<0.64	0.83	<0.87	<2.2	-	<15	<15	15	<15	<15	-	<15	<15	<15	<15	<15	15	<0.41	<5.2
		5.0	10-Feb-22		Residential	24	0.86	1.02	<0.87	<2.2	-	<15	17	68	<15	<15	-	<15	<15	<15	17	15	68	<0.41	<5.2
		5.0	28-Sep-22		Residential	24	<0.50	<0.75	<0.87	<1.8	-	19	<15	<15	<15	<15	-	<15	<15	<15	19	19	<15	<0.41	<5.2
		5.0	25-Jan-23		Residential	24	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV25		5.0	14-Jul-21		Residential	25	2.43	1.96	<0.87	<2.2	-	85	55	16	<15	<15	-	<15	<15	<15	140	136	16	<0.41	<5.2
		5.0	10-Feb-22		Residential	25	1.12	2.00	<0.87	<2.2	-	100	768	291	<15	<15	-	<15	<15	<15	868	864	291	<0.41	<5.2
		5.0	28-Sep-22		Residential	25	0.70	1.47	<0.87	<1.8	-	2781	429	241	<15	<15	-	<15	<15	<15	3210	3210	241	<0.41	<5.2
SV26A		5.0	12-Jul-21		Residential	26A	<0.64	1.92	<0.87	<2.2	-	61	48	65	31	<15	-	<15	<15	<15	109	107	96	<0.41	<5.2
		5.0	11-Feb-22		Residential	26A	1.34	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		5.0	1-Oct-22		Residential	26A	<0.50	<0.75	<0.87	<1.8	-	31	<15	<15	<15	<15	-	<15	<15	<15	31	31	<15	<0.41	<5.2
		5.0	25-Jan-23		Residential	26A	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		5.0	5-May-23		Residential	26A	<0.32	0.76	<0.43	<1.3	<5.0	<5.0	7.5	42.8	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV26B		3.5	12-Jul-21		Residential	26B	1.09	<0.75	<0.87	<2.2	-	25	122	4340	1800	<15	-	<15	<15	<15	147	146	6140	<0.41	<5.2
		3.5	11-Feb-22	d	Residential	26B	319	7.61	33.9	69.0	-	27350	360	<15	<15	102	-	<15	<15	<15	27800	27400	<15	<0.41	<5.2
		3.5	1-Oct-22		Residential	26B	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		3.5	25-Jan-23		Residential	26B	<0.64	<0.75	<0.87	<2.2	-	26	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
	Dup	3.5	25-Jan-23		Residential	Dup-02	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		3.5	5-May-23		Residential	26B	0.50	1.22	<0.43	<1.3	<5.0	5.0	11.1	57.3	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV26C		2.0	12-Jul-21		Residential	26C	<0.64	0.94	<0.87	<2.2	-	18	<15	18	<15	<15	-	<15	<15	<15	18	17	18	<0.41	<5.2
		2.0	11-Feb-22		Residential	26C	0.93	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		2.0	1-Oct-22		Residential	26C	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		2.0	25-Jan-23		Residential	26C	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		2.0	5-May-23		Residential	26C	<0.32	0.74	<0.43	<1.3	<5.0	<5.0	5.4	29.6	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV27		3.0	10-Feb-22		Residential	27	13.6	1.17	1.17	2.3	-	933	<15	<15	<15	<15	-	<15	<15	<15	933	915	<15	<0.41	<5.2
		3.0	26-Sep-22		Residential	27	1.66	3.2	<0.87	<1.8	-	69	22	<15	<15	<15	-	<15	<15	<15	91	86	<15	<0.41	<5.2
SV28		2.5	10-Feb-22		Residential	28	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		2.5	26-Sep-22		Residential	28	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		2.5	25-Jan-23		Residential	28	<0.64	<0.75	<0.87	<2.2	-	22	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsik Corp. for Suncor Energy Products Partnership. December 2022.*
The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).
b - Awaiting confirmation of analytical data for all analytes.
c - Awaiting well depth confirmation.
d - Data appears to be anomalous and is inconsistent with prior and subsequent sampling events; additional sampling is recommended.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Italics - Greater than 90% of referenced guidelines (screening threshold).
Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
Results for all parameters are reported in micrograms per metre cubed (µg/m^3), unless otherwise specified.
Notes: All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Area	Original Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	1,2-Dichloro-ethane	Naphthalene
Guidelines[a]:																									
Residential: fine or coarse-grained; <1 m beneath foundation							6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	NG	NG	NG	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation							3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	NG	4.2E+06	5.1E+06	5.1E+06	NG	NG	NG	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation							3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.5E+06	5.5E+06	5.5E+06	NG	NG	NG	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation							3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	NG	NG	NG	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation							3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	NG	5.0E+06	6.1E+06	6.1E+06	NG	NG	NG	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation							3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.3E+06	6.5E+06	6.5E+06	NG	NG	NG	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation							4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	NG	6.6E+05	8.1E+05	8.1E+05	NG	NG	NG	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation							4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.9E+05	9.9E+05	NG	NG	NG	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation							5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	NG	9.5E+05	1.2E+06	1.2E+06	NG	NG	NG	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation							6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	NG	1.1E+06	1.3E+06	1.3E+06	NG	NG	NG	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation							6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	NG	NG	NG	3.6E+02	6.1E+03
SV29		1.5	10-Feb-22		Residential	29	<0.64	1.06	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	26-Sep-22		Residential	29	<0.50	<0.75	<0.87	<1.8	-	27	<15	<15	<15	<15	-	<15	<15	<15	27	27	<15	<0.41	<5.2
		1.5	25-Jan-23		Residential	29	<0.64	<0.75	<0.87	<2.2	-	19	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV30		1.0	16-Jul-21		Residential	30	<0.64	5.20	3.47	9.3	-	69	103	64	156	21	-	<15	<15	<15	193	175	220	<0.41	<5.2
		1.0	16-Feb-22		Residential	30	2.49	<0.75	<0.87	<2.2	-	49	<15	<15	<15	<15	-	<15	<15	<15	49	47	<15	<0.41	<5.2
		1.0	2-Oct-22		Residential	30	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
SV31		1.0	15-Jul-21		Residential	31	0.77	3.66	6.34	2.2	-	18	<15	27	22	<15	-	<15	<15	<15	18	<15	49	<0.41	<5.2
		1.0	17-Feb-22		Residential	31	1.34	<0.75	<0.87	<2.2	-	21	<15	<15	<15	<15	-	<15	<15	<15	21	20	<15	<0.41	<5.2
		1.0	3-Oct-22		Residential	31	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
	Dup	1.0	3-Oct-22		Residential	931	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	23-Jan-23		Residential	31	<0.64	<0.75	<0.87	<2.2	-	<15	149	556	26	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV32	Dup	1.0	12-Mar-21		Residential	932	<0.50	3.28	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	12-Mar-21		Residential	32	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
	Dup	1.0	7-Jul-21		Residential	932	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	7-Jul-21		Residential	32	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	9-Nov-21		Residential	32	**48800**	**124000**	12600	**60900**	**-**	844145	664	623	<15	19239	**-**	672	<15	<15	865000	619000	623	<4100	<2300
		1.0	20-Dec-21		Residential	32CS	34.3	63	4.73	21.9	-	1381	<15	<15	<15	745	-	<15	<15	<15	2130	2010	<15	<0.41	<5.2
		1.0	12-Feb-22		Residential	32	2.84	<0.75	<0.87	<2.2	-	43	<15	<15	<15	<15	-	<15	<15	<15	43	40	<15	<0.41	<5.2
		1.0	25-May-22		Residential	32	**1790**	1910	749	835	-	**3750000**	14200	<15	<15	326000	-	12200	1540	<15	4100000	4090000	3080	<0.41	100
		1.0	27-Jun-22	b	Residential	32CS	**1890**	3540	392	2000	-	55219	816	<15	<15	7259	-	197.86	<15	<15	63500	55700	<15	<0.41	10
		1.0	5-Oct-22		Residential	32	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
	Dup	1.0	5-Oct-22		Residential	932	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	24-Jan-23		Residential	32	<0.64	<0.75	<0.87	<2.2	-	173	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.0	5-May-23		Residential	32	<0.32	0.50	<0.43	<1.3	<5.0	<5.0	<5.0	6.9	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV36		3.0	8-Jul-21		Residential	36	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		3.0	15-Feb-22		Residential	36	0.89	<0.75	<0.87	<2.2	-	22	<15	<15	<15	<15	-	<15	<15	<15	22	21	<15	<0.41	<5.2
		3.0	30-Sep-22		Residential	36	<0.50	<0.75	<0.87	<1.8	-	68	<15	<15	<15	<15	-	<15	<15	<15	68	68	<15	<0.41	<5.2
		3.0	24-Jan-23		Residential	36	<0.64	<0.75	<0.87	<2.2	-	46	4276	16119	1012	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		3.0	30-Jan-23		Residential	36	<0.64	1.7	2.69	3	-	212	2018	1524	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsik Corp. for Suncor Energy Products Partnership. December 2022.*
The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).
b - Awaiting confirmation of analytical data for all analytes.
c - Awaiting well depth confirmation.
d - Data appears to be anomalous and is inconsistent with prior and subsequent sampling events; additional sampling is recommended.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Italics - Greater than 90% of referenced guidelines (screening threshold).
Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$), unless otherwise specified.
Notes: All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Area	Original Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	1,2-Dichloro-ethane	Naphthalene
Guidelines[a]:																									
Residential: fine or coarse-grained; <1 m beneath foundation							6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	NG	NG	NG	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation							3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	NG	4.2E+06	5.1E+06	5.1E+06	NG	NG	NG	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation							3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.5E+06	5.5E+06	5.5E+06	NG	NG	NG	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation							3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	NG	NG	NG	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation							3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	NG	5.0E+06	6.1E+06	6.1E+06	NG	NG	NG	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation							3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.3E+06	6.5E+06	6.5E+06	NG	NG	NG	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation							4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	NG	6.6E+05	8.1E+05	8.1E+05	NG	NG	NG	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation							4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.9E+05	9.9E+05	NG	NG	NG	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation							5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	NG	9.5E+05	1.2E+06	1.2E+06	NG	NG	NG	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation							6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	NG	1.1E+06	1.3E+06	1.3E+06	NG	NG	NG	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation							6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	NG	NG	NG	3.6E+02	6.1E+03
SV37		2.5	15-Jul-21		Residential	37	<0.64	5.54	1.95	<2.2	-	74	<15	<15	<15	<15	-	<15	<15	<15	74	64	<15	<0.41	<5.2
		2.5	17-Feb-22		Residential	37	3.10	0.87	<0.87	<2.2	-	33	<15	<15	<15	<15	-	<15	<15	<15	33	29	<15	<0.41	<5.2
		2.5	30-Sep-22		Residential	37	<0.50	<0.75	<0.87	<1.8	-	286	<15	<15	<15	<15	-	<15	<15	<15	286	286	<15	<0.41	<5.2
		2.5	24-Jan-23		Residential	37	<0.64	<0.75	<0.87	<2.2	-	95	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV38		4.0	16-Jul-21		Residential	38	<0.64	2.37	<0.87	<2.2	-	259	19	23	<15	<15	-	<15	<15	<15	278	274	23	<0.41	<5.2
		4.0	16-Feb-22		Residential	38	10.2	0.90	<0.87	<2.2	-	205	<15	<15	<15	<15	-	<15	<15	<15	205	194	<15	<0.41	<5.2
		4.0	2-Oct-22		Residential	38	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
SV39		2.0	15-Jul-21		Residential	39	<0.64	7.20	1.17	3.0	-	55	<15	23	<15	<15	-	<15	<15	<15	55	44	23	<0.41	<5.2
		2.0	17-Feb-22		Residential	39	2.75	<0.75	<0.87	<2.2	-	30	<15	<15	<15	<15	-	<15	<15	<15	30	27	<15	<0.41	<5.2
	Dup	2.0	17-Feb-22		Residential	939	2.75	<0.75	<0.87	<2.2	-	28	<15	59	<15	<15	-	<15	<15	<15	28	25	59	<0.41	<5.2
		2.0	30-Sep-22		Residential	39	<0.50	<0.75	<0.87	<1.8	-	513	<15	<15	<15	<15	-	<15	<15	<15	513	513	<15	<0.41	<5.2
		2.0	23-Jan-23		Residential	39	<0.64	<0.75	<0.87	<2.2	-	77	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV40		1.5	15-Jul-21		Residential	40	2.01	15.6	2.48	7.7	-	83	130	95	55	24	-	<15	<15	<15	237	209	150	<0.41	<5.2
		1.5	17-Feb-22		Residential	40	0.96	<0.75	<0.87	<2.2	-	21	<15	<15	<15	<15	-	<15	<15	<15	21	20	<15	<0.41	<5.2
		1.5	6-Oct-22		Residential	40	0.51	<0.75	<0.87	<1.8	-	21	<15	<15	<15	<15	-	<15	<15	<15	21	20	<15	<0.41	<5.2
		1.5	23-Jan-23		Residential	40	<0.64	<0.75	<0.87	<2.2	-	36	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV41		1.5	16-Jul-21		Residential	41	<0.64	<0.75	6.12	6.4	-	<15	<15	23	<15	<15	-	<15	<15	<15	<15	<15	23	<0.41	<5.2
		1.5	16-Feb-22		Residential	41	5.65	<0.75	<0.87	<2.2	-	138	<15	<15	<15	<15	-	<15	<15	<15	138	132	<15	<0.41	<5.2
		1.5	2-Oct-22		Residential	41	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	10-May-23		Residential	41	0.33	0.68	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV101		0.3 m below foundation	3-Oct-22		Residential	101	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		0.3 m below foundation	31-Jan-23		Residential	101	6.77	6.52	1.52	10.2	-	160	30	71	22	21	-	50.01	<15	<15	-	-	-	<0.40	<5.2
		0.3 m below foundation	8-May-23		Residential	101	6.56	2.38	0.69	6.2	<5.0	<5.0	<5.0	76.8	180	-	<5.0	41.8	12.4	24.5	-	-	-	<0.4	<1.0
SV321B		1.04 - 1.09	11-Mar-21	c	Residential	321B	<0.50	1.13	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.04 - 1.09	8-Jul-21	c	Residential	321B	<0.64	1.06	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.04 - 1.09	8-Nov-21	c	Residential	321B	<0.64	<0.75	<0.87	<2.2	-	223	135	47	<15	<15	-	<15	<15	<15	358	358	47	<0.41	<5.2
		1.04 - 1.09	11-Feb-22	c	Residential	321B	<0.64	1.02	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.04 - 1.09	24-May-22	c	Residential	321B	<0.50	1.92	<0.87	<1.8	-	30	<15	<15	<15	<15	-	<15	<15	<15	30	27	<15	<0.41	<5.2
		1.04 - 1.09	4-Oct-22	c	Residential	321B	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.04 - 1.09	27-Jul-23	c	Residential	321B	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.40	<1.0

