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**Phase Two Environmental Site Assessment
Creekside 2 Subdivision -
2770 Eagleson Road, Village of Richmond
Ottawa, Ontario**

GEMTEC Project: 61899.04



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Submitted to:

Cardel Group of Companies
301 Moodie Drive, Suite 100
Ottawa, Ontario
K2H 9C4

**Phase Two Environmental Site Assessment
Creekside 2 Subdivision -
2770 Eagleson Road, Village of Richmond
Ottawa, Ontario**

July 24, 2023
GEMTEC Project: 61899.04

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July 24, 2023

File: 61899.04 – Rev0

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Attention: Tyler Ferguson, Land Manager

**Re: Phase Two Environmental Site Assessment
Creekside 2 Subdivision
2770 Eagleson Road – Village of Richmond, Ottawa, Ontario**

Enclosed is GEMTEC Consulting Engineers and Scientists Limited's Phase Two Environmental Site Assessment (ESA) report for the above-noted project. The Phase Two ESA and reporting was based on the original scope of work presented in our proposal dated March 8, 2023. This report was prepared by Connor Shaw, B.E.Sc., and reviewed by Sherry Eaton, M.Sc., P.Geo., PMP, QP_{ESA}.

We trust this information is sufficient for your current needs. If you have any questions or require further information, please contact the undersigned.



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CS/SE/af

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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Cardel Group of Companies to carry out a Phase Two Environmental Site Assessment (ESA) for the property located at 2770 Eagleson Road in Ottawa, Ontario, hereafter referred to as the “Phase Two Property” or “Site”. It is understood that this Phase Two ESA is required to support a site plan application (SPA).

GEMTEC previously completed a Phase One ESA for the Site, the results of which were documented in the report titled “*Phase One Environmental Site Assessment, Creekside 2 Subdivision, 2770 Eagleson Road, Ottawa, Ontario*”, dated February 2023. Based on the findings of the Phase One ESA, GEMTEC completed this Phase Two ESA investigation.

Utility locates were completed prior to the drilling program. On April 20, 2023, five boreholes (BH23-01 to BH23-05) and eleven manually advanced holes (GS23-01 to GS23-11) were advanced to a maximum depth of 4.57 metres below ground surface (mbgs). One borehole BH23-01 was advanced as a monitoring well. Monitoring wells (BH/MW20-01 and BH/MW20-03) from GEMTEC’s 2020 hydrogeological and geotechnical investigation were utilized to determine hydrogeological features and groundwater quality for the Site.

Soil and groundwater results were compared to Ministry of the Environment, Conservation, and Parks (MECP) Table 2 Residential/Parkland/Institutional (RPI) Site Condition Standards (SCS) for fine to medium textured soil. All soil and groundwater samples are considered to have met the Table 2 RPI SCS.

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Cardel Group of Companies (Cardel) to carry out a Phase Two Environmental Site Assessment (ESA) for the property located at 2770 Eagleson Road in Ottawa, Ontario, hereafter referred to as the “Phase Two Property” or “Site”.

GEMTEC previously completed a Phase One ESA for the Site, the results of which were documented in the report titled “*Phase One Environmental Site Assessment, Creekside 2 Subdivision, 2770 Eagleson Road, Ottawa, Ontario*”, dated February 2023. Based on the findings of the Phase One ESA, GEMTEC completed this Phase Two ESA investigation. This Phase Two ESA was completed in general accordance with the requirements for Phase Two ESAs as defined in Part VII and Schedule E of Ontario Regulation 153/04 (O.Reg. 153/04). It is GEMTEC’s understanding that the filing of a Record of Site Condition (RSC) is not required.

The Site’s approximate boundaries and location are provided on Figure A.1, Appendix A.

1.1 Site Description

The Site has an area of approximately 56 acres and is located at 2770 Eagleson Road in Ottawa, Ontario. Based on the available aerial photographs, the Phase Two Property has been used for agricultural operations since prior to 1959. Currently, the Site consists of a vacant agricultural field with one small storage shed in the southeast corner. Current and historical land use in the Phase One study area was predominately rural residential/commercial with community right of way (i.e., roadways).

The legal description for the property is:

- PART LOT 27, CONCESSION 4, GOULBOURN, PART 1 PLAN 4R31078; CITY OF OTTAWA. PIN 04448-0240 (LT).
- PART OF LOT 26, CONCESSION 4, GOULBOURN, PARTS 4, 5 AND 7 PLAN 4R27894, SAVE AND EXCEPT 4M1621; SUBJECT TO AN EASEMENT OVER PART 4 PLAN 4R27894 IN FAVOUR OF PART OF LOT 26, CONCESSION 4, GOULBOURN, PART 1 PLAN 4R25979 EXCEPT PARTS 1 AND 2 PLAN 4R27030 AS IN OC1738973; SUBJECT TO AN EASEMENT OVER PART 5 PLAN 4R27894, SAVE AND EXCEPT 4M1621 AS IN N510155; CITY OF OTTAWA. PIN 04448-0300 (LT).

The Site is currently owned by Cardel Group of Companies (1470424 Ontario Inc.).

The Site location and Site features are shown on Figure A.1 and Figure A.2, Appendix A.

1.2 Current and Proposed Future Uses

Currently the Phase Two Property is operated agriculturally. The proposed future use is to convert the Site into a residential subdivision.

1.3 Applicable Site Condition Standards

The analytical results of the samples collected for this Phase Two ESA were compared to the following standards:

- Table 2 Generic Site Condition Standards in a Potable Ground Water Condition for residential / parkland / institutional property use and fine to medium soil texture, as presented in the Ministry of the Environment, Conservation, and Parks (MECP) document “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act”, dated April 15, 2011.

The applicable site condition standards were selected based on the following rationale:

- The Site is currently agricultural and the proposed future land use is residential.
- Nearby residential properties rely on groundwater as the source of potable water.
- Based on grain size curves prepared in conjunction with the geotechnical investigation for the Site, the soil texture is considered fine to medium.
- An unnamed creek runs along the western boundary of the Site. As all areas of potential environmental concern (APECs) were located further than 30 m away from the unnamed creek, Table 2 RPI SCS was deemed acceptable.
- No features have been identified at the Phase Two Property that would meet the conditions of an environmentally sensitive site.
- The pH of soil at the Site is greater than 5 and less than 9.
- The overburden thickness is greater than 2 metres for more than one-third of the Phase Two Property. The measured depth to water at the Site ranged from 1.27 metre to 2.58 metres below ground surface (mbgs). The shallow depth of groundwater was not considered significant when selecting the applicable site condition standards given the site conditions (i.e., no volatile contaminants were identified, potable water is obtained from a deep screened well).

2.0 BACKGROUND INFORMATION

This section presents the background conditions of the Phase Two Property including a description of the physical setting and a summary of past investigations conducted.

The objectives of the Phase Two ESA were to obtain information about environmental conditions in the soil and groundwater on, in or under the Site. The objectives of this Phase Two ESA were achieved by:

- Developing an understanding of the geological and hydrogeological conditions at the Phase Two Property; and,
- Conducting field sampling for all contaminants of potential concern (COPCs) associated with the area of potential environmental concern (APEC) identified in the Phase One ESA.

2.1 Physical Setting

The Site has a relatively flat topography and is at an elevation of approximately 96 metres above sea level. Surficial and bedrock geology maps of the Ottawa area were reviewed with Google imagery. Based on the review, overburden in the vicinity of the Site generally consists of fine textured glaciomarine deposits with silt & clay and minor sand & gravel with a thickness of approximately 10 to 15 metres (ESRI, 2016). Bedrock is mapped as primarily dolostone and sandstone from the Beekermantown Group (ESRI, 2016).

Groundwater flow often reflects topographic features and typically flows towards nearby lakes, rivers, and wetland areas. Based on hydrogeological features, it is anticipated that local shallow groundwater would flow to the south/southwest towards the Jock River and unnamed creek that runs along the western boundary of the Site. Based on the findings of this Phase Two ESA, shallow groundwater was interpreted to flow towards the southwest.

No provincially significant wetlands (PSWs) or areas of natural and scientific interest (ANSIs) were identified on the Site or within the study area.

2.2 Past Investigations

One historical report was available to GEMTEC for review.

2.2.1 Phase One Environmental Site Assessment

GEMTEC conducted a Phase One ESA titled *“Phase One Environmental Site Assessment, Creekside 2 Subdivision, 2770 Eagleson Road, Ottawa, Ontario”*, dated February 2023, to assess the likelihood of soil and/or groundwater contamination resulting from historical or present activities at the Site and surrounding area. This included a review of available historical information on the Site and surrounding area, interviews with persons familiar with the Site and a Site reconnaissance. Based on this review, three potentially contaminating activities (PCAs) were identified resulting in one area of potential environmental concern at the Site.

Figure A.3, Appendix A indicates the location of the PCAs and Figure A.4, Appendix A indicates the location of the APECs. The APECs identified in the Phase One ESA (GEMTEC, 2023) are summarized in the table below.

| APEC # | Area of Potential Environmental Concern | Location of Area of Potential Environmental Concern on Phase One property | Potentially Contaminating Activity | Location of PCA (On-site and / or off-site) | Contaminants of Potential Concern (COPC) | Media potentially impacted (groundwater, soil and / or sediments) |
|--------|--|---|--|---|--|---|
| 1 | Historical, large-scale pesticide use across the Site is inferred given the size of the Site and since the majority of the Site was used for agricultural purposes. Based on the interview, the Site representative confirmed that pesticides had been used at the Site. No further details regarding pesticide use were provided. | Site wide | 40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications | On the Phase One Property | OCPs, metals, hydride forming metals | Soil |
| 2 | Fill material of unknown origin and construction debris observed on southeast portion of the Site, adjacent to the former offsite landscaping company operations. | Southeast portion of the Site | 30. Importation of Fill Material of Unknown Quality | On the Phase One Property | Metal, hydride forming metals, ORP, PHCs, BTEX, PAHs | Soil |

| APEC # | Area of Potential Environmental Concern | Location of Area of Potential Environmental Concern on Phase One property | Potentially Contaminating Activity | Location of PCA (On-site and / or off-site) | Contaminants of Potential Concern (COPC) | Media potentially impacted (groundwater, soil and / or sediments) |
|--------|--|---|---------------------------------------|---|---|---|
| 3 | <p>From aerial photographs, the property at 5831 Perth Street is located adjacent south of the Site and commercial activities can be seen as early as 1991. Aerials suggest that the property was historically used to sell agricultural machinery as recently as 2011. Property formerly used for equipment and vehicle servicing. Aerial photographs and a review of Google Imagery indicate that the property was used as an RV and automotive repair shop as recently as 2019. Aerial photographs show vehicles parked along the property boundary adjacent to the Site. A used vehicle dealership under construction was noted on the property during the site recon.</p> | South portion of the Site | OT 2. Equipment and Vehicle Servicing | Off-site at 5831 Perth Street | Metals, hydride forming metals, ORP, PHCs, PAHs, VOCs | Soil and groundwater |

Notes:

ORP – Other Regulated Parameters consisting of electrical conductivity (EC), sodium adsorption ration (SAR), pH, hexavalent chromium (CrVI), cyanide (CN)

PHC F1-F4 – Petroleum Hydrocarbons F1 to F4

BTEX – Benzene, Toluene, Ethylbenzene, Xylenes

PAHs – Polycyclic Aromatic Hydrocarbons

OCPs – Organochlorine Pesticides

VOCs – Volatile Organic Compounds

3.0 SCOPE OF THE INVESTIGATION

3.1 Overview of the Site Investigation

The Phase Two ESA investigation activities were completed between April 2023 and May 2023 and included the following tasks:

- **Health and Safety Plan:** Preparation of a Health and Safety Plan for internal and subcontractor use prior to initiating any field work at the Site.
- **Utility Clearances:** Coordination of utility clearances with local utility companies along with retaining the services of a private locator to assess for possible services in the areas of the proposed borehole locations.
- **Sampling and Analysis Plan (SAP):** Preparation of a SAP to document the purpose, rationale, number and location of samples to be recovered as part of the Phase Two investigation. A copy of the SAP is provided in Appendix B.
- **Borehole Advancement and Monitoring Well Installation:** The borehole drilling and monitoring well installation program included the drilling of five boreholes. One borehole was advanced as a groundwater monitoring well. The rationale for the selected location of the boreholes is provided in the SAP provided in Appendix B. The locations of the boreholes and monitoring well are provided in Figure A.5, Appendix A. The monitoring well construction details and water levels are presented in Table A.1 and A.2, Appendix A.
- **Soil Sampling:** Soil samples were collected on April 4 and 25, 2023 from the boreholes and manually advanced holes (via shovel). Selected soil samples were submitted for chemical analysis of one or more of the following:
 - Metals and other regulated parameters (ORP);
 - Organochlorine Pesticides (OCPs);
 - Petroleum hydrocarbon (PHC) fractions F1 to F4;
 - Volatile organic compounds (VOCs); and/or,
 - Polycyclic aromatic hydrocarbons (PAHs).
- **Groundwater Monitoring and Sampling:** Groundwater samples were collected from the on-Site groundwater monitoring wells on May 25, 2023. Groundwater samples were collected from the newly installed monitoring well and MW20-01 on Site that was installed during GEMTEC's 2020 geotechnical and hydrogeological investigation. Groundwater samples were submitted for analysis of one or more of the following:
 - PHC F1 to F4; and,
 - VOCs.
- **Surveying:** An elevation survey for boreholes and monitoring wells was completed.
- **Reporting:** GEMTEC compiled and assessed the field and laboratory results from the above noted activities into this report.

The Phase Two investigation was carried out in general accordance with GEMTEC's standard operating procedures, which conform to the requirements of O. Reg. 153/04.

There were no impediments or access limitations that in the opinion of the Qualified Person (QP) would affect the conclusions of this Phase Two ESA report.

3.2 Media Investigated

To address the potential environmental issues identified in the Phase One ESA, the Phase Two ESA field program included sampling of subsurface soil and groundwater from boreholes, hand dug holes, and monitoring wells completed within the overburden at the Site. The SAP outlines the rationale for the field investigation activities carried out at the Site and the associated methodologies used to meet the objectives of this Phase Two ESA.

3.3 Phase One ESA Conceptual Site Model

The following key features (as required by O.Reg. 153/04) are presented in Figures A.1, A.2, and A.3:

- Water bodies and areas of natural significance located in the Phase One Study Area;
- Drinking water wells on the Phase One Property;
- Roads (including names) within the Phase One Study Area;
- Uses of properties adjacent to the Phase One Property; and,
- Location of identified PCAs in the Phase One Study Area (including any storage tanks).

The following describes the Phase One ESA Conceptual Site Model (CSM) based on the information obtained and reviewed as part of this Phase One ESA:

- The Phase One property is located at 2770 Eagleson Road in the Village of Richmond in Ottawa, Ontario. The Site is approximately 56 acres in size and has one small storage shed in the southeast corner. At the time of the Site reconnaissance, the Site was a vacant agricultural field.
- Previous uses of the Site include agricultural operations. Aerial photographs indicate that the Site was used for agricultural operations prior to 1959.
- Current surrounding land uses include agricultural, commercial, and residential.
- The Site and nearby developed properties are serviced with natural gas, hydro, and municipal sewers. Groundwater is used as the source of potable water in the study area.
- The Site is at an elevation of approximately 96 metres above sea level. Based on Site observations, the Site and study area are relatively flat.
- Surficial soil conditions consist of silt & clay and minor sand and gravel.
- Bedrock is mapped as primarily dolostone and sandstone from the Beekermantown Group. Based on water well records for the area of the Site, bedrock was encountered at a depth of approximately 10 metres below ground surface (m bgs).
- Shallow groundwater in the vicinity of the Site is reported to range from roughly 1.36 m to 2.6 m bgs based on water well reports for the area of the Site.
- Shallow groundwater direction is interpreted to be in a south/southwesterly direction.

- No areas of natural and scientific interest were identified on the Site or within the study area.
- A small unnamed creek is present along the western portion of the Site. The Jock River is located approximately 100 meters south of the Site.
- Based on the review of records, the interview and the Site reconnaissance completed as part of the Phase One ESA, GEMTEC identified seven PCAs resulting in three APECs on the Site. These APECs include:
 - APEC 1 – Historical, large-scale application of pesticides on the Site. COPCs include OCPs and metals with the potential for impacts in soil;
 - APEC 2 – Fill material of unknown origin was identified on Site. COPCs include M&I, PHCs, BTEX, and PAHs with potential for impacts in soil; and,
 - APEC 3 – Former equipment and vehicle servicing business identified adjacent south of the Site. COPCs include M&I, PHCs, PAHs, and VOCs with potential for impacts in soil and groundwater.

3.4 Deviations from Sampling and Analysis Plan

An SAP is provided in Appendix B. The SAP outlines the rationale for the field investigation activities carried out at the Site and the associated methodologies used to meet the objectives of this Phase Two ESA. The SAP covers the activities undertaken during the Phase Two ESA. The only deviation from the SAP was that a VOC travel blank and field blank were not submitted. It is the Qualified Person's opinion that this deviation would not affect the outcome of the Phase Two ESA.

3.5 Impediments

No physical impediments to the Phase Two ESA investigation were encountered. Access to the Phase Two Property was not denied or restricted.

4.0 INVESTIGATION METHOD

4.1 General

The following sections describe the field investigation methodology employed during the Phase Two ESA. The field work was conducted between April 4, 2023, and May 25, 2023.

Prior to initiating the field work, GEMTEC developed and implemented Site-specific protocols to protect the health and safety of its employees and subcontractors through the preparation of a Site-specific Health and Safety Plan. Additionally, prior to the drilling program, GEMTEC completed public and private utility clearances.

4.2 Borehole Drilling

On April 25, 2023, five boreholes (BH23-01, BH23-02, BH23-03, BH23-04, and BH23-05) were advanced to depths ranging from 1.52 to 4.57 below ground surface (mbgs). Borehole locations

are provided in Figure A.4, Appendix A. A description of the quality assurance/quality control measures taken to minimize the potential for cross-contamination between sampling locations is provided in Section 5.12.

All boreholes were advanced by Strata Soil Drilling (Strata) using a track mounted 7822DT geoprobe. During drilling, a macro core soil sampling system utilizing direct push technology with solid stem augers and disposable 5.71 cm (2-1/4 inch) PVC tube liners, which fit inside a 6.26 cm (3-1/4 inch) outer stainless steel tube was used to sample the overburden soil. The macro core soil samples were obtained at regular depth intervals and logged in the field noting subsurface conditions.

4.3 Soil: Sampling

On April 4, 2023, eleven shallow soil samples (GS23-01 to GS23-11) were collected from across the Site using a shovel. The samples were collected from approximately 0 – 0.15 mbgs. Sample locations are provided in Figure A.4, Appendix A. A description of the quality assurance/quality control measures taken to minimize the potential for cross-contamination between sampling locations is provided in Section 5.12.

Soil samples collected from the boreholes were split in the field into two components. One component was placed into laboratory-prepared container with minimal headspace and stored in a cooler for potential laboratory analysis. The second component was placed inside a plastic bag for field screening, consisting of the soil description, and noting the presence of any staining, odour and/or debris. A gas detector (RKI Eagle 2) calibrated to 100 parts per million (ppm) isobutylene and hexane was used to measure the total organic vapour and combustible gas concentrations in the headspace in the sealed plastic bag.

As per the SAP, soil samples at each sampling location were selected for laboratory analysis based on the field headspace screening measurements, visual observations (e.g., staining, discoloration and/or free product, if any), and olfactory observations (if any). Soil samples were submitted to the analytical laboratory under chain-of-custody procedures. A summary of the soil samples submitted for analysis is provided in Table A.3.

Geologic descriptions, visual and olfactory observations, and results of field headspace measurements are presented on the Record of Borehole Logs in Appendix C.

4.4 Soil: Field Screening

Field measurements of sample headspace concentration were made using the following equipment:

| Equipment | Parameters Detected | Detection Limit | Precision | Accuracy | Calibration Standard |
|-------------|----------------------|-----------------|-----------|----------|-----------------------|
| RKI Eagle 2 | Combustible gas | 0-50,000 ppm | NA | ±5% | Hexane (1650 ppm) |
| | Total organic vapour | 0-2,000 ppm | NA | ±5% | Isobutylene (100 ppm) |

The RKI Eagle 2 was calibrated by GEMTEC daily prior to field use.

The results of soil headspace screening measurements are provided in the Record of Borehole Logs in Appendix C.

4.5 Groundwater: Monitoring Well Installation

Groundwater monitoring wells were installed by Strata using threaded 50 mm diameter, schedule 40, polyvinyl chloride (PVC) well screens and riser pipe, which were brought to the Site in sealed plastic bags. The annular space was filled with silica filter sand to at least 0.3 m above the well screen. The monitoring well was sealed with bentonite from the top of the sand pack and completed with a monument-style protective well casing. The riser pipes were sealed with a J-plug. The monitoring well construction details are presented in Table A.1, Appendix A.

A description of the quality assurance/quality control measures taken to minimize the potential for cross-contamination between sampling locations is provided in Section 4.12.

4.6 Groundwater: Field Measurements for Water Quality Parameters

Groundwater indicator parameters including temperature, pH and conductivity were measured prior to sampling to ensure adequate well development and purging. A Horiba Multi parameter meter was used to measure groundwater quality during groundwater sampling. This instrument was calibrated by Maxim Environmental and/or using factory supplied solutions for electrical conductivity (1413 micro Siemens per centimetre ($\mu\text{S}/\text{cm}$)) and pH (4.01 pH and 7.01 pH) parameters. Specifications for the water quality metre are summarized in the following table:

| Parameter | Measurement Range | Precision | Accuracy |
|--------------|-------------------|------------|-----------|
| pH | 0.00 to 14.00 pH | 0.01 pH | ±0.2 pH |
| Conductivity | 0.00 to 200 mS/cm | 0.01 mS/cm | ± 0.5% |
| Temperature | -5 to 45 °C | 0.1 °C | ± 0.15 °C |

4.7 Groundwater: Development, Purging and Sampling

Following drilling, the monitoring wells were developed on April 26, 2023, by removing one to three well volumes at which point the wells became dry using dedicated Waterra® pumps (tubing with foot valves) or until water quality parameters stabilize. During monitoring well development, qualitative observations were made of water colour, clarity, and the presence or absence of any hydrocarbon sheen or odours.

The monitoring wells were purged prior to sample collection using a GeoPump peristaltic pump with samples collected upon stabilization of field parameters (i.e., pH, temperature, conductivity, dissolved oxygen and redox potential) which was generally obtained for two to three consecutive readings. During purging and sampling, qualitative observations were made of water colour, clarity, and the presence of hydrocarbon sheen or odour. The depth to water in each well was measured using an electronic water level tape prior to purging.

Groundwater samples were placed in laboratory-prepared containers and stored on ice in a cooler until delivery to the analytical laboratory under chain-of-custody procedures. A summary of the groundwater samples submitted for analysis is presented in Table A.4, Appendix A.

4.8 Laboratory Analytical Program

The contact information for the analytical laboratory is as follows:

- ALS Laboratories (ALS), 190 Colonnade Road South, Nepean, ON K2E 7J6. (Costas Farassoglou, 613-225-8279).

The analytical laboratory is accredited in accordance with the International Standard ISO/IEC 17025 (CALA) (General Requirement for the Competence of Testing and Calibration Laboratories, May 5, 2005, as amended) and the standards for proficiency testing developed by the Standards Council of Canada, the Canadian Association for Laboratory Accreditation or another accreditation body accepted by the MECP.

4.9 Surveying

Elevation of monitoring well locations were surveyed using a Trimble R10 global positioning system. The coordinates of the boreholes are referenced to NAD83 (CSRS) Epoch 2010, vertical network CGVD28 and are considered to be accurate within the tolerance of the instrument.

4.10 Quality Assurance / Quality Control Program

GEMTEC's quality assurance program for environmental investigations was implemented to ensure that analytical data obtained by the investigation were valid and representative. The quality assurance program included the following measures:

- The use of standard operating procedures for all field investigation activities.
- All monitoring wells were developed following installation to remove fine particles from the filter pack and any fluids introduced during drilling.
- Monitoring wells were appropriately purged prior to groundwater sample collection to remove stagnant water from the well bore and improve sample representativeness, minimizing sample agitation and aeration to the extent practicable.
- The collection of field duplicate samples at a minimum frequency of one duplicate for every ten samples.
- Initial calibration of field equipment was performed at the start of each field day, with a daily check of calibration, as needed, using a standard of known concentration.
- Soil and groundwater samples were handled and stored in accordance with the sample collection and preservation requirement of the MECP “Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.I of the Environmental Protection Act”, July 1, 2011. Samples were collected directly into pre-cleaned, laboratory-supplied sample containers with the appropriate preservative for the analyte group. Upon collection, samples were placed in insulated coolers with ice for storage and transport to the analytical laboratory under chain-of-custody.
- Dedicated sampling equipment (tubing and footvalves) and clean disposable Nitrile™ gloves were used at each sampling location to prevent cross-contamination. All non-dedicated sampling equipment (e.g., water level meters, split spoons) was decontaminated between sampling locations. Sampling equipment in contact with soil, groundwater, or sediment was cleaned by mechanical means; washed with a phosphate-free, laboratory-grade detergent (e.g., Alconox powder) and, if necessary, an appropriate desorbing wash solution; and thoroughly rinsed with analyte-free water.
- Detailed field records documenting the methods and circumstances of collection for each field sample were prepared at the time of sample collection. Each sample was assigned a unique sample identification number recorded in the field notes, along with the date and time of sample collection, the sample matrix, and the requested analyses.
- The submission of samples to the analytical laboratory in accordance with standard chain of custody procedures.

Below is a summary of the primary and duplicate samples.

| Date | Media | Sample ID | Duplicate ID |
|----------------|-------------|-------------|---------------|
| April 4, 2023 | Soil | GS23-01 SA1 | GS23-01 SA101 |
| April 25, 2023 | Soil | BH23-01 SA1 | BH23-01 SA101 |
| May 25, 2022 | Groundwater | MW23-1 | MW23-101 |

5.0 REVIEW AND EVALUATION

This section of the report presents a review and evaluation of the results of the drilling, monitoring, and sampling activities conducted as part of the Phase Two ESA.

5.1 Geology

The soil conditions encountered during the borehole drilling program are presented in the Record of Borehole Logs provided in Appendix C, as well as on cross section figures provided in Figure A.6 and Figure A.7, Appendix A. The location of the section lines are indicated on Figure A.5, Appendix A.

In general and based on observations from BH23-01 and the previously completed geotechnical boreholes, the subsurface soil conditions encountered across the majority of the site generally consisted top soil (with thickness ranging from about 50 to 200 mm), underlain by native silty clay which extended to depths ranging from about 2.6 to 8.4 m bgs. A deposit of glacial till was encountered below the silty clay at some geotechnical borehole locations and generally extended beyond the depth of investigation. In the vicinity of APEC 2, at the southeast portion of the Site, surface fill material was encountered comprised of silty sand and gravel to depths ranging from 0.33 to 0.64 m bgs underlain by native silty clay and sandy silt that extended beyond the depth of investigation. The boreholes were advanced to depths ranging from 1.52 to 4.57 mbgs.

5.2 Groundwater: Elevations and Flow Direction

The groundwater monitoring well installed as part of the Phase Two ESA field program (BH/MW23-01) and two wells (BH/MW20-01 and BH/MW20-03) installed for GEMTEC's 2020 geotechnical and hydrogeological were used in the interpretation of shallow groundwater contours and shallow groundwater flow direction. Any temporary fluctuation in water levels on the Phase Two Property is not anticipated to affect the conclusions of the Phase Two ESA.

The location and depth of the screen for the monitoring well installed for the purpose of the Phase Two ESA was selected based on the issue being investigated and was installed to straddle the anticipated water table based on conditions observed during drilling. The well screens were located within native silty clay. A summary of the monitoring well construction details are presented in Table A.1, Appendix A.

Water levels measured in the monitoring wells ranged from 0.66 m to 1.98 m bgs on the May 25, 2023 monitoring event. The ground surface and top pipe at each well location were surveyed using a Trimble R10 global positioning system. The coordinates of the boreholes are referenced to NAD83 (CSRS) Epoch 2010, vertical network CGVD28 and are considered to be accurate within the tolerance of the instrument. Water level measurements and elevations are summarized in Table A.2, Appendix A.

Groundwater elevations ranged from 90.69 to 92.63 m above sea level (masl) on May 25, 2023. Based on the interpreted groundwater elevation contours presented in Figure A.5, Appendix A, the inferred direction of shallow groundwater flow is generally to the southwest.

Seasonal fluctuation in water levels on the Site should be expected. Considering only one monitoring event was conducted, seasonal trends could not be identified; however, shallow groundwater water levels are typically highest following the spring recharge and decline throughout the summer and fall months into the winter. At the time of groundwater sample collection on May 25, 2023, the measured water level at MW20-01B intersected the well screen. The water level at MW23-01 was slightly above the respective well screen interval. The presence of the water table above the well screen interval is not considered to affect the conclusions of this Phase Two ESA given the observations during drilling, results of the field screening, and the results of the analytical testing.

Utility locates completed prior to the drilling did not indicate any utilities on the Site. Based on this, buried services are not considered to have not facilitated the migration of contaminants at the Site.

5.3 Groundwater: Hydraulic Gradients

The average horizontal hydraulic gradient was estimated for shallow groundwater conditions based on water levels measured on May 25, 2023, and the inferred groundwater contours are presented in Figure A.5, Appendix A. The average horizontal hydraulic gradient for shallow groundwater conditions was 0.0018 m/m.

Vertical hydraulic gradient for shallow groundwater conditions were not calculated as nested monitoring wells were not installed at the Site.

5.4 Soil Texture

Based on grain size curves prepared in conjunction with the geotechnical investigation for the Site, the soil texture is considered fine to medium. Copies of the grain size curves are provided in Appendix C.

5.5 Soil: Field Screening

Headspace vapour measurements were conducted on the soil samples collected from each of the boreholes advanced at the Site. The results of headspace vapour measurements are presented in table below and on the Record of Borehole Logs in Appendix C.

| Borehole | Vapour readings (ppm HEX; ppm IBL) | Depth of samples |
|----------|------------------------------------|------------------|
| BH23-01 | Hex: 40 to 50 ppm; IBL: 0 ppm | 0 – 3.05 m bgs |

| Borehole | Vapour readings (ppm HEX; ppm IBL) | Depth of samples |
|----------|------------------------------------|-------------------|
| BH23-02 | Hex: 0 to 40 ppm; IBL: 0 ppm | 0.10 – 1.52 m bgs |
| BH23-03 | Hex: 0 to 5 ppm; IBL: 0-7 ppm | 0.05-1.52 m bgs |
| BH23-04 | Hex: 0 to 5 ppm; IBL: 0-7 ppm | 0.05-1.52 m bgs |
| BH23-05 | Hex: 0 to 15 ppm; IBL: 0 ppm | 0-1.52 m bgs |

Although elevated Hex readings were identified, analysis of samples from at and near to these depths for PHCs and VOCs did not identify any detectable concentrations. Additionally, no VOCs were detected in groundwater sampled from these locations.

5.6 Soil: Quality

Table A.3, Appendix A provides a summary of the soil samples submitted for analysis and the associated test parameters. The analytical results of soil samples are presented in Tables A.5, Appendix A. Figures A.8 to A.11, Appendix A illustrate the soil sample results by location. Laboratory Certificates of Analysis for the soil samples are included in Appendix D.

Soil sampling at the Site was completed by hand on April 4, 2023, and during borehole advancement on April 25, 2023. The soil samples were submitted to ALS for analysis of one or more of the following parameters: metals, OCPs, ORP, PHCs, VOCs and/or PAHs.

A summary of the number of soil samples analyzed and the number of soil samples exceeding the Table 2 Standards is provided below. Further discussion regarding the detected concentrations and their interpretation as exceedances is provided below.

| Parameter | Number of soil samples analyzed (including duplicates) | Number of soil samples exceeding the Table 2 Standards |
|------------------------------|--|---|
| Metals | 18 (16 plus two duplicates) | Vanadium – BH 23-01 SA1 and duplicate sample BH23-01 SA101. See comment below. |
| ORP (EC, SAR, pH, CrVI, CN)) | 6 (5 plus one duplicate) | EC – BH23-02 SA1, BH23-04 SA1, BH23-05 SA2. See comment below. SAR – BH23-02 SA1, BH23-04 SA1, BH23-05 SA2. See comment below. pH – within acceptable range |
| PHC F1 to F4 | 6 (5 plus one duplicate) | 0 |

| Parameter | Number of soil samples analyzed (including duplicates) | Number of soil samples exceeding the Table 2 Standards |
|-----------|--|--|
| VOCs | 6 (5 plus one duplicate) | 0 |
| PAHs | 6 (5 plus one duplicate) | 0 |
| OCPs | 12 (11 plus one duplicate) | 0 |

Note:

Sample BH23-01 SA101 was a duplicate of BH23-01 SA1

With regards to the detected vanadium concentrations, these are inferred to be naturally occurring. Specifically, as per Sterling et al., 2017, geo-regional background concentrations of vanadium in Champlain Sea sediments are often above the established MECP site condition standards for soil. Based on this and since the samples with elevated vanadium (i.e., BH23-01 SA1 and associated duplicate) are considered to be Champlain Sea sediments, GEMTEC considers the detected concentrations to be naturally occurring and are not considered an exceedance of the Table 2 Standards.

With regards to the EC and SAR concentrations, these are considered to be related to the application of de-icing salt for vehicle and pedestrian safety associated with the nearby roadway and former adjacent landscaping business. Therefore, as per Section 49.1 of O.Reg. 153/04, it is the Qualified Person's opinion that the site conditions standards for EC and SAR are not exceeded.

5.7 Groundwater: Quality

Monitoring well construction details are summarized in Table A.1, Appendix A and a summary of groundwater samples submitted for laboratory analysis is provided in Table A.4, Appendix A. The analytical results for groundwater samples are summarized in Table A.7, Appendix A. Figure A.12, Appendix A illustrates the groundwater sample results by location. Laboratory certificates of analysis for groundwater are provided in Appendix D.

Groundwater sampling at the Site was completed on May 25, 2023. The groundwater samples were submitted to ALS for analysis of the following parameters: PHCs and VOCs.

A summary of the number of groundwater samples analyzed and number of samples exceeding the Table 2 Standards is provided below:

| Parameter | Number of groundwater samples analyzed (including duplicate sample) | Number of groundwater samples exceeding the Table 2 Standards |
|--------------|---|---|
| PHC F1 to F4 | 3 samples (2 plus one duplicate) | 0 |
| VOCs | 3 samples (2 plus one duplicate) | 0 |

5.8 Sediment: Quality

No sediment samples were collected as part of this investigation.

5.9 Quality Assurance and Quality Control Results

The quality assurance assessment of the field duplicate sample results was conducted according to the MECP document “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act”, March 9, 2004 (amended in July 2009 and effective as of July 1, 2011) (“Analytical Protocol”).

To determine the precision of the analytical methods and field sampling procedures, blind duplicate samples were collected during soil and groundwater sampling. Precision is determined by the relative percent difference (“RPD”) between the duplicate and original samples and was calculated as follows:

$$RPD = \frac{|x_1 - x_2|}{x_m}$$

Where

- x_1 initial sample results
- x_2 duplicate sample results
- x_m mean of x_1 , x_2

The analytical results of the primary and duplicate soil and groundwater samples indicated a satisfactory correlation between the primary and duplicate samples and were within the 30 percent recommended control limit in the Analytical Protocol.

All certificates of analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47(3). A certificate of analysis or analytical report has been received for each sample submitted for analysis and is provided in Appendix D.

Accordingly, the analytical data generated during the investigation are valid and representative and may be used in this Phase Two ESA without further qualification.

6.0 PHASE TWO CONCEPTUAL SITE MODEL

The Phase Two ESA conceptual site model (CSM) is presented in the following sections.

The Phase Two CSM was prepared in accordance with Schedule E, Part V, Table 1, Section 6, Sub-heading (x) of Ontario Regulation 153/04 (O. Reg. 153/04) and is described in the text below and in the following figures:

- Figure A.1 Phase Two Property and Phase One Study Area.
- Figure A.2 Potentially Contaminating Activities.
- Figure A.3 Areas of Potential Environmental Concern.
- Figure A.4 APECs and Test Locations.
- Figure A.5 Groundwater Elevations – May 25, 2023.
- Figure A.6 Geologic Cross Section A – A’.
- Figure A.7 Geologic Cross Section B - B’.
- Figure A.8 Soil Analytical Results – Metals and Hydride Forming Metals.
- Figure A.9 Soil Analytical Results – Metals and Organochlorine Pesticides.
- Figure A.10 Soil Analytical Results – ORP.
- Figure A.11 Soil Analytical Results – Petroleum Hydrocarbons, Polycyclic Aromatic Hydrocarbons, Volatile Organic Compounds.
- Figure A.12 Groundwater Analytical Results – Petroleum Hydrocarbons and Volatile Organic Compounds.

6.1 Property Description and History

The Site has an area of approximately 56 acres and is located at 2770 Eagleson Road in Ottawa, Ontario. At the time of the Site reconnaissance, the Phase One Property consisted of a vacant agricultural field. A small three sided shed was noted at the south-east corner of the Site where operations from the adjacent landscaping business encroached onto the Site.

The Site is currently unoccupied and was previously used for agricultural purposes. The proposed future land use is residential. The Phase One Property is not serviced.

The Phase Two Property and associated Phase One ESA study area are shown on Figure A.1, Appendix A.

The legal description of the Site consists of:

- PART LOT 27, CONCESSION 4, GOULBOURN, PART 1 PLAN 4R31078; CITY OF OTTAWA. PIN 04448-0240 (LT).
- PART OF LOT 26, CONCESSION 4, GOULBOURN, PARTS 4, 5 AND 7 PLAN 4R27894, SAVE AND EXCEPT 4M1621; SUBJECT TO AN EASEMENT OVER PART 4 PLAN 4R27894 IN FAVOUR OF PART OF LOT 26, CONCESSION 4, GOULBOURN, PART 1 PLAN 4R25979 EXCEPT PARTS 1 AND 2 PLAN 4R27030 AS IN OC1738973; SUBJECT TO AN EASEMENT OVER PART 5 PLAN 4R27894, SAVE AND EXCEPT 4M1621 AS IN N510155; CITY OF OTTAWA. PIN 04448-0300 (LT).

The Site is presently owned by Cardel Group of Companies (1470424 Ontario Inc.). The contact person for the Site at the time of this reporting is Tyler Ferguson, Land Manager with Cardel Group of Companies.

6.2 Previous Investigation

The following lists the previous environmental reports available for the Site. The Phase One ESA formed the basis for completing this Phase Two ESA.

- Phase One Environmental Site Assessment, Creekside 2 Subdivision, 2770 Eagleson Road, Village of Richmond, Ottawa, Ontario”, prepared by GEMTEC, dated February 2023 (2023 Phase One ESA).