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsik Corp. for Suncor Energy Products Partnership. December 2022.* The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).
b - Awaiting confirmation of analytical data for all analytes.
c - Awaiting well depth confirmation.
d - Data appears to be anomalous and is inconsistent with prior and subsequent sampling events; additional sampling is recommended.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Italics - Greater than 90% of referenced guidelines (screening threshold).
Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$), unless otherwise specified.
Notes: All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Area	Original Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	1,2-Dichloro-ethane	Naphthalene
Guidelines[a]:																									
Residential: fine or coarse-grained; <1 m beneath foundation							6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	NG	NG	NG	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation							3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	NG	4.2E+06	5.1E+06	5.1E+06	NG	NG	NG	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation							3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.5E+06	5.5E+06	5.5E+06	NG	NG	NG	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation							3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	NG	NG	NG	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation							3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	NG	5.0E+06	6.1E+06	6.1E+06	NG	NG	NG	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation							3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.3E+06	6.5E+06	6.5E+06	NG	NG	NG	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation							4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	NG	6.6E+05	8.1E+05	8.1E+05	NG	NG	NG	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation							4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.9E+05	9.9E+05	NG	NG	NG	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation							5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	NG	9.5E+05	1.2E+06	1.2E+06	NG	NG	NG	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation							6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	NG	1.1E+06	1.3E+06	1.3E+06	NG	NG	NG	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation							6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	NG	NG	NG	3.6E+02	6.1E+03
SV322		1.0	11-Mar-21		Residential	322	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	8-Jul-21		Residential	322	<0.64	1.55	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	8-Nov-21		Residential	322	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	11-Feb-22		Residential	322	4.03	0.79	<0.87	<2.2	-	107	<15	<15	<15	<15	-	<15	<15	<15	107	102	<15	<0.41	<5.2
		1.0	24-May-22		Residential	322	42.9	50.0	13.8	78.8	-	518	<15	<15	<15	120	-	<15	<15	<15	638	453	<15	<0.41	<5.2
	Dup	1.0	24-May-22		Residential	9322	44.4	53.6	15.0	83.8	-	537	<15	<15	<15	127	-	<15	<15	<15	664	467	<15	<0.41	<5.2
		1.0	4-Oct-22		Residential	322	1.0	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
	Dup	1.0	4-Oct-22		Residential	9322	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	30-Jan-23		Residential	322	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.0	27-Jul-23		Residential	322	0.44	1.07	1.20	5.6	<5.0	6.4	10.2	70.0	9.2	-	<5.0	6.0	<5.0	<5.0	-	-	-	<0.40	<1.0
SV323		1.0	12-Mar-21		Residential	323	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	8-Jul-21		Residential	323	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	8-Nov-21		Residential	323	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
	Dup	1.0	8-Nov-21		Residential	9323	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	11-Feb-22		Residential	323	0.83	0.94	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	24-May-22		Residential	323	<0.50	1.06	1.43	2.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	3-Oct-22		Residential	323	1.47	4.90	3.34	65.7	-	42	18	33	<15	107	-	21.45	<15	<15	188	113	33	<0.41	<5.2
		1.0	31-Jan-23		Residential	323	<0.64	<0.75	<0.87	<2.2	-	130	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.0	11-May-23		Residential	323	0.53	0.95	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV324		1.5	3-Oct-22		Residential	324	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	26-Jan-23		Residential	324	<0.64	<0.75	<0.87	<2.2	-	20	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
	Dup	1.5	26-Jan-23		Residential	Dup-03	0.67	1.81	<0.87	<2.2	-	91	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.5	10-May-23		Residential	324	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0

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Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
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Notes: All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

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PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Area	Original Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	1,2-Dichloro-ethane	Naphthalene
Guidelines[a]:																									
Residential: fine or coarse-grained; <1 m beneath foundation							6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	NG	NG	NG	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation							3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	NG	4.2E+06	5.1E+06	5.1E+06	NG	NG	NG	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation							3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.5E+06	5.5E+06	5.5E+06	NG	NG	NG	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation							3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	NG	NG	NG	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation							3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	NG	5.0E+06	6.1E+06	6.1E+06	NG	NG	NG	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation							3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.3E+06	6.5E+06	6.5E+06	NG	NG	NG	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation							4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	NG	6.6E+05	8.1E+05	8.1E+05	NG	NG	NG	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation							4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.9E+05	9.9E+05	NG	NG	NG	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation							5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	NG	9.5E+05	1.2E+06	1.2E+06	NG	NG	NG	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation							6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	NG	1.1E+06	1.3E+06	1.3E+06	NG	NG	NG	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation							6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	NG	NG	NG	3.6E+02	6.1E+03
SV325		1.5	4-Oct-22		Residential	325	<0.50	<0.75	<0.87	<1.8	-	71	<15	<15	<15	<15	-	<15	<15	<15	71	71	<15	<0.41	<5.2
		1.5	26-Jan-23		Residential	325	<0.64	<0.75	<0.87	<2.2	-	28	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.5	5-May-23		Residential	325	<0.32	2.06	0.48	2.3	<5.0	<5.0	8.7	52.7	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV326		1.5	4-Oct-22		Residential	326	<0.50	<0.75	<0.87	<1.8	-	21	<15	<15	<15	<15	-	<15	<15	<15	21	21	<15	<0.41	<5.2
		1.5	26-Jan-23		Residential	326	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.5	5-May-23		Residential	326	<0.32	1.36	<0.43	1.8	<5.0	<5.0	10.5	31.7	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV401		1.5	12-Mar-21		Residential	401	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	8-Jul-21		Residential	401	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	9-Nov-21		Residential	401	<0.64	<0.75	<0.87	<2.2	-	23	<15	<15	<15	<15	-	<15	<15	<15	23	23	<15	<0.41	<5.2
		1.5	12-Feb-22		Residential	401	1.21	2.41	<0.87	<2.2	-	17	<15	<15	<15	<15	-	<15	<15	<15	17	<15	<15	<0.41	<5.2
		1.5	24-May-22		Residential	401	<0.50	1.09	2.00	4.9	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	5-Oct-22		Residential	401	<0.50	<0.75	<0.87	<1.8	-	19	<15	<15	<15	<15	-	<15	<15	<15	19	19	<15	<0.41	<5.2
		1.5	11-May-23		Residential	401	0.37	1.03	<0.43	<1.3	<5.0	<5.0	<5.0	7.7	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV402		1.5	12-Mar-21		Residential	402	0.73	3.24	1.35	4.9	-	<150	1100	18200	9140	<150	-	<150	<150	<150	1100	1090	27300	<0.41	22.5
		1.5	7-Jul-21		Residential	402	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	9-Nov-21		Residential	402	**58300**	**155000**	16100	**76700**	-	118166	2255	813	<15	23532	-	937.4	318	318	145000	<15	1450	<4100	**3470**
		1.5	20-Dec-21		Residential	402CS	24.2	37.9	2.0	7.6	-	848	<15	<15	<15	55	-	<15	<15	<15	903	831	<15	<0.41	<5.2
		1.5	12-Feb-22		Residential	402	0.83	<0.75	<0.87	<2.2	-	<15	<15	67	634	<15	-	<15	<15	<15	<15	<15	701	<0.41	<5.2
	Dup	1.5	12-Feb-22		Residential	9402	0.86	<0.75	<0.87	<2.2	-	<15	<15	74	599	<15	-	<15	<15	<15	<15	<15	673	<0.41	<5.2
		1.5	25-May-22		Residential	402	**264000**	**182000**	35300	**178000**	-	28500	600	<15	<15	4170	-	219	36	<15	33500	<15	72	<0.41	**1160**
		1.5	27-Jun-22	b	Residential	402CS	**1410**	2950	452	2510	-	35896	650	<15	<15	6434	-	188.75	<15	<15	43200	35900	<15	<0.41	27.4
		1.5	5-Oct-22	b	Residential	402	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.5	24-Jan-23		Residential	402	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
	Dup	1.5	24-Jan-23		Residential	Dup-01	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.5	5-May-23		Residential	402	<0.32	0.94	<0.43	<1.3	<5.0	<5.0	<5.0	26.8	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsik Corp. for Suncor Energy Products Partnership. December 2022.*
The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).
b - Awaiting confirmation of analytical data for all analytes.
c - Awaiting well depth confirmation.
d - Data appears to be anomalous and is inconsistent with prior and subsequent sampling events; additional sampling is recommended.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Italics - Greater than 90% of referenced guidelines (screening threshold).
Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$), unless otherwise specified.
Notes: All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Area	Original Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	1,2-Dichloro-ethane	Naphthalene
Guidelines[a]:																									
Residential: fine or coarse-grained; <1 m beneath foundation							6.3E+01	1.1E+05	1.0E+05	4.9E+03	NG	9.2E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	NG	NG	NG	3.8E+01	4.5E+02
Residential: fine-grained: 1 m beneath foundation							3.0E+04	5.5E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.5E+07	2.6E+07	2.6E+07	NG	NG	4.2E+06	5.1E+06	5.1E+06	NG	NG	NG	1.8E+03	2.3E+04
Residential: fine-grained: 1.5 m beneath foundation							3.2E+04	5.7E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.5E+06	5.5E+06	5.5E+06	NG	NG	NG	1.9E+03	2.4E+04
Residential: fine-grained: 2 m beneath foundation							3.3E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.8E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	NG	NG	NG	1.9E+03	2.5E+04
Residential: fine-grained: 2.5 m beneath foundation							3.4E+04	6.1E+07	5.6E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.1E+07	3.1E+07	NG	NG	5.0E+06	6.1E+06	6.1E+06	NG	NG	NG	2.0E+03	2.7E+04
Residential: fine-grained: 3 m beneath foundation							3.5E+04	6.3E+07	5.8E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.3E+06	6.5E+06	6.5E+06	NG	NG	NG	2.0E+03	2.8E+04
Residential: coarse-grained: 1 m beneath foundation							4.1E+03	7.4E+06	6.8E+06	3.3E+05	NG	7.4E+07	3.9E+06	4.0E+06	4.0E+06	NG	NG	6.6E+05	8.1E+05	8.1E+05	NG	NG	NG	2.3E+02	3.4E+03
Residential: coarse-grained: 1.5 m beneath foundation							4.7E+03	8.5E+06	8.0E+06	3.9E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.9E+05	9.9E+05	NG	NG	NG	2.7E+02	4.1E+03
Residential: coarse-grained: 2 m beneath foundation							5.3E+03	9.7E+06	9.2E+06	4.5E+05	NG	1.1E+08	5.6E+06	5.8E+06	5.8E+06	NG	NG	9.5E+05	1.2E+06	1.2E+06	NG	NG	NG	3.0E+02	4.8E+03
Residential: coarse-grained: 2.5 m beneath foundation							6.0E+03	1.1E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.5E+06	6.7E+06	6.7E+06	NG	NG	1.1E+06	1.3E+06	1.3E+06	NG	NG	NG	3.3E+02	5.5E+03
Residential: coarse-grained: 3 m beneath foundation							6.6E+03	1.2E+07	1.2E+07	5.6E+05	NG	1.4E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	NG	NG	NG	3.6E+02	6.1E+03
SV403		0.95	11-Mar-21		Residential	403	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		0.95	7-Jul-21		Residential	403	<0.64	2.07	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		0.95	8-Nov-21		Residential	403	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		0.95	11-Feb-22		Residential	403	2.46	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		0.95	24-May-22		Residential	403	<0.50	0.83	<0.87	<1.8	-	20	<15	18	<15	<15	-	<15	<15	<15	20	19	18	<0.41	<5.2
		0.95	5-Oct-22		Residential	403	1.50	0.79	<0.87	<1.8	-	34	<15	<15	<15	<15	-	<15	<15	<15	34	32	<15	<0.41	<5.2
		0.95	10-May-23		Residential	403	0.41	0.39	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV404		1.0	11-Mar-21		Residential	404	0.54	0.98	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	7-Jul-21		Residential	404	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	8-Nov-21		Residential	404	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	11-Feb-22		Residential	404	5.08	<0.75	<0.87	<2.2	-	35	<15	<15	<15	<15	-	<15	<15	<15	35	30	<15	<0.41	<5.2
		1.0	25-May-22		Residential	404	0.61	2.00	1.56	2.6	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	5-Oct-22		Residential	404	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<15	<15	<0.41	<5.2
		1.0	24-Jan-23		Residential	404	<0.64	<0.75	<0.87	<2.2	-	17	<15	<15	<15	<15	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.0	5-May-23		Residential	404	<0.32	0.61	<0.43	<1.3	<5.0	<5.0	<5.0	19.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
		1.0	5-May-23		Residential	Dup-01	1.32	2.5	0.65	2.9	<5.0	9.6	9.7	48.8	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV500		1.2	27-Jan-23		Residential	500	<0.64	1.85	3	11.4	-	22	71	189	<15	16	-	<15	<15	<15	-	-	-	<0.40	<5.2
SV501		1.2	30-Jan-23		Residential	501	0.89	6.33	5.43	15.6	-	53	130	40	<15	21	-	<15	<15	<15	-	-	-	<0.40	<5.2
		1.2	11-May-23		Residential	501	0.51	2.01	1.58	4.1	<5.0	<5.0	<5.0	10.6	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV502		1.2	11-May-23		Residential	502	<0.32	0.62	0.55	<1.3	<5.0	20.4	5.8	23.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV503		1.2	11-May-23		Residential	503	0.36	0.49	<0.43	<1.3	<5.0	<5.0	<5.0	14.1	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
		1.2	11-May-23		Residential	Dup-03	<0.32	0.65	<0.43	<1.3	<5.0	<5.0	<5.0	13.9	<5.0	-	<5.0	<5.0	<5.0	<5.0	-	-	-	<0.4	<1.0
SV504		1.2	11-May-23		Residential	504	<0.32	<0.38	<0.43	<1.3	<5.0	13.5	131	360	10.7	-	<5.0	5.3	9.1	<5.0	-	-	-	<0.4	<1.0
SV505		1.2	23-Jan-23		Residential	505	0.73	9.8	7.08	25.5	-	269	151	188	<15	42	-	<15	<15	<15	-	-	-	<0.40	<5.2

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The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).
b - Awaiting confirmation of analytical data for all analytes.
c - Awaiting well depth confirmation.
d - Data appears to be anomalous and is inconsistent with prior and subsequent sampling events; additional sampling is recommended.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Italics - Greater than 90% of referenced guidelines (screening threshold).
Underline - Detection limit exceeds guideline.
Shaded Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.
BOLD - Exceeds referenced guidelines.
Results for all parameters are reported in micrograms per metre cubed (µg/m^3), unless otherwise specified.
Notes: All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-2A

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
VOLATILE ORGANIC COMPOUND PARAMETERS