6.3 Potentially Contaminating Activities

The potentially contaminating activities (PCAs) identified via the 2023 Phase One ESA are summarized in Table below. Figure A.2 indicates the location of the PCAs.

| PCA # | Address/ Location | PCA ID | Distance from Site | Description |
|-------|-------------------------------------|--|----------------------|--|
| 1 | 2770 Eagleson Drive | 40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications | On-Site | Historical, large-scale pesticide use across the Site is inferred given the size of the Site and since the majority of the Site was used for agricultural purposes. Based on the interview, the Site representative confirmed that pesticides had been used at the Site. No further details regarding pesticide use were provided. |
| 2 | 2770 Eagleson Drive | 30. Importation of Fill Material of Unknown Quality | On-Site | Fill material of unknown origin and construction debris observed on southeast portion of the Site, adjacent to the off-site landscaping company operations. |
| 3 | 5789 Perth Street | 28. Gasoline and Associated Products Storage in Fixed Tanks | 75 m southeast | The property is listed as a service station for gasoline, oil and natural gas. Records noted that three gasoline USTs, one diesel UST, and one diesel AST (all single wall) were active as of August 2007. An additional record noted a double wall diesel AST was installed in 2009. |
| 4 | Corner of Eagleson and Perth Street | OT 1. Spill | 115 m southeast | A City of Ottawa forcemain break in 2004 resulted in a 200 m ³ spill of raw, unchlorinated sewage. Environmental impact was noted as possible. |
| 5 | 3440 Eagleson Road | OT 1. Spill | 140 meters southeast | Listed as a pesticide vendor. |

| PCA # | Address/ Location | PCA ID | Distance from Site | Description |
|-------|-------------------|--|----------------------------|--|
| 6 | 5911 Perth Street | 40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications | 50 meters southwest | A 100 litre spill of diesel fuel was reported in the parking lot in 2018. |
| 7 | 5873 Perth Street | OT 1. Spill | 205 meters southwest | A fuel oil spill of unknown volume was reported in 2011. Environmental impact was noted. |
| 8 | 5831 Perth Street | OT 2. Equipment and Vehicle Servicing | Adjacent south of the Site | From aerial photographs, the property is located adjacent south of the Site and commercial activities can be seen as early as 1991. Aerials suggest that the property was historically used to sell agricultural machinery as recently as 2011. Property formerly used for equipment and vehicle servicing. Aerial photographs and a review of Google Imagery indicate that the property was used as an RV and automotive repair shop as recently as 2019. Aerial photographs show vehicles parked along the property boundary adjacent to the Site. A used vehicle dealership under construction was noted on the property during the site recon. |

6.4 Areas of Potential Environmental Concern

The areas of potential environmental concern (APECs) identified based on the PCAs and as set out in the 2023 Phase One ESA are summarized in the Table below. Figure A.3 indicates the location of the APECs.

| Area of Potential Environmental Concern | Location of Area of Potential Environmental Concern on Phase One Property | Potentially Contaminating Activity | Location of PCA (on-Site or off-Site) | Contaminants of Potential Concern | Media Potentially Impacted (Groundwater, soil and/or Sediment) |
|---|---|--|---------------------------------------|---|--|
| APEC 1 – Historical pesticide use on the Site. | Site wide | 40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications | On-Site | OCPs, metals, hydride forming metals | Soil |
| APEC 2 – Fill material of unknown origin | Located in the southeast portion of the Site | 30. Importation of Fill Material of Unknown Quality | On-Site | Metals, hydride forming metals, ORP, PHCs, BTEX, PAHs | Soil |
| APEC 3 – Equipment and Vehicle Servicing Business | South portion of the Site | OT 2. Equipment and Vehicle Servicing | Adjacent south of the Site | Metals, hydride forming meals, ORP, PHCs, PAHs, VOCs | Soil and groundwater |

Notes:

- ORP – Other Regulated Parameters consisting of electrical conductivity (EC), sodium adsorption ration (SAR), pH, hexavalent chromium (CrVI), cyanide (CN)
- PHC F1-F4 – Petroleum Hydrocarbons F1 to F4
- BTEX – Benzene, Toluene, Ethylbenzene, Xylenes
- PAHs – Polycyclic Aromatic Hydrocarbons
- OCPs – Organochlorine Pesticides
- VOCs – Volatile Organic Compounds

6.5 APEC 1 – Historical Large Scale Pesticide Use

Based on the Phase One ESA, large scale application of pesticides is expected across the Site from historical agricultural activities. The Site representative was unsure of the exact pesticides that were utilized on-Site. The COPCs are metals and OCPs in soil.

This APEC was investigated as part of this Phase Two ESA through manually advanced holes via shovel (GS23-01 to GS23-11). The samples were collected from approximately 0 – 0.15 mbgs. Eleven soil samples (GS23-01 to GS23-11) were submitted for analysis of metals and OCPs. Based on a comparison to the applicable standards, no exceedances were identified.

6.6 APEC 2 – Fill Material of Unknown Origin

Based on the Phase One ESA, potential fill material of unknown origin was observed on the southeast portion of the Site adjacent to the offsite landscaping company. The COPCs are metals, ORPs, BTEX, and PAHs in soil.

This APEC was investigated through the advancement of 4 boreholes (BH23-02, BH23-03, BH23-04, and BH23-05). The boreholes were advanced on the southeast portion of the Site to a depth of 1.52 mbgs. Elevated concentrations with respect to the applicable Table 2 RPI SCS were noted for SAR and EC at BH23-02, BH23-04, and BH23-05. With regards to these EC and SAR concentrations, they are considered to be related to the application of de-icing salt for vehicle and pedestrian safety associated with the nearby roadway and former adjacent landscaping business. Therefore, as per Section 49.1 of O.Reg. 153/04, it is the Qualified Person's opinion that the site conditions standards for EC and SAR are not exceeded.

6.7 APEC 3 – Equipment and Vehicle Servicing Business

Based on the Phase One ESA, a former vehicle servicing business and current used vehicle dealership was noted adjacent to the south portion of the Site. The COPCs are metals, ORPs, PHCs, and VOCs in soil and groundwater.

This APEC was investigated at test location BH/MW23-01 and BH/MW20-01. No exceedances were identified in any of the soil or groundwater samples submitted with the exception of vanadium exceedance in soil at BH23-01 (i.e., sample SA1 and associated duplicate). With regards to the detected vanadium concentrations, this are inferred to be naturally occurring. Specifically, as per Sterling et al., 2017, geo-regional background concentrations of vanadium in Champlain Sea sediments are often above the established MECP site condition standards for soil. Based on this and since the samples with elevated vanadium are considered to be Champlain Sea sediments, GEMTEC considers the detected concentrations to be naturally occurring and are not considered an exceedance of the Table 2 Standards.

6.8 Subsurface Structures and Utilities

Buried utility service locates were completed prior to the drilling program indicated no public buried utility services at the Site. No underground utility drawings were provided for review. Underground utilities are also inferred to be present in the general vicinity of the neighbouring properties.

Given the conditions encountered during drilling and the lab results, buried services are not considered to have facilitated the migration of contaminants at the Site.

6.9 Physical Setting

Topography

Topographic mapping available through the City of Ottawa's interactive mapping tool geoOttawa was reviewed to determine topographic features in the vicinity of the Site.

The elevation of the Site approximately 96 metres above sea level and is relatively flat (geoOttawa, n.d.).

Stratigraphy - Boreholes

In general and based on observations from BH23-01 and the previously completed geotechnical boreholes, the subsurface soil conditions encountered across the majority of the site generally consisted of topsoil (with thickness ranging from about 50 to 200 mm), underlain by native silty clay which extended to depths ranging from about 2.6 to 8.4 m bgs. A deposit of glacial till was encountered below the silty clay at some geotechnical borehole locations and generally extended beyond the depth of investigation. In the vicinity of APEC 2, at the southeast portion of the Site, surface fill material was encountered comprised of silty sand and gravel to depths ranging from 0.33 to 0.64 m bgs underlain by native silty clay and sandy silt that extended beyond the depth of investigation. The boreholes were advanced to depths ranging from 1.52 to 4.57 mbgs.

Depth to Bedrock

The MECP well records indicate that bedrock anticipated to be at least 13 m bgs.

Hydrogeological Characteristics

Based on the topography of the study area, it is expected that the local shallow groundwater flow will trend southwest towards the unnamed creek on the west boundary of the Site.

Based on the interpreted groundwater elevation contours for water level measured on May 25, 2023, the inferred direction of shallow groundwater flow is generally to the southwest.

The average horizontal hydraulic gradient for shallow groundwater conditions measured on May 25, 2023 was 0.0018 m/m. Vertical hydraulic gradient for shallow groundwater conditions were not calculated as nesting monitoring wells were not installed at the Site.

Depth to Groundwater

Water levels measured in the monitoring wells ranged from 0.66 m to 1.98 m bgs on the May 25, 2023 monitoring event. Groundwater elevations ranged from 90.69 m to 92.63 m above sea level (m asl) on May 25, 2022.

Environmentally Sensitive Areas

No areas of natural significance were identified on the Site or within the Phase Two Study Area.

Shallow Soil Property or Water Body

Overburden soil at the Site extended beyond the depth of investigation (i.e., beyond 4.57 m bgs). An unnamed creek runs along the western boundary of the Site. As all areas of potential environmental concern (APECs) were located further than 30 m away from the unnamed creek, Table 2 RPI SCS was deemed acceptable.

Imported Soil

Imported fill material was noted on the southeast portion of the Site adjacent to the offsite landscaping company. Samples BH23-02 SA1, BH23-03 SA1, and BH23-04 SA1 were taken from the layer of fill material and submitted for analysis of metals, ORPs, PAHs, PHCs and BTEX. No exceedances were noted with the exception of EC and SAR.

6.10 Site Condition Standards

The analytical results of the samples collected for this Phase Two ESA were compared to the Table 2 generic site condition standards (residential property use, fine to medium soil texture) presented in the MECP document “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act”, dated April 15, 2011. The applicable site condition standards were selected based on the following rationale:

- The Site is currently agricultural and the proposed future land use is residential.
- Nearby residential properties rely on groundwater as the source of potable water.
- Based on grain size curves prepared in conjunction with the geotechnical investigation for the Site, the soil texture is considered fine to medium.

- An unnamed creek runs along the western boundary of the Site. As all areas of potential environmental concern (APECs) were located further than 30 m away from the unnamed creek, Table 2 RPI SCS was deemed acceptable.
- No features have been identified at the Phase Two Property that would meet the conditions of an environmentally sensitive site.
- The pH of soil at the Site is greater than 5 and less than 9.
- The overburden thickness is greater than 2 metres for more than one-third of the Phase Two Property. The measured depth to water at the Site ranged from 1.27 metre to 2.58 metres below ground surface (mbgs). The shallow depth of groundwater was not considered significant when selecting the applicable site condition standards given the site conditions (i.e., no volatile contaminants were identified, potable water is obtained from a deep screened well).

6.11 Contaminated Media

Based on the findings of this Phase Two ESA, no contaminated media (i.e., soil and groundwater) were identified.

6.12 Contaminants Exceeding Applicable Standards at the Site

As noted above, elevated concentrations with respect to the applicable Table 2 RPI SCS were noted for SAR and EC at BH23-02, BH23-04, and BH23-05. With regards to these EC and SAR concentrations, they are considered to be related to the application of de-icing salt for vehicle and pedestrian safety associated with the nearby roadway and former adjacent landscaping business. Therefore, as per Section 49.1 of O.Reg. 153/04, it is the Qualified Person's opinion that the site conditions standards for EC and SAR are not exceeded.

Vanadium exceedances were identified in soil at BH23-01 (i.e., Sample SA1 and associated duplicate). With regards to the detected vanadium concentrations, these are inferred to be naturally occurring. Specifically, as per Sterling et al., 2017, geo-regional background concentrations of vanadium in Champlain Sea sediments are often above the established MECP site condition standards for soil. Based on this and since the samples with elevated vanadium are considered to be Champlain Sea sediments, GEMTEC considers the detected concentrations to be naturally occurring and are not considered an exceedance of the Table 2 Standards.

6.13 Description of Areas of Contamination on the Property

As discussed above, no areas of contamination were identified on the Phase Two Property.

6.14 Potential Influence of Utilities on Contaminant Migration

Given the conditions encountered during drilling, the lab results and the lack of utilities at the site, buried services are not considered to have facilitated the migration of contaminants at the Site.

6.15 Contaminant Migration

Based on the findings of this Phase Two ESA, no contaminated media (i.e., soil and groundwater) were identified.

6.16 Meteorological and Climatic Considerations

Seasonal fluctuation in water levels on the Site should be expected. Considering one groundwater monitoring events, seasonal trends could not be identified; however, shallow groundwater water levels are typically highest following the spring recharge and decline throughout the summer and fall months into the winter. As noted above, no contaminated media (i.e., soil and groundwater) were identified.

6.17 Cross Sections – Lateral and Vertical Distribution of Contaminants

Representative geologic cross-sections are presented in Figures A.6 and A.7, Appendix A. As no contaminated media (i.e., soil and groundwater) were identified, cross sections indicating the distribution of contaminants were not required.

6.18 Potential Exposure Pathways and Receptors

Based on the Site characterization data collected, no exposure pathways were deemed relevant for the Phase One Property.

7.0 CONCLUSIONS

The Phase Two ESA investigated the APECs identified in the 2023 Phase One ESA.

Based on the results of the soil and groundwater samples submitted as part of this Phase Two ESA, no exceedances to the applicable site conditions standards for the Site were identified. As such, no further work is recommended at this time.

8.0 REFERENCES

Ontario Ministry of the Environment (MOE). Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act. April 15, 2011.

Ontario Regulation 153/04: Records of Site Condition

Phase One Environmental Site Assessment, 2770 Eagleson Road, Creekside 2 Subdivision, Village of Richmond, Ontario, prepared by GEMTEC, dated February 2023.

Stirling, Sean. Elevated Background Metal Concentrations in Champlain Sea Clay – Ottawa Region. (N.D.). GEO Ottawa 2017.

9.0 LIMITATION OF LIABILITY

This report was prepared for the exclusive use of Cardel Group of Companies. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and Cardel Group of Companies. Nothing in this report is intended to provide a legal opinion. Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. GEMTEC accepts no responsibility for damages, if any, suffered by any third party (other than as noted above) as a result of decisions made or actions based on this report.

The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information available at the time the report was prepared. This report has been prepared for the application noted and it is based, in part, on visual observations made at the site, subsurface investigations at discrete locations and depths and laboratory analyses of specific chemical parameters and material during a specific time interval, all as described in the report. Unless otherwise stated, the findings contained in this report cannot be extrapolated or extended to previous or future site conditions, portions of the site that were unavailable for direct investigation, subsurface locations on the site that were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Chemical parameters other than those addressed by the investigation described in this report may exist in soil and groundwater elsewhere on the site.

This report provides a professional opinion and therefore no warranty is expressed, implied, or made as to the conclusions, advice and recommendations offered in this report. This report does not provide a legal opinion regarding compliance with applicable laws. With respect to regulatory compliance issues, it should be noted that regulatory statutes and the interpretation of regulatory statutes are subject to change.

Should new information become available during future work, including excavations, borings or other studies, GEMTEC should be requested to review the information and, if necessary, re-assess the conclusions presented herein.

The monitoring wells installed as part of this project have been constructed using licensed drilling/well contractors employing licensed well technicians. It is owner's responsibility to have a licensed well technician properly abandon all monitoring wells, if required.

10.0 CLOSURE

The undersigned Qualified Person confirms that he/she was responsible for conducting and/or supervising this Phase Two ESA and the associated findings and conclusions.

We trust this report provides sufficient information for your present purposes. If you have any questions concerning this report, please do not hesitate to contact our office.

Regards,

GEMTEC Consulting Engineers and Scientists Limited



Connor Shaw, B.E.Sc.
Environmental Scientist



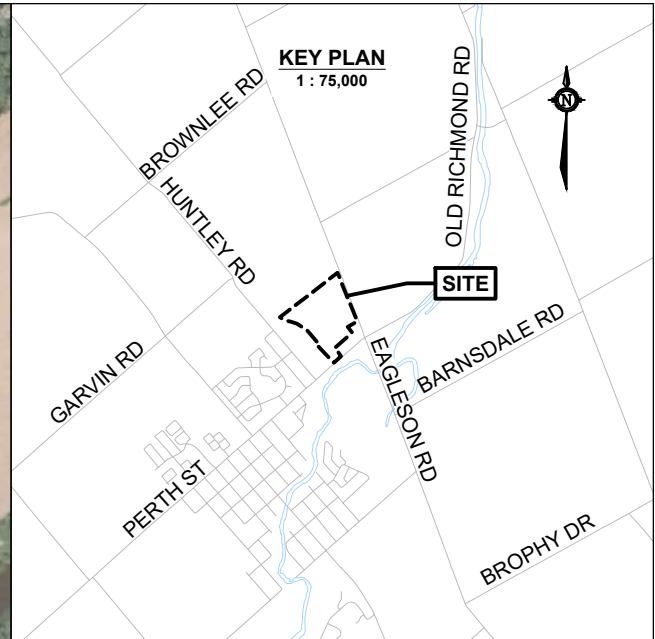
Sherry Eaton, M.Sc., P.Geo., PMP, QP_{ESA}
Senior Environmental Consultant



APPENDIX A

Figures and Tables

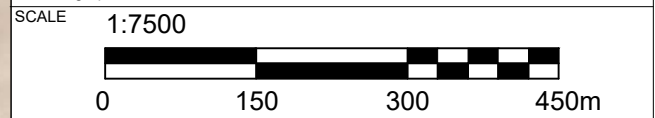
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LEGEND

| | |
|--|---|
| | APPROXIMATE SITE BOUNDARY |
| | STUDY AREA (250 m RADIUS AROUND THE SITE BOUNDARY) |

- BASEMAP NOTES**
- Coordinate system: NAD83, UTM ZONE 18N.
 - Contains information licensed under the Open Government Licence – Ontario.
 - Maps Data: Google, ©2023 CNES / Airbus, First Base Solutions, Maxar Technologies.
 - Geographic dataset source: Ontario GeoHub.



DRAWING **PHASE TWO PROPERTY AND PHASE ONE STUDY AREA**

CLIENT **CARDEL GROUP OF COMPANIES**

PROJECT **PHASE TWO ENVIRONMENTAL SITE ASSESSMENT CREEKSIDE 2 DEVELOPMENT 2770 EAGLESON ROAD OTTAWA, ONTARIO**

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| DRAWN BY S.L. | CHECKED BY C.S. |
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| PROJECT NO. 61899.04 | REVISION NO. 0 |
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| DATE JUNE 2023 | FIGURE NO. FIGURE A.1 |
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LEGEND

--- APPROXIMATE SITE BOUNDARY

--- STUDY AREA
(250 m RADIUS AROUND THE SITE BOUNDARY)

POTENTIALLY CONTAMINATING ACTIVITIES

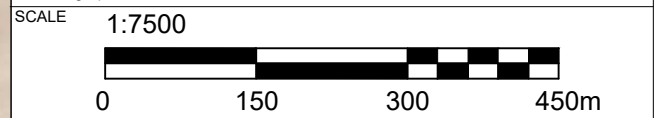
| | |
|----|---|
| 28 | Gasoline and Associated Products Storage in Fixed Tanks |
| 30 | Importation of Fill Material of Unknown Quality |
| 40 | Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Large-Scale Applications |

OTHER

| | |
|-----|---------------------------------|
| OT1 | Spill |
| OT2 | Equipment and Vehicle Servicing |

BASEMAP NOTES

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DRAWING
POTENTIALLY CONTAMINATING ACTIVITIES

CLIENT
CARDEL GROUP OF COMPANIES

PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
CREEKSIDE 2 DEVELOPMENT
2770 EAGLESON ROAD
OTTAWA, ONTARIO

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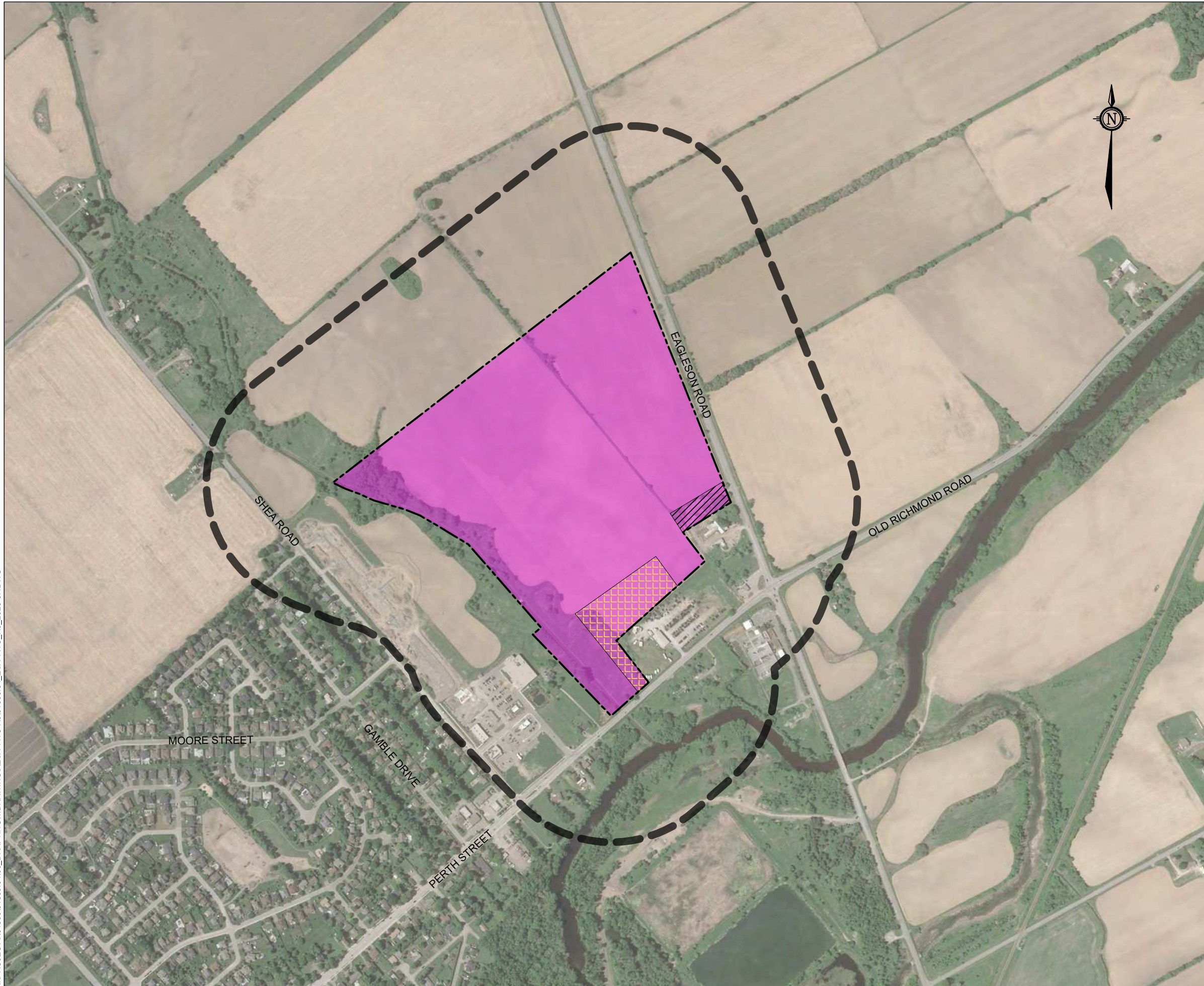
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| PROJECT NO. 61899.04 | REVISION NO. 0 |
|--------------------------------|--------------------------|

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| DATE JUNE 2023 | FIGURE NO. FIGURE A.2 |
|--------------------------|---------------------------------|

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LEGEND

- APPROXIMATE SITE BOUNDARY
- STUDY AREA (250 m RADIUS AROUND THE SITE BOUNDARY)

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

- APEC 1:** Historical Pesticide Use On Site
- APEC 2:** Fill Material of Unknown Origin
- APEC 3:** Equipment and Vehicle Servicing Business

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SCALE 1:7500

DRAWING
AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

CLIENT
CARDEL GROUP OF COMPANIES

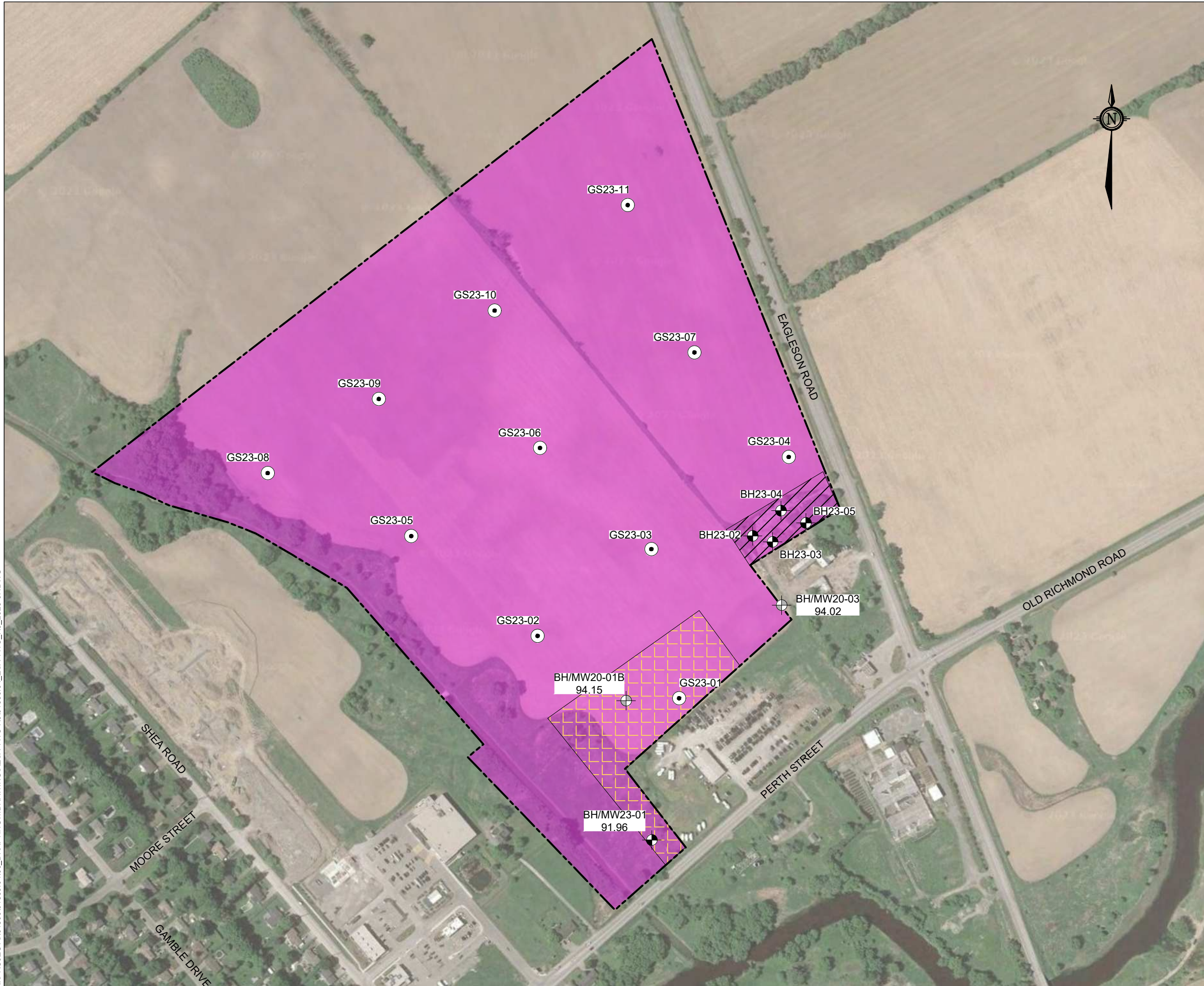
PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
CREEKSIDE 2 DEVELOPMENT
2770 EAGLESON ROAD
OTTAWA, ONTARIO

| | |
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| PROJECT NO. 61899.04 | REVISION NO. 0 |
| DATE JUNE 2023 | FIGURE NO. FIGURE A.3 |

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LEGEND

BH/ MW/ SA # \leftarrow BOREHOLE/ MONITORING WELL SAMPLE ID
 XXX.XX \leftarrow GROUND SURFACE ELEVATION, IN METRES GEODETIC DATUM

BOREHOLE LOCATION
 (current investigation by GEMTEC)

MONITORING WELL/ BOREHOLE LOCATION
 (from GEMTEC's 2020 geotechnical investigation)

SAMPLING LOCATION

APPROXIMATE SITE BOUNDARY

STUDY AREA
 (250 m RADIUS AROUND THE SITE BOUNDARY)

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

APEC 1:
 Historical Pesticide Use On Site

APEC 2:
 Fill Material of Unknown Origin

APEC 3:
 Equipment and Vehicle Servicing Business

BASEMAP NOTES

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SCALE 1:4000

DRAWING APECS AND TEST LOCATIONS

CLIENT CARDEL GROUP OF COMPANIES

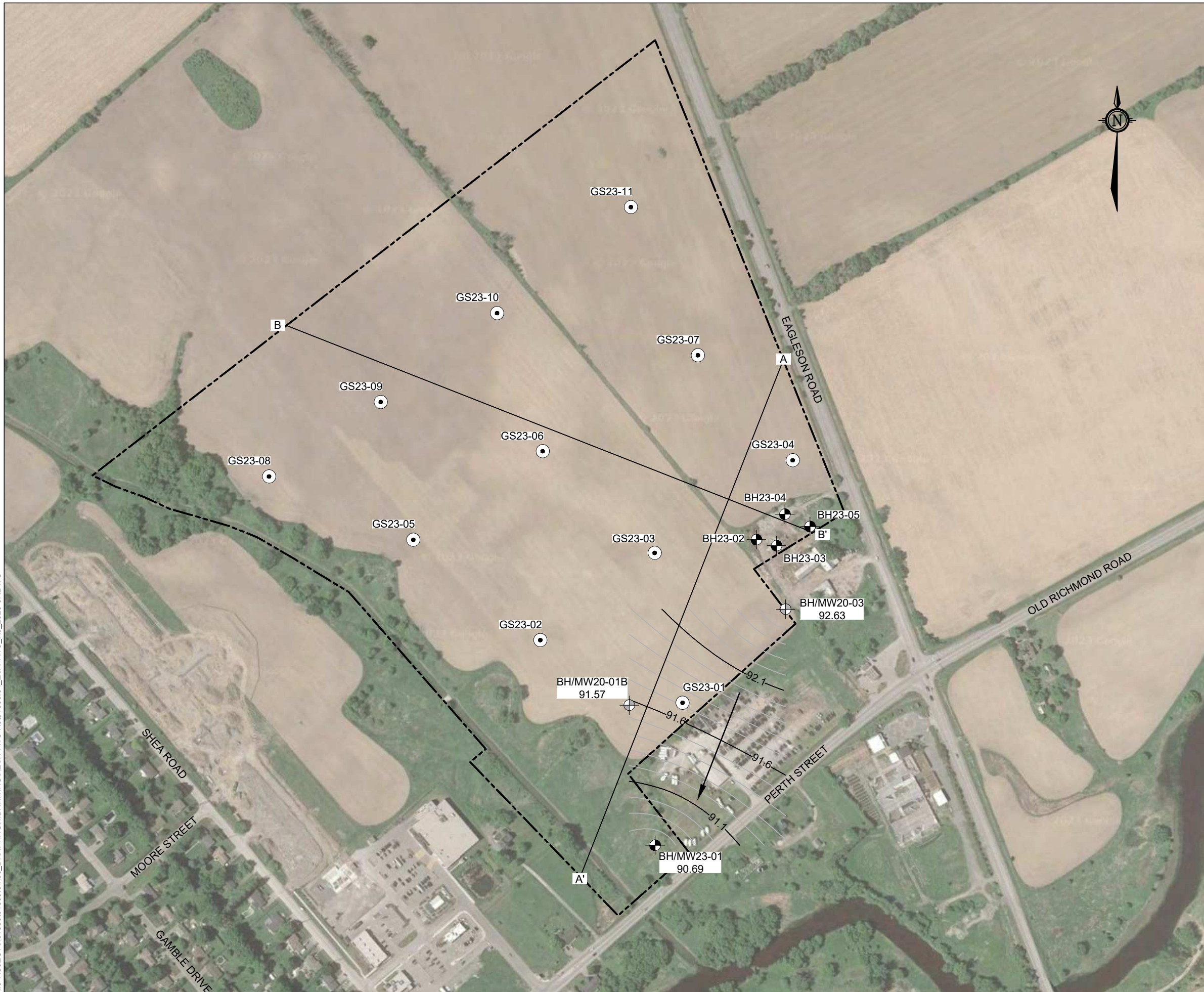
PROJECT PHASE TWO ENVIRONMENTAL SITE ASSESSMENT CREEKSIDE 2 DEVELOPMENT 2770 EAGLESON ROAD OTTAWA, ONTARIO

| | |
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| DRAWN BY S.L. | CHECKED BY C.S. |
| PROJECT NO. 61899.04 | REVISION NO. 0 |
| DATE JUNE 2023 | FIGURE NO. FIGURE A.4 |

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LEGEND

- BH/ MW/ SA # BOREHOLE/ MONITORING WELL SAMPLE ID
- XXX.XX GROUND WATER ELEVATION, IN METRES
(from May 25, 2023)
- BOREHOLE LOCATION**
(current investigation by GEMTEC)
- MONITORING WELL/ BOREHOLE LOCATION**
(from GEMTEC's 2020 geotechnical investigation)
- SAMPLING LOCATION**
- APPROXIMATE SITE BOUNDARY**
- 91.6 MAJOR GROUNDWATER CONTOURS, METRES**
- MINOR GROUNDWATER CONTOURS, METRES**
- INFERRED GROUNDWATER FLOW DIRECTION**
- A — A' GEOLOGIC CROSS SECTION**

BASEMAP NOTES

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SCALE 1:4000



DRAWING
GROUNDWATER ELEVATIONS (MAY 25, 2023)

CLIENT
CARDEL GROUP OF COMPANIES

PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
CREEKSIDE 2 DEVELOPMENT
2770 EAGLESON ROAD
OTTAWA, ONTARIO

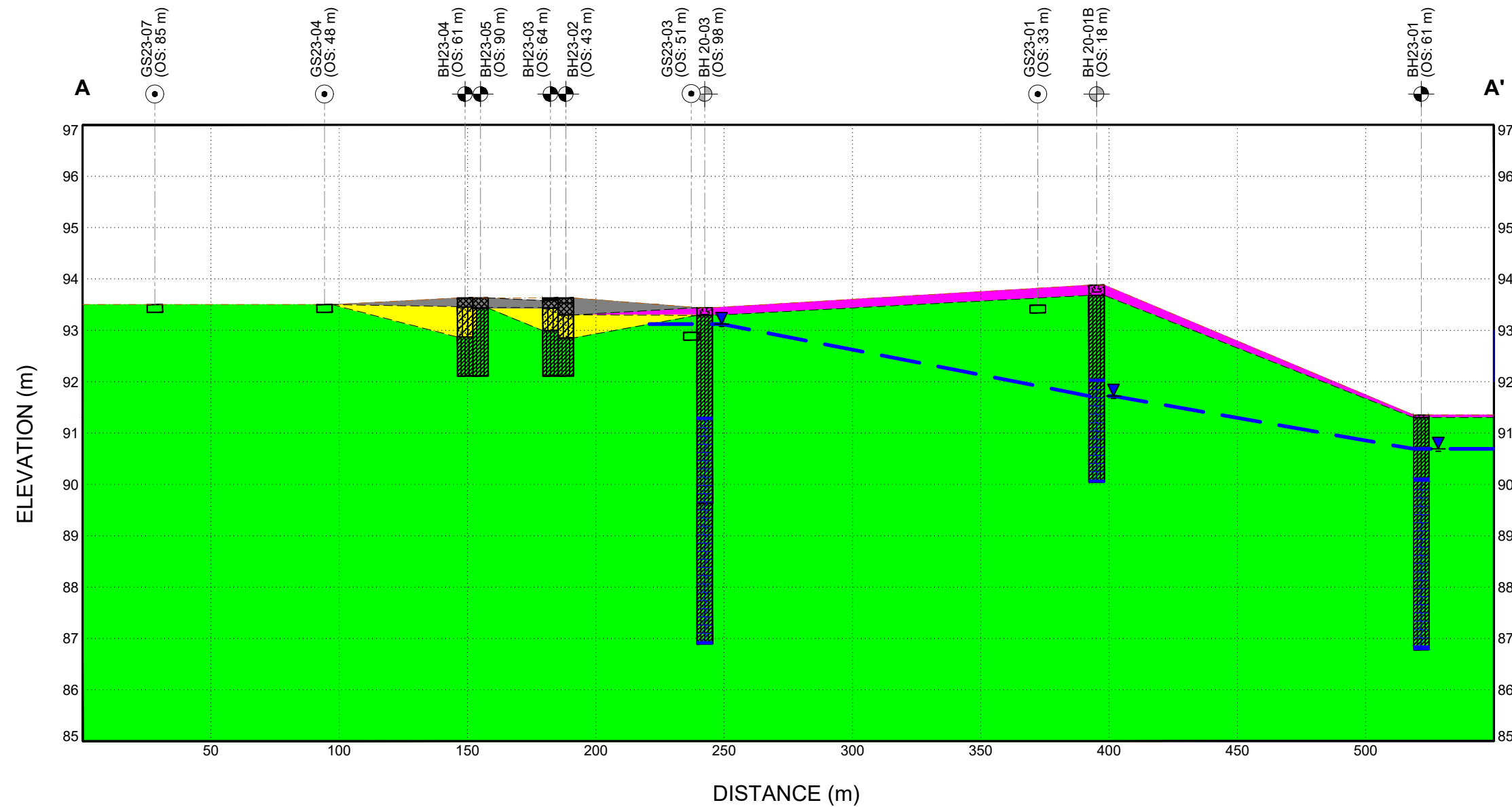
| | |
|-------------------------|---------------------------|
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| PROJECT NO. 61899.04 | REVISION NO. 0 |
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| | |
|--------------------------|---------------------------------|
| DATE JUNE 2023 | FIGURE NO. FIGURE A.5 |
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| | |
|--|--|
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|--|--|

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LEGEND

BH/ MW/ SA # ← BOREHOLE/ MONITORING WELL SAMPLE ID
 XXX.XX ← GROUND SURFACE ELEVATION, IN METRES
 GEODETIC DATUM

● BOREHOLE LOCATION
 (current investigation by GEMTEC)

⊕ MONITORING WELL/ BOREHOLE LOCATION
 (from GEMTEC's 2020 geotechnical investigation)