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Original Sample ID	Propylene	Dichloro-difluoro-methane	1,2-Dichloro-tetrafluoro-ethane	Ethanol	1,1,2-Trichloro-1,2,2-trifluoro-ethane	Chloro-methane	Vinyl Chloride	1,3-Butadiene	Bromo-methane	Chloro-ethane	Vinyl Bromide	Trichloro-fluoro-methane	Acetone	Isopropanol	1,1-Dichloro-ethene	Dichloromethane (Methylene Chloride)	Carbon Disulfide	trans-1,2-Dichloro-ethene	Methyl tert-Butyl Ether (MTBE)	1,1-Dichloro-ethane	Vinyl Acetate	n-Hexane	Methyl Ethyl Ketone	cis-1,2-Dichloro-ethene	Chloroform	Ethyl Acetate	Tetra-hydrofuran	1,1,1-Trichloro-ethane	2,2,4-Tri-methyl-pentane (Iso octane)
Guidelines:						NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
SV01		4.5	27-Jun-22		1	<0.52	2.27	<1.4	9.59	<1.5	1.05	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	14.2	<1.2	19	<1.5	<0.80	<0.72	<1.2	<1.8	13.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	6.5
SV07		5.0	12-Jul-21		7	1.03	2.18	<1.4	14.4	<1.5	1.53	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	19.9	3.1	<1.2	1.3	23.6	<0.80	<0.72	<1.2	<1.8	1.6	5.3	<0.80	<1.0	3.5	<1.2	<1.6	<2.3
		5.0	1-Oct-22		7	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV08		4.0	12-Jul-21		8	1.67	2.82	<1.4	41.8	<1.5	1.42	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	9.4	2.8	<1.2	1.8	<1.5	<0.80	<0.72	<1.2	<1.8	1.5	1.6	<0.80	<1.0	4.9	<1.2	<1.6	<2.3
		4.0	14-Feb-22		8	<0.52	1.93	<1.4	2.51	<1.5	0.72	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5.6	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
	Dup	4.0	14-Feb-22		98	<0.52	2.08	<1.4	1.83	<1.5	0.83	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	4.5	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		4.0	30-Sep-22		8	<0.52	2.13	<1.4	3.58	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	1.8	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
	Dup	4.0	30-Sep-22		98	<0.52	2.18	<1.4	2.51	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV09	Dup	4.0	12-Jul-21		99	0.98	15.8	<1.4	8.61	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	2.7	12.8	2.3	<1.2	<1.0	6.7	<0.80	<0.72	<1.2	<1.8	<1.1	2.6	<0.80	<1.0	2.7	<1.2	<1.6	<2.3
		4.0	12-Jul-21		9	1.12	6.63	<1.4	19.2	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	16.3	2.8	<1.2	1.3	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	1.7	<0.80	<1.0	3.0	<1.2	<1.6	<2.3
		4.0	14-Feb-22		9	1.31	2.13	<1.4	2.39	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	4.8	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		4.0	30-Sep-22		9	<0.52	37.2	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	3	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	5.3	<1.8	<1.2	<1.6	<2.3
SV10		1.0	12-Jul-21		10	0.74	2.23	<1.4	14.0	<1.5	1.47	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	13.3	1.4	<1.2	<1.0	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	10-Feb-22		10	<0.52	1.88	<1.4	1.87	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	3.4	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	26-Sep-22		10	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV11		1.5	15-Jul-21		11	<0.52	15.1	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	54.6	7.7	4.4	<1.2	15.4	8.1	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	8.9	<1.8	<1.2	<1.6	<2.3
		1.5	17-Feb-22		11	1.34	2.23	<1.4	4.13	<1.5	0.97	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.5	6-Oct-22		11	<0.52	2.42	<1.4	5.28	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV20		3.5	14-Jul-21		20	1.38	2.32	<1.4	6.75	<1.5	1.73	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	18.2	2.1	<1.2	<1.0	<1.5	<0.80	<0.72	<1.2	<1.8	1.7	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		3.5	15-Feb-22		20	5.46	1.83	<1.4	1.13	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	424	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	183
		3.5	28-Sep-22		20	<0.52	2.23	<1.4	9.31	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	2.3	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV21		3.5	14-Jul-21		21	<0.52	3.21	<1.4	1.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	8.3	1.2	<1.2	1.4	13.4	<0.80	<0.72	<1.2	<1.8	2.3	2.3	<0.80	5.0	<1.8	<1.2	<1.6	<2.3
		3.5	15-Feb-22		21	2.10	1.88	<1.4	1.56	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	84.6	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	52.2
		3.5	28-Sep-22		21	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	3.9	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	10.3	<1.8	<1.2	<1.6	<2.3
SV22		4.0	14-Jul-21		22	<0.52	<0.99	<1.4	6.01	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	20.0	2.3	<1.2	1.7	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	2.1	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		4.0	15-Feb-22		22	<0.52	2.18	<1.4	2.34	<1.5	0.66	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5.3	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		4.0	28-Sep-22		22	<0.52	2.18	<1.4	12.5	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.3	2.2	<0.80	<1.0	3	<1.2	<1.6	<2.3
SV23		4.5	14-Jul-21		23	1.15	<0.99	<1.4	51.8	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	3.5	1.3	<1.2	1.3	287	<0.80	<0.72	<1.2	<1.8	<1.1	4.1	<0.80	1.0	<1.8	4.7	<1.6	<2.3
		4.5	15-Feb-22		23	<0.52	2.23	<1.4	2.09	<1.5	0.95	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	4.7	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		4.5	28-Sep-22		23	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	60	<1.5	<0.80	<0.72	<1.2	<1.8	3.6	<1.5	<0.80	8.9	<1.8	<1.2	<1.6	<2.3
SV24		5.0	14-Jul-21		24	0.69	3.31	<1.4	2.60	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	8.4	<1.2	<1.2	<1.0	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	11.7	<1.8	<1.2	<1.6	<2.3
		5.0	10-Feb-22		24	<0.52	4.99	<1.4	4.24	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	4.0	<250	<1.2	<1.2	<15	1.6	<0.80	<0.72	<1.2	<1.8	3.0	<1.5	<0.80	3.1	<1.8	<1.2	<1.6	<2.3
		5.0	28-Sep-22		24	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	21.6	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	13.2	<1.8	<1.2	<1.6	<2.3
SV25		5.0	14-Jul-21		25	6.06	1.78	<1.4	16.2	<1.5	1.49	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	35.2	4.2	<1.2	1.7	52.5	<0.80	<0.72	<1.2	<1.8	3.7	14.5	<0.80	<1.0	2.8	<1.2	<1.6	<2.3
		5.0	10-Feb-22		25	<0.52	2.23	<1.4	12.1	<1.5	1.49	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		5.0	28-Sep-22		25	12.9	2.13	<1.4	<0.94	<1.5	4.4	<0.51	<1.1	<1.9	5.2	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	16.1	35.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV26A		5.0	12-Jul-21		26A	<0.52	2.27	<1.4	34.9	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	18.4	9.9	3.1	<1.2	1.8	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	1.5	<0.80	3.2	6.6	<1.2	<1.6	<2.3
		5.0	11-Feb-22		26A	<0.52	2.42	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	10.6	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	3.6	<1.5	<0.80	2.0	<1.8	<1.2	<1.6	<2.3
		5.0	1-Oct-22		26A	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	24.8	<250	<1.2	<1.2	<15	35.1	<0.80	<0.72	<1.2	<1.8	2.4	8.2	<0.80	4.8	8.5	<1.2	<1.6	4.5
SV26B		3.5	12-Jul-21		26B	0.79	2.32	<1.4	4.07	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	19.2	15.5	<1.2	<1.2	<1.0	2.9	<0.80	<0.72	<1.2	<1.8	1.1	3.6	<0.80	3.2	<1.8	<1.2	<1.6	<2.3
		3.5	11-Feb-22		26B	29.4	1.83	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	10.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	4540	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	1740
		3.5	1-Oct-22		26B	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	22.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.3	3.7	<1.2	<1.6	<2.3
SV26C		2.0	12-Jul-21		26C	0.95	2.62	<1.4	4.07	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	30.0	11.8	1.6	2.6	1.0	1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	3.1	2.1	<1.2	<1.6	<2.3
		2.0	11-Feb-22		26C	<0.52	1.88	<1.4	1.81	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	5.9	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	2.7	<1.5	<0.80	1.0	<1.8	<1.2	<1.6	<2.3
		2.0	1-Oct-22		26C	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	30.1	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.3	<1.8	<1.2	<1.6	<2.3
SV27		3.0	10-Feb-22		27	3.53	1.78	<1.4	4.90	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	161	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	46.7
		3.0	26-Sep-22		27	<0.52	<0.99	<1.4	7.41	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	5	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	9.8	5.1	<0.80	1.9	<1.8	<1.2	<1.6	<2.3
SV28		2.5	10-Feb-22		28	<0.52	2.08	<1.4	4.47	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	20	<1.5	<0.80	<0.72	<1.2	<1.8	4.0	<1.5	<0.80	3.5	<1.8	<1.2	<1.6	<2.3
		2.5	26-Sep-22		28	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	7.8	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV29		1.5	10-Feb-22		29	<0.52	1.73	<1.4	6.82	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.2	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.5	26-Sep-22		29	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	9.5	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	12.8	<1.8	<1.2	<1.6	<2.3
SV30		1.0	16-Jul-21		30	<0.52	38.5	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	3.5	23.5	29.2	<1.2	1.6	151	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.1	4.4	<1.2	<1.6	<2.3
		1.0	16-Feb-22		30	1.07	2.23	<1.4	1.73	<1.5	0.89	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	8.4	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	2-Oct-22		30	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	36.5	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.8	<1.8	<1.2	<1.6	<2.3
SV31		1.0	15-Jul-21		31	<0.52	146	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	10.4	10.8	<1.2	<1.2	2.4	35.6	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.0	<1.8	<1.2	<1.6	<2.3
		1.0	17-Feb-22		31	<0.52	2.18	<1.4	2.47	<1.5	0.68	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5.0	<1.5	<0.80	<1.0	2.7	<1.2	<1.6	<2.3
		1.0	3-Oct-22		31	<0.52	<0.99	<1.4	7.84	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	3.4	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.8	<1.8	<1.2	<1.6	<2.3
	Dup	1.0	3-Oct-22		931	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	3.09	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	3.5	<1.8	<1.2	<1.6	<2.3
SV32	Dup	1.0	12-Mar-21		932	<0.52	2.13	<1.4	3.11	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	17.0	8.1	<1.2	13.0	<1.5	<0.80	<0.72	<1.2	<1.8	6.2	2.1	<0.80	<1.0	<1.8	<1.2	<1.6	3.0
		1.0	12-Mar-21		32	<0.52	2.08	<1.4	1.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	3.6	1.8	<1.2	3.9	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
	Dup	1.0	7-Jul-21		932	<0.52	3.46	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	10.3	29.6	<1.2	1.6	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.2	2.3	<1.2	<1.6	<2.3
		1.0	7-Jul-21		32	<0.52	2.97	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	10.1	29.9	<1.2	1.2	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.3	1.9	1.5	<1.6	<2.3
		1.0	9-Nov-21		32	204000	<6300	<9100	836000	<8300	<3000	<3500	<2600	<4700	<3700	<5500	<7300	595000	<3900	<3700	<3900	<2800	<3260	<2100	<4300	<3500	123000	<2800	<3900	<5300	<2900	<1700	<5300	75500
		1.0	20-Dec-21		32CS	31.7	<0.99	<1.4	414	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	2.1	<0.80	<0.72	<1.2	<1.8	68.8	<1.5	<0.8	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	12-Feb-22		32	<0.52	1.19	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	9.6	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	25-May-22		32	131	2.18	<1.4	27100	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	6110	<1.5	<0.80	<1.0	10.8	<1.2	<1.6	2160
		1.0	27-Jun-22	a	32CS	199	<0.99	<1.4	43600	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5720	<1.5	<0.80	<1.0	4.5	<1.2	<1.6	4030
		1.0	5-Oct-22		32	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
	Dup	1.0	5-Oct-22		932	<0.52	<0.99	<1.4	66.9	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV36		3.0	8-Jul-21		36	0.64	3.51	<1.4	2.17	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	69.8	5.1	4.3	<1.2	<1.0	6.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	66.5	<1.8	<1.2	<1.6	<2.3
		3.0	15-Feb-22		36	<0.52	2.13	<1.4	1.87	<1.5	0.72	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	4.6	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		3.0	30-Sep-22		36	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	42.8	<250	<1.2	<1.2	38	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	46	<1.8	<1.2	<1.6	<2.3
SV37		2.5	15-Jul-21		37	<0.52	2.13	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	3.9	<1.2	<1.2	14.1	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	76.6	<1.8	<1.2	<1.6	<2.3
		2.5	17-Feb-22		37	<0.52	2.42	<1.4	2.13	<1.5	1.16	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5.6	<1.5	1.47	<1.0	<1.8	<1.2	<1.6	<2.3
		2.5	30-Sep-22		37	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	212	<1.8	<1.2	<1.6	<2.3

a - Awaiting confirmation of analytical data for all analytes.
b - Awaiting well depth confirmation.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - Meters below ground surface (unless otherwise specified)
Notes: Results for all parameters are reported in micrograms per metre cubed (ug/m^3), unless otherwise specified.
All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-2A

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
VOLATILE ORGANIC COMPOUND PARAMETERS