○ SAMPLING LOCATION

▽ GROUNDWATER LEVEL

OS OFFSET FROM SECTION LINE

--- INFERRED GROUND SURFACE

--- INFERRED STATIGRAPHY

— INFERRED GROUNDWATER LEVEL

STRATIGRAPHY

TOPSOIL

ASPHALTIC CONCRETE

FILL MATERIAL

SANDY SILT

SILTY CLAY

MONITORING WELL SCREEN

NOTE:
 Elevation data from grab sample locations (GS23-01 etc.) and BH23-02, BH23-03, BH23-04, and BH23-05 is approximated based on nearby survey locations from GEMTEC's 2020 Geotechnical Investigation on the Site



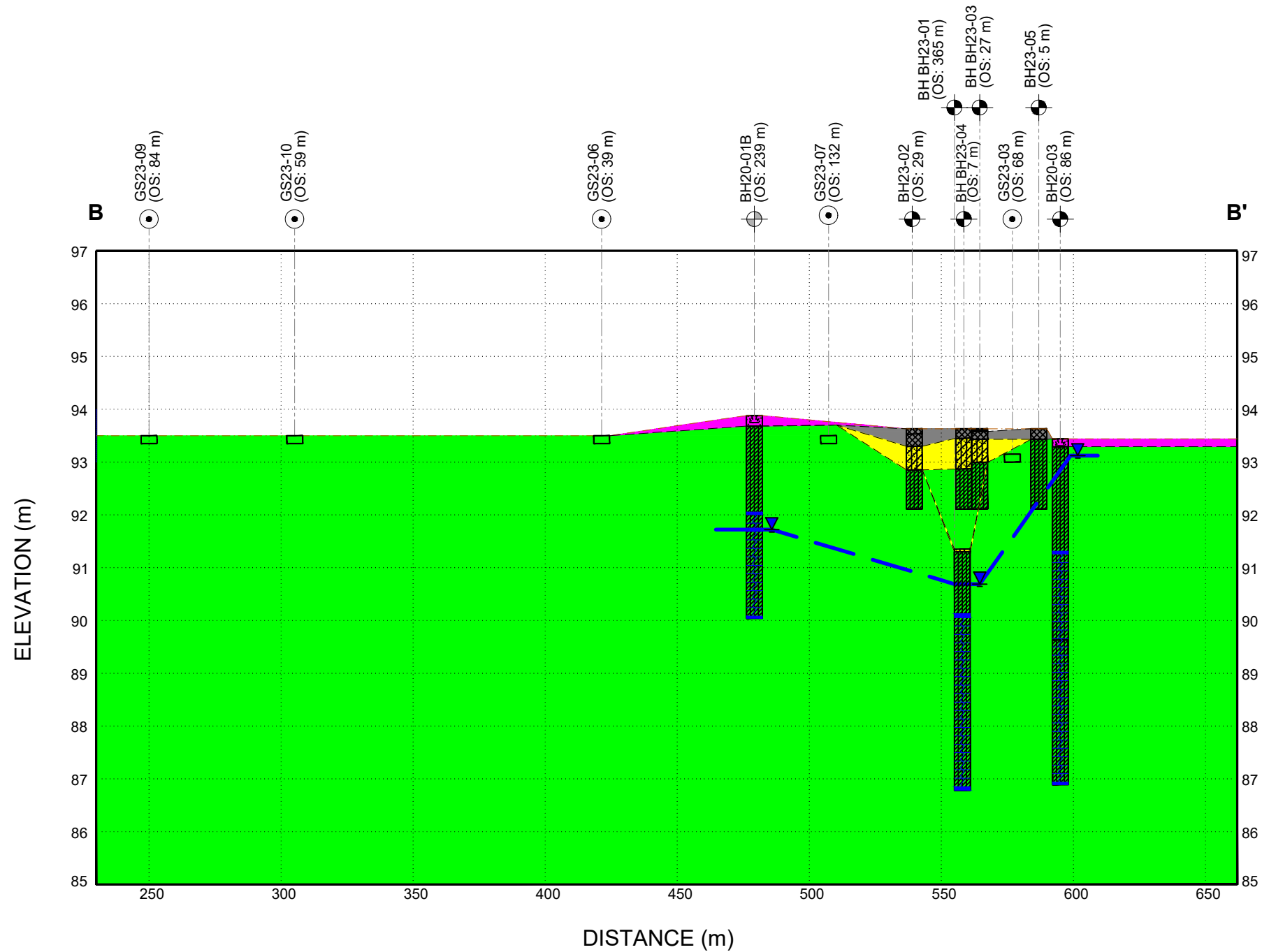
VERTICAL SCALE
 20X VERTICAL EXAGGERATION

| | |
|--|--------------|
| DRAWING | |
| GEOLOGIC CROSS SECTION A - A' | |
| CLIENT | |
| CARDEL GROUP OF COMPANIES | |
| PROJECT | |
| PHASE TWO ENVIRONMENTAL SITE ASSESSMENT CREEKSIDE 2 DEVELOPMENT 2770 EAGLESON ROAD OTTAWA, ONTARIO | |
| DRAWN BY | CHECKED BY |
| S.L. | C.S. |
| PROJECT NO. | REVISION NO. |
| 61899.04 | 0 |
| DATE | FIGURE NO. |
| JUNE 2023 | FIGURE A.6 |

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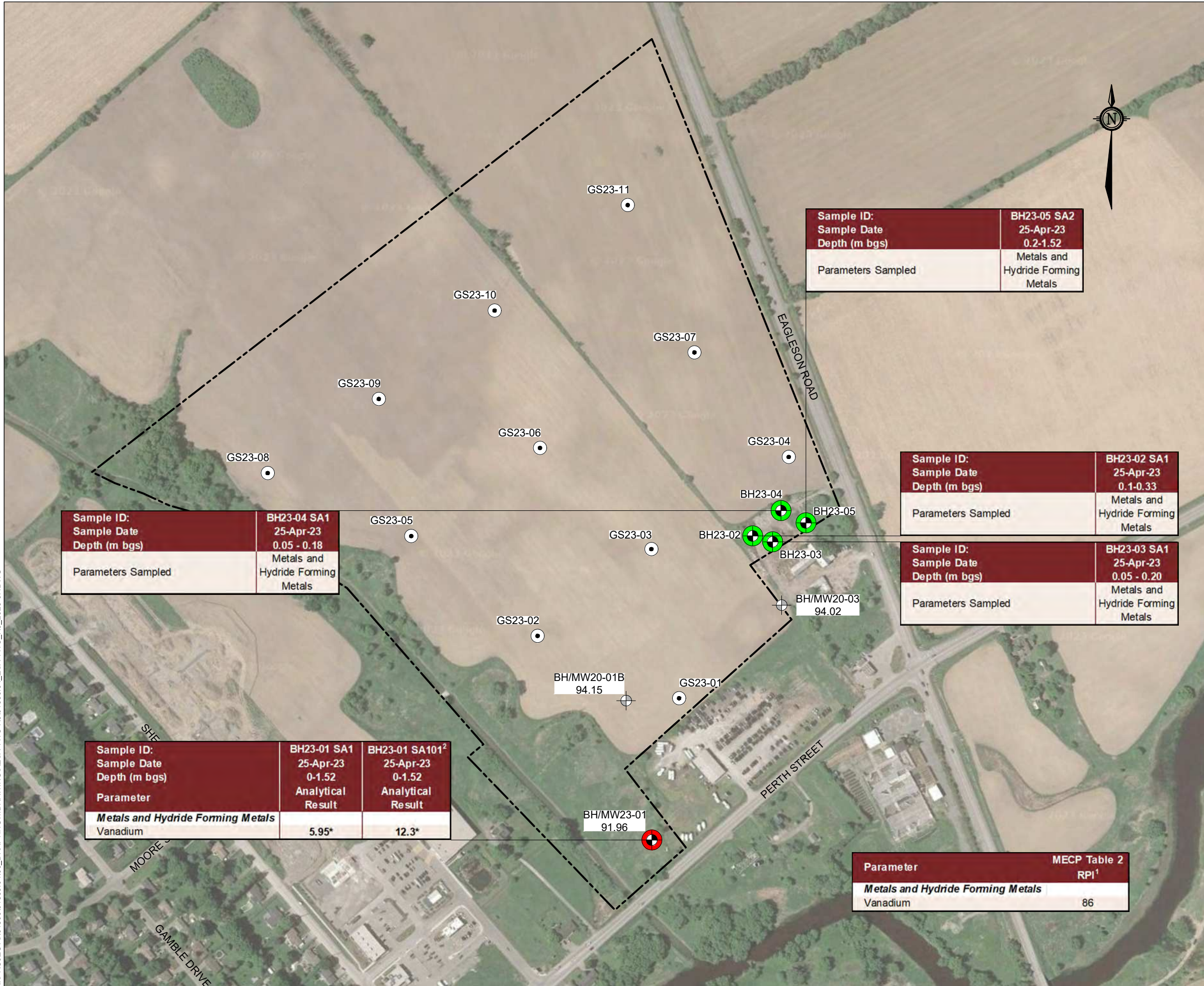
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| | |
|--|--|
| LEGEND | |
| BH/ MW/ SA # | BOREHOLE/ MONITORING WELL SAMPLE ID |
| XXX.XX | GROUND SURFACE ELEVATION, IN METRES GEODETIC DATUM |
| | BOREHOLE LOCATION (current investigation by GEMTEC) |
| | MONITORING WELL/ BOREHOLE LOCATION (from GEMTEC's 2020 geotechnical investigation) |
| | SAMPLING LOCATION |
| | GROUNDWATER LEVEL |
| OS | OFFSET FROM SECTION LINE |
| | INFERRED GROUND SURFACE |
| | INFERRED STATIGRAPHY |
| | INFERRED GROUNDWATER LEVEL |
| STRATIGRAPHY | |
| | TOPSOIL |
| | ASPHALTIC CONCRETE |
| | FILL MATERIAL |
| | SANDY SILT |
| | SILTY CLAY |
| | MONITORING WELL SCREEN |
| NOTE: Elevation data from grab sample locations (GS23-01 etc.) and BH23-02, BH23-03, BH23-04, and BH23-05 is approximated based on nearby survey locations from GEMTEC's 2020 Geotechnical Investigation on the Site | |
| HORIZONTAL SCALE 1:2000 | |
| VERTICAL SCALE 20X VERTICAL EXAGGERATION | |
| DRAWING GEOLOGIC CROSS SECTION B - B' | |
| CLIENT CARDEL GROUP OF COMPANIES | |
| PROJECT PHASE TWO ENVIRONMENTAL SITE ASSESSMENT CREEKSIDE 2 DEVELOPMENT 2770 EAGLESON ROAD OTTAWA, ONTARIO | |
| DRAWN BY S.L. | CHECKED BY C.S. |
| PROJECT NO. 61899.04 | REVISION NO. 0 |
| DATE JUNE 2023 | FIGURE NO. FIGURE 7 |
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LEGEND

BH/ MW/ SA # BOREHOLE/ MONITORING WELL SAMPLE ID
 XXX.XX GROUND WATER ELEVATION, IN METRES
 (from May 25, 2023)

BOREHOLE LOCATION
 (current investigation by GEMTEC)

MONITORING WELL/ BOREHOLE LOCATION
 (from GEMTEC's 2020 geotechnical investigation)

SAMPLING LOCATION

LOCATION SAMPLED AND EXCEEDS TABLE 2 RPI SCS

LOCATION SAMPLED AND MEETS TABLE 2 RPI SCS

APPROXIMATE SITE BOUNDARY

Notes:

1 - MECP Table 2 RPI SCS: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for fine to medium textured soil for Residential/Parkland/Institutional Property Use

2 - BH23-01 SA101 is a duplicate samples of BH23-01 SA1

Bold - Exceeds MECP Table 2 RPI SCS

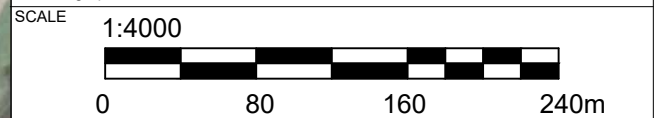
* - Vanadium exceedance is attributed to geo-regional background concentrations of vanadium in Champlain Sea sediments being above the established MECP Site Condition Standards (Striling et al., 2017). As such, GEMTEC considers the detected concentrations to be naturally occurring and are not considered an exceedance of the Table 2 Standards.

NOTE:

Elevation data from grab sample locations (GS23-01 etc.) and BH23-02, BH23-03, BH23-04, and BH23-05 is approximated based on nearby survey locations from GEMTEC's 2020 Geotechnical Investigation on the Site

BASEMAP NOTES

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DRAWING SOIL ANALYTICAL RESULTS
 METALS AND HYDRIDE FORMING METALS

CLIENT CARDEL GROUP OF COMPANIES

PROJECT PHASE TWO
 ENVIRONMENTAL SITE ASSESSMENT
 CREEKSIDE 2 DEVELOPMENT
 2770 EAGLESON ROAD
 OTTAWA, ONTARIO

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PROJECT NO. 61899.04 **REVISION NO.** 0

DATE JUNE 2023 **FIGURE NO.** **FIGURE A.8**

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| | |
|---------------------------|-----------------------------------|
| Sample ID: | BH23-04 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.05 - 0.18 |
| Parameters Sampled | Metals and Hydride Forming Metals |

| | |
|---------------------------|-----------------------------------|
| Sample ID: | BH23-05 SA2 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.2-1.52 |
| Parameters Sampled | Metals and Hydride Forming Metals |

| | |
|---------------------------|-----------------------------------|
| Sample ID: | BH23-02 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.1-0.33 |
| Parameters Sampled | Metals and Hydride Forming Metals |

| | |
|---------------------------|-----------------------------------|
| Sample ID: | BH23-03 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.05 - 0.20 |
| Parameters Sampled | Metals and Hydride Forming Metals |

| | | |
|--|-------------------|----------------------------|
| Sample ID: | BH23-01 SA1 | BH23-01 SA101 ² |
| Sample Date | 25-Apr-23 | 25-Apr-23 |
| Depth (m bgs) | 0-1.52 | 0-1.52 |
| Parameter | Analytical Result | Analytical Result |
| Metals and Hydride Forming Metals | | |
| Vanadium | 5.95* | 12.3* |

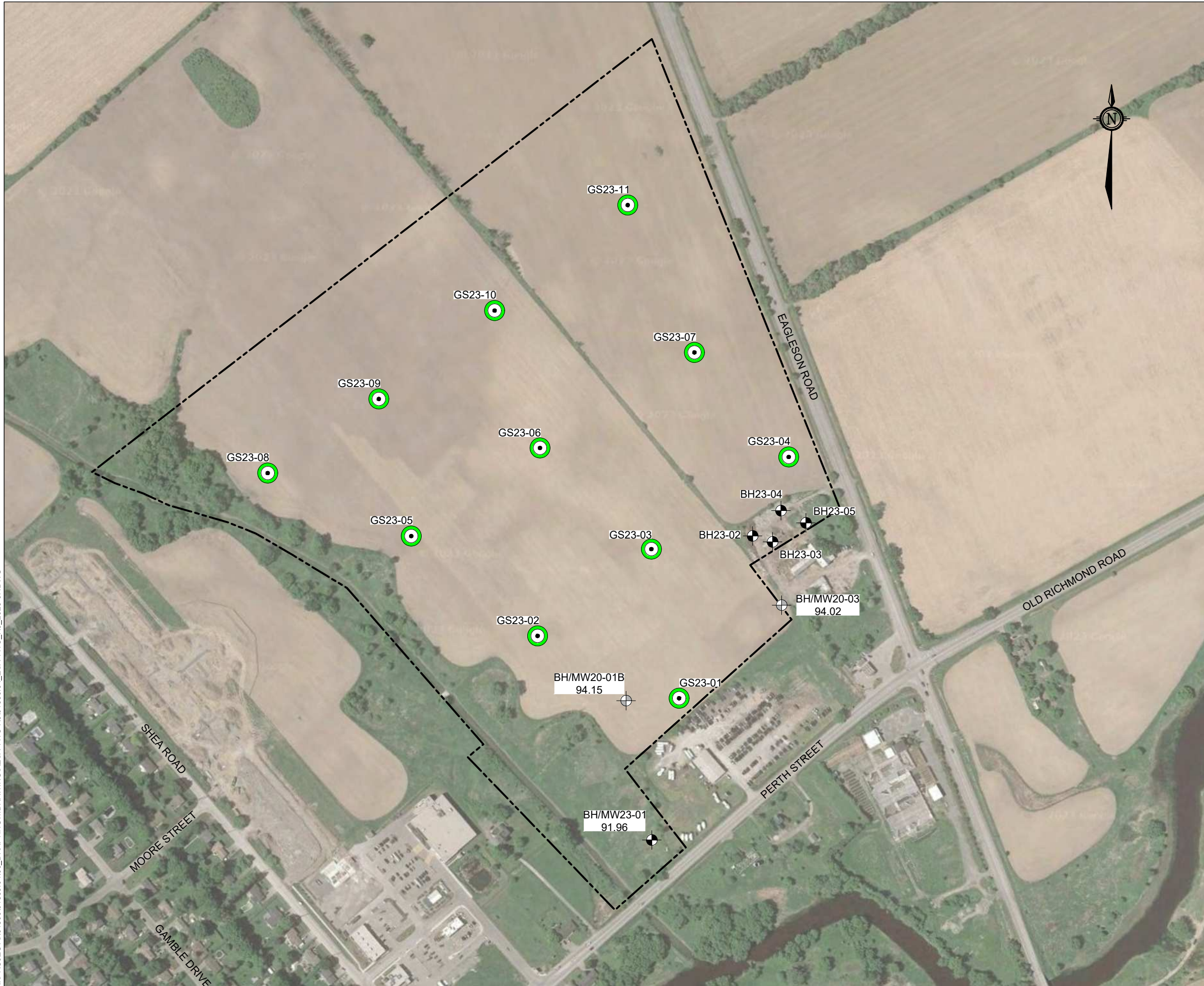
| | |
|--|-------------------------------|
| Parameter | MECP Table 2 RPI ¹ |
| Metals and Hydride Forming Metals | |
| Vanadium | 86 |

BH/MW20-01B
94.15

BH/MW20-03
94.02

BH/MW23-01
91.96

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LEGEND

BH/ MW/ SA # BOREHOLE/ MONITORING WELL SAMPLE ID
 XXX.XX GROUND WATER ELEVATION, IN METRES
 (from May 25, 2023)

BOREHOLE LOCATION
 (current investigation by GEMTEC)

MONITORING WELL/ BOREHOLE LOCATION
 (from GEMTEC's 2020 geotechnical investigation)

SAMPLING LOCATION

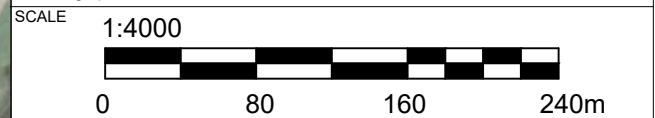
LOCATION SAMPLED AND EXCEEDS TABLE 2 RPI SCS

LOCATION SAMPLED AND MEETS TABLE 2 RPI SCS

APPROXIMATE SITE BOUNDARY

- NOTE:**
- Elevation data from grab sample locations (GS23-01 etc.) and BH23-02, BH23-03, BH23-04, and BH23-05 is approximated based on nearby survey locations from GEMTEC's 2020 Geotechnical Investigation on the Site
 - All grab samples (GS) submitted for metals and organochlorine pesticides were collected from 0-0.15 meters below ground surface on April 4, 2023

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DRAWING SOIL ANALYTICAL RESULTS
 METALS AND ORGANOCHLORINE PESTICIDES

CLIENT CARDEL GROUP OF COMPANIES

PROJECT PHASE TWO
 ENVIRONMENTAL SITE ASSESSMENT
 CREEKSIDE 2 DEVELOPMENT
 2770 EAGLESON ROAD
 OTTAWA, ONTARIO

DRAWN BY S.L. **CHECKED BY** C.S.

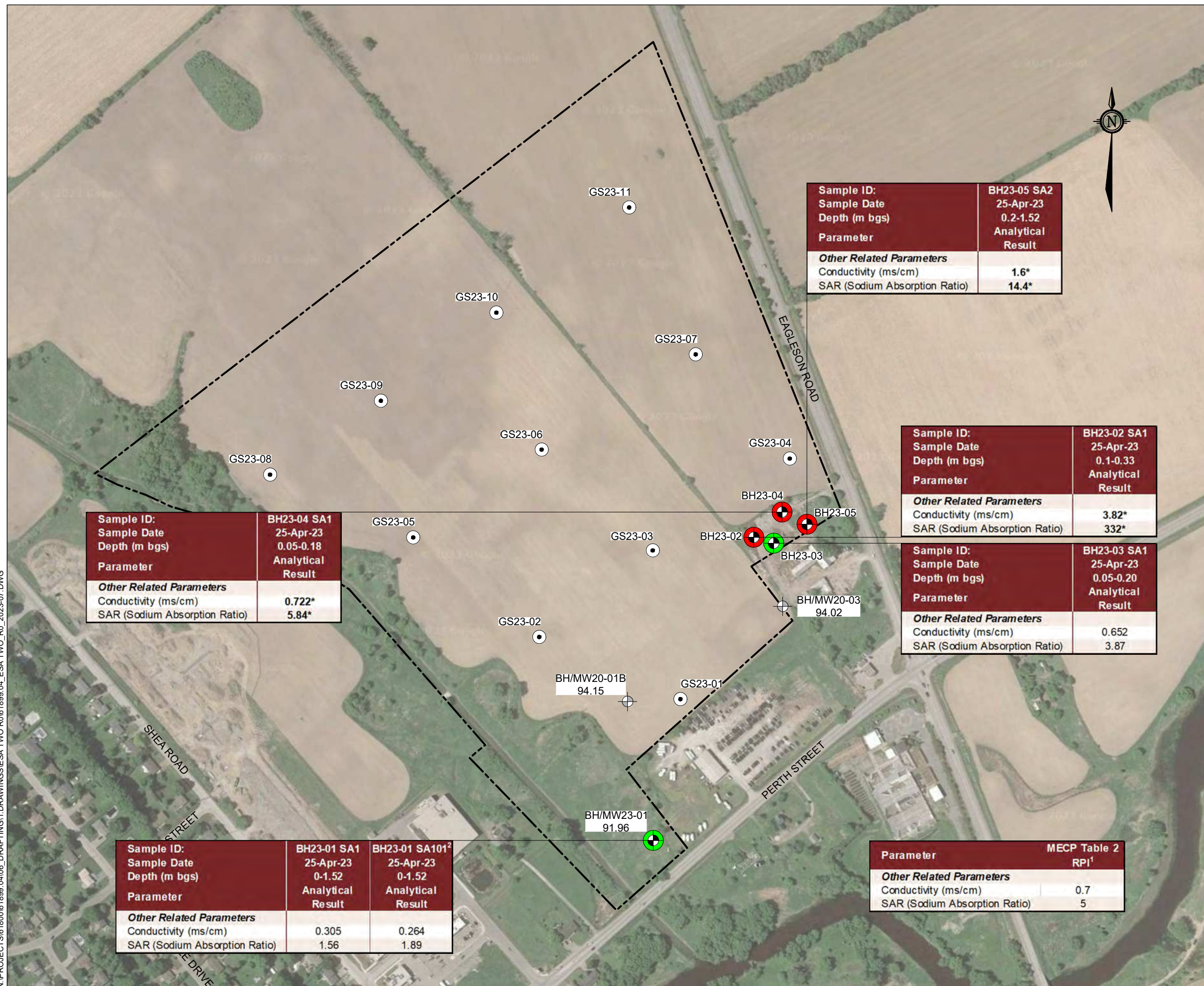
PROJECT NO. 61899.04 **REVISION NO.** 0

DATE JUNE 2023 **FIGURE NO.** **FIGURE A.9**

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LEGEND

BH/ MW/ SA # BOREHOLE/ MONITORING WELL SAMPLE ID
 XXX.XX GROUND WATER ELEVATION, IN METRES
 (from May 25, 2023)

BOREHOLE LOCATION
 (current investigation by GEMTEC)

MONITORING WELL/ BOREHOLE LOCATION
 (from GEMTEC's 2020 geotechnical investigation)

SAMPLING LOCATION

LOCATION SAMPLED AND EXCEEDS TABLE 2 RPI SCS

LOCATION SAMPLED AND MEETS TABLE 2 RPI SCS

----- APPROXIMATE SITE BOUNDARY

Notes:

1 - MECP Table 2 RPI SCS: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for fine to medium textured soil for Residential/Parkland/Institutional Property Use

2 - BH23-01 SA101 is a duplicate sample of BH23-01 SA1

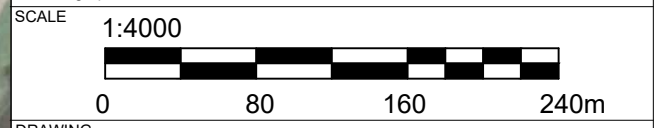
Bold - Exceeds MECP Table 2 RPI SCS

* - Salt related exceedance is attributed to de-icing procedures for the safety of vehicular or pedestrian traffic. It is the Qualified Person's opinion that the EC and SAR SCS are not exceeded.

NOTE:
 Elevation data from grab sample locations (GS23-01 etc.) and BH23-02, BH23-03, BH23-04, and BH23-05 is approximated based on nearby survey locations from GEMTEC's 2020 Geotechnical Investigation on the Site

BASEMAP NOTES

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- Geographic dataset source: Ontario GeoHub.



| | | | |
|-------------|-----------|--|--------------------|
| DRAWING | | SOIL ANALYTICAL RESULTS - ORP | |
| CLIENT | | CARDEL GROUP OF COMPANIES | |
| PROJECT | | PHASE TWO ENVIRONMENTAL SITE ASSESSMENT CREEKSIDE 2 DEVELOPMENT 2770 EAGLESON ROAD OTTAWA, ONTARIO | |
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| PROJECT NO. | 61899.04 | REVISION NO. | 0 |
| DATE | JUNE 2023 | FIGURE NO. | FIGURE A.10 |

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| | |
|---------------------------------|-------------------|
| Sample ID: | BH23-04 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.05-0.18 |
| Parameter | Analytical Result |
| Other Related Parameters | |
| Conductivity (ms/cm) | 0.722* |
| SAR (Sodium Absorption Ratio) | 5.84* |

| | |
|---------------------------------|-------------------|
| Sample ID: | BH23-05 SA2 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.2-1.52 |
| Parameter | Analytical Result |
| Other Related Parameters | |
| Conductivity (ms/cm) | 1.6* |
| SAR (Sodium Absorption Ratio) | 14.4* |

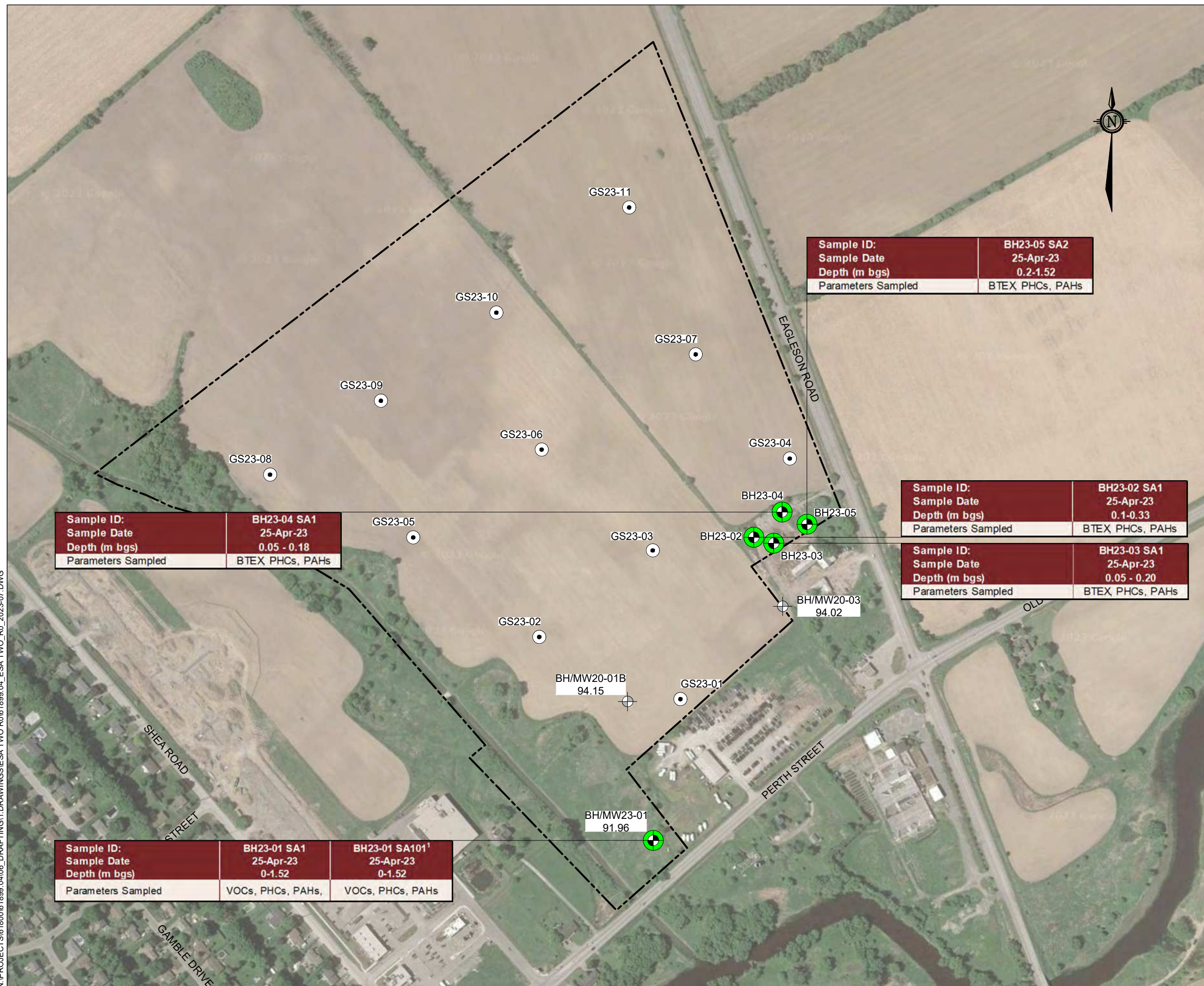
| | |
|---------------------------------|-------------------|
| Sample ID: | BH23-02 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.1-0.33 |
| Parameter | Analytical Result |
| Other Related Parameters | |
| Conductivity (ms/cm) | 3.82* |
| SAR (Sodium Absorption Ratio) | 332* |

| | |
|---------------------------------|-------------------|
| Sample ID: | BH23-03 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.05-0.20 |
| Parameter | Analytical Result |
| Other Related Parameters | |
| Conductivity (ms/cm) | 0.652 |
| SAR (Sodium Absorption Ratio) | 3.87 |

| | | |
|---------------------------------|-------------------|----------------------------|
| Sample ID: | BH23-01 SA1 | BH23-01 SA101 ² |
| Sample Date | 25-Apr-23 | 25-Apr-23 |
| Depth (m bgs) | 0-1.52 | 0-1.52 |
| Parameter | Analytical Result | Analytical Result |
| Other Related Parameters | | |
| Conductivity (ms/cm) | 0.305 | 0.264 |
| SAR (Sodium Absorption Ratio) | 1.56 | 1.89 |

| | |
|---------------------------------|-------------------------------|
| Parameter | MECP Table 2 RPI ¹ |
| Other Related Parameters | |
| Conductivity (ms/cm) | 0.7 |
| SAR (Sodium Absorption Ratio) | 5 |

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LEGEND

BH/ MW/ SA # — BOREHOLE/ MONITORING WELL SAMPLE ID
 XXX.XX — GROUND WATER ELEVATION, IN METRES (from May 25, 2023)

BOREHOLE LOCATION
 (current investigation by GEMTEC)

MONITORING WELL/ BOREHOLE LOCATION
 (from GEMTEC's 2020 geotechnical investigation)

SAMPLING LOCATION

LOCATION SAMPLED AND EXCEEDS TABLE 2 RPI SCS

LOCATION SAMPLED AND MEETS TABLE 2 RPI SCS

----- **APPROXIMATE SITE BOUNDARY**

Notes:
 1 - BH23-01 SA101 is a duplicate sample of BH23-01 SA1
 m bgs - meters below ground surface

| | |
|--------------------|------------------|
| Sample ID: | BH23-04 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.05 - 0.18 |
| Parameters Sampled | BTEX, PHCs, PAHs |

| | |
|--------------------|------------------|
| Sample ID: | BH23-05 SA2 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.2-1.52 |
| Parameters Sampled | BTEX, PHCs, PAHs |

| | |
|--------------------|------------------|
| Sample ID: | BH23-02 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.1-0.33 |
| Parameters Sampled | BTEX, PHCs, PAHs |

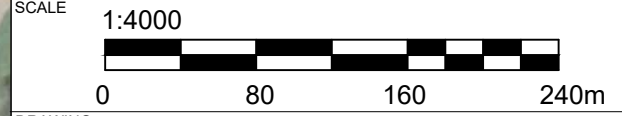
| | |
|--------------------|------------------|
| Sample ID: | BH23-03 SA1 |
| Sample Date | 25-Apr-23 |
| Depth (m bgs) | 0.05 - 0.20 |
| Parameters Sampled | BTEX, PHCs, PAHs |

| | | |
|--------------------|-------------------|----------------------------|
| Sample ID: | BH23-01 SA1 | BH23-01 SA101 ¹ |
| Sample Date | 25-Apr-23 | 25-Apr-23 |
| Depth (m bgs) | 0-1.52 | 0-1.52 |
| Parameters Sampled | VOCs, PHCs, PAHs, | VOCs, PHCs, PAHs |

NOTE:
 Elevation data from grab sample locations (GS23-01 etc.) and BH23-02, BH23-03, BH23-04, and BH23-05 is approximated based on nearby survey locations from GEMTEC's 2020 Geotechnical Investigation on the Site

BASEMAP NOTES

- Coordinate system: NAD83, UTM ZONE 18N.
- Contains information licensed under the Open Government Licence - Ontario.
- Maps Data: Google, @2023 CNES / Airbus, First Base Solutions, Maxar Technologies.
- Geographic dataset source: Ontario GeoHub.



DRAWING
 SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS, POLYCYCLIC AROMATIC HYDROCARBONS, VOLATILE ORGANIC COMPOUNDS

CLIENT
 CARDEL GROUP OF COMPANIES

PROJECT
 PHASE TWO ENVIRONMENTAL SITE ASSESSMENT CREEKSIDE 2 DEVELOPMENT 2770 EAGLESON ROAD OTTAWA, ONTARIO

DRAWN BY S.L. **CHECKED BY** C.S.

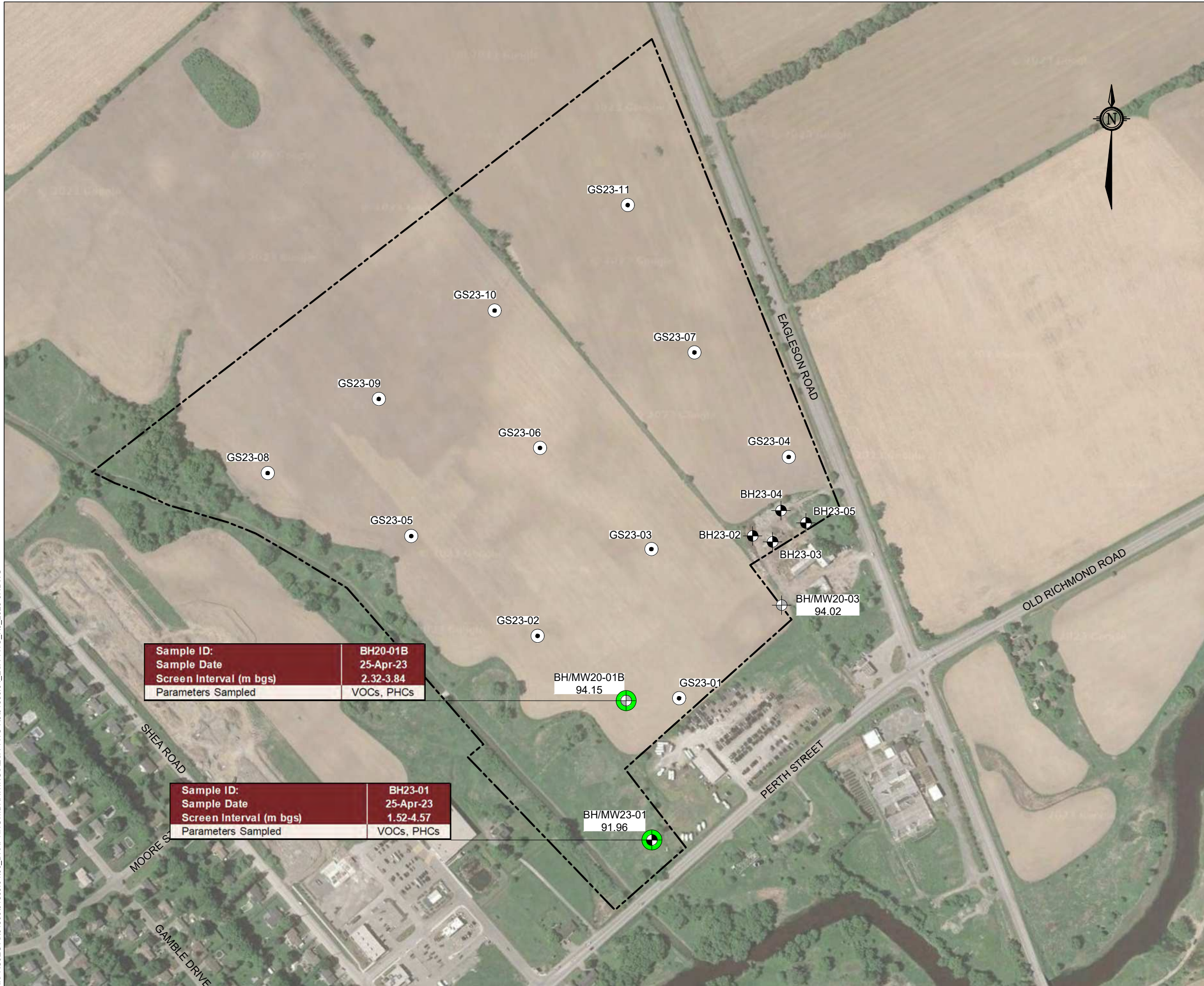
PROJECT NO. 61899.04 **REVISION NO.** 0

DATE JUNE 2023 **FIGURE NO.** **FIGURE A.11**

GEMTEC
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N:\PROJECTS\161800\161899.04\06_DRAFTING\1_DRAWINGS\ESA TWO R0161899.04_ESA_TWO_R0_2023-07.DWG



| | |
|-------------------------|------------|
| Sample ID: | BH20-01B |
| Sample Date | 25-Apr-23 |
| Screen Interval (m bgs) | 2.32-3.84 |
| Parameters Sampled | VOCs, PHCs |

| | |
|-------------------------|------------|
| Sample ID: | BH23-01 |
| Sample Date | 25-Apr-23 |
| Screen Interval (m bgs) | 1.52-4.57 |
| Parameters Sampled | VOCs, PHCs |

LEGEND

BH/ MW/ SA # ——— BOREHOLE/ MONITORING WELL SAMPLE ID
 XXX.XX ——— GROUND WATER ELEVATION, IN METRES
 (from May 25, 2023)

BOREHOLE LOCATION
 (current investigation by GEMTEC)

MONITORING WELL/ BOREHOLE LOCATION
 (from GEMTEC's 2020 geotechnical investigation)

SAMPLING LOCATION

LOCATION SAMPLED AND EXCEEDS TABLE 2 RPI SCS

LOCATION SAMPLED AND MEETS TABLE 2 RPI SCS

----- **APPROXIMATE SITE BOUNDARY**

Notes:
 m bgs - meters below ground surface

NOTE:
 Elevation data from grab sample locations (GS23-01 etc.) and BH23-02, BH23-03, BH23-04, and BH23-05 is approximated based on nearby survey locations from GEMTEC's 2020 Geotechnical Investigation on the Site

BASEMAP NOTES

- Coordinate system: NAD83, UTM ZONE 18N.
- Contains information licensed under the Open Government Licence – Ontario.
- Maps Data: Google, @2023 CNES / Airbus, First Base Solutions, Maxar Technologies.
- Geographic dataset source: Ontario GeoHub.