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Original Sample ID	Propylene	Dichloro-difluoro-methane	1,2-Dichloro-tetrafluoro-ethane	Ethanol	1,1,2-Trichloro-1,2,2-trifluoro-ethane	Chloro-methane	Vinyl Chloride	1,3-Butadiene	Bromo-methane	Chloro-ethane	Vinyl Bromide	Trichloro-fluoro-methane	Acetone	Isopropanol	1,1-Dichloro-ethene	Dichloromethane (Methylene Chloride)	Carbon Disulfide	trans-1,2-Dichloro-ethene	Methyl tert-Butyl Ether (MTBE)	1,1-Dichloro-ethane	Vinyl Acetate	n-Hexane	Methyl Ethyl Ketone	cis-1,2-Dichloro-ethene	Chloroform	Ethyl Acetate	Tetra-hydrofuran	1,1,1-Trichloro-ethane	2,2,4-Tri-methyl-pentane (Iso octane)
Guidelines:						NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
SV38		4.0	16-Jul-21		38	<0.52	<0.99	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	2.2	<1.2	<1.2	21.7	1.6	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	94.5	<1.8	<1.2	<1.6	<2.3
		4.0	16-Feb-22		38	<0.52	2.18	<1.4	2.71	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	36.0	<1.5	<0.80	<1.0	5.3	<1.2	<1.6	<2.3
		4.0	2-Oct-22		38	<0.52	<0.99	<1.4	3.47	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	52.8	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.9	<1.8	<1.2	<1.6	<2.3
SV39		2.0	15-Jul-21		39	<0.52	<0.99	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	2.7	<1.2	<1.2	<1.0	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	104	<1.8	<1.2	<1.6	<2.3
		2.0	17-Feb-22		39	1.36	2.13	<1.4	1.90	<1.5	0.85	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	6.0	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	5.3
	Dup	2.0	17-Feb-22		939	1.31	2.18	<1.4	2.47	<1.5	0.81	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5.3	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	5.2
		2.0	30-Sep-22		39	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	6.1	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	468	<1.8	<1.2	<1.6	<2.3
SV40		1.5	15-Jul-21		40	<0.52	5.14	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	4.4	41.4	43.6	<1.2	6.8	10.7	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	11.7	38.1	<1.2	<1.6	<2.3
		1.5	17-Feb-22		40	1.45	2.13	<1.4	7.73	<1.5	1.09	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	5.6	<1.5	<0.80	<1.0	2.1	<1.2	<1.6	<2.3
		1.5	6-Oct-22		40	<0.52	10.2	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	3.9	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.4	<1.5	<0.80	21.0	<1.8	<1.2	<1.6	<2.3
SV41		1.5	16-Jul-21		41	<0.52	7.86	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	28.1	9.2	8.0	<1.2	19.0	30.8	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	4.6	<1.8	<1.2	<1.6	<2.3
		1.5	16-Feb-22		41	<0.52	2.13	<1.4	2.00	<1.5	0.85	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	20.3	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.5	2-Oct-22		41	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	22.1	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.3	3.5	<1.2	<1.6	<2.3
SV101		0.3 m below foundation	3-Oct-22		101	<0.52	2.18	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	42.8	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.2	<1.5	<0.80	2.3	<1.8	<1.2	<1.6	<2.3
SV321B		1.04 - 1.09	11-Mar-21	b	321B	<0.52	2.42	<1.4	4.86	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	21.6	3.3	<1.2	5.3	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	1.9	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.04 - 1.09	8-Jul-21	b	321B	0.88	3.07	<1.4	5.58	<1.5	1.05	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	13.3	8.8	<1.2	3.4	<1.5	<0.80	<0.72	<1.2	<1.8	1.8	<1.5	<0.80	<1.0	5.2	<1.2	<1.6	<2.3
		1.04 - 1.09	8-Nov-21	b	321B	<0.52	2.27	<1.4	36.6	<1.5	<0.62	<0.51	<1.1	<1.9	2.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.04 - 1.09	11-Feb-22	b	321B	<0.52	1.58	<1.4	1.85	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.4	<1.5	<0.80	<1.0	28.8	<1.2	<1.6	<2.3
		1.04 - 1.09	24-May-22	b	321B	<0.52	3.12	<1.4	81.1	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	11.5	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.5	16.5	<0.80	<1.0	3.5	<1.2	<1.6	<2.3
		1.04 - 1.09	4-Oct-22	b	321B	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.5	<1.8	<1.2	<1.6	<2.3
SV322		1.0	11-Mar-21		322	<0.52	2.47	<1.4	1.87	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	3.4	1.4	<1.2	2.4	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	1.9	<1.2	<1.6	<2.3
		1.0	8-Jul-21		322	1.96	3.07	<1.4	3.22	<1.5	0.95	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	13.1	7.3	<1.2	10.7	1.9	<0.80	<0.72	<1.2	<1.8	3.7	2.2	<0.80	1.4	5.7	<1.2	<1.6	<2.3
		1.0	8-Nov-21		322	<0.52	2.42	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	11-Feb-22		322	<0.52	1.63	<1.4	2.64	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	3.6	<0.80	<0.72	<1.2	<1.8	18.3	<1.5	<0.80	<1.0	4.1	<1.2	<1.6	<2.3
		1.0	24-May-22		322	12.6	3.02	<1.4	327	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	154	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	44.1
	Dup	1.0	24-May-22		9322	13.7	3.26	<1.4	348	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	165	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	44.5
		1.0	4-Oct-22		322	<0.52	<0.99	<1.4	5.80	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.6	3.8	<1.2	<1.6	<2.3
	Dup	1.0	4-Oct-22		9322	<0.52	<0.99	<1.4	4.92	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	2.2	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.5	2.1	<1.2	<1.6	<2.3
SV323		1.0	12-Mar-21		323	<0.52	2.57	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	4.6	3.3	<1.2	2.6	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	1.7	<1.8	<1.2	<1.6	<2.3
		1.0	8-Jul-21		323	2.98	3.02	<1.4	1.19	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	6.6	<1.2	<1.2	<1.0	<1.5	49.6	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	42.0	<1.8	<1.2	<1.6	<2.3
		1.0	8-Nov-21		323	<0.52	2.42	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	2.22	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.6	<1.8	<1.2	<1.6	<2.3
	Dup	1.0	8-Nov-21		9323	<0.52	2.62	<1.4	3.62	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	2.18	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.8	<1.8	<1.2	<1.6	<2.3
		1.0	11-Feb-22		323	<0.52	1.78	<1.4	18.1	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	2.89	<0.72	<1.2	<1.8	1.8	<1.5	<0.80	1.1	4.0	<1.2	<1.6	<2.3
		1.0	24-May-22		323	<0.52	3.12	<1.4	4.80	<1.5	0.89	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	17.5	<0.72	<1.2	<1.8	2.4	<1.5	<0.80	5.1	2.5	<1.2	<1.6	<2.3
		1.0	3-Oct-22		323	8.74	2.52	<1.4	75.7	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	11.1	<1.2	<15	1.7	7.97	<0.72	<1.2	<1.8	7.4	<1.5	<0.80	6.1	<1.8	<1.2	<1.6	<2.3
SV324		1.5	3-Oct-22		324	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV325		1.5	4-Oct-22		325	<0.52	<0.99	<1.4	5.13	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	73.2	<1.8	<1.2	<1.6	<2.3
SV326		1.5	4-Oct-22		326	<0.52	2.03	<1.4	2.79	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	15.2	<1.8	<1.2	<1.6	<2.3
SV401		1.5	12-Mar-21		401	<0.52	2.18	<1.4	1.85	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	3.0	<1.2	<1.2	1.6	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.5	8-Jul-21		401	2.60	3.12	<1.4	7.84	<1.5	1.92	<0.51	<1.1	<1.9	<1.1	<0.88	2.6	19.9	4.8	<1.2	1.0	1.8	<0.80	<0.72	<1.2	2.4	<1.1	1.7	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.5	9-Nov-21		401	<0.52	2.42	<1.4	9.01	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	3.6	<0.80	<0.72	<1.2	<1.8	<1.1	3.4	<0.80	2.4	<1.8	<1.2	<1.6	<2.3
		1.5	12-Feb-22		401	<0.52	1.43	<1.4	4.15	<1.5	1.09	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	2.7	<1.5	<0.80	<1.0	1.9	<1.2	<1.6	<2.3
		1.5	24-May-22		401	<0.52	3.07	<1.4	4.45	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	2.6	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.6	2.1	<0.80	4.2	<1.8	<1.2	<1.6	<2.3
		1.5	5-Oct-22		401	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	17.5	<1.8	<1.2	<1.6	<2.3
SV402		1.5	12-Mar-21		402	<0.52	2.62	<1.4	7.90	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	18.6	16.3	<1.2	42.0	4.1	<0.80	<0.72	<1.2	<1.8	3.7	<1.5	<0.80	3.9	<1.8	<1.2	<1.6	3.4
		1.5	7-Jul-21		402	1.67	3.61	<1.4	5.31	<1.5	1.42	<0.51	<1.1	<1.9	<1.1	<0.88	2.9	15.7	42.6	<1.2	2.3	2.3	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	3.7	<1.8	1.4	<1.6	<2.3
		1.5	9-Nov-21		402	315000	<6300	<9100	1050000	<8300	<3000	<3500	<2600	<4700	<3700	<5500	<7300	764000	<3900	<3700	<3900	<2800	<3250	<2100	<4300	<3500	153000	<2800	<3900	<5300	<2900	<1700	<5300	83700
		1.5	20-Dec-21		402CS	27.6	<0.99	<1.4	377	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	46.1	<1.5	<0.8	<1.0	<1.8	<1.2	<1.6	64.7
		1.5	12-Feb-22		402	<0.52	1.24	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.9	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
	Dup	1.5	12-Feb-22		9402	<0.52	1.14	<1.4	1.90	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	1.2	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.5	25-May-22		402	82600	<0.99	<1.4	1650000	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	861000	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	276000
		1.5	27-Jun-22	a	402CS	148	1.09	<1.4	28700	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	4020	<1.5	<0.80	<1.0	8.1	<1.2	<1.6	2690
		1.5	5-Oct-22	a	402	<0.52	2.57	<1.4	5.50	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
SV403		0.95	11-Mar-21		403	<0.52	2.37	<1.4	2.49	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	4.0	2.4	<1.2	5.5	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	7.5	2.6	<1.2	<1.6	<2.3
		0.95	7-Jul-21		403	1.00	3.31	<1.4	4.18	<1.5	1.30	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	14.8	18.7	<1.2	13.9	<1.5	<0.80	<0.72	<1.2	<1.8	6.0	<1.5	<0.80	13.2	10.9	<1.2	<1.6	<2.3
		0.95	8-Nov-21		403	<0.52	3.12	<1.4	<0.94	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	11.1	<1.8	<1.2	<1.6	<2.3
		0.95	11-Feb-22		403	<0.52	2.37	<1.4	3.18	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	3.3	<1.5	<0.80	4.5	<1.8	<1.2	<1.6	<2.3
		0.95	24-May-22		403	<0.52	<0.99	<1.4	9.52	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	29.6	<1.8	<1.2	<1.6	<2.3
		0.95	5-Oct-22		403	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	18.8	<1.8	<1.2	<1.6	<2.3
SV404		1.0	11-Mar-21		404	1.57	2.52	<1.4	7.08	<1.5	1.51	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	6.1	1.9	<1.2	4.2	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	7-Jul-21		404	1.98	3.16	<1.4	3.83	<1.5	0.87	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	16.3	47.4	<1.2	4.0	<1.5	<0.80	<0.72	<1.2	<1.8	1.5	<1.5	<0.80	12.8	3.0	<1.2	<1.6	<2.3
		1.0	8-Nov-21		404	<0.52	2.27	<1.4	1.73	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	2.0	<1.8	<1.2	<1.6	<2.3
		1.0	11-Feb-22		404	<0.52	1.58	<1.4	2.90	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	7.8	<1.5	<0.80	<1.0	<1.8	<1.2	<1.6	<2.3
		1.0	25-May-22		404	<0.52	3.21	<1.4	8.37	<1.5	<0.62	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	6.5	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	3.1	2.9	<0.80	3.9	6.8	<1.2	<1.6	<2.3
		1.0	5-Oct-22		404	<0.52	<0.99	<1.4	<0.94	<1.5	<2.0	<0.51	<1.1	<1.9	<1.1	<0.88	<2.2	<250	<1.2	<1.2	<15	<1.5	<0.80	<0.72	<1.2	<1.8	<1.1	<1.5	<0.80	6.8	<1.8	<1.2	<1.6	<2.3

a - Awaiting confirmation of analytical data for all analytes.
b - Awaiting well depth confirmation.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Notes: Results for all parameters are reported in micrograms per metre cubed (ug/m^3), unless otherwise specified.
All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-2B

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
VOLATILE ORGANIC COMPOUND PARAMETERS

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Original Sample ID	Cyclohexane	Carbon Tetrachloride	1,2-Dichloro-propane	n-Heptane	Trichloro-ethene	Bromo-dichloro-methane	1,4-Dioxane	Methyl Methacrylate	cis-1,3-Dichloro-propene	trans-1,3-Dichloro-propene	Methyl Isobutyl Ketone (MIBK)	1,1,2-Tri-chloroethane	2-Hexanone	Dibromo-chloro-methane	1,2-Dibromo-ethane	Tetra-chloro-ethene	Chlorobenzene	Bromoform	Styrene	1,1,2,2-Tetrachloro-ethane	1-Ethyl-4-Methyl-benzene	1,3,5-Tri-methyl-benzene	1,2,4-Tri-methyl-benzene	1,3-Di-chloro-benzene	Benzyl Chloride	1,4-Dichloro-benzene	1,2-Dichloro-benzene	1,2,4-Trichloro-benzene	Hexa-chloro-butadiene
Guidelines:						NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
SV01		4.5	27-Jun-22		1	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV07		5.0	12-Jul-21		7	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		5.0	1-Oct-22		7	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV08		4.0	12-Jul-21		8	<0.69	<1.9	<1.8	<1.2	3.4	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	14-Feb-22		8	1.10	<1.9	<1.8	1.9	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	4.0	14-Feb-22		98	1.00	<1.9	<1.8	1.6	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	30-Sep-22		8	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	4.0	30-Sep-22		98	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV09	Dup	4.0	12-Jul-21		99	<0.69	<1.9	<1.8	<1.2	1.3	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	3.2	<2.6	3.4	<2.4	<3.7	<5.3
		4.0	12-Jul-21		9	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	14-Feb-22		9	1.03	<1.9	<1.8	1.8	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	30-Sep-22		9	<0.69	<1.9	<1.8	<1.2	1.7	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV10		1.0	12-Jul-21		10	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	10-Feb-22		10	0.72	<1.9	<1.8	1.3	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	26-Sep-22		10	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV11		1.5	15-Jul-21		11	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	7.2	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	17-Feb-22		11	1.14	<1.9	<1.8	2.3	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	6-Oct-22		11	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV20		3.5	14-Jul-21		20	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.5	15-Feb-22		20	105	<1.9	<1.8	148	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.5	28-Sep-22		20	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV21		3.5	14-Jul-21		21	1.27	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.5	15-Feb-22		21	29.1	<1.9	<1.8	42.9	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.5	28-Sep-22		21	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV22		4.0	14-Jul-21		22	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	15-Feb-22		22	1.07	<1.9	<1.8	1.5	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	28-Sep-22		22	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV23		4.5	14-Jul-21		23	<0.69	<1.9	<1.8	3.8	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	2.4	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	3.4	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.5	15-Feb-22		23	1.00	<1.9	<1.8	1.6	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.5	28-Sep-22		23	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV24		5.0	14-Jul-21		24	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		5.0	10-Feb-22		24	<0.69	<1.9	<1.8	1.8	<1.1	<1.3	2.3	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		5.0	28-Sep-22		24	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV25		5.0	14-Jul-21		25	<0.69	<1.9	<1.8	<1.2	1.3	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		5.0	10-Feb-22		25	<0.69	<1.9	<1.8	5.7	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		5.0	28-Sep-22		25	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	32.1	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV26A		5.0	12-Jul-21		26A	<0.69	<1.9	<1.8	<1.2	3.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		5.0	11-Feb-22		26A	1.14	<1.9	<1.8	1.9	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		5.0	1-Oct-22		26A	<0.69	<1.9	<1.8	<1.2	9.0	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV26B		3.5	12-Jul-21		26B	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	4.3	<1.1	<2.0	<1.7	<1.5	1.3	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	4.8	<2.4	<2.4	<3.7	<5.3
		3.5	11-Feb-22		26B	672	<1.9	<1.8	1440	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	3.2	2.8	8.0	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.5	1-Oct-22		26B	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV26C		2.0	12-Jul-21		26C	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		2.0	11-Feb-22		26C	<0.69	<1.9	<1.8	1.3	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		2.0	1-Oct-22		26C	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	5.2	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV27		3.0	10-Feb-22		27	29.8	<1.9	<1.8	41.5	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.0	26-Sep-22		27	2.38	<1.9	<1.8	3.6	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.5	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV28		2.5	10-Feb-22		28	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.6	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		2.5	26-Sep-22		28	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.9	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV29		1.5	10-Feb-22		29	<0.69	<1.9	<1.8	1.5	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	26-Sep-22		29	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	4.1	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV30		1.0	16-Jul-21		30	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	2.7	<1.1	2.0	<1.7	<1.5	2.4	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	16-Feb-22		30	1.89	<1.9	<1.8	2.6	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	2-Oct-22		30	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	5.4	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV31		1.0	15-Jul-21		31	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	17-Feb-22		31	1.24	<1.9	<1.8	1.8	1.2	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	3-Oct-22		31	<0.69	<1.9	<1.8	<1.2	1.5	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	1.0	3-Oct-22		931	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV32	Dup	1.0	12-Mar-21		932	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	12-Mar-21		32	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	1.0	7-Jul-21		932	<0.69	<1.9	<1.8	<1.2	1.8	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	7-Jul-21		32	<0.69	<1.9	<1.8	<1.2	2.4	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	3.1	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	9-Nov-21		32	39400	<7100	<5100	34700	<5600	<650	<3100	<2600	<3800	<4100	<4700	<5900	<2600	<10000	<9500	<7500	<5500	<13000	<4800	<9100	<8700	<6700	17600	<16000	<14000	<5700	<7300	<4700	<9700
		1.0	20-Dec-21		32CS	13.9	<1.9	<1.8	17.8	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	2.6	10.1	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	12-Feb-22		32	2.10	<1.9	<1.8	2.8	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	25-May-22		32	950	<1.9	<1.8	2250	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	1.02	<1.4	287	318	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	27-Jun-22	a	32CS	652	<1.9	<1.8	1740	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	68.6	79.1	246	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	5-Oct-22		32	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	1.0	5-Oct-22		932	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV36		3.0	8-Jul-21		36	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.0	15-Feb-22		36	1.00	<1.9	<1.8	1.6	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		3.0	30-Sep-22		36	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV37		2.5	15-Jul-21		37	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		2.5	17-Feb-22		37	1.45	<1.9	<1.8	2.5	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		2.5	30-Sep-22		37	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3

a - Awaiting confirmation of analytical data for all analytes.
b - Awaiting well depth confirmation.
NG - No guideline.
"-" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Notes: Results for all parameters are reported in micrograms per metre cubed (µg/m^3), unless otherwise specified.
All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-2B