SCALE
 1:4000

DRAWING GROUNDWATER ANALYTICAL RESULTS
 PETROLEUM HYDROCARBONS AND
 VOLATILE ORGANIC COMPOUNDS

CLIENT
 CARDEL GROUP OF COMPANIES

PROJECT
 PHASE TWO
 ENVIRONMENTAL SITE ASSESSMENT
 CREEKSIDE 2 DEVELOPMENT
 2770 EAGLESON ROAD
 OTTAWA, ONTARIO

DRAWN BY S.L. **CHECKED BY** C.S.

PROJECT NO. 61899.04 **REVISION NO.** 0

DATE JUNE 2023 **FIGURE NO.** **FIGURE A.12**

GEMTEC
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TABLE A.1
SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
 2770 Eagleson Road, Ottawa, Ontario

| Location ID | Installation Date | Installed by | Borehole Depth (mbgs) | Monitoring Well Depth (mbgs) | Well Diameter (mm) | Screen Length (m) | Top of Screen (m bgs) | Bottom of Screen (m bgs) | Lithology at Screen Interval |
|-------------|-------------------|--------------|-----------------------|------------------------------|--------------------|-------------------|-----------------------|--------------------------|------------------------------|
| BH/MW20-01B | 16-Jul-20 | CCC | 3.84 | 3.84 | 51 | 1.52 | 2.32 | 3.84 | Native silty clay |
| BH/MW20-03 | 17-Jul-20 | CCC | 6.55 | 4.00 | 51 | 1.52 | 2.48 | 4.00 | Native silty clay |
| BH/MW23-01 | 25-Apr-23 | Strata | 4.57 | 4.57 | 51 | 3.05 | 1.52 | 4.57 | Native silty clay |

Notes

mm = millimetres

m - metres

mbgs = metres below ground surface

TABLE A.2
WATER LEVEL MEASUREMENTS AND ELEVATIONS
 2770 Eagleson Road, Ottawa, Ontario

| Location ID | Groundsurface Elevation (m asl) | Top of Pipe Elevation (m asl) | Date of Monitoring | Depth to Water (m btop) | Depth to Groundwater (m bgs) | Groundwater Elevation (m asl) |
|-------------|---------------------------------|-------------------------------|--------------------|-------------------------|------------------------------|-------------------------------|
| BH/MW20-01B | 93.55 | 94.15 | 25-May-23 | 2.59 | 1.98 | 91.57 |
| BH/MW20-03 | 93.39 | 94.02 | 25-May-23 | 1.39 | 0.76 | 92.63 |
| BH/MW23-01 | 91.35 | 91.96 | 25-May-23 | 1.27 | 0.66 | 90.69 |

Notes:

m asl = metre above sea level

m bgs = metres below ground surface

m btop - metres below top of pipe

TABLE A.3
SUMMARY OF SOIL SAMPLES SUBMITTED FOR ANALYSIS
2770 Eagleson Road, Ottawa, Ontario

| Location ID | Sample ID | Date | Sample Depth (mbgs) | Headspace Screening | Soil Description | Analyses Completed |
|-------------|---------------|-----------|---------------------|-------------------------|------------------------------|------------------------------|
| | | | | Result (HEX / IBL, ppm) | | |
| BH23-01 | BH23-01 SA1 | 25-Apr-23 | 0 - 1.52 | 40/0 | Native, silty clay | metals, ORP, PHC, VOC, PAHs |
| | BH23-01 SA101 | 25-Apr-23 | 0 - 1.52 | 50/0 | Native, silty clay | metals, ORP, PHC, VOC, PAHs |
| BH22-02 | BH23-02 SA1 | 25-Apr-23 | 0.1 - 0.33 | 40/0 | Fill, silty sand with gravel | metals, ORP, PHC, BTEX, PAHs |
| BH23-03 | BH23-03 SA1 | 25-Apr-23 | 0.05 - 0.20 | 0/0 | Fill, silty sand with gravel | metals, ORP, PHC, BTEX, PAHs |
| BH23-04 | BH23-04 SA1 | 25-Apr-23 | 0.05 - 0.18 | 5/7 | Fill, silty sand with gravel | metals, ORP, PHC, BTEX, PAHs |
| BH23-05 | BH23-05 SA2 | 25-Apr-23 | 0.2 - 1.52 | 5/7 | Native, silty clay | metals, ORP, PHC, BTEX, PAHs |
| GS23-01 | GS23-1 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| | GS23-101 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-02 | GS23-02 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-03 | GS23-03 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-04 | GS23-04 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-05 | GS23-05 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-06 | GS23-06 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-07 | GS23-07 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-08 | GS23-08 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-09 | GS23-09 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-10 | GS23-10 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |
| GS23-11 | GS23-11 | 04-Apr-23 | 0 - 0.15 | NA | Native, silty clay | metals, OCPs |

Notes:

- m bgs = metres below ground surface
- metals = O.Reg. 153/04 metals and hydride forming metals
- ORP = other regulated parameters
- PHC = petroleum hydrocarbons
- VOC = volatile organic compounds
- PAH = polycyclic aromatic hydrocarbons
- BTEX =benzene, toluene, ethylbenzene, xylene
- OCP = organochlorine pesticides
- ppm = parts per million

TABLE A.4
SUMMARY OF GROUNDWATER SAMPLES SUBMITTED FOR ANALYSIS
 2770 Eagleson Road, Ottawa, Ontario

| Location ID | Sample ID | Sampling Date | Well Depth (mbgs) | Screen Interval (m bgs) | Groundwater Sampling Field | | | Analyses Completed | |
|-------------|-----------|---------------|-------------------|-------------------------|----------------------------|-------|-----------------|--------------------|-----------|
| | | | | | Temperature (deg cel.) | pH | Turbidity (NTU) | | |
| BH20-01B | BH20-01 | 25-May-23 | 3.84 | 3.05 | 4.00 | 11.1 | 7.85 | 4.5 | PHC, VOCs |
| BH/MW23-01 | MW23-1 | 25-May-23 | 4.57 | 1.52 | 4.57 | 17.60 | 7.66 | 34.3 | PHC, VOCs |
| | MW23-101 | 25-May-23 | | | | | | | PHC, VOCs |

Notes:
 mbgs = meters below ground surface
 PHC = petroleum hydrocarbons
 VOCs = volatile organic compounds

TABLE A.5
Soil Analytical Results - Metals and OCPs
Phase Two Environmental Site Assessment
2770 Eagleson Road
Ottawa, Ontario

| Parameter | Units | MDL | MECP Table 2 RPI SCS ¹ | Sample ID: | GS 23-01 | GS 23-101 | GS 23-02 | GS 23-03 | GS 23-04 | GS 23-05 |
|----------------------------------|-------|-------|--------------------------------------|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | | | | Laboratory Sample ID: | WT2308433-001 | WT2308433-002 | WT2308433-003 | WT2308433-004 | WT2308433-005 | WT2308433-006 |
| | | | | Date Sampled (dd/mm/yyyy): | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 |
| | | | | Sample Depth (mbgs): | 0-0.15 | 0-0.15 | 0-0.15 | 0-0.15 | 0-0.15 | 0-0.15 |
| Metals | | | | | | | | | | |
| Antimony | mg/kg | 0.10 | 7.5 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.11 |
| Arsenic | mg/kg | 0.10 | 18 | | 4.00 | 3.99 | 4.16 | 3.36 | 3.04 | 4.59 |
| Barium | mg/kg | 0.50 | 390 | | 155 | 148 | 162 | 113 | 130 | 191 |
| Beryllium | mg/kg | 0.10 | 5 | | 0.78 | 0.77 | 0.82 | 0.71 | 0.68 | 1.04 |
| Boron | mg/kg | 5.0 | 120 | | 9.3 | 9.0 | 7.7 | 6.9 | 6.6 | 10.8 |
| Cadmium | mg/kg | 0.020 | 1.2 | | 0.132 | 0.141 | 0.147 | 0.142 | 0.139 | 0.212 |
| Chromium | mg/kg | 0.50 | 160 | | 38.8 | 38.3 | 40.6 | 34.1 | 33.4 | 48.5 |
| Cobalt | mg/kg | 0.10 | 22 | | 11.8 | 11.7 | 12.3 | 10.0 | 8.19 | 14.3 |
| Copper | mg/kg | 0.50 | 180 | | 18.2 | 18.1 | 17.5 | 14.8 | 13.3 | 21.7 |
| Lead | mg/kg | 0.50 | 120 | | 9.69 | 9.67 | 10.5 | 11.4 | 9.86 | 12.3 |
| Molybdenum | mg/kg | 0.10 | 6.9 | | 0.58 | 0.65 | 0.57 | 0.55 | 0.43 | 0.68 |
| Nickel | mg/kg | 0.50 | 130 | | 22.3 | 22.5 | 21.9 | 17.4 | 16.8 | 26.6 |
| Selenium | mg/kg | 0.20 | 2.4 | | <0.20 | 0.21 | 0.21 | 0.22 | <0.20 | 0.26 |
| Silver | mg/kg | 0.10 | 25 | | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | 0.11 |
| Thallium | mg/kg | 0.050 | 1 | | 0.201 | 0.192 | 0.200 | 0.165 | 0.162 | 0.259 |
| Uranium | mg/kg | 0.050 | 23 | | 0.746 | 0.710 | 0.838 | 0.939 | 0.956 | 1.08 |
| Vanadium | mg/kg | 0.20 | 86 | | 59.1 | 58.2 | 60.1 | 52.6 | 48.7 | 69.7 |
| Zinc | mg/kg | 2.0 | 340 | | 69.8 | 70.9 | 74.7 | 66.0 | 66.7 | 91.2 |
| Organochlorine Pesticides | | | | | | | | | | |
| Aldrin | mg/kg | 0.020 | 0.05 | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, cis- (alpha) | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, total | mg/kg | 0.030 | 0.05 | | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Chlordane, trans- (gamma) | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 2,4'- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 4,4'- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, total | mg/kg | 0.030 | 3.3 | | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDE, 2,4'- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDE, 4,4'- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDE, total | mg/kg | 0.030 | 0.33 | | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDT, 2,4'- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, 4,4'- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, total | mg/kg | 0.030 | 1.4 | | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Dieldrin | mg/kg | 0.020 | 0.05 | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, alpha- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, beta- | mg/kg | 0.020 | NS | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, total | mg/kg | 0.030 | 0.04 | | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Endrin | mg/kg | 0.020 | 0.04 | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor | mg/kg | 0.020 | 0.15 | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor epoxide | mg/kg | 0.020 | 0.05 | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Hexachlorobenzene | mg/kg | 0.010 | 0.52 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorobutadiene | mg/kg | 0.010 | 0.014 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorocyclohexane, gamma- | mg/kg | 0.010 | 0.063 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachloroethane | mg/kg | 0.010 | 0.071 | | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Methoxychlor | mg/kg | 0.020 | 0.13 | | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |

Notes:
MDL - Method Detection Limit
'mbgs' - metres below ground surface
'NS' - No Standard/ Guideline
< - Non-Detect Sample
RPI - Residential / Parkland / Institutional
1 -MECP Table 2 RPI SCS: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for fine to medium grain Soil for Residential/Parkland/Institutional Property Use
Bold - Exceeds MECP SCS Table 2 RPI SCS

TABLE A.5
Soil Analytical Results - Metals and OCPs
Phase Two Environmental Site Assessment
2770 Eagleson Road
Ottawa, Ontario

| Parameter | Units | MDL | MECP Table 2 RPI SCS ¹ | Sample ID: | GS 23-06 | GS 23-07 | GS 23-08 | GS 23-09 | GS 23-10 | GS 23-11 |
|----------------------------------|-------|-------|--------------------------------------|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | | | | Laboratory Sample ID: | WT2308433-007 | WT2308433-008 | WT2308433-009 | WT2308433-010 | WT2308433-011 | WT2308433-012 |
| | | | | Date Sampled (dd/mm/yyyy): | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 |
| | | | | Sample Depth (mbgs): | 0-0.15 | 0-0.15 | 0-0.15 | 0-0.15 | 0-0.15 | 0-0.15 |
| Metals | | | | | | | | | | |
| Antimony | mg/kg | 0.10 | 7.5 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Arsenic | mg/kg | 0.10 | 18 | 4.52 | 3.11 | 3.43 | 3.53 | 3.92 | 3.36 | |
| Barium | mg/kg | 0.50 | 390 | 174 | 105 | 129 | 120 | 146 | 119 | |
| Beryllium | mg/kg | 0.10 | 5 | 0.97 | 0.59 | 0.66 | 0.65 | 0.77 | 0.61 | |
| Boron | mg/kg | 5.0 | 120 | 10.3 | 8.1 | 7.2 | 9.4 | 9.1 | 8.5 | |
| Cadmium | mg/kg | 0.020 | 1.2 | 0.249 | 0.209 | 0.203 | 0.240 | 0.233 | 0.215 | |
| Chromium | mg/kg | 0.50 | 160 | 45.0 | 30.0 | 34.8 | 34.6 | 38.2 | 31.6 | |
| Cobalt | mg/kg | 0.10 | 22 | 14.1 | 7.50 | 10.5 | 9.00 | 10.9 | 8.06 | |
| Copper | mg/kg | 0.50 | 180 | 21.5 | 15.6 | 17.6 | 18.3 | 18.4 | 17.4 | |
| Lead | mg/kg | 0.50 | 120 | 11.8 | 8.60 | 9.43 | 9.65 | 10.7 | 9.17 | |
| Molybdenum | mg/kg | 0.10 | 6.9 | 0.60 | 0.40 | 0.46 | 0.45 | 0.52 | 0.39 | |
| Nickel | mg/kg | 0.50 | 130 | 25.8 | 15.7 | 19.5 | 17.9 | 20.1 | 16.6 | |
| Selenium | mg/kg | 0.20 | 2.4 | 0.23 | 0.25 | 0.22 | 0.33 | 0.30 | 0.28 | |
| Silver | mg/kg | 0.10 | 25 | 0.11 | 0.11 | <0.10 | 0.12 | 0.11 | 0.11 | |
| Thallium | mg/kg | 0.050 | 1 | 0.243 | 0.143 | 0.177 | 0.163 | 0.180 | 0.155 | |
| Uranium | mg/kg | 0.050 | 23 | 1.04 | 1.11 | 1.02 | 1.34 | 1.22 | 1.21 | |
| Vanadium | mg/kg | 0.20 | 86 | 66.0 | 47.1 | 51.1 | 53.2 | 57.6 | 48.8 | |
| Zinc | mg/kg | 2.0 | 340 | 89.2 | 67.2 | 73.9 | 75.4 | 78.0 | 74.0 | |
| Organochlorine Pesticides | | | | | | | | | | |
| Aldrin | mg/kg | 0.020 | 0.05 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, cis- (alpha) | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, total | mg/kg | 0.030 | 0.05 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Chlordane, trans- (gamma) | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 2,4'- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 4,4'- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, total | mg/kg | 0.030 | 3.3 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDE, 2,4'- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDE, 4,4'- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDE, total | mg/kg | 0.030 | 0.33 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDT, 2,4'- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, 4,4'- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, total | mg/kg | 0.030 | 1.4 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Dieldrin | mg/kg | 0.020 | 0.05 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, alpha- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, beta- | mg/kg | 0.020 | NS | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, total | mg/kg | 0.030 | 0.04 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Endrin | mg/kg | 0.020 | 0.04 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor | mg/kg | 0.020 | 0.15 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor epoxide | mg/kg | 0.020 | 0.05 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Hexachlorobenzene | mg/kg | 0.010 | 0.52 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorobutadiene | mg/kg | 0.010 | 0.014 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorocyclohexane, gamma- | mg/kg | 0.010 | 0.063 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachloroethane | mg/kg | 0.010 | 0.071 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Methoxychlor | mg/kg | 0.020 | 0.13 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |

Notes:
MDL - Method Detection Limit
'mbgs' - metres below ground surface
'NS' - No Standard/ Guideline
< - Non-Detect Sample
RPI - Residential / Parkland / Institutional
1 -MECP Table 2 RPI SCS: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for fine to medium grain Soil for Residential/Parkland/Institutional Property Use
Bold - Exceeds MECP SCS Table 2 RPI SCS

TABLE A.6
Soil Analytical Results - Metals, Hydride Forming Metals, Other Related Paramters, Polycyclic Aromatic Hydrocarbons, Volatile Organic Compounds, and Petroleum Hydrocarbons
Phase Two ESA
2770 Eagleson Road
Ottawa, Ontario

| Parameter | Units | MDL | MECP Table 2 RPI SCS ¹ | Sample ID: | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 |
|---|----------|--------|--------------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | | Laboratory Sample ID: | WT 2310622-001 | WT 2310622-002 | WT 2310622-003 | WT 2310622-004 | WT 2310622-005 | WT 2310622-006 |
| Date Sampled (dd/mm/yyyy): | | | | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 |
| Sample Depth (mbgs): | | | | 0-1.52 | 0-1.52 | 0.1-0.33 | 0.05-0.20 | 0.05-0.18 | 0.2-1.52 | |
| Metals, Hydride Forming Metals, and Other Related Parameters | | | | | | | | | | |
| Antimony | mg/kg | 0.10 | 7.5 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Arsenic | mg/kg | 0.10 | 18 | 5.60 | 5.20 | 4.12 | 4.72 | 3.38 | 5.31 | |
| Barium | mg/kg | 0.50 | 390 | 278 | 270 | 200 | 261 | 168 | 216 | |
| Beryllium | mg/kg | 0.10 | 5 | 1.05 | 1.00 | 0.89 | 0.98 | 0.76 | 0.99 | |
| Boron | mg/kg | 5.0 | 120 | 15.0 | 14.8 | 12.6 | 10.8 | 9.8 | 13.4 | |
| Boron, hot water soluble | mg/kg | 0.10 | 1.5 | <0.40 | 0.24 | 0.96 | 0.46 | 1.10 | 0.52 | |
| Cadmium | mg/kg | 0.020 | 1.2 | 0.131 | 0.096 | 0.086 | 0.278 | 0.205 | 0.089 | |
| Chromium | mg/kg | 0.50 | 160 | 67.2 | 66.6 | 50.0 | 53.0 | 40.8 | 56.8 | |
| Cobalt | mg/kg | 0.10 | 22 | 21.9 | 19.3 | 14.8 | 17.0 | 11.2 | 18.5 | |
| Copper | mg/kg | 0.50 | 180 | 39.2 | 38.7 | 21.5 | 23.5 | 20.6 | 26.0 | |
| Lead | mg/kg | 0.50 | 120 | 9.02 | 8.56 | 8.02 | 9.88 | 9.92 | 9.38 | |
| Mercury | mg/kg | 0.0050 | 1.8 | 0.0110 | 0.0114 | 0.0274 | 0.0279 | 0.0425 | 0.0193 | |
| Molybdenum | mg/kg | 0.10 | 6.9 | 0.49 | 0.37 | 0.39 | 0.85 | 0.64 | 0.52 | |
| Nickel | mg/kg | 0.50 | 130 | 47.2 | 42.9 | 28.0 | 34.7 | 21.4 | 31.6 | |
| Selenium | mg/kg | 0.20 | 2.4 | <0.20 | <0.20 | <0.20 | 0.23 | 0.24 | <0.20 | |
| Silver | mg/kg | 0.10 | 25 | <0.10 | <0.10 | <0.10 | 0.11 | 0.14 | <0.10 | |
| Thallium | mg/kg | 0.050 | 1 | 0.327 | 0.304 | 0.245 | 0.249 | 0.188 | 0.280 | |
| Uranium | mg/kg | 0.050 | 23 | 0.604 | 0.614 | 0.677 | 0.886 | 0.933 | 0.652 | |
| Vanadium | mg/kg | 0.20 | 86 | 94.4 | 91.9 | 69.8 | 79.3 | 61.9 | 79.7 | |
| Zinc | mg/kg | 2.0 | 340 | 96.2 | 95.4 | 66.7 | 91.7 | 87.9 | 81.4 | |
| Conductivity (1:2 leachate) | mS/cm | 0.005 | 0.7 | 0.305 | 0.264 | 3.82 | 0.652 | 0.722 | 1.60 | |
| pH (1:2 soil:CaCl2-aq) | pH units | 0.1 | 5 to 9 | 7.18 | 7.16 | 7.83 | 6.97 | 6.69 | 8.17 | |
| Sodium adsorption ratio [SAR] | - | 0.1 | 5 | 1.56 | 1.89 | 332 | 3.87 | 5.84 | 14.4 | |
| Chromium, hexavalent [Cr VI] | mg/kg | 0.1 | 10 | 0.33 | 0.25 | 0.12 | <0.10 | <0.10 | 0.40 | |
| Cyanide, weak acid dissociable | mg/kg | 0.05 | 0.051 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Acenaphthene | mg/kg | 0.05 | 29 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Acenaphthylene | mg/kg | 0.05 | 0.17 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Anthracene | mg/kg | 0.05 | 0.74 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Benzo(a)anthracene | mg/kg | 0.05 | 0.63 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Benzo(a)pyrene | mg/kg | 0.05 | 0.3 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Benzo(b+j)fluoranthene | mg/kg | 0.05 | 0.78 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Benzo(g,h,i)perylene | mg/kg | 0.05 | 7.8 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Benzo(k)fluoranthene | mg/kg | 0.05 | 0.78 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Chrysene | mg/kg | 0.05 | 7.8 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | 0.1 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Fluoranthene | mg/kg | 0.05 | 0.69 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Fluorene | mg/kg | 0.05 | 69 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.05 | 0.48 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Methylnaphthalene, 1- | mg/kg | 0.03 | NS | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | |
| Methylnaphthalene, 1+2- | mg/kg | 0.042 | 3.4 | <0.042 | <0.042 | <0.042 | <0.042 | <0.042 | <0.042 | |
| Methylnaphthalene, 2- | mg/kg | 0.03 | NS | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | |
| Naphthalene | mg/kg | 0.05 | 0.75 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Phenanthrene | mg/kg | 0.1 | 7.8 | <0.100 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |
| Pyrene | mg/kg | 0.05 | 78 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | |

TABLE A.6
Soil Analytical Results - Metals, Hydride Forming Metals, Other Related Paramters, Polycyclic Aromatic Hydrocarbons, Volatile Organic Compounds, and Petroleum Hydrocarbons
Phase Two ESA
2770 Eagleson Road
Ottawa, Ontario

| Parameter | Units | MDL | MECP Table 2 RPI SCS ¹ | Sample ID: | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 |
|-----------------------------------|-------|-------|--------------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | | Laboratory Sample ID: | WT 2310622-001 | WT 2310622-002 | WT 2310622-003 | WT 2310622-004 | WT 2310622-005 | WT 2310622-006 |
| Date Sampled (dd/mm/yyyy): | | | | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 | 25/04/2023 |
| Sample Depth (mbgs): | | | | 0-1.52 | 0-1.52 | 0-1.33 | 0.05-0.20 | 0.05-0.18 | 0.2-1.52 | |
| Volatile Organic Compounds | | | | | | | | | | |
| Acetone | mg/kg | 0.5 | 28 | <0.50 | <0.50 | NA | NA | NA | NA | NA |
| Benzene | mg/kg | 0.005 | 0.17 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 |
| Bromodichloromethane | mg/kg | 0.05 | 1.5 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Bromoform | mg/kg | 0.05 | 0.26 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Bromomethane | mg/kg | 0.05 | 0.05 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| BTEX, total | mg/kg | 0.1 | NS | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Carbon tetrachloride | mg/kg | 0.05 | 0.12 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Chlorobenzene | mg/kg | 0.05 | 2.7 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Chloroform | mg/kg | 0.05 | 0.05 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dibromochloromethane | mg/kg | 0.05 | 2.9 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dibromoethane, 1,2- | mg/kg | 0.05 | NS | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichlorobenzene, 1,2- | mg/kg | 0.05 | 1.7 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichlorobenzene, 1,3- | mg/kg | 0.05 | 6 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichlorobenzene, 1,4- | mg/kg | 0.05 | 0.097 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichlorodifluoromethane | mg/kg | 0.05 | 25 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloroethane, 1,1- | mg/kg | 0.05 | 0.6 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloroethane, 1,2- | mg/kg | 0.05 | 0.05 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloroethylene, 1,1- | mg/kg | 0.05 | 0.05 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloroethylene, cis-1,2- | mg/kg | 0.05 | 2.5 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloroethylene, trans-1,2- | mg/kg | 0.05 | 0.75 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloromethane | mg/kg | 0.045 | NS | <0.045 | <0.045 | NA | NA | NA | NA | NA |
| Dichloropropane, 1,2- | mg/kg | 0.05 | 0.085 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloropropylene, cis+trans-1,3- | mg/kg | 0.05 | NS | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Dichloropropylene, cis-1,3- | mg/kg | 0.03 | NS | <0.030 | <0.030 | NA | NA | NA | NA | NA |
| Dichloropropylene, trans-1,3- | mg/kg | 0.03 | NS | <0.030 | <0.030 | NA | NA | NA | NA | NA |
| Ethylbenzene | mg/kg | 0.015 | 1.6 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 |
| Hexane, n- | mg/kg | 0.05 | 34 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Methyl ethyl ketone [MEK] | mg/kg | 0.5 | 44 | <0.50 | <0.50 | NA | NA | NA | NA | NA |
| Methyl isobutyl ketone [MIBK] | mg/kg | 0.5 | 4.3 | <0.50 | <0.50 | NA | NA | NA | NA | NA |
| Methyl-tert-butyl ether [MTBE] | mg/kg | 0.04 | 1.4 | <0.040 | <0.040 | NA | NA | NA | NA | NA |
| Styrene | mg/kg | 0.05 | 2.2 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Tetrachloroethane, 1,1,1,2- | mg/kg | 0.05 | 0.05 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Tetrachloroethane, 1,1,2,2- | mg/kg | 0.05 | 0.05 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Tetrachloroethylene | mg/kg | 0.05 | 2.3 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Toluene | mg/kg | 0.05 | 6 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Trichloroethane, 1,1,1- | mg/kg | 0.05 | 3.4 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Trichloroethane, 1,1,2- | mg/kg | 0.05 | 0.05 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Trichloroethylene | mg/kg | 0.01 | 0.52 | <0.010 | <0.010 | NA | NA | NA | NA | NA |
| Trichlorofluoromethane | mg/kg | 0.05 | 5.8 | <0.050 | <0.050 | NA | NA | NA | NA | NA |
| Vinyl chloride | mg/kg | 0.02 | 0.022 | <0.020 | <0.020 | NA | NA | NA | NA | NA |
| Xylene, m+p- | mg/kg | 0.03 | NS | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Xylene, o- | mg/kg | 0.03 | NS | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Xylenes, total | mg/kg | 0.05 | 25 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Petroleum Hydrocarbons | | | | | | | | | | |
| F1 (C6-C10) | mg/kg | 5 | 65 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| F1-BTEX | mg/kg | 5 | NS | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| F2 (C10-C16) | mg/kg | 10 | 150 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| F3 (C16-C34) | mg/kg | 50 | 1300 | <50 | <50 | <50 | <50 | 74 | <50 | <50 |
| F4 (C34-C50) | mg/kg | 50 | 5600 | <50 | <50 | <50 | <50 | 190 | <50 | <50 |
| F4G-9g | mg/kg | - | NS | NA | NA | NA | NA | 620 | NA | NA |

Notes:
MDL - Method Detection Limit
'mbgs' - metres below ground surface
'NS' - No Standard/ Guideline
'<' - Non-Detect Sample
NA - Not analyzed
RPI - Residential / Parkland / Institutional
1 -MECP Table 2 RPI SCS: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for fine to medium grain Soil for Residential/Parkland/Institutional Property Use
Bold - Exceeds MECP SCS Table 2 RPI SCS

TABLE A.7
Groundwater Analytical Results - Volatile Organic Compounds, and Petroleum Hydrocarbons
Phase Two Environmental Site Assessment
2770 Eagleson Road
Ottawa, Ontario

| Parameter | Units | MDL | MECP Table 2 SCS ¹ | Sample ID: | BH20-01 | MW23-1 | MW23-101 |
|-----------------------------------|-------|-----|----------------------------------|-----------------------|---------------|---------------|---------------|
| | | | | Laboratory Sample ID: | WT2314661-001 | WT2314661-002 | WT2314661-003 |
| Date Sampled (dd/mm/yyyy): | | | | 25/05/2023 | 25/05/2023 | 25/05/2023 | 25/05/2023 |
| Screen Interval (mbgs): | | | | 2.32-3.84 | 1.52-4.57 | 1.52-4.57 | 1.52-4.57 |
| Petroleum Hydrocarbons | | | | | | | |
| F1 (C6-C10) | µg/L | 25 | 750 | <25 | <25 | <25 | <25 |
| F1-BTEX | µg/L | 25 | 750 | <25 | <25 | <25 | <25 |
| F2 (C10-C16) | µg/L | 100 | 150 | <100 | <100 | <100 | <100 |
| F3 (C16-C34) | µg/L | 250 | 500 | <250 | <250 | <250 | <250 |
| F4 (C34-C50) | µg/L | 250 | 500 | <250 | <250 | <250 | <250 |
| Volatile Organic Compounds | | | | | | | |
| Acetone | µg/L | 20 | 2700 | <20 | <20 | <20 | <20 |
| Benzene | µg/L | 0.5 | 5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Bromodichloromethane | µg/L | 0.5 | 16 | <0.50 | <0.50 | <0.50 | <0.50 |
| Bromoform | µg/L | 0.5 | 25 | <0.50 | <0.50 | <0.50 | <0.50 |
| Bromomethane | µg/L | 0.5 | 0.89 | <0.50 | <0.50 | <0.50 | <0.50 |
| BTEX, total | µg/L | 1 | NS | <1.0 | <1.0 | <1.0 | <1.0 |
| Carbon tetrachloride | µg/L | 0.2 | 5 | <0.20 | <0.20 | <0.20 | <0.20 |
| Chlorobenzene | µg/L | 0.5 | 30 | <0.50 | <0.50 | <0.50 | <0.50 |
| Chloroform | µg/L | 0.5 | 22 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dibromochloromethane | µg/L | 0.5 | 25 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dibromoethane, 1,2- | µg/L | 0.2 | NS | <0.20 | <0.20 | <0.20 | <0.20 |
| Dichlorobenzene, 1,2- | µg/L | 0.5 | 3 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichlorobenzene, 1,3- | µg/L | 0.5 | 59 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichlorobenzene, 1,4- | µg/L | 0.5 | 1 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichlorodifluoromethane | µg/L | 0.5 | 590 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloroethane, 1,1- | µg/L | 0.5 | 5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloroethane, 1,2- | µg/L | 0.5 | 5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloroethylene, 1,1- | µg/L | 0.5 | 14 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloroethylene, cis-1,2- | µg/L | 0.5 | 17 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloroethylene, trans-1,2- | µg/L | 0.5 | 17 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloromethane | µg/L | 1 | 50 | <1.0 | <1.0 | <1.0 | <1.0 |
| Dichloropropane, 1,2- | µg/L | 0.5 | 5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloropropylene, cis+trans-1,3- | µg/L | 0.5 | 0.5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Dichloropropylene, cis-1,3- | µg/L | 0.3 | NS | <0.30 | <0.30 | <0.30 | <0.30 |
| Dichloropropylene, trans-1,3- | µg/L | 0.3 | NS | <0.30 | <0.30 | <0.30 | <0.30 |
| Ethylbenzene | µg/L | 0.5 | 2.4 | <0.50 | <0.50 | <0.50 | <0.50 |
| Hexane, n- | µg/L | 0.5 | 520 | <0.50 | <0.50 | <0.50 | <0.50 |
| Methyl ethyl ketone [MEK] | µg/L | 20 | 1800 | <20 | <20 | <20 | <20 |
| Methyl isobutyl ketone [MIBK] | µg/L | 20 | 640 | <20 | <20 | <20 | <20 |
| Methyl-tert-butyl ether [MTBE] | µg/L | 0.5 | 15 | <0.50 | <0.50 | <0.50 | <0.50 |
| Styrene | µg/L | 0.5 | 5.4 | <0.50 | <0.50 | <0.50 | <0.50 |
| Tetrachloroethane, 1,1,1,2- | µg/L | 0.5 | 1.1 | <0.50 | <0.50 | <0.50 | <0.50 |
| Tetrachloroethane, 1,1,2,2- | µg/L | 0.5 | 1 | <0.50 | <0.50 | <0.50 | <0.50 |
| Tetrachloroethylene | µg/L | 0.5 | 17 | <0.50 | <0.50 | <0.50 | <0.50 |
| Toluene | µg/L | 0.5 | 24 | <0.50 | <0.50 | <0.50 | <0.50 |
| Trichloroethane, 1,1,1- | µg/L | 0.5 | 200 | <0.50 | <0.50 | <0.50 | <0.50 |
| Trichloroethane, 1,1,2- | µg/L | 0.5 | 5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Trichloroethylene | µg/L | 0.5 | 5 | <0.50 | <0.50 | <0.50 | <0.50 |
| Trichlorofluoromethane | µg/L | 0.5 | 150 | <0.50 | <0.50 | <0.50 | <0.50 |
| Vinyl chloride | µg/L | 0.5 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 |
| Xylene, m+p- | µg/L | 0.4 | NS | <0.40 | <0.40 | <0.40 | <0.40 |
| Xylene, o- | µg/L | 0.3 | NS | <0.30 | <0.30 | <0.30 | <0.30 |
| Xylenes, total | µg/L | 0.5 | 300 | <0.50 | <0.50 | <0.50 | <0.50 |

Notes:
MDL - Method Detection Limit
'mbgs' - metres below ground surface
'NS' - No Standard/ Guideline
'<' - Non-Detect Sample
1 -MECP Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition with fine to medium grain soils for Potable Ground Water for All Types of Property Use



APPENDIX B

Sampling and Analysis Plan

April 2023

File: 61899.04

**Re: Sampling and Analysis Plan
Phase Two Environmental Site Assessment
Creekside 2 Subdivision, 2770 Eagleson Road, Village of Richmond
Ottawa, Ontario**

Objective

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Cardel Group of Companies to carry out a Phase Two Environmental Site Assessment (ESA) for the property located at 2770 Eagleson Road in Ottawa, Ontario, hereafter referred to as the “Phase Two Property” or “Site”. It is understood that this Phase Two ESA is required in support of redevelopment and associated planning-related approvals.

The intent of the current investigation is to complete a subsurface investigation for the above noted property (herein referred to as the “Site”) as part of a Phase Two Environmental Site Assessment (ESA).

The general objectives of the scope of work are to determine the location and concentration of contaminants in the Site soil and groundwater, to obtain information about environmental conditions, and to determine if the applicable site condition standards are met at the time of the assessment.

Background

GEMTEC previously completed a Phase One ESA for the site, the results of which were documented in the report titled “Phase One Environmental Site Assessment, Creekside 2 Subdivision, 2770 Eagleson Road, Ottawa, Ontario”, dated February 22, 2023. Based on the findings of the Phase One ESA, GEMTEC completed this Phase Two ESA investigation.

The Phase Two ESA will focus on the following areas of potential environmental concern (APEC):

| Area of Potential Environmental Concern | Location of Area of Potential Environmental Concern on Phase One Property | Potentially Contaminating Activity | Location of PCA (on-Site or off-Site) | Contaminants of Potential Concern | Media Potentially Impacted (Groundwater, soil and/or Sediment) |
|---|---|--|---------------------------------------|-----------------------------------|--|
| APEC 1 – Historical pesticide use on the Site. | Site wide | 40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications | On-Site | OCPs, metals | Soil |
| APEC 2 – Fill material of unknown origin | Located in the southeast portion of the Site | 30. Importation of Fill Material of Unknown Quality | On-Site | M&I, PHCs, BTEX, PAHs | Soil |
| APEC 3 – Equipment and Vehicle Servicing Business | South portion of the Site | OT 2. Equipment and Vehicle Servicing | Adjacent south of the Site | M&I, PHCs, PAHs, VOCs | Soil and groundwater |

Notes:

OCPs – Organochlorine Pesticides

M&I – Metals and Inorganics

PHCs – petroleum hydrocarbon fractions F1 to F4

VOCs – volatile organic compounds

PAHs – polycyclic aromatic hydrocarbons

GENERAL REQUIREMENTS

- Follow standard operating procedures;
- Complete a Daily Log for every day of field work. Use standard field forms;
- Initial calibration of field equipment should be performed at the start of each field day, with a daily check of calibration using a standard of known concentration (i.e., RKI Eagle 2);
- Clean disposable Nitrile™ gloves will be used at each sampling location to prevent cross-contamination;
- All non-dedicated sampling equipment (e.g., water level meters, split spoons) will be decontaminated between sampling locations. Sampling equipment in contact with soil, groundwater, or sediment will be: cleaned with a brush; washed with a laboratory-grade detergent solution (e.g., phosphate-free AlcoNox) and thoroughly rinsed with analyte-free water.
- Please let the Project manager know if the schedule is going off-track.

BOREHOLE DRILLING

- Drilling scheduled for April 4, 2023 to advanced 4 boreholes (BH23-1, BH23-2, BH23-3, BH23-4). BH23-1 is to be advanced to the water table (assume 4 metres below ground surface (mbgs)) and BH23-2 to BH23-4 are to be advanced to native soils (assume 1 mbgs).
- Confirm that every borehole location has been cleared by the private locator.
- At each drilling location soil samples will be collected in the following frequency: every 2-2.5 ft down to targeted depth and/or until the water table is encountered. Once the water table is identified, call PM to confirm well installation.
- Screen soil samples for field evidence of potential impact, including odour, visible staining, debris and headspace organic vapour (organics) and combustible gas (hexane) concentrations at the same frequency of jarring (i.e. every 2-2.5 ft) using an RKI Eagle 2 gas detector, calibrated to both hexane (hydrocarbons) and isobutylene (organics).
- Record soil stratigraphy and observations on soil type, presence/absence of debris and passive odour on “Record of Borehole Logs”
- In addition to the soil samples collected from the boreholes, 10 surficial soil samples will be collected from across the Site by hand.
- The table below provides a summary of the sampling and analytical program. Submit samples to ALS Labs following the chain of custody procedures provided below.

| Borehole ID | Rationale | Borehole Depth (m) | Soil Analysis | Duplicate Soil Samples |
|-------------|---|--|-----------------------|------------------------|
| BH/MW23-1 | APEC 3 – Equipment and Vehicle Servicing Business | 4 m (depends on depth to water table) | M&I, PHCs, PAHs, VOCs | M&I, PHCs, PAHs, VOCs |
| BH23-2 | APEC 2 – Fill material of unknown origin | 1 m (depends on depth to native soils) | M&I, PHCs, BTEX, PAHs | |
| BH23-3 | APEC 2 – Fill material of unknown origin | 1 m (depends on depth to native soils) | M&I, PHCs, BTEX, PAHs | |
| BH23-3 | APEC 2 – Fill material of unknown origin | 1 m (depends on depth to native soils) | M&I, PHCs, BTEX, PAHs | |

| Borehole ID | Rationale | Borehole Depth (m) | Soil Analysis | Duplicate Soil Samples |
|-------------|--|--------------------|---------------|------------------------|
| GS23-01 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | OCPs, metals |
| GS23-02 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-03 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-04 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-05 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-06 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-07 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-08 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-09 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |
| GS23-10 | APEC 1 – Historical pesticide use on the Site. | 0.10 m | OCPs, metals | |

- For well installation: 2 inch inside diameter (ID) Schedule 40 polyvinyl chloride (PVC) casing and 2 inch ID Schedule 40 PVC well screens (1.5 metres in length, #10 slot size); sand pack surrounding each screen will be #00N. GEMTEC plans to install one monitoring (MW23-01) that will be completed at ground surface with a monument casing set in concrete and sealed with a PVC j-plug. The remainder of the groundwater monitoring program will be carried out with wells installed by GEMTEC during the 2022 geotechnical and hydrogeological investigation.
- Mark the reference point at the top of well pipe with a small notch. Install Waterra tubing and foot valve in each new monitoring well.
- Develop monitoring wells in accordance with standard operating procedure. Use Waterra for well development. Record development information on standard field form.
- Well construction details for shallow wells required for the Phase Two ESA are provided in the table below.

| Monitoring Well ID | Depth of screen base (m bgs) | Screen length (ft) | Well diameter (inch) | Protective Casing Type |
|--------------------|------------------------------------|--------------------|----------------------|------------------------|
| BH/MW23-1 | Set screen to straddle water table | 10 | 2 | Monument |

Test locations are as shown on the figure attached to this document below:

GROUNDWATER MONITORING

- This work to be scheduled following drilling activity .
- Collect a round of water level measurements from the monitoring wells (MW23-01 and MW20-02 & MW 20-6 (already installed on Site)) using the water level meter.
- Develop well by purging 10x volume of the well utilizing the waterra tubing and check valve.
- Purge the wells using a peristaltic pump prior to sampling following the GEMTEC SOP. Use the multi-parameter meter to assess stability. Record the purging on the standard field form. The multi-parameter meter should be initially calibrated by the equipment supplier. Check calibration to known pH, conductivity, ORP and DO concentration prior to use. Collect groundwater samples from monitoring wells using low flow sampling following the GEMTEC SOP.
- Samples are to be collected as outlined below.
- Samples do not need to be submitted on the day of sampling provided you keep them on ice during the day and/or refrigerate them overnight (i.e., keep them cold from collection to submission). If the samples cannot be submitted on the day of sampling, they need to be submitted by the following day.

- Collect quality assurance samples as indicated below. The duplicate groundwater samples should be labelled in a manner in which the laboratory cannot readily identify the sample as a duplicate, especially if there are a small number of primary groundwater samples to be collected.
- Ensure the Trip Blank is brought to Site with you and stored on ice in the lab-supplied cooler. Keep the trip blank vials with the groundwater samples collected.
- Collect a field blank during the sampling program, as per below.
- Please call Mike or Sherry if you see or suspect that there is odour, sheen or product in any monitoring well.
- Use the “GEMTEC Water Sampling form” form to collect all data during groundwater sampling.

| Well ID | Field Parameter Measurements | Groundwater Analyses to be Requested | QA/QC samples |
|------------|--|--------------------------------------|---|
| BH/MW23-01 | pH; EC; temp; DO; ORP, Conductivity, turbidity | PHCs, VOCs | 1 VOC field blank 1 VOC travel blank |
| BH/MW20-02 | pH; EC; temp; DO; ORP, Conductivity, turbidity | PHCs, VOCs | 1 duplicate |

CHAIN-OF-CUSTODY

- Prior to any sample submission to the laboratory, please send a copy/ picture of the chain-of-custody to Sherry for review.
- Relevant project and invoice details for the chain-of-custody are noted in Table below.

| Chain-of-Custody Item | Information |
|---|--|
| Analytical Laboratory | ALS Labs |
| Generic Site Condition Standards | MECP, Table 1, RPIICC, coarse textured soil (to be confirmed prior to reporting) |
| Use Record of Site Condition analytical procedures? | yes |
| Turn-around Time | Regular (5-7 days) |
| Reporting Contact | connor.shaw@gemtec.ca |

MANAGEMENT OF INVESTIGATION DERIVED WASTE

- Waste soil and water are to be discharged to the ground surface unless there is evidence of impact (staining, odour). If impacts are noted, cutting and water are to be contained in metal/plastic drums or buckets (with lids).
- Drums are to be labelled for waste management purposes, project number, date and drum contents (soil, purge water).
- Store drums at an on-site location that is as secure as possible from public access.
- Record inventory of waste containers on Daily Log.

SPECIAL INSTRUCTIONS

- Please prepare a field log for all the boreholes.
- At the end of the field program, scan all project related notes and place in job folder as soon as possible. Scan field notes at resolution and contrast settings that ensure the scanned documents are easily legible.
 - Save field notes (including daily logs, field forms, field logs, calibration records, and chain of custody documents)
 - Sort pages in the .pdf document by form type and in chronological order with daily logs at the front to simplify review.
 - Send the field note package to Mike and Sherry for review and comment.

n:\projects\61800\61899.04\04_deliverables\environmental\phase two esa\appendix b - sap\61899.04_sap_03-27-2023.docx

experience • knowledge • integrity



| | |
|-------------------|--------------------------------------|
| civil | civil |
| geotechnical | géotechnique |
| environmental | environnement |
| structural | structures |
| field services | surveillance de chantier |
| materials testing | service de laboratoire des matériaux |

expérience • connaissance • intégrité





APPENDIX C

Borehole Logs and Grain Size Curves

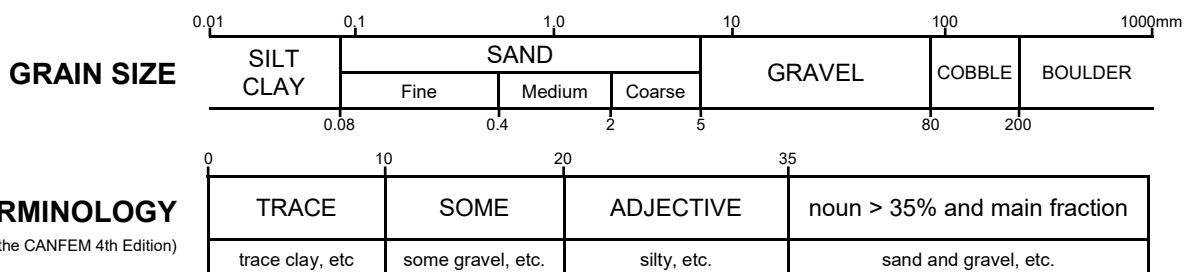
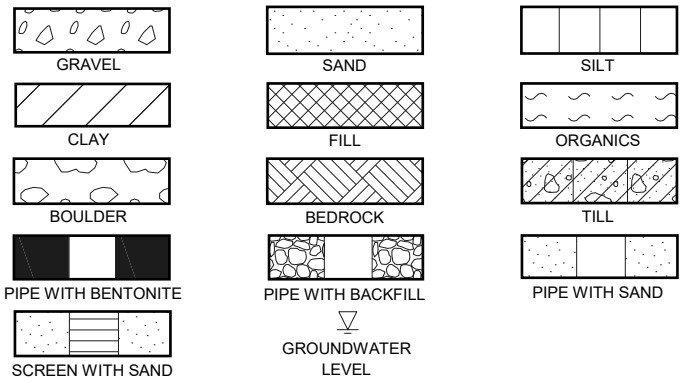
ABBREVIATIONS AND TERMINOLOGY USED ON RECORDS OF BOREHOLES AND TEST PITS

| SAMPLE TYPES | |
|--------------|--------------------------------|
| AS | Auger sample |
| CA | Casing sample |
| CS | Chunk sample |
| BS | Borros piston sample |
| GS | Grab sample |
| MS | Manual sample |
| RC | Rock core |
| SS | Split spoon sampler |
| ST | Slotted tube |
| TO | Thin-walled open shelby tube |
| TP | Thin-walled piston shelby tube |
| WS | Wash sample |

| SOIL TESTS | |
|------------|--|
| w | Water content |
| PL, w_p | Plastic limit |
| LL, w_L | Liquid limit |
| C | Consolidation (oedometer) test |
| D_R | Relative density |
| DS | Direct shear test |
| G_s | Specific gravity |
| M | Sieve analysis for particle size |
| MH | Combined sieve and hydrometer (H) analysis |
| MPC | Modified Proctor compaction test |
| SPC | Standard Proctor compaction test |
| OC | Organic content test |
| UC | Unconfined compression test |
| γ | Unit weight |

| PENETRATION RESISTANCE | |
|--|--|
| <p>Standard Penetration Resistance, N The number of blows by a 63.5 kg (140 lb) hammer dropped 760 millimetres (30 in.) required to drive a 50 mm split spoon sampler for a distance of 300 mm (12 in.). For split spoon samples where less than 300 mm of penetration was achieved, the number of blows is reported over the sampler penetration in mm.</p> | |
| <p>Dynamic Penetration Resistance The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive a 50 mm (2 in.) diameter 60° cone attached to 'A' size drill rods for a distance of 300 mm (12 in.).</p> | |
| WH | Sampler advanced by static weight of hammer and drill rods |
| WR | Sampler advanced by static weight of drill rods |
| PH | Sampler advanced by hydraulic pressure from drill rig |
| PM | Sampler advanced by manual pressure |

| COHESIONLESS SOIL Compactness | | COHESIVE SOIL Consistency | |
|----------------------------------|-------------|------------------------------|-------------|
| SPT N-Values | Description | C_u , kPa | Description |
| 0-4 | Very Loose | 0-12 | Very Soft |
| 4-10 | Loose | 12-25 | Soft |
| 10-30 | Compact | 25-50 | Firm |
| 30-50 | Dense | 50-100 | Stiff |
| >50 | Very Dense | 100-200 | Very Stiff |
| | | >200 | Hard |



DESCRIPTIVE TERMINOLOGY

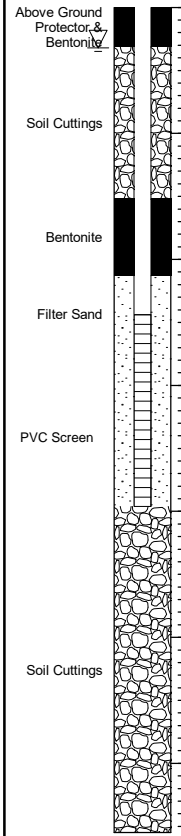
(Based on the CANFEM 4th Edition)

RECORD OF BOREHOLE 20-03

CLIENT: Cardel Homes
 PROJECT: Geotechnical & Hydrogeological Investigation
 JOB#: 61899.04
 LOCATION: See Site Plan, Figure 1

SHEET: 1 OF 1
 DATUM: CGVD28
 BORING DATE: Jul 17 2020

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE | | | SAMPLES | | | | ● PENETRATION RESISTANCE (N), BLOWS/0.3m ▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m | SHEAR STRENGTH (Cu), kPA + NATURAL ⊕ REMOULDED | | ADDITIONAL LAB. TESTING | PIEZOMETER OR STANDPIPE INSTALLATION | |
|--------------------|---|--|------------------------|-----------------|---------|------|--------------|------------|--|---|---|-------------------------|--------------------------------------|--|
| | | DESCRIPTION | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | RECOVERY, mm | BLOWS/0.3m | | WATER CONTENT, % W _p — W — W _L | | | | |
| 0 | Power Auger Hollow Stem Auger (210mm OD) | Ground Surface | | 93.44 | | | | | | | | | | |
| | | TOPSOIL | | 93.29 | | | | | | | | | | |
| | | Stiff to very stiff, grey brown SILTY CLAY, trace sand seams (WEATHERED CRUST) | | 0.15 | 1 | SS | 150 | 6 | ● | | | | | |
| 1 | | | | | 2 | SS | 405 | 6 | ● | | | | | |
| | | | | | 3 | SS | 510 | 3 | ● | I | ⊕ | | | |
| 2 | | | | | 4 | SS | 610 | 5 | ● | | | | | |
| | | | | | 5 | SS | 610 | 6 | ● | | | | | |
| 3 | | | | | | | | | | | | | | |
| | | | | 89.63 | | | | | | | | | | |
| 4 | | | Stiff, grey SILTY CLAY | 3.81 | 6 | SS | 610 | WH | | | | | | |
| | | | | | 7 | SS | 610 | WH | | | | | | |
| 5 | | | | | | | | | | | | | | |
| | | | | 8 | SS | 610 | WH | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| | | | 86.89 | | | | | | | | | | | |
| 7 | | End of borehole | 6.55 | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |



| GROUNDWATER OBSERVATIONS | | |
|--------------------------|-----------|----------|
| DATE | DEPTH (m) | ELEV (m) |
| 20-09-30 | 0.3 | 93.1 |
| | | |
| | | |

GEO - BOREHOLE LOG 61899.04 BOREHOLE LOGS_R0_2020-07-17.GPJ GEMTEC 2018.GDT 12-2-20

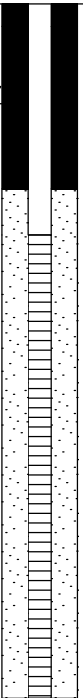


LOGGED: ML
 CHECKED: WAM

RECORD OF BOREHOLE 23-01

CLIENT: Cardel Group of Companies
 PROJECT: Phase Two Environmental Site Assessment
 JOB#: 61899.04
 LOCATION: See Figure A.1, Borehole Layout Plan

SHEET: 1 OF 1
 DATUM: CGVD28
 BORING DATE: Apr 25 2023

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE | | | SAMPLE DATA | | | | COMBUSTIBLE VAPOUR CONCENTRATION (ppm) | ODOUR | TPH (mg/kg) | MONITORING WELL INSTALLATION AND NOTES |
|--------------------|---------------|------------------|-------------|-----------------|-------------|------|---------------|---|--|-------|-------------|---|
| | | DESCRIPTION | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | RECOVERY (mm) | BLOWS/0.3m | | | | |
| 0 | | Ground Surface | | 91.35 | | | | | | | |  <p style="font-size: small;">Monument style protective casing Bentonite Filter sand PVC Screen</p> |
| | | TOPSOIL | | 91.36 | | | | | | | | |
| | | Brown SILTY CLAY | | 0.05 | 1 | CA | 1016 | BH23-01 SA1 and Duplicate BH23-01 SA101: M&I, PAHs, VOCs, PHC F1-F4 | 40/0 | | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | | 2 | CA | 1346 | | 50/0 | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | 3 | CA | 1422 | | | | | |
| | | End of Borehole | | 86.78 4.57 | | | | | | | | |

| GROUNDWATER OBSERVATIONS | | |
|--------------------------|-----------|---------------|
| DATE | DEPTH (m) | ELEVATION (m) |
| May. 25/23 | 0.66 | ▽ 90.69 |
| | | |
| | | |

ENV - BOREHOLE LOG 61899.04_BHLOGS_05-03-2023.GPJ GEMTEC 2018.GDT 6/14/23




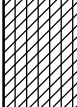


LOGGED: CS
 CHECKED: SE

RECORD OF BOREHOLE 23-02

CLIENT: Cardel Group of Companies
 PROJECT: Phase Two Environmental Site Assessment
 JOB#: 61899.04
 LOCATION: See Figure A.1, Borehole Layout Plan

SHEET: 1 OF 1
 DATUM: CGVD28
 BORING DATE: Apr 25 2023




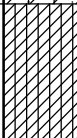
| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE | | | SAMPLE DATA | | | | COMBUSTIBLE VAPOUR CONCENTRATION (ppm) | ODOUR | TPH (mg/kg) | MONITORING WELL INSTALLATION AND NOTES |
|--------------------|---------------|-------------------------------------|---|-----------------|-------------|------|---------------|------------|--|-------|-------------|--|
| | | DESCRIPTION | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | RECOVERY (mm) | BLOWS/0.3m | | | | |
| 0 | | Ground Surface | | | | | | | | | | |
| | | Crushed asphalt and gravel (FILL) |  | 0.10 | 1 | CA | | | | | | <div style="background-color: black; width: 40px; height: 100px; margin: 0 auto;"></div> Backfilled with bentonite |
| | | Brown silty sand with gravel (FILL) |  | 0.33 | | CA | | | 40/0 | | | |
| | | Grey SANDY SILT |  | | | | | | | | | |
| 1 | | Grey SILTY CLAY |  | 0.78 | | CA | | | 0/0 | | | |
| | | End of Borehole | | 1.52 | | | | | | | | |

ENV - BOREHOLE LOG 61899.04_BH.LOGS_05-03-2023.GPJ GEMTEC 2018.GDT 6/14/23

RECORD OF BOREHOLE 23-03

CLIENT: Cardel Group of Companies
 PROJECT: Phase Two Environmental Site Assessment
 JOB#: 61899.04
 LOCATION: See Figure A.1, Borehole Layout Plan

SHEET: 1 OF 1
 DATUM: CGVD28
 BORING DATE: Apr 25 2023

| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE | | | SAMPLE DATA | | | | COMBUSTIBLE VAPOUR CONCENTRATION (ppm) | ODOUR | TPH (mg/kg) | MONITORING WELL INSTALLATION AND NOTES |
|--------------------|---------------|-------------------------------------|---|-----------------|-------------|------|---------------|------------|--|-------|-------------|--|
| | | DESCRIPTION | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | RECOVERY (mm) | BLOWS/0.3m | | | | |
| 0 | | Ground Surface | | | | | | | | | | |
| | | ASPHALT |  | 0.05 | 1 | CA | | | 5/7 | | | <div style="background-color: black; width: 40px; height: 100px; margin: 0 auto;"></div> Backfilled with bentonite |
| | | Brown silty sand with gravel (FILL) |  | 0.20 | | CA | | | | | | |
| | | Brown SANDY SILT |  | | | | | | | | | |
| 1 | | Grey SILTY CLAY |  | 0.64 | | CA | | | 0/0 | | | |
| | | End of Borehole | | 1.52 | | | | | | | | |

ENV - BOREHOLE LOG 61899.04_BH.LOGS_05-03-2023.GPJ GEMTEC 2018.GDT 6/14/23

RECORD OF BOREHOLE 23-04

CLIENT: Cardel Group of Companies
 PROJECT: Phase Two Environmental Site Assessment
 JOB#: 61899.04
 LOCATION: See Figure A.1, Borehole Layout Plan

SHEET: 1 OF 1
 DATUM: CGVD28
 BORING DATE: Apr 25 2023


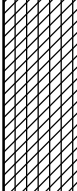
| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE | | | SAMPLE DATA | | | | COMBUSTIBLE VAPOUR CONCENTRATION (ppm) | ODOUR | TPH (mg/kg) | MONITORING WELL INSTALLATION AND NOTES |
|--------------------|---------------|-------------------------------------|-------------|-----------------|-------------|------|---------------|------------|--|-------|-------------|--|
| | | DESCRIPTION | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | RECOVERY (mm) | BLOWS/0.3m | | | | |
| 0 | | Ground Surface | | | | | | | | | | |
| | | Brown silty sand with gravel (FILL) | | 0.18 | 1 | CA | | | 5/7 | | | Backfilled with bentonite |
| | | Brown SANDY SILT | | | | CA | | | | | | |
| 1 | | Grey SILTY CLAY | | 0.76 | | CA | | | 0/0 | | | |
| | | End of Borehole | | 1.52 | | | | | | | | |

ENV - BOREHOLE LOG 61899.04_BHLOGS_05-03-2023.GPJ GEMTEC 2018.GDT 6/14/23

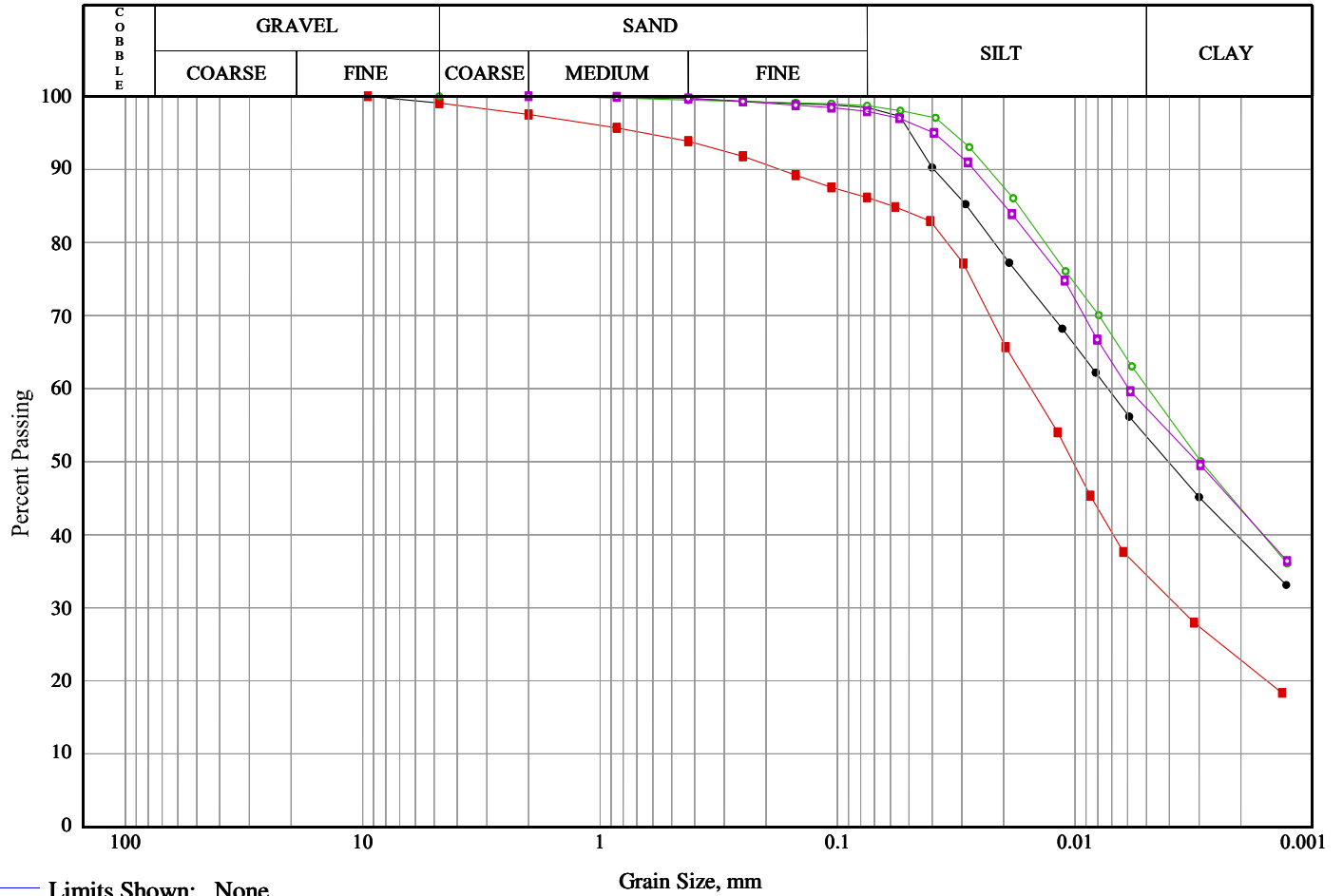
RECORD OF BOREHOLE 23-05

CLIENT: Cardel Group of Companies
 PROJECT: Phase Two Environmental Site Assessment
 JOB#: 61899.04
 LOCATION: See Figure A.1, Borehole Layout Plan

SHEET: 1 OF 1
 DATUM: CGVD28
 BORING DATE: Apr 25 2023

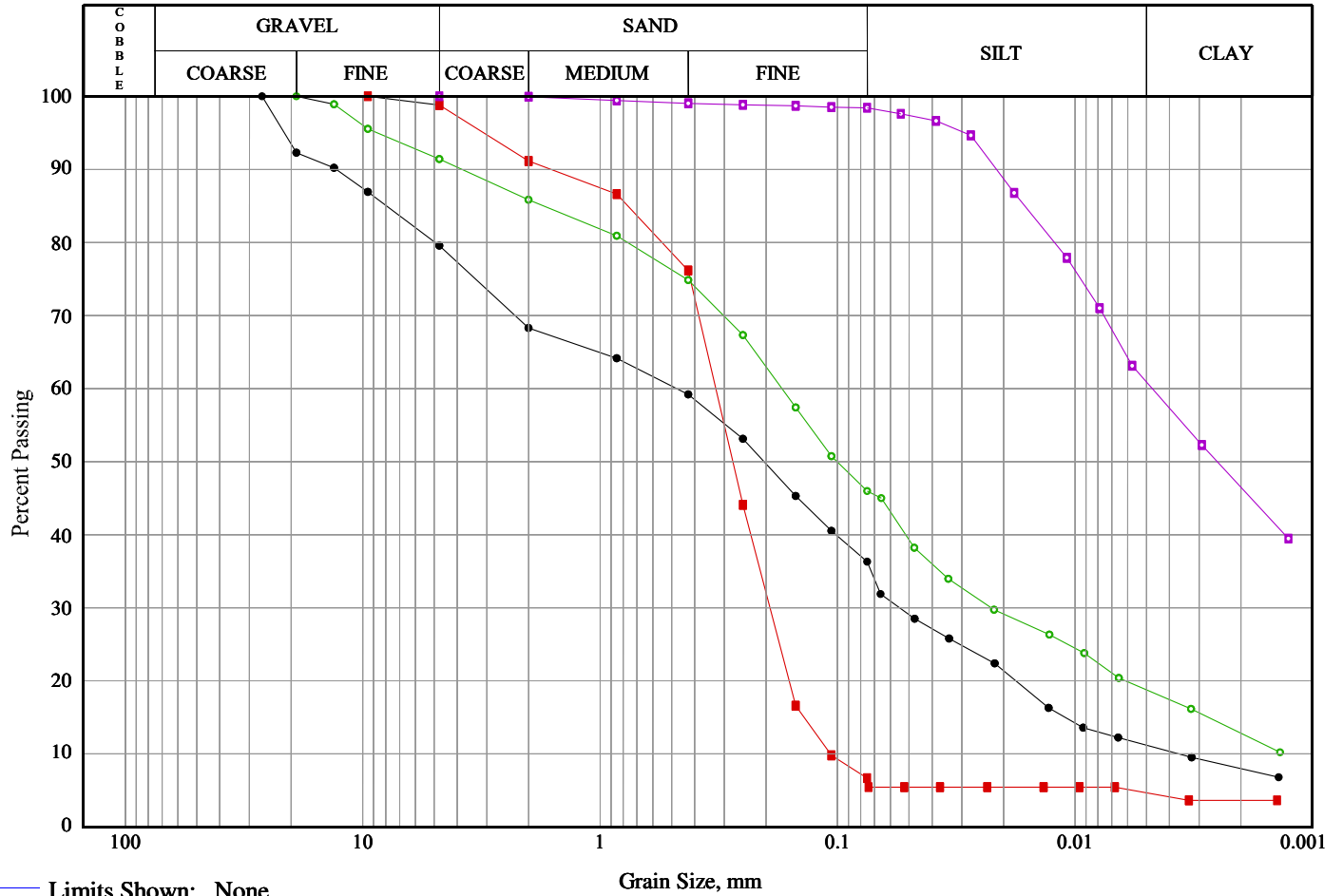
| DEPTH SCALE METRES | BORING METHOD | SOIL PROFILE | | | SAMPLE DATA | | | | COMBUSTIBLE VAPOUR CONCENTRATION (ppm) | ODOUR | TPH (mg/kg) | MONITORING WELL INSTALLATION AND NOTES |
|--------------------|---------------|---|---|-----------------|-------------|------|---------------|---|--|-------|-------------|--|
| | | DESCRIPTION | STRATA PLOT | ELEV. DEPTH (m) | NUMBER | TYPE | RECOVERY (mm) | BLOWS/0.3m | | | | |
| 0 | | Ground Surface | | | | | | | | | | |
| | | Brown silty sand with gravel, concrete (FILL) |  | 0.20 | | CA | | | 10/0 | | | <div style="background-color: black; width: 40px; height: 100px; margin: 0 auto;"></div> Backfilled with bentonite |
| | | Grey SILTY CLAY |  | | 1 | CA | | BH23-05 SA2: M&I, PAHs, VOCs, PHC F1-F4 | 15/0 | | | |
| | | End of Borehole | | 1.52 | | | | | | | | |

ENV - BOREHOLE LOG 61899.04_BHLOGS_05-03-2023.GPJ GEMTEC 2018.GDT 6/14/23



| Line Symbol | Sample | Borehole/ Test Pit | Sample Number | Depth | % Cob.+ Gravel | % Sand | % Silt | % Clay |
|-------------|----------------------------|--------------------|---------------|-----------|----------------|--------|--------|--------|
| —●— | Weathered Silty Clay Crust | 20-06 | SA 2 | 0.76-1.37 | 0.0 | 1.5 | 45.0 | 53.4 |
| —■— | Clayey Silt | 20-11 | SA 7 | 4.57-5.18 | 0.9 | 12.9 | 51.7 | 34.5 |
| —○— | Weathered Silty Clay Crust | 20-13 | SA 3 | 1.52-2.13 | 0.0 | 1.3 | 38.4 | 60.3 |
| —□— | Weathered Silty Clay Crust | 20-14 | SA 3 | 1.52-2.13 | 0.0 | 2.1 | 40.6 | 57.3 |

| Line Symbol | CanFEM Classification | USCS Symbol | D ₁₀ | D ₁₅ | D ₃₀ | D ₅₀ | D ₆₀ | D ₈₅ | % 5-75µm |
|-------------|--|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|
| —●— | Clay and silt , trace sand | CL | --- | --- | --- | 0.00 | 0.01 | 0.03 | 45.0 |
| —■— | Clayey silt , some sand , trace gravel | N/A | --- | --- | 0.00 | 0.01 | 0.02 | 0.06 | 51.7 |
| —○— | Clay and silt , trace sand | CL | --- | --- | --- | 0.00 | 0.00 | 0.02 | 38.4 |
| —□— | Clay and silt , trace sand | CL | --- | --- | --- | 0.00 | 0.01 | 0.02 | 40.6 |



| Line Symbol | Sample | Borehole/ Test Pit | Sample Number | Depth | % Cob.+ Gravel | % Sand | % Silt | % Clay |
|-------------|----------------------------|--------------------|---------------|-----------|----------------|--------|--------|--------|
| —●— | Glacial Till | 20-15 | SA 5 | 3.05-3.66 | 20.4 | 43.3 | 25.1 | 11.2 |
| —■— | Sand | 20-15 | SA 8 | 5.45-5.94 | 1.2 | 92.2 | 2.0 | 4.7 |
| —○— | Glacial Till | 20-19 | SA 5 | 3.05-3.66 | 8.6 | 45.5 | 27.2 | 18.7 |
| —□— | Weathered Silty Clay Crust | 20-20 | SA 3 | 1.52-2.13 | 0.0 | 1.6 | 37.5 | 60.9 |

| Line Symbol | CanFEM Classification | USCS Symbol | D ₁₀ | D ₁₅ | D ₃₀ | D ₅₀ | D ₆₀ | D ₈₅ | % 5-75µm |
|-------------|---|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|
| —●— | Gravelly silty sand , some clay | N/A | 0.00 | 0.01 | 0.05 | 0.20 | 0.48 | 7.94 | 25.1 |
| —■— | Sand , trace gravel, trace silt, trace clay | N/A | 0.11 | 0.14 | 0.19 | 0.28 | 0.33 | 0.76 | 2.0 |
| —○— | Silty sand , some clay , trace gravel | N/A | --- | 0.00 | 0.02 | 0.10 | 0.17 | 1.73 | 27.2 |
| —□— | Clay and silt , trace sand | CL | --- | --- | --- | 0.00 | 0.00 | 0.02 | 37.5 |



APPENDIX D

Laboratory Certificates of Analysis

CERTIFICATE OF ANALYSIS

| | |
|--|---|
| <p>Work Order : WT2314661</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone : ----</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : Adrian Williams</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 3</p> <p>No. of samples analysed : 3</p> | <p>Page : 1 of 5</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 25-May-2023 15:45</p> <p>Date Analysis Commenced : 29-May-2023</p> <p>Issue Date : 05-Jun-2023 14:22</p> |
|--|---|

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Laboratory Department</i> |
|--------------------|--|------------------------------|
| Andrea Armstrong | Department Manager - Air Quality and Volatiles | VOC, Waterloo, Ontario |
| Jocelyn Kennedy | Department Manager - Semi-Volatile Organics | Organics, Waterloo, Ontario |



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

| <i>Unit</i> | <i>Description</i> |
|-------------|----------------------|
| - | no units |
| µg/L | micrograms per litre |

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

| Sub-Matrix: Water | | | | | Client sample ID | BH20-1 | MW23-1 | MW23-101 | ---- | ---- |
|-----------------------------------|------------|------------|------|------|-----------------------------|----------------------|----------------------|----------------------|-------|------|
| (Matrix: Water) | | | | | Client sampling date / time | 25-May-2023 12:00 | 25-May-2023 12:00 | 25-May-2023 12:00 | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | WT2314661-001 | WT2314661-002 | WT2314661-003 | ----- | ----- | |
| | | | | | Result | Result | Result | ---- | ---- | |
| Volatile Organic Compounds | | | | | | | | | | |
| Acetone | 67-64-1 | E611D/WT | 20 | µg/L | <20 | <20 | <20 | ---- | ---- | |
| Benzene | 71-43-2 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Bromodichloromethane | 75-27-4 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Bromoform | 75-25-2 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Bromomethane | 74-83-9 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Carbon tetrachloride | 56-23-5 | E611D/WT | 0.20 | µg/L | <0.20 | <0.20 | <0.20 | ---- | ---- | |
| Chlorobenzene | 108-90-7 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Chloroform | 67-66-3 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dibromochloromethane | 124-48-1 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dibromoethane, 1,2- | 106-93-4 | E611D/WT | 0.20 | µg/L | <0.20 | <0.20 | <0.20 | ---- | ---- | |
| Dichlorobenzene, 1,2- | 95-50-1 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichlorobenzene, 1,3- | 541-73-1 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichlorobenzene, 1,4- | 106-46-7 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichlorodifluoromethane | 75-71-8 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloroethane, 1,1- | 75-34-3 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloroethane, 1,2- | 107-06-2 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloroethylene, 1,1- | 75-35-4 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloromethane | 75-09-2 | E611D/WT | 1.0 | µg/L | <1.0 | <1.0 | <1.0 | ---- | ---- | |
| Dichloropropane, 1,2- | 78-87-5 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloropropylene, cis+trans-1,3- | 542-75-6 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611D/WT | 0.30 | µg/L | <0.30 | <0.30 | <0.30 | ---- | ---- | |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611D/WT | 0.30 | µg/L | <0.30 | <0.30 | <0.30 | ---- | ---- | |
| Ethylbenzene | 100-41-4 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Hexane, n- | 110-54-3 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Methyl ethyl ketone [MEK] | 78-93-3 | E611D/WT | 20 | µg/L | <20 | <20 | <20 | ---- | ---- | |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D/WT | 20 | µg/L | <20 | <20 | <20 | ---- | ---- | |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |



Analytical Results

| Sub-Matrix: Water | | | | | Client sample ID | BH20-1 | MW23-1 | MW23-101 | ---- | ---- |
|--|-------------|--------------|------|------|-----------------------------|----------------------|----------------------|----------------------|-------|------|
| (Matrix: Water) | | | | | Client sampling date / time | 25-May-2023 12:00 | 25-May-2023 12:00 | 25-May-2023 12:00 | ---- | ---- |
| Analyte | CAS Number | Method/Lab | LOR | Unit | WT2314661-001 | WT2314661-002 | WT2314661-003 | ----- | ----- | |
| | | | | | Result | Result | Result | ---- | ---- | |
| Volatile Organic Compounds | | | | | | | | | | |
| Styrene | 100-42-5 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Tetrachloroethylene | 127-18-4 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Toluene | 108-88-3 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Trichloroethane, 1,1,1- | 71-55-6 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Trichloroethane, 1,1,2- | 79-00-5 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Trichloroethylene | 79-01-6 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Trichlorofluoromethane | 75-69-4 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Vinyl chloride | 75-01-4 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| Xylene, m+p- | 179601-23-1 | E611D/WT | 0.40 | µg/L | <0.40 | <0.40 | <0.40 | ---- | ---- | |
| Xylene, o- | 95-47-6 | E611D/WT | 0.30 | µg/L | <0.30 | <0.30 | <0.30 | ---- | ---- | |
| Xylenes, total | 1330-20-7 | E611D/WT | 0.50 | µg/L | <0.50 | <0.50 | <0.50 | ---- | ---- | |
| BTEX, total | ---- | E611D/WT | 1.0 | µg/L | <1.0 | <1.0 | <1.0 | ---- | ---- | |
| Hydrocarbons | | | | | | | | | | |
| F1 (C6-C10) | ---- | E581.F1-L/WT | 25 | µg/L | <25 | <25 | <25 | ---- | ---- | |
| F2 (C10-C16) | ---- | E601.SG/WT | 100 | µg/L | <100 | <100 | <100 | ---- | ---- | |
| F3 (C16-C34) | ---- | E601.SG/WT | 250 | µg/L | <250 | <250 | <250 | ---- | ---- | |
| F4 (C34-C50) | ---- | E601.SG/WT | 250 | µg/L | <250 | <250 | <250 | ---- | ---- | |
| F1-BTEX | ---- | EC580/WT | 25 | µg/L | <25 | <25 | <25 | ---- | ---- | |
| Hydrocarbons, total (C6-C50) | ---- | EC581SG/WT | 240 | µg/L | <370 | <370 | <370 | ---- | ---- | |
| Chromatogram to baseline at nC50 | n/a | E601.SG/WT | - | - | YES | YES | YES | ---- | ---- | |
| Hydrocarbons Surrogates | | | | | | | | | | |
| Bromobenzotrifluoride, 2- (F2-F4 surrogate) | 392-83-6 | E601.SG/WT | 1.0 | % | 80.4 | 83.6 | 79.1 | ---- | ---- | |
| Dichlorotoluene, 3,4- | 95-75-0 | E581.F1-L/WT | 1.0 | % | 105 | 96.5 | 98.8 | ---- | ---- | |
| Volatile Organic Compounds Surrogates | | | | | | | | | | |
| Bromofluorobenzene, 4- | 460-00-4 | E611D/WT | 1.0 | % | 101 | 99.6 | 101 | ---- | ---- | |
| Difluorobenzene, 1,4- | 540-36-3 | E611D/WT | 1.0 | % | 98.5 | 98.1 | 98.5 | ---- | ---- | |