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
VOLATILE ORGANIC COMPOUND PARAMETERS

Well ID	Duplicate	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Footnote	Original Sample ID	Cyclohexane	Carbon Tetrachloride	1,2-Dichloro-propane	n-Heptane	Trichloro-ethene	Bromo-dichloro-methane	1,4-Dioxane	Methyl Methacrylate	cis-1,3-Dichloro-propene	trans-1,3-Dichloro-propene	Methyl Isobutyl Ketone (MIBK)	1,1,2-Tri-chloroethane	2-Hexanone	Dibromo-chloro-methane	1,2-Dibromo-ethane	Tetra-chloro-ethene	Chlorobenzene	Bromoform	Styrene	1,1,2,2-Tetrachloro-ethane	1-Ethyl-4-Methyl-benzene	1,3,5-Tri-methyl-benzene	1,2,4-Tri-methyl-benzene	1,3-Di-chloro-benzene	Benzyl Chloride	1,4-Dichloro-benzene	1,2-Dichloro-benzene	1,2,4-Trichloro-benzene	Hexa-chloro-butadiene
Guidelines:						NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
SV38		4.0	16-Jul-21		38	<0.69	<1.9	<1.8	<1.2	1.6	8.7	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.2	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	16-Feb-22		38	7.23	<1.9	<1.8	7.3	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		4.0	2-Oct-22		38	<0.69	<1.9	<1.8	<1.2	1.3	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV39		2.0	15-Jul-21		39	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.6	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		2.0	17-Feb-22		39	1.27	<1.9	<1.8	2.3	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	2.0	17-Feb-22		939	1.14	<1.9	<1.8	2.3	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		2.0	30-Sep-22		39	<0.69	<1.9	<1.8	<1.2	<1.1	4.7	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV40		1.5	15-Jul-21		40	3.10	<1.9	<1.8	<1.2	137	<1.3	<2.2	<2.0	<0.91	<0.91	2.3	<1.1	<2.0	<1.7	<1.5	3.7	<0.92	<2.1	1.66	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	17-Feb-22		40	1.10	<1.9	<1.8	2.5	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	6-Oct-22		40	<0.69	<1.9	<1.8	1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.8	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV41		1.5	16-Jul-21		41	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	3.9	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	16-Feb-22		41	4.51	<1.9	<1.8	5.1	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	2-Oct-22		41	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV101		0.3 m below foundation	3-Oct-22		101	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV321B		1.04 - 1.09	11-Mar-21	b	321B	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.04 - 1.09	8-Jul-21	b	321B	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.5	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.04 - 1.09	8-Nov-21	b	321B	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	14.1	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.04 - 1.09	11-Feb-22	b	321B	<0.69	<1.9	<1.8	<1.2	3.2	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.04 - 1.09	24-May-22	b	321B	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.04 - 1.09	4-Oct-22	b	321B	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	2.2	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV322		1.0	11-Mar-21		322	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	8-Jul-21		322	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	8-Nov-21		322	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	11-Feb-22		322	3.92	<1.9	<1.8	4.7	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	24-May-22		322	21.8	<1.9	<1.8	45.0	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	5.0	5.0	18.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	1.0	24-May-22		9322	22.5	<1.9	<1.8	48.1	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	5.1	5.1	18.4	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	4-Oct-22		322	<0.69	<1.9	<1.8	<1.2	2.2	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	1.0	4-Oct-22		9322	<0.69	<1.9	<1.8	<1.2	1.7	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV323		1.0	12-Mar-21		323	<0.69	<1.9	<1.8	<1.2	1.8	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	8-Jul-21		323	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	8-Nov-21		323	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	1.0	8-Nov-21		9323	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	11-Feb-22		323	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	24-May-22		323	<0.69	<1.9	<1.8	<1.2	3.9	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	3-Oct-22		323	1.34	<1.9	<1.8	2.7	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	48.2	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV324		1.5	3-Oct-22		324	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV325		1.5	4-Oct-22		325	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV326		1.5	4-Oct-22		326	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV401		1.5	12-Mar-21		401	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	8-Jul-21		401	<0.69	<1.9	<1.8	<1.2	1.6	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	2.8	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	9-Nov-21		401	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	12-Feb-22		401	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	24-May-22		401	<0.69	<1.9	<1.8	<1.2	1.6	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.4	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	5-Oct-22		401	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV402		1.5	12-Mar-21		402	<0.69	<1.9	<1.8	<1.2	8.5	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	5.2	4.6	7.0	<2.5	<2.6	<2.4	<2.4	9.2	<5.3
		1.5	7-Jul-21		402	<0.69	<1.9	<1.8	<1.2	4.6	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.8	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	9-Nov-21		402	48100	<7100	<5100	41600	<5600	<650	<3100	<2600	<3800	<4100	<4700	<5900	<2600	<10000	<9500	<7500	<5500	<13000	<4800	<9100	<8700	6840	19100	<16000	<14000	<5700	<7300	<4700	<9700
		1.5	20-Dec-21		402CS	9.09	<1.9	<1.8	10.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	4.1	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	12-Feb-22		402	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
	Dup	1.5	12-Feb-22		9402	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	25-May-22		402	156000	<1.9	<1.8	263000	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	233	<1.4	22300	21400	63800	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	27-Jun-22	a	402CS	470	<1.9	<1.8	1190	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	92.5	103	371	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.5	5-Oct-22	a	402	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV403		0.95	11-Mar-21		403	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		0.95	7-Jul-21		403	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		0.95	8-Nov-21		403	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		0.95	11-Feb-22		403	0.86	<1.9	<1.8	1.8	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		0.95	24-May-22		403	<0.69	<1.9	<1.8	<1.2	2.3	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		0.95	5-Oct-22		403	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
SV404		1.0	11-Mar-21		404	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	7-Jul-21		404	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	2.6	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	8-Nov-21		404	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	11-Feb-22		404	1.69	<1.9	<1.8	2.6	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	<1.0	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	25-May-22		404	<0.69	<1.9	<1.8	<1.2	3.7	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	1.1	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3
		1.0	5-Oct-22		404	<0.69	<1.9	<1.8	<1.2	<1.1	<1.3	<2.2	<2.0	<0.91	<0.91	<2.0	<1.1	<2.0	<1.7	<1.5	2.2	<0.92	<2.1	<0.85	<1.4	<2.5	<2.5	<2.5	<2.5	<2.6	<2.4	<2.4	<3.7	<5.3

a - Awaiting confirmation of analytical data for all analytes.
b - Awaiting well depth confirmation.
NG - No guideline.
" - Not analyzed.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Notes: Results for all parameters are reported in micrograms per metre cubed (µg/m^3), unless otherwise specified.
All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-3

SUMMARY OF 2021 TO 2023 SOIL VAPOUR ANALYTICAL DATA
MATRIX GAS

Well ID	Dup	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Original Sample ID	Helium	Hydrogen	Oxygen	Nitrogen	Carbon Dioxide	Hydrogen Sulphide	Methane	Ethane	Propane	I-Butane	N-Butane	I-Pentane	N-Pentane	Hexanes	Heptanes	Octanes	Nonanes	Decanes+
					(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Guidelines:					NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
SV21		3.5	24-Jan-23	21	0.00230	<0.001	20.88710	78.3407	0.769	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV24		5	25-Jan-23	24	0.00180	0.00350	18.40760	79.2816	2.306	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV26A		5.0	12-Jul-21	26A	0.023	0.004	19.848	78.936	1.189	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5.0	11-Feb-22	26A	<0.001	0.0128	20.6108	78.4465	0.9287	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5.0	1-Oct-22	26A	0.03	<0.01	20.31	78.9	0.71	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		5.0	25-Jan-23	26A	0.02320	<0.001	20.39210	78.6349	0.949	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV26B		3.5	12-Jul-21	26B	0.007	0.002	20.288	78.923	0.781	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		3.5	11-Feb-22	26B	0.0257	0.0352	20.9215	78.5524	0.4610	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	0.0011	<0.001	<0.001	<0.001
		3.5	1-Oct-22	26B	<0.01	<0.01	20.10	79.2	0.71	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Dup	3.5	25-Jan-23	26B	0.00620	0.00530	20.93540	78.7687	0.285	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		3.5	25-Jan-23	26B	0.01480	<0.001	20.38980	78.6346	0.960	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV26C		2.0	12-Jul-21	26C	0.027	0.002	19.849	79.321	0.801	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2.0	11-Feb-22	26C	<0.001	0.0559	20.9268	78.4332	0.5745	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0030	0.0045	<0.001	<0.001	<0.001
		2.0	1-Oct-22	26C	0.01	<0.01	19.09	80.1	0.76	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2.0	25-Jan-23	26C	0.03260	0.00670	20.34960	78.7573	0.854	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV32	Dup	1.0	12-Mar-21	932	0.2606	0.0083	17.1833	80.7652	1.7826	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV36		3.0	30-Jan-23	36	0.00320	0.00690	20.50470	79.0476	0.438	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV39		2.0	23-Jan-23	39	0.00330	0.00540	20.67780	78.1758	1.138	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV101		0.3 m below foundation	31-Jan-23	101	0.00170	0.00870	20.32140	79.6162	0.052	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV322		1.0	30-Jan-23	322	0.00400	<0,001	20.96910	78.7739	0.252	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV323		1.0	31-Jan-23	323	<0.001	<0.001	20.95270	78.5999	0.45	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV501		1.2	30-Jan-23	501	0.00190	0.00280	20.74210	78.3730	0.88	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

NG - No guideline.
Dup - Duplicate Sample.
mbgs - metres below ground surface (unless otherwise specified)
Notes: Results for all parameters are reported in micrograms per metre cubed ($\mu g/m^3$), unless otherwise specified.
All 2021 and 2022 analytical data was collected by Clifton Engineering Group Inc.

APPENDIX E

QUALITY ASSURANCE AND QUALITY CONTROL

APPENDIX E
QUALITY ASSURANCE AND QUALITY CONTROL (QAQC)

A QAQC program was implemented to reduce and quantify potential issues introduced during sample collection, handling, shipping, and analysis. The program included, but was not limited to, using dedicated sampling equipment, using sample specific identification and labelling procedures, and using chain of custody records.

LABORATORY QAQC

The results of the laboratory QAQC analysis are presented with the laboratory certificates of analysis. The analysis included method blanks, matrix duplicates, matrix spikes, and laboratory control samples.

FIELD QAQC

For each sampling event, a field duplicate is taken every 10 samples submitted to Bureau Veritas.

For the field duplicate samples, evaluations of the QAQC results were determined by calculating the relative percent difference (RPD) between the field duplicate and original sample results, and comparison of the RPD to designated alert limits.

$$RPD = \left| \frac{(x_1 - x_2)}{\left(\frac{(x_1 + x_2)}{2}\right)} \right| \times 100$$

The designated field duplicate RPD alert limits are presented in Table E-1. Consistent with laboratory practices and to permit reliable calculations, an RPD is only calculated when the original and duplicate sample concentrations are at least five times the reportable detection limit.

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Inc.*

Sampling Date: *2023/05/05 to 2023/05/11*

Location: *1620 - 14th Avenue NW, Calgary, AB*

Laboratory : *Bureau Veritas, Mississauga, ON*

Consultant Project Number: *10-12832*

Sample Submission Number: *C3D5355*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Other Quality Control Data	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Equipment Blank Concentration			*X*	*All field QC samples have met the acceptable RPD limits.*
Trip Blank Concentration			*X*	
Field Duplicate RPD	*X*			

Has CoA been signed off (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*No*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Performed by (Print): *Rebecca Neufeld*

Reviewed by (Print): *Michelle Patterson*

Reviewed date: *2023/06/05*

Reviewed by (Signature):

TABLE E-1

RELATIVE PERCENT DIFFERENCE CALCULATIONS-AIR- ORGANIC HYDROCARBONS PETROLEUM HYDROCARBONS, 1,2-DICHLOROETHANE AND NAPHTHALENE

SAMPLE LOCATIONS	SV404		DUP-01 FIELD DUPLICATE SV404			SV09		DUP-02 FIELD DUPLICATE SV09			SV503		DUP-03 FIELD DUPLICATE SV503			RPD ALERT LIMITS (%)[a]
Maxxam Certificate of Analysis No.	C3D5355V6R	RDL	C3D5355V6R	RDL	RPD	C3D5355V6R	RDL	C3D5355V6R	RDL	RPD	C3D5355V6R	RDL	C3D5355V6R	RDL	RPD	
Maxxam Sample ID	VUG860		VUG868			VUG873		VUG874			VUG877		VUG881			
Date Sampled (yyyy/mm/dd)	2023/05/05		2023/05/05			2023/05/10		2023/05/10			2023/05/11		2023/05/11			
PARAMETERS																
Benzene	<0.32	0.32	1.32	0.32	NC	<0.32	0.32	<0.32	0.32	NC	0.36	0.32	<0.32	0.32	NC	50
Toluene	0.61	0.38	2.5	0.38	NC	<0.38	0.38	<0.38	0.38	NC	0.49	0.38	0.65	0.38	NC	50
Ethylbenzene	<0.43	0.43	0.65	0.43	NC	<0.43	0.43	<0.43	0.43	NC	<0.43	0.43	<0.43	0.43	NC	50
Total Xylenes	<1.3	1.3	2.9	1.3	NC	<1.3	1.3	<1.3	1.3	NC	<1.3	1.3	<1.3	1.3	NC	50
Aliphatics																
Aliphatic >C5-C6	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
Aliphatic >C6-C8	<5.0	5.0	9.6	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
Aliphatic >C8-C10	<5.0	5.0	9.7	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
Aliphatic >C10-C12	19.0	5.0	48.8	5.0	NC	7.6	5.0	<5.0	5.0	NC	14.1	5.0	13.9	5.0	NC	50
Aliphatic >C12-C16	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
Aromatics																
Aromatic >C7-C8 (TEX Excl.)	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
Aromatic >C8-C10	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
Aromatic >C10-C12	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
Aromatic >C12-C16	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	<5.0	5.0	<5.0	5.0	NC	50
1,2-Dichloroethane	<0.4	0.4	<0.4	0.4	NC	<0.4	0.4	<0.4	0.4	NC	<0.4	0.4	<0.4	0.4	NC	50
Naphthalene	<1.0	1.0	<1.0	1.0	NC	<1.0	1.0	<1.0	1.0	NC	<1.0	1.0	<1.0	1.0	NC	50

a - Alert limits used for field duplicate samples.
NC - Not Calculated.
RDL - Reportable detection limit.
RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL).
BOLD - Exceeds RPD alert limit.
Results for all parameters are reported in milligrams per cubic metre (µg/m³)

Your P.O. #: RN-164147-PCL
Your Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your C.O.C. #: na

Attention: Michelle Patterson

Parsons Inc.
318 - 11th Ave SE
Suite 200
Calgary, AB
CANADA T2G 0Y2

Report Date: 2023/05/26
Report #: R7645116
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3D5355
Received: 2023/05/12, 09:00

Sample Matrix: Air
Samples Received: 22

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX Fractionation in Air (TO-15mod)	18	N/A	2023/05/15	BRL SOP-00304	EPA TO-15 m
BTEX Fractionation in Air (TO-15mod)	4	N/A	2023/05/16	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	18	N/A	2023/05/15	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	4	N/A	2023/05/16	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (ug/m3)	6	N/A	2023/05/15	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (ug/m3)	12	N/A	2023/05/18	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (ug/m3)	4	N/A	2023/05/19	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	18	N/A	2023/05/15	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	4	N/A	2023/05/16	BRL SOP-00304	EPA TO-15 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO15. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Your P.O. #: RN-164147-PCL
Your Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your C.O.C. #: na

Attention: Michelle Patterson

Parsons Inc.
318 - 11th Ave SE
Suite 200
Calgary, AB
CANADA T2G 0Y2

Report Date: 2023/05/26
Report #: R7645116
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C3D5355
Received: 2023/05/12, 09:00

and was pressurized with Zero Air. This canister was then analyzed via TO15 on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Bureau Veritas for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Cristina (Maria) Bacchus, Project Manager
Email: maria.bacchus@bureauveritas.com
Phone# (905)817-5763
==========
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

RESULTS OF ANALYSES OF AIR

Bureau Veritas ID		VUG860	VUG861	VUG862	VUG863	VUG864	VUG865	VUG866	
Sampling Date		2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	
COC Number		na	na	na	na	na	na	na	
	UNITS	**SV404**	**SV325**	**SV326**	**SV402**	**SV26C**	**SV32**	**SV26A**	**QC Batch**
Volatile Organics									
Pressure on Receipt	psig	(-3.3)	(-1.6)	(-1.6)	(-3.1)	(-2.7)	(-2.5)	(-3.0)	8666670
QC Batch = Quality Control Batch									

Bureau Veritas ID		VUG867	VUG868	VUG869	VUG870	VUG871		VUG872	VUG873	
Sampling Date		2023/05/05	2023/05/05	2023/05/08	2023/05/10	2023/05/10		2023/05/10	2023/05/10	
COC Number		na	na	na	na	na		na	na	
	UNITS	**SV26B**	**DUP-01**	**SV101**	**SV324**	**SV403**	**QC Batch**	**SV41**	**SV09**	**QC Batch**
Volatile Organics										
Pressure on Receipt	psig	(-3.6)	(-3.3)	(-2.3)	(-3.4)	(-1.7)	8666670	(-2.3)	(-2.6)	8665482
QC Batch = Quality Control Batch										

Bureau Veritas ID		VUG874	VUG875	VUG876	VUG877		VUG878	VUG879	VUG880	
Sampling Date		2023/05/10	2023/05/11	2023/05/11	2023/05/11		2023/05/11	2023/05/11	2023/05/11	
COC Number		na	na	na	na		na	na	na	
	UNITS	**DUP-02**	**SV501**	**SV502**	**SV503**	**QC Batch**	**SV504**	**SV323**	**SV401**	**QC Batch**
Volatile Organics										
Pressure on Receipt	psig	(-2.5)	(-3.0)	(-2.9)	(-1.9)	8665482	(-3.0)	(-1.1)	(-2.6)	8672617
QC Batch = Quality Control Batch										

Bureau Veritas ID		VUG881	
Sampling Date		2023/05/11	
COC Number		na	
	UNITS	**DUP-03**	**QC Batch**
Volatile Organics			
Pressure on Receipt	psig	(-3.6)	8672617
QC Batch = Quality Control Batch			

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		VUG860	VUG861	VUG862	VUG863	VUG864	VUG865	VUG866		
Sampling Date		2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05		
COC Number		na	na	na	na	na	na	na		
	UNITS	**SV404**	**SV325**	**SV326**	**SV402**	**SV26C**	**SV32**	**SV26A**	**RDL**	**QC Batch**
Volatile Organics										
1,2-Dichloroethane	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8664870
Benzene	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8664870
Toluene	ppbv	0.16	0.55	0.36	0.25	0.20	0.13	0.20	0.10	8664870
Ethylbenzene	ppbv	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8664870
p+m-Xylene	ppbv	<0.20	0.40	0.30	<0.20	<0.20	<0.20	<0.20	0.20	8664870
o-Xylene	ppbv	<0.10	0.13	0.11	<0.10	<0.10	<0.10	<0.10	0.10	8664870
Naphthalene	ppbv	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8664870
Total Xylenes	ppbv	<0.30	0.52	0.41	<0.30	<0.30	<0.30	<0.30	0.30	8664870
Surrogate Recovery (%)										
Bromochloromethane	%	87	90	89	86	87	86	86		8664870
D5-Chlorobenzene	%	77	83	80	79	79	79	85		8664870
Difluorobenzene	%	87	92	89	85	87	85	84		8664870

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		VUG867	VUG868	VUG869	VUG870	VUG871		VUG872		
Sampling Date		2023/05/05	2023/05/05	2023/05/08	2023/05/10	2023/05/10		2023/05/10		
COC Number		na	na	na	na	na		na		
	UNITS	**SV26B**	**DUP-01**	**SV101**	**SV324**	**SV403**	**QC Batch**	**SV41**	**RDL**	**QC Batch**
Volatile Organics										
1,2-Dichloroethane	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	8664870	<0.10	0.10	8664822
Benzene	ppbv	0.16	0.41	2.05	<0.10	0.13	8664870	0.10	0.10	8664822
Toluene	ppbv	0.32	0.66	0.63	<0.10	0.10	8664870	0.18	0.10	8664822
Ethylbenzene	ppbv	<0.10	0.15	0.16	<0.10	<0.10	8664870	<0.10	0.10	8664822
p+m-Xylene	ppbv	0.23	0.48	0.93	<0.20	<0.20	8664870	<0.20	0.20	8664822
o-Xylene	ppbv	<0.10	0.19	0.51	<0.10	<0.10	8664870	<0.10	0.10	8664822
Naphthalene	ppbv	<0.20	<0.20	<0.20	<0.20	<0.20	8664870	<0.20	0.20	8664822
Total Xylenes	ppbv	<0.30	0.67	1.44	<0.30	<0.30	8664870	<0.30	0.30	8664822
Surrogate Recovery (%)										
Bromochloromethane	%	85	84	84	85	88	8664870	87		8664822
D5-Chlorobenzene	%	79	77	79	76	89	8664870	82		8664822
Difluorobenzene	%	83	82	82	81	88	8664870	87		8664822

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		VUG873	VUG874	VUG875	VUG876	VUG877		VUG878		
Sampling Date		2023/05/10	2023/05/10	2023/05/11	2023/05/11	2023/05/11		2023/05/11		
COC Number		na	na	na	na	na		na		
	UNITS	**SV09**	**DUP-02**	**SV501**	**SV502**	**SV503**	**QC Batch**	**SV504**	**RDL**	**QC Batch**
Volatile Organics										
1,2-Dichloroethane	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	8664822	<0.10	0.10	8667141
Benzene	ppbv	<0.10	<0.10	0.16	<0.10	0.11	8664822	<0.10	0.10	8667141
Toluene	ppbv	<0.10	<0.10	0.53	0.17	0.13	8664822	<0.10	0.10	8667141
Ethylbenzene	ppbv	<0.10	<0.10	0.36	0.13	<0.10	8664822	<0.10	0.10	8667141
p+m-Xylene	ppbv	<0.20	<0.20	0.38	<0.20	<0.20	8664822	<0.20	0.20	8667141
o-Xylene	ppbv	<0.10	<0.10	0.58	0.25	<0.10	8664822	<0.10	0.10	8667141
Naphthalene	ppbv	<0.20	<0.20	<0.20	<0.20	<0.20	8664822	<0.20	0.20	8667141
Total Xylenes	ppbv	<0.30	<0.30	0.95	<0.30	<0.30	8664822	<0.30	0.30	8667141
Surrogate Recovery (%)										
Bromochloromethane	%	87	87	85	84	87	8664822	83		8667141
D5-Chlorobenzene	%	82	82	81	81	83	8664822	75		8667141
Difluorobenzene	%	87	88	85	85	87	8664822	77		8667141

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		VUG879	VUG880	VUG881		
Sampling Date		2023/05/11	2023/05/11	2023/05/11		
COC Number		na	na	na		
	UNITS	**SV323**	**SV401**	**DUP-03**	**RDL**	**QC Batch**
Volatile Organics						
1,2-Dichloroethane	ppbv	<0.10	<0.10	<0.10	0.10	8667141
Benzene	ppbv	0.17	0.12	<0.10	0.10	8667141
Toluene	ppbv	0.25	0.27	0.17	0.10	8667141
Ethylbenzene	ppbv	<0.10	<0.10	<0.10	0.10	8667141
p+m-Xylene	ppbv	<0.20	<0.20	<0.20	0.20	8667141
o-Xylene	ppbv	<0.10	<0.10	<0.10	0.10	8667141
Naphthalene	ppbv	<0.20	<0.20	<0.20	0.20	8667141
Total Xylenes	ppbv	<0.30	<0.30	<0.30	0.30	8667141
Surrogate Recovery (%)						
Bromochloromethane	%	86	83	83		8667141
D5-Chlorobenzene	%	81	74	78		8667141
Difluorobenzene	%	83	79	78		8667141

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

CALCULATED VOLATILE ORGANICS (AIR)

Bureau Veritas ID		VUG860	VUG861	VUG862	VUG863	VUG864	VUG865	VUG866		
Sampling Date		2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05		
COC Number		na	na	na	na	na	na	na		
	UNITS	**SV404**	**SV325**	**SV326**	**SV402**	**SV26C**	**SV32**	**SV26A**	**RDL**	**QC Batch**
Calculated Parameters										
1,2-Dichloroethane	ug/m3	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8661824
Benzene	ug/m3	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	8661824
Toluene	ug/m3	0.61	2.06	1.36	0.94	0.74	0.50	0.76	0.38	8661824
Ethylbenzene	ug/m3	<0.43	0.48	<0.43	<0.43	<0.43	<0.43	<0.43	0.43	8661824
p+m-Xylene	ug/m3	<0.87	1.72	1.29	<0.87	<0.87	<0.87	<0.87	0.87	8661824
o-Xylene	ug/m3	<0.43	0.54	0.47	<0.43	<0.43	<0.43	<0.43	0.43	8661824
Naphthalene	ug/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8661824
Total Xylenes	ug/m3	<1.3	2.3	1.8	<1.3	<1.3	<1.3	<1.3	1.3	8661824

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		VUG867	VUG868	VUG869	VUG870	VUG871	VUG872	VUG873		
Sampling Date		2023/05/05	2023/05/05	2023/05/08	2023/05/10	2023/05/10	2023/05/10	2023/05/10		
COC Number		na	na	na	na	na	na	na		
	UNITS	**SV26B**	**DUP-01**	**SV101**	**SV324**	**SV403**	**SV41**	**SV09**	**RDL**	**QC Batch**
Calculated Parameters										
1,2-Dichloroethane	ug/m3	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8661824
Benzene	ug/m3	0.50	1.32	6.56	<0.32	0.41	0.33	<0.32	0.32	8661824
Toluene	ug/m3	1.22	2.50	2.38	<0.38	0.39	0.68	<0.38	0.38	8661824
Ethylbenzene	ug/m3	<0.43	0.65	0.69	<0.43	<0.43	<0.43	<0.43	0.43	8661824
p+m-Xylene	ug/m3	1.00	2.09	4.02	<0.87	<0.87	<0.87	<0.87	0.87	8661824
o-Xylene	ug/m3	<0.43	0.83	2.23	<0.43	<0.43	<0.43	<0.43	0.43	8661824
Naphthalene	ug/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8661824
Total Xylenes	ug/m3	<1.3	2.9	6.2	<1.3	<1.3	<1.3	<1.3	1.3	8661824

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

CALCULATED VOLATILE ORGANICS (AIR)

Bureau Veritas ID		VUG874	VUG875	VUG876	VUG877	VUG878	VUG879	VUG880		
Sampling Date		2023/05/10	2023/05/11	2023/05/11	2023/05/11	2023/05/11	2023/05/11	2023/05/11		
COC Number		na	na	na	na	na	na	na		
	UNITS	**DUP-02**	**SV501**	**SV502**	**SV503**	**SV504**	**SV323**	**SV401**	**RDL**	**QC Batch**
Calculated Parameters										
1,2-Dichloroethane	ug/m3	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8661824
Benzene	ug/m3	<0.32	0.51	<0.32	0.36	<0.32	0.53	0.37	0.32	8661824
Toluene	ug/m3	<0.38	2.01	0.62	0.49	<0.38	0.95	1.03	0.38	8661824
Ethylbenzene	ug/m3	<0.43	1.58	0.55	<0.43	<0.43	<0.43	<0.43	0.43	8661824
p+m-Xylene	ug/m3	<0.87	1.63	<0.87	<0.87	<0.87	<0.87	<0.87	0.87	8661824
o-Xylene	ug/m3	<0.43	2.51	1.08	<0.43	<0.43	<0.43	<0.43	0.43	8661824
Naphthalene	ug/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8661824
Total Xylenes	ug/m3	<1.3	4.1	<1.3	<1.3	<1.3	<1.3	<1.3	1.3	8661824

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		VUG881		
Sampling Date		2023/05/11		
COC Number		na		
	UNITS	**DUP-03**	**RDL**	**QC Batch**
Calculated Parameters				
1,2-Dichloroethane	ug/m3	<0.40	0.40	8661824
Benzene	ug/m3	<0.32	0.32	8661824
Toluene	ug/m3	0.65	0.38	8661824
Ethylbenzene	ug/m3	<0.43	0.43	8661824
p+m-Xylene	ug/m3	<0.87	0.87	8661824
o-Xylene	ug/m3	<0.43	0.43	8661824
Naphthalene	ug/m3	<1.0	1.0	8661824
Total Xylenes	ug/m3	<1.3	1.3	8661824

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Bureau Veritas ID		VUG860	VUG861	VUG862	VUG863	VUG864	VUG865	VUG866		
Sampling Date		2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05	2023/05/05		
COC Number		na	na	na	na	na	na	na		
	UNITS	**SV404**	**SV325**	**SV326**	**SV402**	**SV26C**	**SV32**	**SV26A**	**RDL**	**QC Batch**
Volatile Organics										
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8666673
Aliphatic >C6-C8	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8666673
Aliphatic >C8-C10	ug/m3	<5.0	8.7	10.5	<5.0	5.4	<5.0	7.5	5.0	8666673
Aliphatic >C10-C12	ug/m3	19.0	52.7	31.7	26.8	29.6	6.9	42.8	5.0	8666673
Aliphatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8666673
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8666673
Aromatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8666673
Aromatic >C10-C12	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8666673
Aromatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8666673

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		VUG867	VUG868	VUG869	VUG870	VUG871		VUG872		
Sampling Date		2023/05/05	2023/05/05	2023/05/08	2023/05/10	2023/05/10		2023/05/10		
COC Number		na	na	na	na	na		na		
	UNITS	**SV26B**	**DUP-01**	**SV101**	**SV324**	**SV403**	**QC Batch**	**SV41**	**RDL**	**QC Batch**
Volatile Organics										
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aliphatic >C6-C8	ug/m3	5.0	9.6	<5.0	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aliphatic >C8-C10	ug/m3	11.1	9.7	<5.0	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aliphatic >C10-C12	ug/m3	57.3	48.8	76.8	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aliphatic >C12-C16	ug/m3	<5.0	<5.0	180	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aromatic >C8-C10	ug/m3	<5.0	<5.0	41.8	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aromatic >C10-C12	ug/m3	<5.0	<5.0	12.4	<5.0	<5.0	8666673	<5.0	5.0	8665755
Aromatic >C12-C16	ug/m3	<5.0	<5.0	24.5	<5.0	<5.0	8666673	<5.0	5.0	8665755