Page : 5 of 5
Work Order : WT2314661
Client : Gemtec Consulting Engineers and Scientists Limited
Project : 61899.04



Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

| | |
|--|---|
| <p>Work Order : WT2314661</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone : ----</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : Adrian Williams</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 3</p> <p>No. of samples analysed : 3</p> | <p>Page : 1 of 6</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 25-May-2023 15:45</p> <p>Issue Date : 05-Jun-2023 14:22</p> |
|--|---|

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|-----------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level) | | | | | | | | | | |
| Glass vial (sodium bisulfate) BH20-1 | E581.F1-L | 25-May-2023 | 29-May-2023 | ---- | ---- | | 29-May-2023 | 14 days | 4 days | ✓ |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level) | | | | | | | | | | |
| Glass vial (sodium bisulfate) MW23-1 | E581.F1-L | 25-May-2023 | 29-May-2023 | ---- | ---- | | 29-May-2023 | 14 days | 4 days | ✓ |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level) | | | | | | | | | | |
| Glass vial (sodium bisulfate) MW23-101 | E581.F1-L | 25-May-2023 | 29-May-2023 | ---- | ---- | | 29-May-2023 | 14 days | 4 days | ✓ |
| Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID | | | | | | | | | | |
| Amber glass/Teflon lined cap (sodium bisulfate) [ON MECP] BH20-1 | E601.SG | 25-May-2023 | 31-May-2023 | 40 days | 6 days | ✓ | 05-Jun-2023 | 40 days | 5 days | ✓ |
| Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID | | | | | | | | | | |
| Amber glass/Teflon lined cap (sodium bisulfate) [ON MECP] MW23-1 | E601.SG | 25-May-2023 | 31-May-2023 | 40 days | 6 days | ✓ | 05-Jun-2023 | 40 days | 5 days | ✓ |
| Hydrocarbons : Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID | | | | | | | | | | |
| Amber glass/Teflon lined cap (sodium bisulfate) [ON MECP] MW23-101 | E601.SG | 25-May-2023 | 31-May-2023 | 40 days | 6 days | ✓ | 05-Jun-2023 | 40 days | 5 days | ✓ |
| Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS | | | | | | | | | | |
| Glass vial (sodium bisulfate) BH20-1 | E611D | 25-May-2023 | 29-May-2023 | ---- | ---- | | 29-May-2023 | 14 days | 4 days | ✓ |



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS | | | | | | | | | | |
| Glass vial (sodium bisulfate) MW23-1 | E611D | 25-May-2023 | 29-May-2023 | ---- | ---- | | 29-May-2023 | 14 days | 4 days | ✔ |
| Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS | | | | | | | | | | |
| Glass vial (sodium bisulfate) MW23-101 | E611D | 25-May-2023 | 29-May-2023 | ---- | ---- | | 29-May-2023 | 14 days | 4 days | ✔ |

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

| Quality Control Sample Type | Method | QC Lot # | Count | | Frequency (%) | | |
|--|-----------|----------|-------|---------|---------------|----------|------------|
| | | | QC | Regular | Actual | Expected | Evaluation |
| Analytical Methods | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| CCME PHC - F1 by Headspace GC-FID (Low Level) | E581.F1-L | 959169 | 1 | 5 | 20.0 | 5.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 959168 | 2 | 20 | 10.0 | 5.0 | ✔ |
| Laboratory Control Samples (LCS) | | | | | | | |
| CCME PHC - F1 by Headspace GC-FID (Low Level) | E581.F1-L | 959169 | 1 | 5 | 20.0 | 5.0 | ✔ |
| Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID | E601.SG | 963255 | 1 | 14 | 7.1 | 5.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 959168 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Method Blanks (MB) | | | | | | | |
| CCME PHC - F1 by Headspace GC-FID (Low Level) | E581.F1-L | 959169 | 1 | 5 | 20.0 | 5.0 | ✔ |
| Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID | E601.SG | 963255 | 1 | 14 | 7.1 | 5.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 959168 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Matrix Spikes (MS) | | | | | | | |
| CCME PHC - F1 by Headspace GC-FID (Low Level) | E581.F1-L | 959169 | 1 | 5 | 20.0 | 5.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 959168 | 1 | 20 | 5.0 | 5.0 | ✔ |



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|--|---------------------------------------|--------|---------------------------------|---|
| CCME PHC - F1 by Headspace GC-FID (Low Level) | E581.F1-L Waterloo - Environmental | Water | CCME PHC in Soil - Tier 1 (mod) | CCME Fraction 1 (F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. |
| Silica Gel Treated CCME PHCs - F2-F4sg by GC-FID | E601.SG Waterloo - Environmental | Water | CCME PHC in Soil - Tier 1 (mod) | Sample extracts are subjected to in-situ silica gel treatment prior to analysis by GC-FID for CCME hydrocarbon fractions (F2-F4). Sample extracts are analyzed by GC-FID for CCME hydrocarbon fractions (F2-F4), as per the CCME Analytical Methods Guidance Manual (2016) |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D Waterloo - Environmental | Water | EPA 8260D (mod) | Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. |
| F1-BTEX | EC580 Waterloo - Environmental | Water | CCME PHC in Soil - Tier 1 | F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX). |
| SUM F1 to F4 where F2-F4 is SG treated | EC581SG Waterloo - Environmental | Water | CCME PHC in Soil - Tier 1 | Hydrocarbons, total (C6-C50) is the sum of CCME Fraction F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50), where F2-F4 have been treated with silica gel. F4G-sg is not used within this calculation due to overlap with other fractions. |
| Preparation Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
| VOCs Preparation for Headspace Analysis | EP581 Waterloo - Environmental | Water | EPA 5021A (mod) | Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into the GC/MS-FID system. |
| PHCs and PAHs Hexane Extraction | EP601 Waterloo - Environmental | Water | EPA 3511 (mod) | Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction. |

QUALITY CONTROL REPORT

Work Order : **WT2314661**
Client : Gemtec Consulting Engineers and Scientists Limited
Contact : Connor Shaw
Address : 142 Industrial Drive
 Petawawa ON Canada K8H 2W8
Telephone :
Project : 61899.04
PO : ----
C-O-C number : ----
Sampler : Adrian Williams___
Site : ----
Quote number : SOA - 2022
No. of samples received : 3
No. of samples analysed : 3

Page : 1 of 10
Laboratory : Waterloo - Environmental
Account Manager : Costas Farassoglou
Address : 60 Northland Road, Unit 1
 Waterloo, Ontario Canada N2V 2B8
Telephone : 613 225 8279
Date Samples Received : 25-May-2023 15:45
Date Analysis Commenced : 29-May-2023
Issue Date : 05-Jun-2023 14:25

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Laboratory Department</i> |
|--------------------|--|--------------------------------------|
| Andrea Armstrong | Department Manager - Air Quality and Volatiles | Waterloo VOC, Waterloo, Ontario |
| Jocelyn Kennedy | Department Manager - Semi-Volatile Organics | Waterloo Organics, Waterloo, Ontario |

Page : 2 of 10
Work Order : WT2314661
Client : Gemtec Consulting Engineers and Scientists Limited
Project : 61899.04



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

| Sub-Matrix: Water | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|--|------------------|--------------------------------|------------|--------|-----------------------------------|------|-----------------|------------------|----------------------|------------------|-----------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Volatile Organic Compounds (QC Lot: 959168) | | | | | | | | | | | |
| WT2314220-001 | Anonymous | Dichloromethane | 75-09-2 | E611D | 1.0 | µg/L | <1.0 | <1.0 | 0 | Diff <2x LOR | ---- |
| WT2314220-001 | Anonymous | Acetone | 67-64-1 | E611D | 20 | µg/L | <20 | <20 | 0 | Diff <2x LOR | ---- |
| | | Benzene | 71-43-2 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromodichloromethane | 75-27-4 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromoform | 75-25-2 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Bromomethane | 74-83-9 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611D | 0.20 | µg/L | <0.20 | <0.20 | 0 | Diff <2x LOR | ---- |
| | | Chlorobenzene | 108-90-7 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Chloroform | 67-66-3 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dibromochloromethane | 124-48-1 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dibromoethane, 1,2- | 106-93-4 | E611D | 0.20 | µg/L | <0.20 | <0.20 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichlorodifluoromethane | 75-71-8 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 0.30 | µg/L | <0.30 | <0.30 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 0.30 | µg/L | <0.30 | <0.30 | 0 | Diff <2x LOR | ---- |
| | | Ethylbenzene | 100-41-4 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Hexane, n- | 110-54-3 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 20 | µg/L | <20 | <20 | 0 | Diff <2x LOR | ---- |
| | | Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 20 | µg/L | <20 | <20 | 0 | Diff <2x LOR | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Styrene | 100-42-5 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |



| Sub-Matrix: Water | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|--|-------------------------|-----------------------------|-------------------|---------------|--|-------------|------------------------|-------------------------|-----------------------------|-------------------------|------------------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Volatile Organic Compounds (QC Lot: 959168) - continued | | | | | | | | | | | |
| WT2314220-001 | Anonymous | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Toluene | 108-88-3 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethylene | 79-01-6 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Vinyl chloride | 75-01-4 | E611D | 0.50 | µg/L | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611D | 0.40 | µg/L | <0.40 | <0.40 | 0 | Diff <2x LOR | ---- |
| Xylene, o- | 95-47-6 | E611D | 0.30 | µg/L | <0.30 | <0.30 | <0.30 | 0 | Diff <2x LOR | ---- | |
| Hydrocarbons (QC Lot: 959169) | | | | | | | | | | | |
| WT2314220-001 | Anonymous | F1 (C6-C10) | ---- | E581.F1-L | 25 | µg/L | <25 | <25 | 0 | Diff <2x LOR | ---- |



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|------------|--------|-----|------|--------|-----------|
| Volatile Organic Compounds (QCLot: 959168) | | | | | | |
| Acetone | 67-64-1 | E611D | 20 | µg/L | <20 | ---- |
| Benzene | 71-43-2 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Bromodichloromethane | 75-27-4 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Bromoform | 75-25-2 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Bromomethane | 74-83-9 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Carbon tetrachloride | 56-23-5 | E611D | 0.2 | µg/L | <0.20 | ---- |
| Chlorobenzene | 108-90-7 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Chloroform | 67-66-3 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dibromochloromethane | 124-48-1 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dibromoethane, 1,2- | 106-93-4 | E611D | 0.2 | µg/L | <0.20 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichlorodifluoromethane | 75-71-8 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichloromethane | 75-09-2 | E611D | 1 | µg/L | <1.0 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 0.3 | µg/L | <0.30 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 0.3 | µg/L | <0.30 | ---- |
| Ethylbenzene | 100-41-4 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Hexane, n- | 110-54-3 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 20 | µg/L | <20 | ---- |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 20 | µg/L | <20 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Styrene | 100-42-5 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Tetrachloroethylene | 127-18-4 | E611D | 0.5 | µg/L | <0.50 | ---- |



Sub-Matrix: **Water**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|-------------|-----------|-----|------|--------|-----------|
| Volatile Organic Compounds (QCLot: 959168) - continued | | | | | | |
| Toluene | 108-88-3 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Trichloroethylene | 79-01-6 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Vinyl chloride | 75-01-4 | E611D | 0.5 | µg/L | <0.50 | ---- |
| Xylene, m+p- | 179601-23-1 | E611D | 0.4 | µg/L | <0.40 | ---- |
| Xylene, o- | 95-47-6 | E611D | 0.3 | µg/L | <0.30 | ---- |
| Hydrocarbons (QCLot: 959169) | | | | | | |
| F1 (C6-C10) | ---- | E581.F1-L | 25 | µg/L | <25 | ---- |
| Hydrocarbons (QCLot: 963255) | | | | | | |
| F2 (C10-C16) | ---- | E601.SG | 100 | µg/L | <100 | ---- |
| F3 (C16-C34) | ---- | E601.SG | 250 | µg/L | <250 | ---- |
| F4 (C34-C50) | ---- | E601.SG | 250 | µg/L | <250 | ---- |



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|------------|--------|-----|------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Volatile Organic Compounds (QCLot: 959168) | | | | | | | | | |
| Acetone | 67-64-1 | E611D | 20 | µg/L | 100 µg/L | 104 | 70.0 | 130 | ---- |
| Benzene | 71-43-2 | E611D | 0.5 | µg/L | 100 µg/L | 97.2 | 70.0 | 130 | ---- |
| Bromodichloromethane | 75-27-4 | E611D | 0.5 | µg/L | 100 µg/L | 97.8 | 70.0 | 130 | ---- |
| Bromoform | 75-25-2 | E611D | 0.5 | µg/L | 100 µg/L | 92.7 | 70.0 | 130 | ---- |
| Bromomethane | 74-83-9 | E611D | 0.5 | µg/L | 100 µg/L | 111 | 60.0 | 140 | ---- |
| Carbon tetrachloride | 56-23-5 | E611D | 0.2 | µg/L | 100 µg/L | 110 | 70.0 | 130 | ---- |
| Chlorobenzene | 108-90-7 | E611D | 0.5 | µg/L | 100 µg/L | 96.2 | 70.0 | 130 | ---- |
| Chloroform | 67-66-3 | E611D | 0.5 | µg/L | 100 µg/L | 99.2 | 70.0 | 130 | ---- |
| Dibromochloromethane | 124-48-1 | E611D | 0.5 | µg/L | 100 µg/L | 97.8 | 70.0 | 130 | ---- |
| Dibromoethane, 1,2- | 106-93-4 | E611D | 0.2 | µg/L | 100 µg/L | 94.3 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611D | 0.5 | µg/L | 100 µg/L | 97.5 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611D | 0.5 | µg/L | 100 µg/L | 101 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611D | 0.5 | µg/L | 100 µg/L | 102 | 70.0 | 130 | ---- |
| Dichlorodifluoromethane | 75-71-8 | E611D | 0.5 | µg/L | 100 µg/L | 99.2 | 60.0 | 140 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611D | 0.5 | µg/L | 100 µg/L | 96.2 | 70.0 | 130 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611D | 0.5 | µg/L | 100 µg/L | 97.5 | 70.0 | 130 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611D | 0.5 | µg/L | 100 µg/L | 95.6 | 70.0 | 130 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 0.5 | µg/L | 100 µg/L | 94.5 | 70.0 | 130 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 0.5 | µg/L | 100 µg/L | 96.1 | 70.0 | 130 | ---- |
| Dichloromethane | 75-09-2 | E611D | 1 | µg/L | 100 µg/L | 105 | 70.0 | 130 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611D | 0.5 | µg/L | 100 µg/L | 91.1 | 70.0 | 130 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 0.3 | µg/L | 100 µg/L | 87.9 | 70.0 | 130 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 0.3 | µg/L | 100 µg/L | 87.3 | 70.0 | 130 | ---- |
| Ethylbenzene | 100-41-4 | E611D | 0.5 | µg/L | 100 µg/L | 97.7 | 70.0 | 130 | ---- |
| Hexane, n- | 110-54-3 | E611D | 0.5 | µg/L | 100 µg/L | 97.2 | 70.0 | 130 | ---- |
| Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 20 | µg/L | 100 µg/L | 96.4 | 70.0 | 130 | ---- |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 20 | µg/L | 100 µg/L | 84.9 | 70.0 | 130 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 0.5 | µg/L | 100 µg/L | 98.5 | 70.0 | 130 | ---- |
| Styrene | 100-42-5 | E611D | 0.5 | µg/L | 100 µg/L | 93.9 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 0.5 | µg/L | 100 µg/L | 94.8 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 0.5 | µg/L | 100 µg/L | 97.0 | 70.0 | 130 | ---- |
| Tetrachloroethylene | 127-18-4 | E611D | 0.5 | µg/L | 100 µg/L | 114 | 70.0 | 130 | ---- |
| Toluene | 108-88-3 | E611D | 0.5 | µg/L | 100 µg/L | 97.3 | 70.0 | 130 | ---- |



Sub-Matrix: **Water**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|-------------|-----------|-----|------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Volatile Organic Compounds (QCLot: 959168) - continued | | | | | | | | | |
| Trichloroethane, 1,1,1- | 71-55-6 | E611D | 0.5 | µg/L | 100 µg/L | 96.5 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611D | 0.5 | µg/L | 100 µg/L | 95.3 | 70.0 | 130 | ---- |
| Trichloroethylene | 79-01-6 | E611D | 0.5 | µg/L | 100 µg/L | 104 | 70.0 | 130 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611D | 0.5 | µg/L | 100 µg/L | 108 | 60.0 | 140 | ---- |
| Vinyl chloride | 75-01-4 | E611D | 0.5 | µg/L | 100 µg/L | 95.2 | 60.0 | 140 | ---- |
| Xylene, m+p- | 179601-23-1 | E611D | 0.4 | µg/L | 200 µg/L | 102 | 70.0 | 130 | ---- |
| Xylene, o- | 95-47-6 | E611D | 0.3 | µg/L | 100 µg/L | 96.6 | 70.0 | 130 | ---- |
| Hydrocarbons (QCLot: 959169) | | | | | | | | | |
| F1 (C6-C10) | ---- | E581.F1-L | 25 | µg/L | 2000 µg/L | 96.3 | 80.0 | 120 | ---- |
| Hydrocarbons (QCLot: 963255) | | | | | | | | | |
| F2 (C10-C16) | ---- | E601.SG | 100 | µg/L | 4613.474 µg/L | 97.8 | 70.0 | 130 | ---- |
| F3 (C16-C34) | ---- | E601.SG | 250 | µg/L | 6464.481 µg/L | 99.3 | 70.0 | 130 | ---- |
| F4 (C34-C50) | ---- | E601.SG | 250 | µg/L | 4040.361 µg/L | 105 | 70.0 | 130 | ---- |



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|------------------|--------------------------------|------------|--------|--------------------------|----------|--------------|---------------------|------|-----------|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| Volatile Organic Compounds (QCLot: 959168) | | | | | | | | | | |
| TY2304346-001 | Anonymous | Acetone | 67-64-1 | E611D | 107 µg/L | 100 µg/L | 107 | 60.0 | 140 | ---- |
| | | Benzene | 71-43-2 | E611D | 96.2 µg/L | 100 µg/L | 96.2 | 60.0 | 140 | ---- |
| | | Bromodichloromethane | 75-27-4 | E611D | 98.0 µg/L | 100 µg/L | 98.0 | 60.0 | 140 | ---- |
| | | Bromoform | 75-25-2 | E611D | 89.9 µg/L | 100 µg/L | 89.9 | 60.0 | 140 | ---- |
| | | Bromomethane | 74-83-9 | E611D | 108 µg/L | 100 µg/L | 108 | 60.0 | 140 | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611D | 106 µg/L | 100 µg/L | 106 | 60.0 | 140 | ---- |
| | | Chlorobenzene | 108-90-7 | E611D | 93.8 µg/L | 100 µg/L | 93.8 | 60.0 | 140 | ---- |
| | | Chloroform | 67-66-3 | E611D | 98.7 µg/L | 100 µg/L | 98.7 | 60.0 | 140 | ---- |
| | | Dibromochloromethane | 124-48-1 | E611D | 98.7 µg/L | 100 µg/L | 98.7 | 60.0 | 140 | ---- |
| | | Dibromoethane, 1,2- | 106-93-4 | E611D | 94.6 µg/L | 100 µg/L | 94.6 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611D | 95.4 µg/L | 100 µg/L | 95.4 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611D | 94.7 µg/L | 100 µg/L | 94.7 | 60.0 | 140 | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611D | 96.9 µg/L | 100 µg/L | 96.9 | 60.0 | 140 | ---- |
| | | Dichlorodifluoromethane | 75-71-8 | E611D | 89.7 µg/L | 100 µg/L | 89.7 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611D | 95.4 µg/L | 100 µg/L | 95.4 | 60.0 | 140 | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611D | 98.7 µg/L | 100 µg/L | 98.7 | 60.0 | 140 | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611D | 92.2 µg/L | 100 µg/L | 92.2 | 60.0 | 140 | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 94.2 µg/L | 100 µg/L | 94.2 | 60.0 | 140 | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 93.3 µg/L | 100 µg/L | 93.3 | 60.0 | 140 | ---- |
| | | Dichloromethane | 75-09-2 | E611D | 105 µg/L | 100 µg/L | 105 | 60.0 | 140 | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611D | 91.1 µg/L | 100 µg/L | 91.1 | 60.0 | 140 | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 86.1 µg/L | 100 µg/L | 86.1 | 60.0 | 140 | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 84.7 µg/L | 100 µg/L | 84.7 | 60.0 | 140 | ---- |
| | | Ethylbenzene | 100-41-4 | E611D | 93.9 µg/L | 100 µg/L | 93.9 | 60.0 | 140 | ---- |
| | | Hexane, n- | 110-54-3 | E611D | 93.8 µg/L | 100 µg/L | 93.8 | 60.0 | 140 | ---- |
| | | Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 103 µg/L | 100 µg/L | 103 | 60.0 | 140 | ---- |
| | | Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 89 µg/L | 100 µg/L | 89.2 | 60.0 | 140 | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 96.8 µg/L | 100 µg/L | 96.8 | 60.0 | 140 | ---- |
| | | Styrene | 100-42-5 | E611D | 91.6 µg/L | 100 µg/L | 91.6 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 92.9 µg/L | 100 µg/L | 92.9 | 60.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 101 µg/L | 100 µg/L | 101 | 60.0 | 140 | ---- |



Sub-Matrix: **Water**

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|------------------|-------------------------|-------------|-----------|--------------------------|-----------|--------------|---------------------|------|-----------|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| Volatile Organic Compounds (QCLot: 959168) - continued | | | | | | | | | | |
| TY2304346-001 | Anonymous | Tetrachloroethylene | 127-18-4 | E611D | 108 µg/L | 100 µg/L | 108 | 60.0 | 140 | ---- |
| | | Toluene | 108-88-3 | E611D | 93.6 µg/L | 100 µg/L | 93.6 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611D | 92.2 µg/L | 100 µg/L | 92.2 | 60.0 | 140 | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611D | 97.0 µg/L | 100 µg/L | 97.0 | 60.0 | 140 | ---- |
| | | Trichloroethylene | 79-01-6 | E611D | 101 µg/L | 100 µg/L | 101 | 60.0 | 140 | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611D | 103 µg/L | 100 µg/L | 103 | 60.0 | 140 | ---- |
| | | Vinyl chloride | 75-01-4 | E611D | 90.1 µg/L | 100 µg/L | 90.1 | 60.0 | 140 | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611D | 196 µg/L | 200 µg/L | 98.2 | 60.0 | 140 | ---- |
| | | Xylene, o- | 95-47-6 | E611D | 93.8 µg/L | 100 µg/L | 93.8 | 60.0 | 140 | ---- |
| Hydrocarbons (QCLot: 959169) | | | | | | | | | | |
| WT2314220-001 | Anonymous | F1 (C6-C10) | ---- | E581.F1-L | 1770 µg/L | 2000 µg/L | 88.4 | 60.0 | 140 | ---- |



CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

| | |
|---|--|
| <p>Work Order : WT2310622</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone : ----</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : CLIENT</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 6</p> <p>No. of samples analysed : 6</p> | <p>Page : 1 of 14</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 26-Apr-2023 14:45</p> <p>Date Analysis Commenced : 28-Apr-2023</p> <p>Issue Date : 08-May-2023 10:02</p> |
|---|--|

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <u>Signatories</u> | <u>Position</u> | <u>Laboratory Department</u> |
|--------------------|--|-------------------------------------|
| Amaninder Dhillon | Team Lead - Semi-Volatile Instrumentation | Organics, Waterloo, Ontario |
| Andrea Armstrong | Department Manager - Air Quality and Volatiles | VOC, Waterloo, Ontario |
| Jocelyn Kennedy | Department Manager - Semi-Volatile Organics | Organics, Waterloo, Ontario |
| Niral Patel | | Centralized Prep, Waterloo, Ontario |
| Walt Kippenhuck | Supervisor - Inorganic | Inorganics, Waterloo, Ontario |
| Walt Kippenhuck | Supervisor - Inorganic | Metals, Waterloo, Ontario |



Summary of Guideline Breaches by Sample

| SampleID/Client ID | Matrix | Analyte | Analyte Summary | Guideline | Category | Result | Limit |
|--------------------|------------|-------------------------------|-----------------|-----------|-----------|-------------|------------|
| BH23-01 SA1 | Soil/Solid | Barium | | ON153/04 | T1-RPIICC | 278 mg/kg | 220 mg/kg |
| | Soil/Solid | Cobalt | | ON153/04 | T1-RPIICC | 21.9 mg/kg | 21 mg/kg |
| | Soil/Solid | Vanadium | | ON153/04 | T1-RPIICC | 94.4 mg/kg | 86 mg/kg |
| BH23-01 SA101 | Soil/Solid | Barium | | ON153/04 | T1-RPIICC | 270 mg/kg | 220 mg/kg |
| | Soil/Solid | Vanadium | | ON153/04 | T1-RPIICC | 91.9 mg/kg | 86 mg/kg |
| BH23-02 SA1 | Soil/Solid | Conductivity (1:2 leachate) | | ON153/04 | T1-RPIICC | 3.82 mS/cm | 0.57 mS/cm |
| | Soil/Solid | Sodium adsorption ratio [SAR] | | ON153/04 | T1-RPIICC | 332 - | 2.4 - |
| BH23-03 SA1 | Soil/Solid | Conductivity (1:2 leachate) | | ON153/04 | T1-RPIICC | 0.652 mS/cm | 0.57 mS/cm |
| | Soil/Solid | Sodium adsorption ratio [SAR] | | ON153/04 | T1-RPIICC | 3.87 - | 2.4 - |
| | Soil/Solid | Barium | | ON153/04 | T1-RPIICC | 261 mg/kg | 220 mg/kg |
| BH23-04 SA1 | Soil/Solid | Conductivity (1:2 leachate) | | ON153/04 | T1-RPIICC | 0.722 mS/cm | 0.57 mS/cm |
| | Soil/Solid | Sodium adsorption ratio [SAR] | | ON153/04 | T1-RPIICC | 5.84 - | 2.4 - |
| | Soil/Solid | F4 (C34-C50) | | ON153/04 | T1-RPIICC | 190 mg/kg | 120 mg/kg |
| | Soil/Solid | F4G-sg | | ON153/04 | T1-RPIICC | 620 mg/kg | 120 mg/kg |
| BH23-05 SA2 | Soil/Solid | Conductivity (1:2 leachate) | | ON153/04 | T1-RPIICC | 1.60 mS/cm | 0.57 mS/cm |
| | Soil/Solid | Sodium adsorption ratio [SAR] | | ON153/04 | T1-RPIICC | 14.4 - | 2.4 - |



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

| <i>Unit</i> | <i>Description</i> |
|-------------|-----------------------------|
| - | no units |
| % | percent |
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per litre |
| mS/cm | millisiemens per centimetre |
| pH units | pH units |

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

Sample Comments

| <i>Sample</i> | <i>Client Id</i> | <i>Comment</i> |
|---------------|------------------|---|
| WT2310622-001 | BH23-01 SA1 | RRR:Detection limit raised due to potential carryover from previous sample. |



Qualifiers

| <i>Qualifier</i> | <i>Description</i> |
|------------------|--|
| <i>DLHC</i> | <i>Detection Limit Raised: Dilution required due to high concentration of test analyte(s).</i> |
| <i>DLIS</i> | <i>Detection Limit Adjusted due to insufficient sample.</i> |
| <i>FR8</i> | <i>As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:8 due to high soil organic content.</i> |
| <i>RRR</i> | <i>Refer to report comments for issues regarding this analysis.</i> |



Analytical Results Evaluation

| Matrix: Soil | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 | ---- |
|---------------------------------|------------|----------|----------------------------|---------------|-----------------------|---------------|---------------|---------------|---------------|-------|
| | | | Sampling date/time | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | ---- |
| | | | Sub-Matrix | Soil | Soil | Soil | Soil | Soil | Soil | ---- |
| Analyte | CAS Number | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | WT2310622-006 | WT2310622-006 | ----- |
| Physical Tests | | | | | | | | | | |
| Conductivity (1:2 leachate) | ---- | mS/cm | 0.305 | 0.264 | 3.82 ^{DLHC} | 0.652 | 0.722 | 1.60 | ---- | ---- |
| Moisture | ---- | % | 20.9 | 27.4 | 19.3 | 19.1 | 20.8 | 22.8 | ---- | ---- |
| pH (1:2 soil:CaCl2-aq) | ---- | pH units | 7.18 | 7.16 | 7.83 | 6.97 | 6.69 | 8.17 | ---- | ---- |
| Cyanides | | | | | | | | | | |
| Cyanide, weak acid dissociable | ---- | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| Fixed-Ratio Extractables | | | | | | | | | | |
| Calcium, soluble ion content | 7440-70-2 | mg/L | 13.2 | 8.86 | 37.0 ^{DLHC} | 21.5 | 18.5 | 18.5 | ---- | ---- |
| Magnesium, soluble ion content | 7439-95-4 | mg/L | 6.33 | 4.28 | <10.0 ^{DLHC} | 5.30 | 3.63 | 15.9 | ---- | ---- |
| Sodium, soluble ion content | 17341-25-2 | mg/L | 27.5 | 27.4 | 7340 ^{DLHC} | 77.3 | 105 | 349 | ---- | ---- |
| Sodium adsorption ratio [SAR] | ---- | - | 1.56 | 1.89 | 332 ^{DLHC} | 3.87 | 5.84 | 14.4 | ---- | ---- |
| Metals | | | | | | | | | | |
| Antimony | 7440-36-0 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Arsenic | 7440-38-2 | mg/kg | 5.60 | 5.20 | 4.12 | 4.72 | 3.38 | 5.31 | ---- | ---- |
| Barium | 7440-39-3 | mg/kg | 278 | 270 | 200 | 261 | 168 | 216 | ---- | ---- |
| Beryllium | 7440-41-7 | mg/kg | 1.05 | 1.00 | 0.89 | 0.98 | 0.76 | 0.99 | ---- | ---- |
| Boron | 7440-42-8 | mg/kg | 15.0 | 14.8 | 12.6 | 10.8 | 9.8 | 13.4 | ---- | ---- |
| Boron, hot water soluble | 7440-42-8 | mg/kg | <0.40 ^{DLIS, FRB} | 0.24 | 0.96 | 0.46 | 1.10 | 0.52 | ---- | ---- |
| Cadmium | 7440-43-9 | mg/kg | 0.131 | 0.096 | 0.086 | 0.278 | 0.205 | 0.089 | ---- | ---- |
| Chromium | 7440-47-3 | mg/kg | 67.2 | 66.6 | 50.0 | 53.0 | 40.8 | 56.8 | ---- | ---- |
| Cobalt | 7440-48-4 | mg/kg | 21.9 | 19.3 | 14.8 | 17.0 | 11.2 | 18.5 | ---- | ---- |
| Copper | 7440-50-8 | mg/kg | 39.2 | 38.7 | 21.5 | 23.5 | 20.6 | 26.0 | ---- | ---- |
| Lead | 7439-92-1 | mg/kg | 9.02 | 8.56 | 8.02 | 9.88 | 9.92 | 9.38 | ---- | ---- |
| Mercury | 7439-97-6 | mg/kg | 0.0110 | 0.0114 | 0.0274 | 0.0279 | 0.0425 | 0.0193 | ---- | ---- |
| Molybdenum | 7439-98-7 | mg/kg | 0.49 | 0.37 | 0.39 | 0.85 | 0.64 | 0.52 | ---- | ---- |
| Nickel | 7440-02-0 | mg/kg | 47.2 | 42.9 | 28.0 | 34.7 | 21.4 | 31.6 | ---- | ---- |
| Selenium | 7782-49-2 | mg/kg | <0.20 | <0.20 | <0.20 | 0.23 | 0.24 | <0.20 | ---- | ---- |
| Silver | 7440-22-4 | mg/kg | <0.10 | <0.10 | <0.10 | 0.11 | 0.14 | <0.10 | ---- | ---- |
| Thallium | 7440-28-0 | mg/kg | 0.327 | 0.304 | 0.245 | 0.249 | 0.188 | 0.280 | ---- | ---- |



Analytical Results Evaluation

| Matrix: Soil | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 | ---- |
|-----------------------------------|------------|-------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|
| | | | Sampling date/time | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | ---- |
| | | | Sub-Matrix | Soil | Soil | Soil | Soil | Soil | Soil | ---- |
| Analyte | CAS Number | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | WT2310622-006 | WT2310622-006 | ----- |
| Metals | | | | | | | | | | |
| Uranium | 7440-61-1 | mg/kg | 0.604 | 0.614 | 0.677 | 0.886 | 0.933 | 0.652 | | ---- |
| Vanadium | 7440-62-2 | mg/kg | 94.4 | 91.9 | 69.8 | 79.3 | 61.9 | 79.7 | | ---- |
| Zinc | 7440-66-6 | mg/kg | 96.2 | 95.4 | 66.7 | 91.7 | 87.9 | 81.4 | | ---- |
| Speciated Metals | | | | | | | | | | |
| Chromium, hexavalent [Cr VI] | 18540-29-9 | mg/kg | 0.33 | 0.25 | 0.12 | <0.10 | <0.10 | 0.40 | | ---- |
| Volatile Organic Compounds | | | | | | | | | | |
| Acetone | 67-64-1 | mg/kg | <0.50 | <0.50 | ---- | ---- | ---- | ---- | | ---- |
| Benzene | 71-43-2 | mg/kg | ---- | ---- | <0.0050 | <0.0050 | <0.0050 | <0.0050 | | ---- |
| Benzene | 71-43-2 | mg/kg | <0.0050 | <0.0050 | ---- | ---- | ---- | ---- | | ---- |
| Bromodichloromethane | 75-27-4 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Bromoform | 75-25-2 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Bromomethane | 74-83-9 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Carbon tetrachloride | 56-23-5 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Chlorobenzene | 108-90-7 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Chloroform | 67-66-3 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dibromochloromethane | 124-48-1 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dibromoethane, 1,2- | 106-93-4 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichlorodifluoromethane | 75-71-8 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloroethane, 1,1- | 75-34-3 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloroethane, 1,2- | 107-06-2 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloromethane | 75-09-2 | mg/kg | <0.045 | <0.045 | ---- | ---- | ---- | ---- | | ---- |
| Dichloropropane, 1,2- | 78-87-5 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloropropylene, cis+trans-1,3- | 542-75-6 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | ---- | | ---- |



Analytical Results Evaluation

| | | | Client sample ID | | | | | | |
|-----------------------------------|-------------|-------|--------------------|---------------|---------------|---------------|---------------|---------------|-------|
| Matrix: Soil | | | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 | ---- |
| | | | Sampling date/time | | | | | | |
| | | | Sub-Matrix | | | | | | |
| Analyte | CAS Number | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | WT2310622-006 | ----- |
| Volatile Organic Compounds | | | | | | | | | |
| Dichloropropylene, trans-1,3- | 10061-02-6 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | ---- | ---- |
| Ethylbenzene | 100-41-4 | mg/kg | ---- | ---- | <0.015 | <0.015 | <0.015 | <0.015 | ---- |
| Ethylbenzene | 100-41-4 | mg/kg | <0.015 | <0.015 | ---- | ---- | ---- | ---- | ---- |
| Hexane, n- | 110-54-3 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Methyl ethyl ketone [MEK] | 78-93-3 | mg/kg | <0.50 | <0.50 | ---- | ---- | ---- | ---- | ---- |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | mg/kg | <0.50 | <0.50 | ---- | ---- | ---- | ---- | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | mg/kg | <0.040 | <0.040 | ---- | ---- | ---- | ---- | ---- |
| Styrene | 100-42-5 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Tetrachloroethylene | 127-18-4 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Toluene | 108-88-3 | mg/kg | ---- | ---- | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| Toluene | 108-88-3 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Trichloroethylene | 79-01-6 | mg/kg | <0.010 | <0.010 | ---- | ---- | ---- | ---- | ---- |
| Trichlorofluoromethane | 75-69-4 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| Vinyl chloride | 75-01-4 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | ---- | ---- |
| Xylene, m+p- | 179601-23-1 | mg/kg | ---- | ---- | <0.030 | <0.030 | <0.030 | <0.030 | ---- |
| Xylene, m+p- | 179601-23-1 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | ---- | ---- |
| Xylene, o- | 95-47-6 | mg/kg | ---- | ---- | <0.030 | <0.030 | <0.030 | <0.030 | ---- |
| Xylene, o- | 95-47-6 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | ---- | ---- |
| Xylenes, total | 1330-20-7 | mg/kg | ---- | ---- | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| Xylenes, total | 1330-20-7 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | ---- | ---- |
| BTEX, total | ---- | mg/kg | ---- | ---- | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| BTEX, total | ---- | mg/kg | <0.10 | <0.10 | ---- | ---- | ---- | ---- | ---- |
| Hydrocarbons | | | | | | | | | |
| F1 (C6-C10) | ---- | mg/kg | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | ---- |
| F2 (C10-C16) | ---- | mg/kg | <10 | <10 | <10 | <10 | <10 | <10 | ---- |
| F2-Naphthalene | ---- | mg/kg | <25 | <25 | <25 | <25 | <25 | <25 | ---- |



Analytical Results Evaluation

| Matrix: Soil | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 | ---- | |
|--|------------|-------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|------|
| | | | Sampling date/time | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | ---- |
| | | | Sub-Matrix | Soil | Soil | Soil | Soil | Soil | Soil | Soil | ---- |
| Analyte | CAS Number | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | WT2310622-006 | WT2310622-006 | ----- | |
| Hydrocarbons | | | | | | | | | | | |
| F3 (C16-C34) | ---- | mg/kg | <50 | <50 | <50 | <50 | <50 | 74 | <50 | ---- | |
| F3-PAH | n/a | mg/kg | <50 | <50 | <50 | <50 | <50 | 74 | <50 | ---- | |
| F4 (C34-C50) | ---- | mg/kg | <50 | <50 | <50 | <50 | <50 | 190 | <50 | ---- | |
| F4G-sg | ---- | mg/kg | ---- | ---- | ---- | ---- | ---- | 620 | ---- | ---- | |
| F1-BTEX | ---- | mg/kg | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | ---- | |
| Hydrocarbons, total (C6-C50) | ---- | mg/kg | <80 | <80 | <80 | <80 | <80 | 264 | <80 | ---- | |
| Chromatogram to baseline at nC50 | n/a | - | YES | YES | YES | YES | YES | NO | YES | ---- | |
| Hydrocarbons Surrogates | | | | | | | | | | | |
| Bromobenzotrifluoride, 2- (F2-F4 surrogate) | 392-83-6 | % | 91.0 | 90.9 | 87.1 | 95.3 | 95.3 | 91.0 | 93.0 | ---- | |
| Dichlorotoluene, 3,4- | 95-75-0 | % | 66.7 | 97.1 | 82.3 | 92.7 | 92.7 | 104 | 76.6 | ---- | |
| Volatile Organic Compounds Surrogates | | | | | | | | | | | |
| Bromofluorobenzene, 4- | 460-00-4 | % | ---- | ---- | 82.2 | 90.3 | 90.3 | 103 | 77.7 | ---- | |
| Bromofluorobenzene, 4- | 460-00-4 | % | 94.0 | 97.4 | ---- | ---- | ---- | ---- | ---- | ---- | |
| Difluorobenzene, 1,4- | 540-36-3 | % | ---- | ---- | 105 | 116 | 116 | 133 | 100 | ---- | |
| Difluorobenzene, 1,4- | 540-36-3 | % | 102 | 105 | ---- | ---- | ---- | ---- | ---- | ---- | |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | |
| Acenaphthene | 83-32-9 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Acenaphthylene | 208-96-8 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Anthracene | 120-12-7 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Benz(a)anthracene | 56-55-3 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Benzo(a)pyrene | 50-32-8 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Benzo(b+j)fluoranthene | n/a | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Chrysene | 218-01-9 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Dibenz(a,h)anthracene | 53-70-3 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Fluoranthene | 206-44-0 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Fluorene | 86-73-7 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- | |



Analytical Results Evaluation

| | | | Client sample ID | | | | | | |
|--|------------|-------|-----------------------|---------------|---------------|---------------|---------------|---------------|-------|
| Matrix: Soil | | | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 | ---- |
| | | | Sampling date/time | | | | | | |
| | | | Sub-Matrix | | | | | | |
| Analyte | CAS Number | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | WT2310622-006 | ----- |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | |
| Methylnaphthalene, 1- | 90-12-0 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | ---- |
| Methylnaphthalene, 1+2- | ---- | mg/kg | <0.042 | <0.042 | <0.042 | <0.042 | <0.042 | <0.042 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | ---- |
| Naphthalene | 91-20-3 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| Phenanthrene | 85-01-8 | mg/kg | <0.100 ^{RRR} | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| Pyrene | 129-00-0 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| Phthalate Esters | | | | | | | | | |
| bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Diethyl phthalate | 84-66-2 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Dimethyl phthalate | 131-11-3 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Semi-Volatile Organics | | | | | | | | | |
| Biphenyl | 92-52-4 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| bis(2-Chloro-1-methylethyl) ether | 108-60-1 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| bis(2-Chloroethyl) ether | 111-44-4 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Chloroaniline, 4- | 106-47-8 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Dichlorobenzidine, 3,3'- | 91-94-1 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Dinitrotoluene, 2,4- | 121-14-2 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Dinitrotoluene, 2,4 + 2,6- | n/a | mg/kg | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | ---- |
| Dinitrotoluene, 2,6- | 606-20-2 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Trichlorobenzene, 1,2,4- | 120-82-1 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | ---- |
| Semi-Volatile Organics Surrogates | | | | | | | | | |
| Fluorobiphenyl, 2- | 321-60-8 | % | 76.5 | 76.3 | 73.9 | 81.5 | 72.3 | 75.1 | ---- |
| Nitrobenzene-d5 | 4165-60-0 | % | 83.3 | 81.6 | 78.5 | 86.6 | 80.6 | 80.6 | ---- |
| Terphenyl-d14, p- | 1718-51-0 | % | 84.0 | 83.3 | 80.4 | 89.9 | 83.7 | 80.8 | ---- |
| Chlorinated Phenolics | | | | | | | | | |
| Chlorophenol, 2- | 95-57-8 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Dichlorophenol, 2,4- | 120-83-2 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Pentachlorophenol [PCP] | 87-86-5 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Trichlorophenol, 2,4,5- | 95-95-4 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |



Analytical Results Evaluation

| Matrix: Soil | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 | BH23-05 SA2 | ---- |
|----------------------------------|------------|-------|--------------------|---------------|---------------|---------------|---------------|---------------|-------------|------|
| | | | Sampling date/time | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | ---- |
| | | | Sub-Matrix | Soil | Soil | Soil | Soil | Soil | Soil | ---- |
| Analyte | CAS Number | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | WT2310622-006 | ----- | |
| Chlorinated Phenolics | | | | | | | | | | |
| Trichlorophenol, 2,4,6- | 88-06-2 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Non-Chlorinated Phenolics | | | | | | | | | | |
| Dimethylphenol, 2,4- | 105-67-9 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Dinitrophenol, 2,4- | 51-28-5 | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | ---- |
| Phenol | 108-95-2 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | ---- |
| Phenolics Surrogates | | | | | | | | | | |
| Tribromophenol, 2,4,6- | 118-79-6 | % | 71.8 | 72.1 | 71.4 | 86.1 | 76.6 | 77.0 | ---- | |

Please refer to the General Comments section for an explanation of any qualifiers detected.