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
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VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Bureau Veritas ID		VUG873	VUG874	VUG875	VUG876	VUG877		VUG878		
Sampling Date		2023/05/10	2023/05/10	2023/05/11	2023/05/11	2023/05/11		2023/05/11		
COC Number		na	na	na	na	na		na		
	UNITS	**SV09**	**DUP-02**	**SV501**	**SV502**	**SV503**	**QC Batch**	**SV504**	**RDL**	**QC Batch**
Volatile Organics										
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8665755	<5.0	5.0	8674707
Aliphatic >C6-C8	ug/m3	<5.0	<5.0	<5.0	20.4	<5.0	8665755	13.5	5.0	8674707
Aliphatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	5.8	<5.0	8665755	131	5.0	8674707
Aliphatic >C10-C12	ug/m3	7.6	<5.0	10.6	23.0	14.1	8665755	360	5.0	8674707
Aliphatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8665755	10.7	5.0	8674707
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8665755	<5.0	5.0	8674707
Aromatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8665755	5.3	5.0	8674707
Aromatic >C10-C12	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8665755	9.1	5.0	8674707
Aromatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	<5.0	<5.0	8665755	<5.0	5.0	8674707

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		VUG879	VUG880	VUG881		
Sampling Date		2023/05/11	2023/05/11	2023/05/11		
COC Number		na	na	na		
	UNITS	**SV323**	**SV401**	**DUP-03**	**RDL**	**QC Batch**
Volatile Organics						
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	<5.0	5.0	8674707
Aliphatic >C6-C8	ug/m3	<5.0	<5.0	<5.0	5.0	8674707
Aliphatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	5.0	8674707
Aliphatic >C10-C12	ug/m3	<5.0	7.7	13.9	5.0	8674707
Aliphatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	5.0	8674707
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	<5.0	5.0	8674707
Aromatic >C8-C10	ug/m3	<5.0	<5.0	<5.0	5.0	8674707
Aromatic >C10-C12	ug/m3	<5.0	<5.0	<5.0	5.0	8674707
Aromatic >C12-C16	ug/m3	<5.0	<5.0	<5.0	5.0	8674707

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Job #: C3D5355
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Parsons Inc.
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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8661824	RAE	RPD	Benzene	2023/05/24	0.47		%	25
			Toluene	2023/05/24	0.51		%	25
			Ethylbenzene	2023/05/24	0.22		%	25
			p+m-Xylene	2023/05/24	0.60		%	25
			o-Xylene	2023/05/24	0.28		%	25
			Total Xylenes	2023/05/24	0.37		%	25
			1,2-Dichloroethane	2023/05/24	NC		%	25
			Benzene	2023/05/24	NC		%	25
			Toluene	2023/05/24	0.41		%	25
			Ethylbenzene	2023/05/24	0.17		%	25
			p+m-Xylene	2023/05/24	3.5		%	25
			o-Xylene	2023/05/24	0.20		%	25
			Naphthalene	2023/05/24	NC		%	25
			Total Xylenes	2023/05/24	2.5		%	25
8661824	RAE	RPD [VUG861-01]	1,2-Dichloroethane	2023/05/25	NC		%	25
			Benzene	2023/05/25	9.6		%	25
			Toluene	2023/05/25	15		%	25
			Ethylbenzene	2023/05/25	13		%	25
			p+m-Xylene	2023/05/25	9.2		%	25
			o-Xylene	2023/05/25	8.3		%	25
			Naphthalene	2023/05/25	NC		%	25
			Total Xylenes	2023/05/25	9.0		%	25
8661824	RAE	RPD [VUG879-01]	1,2-Dichloroethane	2023/05/25	NC		%	25
			Benzene	2023/05/25	11		%	25
			Toluene	2023/05/25	10		%	25
			Ethylbenzene	2023/05/25	NC		%	25
			p+m-Xylene	2023/05/25	NC		%	25
			o-Xylene	2023/05/25	NC		%	25
			Naphthalene	2023/05/25	NC		%	25
			Total Xylenes	2023/05/25	NC		%	25
8664822	DVP	Spiked Blank	Bromochloromethane	2023/05/15		102	%	60 - 140
			D5-Chlorobenzene	2023/05/15		103	%	60 - 140
			Difluorobenzene	2023/05/15		104	%	60 - 140
			1,2-Dichloroethane	2023/05/15		97	%	70 - 130
			Benzene	2023/05/15		102	%	70 - 130
			Toluene	2023/05/15		103	%	70 - 130
			Ethylbenzene	2023/05/15		103	%	70 - 130
			p+m-Xylene	2023/05/15		101	%	70 - 130
			o-Xylene	2023/05/15		99	%	70 - 130
			Naphthalene	2023/05/15		118	%	70 - 130
			Total Xylenes	2023/05/15		100	%	70 - 130
8664822	DVP	Method Blank	Bromochloromethane	2023/05/15		97	%	60 - 140
			D5-Chlorobenzene	2023/05/15		91	%	60 - 140
			Difluorobenzene	2023/05/15		99	%	60 - 140
			1,2-Dichloroethane	2023/05/15	<0.10		ppbv	
			Benzene	2023/05/15	<0.10		ppbv	
			Toluene	2023/05/15	<0.10		ppbv	
			Ethylbenzene	2023/05/15	<0.10		ppbv	
			p+m-Xylene	2023/05/15	<0.20		ppbv	
			o-Xylene	2023/05/15	<0.10		ppbv	

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Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Naphthalene	2023/05/15	<0.20		ppbv	
			Total Xylenes	2023/05/15	<0.30		ppbv	
8664870	NKR	Spiked Blank	Bromochloromethane	2023/05/15		104	%	60 - 140
			D5-Chlorobenzene	2023/05/15		104	%	60 - 140
			Difluorobenzene	2023/05/15		102	%	60 - 140
			1,2-Dichloroethane	2023/05/15		104	%	70 - 130
			Benzene	2023/05/15		107	%	70 - 130
			Toluene	2023/05/15		106	%	70 - 130
			Ethylbenzene	2023/05/15		104	%	70 - 130
			p+m-Xylene	2023/05/15		103	%	70 - 130
			o-Xylene	2023/05/15		101	%	70 - 130
			Naphthalene	2023/05/15		95	%	70 - 130
			Total Xylenes	2023/05/15		102	%	70 - 130
8664870	NKR	Method Blank	Bromochloromethane	2023/05/15		94	%	60 - 140
			D5-Chlorobenzene	2023/05/15		84	%	60 - 140
			Difluorobenzene	2023/05/15		96	%	60 - 140
			1,2-Dichloroethane	2023/05/15	<0.10		ppbv	
			Benzene	2023/05/15	<0.10		ppbv	
			Toluene	2023/05/15	<0.10		ppbv	
			Ethylbenzene	2023/05/15	<0.10		ppbv	
			p+m-Xylene	2023/05/15	<0.20		ppbv	
			o-Xylene	2023/05/15	<0.10		ppbv	
			Naphthalene	2023/05/15	<0.20		ppbv	
			Total Xylenes	2023/05/15	<0.30		ppbv	
8664870	NKR	RPD [VUG861-01]	1,2-Dichloroethane	2023/05/15	NC		%	25
			Benzene	2023/05/15	9.6		%	25
			Toluene	2023/05/15	15		%	25
			Ethylbenzene	2023/05/15	13		%	25
			p+m-Xylene	2023/05/15	9.2		%	25
			o-Xylene	2023/05/15	8.3		%	25
			Naphthalene	2023/05/15	NC		%	25
			Total Xylenes	2023/05/15	9.0		%	25
8665755	DVP	Method Blank	Aliphatic >C5-C6	2023/05/15	<5.0		ug/m3	
			Aliphatic >C6-C8	2023/05/15	<5.0		ug/m3	
			Aliphatic >C8-C10	2023/05/15	<5.0		ug/m3	
			Aliphatic >C10-C12	2023/05/15	<5.0		ug/m3	
			Aliphatic >C12-C16	2023/05/15	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2023/05/15	<5.0		ug/m3	
			Aromatic >C8-C10	2023/05/15	<5.0		ug/m3	
			Aromatic >C10-C12	2023/05/15	<5.0		ug/m3	
			Aromatic >C12-C16	2023/05/15	<5.0		ug/m3	
8665755	DVP	RPD	Aliphatic >C5-C6	2023/05/15	NC		%	25
			Aliphatic >C6-C8	2023/05/15	16		%	25
			Aliphatic >C8-C10	2023/05/15	NC		%	25
			Aliphatic >C10-C12	2023/05/15	19		%	25
			Aliphatic >C12-C16	2023/05/15	NC		%	25
			Aromatic >C7-C8 (TEX Excluded)	2023/05/15	NC		%	25
			Aromatic >C8-C10	2023/05/15	NC		%	25
			Aromatic >C10-C12	2023/05/15	NC		%	25
			Aromatic >C12-C16	2023/05/15	NC		%	25

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8666673	NKR	Method Blank	Aliphatic >C5-C6	2023/05/15	<5.0		ug/m3	
			Aliphatic >C6-C8	2023/05/15	<5.0		ug/m3	
			Aliphatic >C8-C10	2023/05/15	<5.0		ug/m3	
			Aliphatic >C10-C12	2023/05/15	<5.0		ug/m3	
			Aliphatic >C12-C16	2023/05/15	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2023/05/15	<5.0		ug/m3	
			Aromatic >C8-C10	2023/05/15	<5.0		ug/m3	
			Aromatic >C10-C12	2023/05/15	<5.0		ug/m3	
			Aromatic >C12-C16	2023/05/15	<5.0		ug/m3	
8666673	NKR	RPD [VUG861-01]	Aliphatic >C5-C6	2023/05/15	NC		%	25
			Aliphatic >C6-C8	2023/05/15	NC		%	25
			Aliphatic >C8-C10	2023/05/15	14		%	25
			Aliphatic >C10-C12	2023/05/15	16		%	25
			Aliphatic >C12-C16	2023/05/15	NC		%	25
			Aromatic >C7-C8 (TEX Excluded)	2023/05/15	NC		%	25
			Aromatic >C8-C10	2023/05/15	NC		%	25
			Aromatic >C10-C12	2023/05/15	NC		%	25
			Aromatic >C12-C16	2023/05/15	NC		%	25
8667141	NKR	Spiked Blank	Bromochloromethane	2023/05/16		105	%	60 - 140
			D5-Chlorobenzene	2023/05/16		105	%	60 - 140
			Difluorobenzene	2023/05/16		105	%	60 - 140
			1,2-Dichloroethane	2023/05/16		103	%	70 - 130
			Benzene	2023/05/16		104	%	70 - 130
			Toluene	2023/05/16		104	%	70 - 130
			Ethylbenzene	2023/05/16		104	%	70 - 130
			p+m-Xylene	2023/05/16		103	%	70 - 130
			o-Xylene	2023/05/16		102	%	70 - 130
			Naphthalene	2023/05/16		97	%	70 - 130
			Total Xylenes	2023/05/16		102	%	70 - 130
8667141	NKR	Method Blank	Bromochloromethane	2023/05/16		94	%	60 - 140
			D5-Chlorobenzene	2023/05/16		96	%	60 - 140
			Difluorobenzene	2023/05/16		96	%	60 - 140
			1,2-Dichloroethane	2023/05/16	<0.10		ppbv	
			Benzene	2023/05/16	<0.10		ppbv	
			Toluene	2023/05/16	<0.10		ppbv	
			Ethylbenzene	2023/05/16	<0.10		ppbv	
			p+m-Xylene	2023/05/16	<0.20		ppbv	
			o-Xylene	2023/05/16	<0.10		ppbv	
			Naphthalene	2023/05/16	<0.20		ppbv	
			Total Xylenes	2023/05/16	<0.30		ppbv	
8667141	NKR	RPD [VUG879-01]	1,2-Dichloroethane	2023/05/16	NC		%	25
			Benzene	2023/05/16	11		%	25
			Toluene	2023/05/16	10		%	25
			Ethylbenzene	2023/05/16	NC		%	25
			p+m-Xylene	2023/05/16	NC		%	25
			o-Xylene	2023/05/16	NC		%	25
			Naphthalene	2023/05/16	NC		%	25
			Total Xylenes	2023/05/16	NC		%	25
8674707	NKR	Method Blank	Aliphatic >C5-C6	2023/05/16	<5.0		ug/m3	
			Aliphatic >C6-C8	2023/05/16	<5.0		ug/m3	

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Aliphatic >C8-C10	2023/05/16	<5.0		ug/m3	
			Aliphatic >C10-C12	2023/05/16	<5.0		ug/m3	
			Aliphatic >C12-C16	2023/05/16	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2023/05/16	<5.0		ug/m3	
			Aromatic >C8-C10	2023/05/16	<5.0		ug/m3	
			Aromatic >C10-C12	2023/05/16	<5.0		ug/m3	
			Aromatic >C12-C16	2023/05/16	<5.0		ug/m3	
8674707	NKR	RPD [VUG879-01]	Aliphatic >C5-C6	2023/05/16	NC		%	25
			Aliphatic >C6-C8	2023/05/16	NC		%	25
			Aliphatic >C8-C10	2023/05/16	NC		%	25
			Aliphatic >C10-C12	2023/05/16	NC		%	25
			Aliphatic >C12-C16	2023/05/16	NC		%	25
			Aromatic >C7-C8 (TEX Excluded)	2023/05/16	NC		%	25
			Aromatic >C8-C10	2023/05/16	NC		%	25
			Aromatic >C10-C12	2023/05/16	NC		%	25
			Aromatic >C12-C16	2023/05/16	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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Bureau Veritas Job #: C3D5355
Report Date: 2023/05/26

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVENUE NW.CALGARY, AB
Your P.O. #: RN-164147-PCL
Sampler Initials: TW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Melanie Mabini, Team Leader

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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CAM FCD-01302 /5

6740 Campobello Rd
Mississauga Ontario ,L5N 2L8
www.bvna.com

Toll Free: 1-800-668-0639
Phone: (905) 817-5700
Fax: (905) 817-5777

Chain of Custody Form - Summa™ Canister

INVOICE INFORMATION

Company Name: Parsons
Contact Name Stephen D'Abadie Outlet 9445
Address: #100, 318-11 Ave SE
Calgary, AB T2G 0Y2
E-mail:
Ph:
Sampled by: Tyler Wiens

REPORT INFORMATION

Company Name: Parsons
Project Manager: Michelle Patterson
Address: #100, 318-11 Ave SE
Calgary, AB T2G 0Y2
E-mail: michelle.patterson@parsons.com
Ph: rebecca.neufeld@parsons.com
403-294-4215 Fax#403-94-4240