Summary of Guideline Limits

| Analyte | CAS Number | Unit | ON153/04 T1-RPIICC | | | | | | |
|-----------------------------------|------------|----------|-----------------------|--|--|--|--|--|--|
| Physical Tests | | | | | | | | | |
| Conductivity (1:2 leachate) | ---- | mS/cm | 0.57 mS/cm | | | | | | |
| Moisture | ---- | % | | | | | | | |
| pH (1:2 soil:CaCl2-aq) | ---- | pH units | | | | | | | |
| Cyanides | | | | | | | | | |
| Cyanide, weak acid dissociable | ---- | mg/kg | 0.051 mg/kg | | | | | | |
| Fixed-Ratio Extractables | | | | | | | | | |
| Calcium, soluble ion content | 7440-70-2 | mg/L | | | | | | | |
| Magnesium, soluble ion content | 7439-95-4 | mg/L | | | | | | | |
| Sodium adsorption ratio [SAR] | ---- | - | 2.4 - | | | | | | |
| Sodium, soluble ion content | 17341-25-2 | mg/L | | | | | | | |
| Metals | | | | | | | | | |
| Antimony | 7440-36-0 | mg/kg | 1.3 mg/kg | | | | | | |
| Arsenic | 7440-38-2 | mg/kg | 18 mg/kg | | | | | | |
| Barium | 7440-39-3 | mg/kg | 220 mg/kg | | | | | | |
| Beryllium | 7440-41-7 | mg/kg | 2.5 mg/kg | | | | | | |
| Boron, hot water soluble | 7440-42-8 | mg/kg | | | | | | | |
| Boron | 7440-42-8 | mg/kg | 36 mg/kg | | | | | | |
| Cadmium | 7440-43-9 | mg/kg | 1.2 mg/kg | | | | | | |
| Chromium | 7440-47-3 | mg/kg | 70 mg/kg | | | | | | |
| Cobalt | 7440-48-4 | mg/kg | 21 mg/kg | | | | | | |
| Copper | 7440-50-8 | mg/kg | 92 mg/kg | | | | | | |
| Lead | 7439-92-1 | mg/kg | 120 mg/kg | | | | | | |
| Mercury | 7439-97-6 | mg/kg | 0.27 mg/kg | | | | | | |
| Molybdenum | 7439-98-7 | mg/kg | 2 mg/kg | | | | | | |
| Nickel | 7440-02-0 | mg/kg | 82 mg/kg | | | | | | |
| Selenium | 7782-49-2 | mg/kg | 1.5 mg/kg | | | | | | |
| Silver | 7440-22-4 | mg/kg | 0.5 mg/kg | | | | | | |
| Thallium | 7440-28-0 | mg/kg | 1 mg/kg | | | | | | |
| Uranium | 7440-61-1 | mg/kg | 2.5 mg/kg | | | | | | |
| Vanadium | 7440-62-2 | mg/kg | 86 mg/kg | | | | | | |
| Zinc | 7440-66-6 | mg/kg | 290 mg/kg | | | | | | |
| Speciated Metals | | | | | | | | | |
| Chromium, hexavalent [Cr VI] | 18540-29-9 | mg/kg | 0.66 mg/kg | | | | | | |
| Volatile Organic Compounds | | | | | | | | | |
| Acetone | 67-64-1 | mg/kg | 0.5 mg/kg | | | | | | |
| Benzene | 71-43-2 | mg/kg | 0.02 mg/kg | | | | | | |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.05 mg/kg | | | | | | |



| Analyte | CAS Number | Unit | ON153/04 T1-RPIICC | | | | | | |
|---|-------------|-------|-----------------------|--|--|--|--|--|--|
| Volatile Organic Compounds - Continued | | | | | | | | | |
| Bromoform | 75-25-2 | mg/kg | 0.05 mg/kg | | | | | | |
| Bromomethane | 74-83-9 | mg/kg | 0.05 mg/kg | | | | | | |
| BTEX, total | ---- | mg/kg | | | | | | | |
| Carbon tetrachloride | 56-23-5 | mg/kg | 0.05 mg/kg | | | | | | |
| Chlorobenzene | 108-90-7 | mg/kg | 0.05 mg/kg | | | | | | |
| Chloroform | 67-66-3 | mg/kg | 0.05 mg/kg | | | | | | |
| Dibromochloromethane | 124-48-1 | mg/kg | 0.05 mg/kg | | | | | | |
| Dibromoethane, 1,2- | 106-93-4 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichlorobenzene, 1,2- | 95-50-1 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichlorobenzene, 1,3- | 541-73-1 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichlorobenzene, 1,4- | 106-46-7 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichlorodifluoromethane | 75-71-8 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloroethane, 1,1- | 75-34-3 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloroethane, 1,2- | 107-06-2 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloroethylene, 1,1- | 75-35-4 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloroethylene, cis-1,2- | 156-59-2 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloroethylene, trans-1,2- | 156-60-5 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloromethane | 75-09-2 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloropropane, 1,2- | 78-87-5 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloropropylene, cis+trans-1,3- | 542-75-6 | mg/kg | 0.05 mg/kg | | | | | | |
| Dichloropropylene, cis-1,3- | 10061-01-5 | mg/kg | | | | | | | |
| Dichloropropylene, trans-1,3- | 10061-02-6 | mg/kg | | | | | | | |
| Ethylbenzene | 100-41-4 | mg/kg | 0.05 mg/kg | | | | | | |
| Hexane, n- | 110-54-3 | mg/kg | 0.05 mg/kg | | | | | | |
| Methyl ethyl ketone [MEK] | 78-93-3 | mg/kg | 0.5 mg/kg | | | | | | |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | mg/kg | 0.5 mg/kg | | | | | | |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | mg/kg | 0.05 mg/kg | | | | | | |
| Styrene | 100-42-5 | mg/kg | 0.05 mg/kg | | | | | | |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | mg/kg | 0.05 mg/kg | | | | | | |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | mg/kg | 0.05 mg/kg | | | | | | |
| Tetrachloroethylene | 127-18-4 | mg/kg | 0.05 mg/kg | | | | | | |
| Toluene | 108-88-3 | mg/kg | 0.2 mg/kg | | | | | | |
| Trichloroethane, 1,1,1- | 71-55-6 | mg/kg | 0.05 mg/kg | | | | | | |
| Trichloroethane, 1,1,2- | 79-00-5 | mg/kg | 0.05 mg/kg | | | | | | |
| Trichloroethylene | 79-01-6 | mg/kg | 0.05 mg/kg | | | | | | |
| Trichlorofluoromethane | 75-69-4 | mg/kg | 0.25 mg/kg | | | | | | |
| Vinyl chloride | 75-01-4 | mg/kg | 0.02 mg/kg | | | | | | |
| Xylene, m+p- | 179601-23-1 | mg/kg | | | | | | | |
| Xylene, o- | 95-47-6 | mg/kg | | | | | | | |



| Analyte | CAS Number | Unit | ON153/04 T1-RPIICC | | | | | | |
|---|------------|-------|-----------------------|--|--|--|--|--|--|
| Volatile Organic Compounds - Continued | | | | | | | | | |
| Xylenes, total | 1330-20-7 | mg/kg | 0.05 mg/kg | | | | | | |
| Hydrocarbons | | | | | | | | | |
| Chromatogram to baseline at nC50 | n/a | - | | | | | | | |
| F1 (C6-C10) | ---- | mg/kg | 25 mg/kg | | | | | | |
| F1-BTEX | ---- | mg/kg | 25 mg/kg | | | | | | |
| F2 (C10-C16) | ---- | mg/kg | 10 mg/kg | | | | | | |
| F2-Naphthalene | ---- | mg/kg | | | | | | | |
| F3 (C16-C34) | ---- | mg/kg | 240 mg/kg | | | | | | |
| F3-PAH | n/a | mg/kg | | | | | | | |
| F4 (C34-C50) | ---- | mg/kg | 120 mg/kg | | | | | | |
| F4G-sg | ---- | mg/kg | 120 mg/kg | | | | | | |
| Hydrocarbons, total (C6-C50) | ---- | mg/kg | | | | | | | |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | |
| Acenaphthene | 83-32-9 | mg/kg | 0.072 mg/kg | | | | | | |
| Acenaphthylene | 208-96-8 | mg/kg | 0.093 mg/kg | | | | | | |
| Anthracene | 120-12-7 | mg/kg | 0.16 mg/kg | | | | | | |
| Benz(a)anthracene | 56-55-3 | mg/kg | 0.36 mg/kg | | | | | | |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.3 mg/kg | | | | | | |
| Benzo(b+j)fluoranthene | n/a | mg/kg | 0.47 mg/kg | | | | | | |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.68 mg/kg | | | | | | |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.48 mg/kg | | | | | | |
| Chrysene | 218-01-9 | mg/kg | 2.8 mg/kg | | | | | | |
| Dibenz(a,h)anthracene | 53-70-3 | mg/kg | 0.1 mg/kg | | | | | | |
| Fluoranthene | 206-44-0 | mg/kg | 0.56 mg/kg | | | | | | |
| Fluorene | 86-73-7 | mg/kg | 0.12 mg/kg | | | | | | |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | mg/kg | 0.23 mg/kg | | | | | | |
| Methylnaphthalene, 1+2- | ---- | mg/kg | 0.59 mg/kg | | | | | | |
| Methylnaphthalene, 1- | 90-12-0 | mg/kg | 0.59 mg/kg | | | | | | |
| Methylnaphthalene, 2- | 91-57-6 | mg/kg | 0.59 mg/kg | | | | | | |
| Naphthalene | 91-20-3 | mg/kg | 0.09 mg/kg | | | | | | |
| Phenanthrene | 85-01-8 | mg/kg | 0.69 mg/kg | | | | | | |
| Pyrene | 129-00-0 | mg/kg | 1 mg/kg | | | | | | |
| Phthalate Esters | | | | | | | | | |
| bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | mg/kg | 5 mg/kg | | | | | | |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.5 mg/kg | | | | | | |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.5 mg/kg | | | | | | |
| Semi-Volatile Organics | | | | | | | | | |
| Biphenyl | 92-52-4 | mg/kg | 0.05 mg/kg | | | | | | |
| bis(2-Chloro-1-methylethyl) ether | 108-60-1 | mg/kg | 0.5 mg/kg | | | | | | |



| Analyte | CAS Number | Unit | ON153/04 T1-RPIICC | | | | | | |
|---|------------|-------|-----------------------|--|--|--|--|--|--|
| Semi-Volatile Organics - Continued | | | | | | | | | |
| bis(2-Chloroethyl) ether | 111-44-4 | mg/kg | 0.5 mg/kg | | | | | | |
| Chloroaniline, 4- | 106-47-8 | mg/kg | 0.5 mg/kg | | | | | | |
| Dichlorobenzidine, 3,3'- | 91-94-1 | mg/kg | 1 mg/kg | | | | | | |
| Dinitrotoluene, 2,4 + 2,6- | n/a | mg/kg | 0.5 mg/kg | | | | | | |
| Dinitrotoluene, 2,4- | 121-14-2 | mg/kg | | | | | | | |
| Dinitrotoluene, 2,6- | 606-20-2 | mg/kg | | | | | | | |
| Trichlorobenzene, 1,2,4- | 120-82-1 | mg/kg | 0.05 mg/kg | | | | | | |
| Chlorinated Phenolics | | | | | | | | | |
| Chlorophenol, 2- | 95-57-8 | mg/kg | 0.1 mg/kg | | | | | | |
| Dichlorophenol, 2,4- | 120-83-2 | mg/kg | 0.1 mg/kg | | | | | | |
| Pentachlorophenol [PCP] | 87-86-5 | mg/kg | 0.1 mg/kg | | | | | | |
| Trichlorophenol, 2,4,5- | 95-95-4 | mg/kg | 0.1 mg/kg | | | | | | |
| Trichlorophenol, 2,4,6- | 88-06-2 | mg/kg | 0.1 mg/kg | | | | | | |
| Dimethylphenol, 2,4- | 105-67-9 | mg/kg | 0.2 mg/kg | | | | | | |
| Dinitrophenol, 2,4- | 51-28-5 | mg/kg | 2 mg/kg | | | | | | |
| Phenol | 108-95-2 | mg/kg | 0.5 mg/kg | | | | | | |

Please refer to the General Comments section for an explanation of any qualifiers detected.

Key:

ON153/04

Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)

T1-RPIICC

153 T1-Soil-Res/Park/Inst/Ind/Com/Commu Property Use



CERTIFICATE OF ANALYSIS

| | |
|---|--|
| <p>Work Order : WT2310622</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone : ----</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : CLIENT</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 6</p> <p>No. of samples analysed : 6</p> | <p>Page : 1 of 12</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 26-Apr-2023 14:45</p> <p>Date Analysis Commenced : 28-Apr-2023</p> <p>Issue Date : 08-May-2023 10:02</p> |
|---|--|

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Laboratory Department</i> |
|--------------------|--|-------------------------------------|
| Amaninder Dhillon | Team Lead - Semi-Volatile Instrumentation | Organics, Waterloo, Ontario |
| Andrea Armstrong | Department Manager - Air Quality and Volatiles | VOC, Waterloo, Ontario |
| Jocelyn Kennedy | Department Manager - Semi-Volatile Organics | Organics, Waterloo, Ontario |
| Niral Patel | | Centralized Prep, Waterloo, Ontario |
| Walt Kippenhuck | Supervisor - Inorganic | Inorganics, Waterloo, Ontario |
| Walt Kippenhuck | Supervisor - Inorganic | Metals, Waterloo, Ontario |



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
 LOR: Limit of Reporting (detection limit).

| Unit | Description |
|----------|-----------------------------|
| - | no units |
| % | percent |
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per litre |
| mS/cm | millisiemens per centimetre |
| pH units | pH units |

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

| Sample | Client Id | Comment |
|---------------|-------------|---|
| WT2310622-001 | BH23-01 SA1 | RRR:Detection limit raised due to potential carryover from previous sample. |

Qualifiers

| Qualifier | Description |
|-----------|---|
| DLHC | Detection Limit Raised: Dilution required due to high concentration of test analyte(s). |
| DLIS | Detection Limit Adjusted due to insufficient sample. |
| FR8 | As per applicable reference method(s), soil:water ratio for Fixed Ratio Leach was modified to 1:8 due to high soil organic content. |
| RRR | Refer to report comments for issues regarding this analysis. |



Analytical Results

| Sub-Matrix: Soil | | | | | Client sample ID | | | | |
|---------------------------------|------------|--------|---------|----------|----------------------------|---------------|-----------------------|---------------|---------------|
| (Matrix: Soil/Solid) | | | | | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 |
| Client sampling date / time | | | | | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 |
| | | | | | Result | Result | Result | Result | Result |
| Physical Tests | | | | | | | | | |
| Conductivity (1:2 leachate) | ---- | E100-L | 0.00500 | mS/cm | 0.305 | 0.264 | 3.82 ^{DLHC} | 0.652 | 0.722 |
| Moisture | ---- | E144 | 0.25 | % | 20.9 | 27.4 | 19.3 | 19.1 | 20.8 |
| pH (1:2 soil:CaCl2-aq) | ---- | E108A | 0.10 | pH units | 7.18 | 7.16 | 7.83 | 6.97 | 6.69 |
| Cyanides | | | | | | | | | |
| Cyanide, weak acid dissociable | ---- | E336A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Fixed-Ratio Extractables | | | | | | | | | |
| Calcium, soluble ion content | 7440-70-2 | E484 | 0.50 | mg/L | 13.2 | 8.86 | 37.0 ^{DLHC} | 21.5 | 18.5 |
| Magnesium, soluble ion content | 7439-95-4 | E484 | 0.50 | mg/L | 6.33 | 4.28 | <10.0 ^{DLHC} | 5.30 | 3.63 |
| Sodium, soluble ion content | 17341-25-2 | E484 | 0.50 | mg/L | 27.5 | 27.4 | 7340 ^{DLHC} | 77.3 | 105 |
| Sodium adsorption ratio [SAR] | ---- | E484 | 0.10 | - | 1.56 | 1.89 | 332 ^{DLHC} | 3.87 | 5.84 |
| Metals | | | | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Arsenic | 7440-38-2 | E440 | 0.10 | mg/kg | 5.60 | 5.20 | 4.12 | 4.72 | 3.38 |
| Barium | 7440-39-3 | E440 | 0.50 | mg/kg | 278 | 270 | 200 | 261 | 168 |
| Beryllium | 7440-41-7 | E440 | 0.10 | mg/kg | 1.05 | 1.00 | 0.89 | 0.98 | 0.76 |
| Boron | 7440-42-8 | E440 | 5.0 | mg/kg | 15.0 | 14.8 | 12.6 | 10.8 | 9.8 |
| Boron, hot water soluble | 7440-42-8 | E487 | 0.10 | mg/kg | <0.40 ^{DLIS, FR8} | 0.24 | 0.96 | 0.46 | 1.10 |
| Cadmium | 7440-43-9 | E440 | 0.020 | mg/kg | 0.131 | 0.096 | 0.086 | 0.278 | 0.205 |
| Chromium | 7440-47-3 | E440 | 0.50 | mg/kg | 67.2 | 66.6 | 50.0 | 53.0 | 40.8 |
| Cobalt | 7440-48-4 | E440 | 0.10 | mg/kg | 21.9 | 19.3 | 14.8 | 17.0 | 11.2 |
| Copper | 7440-50-8 | E440 | 0.50 | mg/kg | 39.2 | 38.7 | 21.5 | 23.5 | 20.6 |
| Lead | 7439-92-1 | E440 | 0.50 | mg/kg | 9.02 | 8.56 | 8.02 | 9.88 | 9.92 |
| Mercury | 7439-97-6 | E510 | 0.0050 | mg/kg | 0.0110 | 0.0114 | 0.0274 | 0.0279 | 0.0425 |
| Molybdenum | 7439-98-7 | E440 | 0.10 | mg/kg | 0.49 | 0.37 | 0.39 | 0.85 | 0.64 |
| Nickel | 7440-02-0 | E440 | 0.50 | mg/kg | 47.2 | 42.9 | 28.0 | 34.7 | 21.4 |
| Selenium | 7782-49-2 | E440 | 0.20 | mg/kg | <0.20 | <0.20 | <0.20 | 0.23 | 0.24 |
| Silver | 7440-22-4 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | 0.11 | 0.14 |
| Thallium | 7440-28-0 | E440 | 0.050 | mg/kg | 0.327 | 0.304 | 0.245 | 0.249 | 0.188 |
| Uranium | 7440-61-1 | E440 | 0.050 | mg/kg | 0.604 | 0.614 | 0.677 | 0.886 | 0.933 |
| Vanadium | 7440-62-2 | E440 | 0.20 | mg/kg | 94.4 | 91.9 | 69.8 | 79.3 | 61.9 |



Analytical Results

| Sub-Matrix: Soil | | | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 |
|-----------------------------------|------------|--------|--------|-------|-----------------------------|---------------|---------------|---------------|---------------|-------------|
| (Matrix: Soil/Solid) | | | | | Client sampling date / time | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | |
| | | | | | Result | Result | Result | Result | Result | |
| Metals | | | | | | | | | | |
| Zinc | 7440-66-6 | E440 | 2.0 | mg/kg | 96.2 | 95.4 | 66.7 | 91.7 | 87.9 | |
| Speciated Metals | | | | | | | | | | |
| Chromium, hexavalent [Cr VI] | 18540-29-9 | E532 | 0.10 | mg/kg | 0.33 | 0.25 | 0.12 | <0.10 | <0.10 | |
| Volatile Organic Compounds | | | | | | | | | | |
| Acetone | 67-64-1 | E611D | 0.50 | mg/kg | <0.50 | <0.50 | ---- | ---- | ---- | |
| Benzene | 71-43-2 | E611A | 0.0050 | mg/kg | ---- | ---- | <0.0050 | <0.0050 | <0.0050 | |
| Benzene | 71-43-2 | E611D | 0.0050 | mg/kg | <0.0050 | <0.0050 | ---- | ---- | ---- | |
| Bromodichloromethane | 75-27-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Bromoform | 75-25-2 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Bromomethane | 74-83-9 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Carbon tetrachloride | 56-23-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Chlorobenzene | 108-90-7 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Chloroform | 67-66-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dibromochloromethane | 124-48-1 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dibromoethane, 1,2- | 106-93-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichlorobenzene, 1,2- | 95-50-1 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichlorobenzene, 1,3- | 541-73-1 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichlorobenzene, 1,4- | 106-46-7 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichlorodifluoromethane | 75-71-8 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloroethane, 1,1- | 75-34-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloroethane, 1,2- | 107-06-2 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloroethylene, 1,1- | 75-35-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloromethane | 75-09-2 | E611D | 0.045 | mg/kg | <0.045 | <0.045 | ---- | ---- | ---- | |
| Dichloropropane, 1,2- | 78-87-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloropropylene, cis+trans-1,3- | 542-75-6 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | |
| Ethylbenzene | 100-41-4 | E611A | 0.015 | mg/kg | ---- | ---- | <0.015 | <0.015 | <0.015 | |



Analytical Results

| Sub-Matrix: Soil | | | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 |
|-----------------------------------|-------------|-----------|-------|-------|-----------------------------|---------------|---------------|---------------|---------------|-------------|
| (Matrix: Soil/Solid) | | | | | Client sampling date / time | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | |
| | | | | | Result | Result | Result | Result | Result | |
| Volatile Organic Compounds | | | | | | | | | | |
| Ethylbenzene | 100-41-4 | E611D | 0.015 | mg/kg | <0.015 | <0.015 | ---- | ---- | ---- | |
| Hexane, n- | 110-54-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 0.50 | mg/kg | <0.50 | <0.50 | ---- | ---- | ---- | |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 0.50 | mg/kg | <0.50 | <0.50 | ---- | ---- | ---- | |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 0.040 | mg/kg | <0.040 | <0.040 | ---- | ---- | ---- | |
| Styrene | 100-42-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Tetrachloroethylene | 127-18-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Toluene | 108-88-3 | E611A | 0.050 | mg/kg | ---- | ---- | <0.050 | <0.050 | <0.050 | |
| Toluene | 108-88-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Trichloroethane, 1,1,1- | 71-55-6 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Trichloroethane, 1,1,2- | 79-00-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Trichloroethylene | 79-01-6 | E611D | 0.010 | mg/kg | <0.010 | <0.010 | ---- | ---- | ---- | |
| Trichlorofluoromethane | 75-69-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| Vinyl chloride | 75-01-4 | E611D | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Xylene, m+p- | 179601-23-1 | E611A | 0.030 | mg/kg | ---- | ---- | <0.030 | <0.030 | <0.030 | |
| Xylene, m+p- | 179601-23-1 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | |
| Xylene, o- | 95-47-6 | E611A | 0.030 | mg/kg | ---- | ---- | <0.030 | <0.030 | <0.030 | |
| Xylene, o- | 95-47-6 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | |
| Xylenes, total | 1330-20-7 | E611A | 0.050 | mg/kg | ---- | ---- | <0.050 | <0.050 | <0.050 | |
| Xylenes, total | 1330-20-7 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | ---- | ---- | ---- | |
| BTEX, total | ---- | E611A | 0.10 | mg/kg | ---- | ---- | <0.10 | <0.10 | <0.10 | |
| BTEX, total | ---- | E611D | 0.10 | mg/kg | <0.10 | <0.10 | ---- | ---- | ---- | |
| Hydrocarbons | | | | | | | | | | |
| F1 (C6-C10) | ---- | E581.F1 | 5.0 | mg/kg | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| F2 (C10-C16) | ---- | E601.SG-L | 10 | mg/kg | <10 | <10 | <10 | <10 | <10 | |
| F2-Naphthalene | ---- | EC600 | 25 | mg/kg | <25 | <25 | <25 | <25 | <25 | |
| F3 (C16-C34) | ---- | E601.SG-L | 50 | mg/kg | <50 | <50 | <50 | <50 | 74 | |
| F3-PAH | n/a | EC600 | 50 | mg/kg | <50 | <50 | <50 | <50 | 74 | |



Analytical Results

| Sub-Matrix: Soil (Matrix: Soil/Solid) | | | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 |
|--|------------|------------|-------|-------|------------------|---------------|---------------|---------------|---------------|-------------|
| Client sampling date / time | | | | | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | |
| | | | | | Result | Result | Result | Result | Result | |
| Hydrocarbons | | | | | | | | | | |
| F4 (C34-C50) | ---- | E601.SG-L | 50 | mg/kg | <50 | <50 | <50 | <50 | <50 | 190 |
| F4G-sg | ---- | E601.F4G-L | 250 | mg/kg | ---- | ---- | ---- | ---- | ---- | 620 |
| F1-BTEX | ---- | EC580 | 5.0 | mg/kg | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Hydrocarbons, total (C6-C50) | ---- | EC581 | 80 | mg/kg | <80 | <80 | <80 | <80 | <80 | 264 |
| Chromatogram to baseline at nC50 | n/a | E601.SG-L | - | - | YES | YES | YES | YES | YES | NO |
| Hydrocarbons Surrogates | | | | | | | | | | |
| Bromobenzotrifluoride, 2- (F2-F4 surrogate) | 392-83-6 | E601.SG-L | 1.0 | % | 91.0 | 90.9 | 87.1 | 95.3 | 95.3 | 91.0 |
| Dichlorotoluene, 3,4- | 95-75-0 | E581.F1 | 1.0 | % | 66.7 | 97.1 | 82.3 | 92.7 | 92.7 | 104 |
| Volatile Organic Compounds Surrogates | | | | | | | | | | |
| Bromofluorobenzene, 4- | 460-00-4 | E611A | 0.10 | % | ---- | ---- | 82.2 | 90.3 | 90.3 | 103 |
| Bromofluorobenzene, 4- | 460-00-4 | E611D | 0.10 | % | 94.0 | 97.4 | ---- | ---- | ---- | ---- |
| Difluorobenzene, 1,4- | 540-36-3 | E611A | 0.10 | % | ---- | ---- | 105 | 116 | 116 | 133 |
| Difluorobenzene, 1,4- | 540-36-3 | E611D | 0.10 | % | 102 | 105 | ---- | ---- | ---- | ---- |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Acenaphthene | 83-32-9 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Acenaphthylene | 208-96-8 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Anthracene | 120-12-7 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Benz(a)anthracene | 56-55-3 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Benzo(a)pyrene | 50-32-8 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Benzo(b+j)fluoranthene | n/a | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Benzo(g,h,i)perylene | 191-24-2 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Benzo(k)fluoranthene | 207-08-9 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Chrysene | 218-01-9 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Dibenz(a,h)anthracene | 53-70-3 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Fluoranthene | 206-44-0 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Fluorene | 86-73-7 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Methylnaphthalene, 1- | 90-12-0 | E655A | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Methylnaphthalene, 1+2- | ---- | E655A | 0.030 | mg/kg | <0.042 | <0.042 | <0.042 | <0.042 | <0.042 | <0.042 |
| Methylnaphthalene, 2- | 91-57-6 | E655A | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |



Analytical Results

| Sub-Matrix: Soil (Matrix: Soil/Solid) | | | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 |
|--|------------|--------|-------|-------|-----------------------|---------------|---------------|---------------|---------------|-------------|
| Client sampling date / time | | | | | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | |
| | | | | | Result | Result | Result | Result | Result | |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Naphthalene | 91-20-3 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Phenanthrene | 85-01-8 | E655A | 0.050 | mg/kg | <0.100 ^{RRR} | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Pyrene | 129-00-0 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Phthalate Esters | | | | | | | | | | |
| bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Diethyl phthalate | 84-66-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Dimethyl phthalate | 131-11-3 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Semi-Volatile Organics | | | | | | | | | | |
| Biphenyl | 92-52-4 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| bis(2-Chloro-1-methylethyl) ether | 108-60-1 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| bis(2-Chloroethyl) ether | 111-44-4 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Chloroaniline, 4- | 106-47-8 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Dichlorobenzidine, 3,3'- | 91-94-1 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Dinitrotoluene, 2,4- | 121-14-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Dinitrotoluene, 2,4 + 2,6- | n/a | E655A | 0.20 | mg/kg | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 |
| Dinitrotoluene, 2,6- | 606-20-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Trichlorobenzene, 1,2,4- | 120-82-1 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 | <0.050 |
| Semi-Volatile Organics Surrogates | | | | | | | | | | |
| Fluorobiphenyl, 2- | 321-60-8 | E655A | 0.1 | % | 76.5 | 76.3 | 73.9 | 81.5 | 72.3 | |
| Nitrobenzene-d5 | 4165-60-0 | E655A | 0.1 | % | 83.3 | 81.6 | 78.5 | 86.6 | 80.6 | |
| Terphenyl-d14, p- | 1718-51-0 | E655A | 0.1 | % | 84.0 | 83.3 | 80.4 | 89.9 | 83.7 | |
| Chlorinated Phenolics | | | | | | | | | | |
| Chlorophenol, 2- | 95-57-8 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Dichlorophenol, 2,4- | 120-83-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Pentachlorophenol [PCP] | 87-86-5 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Trichlorophenol, 2,4,5- | 95-95-4 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Trichlorophenol, 2,4,6- | 88-06-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Non-Chlorinated Phenolics | | | | | | | | | | |
| Dimethylphenol, 2,4- | 105-67-9 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Dinitrophenol, 2,4- | 51-28-5 | E655A | 1.0 | mg/kg | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |



Analytical Results

| Sub-Matrix: Soil (Matrix: Soil/Solid) | | | | | Client sample ID | BH23-01 SA1 | BH23-01 SA101 | BH23-02 SA1 | BH23-03 SA1 | BH23-04 SA1 |
|--|------------|--------|------|-------|------------------|---------------|---------------|---------------|---------------|-------------|
| Client sampling date / time | | | | | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 | 25-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-001 | WT2310622-002 | WT2310622-003 | WT2310622-004 | WT2310622-005 | |
| | | | | | Result | Result | Result | Result | Result | |
| Non-Chlorinated Phenolics | | | | | | | | | | |
| Phenol | 108-95-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Phenolics Surrogates | | | | | | | | | | |
| Tribromophenol, 2,4,6- | 118-79-6 | E655A | 1.0 | % | 71.8 | 72.1 | 71.4 | 86.1 | 76.6 | |

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

| Sub-Matrix: Soil | | | | | Client sample ID | BH23-05 SA2 | ---- | ---- | ---- | ---- |
|---------------------------------|------------|--------|---------|----------|-----------------------------|-------------|-------|-------|-------|------|
| (Matrix: Soil/Solid) | | | | | Client sampling date / time | 25-Apr-2023 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-006 | ----- | ----- | ----- | ----- | |
| | | | | | Result | ---- | ---- | ---- | ---- | |
| Physical Tests | | | | | | | | | | |
| Conductivity (1:2 leachate) | ---- | E100-L | 0.00500 | mS/cm | 1.60 | ---- | ---- | ---- | ---- | |
| Moisture | ---- | E144 | 0.25 | % | 22.8 | ---- | ---- | ---- | ---- | |
| pH (1:2 soil:CaCl2-aq) | ---- | E108A | 0.10 | pH units | 8.17 | ---- | ---- | ---- | ---- | |
| Cyanides | | | | | | | | | | |
| Cyanide, weak acid dissociable | ---- | E336A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Fixed-Ratio Extractables | | | | | | | | | | |
| Calcium, soluble ion content | 7440-70-2 | E484 | 0.50 | mg/L | 18.5 | ---- | ---- | ---- | ---- | |
| Magnesium, soluble ion content | 7439-95-4 | E484 | 0.50 | mg/L | 15.9 | ---- | ---- | ---- | ---- | |
| Sodium, soluble ion content | 17341-25-2 | E484 | 0.50 | mg/L | 349 | ---- | ---- | ---- | ---- | |
| Sodium adsorption ratio [SAR] | ---- | E484 | 0.10 | - | 14.4 | ---- | ---- | ---- | ---- | |
| Metals | | | | | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Arsenic | 7440-38-2 | E440 | 0.10 | mg/kg | 5.31 | ---- | ---- | ---- | ---- | |
| Barium | 7440-39-3 | E440 | 0.50 | mg/kg | 216 | ---- | ---- | ---- | ---- | |
| Beryllium | 7440-41-7 | E440 | 0.10 | mg/kg | 0.99 | ---- | ---- | ---- | ---- | |
| Boron | 7440-42-8 | E440 | 5.0 | mg/kg | 13.4 | ---- | ---- | ---- | ---- | |
| Boron, hot water soluble | 7440-42-8 | E487 | 0.10 | mg/kg | 0.52 | ---- | ---- | ---- | ---- | |
| Cadmium | 7440-43-9 | E440 | 0.020 | mg/kg | 0.089 | ---- | ---- | ---- | ---- | |
| Chromium | 7440-47-3 | E440 | 0.50 | mg/kg | 56.8 | ---- | ---- | ---- | ---- | |
| Cobalt | 7440-48-4 | E440 | 0.10 | mg/kg | 18.5 | ---- | ---- | ---- | ---- | |
| Copper | 7440-50-8 | E440 | 0.50 | mg/kg | 26.0 | ---- | ---- | ---- | ---- | |
| Lead | 7439-92-1 | E440 | 0.50 | mg/kg | 9.38 | ---- | ---- | ---- | ---- | |
| Mercury | 7439-97-6 | E510 | 0.0050 | mg/kg | 0.0193 | ---- | ---- | ---- | ---- | |
| Molybdenum | 7439-98-7 | E440 | 0.10 | mg/kg | 0.52 | ---- | ---- | ---- | ---- | |
| Nickel | 7440-02-0 | E440 | 0.50 | mg/kg | 31.6 | ---- | ---- | ---- | ---- | |
| Selenium | 7782-49-2 | E440 | 0.20 | mg/kg | <0.20 | ---- | ---- | ---- | ---- | |
| Silver | 7440-22-4 | E440 | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Thallium | 7440-28-0 | E440 | 0.050 | mg/kg | 0.280 | ---- | ---- | ---- | ---- | |
| Uranium | 7440-61-1 | E440 | 0.050 | mg/kg | 0.652 | ---- | ---- | ---- | ---- | |
| Vanadium | 7440-62-2 | E440 | 0.20 | mg/kg | 79.7 | ---- | ---- | ---- | ---- | |