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT/INDOOR AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	BTEX/Aromatic/Aliphatic Hydrocarbon Fractions	BTEX/F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other 1,2 DCA + Naphthalene			CANISTERS NOT USED
SU404	1895	FX0406	May 5								X			X	X		
SU 325	1450	FX0426	"								X			X	X		
SU 326	9753	FX1181	"								X			X	X		
SU 402	10903	FX1463	"								X			X	X		
SU 26C	2460	FX1510	"								X			X	X		
SU32	9878	FX0782	"								X			X	X		
SU26A	1401	FX0242	"								X			X	X		
SU26B	2557	FX0581	"								X			X	X		
DUP-01	1379	FX0385	"								X			X	X		
SU101	9879	FX1498	May 8								X			X	X		
SU324	9719	FX0886	May 10								X			X	X		
SU403	1167	FX0218	"								X			X	X		

TAT Requirement

- STD 10 Business day ☒
- Rush 5 Business day * ☐
- Rush 2 Business day * ☐
- Rush Other * ☐

* need approval from Bureau Veritas

PROJECT INFORMATION

Project #: 10-12832
Name: 1620 14th Avenue NW,Calgary,AB
PO #:
Bureau Veritas Quote #: JOB#C3A9471
Bureau Veritas Contact: Cristina Bacchus
Task Order/Line Item Suncor Outlet 9445

REPORTING REQUIREMENTS

EDD ☐
Regulations ON 153 ☐
ON 419 ☐
BC CSR ☐
Other

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

Client Signature:
Date/Time: May 11, 2023

Received by: Baniska Suman
Date/Time: 2023/05/12 09:00

PLEASE RETURN ALL UNUSED EQUIPMENT

12-May-23 09:00
Cristina (Maria) Bacchus
C3D5355
BSU AIR-001

6740 Campobello Rd
Mississauga Ontario ,L5N 2L8
www.bvna.com

CAM FCD-01302 /5

istody Form - Summa™ Canister

Page 2 of 2

INVOICE INFORMATION		REPORT IN	
Company Name:	Parsons	Company Name:	Parsons
Contact Name	Stephen D'Abadie Outlet 9445	Project Manager:	Michelle Patterson
Address:	#100, 318-11 Ave SE	Address:	#100, 318-11 Ave SE
	Calgary, AB T2G 0Y2		Calgary, AB T2G 0Y2
E-mail:		E-mail:	michelle.patterson@parsons.com
Ph:		Ph:	rebecca.neufeld@parsons.com
Sampled by:	Tyler Wiens		403-294-4215 Fax#403-94-4240

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT/INDOOR AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	BTEX/Aromatic/Aliphatic Hydrocarbon Fractions	BTEX/F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other 1,2 DCA	Naphthalene			CANISTERS NOT USED
SU41	1301	FX0183	May 10								X			X	X			
SU09	2473	FX0425	"								X			X	X			
DUP-02	9772	FX0180	"								X			X	X			
SU501	6320	FX1098	May 11								X			X	X			
SU502	3008	FX0884	"								X			X	X			
SU503	2057	FX1509	"								X			X	X			
SU504	1917	FX0395	"								X			X	X			
SU323	9697	FX0248	"								X			X	X			
SU401	1920	FX0576	"								X			X	X			
DUP-03	1486	FX1099	"								X			X	X			

TAT Requirement

- STD 10 Business day ☒
- Rush 5 Business day * ☐
- Rush 2 Business day * ☐
- Rush Other * ☐

* need approval from Bureau Veritas

PROJECT INFORMATION

Project #: 10-12832
Name: 1620 14th Avenue NW,Calgary,AB
PO #:
Bureau Veritas Quote #: JOB#C3A9471
Bureau Veritas Contact: Cristina Bacchus
Task Order/Line Item: Suncor Outlet 9445

REPORTING REQUIREMENTS

EDD ☐
Regulations ON 153 ☐
ON 419 ☐
BC CSR ☐
Other

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

Client Signature:
Date/Time: May 11, 23

Received by: Bacchus
Date/Time: 2023/05/12 09:10

PLEASE RETURN ALL UNUSED EQUIPMENT

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Bureau Veritas' standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms available at https://www.bvna.com/coc-terms-and-conditions

DATA QUALITY REVIEW CHECKLIST

Consultant: *Parsons Inc.*

Sampling Date: *2023/07/27*

Location: *1620 - 14th Avenue NW, Calgary, AB*

Laboratory : *Bureau Veritas, Mississauga, ON*

Consultant Project Number: *10-12832*

Sample Submission Number: *C3M5783*

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	*X*			*All lab QC met acceptance criteria.*
Method Blank Concentration	*X*			
Matrix Duplicate RPD	*X*			
Matrix Spike Recovery	*X*			
Other Quality Control Data	*X*			

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Equipment Blank Concentration			*X*	*No field QC samples were submitted.*
Trip Blank Concentration			*X*	
Field Duplicate RPD			*X*	

Has CoA been signed off (Yes/No)?:	*Yes*
Were all samples analyzed within hold times (Yes/No)?:	*Yes*
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	*N/A*
Is Chain of Custody completed and signed (Yes/No)?:	*Yes*
Were sample temperatures acceptable when they reached lab (Yes/No)?:	*N/A*

Is data considered to be reliable (Yes/No)?: *Yes*

If answer is "No", describe and provide rationale:

Performed by (Print): *Rebecca Neufeld*

Reviewed by (Print): *Michelle Patterson*

Reviewed date: *2023/08/21*

Reviewed by (Signature):

Your P.O. #: 478621.17103
Your Project #: 10-12832
Site#: 9445
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your C.O.C. #: 52167

Attention: Rebecca Neufeld

Parsons Inc.
Suite 510, 214-11 Avenue SW
Calgary, AB
Canada T2R 0K1

Report Date: 2023/08/21
Report #: R7774238
Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C3M5783
Received: 2023/07/28, 09:00

Sample Matrix: Air
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX Fractionation in Air (TO-15mod)	2	N/A	2023/08/09	BRL SOP-00304	EPA TO-15 m
Canister Pressure (TO-15)	2	N/A	2023/08/09	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (ug/m3)	2	N/A	2023/08/10	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	2	N/A	2023/08/09	BRL SOP-00304	EPA TO-15 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO15. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO15 on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Bureau Veritas for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Your P.O. #: 478621.17103
Your Project #: 10-12832
Site#: 9445
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your C.O.C. #: 52167

Attention: Rebecca Neufeld

Parsons Inc.
Suite 510, 214-11 Avenue SW
Calgary, AB
Canada T2R 0K1

Report Date: 2023/08/21
Report #: R7774238
Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C3M5783
Received: 2023/07/28, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Cristina (Maria) Bacchus, Project Manager
Email: maria.bacchus@bureauveritas.com
Phone# (905)817-5763
==========
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Bureau Veritas Job #: C3M5783
Report Date: 2023/08/21

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your P.O. #: 478621.17103
Sampler Initials: RC

RESULTS OF ANALYSES OF AIR

Bureau Veritas ID		WNH249	WNH250	
Sampling Date		2023/07/27	2023/07/27	
COC Number		52167	52167	
	UNITS	**SV321B/1366**	**SV322/9790**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	(-3.0)	(-2.8)	8843667
QC Batch = Quality Control Batch				

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Bureau Veritas Job #: C3M5783
Report Date: 2023/08/21

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your P.O. #: 478621.17103
Sampler Initials: RC

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		WNH249	WNH250		
Sampling Date		2023/07/27	2023/07/27		
COC Number		52167	52167		
	UNITS	**SV321B/1366**	**SV322/9790**	**RDL**	**QC Batch**
Volatile Organics					
1,2-Dichloroethane	ppbv	<0.10	<0.10	0.10	8841108
Benzene	ppbv	<0.10	0.14	0.10	8841108
Toluene	ppbv	<0.10	0.28	0.10	8841108
Ethylbenzene	ppbv	<0.10	0.28	0.10	8841108
p+m-Xylene	ppbv	<0.20	0.91	0.20	8841108
o-Xylene	ppbv	<0.10	0.37	0.10	8841108
Naphthalene	ppbv	<0.20	<0.20	0.20	8841108
Total Xylenes	ppbv	<0.30	1.28	0.30	8841108
Surrogate Recovery (%)					
Bromochloromethane	%	83	82		8841108
D5-Chlorobenzene	%	82	76		8841108
Difluorobenzene	%	83	81		8841108

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C3M5783
Report Date: 2023/08/21

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your P.O. #: 478621.17103
Sampler Initials: RC

CALCULATED VOLATILE ORGANICS (AIR)

Bureau Veritas ID		WNH249	WNH250		
Sampling Date		2023/07/27	2023/07/27		
COC Number		52167	52167		
	UNITS	**SV321B/1366**	**SV322/9790**	**RDL**	**QC Batch**
Calculated Parameters					
1,2-Dichloroethane	ug/m3	<0.40	<0.40	0.40	8818810
Benzene	ug/m3	<0.32	0.44	0.32	8818810
Toluene	ug/m3	<0.38	1.07	0.38	8818810
Ethylbenzene	ug/m3	<0.43	1.20	0.43	8818810
p+m-Xylene	ug/m3	<0.87	3.96	0.87	8818810
o-Xylene	ug/m3	<0.43	1.60	0.43	8818810
Naphthalene	ug/m3	<1.0	<1.0	1.0	8818810
Total Xylenes	ug/m3	<1.3	5.6	1.3	8818810

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C3M5783
Report Date: 2023/08/21

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your P.O. #: 478621.17103
Sampler Initials: RC

VOLATILE ORGANIC HYDROCARBONS BY GC/MS (AIR)

Bureau Veritas ID		WNH249	WNH250		
Sampling Date		2023/07/27	2023/07/27		
COC Number		52167	52167		
	UNITS	**SV321B/1366**	**SV322/9790**	**RDL**	**QC Batch**
Volatile Organics					
Aliphatic >C5-C6	ug/m3	<5.0	<5.0	5.0	8844656
Aliphatic >C6-C8	ug/m3	<5.0	6.4	5.0	8844656
Aliphatic >C8-C10	ug/m3	<5.0	10.2	5.0	8844656
Aliphatic >C10-C12	ug/m3	<5.0	70.0	5.0	8844656
Aliphatic >C12-C16	ug/m3	<5.0	9.2	5.0	8844656
Aromatic >C7-C8 (TEX Excluded)	ug/m3	<5.0	<5.0	5.0	8844656
Aromatic >C8-C10	ug/m3	<5.0	6.0	5.0	8844656
Aromatic >C10-C12	ug/m3	<5.0	<5.0	5.0	8844656
Aromatic >C12-C16	ug/m3	<5.0	<5.0	5.0	8844656

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C3M5783
Report Date: 2023/08/21

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your P.O. #: 478621.17103
Sampler Initials: RC

GENERAL COMMENTS

8/21/23- report amended. Naphthalene added as per client request.

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C3M5783
Report Date: 2023/08/21

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your P.O. #: 478621.17103
Sampler Initials: RC

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
8818810	RAE	RPD	1,2-Dichloroethane	2023/08/11	NC		%	25
			Benzene	2023/08/11	3.2		%	25
8841108	TIM	Spiked Blank	Bromochloromethane	2023/08/09		101	%	60 - 140
			D5-Chlorobenzene	2023/08/09		101	%	60 - 140
			Difluorobenzene	2023/08/09		101	%	60 - 140
			1,2-Dichloroethane	2023/08/09		98	%	70 - 130
			Benzene	2023/08/09		103	%	70 - 130
			Toluene	2023/08/09		103	%	70 - 130
			Ethylbenzene	2023/08/09		104	%	70 - 130
			p+m-Xylene	2023/08/09		102	%	70 - 130
			o-Xylene	2023/08/09		99	%	70 - 130
			Naphthalene	2023/08/09		89	%	70 - 130
			Total Xylenes	2023/08/09		101	%	70 - 130
8841108	TIM	Method Blank	Bromochloromethane	2023/08/09		93	%	60 - 140
			D5-Chlorobenzene	2023/08/09		86	%	60 - 140
			Difluorobenzene	2023/08/09		92	%	60 - 140
			1,2-Dichloroethane	2023/08/09	<0.10		ppbv	
			Benzene	2023/08/09	<0.10		ppbv	
			Toluene	2023/08/09	<0.10		ppbv	
			Ethylbenzene	2023/08/09	<0.10		ppbv	
			p+m-Xylene	2023/08/09	<0.20		ppbv	
			o-Xylene	2023/08/09	<0.10		ppbv	
			Naphthalene	2023/08/09	<0.20		ppbv	
			Total Xylenes	2023/08/09	<0.30		ppbv	
8841108	TIM	RPD	1,2-Dichloroethane	2023/08/09	NC		%	25
			Benzene	2023/08/09	3.2		%	25
8844656	TIM	Method Blank	Aliphatic >C5-C6	2023/08/09	<5.0		ug/m3	
			Aliphatic >C6-C8	2023/08/09	<5.0		ug/m3	
			Aliphatic >C8-C10	2023/08/09	<5.0		ug/m3	
			Aliphatic >C10-C12	2023/08/09	<5.0		ug/m3	
			Aliphatic >C12-C16	2023/08/09	<5.0		ug/m3	
			Aromatic >C7-C8 (TEX Excluded)	2023/08/09	<5.0		ug/m3	
			Aromatic >C8-C10	2023/08/09	<5.0		ug/m3	
			Aromatic >C10-C12	2023/08/09	<5.0		ug/m3	
			Aromatic >C12-C16	2023/08/09	<5.0		ug/m3	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C3M5783
Report Date: 2023/08/21

Parsons Inc.
Client Project #: 10-12832
Site Location: 1620 14TH AVE NW, CALGARY, AB
Your P.O. #: 478621.17103
Sampler Initials: RC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anke Macfarlane, Laboratory Manager, VOC

Melanie Mabini, Team Leader

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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CAM FCD-01302 /5

52167

Chain of Custody Form - Summa™ Canister

Page 1 of 1

BUREAU VERITAS
6740 Campobello Rd
Mississauga Ontario, L5N 2L8
www.bvlabs.com

Toll Free: 1-800-668-0639
Phone: (905) 817-5700
Fax: (905) 817-5777

INVOICE INFORMATION

Company Name: #11243 Parsons Inc
Contact Name: Accounts Payable
Address: 2751 John Street
Markham ON L3R 2Y8
E-mail: ParsonsIncAP.Parsons@parsons.com
Ph: 905-944-8877
Sampled by: Robyn Craig

REPORT INFORMATION

Company Name: #31652 Parsons Inc
Project Manager: Rebecca Neufeld
Address: 510, 2141 1th ave SW
Calgary, AB T2R 0K1
E-mail: rebecca.neufeld@parsons.com
Ph: 403-629-3746

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT/INDOOR AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	BTEX/Aromatic/Aliphatic Hydrocarbon Fractions	BTEX/F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other	1,2-Dichloroethane			CANISTERS NOT USED
SV321B	1366	FX0782	July 27/23	-26	-4	X					X				X			
SV322	9790	FX1589	July 27/23	-26	-4	X					X				X			

28-Jul-23 09 00
Cristina (Maria) B.chus
C3M5783
BSU AIR-001

TAT Requirement

- TD 10 Business day ✓
- Rush 5 Business day *
- Rush 2 Business day *
- Rush Other *

* need approval from Bureau Veritas

PROJECT INFORMATION

Project #: 1620 14 Ave NW Calgary AB
Name: 9445
PO #: 478 621-1703
Bureau Veritas Quote #:
Bureau Veritas Contact:
Task Order/Line Item

REPORTING REQUIREMENTS

EDD
Regulations ON 153
ON 419
BC CSR
Other CCME

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

Client Signature: [signature]
Date/Time: July 27, 2023 @ 15:00

Received by: [signature]
Date/Time: 2023/07/28 09:00

PLEASE RETURN ALL UNUSED EQUIPMENT

COC-1003 (06/21)