Analytical Results

| Sub-Matrix: Soil | | | | | Client sample ID | BH23-05 SA2 | ---- | ---- | ---- | ---- |
|--|-------------|-----------|--------|-------|-----------------------------|-------------|-------|-------|-------|------|
| (Matrix: Soil/Solid) | | | | | Client sampling date / time | 25-Apr-2023 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-006 | ----- | ----- | ----- | ----- | |
| | | | | | Result | ---- | ---- | ---- | ---- | |
| Metals | | | | | | | | | | |
| Zinc | 7440-66-6 | E440 | 2.0 | mg/kg | 81.4 | ---- | ---- | ---- | ---- | |
| Speciated Metals | | | | | | | | | | |
| Chromium, hexavalent [Cr VI] | 18540-29-9 | E532 | 0.10 | mg/kg | 0.40 | ---- | ---- | ---- | ---- | |
| Volatile Organic Compounds | | | | | | | | | | |
| Benzene | 71-43-2 | E611A | 0.0050 | mg/kg | <0.0050 | ---- | ---- | ---- | ---- | |
| Ethylbenzene | 100-41-4 | E611A | 0.015 | mg/kg | <0.015 | ---- | ---- | ---- | ---- | |
| Toluene | 108-88-3 | E611A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Xylene, m+p- | 179601-23-1 | E611A | 0.030 | mg/kg | <0.030 | ---- | ---- | ---- | ---- | |
| Xylene, o- | 95-47-6 | E611A | 0.030 | mg/kg | <0.030 | ---- | ---- | ---- | ---- | |
| Xylenes, total | 1330-20-7 | E611A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| BTEX, total | ---- | E611A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Hydrocarbons | | | | | | | | | | |
| F1 (C6-C10) | ---- | E581.F1 | 5.0 | mg/kg | <5.0 | ---- | ---- | ---- | ---- | |
| F2 (C10-C16) | ---- | E601.SG-L | 10 | mg/kg | <10 | ---- | ---- | ---- | ---- | |
| F2-Naphthalene | ---- | EC600 | 25 | mg/kg | <25 | ---- | ---- | ---- | ---- | |
| F3 (C16-C34) | ---- | E601.SG-L | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | |
| F3-PAH | n/a | EC600 | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | |
| F4 (C34-C50) | ---- | E601.SG-L | 50 | mg/kg | <50 | ---- | ---- | ---- | ---- | |
| F1-BTEX | ---- | EC580 | 5.0 | mg/kg | <5.0 | ---- | ---- | ---- | ---- | |
| Hydrocarbons, total (C6-C50) | ---- | EC581 | 80 | mg/kg | <80 | ---- | ---- | ---- | ---- | |
| Chromatogram to baseline at nC50 | n/a | E601.SG-L | - | - | YES | ---- | ---- | ---- | ---- | |
| Hydrocarbons Surrogates | | | | | | | | | | |
| Bromobenzotrifluoride, 2- (F2-F4 surrogate) | 392-83-6 | E601.SG-L | 1.0 | % | 93.0 | ---- | ---- | ---- | ---- | |
| Dichlorotoluene, 3,4- | 95-75-0 | E581.F1 | 1.0 | % | 76.6 | ---- | ---- | ---- | ---- | |
| Volatile Organic Compounds Surrogates | | | | | | | | | | |
| Bromofluorobenzene, 4- | 460-00-4 | E611A | 0.10 | % | 77.7 | ---- | ---- | ---- | ---- | |
| Difluorobenzene, 1,4- | 540-36-3 | E611A | 0.10 | % | 100 | ---- | ---- | ---- | ---- | |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Acenaphthene | 83-32-9 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Acenaphthylene | 208-96-8 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |



Analytical Results

| Sub-Matrix: Soil | | | | | Client sample ID | BH23-05 SA2 | ---- | ---- | ---- | ---- |
|---|------------|--------|-------|-------|-----------------------------|-------------|-------|-------|-------|------|
| (Matrix: Soil/Solid) | | | | | Client sampling date / time | 25-Apr-2023 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-006 | ----- | ----- | ----- | ----- | |
| | | | | | Result | ---- | ---- | ---- | ---- | |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | |
| Anthracene | 120-12-7 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Benz(a)anthracene | 56-55-3 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Benzo(a)pyrene | 50-32-8 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Benzo(b+j)fluoranthene | n/a | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Benzo(g,h,i)perylene | 191-24-2 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Benzo(k)fluoranthene | 207-08-9 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Chrysene | 218-01-9 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Dibenz(a,h)anthracene | 53-70-3 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Fluoranthene | 206-44-0 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Fluorene | 86-73-7 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Methylnaphthalene, 1- | 90-12-0 | E655A | 0.030 | mg/kg | <0.030 | ---- | ---- | ---- | ---- | |
| Methylnaphthalene, 1+2- | ---- | E655A | 0.030 | mg/kg | <0.042 | ---- | ---- | ---- | ---- | |
| Methylnaphthalene, 2- | 91-57-6 | E655A | 0.030 | mg/kg | <0.030 | ---- | ---- | ---- | ---- | |
| Naphthalene | 91-20-3 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Phenanthrene | 85-01-8 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Pyrene | 129-00-0 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Phthalate Esters | | | | | | | | | | |
| bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Diethyl phthalate | 84-66-2 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Dimethyl phthalate | 131-11-3 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Semi-Volatile Organics | | | | | | | | | | |
| Biphenyl | 92-52-4 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| bis(2-Chloro-1-methylethyl) ether | 108-60-1 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| bis(2-Chloroethyl) ether | 111-44-4 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Chloroaniline, 4- | 106-47-8 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Dichlorobenzidine, 3,3'- | 91-94-1 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Dinitrotoluene, 2,4- | 121-14-2 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Dinitrotoluene, 2,4 + 2,6- | n/a | E655A | 0.20 | mg/kg | <0.20 | ---- | ---- | ---- | ---- | |
| Dinitrotoluene, 2,6- | 606-20-2 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |



Analytical Results

| Sub-Matrix: Soil | | | | | Client sample ID | BH23-05 SA2 | ---- | ---- | ---- | ---- |
|--|------------|--------|-------|-------|-----------------------------|-------------|-------|-------|-------|------|
| (Matrix: Soil/Solid) | | | | | Client sampling date / time | 25-Apr-2023 | ---- | ---- | ---- | ---- |
| Analyte | CAS Number | Method | LOR | Unit | WT2310622-006 | ----- | ----- | ----- | ----- | |
| | | | | | Result | ---- | ---- | ---- | ---- | |
| Semi-Volatile Organics | | | | | | | | | | |
| Trichlorobenzene, 1,2,4- | 120-82-1 | E655A | 0.050 | mg/kg | <0.050 | ---- | ---- | ---- | ---- | |
| Semi-Volatile Organics Surrogates | | | | | | | | | | |
| Fluorobiphenyl, 2- | 321-60-8 | E655A | 0.1 | % | 75.1 | ---- | ---- | ---- | ---- | |
| Nitrobenzene-d5 | 4165-60-0 | E655A | 0.1 | % | 80.6 | ---- | ---- | ---- | ---- | |
| Terphenyl-d14, p- | 1718-51-0 | E655A | 0.1 | % | 80.8 | ---- | ---- | ---- | ---- | |
| Chlorinated Phenolics | | | | | | | | | | |
| Chlorophenol, 2- | 95-57-8 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Dichlorophenol, 2,4- | 120-83-2 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Pentachlorophenol [PCP] | 87-86-5 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Trichlorophenol, 2,4,5- | 95-95-4 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Trichlorophenol, 2,4,6- | 88-06-2 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Non-Chlorinated Phenolics | | | | | | | | | | |
| Dimethylphenol, 2,4- | 105-67-9 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Dinitrophenol, 2,4- | 51-28-5 | E655A | 1.0 | mg/kg | <1.0 | ---- | ---- | ---- | ---- | |
| Phenol | 108-95-2 | E655A | 0.10 | mg/kg | <0.10 | ---- | ---- | ---- | ---- | |
| Phenolics Surrogates | | | | | | | | | | |
| Tribromophenol, 2,4,6- | 118-79-6 | E655A | 1.0 | % | 77.0 | ---- | ---- | ---- | ---- | |

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

| | |
|---|--|
| <p>Work Order : WT2310622</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone : ----</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : CLIENT</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 6</p> <p>No. of samples analysed : 6</p> | <p>Page : 1 of 19</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 26-Apr-2023 14:45</p> <p>Issue Date : 08-May-2023 10:03</p> |
|---|--|

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✓ | 04-May-2023 | 40 days | 1 days | ✓ |
| Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✓ | 04-May-2023 | 40 days | 1 days | ✓ |
| Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✓ | 04-May-2023 | 40 days | 1 days | ✓ |
| Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✓ | 04-May-2023 | 40 days | 1 days | ✓ |
| Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✓ | 04-May-2023 | 40 days | 1 days | ✓ |
| Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✓ | 04-May-2023 | 40 days | 1 days | ✓ |
| Cyanides : WAD Cyanide (0.01M NaOH Extraction) | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E336A | 25-Apr-2023 | 03-May-2023 | 14 days | 9 days | ✓ | 04-May-2023 | 14 days | 1 days | ✓ |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|--|--------|---------------|--------------------------|---------------|---------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Cyanides : WAD Cyanide (0.01M NaOH Extraction) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E336A | 25-Apr-2023 | 03-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 14 days | 1 days | ✔ | |
| Cyanides : WAD Cyanide (0.01M NaOH Extraction) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E336A | 25-Apr-2023 | 03-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 14 days | 1 days | ✔ | |
| Cyanides : WAD Cyanide (0.01M NaOH Extraction) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E336A | 25-Apr-2023 | 03-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 14 days | 1 days | ✔ | |
| Cyanides : WAD Cyanide (0.01M NaOH Extraction) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E336A | 25-Apr-2023 | 03-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 14 days | 1 days | ✔ | |
| Cyanides : WAD Cyanide (0.01M NaOH Extraction) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E336A | 25-Apr-2023 | 03-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 14 days | 1 days | ✔ | |
| Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E484 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E484 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E484 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E484 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|--|------------|---------------|--------------------------|---------------|---------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E484 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Fixed-Ratio Extractables : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E484 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-02 SA1 | E581.F1 | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-03 SA1 | E581.F1 | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-04 SA1 | E581.F1 | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-05 SA2 | E581.F1 | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-01 SA1 | E581.F1 | 25-Apr-2023 | 01-May-2023 | 14 days | 6 days | ✔ | 01-May-2023 | 40 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHC - F1 by Headspace GC-FID | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-01 SA101 | E581.F1 | 25-Apr-2023 | 01-May-2023 | 14 days | 6 days | ✔ | 01-May-2023 | 40 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHCs - F4G by Gravimetry (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E601.F4G-L | 25-Apr-2023 | 04-May-2023 | 14 days | 10 days | ✔ | 05-May-2023 | 40 days | 1 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|---|-----------|---------------|--------------------------|---------------|---------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E601.SG-L | 25-Apr-2023 | 04-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 40 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E601.SG-L | 25-Apr-2023 | 04-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 40 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E601.SG-L | 25-Apr-2023 | 04-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 40 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E601.SG-L | 25-Apr-2023 | 04-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 40 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E601.SG-L | 25-Apr-2023 | 04-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 40 days | 0 days | ✔ | |
| Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E601.SG-L | 25-Apr-2023 | 04-May-2023 | 14 days | 9 days | ✔ | 04-May-2023 | 40 days | 0 days | ✔ | |
| Metals : Boron-Hot Water Extractable by ICPOES | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E487 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Metals : Boron-Hot Water Extractable by ICPOES | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E487 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Metals : Boron-Hot Water Extractable by ICPOES | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E487 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|--|--------|---------------|--------------------------|---------------|---------|------|---------------|---------------|---------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Metals : Boron-Hot Water Extractable by ICPOES | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E487 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Metals : Boron-Hot Water Extractable by ICPOES | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E487 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Metals : Boron-Hot Water Extractable by ICPOES | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E487 | 25-Apr-2023 | 04-May-2023 | 180 days | 10 days | ✔ | 05-May-2023 | 180 days | 0 days | ✔ | |
| Metals : Mercury in Soil/Solid by CVAAS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E510 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 28 days | 10 days | ✔ | |
| Metals : Mercury in Soil/Solid by CVAAS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E510 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 28 days | 10 days | ✔ | |
| Metals : Mercury in Soil/Solid by CVAAS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E510 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 28 days | 10 days | ✔ | |
| Metals : Mercury in Soil/Solid by CVAAS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E510 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 28 days | 10 days | ✔ | |
| Metals : Mercury in Soil/Solid by CVAAS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E510 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 28 days | 10 days | ✔ | |
| Metals : Mercury in Soil/Solid by CVAAS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E510 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 28 days | 10 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|---------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E440 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E440 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E440 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E440 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 180 days | 10 days | ✔ |
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| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E440 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E440 | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 180 days | 10 days | ✔ |
| Non-Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ |
| Non-Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ |
| Non-Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | |
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Matrix: Soil/Solid

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| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|---|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Non-Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
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| Non-Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Non-Chlorinated Phenolics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Phthalate Esters : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Phthalate Esters : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Phthalate Esters : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
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| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Phthalate Esters : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Phthalate Esters : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|--|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|---------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E100-L | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E100-L | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E100-L | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E100-L | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E100-L | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E100-L | 25-Apr-2023 | 04-May-2023 | ---- | ---- | | 05-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E144 | 25-Apr-2023 | ---- | ---- | ---- | | 03-May-2023 | ---- | ---- | | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E144 | 25-Apr-2023 | ---- | ---- | ---- | | 03-May-2023 | ---- | ---- | | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E144 | 25-Apr-2023 | ---- | ---- | ---- | | 03-May-2023 | ---- | ---- | | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|---|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|---------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E144 | 25-Apr-2023 | ---- | ---- | ---- | | 03-May-2023 | ---- | ---- | | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E144 | 25-Apr-2023 | ---- | ---- | ---- | | 03-May-2023 | ---- | ---- | | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E144 | 25-Apr-2023 | ---- | ---- | ---- | | 03-May-2023 | ---- | ---- | | |
| Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E108A | 25-Apr-2023 | 03-May-2023 | ---- | ---- | | 04-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E108A | 25-Apr-2023 | 03-May-2023 | ---- | ---- | | 04-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E108A | 25-Apr-2023 | 03-May-2023 | ---- | ---- | | 04-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E108A | 25-Apr-2023 | 03-May-2023 | ---- | ---- | | 04-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E108A | 25-Apr-2023 | 03-May-2023 | ---- | ---- | | 04-May-2023 | 30 days | 10 days | ✔ | |
| Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E108A | 25-Apr-2023 | 03-May-2023 | ---- | ---- | | 04-May-2023 | 30 days | 10 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|--|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Polycyclic Aromatic Hydrocarbons : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Polycyclic Aromatic Hydrocarbons : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Polycyclic Aromatic Hydrocarbons : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Polycyclic Aromatic Hydrocarbons : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Polycyclic Aromatic Hydrocarbons : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Polycyclic Aromatic Hydrocarbons : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Semi-Volatile Organics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Semi-Volatile Organics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Semi-Volatile Organics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|--|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Semi-Volatile Organics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Semi-Volatile Organics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Semi-Volatile Organics : BNA (ON 625-511 list) by GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E655A | 25-Apr-2023 | 03-May-2023 | 60 days | 9 days | ✔ | 04-May-2023 | 40 days | 1 days | ✔ | |
| Speciated Metals : Hexavalent Chromium (Cr VI) by IC | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA1 | E532 | 25-Apr-2023 | 03-May-2023 | 30 days | 9 days | ✔ | 04-May-2023 | 7 days | 1 days | ✔ | |
| Speciated Metals : Hexavalent Chromium (Cr VI) by IC | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-01 SA101 | E532 | 25-Apr-2023 | 03-May-2023 | 30 days | 9 days | ✔ | 04-May-2023 | 7 days | 1 days | ✔ | |
| Speciated Metals : Hexavalent Chromium (Cr VI) by IC | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-02 SA1 | E532 | 25-Apr-2023 | 03-May-2023 | 30 days | 9 days | ✔ | 04-May-2023 | 7 days | 1 days | ✔ | |
| Speciated Metals : Hexavalent Chromium (Cr VI) by IC | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-03 SA1 | E532 | 25-Apr-2023 | 03-May-2023 | 30 days | 9 days | ✔ | 04-May-2023 | 7 days | 1 days | ✔ | |
| Speciated Metals : Hexavalent Chromium (Cr VI) by IC | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-04 SA1 | E532 | 25-Apr-2023 | 03-May-2023 | 30 days | 9 days | ✔ | 04-May-2023 | 7 days | 1 days | ✔ | |
| Speciated Metals : Hexavalent Chromium (Cr VI) by IC | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] BH23-05 SA2 | E532 | 25-Apr-2023 | 03-May-2023 | 30 days | 9 days | ✔ | 04-May-2023 | 7 days | 1 days | ✔ | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|---|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Volatile Organic Compounds : BTEX by Headspace GC-MS | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-02 SA1 | E611A | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Volatile Organic Compounds : BTEX by Headspace GC-MS | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-03 SA1 | E611A | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Volatile Organic Compounds : BTEX by Headspace GC-MS | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-04 SA1 | E611A | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Volatile Organic Compounds : BTEX by Headspace GC-MS | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-05 SA2 | E611A | 25-Apr-2023 | 28-Apr-2023 | 14 days | 4 days | ✔ | 30-Apr-2023 | 40 days | 2 days | ✔ | |
| Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-01 SA1 | E611D | 25-Apr-2023 | 01-May-2023 | 14 days | 6 days | ✔ | 01-May-2023 | 40 days | 0 days | ✔ | |
| Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS | | | | | | | | | | | |
| Glass soil methanol vial [ON MECP] BH23-01 SA101 | E611D | 25-Apr-2023 | 01-May-2023 | 14 days | 6 days | ✔ | 01-May-2023 | 40 days | 0 days | ✔ | |

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

| Quality Control Sample Type | Method | QC Lot # | Count | | Frequency (%) | | Evaluation |
|--|------------|----------|-------|---------|---------------|----------|------------|
| | | | QC | Regular | Actual | Expected | |
| Analytical Methods | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| BNA (ON 625-511 list) by GC-MS | E655A | 920240 | 1 | 19 | 5.2 | 5.0 | ✔ |
| Boron-Hot Water Extractable by ICPOES | E487 | 918456 | 1 | 11 | 9.0 | 5.0 | ✔ |
| BTEX by Headspace GC-MS | E611A | 915134 | 1 | 19 | 5.2 | 5.0 | ✔ |
| CCME PHC - F1 by Headspace GC-FID | E581.F1 | 915135 | 2 | 36 | 5.5 | 5.0 | ✔ |
| CCME PHCs - F4G by Gravimetry (Low Level) | E601.F4G-L | 923109 | 0 | 1 | 0.0 | 5.0 | ✖ |
| CCME PHCs - F2-F4 by GC-FID (Low Level) | E601.SG-L | 920710 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | E100-L | 918454 | 1 | 15 | 6.6 | 5.0 | ✔ |
| Hexavalent Chromium (Cr VI) by IC | E532 | 921177 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Mercury in Soil/Solid by CVAAS | E510 | 918453 | 1 | 11 | 9.0 | 5.0 | ✔ |
| Metals in Soil/Solid by CRC ICPMS | E440 | 918452 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Moisture Content by Gravimetry | E144 | 919994 | 1 | 20 | 5.0 | 5.0 | ✔ |
| pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | E108A | 920404 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | E484 | 918455 | 1 | 15 | 6.6 | 5.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 916996 | 1 | 20 | 5.0 | 5.0 | ✔ |
| WAD Cyanide (0.01M NaOH Extraction) | E336A | 920403 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Laboratory Control Samples (LCS) | | | | | | | |
| BNA (ON 625-511 list) by GC-MS | E655A | 920240 | 1 | 19 | 5.2 | 5.0 | ✔ |
| Boron-Hot Water Extractable by ICPOES | E487 | 918456 | 2 | 11 | 18.1 | 10.0 | ✔ |
| BTEX by Headspace GC-MS | E611A | 915134 | 1 | 19 | 5.2 | 5.0 | ✔ |
| CCME PHC - F1 by Headspace GC-FID | E581.F1 | 915135 | 2 | 36 | 5.5 | 5.0 | ✔ |
| CCME PHCs - F4G by Gravimetry (Low Level) | E601.F4G-L | 923109 | 1 | 1 | 100.0 | 5.0 | ✔ |
| CCME PHCs - F2-F4 by GC-FID (Low Level) | E601.SG-L | 920710 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | E100-L | 918454 | 2 | 15 | 13.3 | 10.0 | ✔ |
| Hexavalent Chromium (Cr VI) by IC | E532 | 921177 | 2 | 20 | 10.0 | 10.0 | ✔ |
| Mercury in Soil/Solid by CVAAS | E510 | 918453 | 2 | 11 | 18.1 | 10.0 | ✔ |
| Metals in Soil/Solid by CRC ICPMS | E440 | 918452 | 2 | 20 | 10.0 | 10.0 | ✔ |
| Moisture Content by Gravimetry | E144 | 919994 | 1 | 20 | 5.0 | 5.0 | ✔ |
| pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received | E108A | 920404 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | E484 | 918455 | 2 | 15 | 13.3 | 10.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 916996 | 1 | 20 | 5.0 | 5.0 | ✔ |
| WAD Cyanide (0.01M NaOH Extraction) | E336A | 920403 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Method Blanks (MB) | | | | | | | |
| BNA (ON 625-511 list) by GC-MS | E655A | 920240 | 1 | 19 | 5.2 | 5.0 | ✔ |
| Boron-Hot Water Extractable by ICPOES | E487 | 918456 | 1 | 11 | 9.0 | 5.0 | ✔ |
| BTEX by Headspace GC-MS | E611A | 915134 | 1 | 19 | 5.2 | 5.0 | ✔ |



Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

| Quality Control Sample Type | Method | QC Lot # | Count | | Frequency (%) | | |
|--|------------|----------|-------|---------|---------------|----------|------------|
| | | | QC | Regular | Actual | Expected | Evaluation |
| Analytical Methods | | | | | | | |
| Method Blanks (MB) - Continued | | | | | | | |
| CCME PHC - F1 by Headspace GC-FID | E581.F1 | 915135 | 2 | 36 | 5.5 | 5.0 | ✔ |
| CCME PHCs - F4G by Gravimetry (Low Level) | E601.F4G-L | 923109 | 1 | 1 | 100.0 | 5.0 | ✔ |
| CCME PHCs - F2-F4 by GC-FID (Low Level) | E601.SG-L | 920710 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | E100-L | 918454 | 1 | 15 | 6.6 | 5.0 | ✔ |
| Hexavalent Chromium (Cr VI) by IC | E532 | 921177 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Mercury in Soil/Solid by CVAAS | E510 | 918453 | 1 | 11 | 9.0 | 5.0 | ✔ |
| Metals in Soil/Solid by CRC ICPMS | E440 | 918452 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Moisture Content by Gravimetry | E144 | 919994 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | E484 | 918455 | 1 | 15 | 6.6 | 5.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 916996 | 1 | 20 | 5.0 | 5.0 | ✔ |
| WAD Cyanide (0.01M NaOH Extraction) | E336A | 920403 | 1 | 20 | 5.0 | 5.0 | ✔ |
| Matrix Spikes (MS) | | | | | | | |
| BNA (ON 625-511 list) by GC-MS | E655A | 920240 | 1 | 19 | 5.2 | 5.0 | ✔ |
| BTEX by Headspace GC-MS | E611A | 915134 | 1 | 19 | 5.2 | 5.0 | ✔ |
| CCME PHC - F1 by Headspace GC-FID | E581.F1 | 915135 | 2 | 36 | 5.5 | 5.0 | ✔ |
| CCME PHCs - F4G by Gravimetry (Low Level) | E601.F4G-L | 923109 | 0 | 1 | 0.0 | 5.0 | ✖ |
| CCME PHCs - F2-F4 by GC-FID (Low Level) | E601.SG-L | 920710 | 1 | 20 | 5.0 | 5.0 | ✔ |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D | 916996 | 1 | 20 | 5.0 | 5.0 | ✔ |
| WAD Cyanide (0.01M NaOH Extraction) | E336A | 920403 | 1 | 20 | 5.0 | 5.0 | ✔ |



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|--|------------|-----------------------------------|--|
| Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level) | E100-L Waterloo - Environmental | Soil/Solid | CSSS Ch. 15 (mod)/APHA 2510 (mod) | Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a soil sample that has been added in a defined ratio of soil to deionized water, then shaken well and allowed to settle. Conductance is measured in the fluid that is observed in the upper layer. |
| pH by Meter (1:2 Soil:0.01M CaCl ₂ Extraction) - As Received | E108A Waterloo - Environmental | Soil/Solid | MOEE E3137A | pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C) and is carried out in accordance with procedures described in the Analytical Protocol (prescriptive method). A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling, or decanting and then analyzed using a pH meter and electrode. |
| Moisture Content by Gravimetry | E144 Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage. |
| WAD Cyanide (0.01M NaOH Extraction) | E336A Waterloo - Environmental | Soil/Solid | APHA 4500-CN I (mod) | Weak Acid Dissociable (WAD) cyanide is determined after extraction by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis. |
| Metals in Soil/Solid by CRC ICPMS | E440 Waterloo - Environmental | Soil/Solid | EPA 6020B (mod) | This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS. |
| Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry) | E484 Waterloo - Environmental | Soil/Solid | SW846 6010C | A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline. |
| Boron-Hot Water Extractable by ICPOES | E487 Waterloo - Environmental | Soil/Solid | HW EXTR, EPA 6010B | A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES. Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). |



| Analytical Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|--|------------|-------------------------------|---|
| Mercury in Soil/Solid by CVAAS | E510 Waterloo - Environmental | Soil/Solid | EPA 200.2/1631 Appendix (mod) | Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl, followed by CVAAS analysis. |
| Hexavalent Chromium (Cr VI) by IC | E532 Waterloo - Environmental | Soil/Solid | APHA 3500-CR C | Instrumental analysis is performed by ion chromatography with UV detection. |
| CCME PHC - F1 by Headspace GC-FID | E581.F1 Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | CCME Fraction 1 (F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. |
| CCME PHCs - F4G by Gravimetry (Low Level) | E601.F4G-L Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | A portion of the silica gel treated sample extract is filtered and dried at 105°C and the mass of the residual gravimetric heavy hydrocarbons (F4G) is determined gravimetrically. |
| CCME PHCs - F2-F4 by GC-FID (Low Level) | E601.SG-L Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | Sample extracts are subjected to in-situ silica gel treatment prior to analysis by GC-FID for CCME hydrocarbon fractions (F2-F4). |
| BTEX by Headspace GC-MS | E611A Waterloo - Environmental | Soil/Solid | EPA 8260D (mod) | Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. |
| VOCs (Eastern Canada List) by Headspace GC-MS | E611D Waterloo - Environmental | Soil/Solid | EPA 8260D (mod) | Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. |
| BNA (ON 625-511 list) by GC-MS | E655A Waterloo - Environmental | Soil/Solid | EPA 8270E (mod) | BNA are analyzed by GC-MS. |
| F1-BTEX | EC580 Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX). |
| Sum F1 to F4 (C6-C50) | EC581 Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions. |
| F2 to F3 minus PAH | EC600 Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | F2-PAH = CCME Fraction 2 (C10-C16) minus Naphthalene F3-PAH = CCME Fraction 3 (C16-C34) minus select Polycyclic Aromatic Hydrocarbons (PAH) as per CCME Soil Tier 1 |



| Preparation Methods | Method / Lab | Matrix | Method Reference | Method Descriptions |
|---|------------------------------------|------------|---|--|
| Leach 1:2 Soil:Water for pH/EC | EP108 Waterloo - Environmental | Soil/Solid | BC WLAP METHOD: PH, ELECTROMETRIC, SOIL | The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. |
| Leach 1:2 Soil : 0.01CaCl ₂ - As Received for pH | EP108A Waterloo - Environmental | Soil/Solid | MOEE E3137A | A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling or decanting and then analyzed using a pH meter and electrode. |
| Cyanide Extraction for CFA (0.01M NaOH) | EP333A Waterloo - Environmental | Soil/Solid | ON MECP E3015 (mod) | Extraction for various cyanide analysis is by rotary extraction of the soil with 0.01M Sodium Hydroxide. |
| Digestion for Metals and Mercury | EP440 Waterloo - Environmental | Soil/Solid | EPA 200.2 (mod) | Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available. |
| Boron-Hot Water Extractable | EP487 Waterloo - Environmental | Soil/Solid | HW EXTR, EPA 6010B | A dried solid sample is extracted with weak calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES. Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011) |
| Preparation of Hexavalent Chromium (Cr VI) for IC | EP532 Waterloo - Environmental | Soil/Solid | EPA 3060A | Field moist samples are digested with a sodium hydroxide/sodium carbonate solution as described in EPA 3060A. |
| VOCs Methanol Extraction for Headspace Analysis | EP581 Waterloo - Environmental | Soil/Solid | EPA 5035A (mod) | VOCs in samples are extracted with methanol. Extracts are then prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. |
| PHCs and PAHs Hexane-Acetone Tumbler Extraction | EP601 Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 (mod) | Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor. |
| BNA DCM-Acetone Shaker Extraction | EP655 Waterloo - Environmental | Soil/Solid | EPA 3570 (mod) | Samples are subsampled and BNA are extracted with 1:1 DCM:acetone using a mechanical shakerr. |

QUALITY CONTROL REPORT

| | |
|--|--|
| <p>Work Order : WT2310622</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone :</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : CLIENT ----</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 6</p> <p>No. of samples analysed : 6</p> | <p>Page : 1 of 21</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 26-Apr-2023 14:45</p> <p>Date Analysis Commenced : 28-Apr-2023</p> <p>Issue Date : 08-May-2023 10:02</p> |
|--|--|

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Laboratory Department</i> |
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Work Order : WT2310622
Client : Gemtec Consulting Engineers and Scientists Limited
Project : 61899.04



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

| | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|--|------------------|--------------------------------|------------|--------|-----------------------------------|----------|-----------------|------------------|----------------------|------------------|-----------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Physical Tests (QC Lot: 918454) | | | | | | | | | | | |
| WT2310435-002 | Anonymous | Conductivity (1:2 leachate) | ---- | E100-L | 5.00 | µS/cm | 0.177 mS/cm | 172 | 2.93% | 20% | ---- |
| Physical Tests (QC Lot: 919994) | | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Moisture | ---- | E144 | 0.25 | % | 20.9 | 20.4 | 2.54% | 20% | ---- |
| Physical Tests (QC Lot: 920404) | | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | pH (1:2 soil:CaCl2-aq) | ---- | E108A | 0.10 | pH units | 7.18 | 7.10 | 1.12% | 5% | ---- |
| Cyanides (QC Lot: 920403) | | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Cyanide, weak acid dissociable | ---- | E336A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| Metals (QC Lot: 918452) | | | | | | | | | | | |
| WT2310510-001 | Anonymous | Antimony | 7440-36-0 | E440 | 0.10 | mg/kg | 0.13 | 0.11 | 0.02 | Diff <2x LOR | ---- |
| | | Arsenic | 7440-38-2 | E440 | 0.10 | mg/kg | 2.97 | 2.90 | 2.45% | 30% | ---- |
| | | Barium | 7440-39-3 | E440 | 0.50 | mg/kg | 57.9 | 56.6 | 2.26% | 40% | ---- |
| | | Beryllium | 7440-41-7 | E440 | 0.10 | mg/kg | 0.42 | 0.38 | 0.04 | Diff <2x LOR | ---- |
| | | Boron | 7440-42-8 | E440 | 5.0 | mg/kg | 7.1 | 6.7 | 0.4 | Diff <2x LOR | ---- |
| | | Cadmium | 7440-43-9 | E440 | 0.020 | mg/kg | 0.101 | 0.102 | 0.002 | Diff <2x LOR | ---- |
| | | Chromium | 7440-47-3 | E440 | 0.50 | mg/kg | 22.3 | 20.3 | 9.31% | 30% | ---- |
| | | Cobalt | 7440-48-4 | E440 | 0.10 | mg/kg | 6.48 | 6.38 | 1.60% | 30% | ---- |
| | | Copper | 7440-50-8 | E440 | 0.50 | mg/kg | 16.5 | 16.2 | 1.85% | 30% | ---- |
| | | Lead | 7439-92-1 | E440 | 0.50 | mg/kg | 12.0 | 13.0 | 8.05% | 40% | ---- |
| | | Molybdenum | 7439-98-7 | E440 | 0.10 | mg/kg | 0.34 | 0.33 | 0.01 | Diff <2x LOR | ---- |
| | | Nickel | 7440-02-0 | E440 | 0.50 | mg/kg | 15.3 | 14.5 | 4.88% | 30% | ---- |
| | | Selenium | 7782-49-2 | E440 | 0.20 | mg/kg | <0.20 | <0.20 | 0 | Diff <2x LOR | ---- |
| | | Silver | 7440-22-4 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Thallium | 7440-28-0 | E440 | 0.050 | mg/kg | 0.098 | 0.101 | 0.003 | Diff <2x LOR | ---- |
| Uranium | 7440-61-1 | E440 | 0.050 | mg/kg | 0.421 | 0.400 | 5.10% | 30% | ---- | | |
| Vanadium | 7440-62-2 | E440 | 0.20 | mg/kg | 28.5 | 27.0 | 5.61% | 30% | ---- | | |
| Zinc | 7440-66-6 | E440 | 2.0 | mg/kg | 40.9 | 42.9 | 4.84% | 30% | ---- | | |
| Metals (QC Lot: 918453) | | | | | | | | | | | |
| WT2310510-001 | Anonymous | Mercury | 7439-97-6 | E510 | 0.0050 | mg/kg | 0.0197 | 0.0202 | 0.0005 | Diff <2x LOR | ---- |
| Metals (QC Lot: 918455) | | | | | | | | | | | |
| WT2310435-002 | Anonymous | Calcium, soluble ion content | 7440-70-2 | E484 | 0.50 | mg/L | 5.46 | 5.30 | 2.97% | 30% | ---- |



| Sub-Matrix: Soil/Solid | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|--|------------------|--------------------------------|-------------|--------|-----------------------------------|--------|-----------------|------------------|----------------------|------------------|-----------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Metals (QC Lot: 918455) - continued | | | | | | | | | | | |
| WT2310435-002 | Anonymous | Magnesium, soluble ion content | 7439-95-4 | E484 | 0.50 | mg/L | 2.57 | 2.50 | 0.07 | Diff <2x LOR | ---- |
| | | Sodium, soluble ion content | 17341-25-2 | E484 | 0.50 | mg/L | 29.6 | 28.4 | 4.14% | 30% | ---- |
| Metals (QC Lot: 918456) | | | | | | | | | | | |
| WT2310510-001 | Anonymous | Boron, hot water soluble | 7440-42-8 | E487 | 0.10 | mg/kg | 0.23 | 0.24 | 0.007 | Diff <2x LOR | ---- |
| Speciated Metals (QC Lot: 921177) | | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Chromium, hexavalent [Cr VI] | 18540-29-9 | E532 | 0.10 | mg/kg | 0.33 | 0.33 | 0.004 | Diff <2x LOR | ---- |
| Volatile Organic Compounds (QC Lot: 915134) | | | | | | | | | | | |
| WT2311058-002 | Anonymous | Benzene | 71-43-2 | E611A | 0.0060 | mg/kg | <0.0060 | <0.0060 | 0 | Diff <2x LOR | ---- |
| | | Ethylbenzene | 100-41-4 | E611A | 0.015 | mg/kg | <0.015 | <0.015 | 0 | Diff <2x LOR | ---- |
| | | Toluene | 108-88-3 | E611A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611A | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- |
| | | Xylene, o- | 95-47-6 | E611A | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- |
| Volatile Organic Compounds (QC Lot: 916996) | | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Acetone | 67-64-1 | E611D | 0.50 | mg/kg | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Benzene | 71-43-2 | E611D | 0.0050 | mg/kg | <0.0050 | <0.0050 | 0 | Diff <2x LOR | ---- |
| | | Bromodichloromethane | 75-27-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Bromoform | 75-25-2 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Bromomethane | 74-83-9 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Chlorobenzene | 108-90-7 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Chloroform | 67-66-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dibromochloromethane | 124-48-1 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dibromoethane, 1,2- | 106-93-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichlorodifluoromethane | 75-71-8 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Dichloromethane | 75-09-2 | E611D | 0.045 | mg/kg | <0.045 | <0.045 | 0 | Diff <2x LOR | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- | | |



| Sub-Matrix: Soil/Solid | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|--|------------------|--------------------------------|-------------|-----------|-----------------------------------|--------|-----------------|------------------|----------------------|------------------|-----------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Volatile Organic Compounds (QC Lot: 916996) - continued | | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- |
| | | Ethylbenzene | 100-41-4 | E611D | 0.015 | mg/kg | <0.015 | <0.015 | 0 | Diff <2x LOR | ---- |
| | | Hexane, n- | 110-54-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 0.50 | mg/kg | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 0.50 | mg/kg | <0.50 | <0.50 | 0 | Diff <2x LOR | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 0.040 | mg/kg | <0.040 | <0.040 | 0 | Diff <2x LOR | ---- |
| | | Styrene | 100-42-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Toluene | 108-88-3 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Trichloroethylene | 79-01-6 | E611D | 0.010 | mg/kg | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611D | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Vinyl chloride | 75-01-4 | E611D | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- |
| Xylene, o- | 95-47-6 | E611D | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- | | |
| Hydrocarbons (QC Lot: 915135) | | | | | | | | | | | |
| WT2311058-002 | Anonymous | F1 (C6-C10) | ---- | E581.F1 | 5.0 | mg/kg | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| Hydrocarbons (QC Lot: 916997) | | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | F1 (C6-C10) | ---- | E581.F1 | 5.0 | mg/kg | <5.0 | <5.0 | 0 | Diff <2x LOR | ---- |
| Hydrocarbons (QC Lot: 920710) | | | | | | | | | | | |
| WT2310694-001 | Anonymous | F2 (C10-C16) | ---- | E601.SG-L | 10 | mg/kg | <10 | <10 | 0 | Diff <2x LOR | ---- |
| | | F3 (C16-C34) | ---- | E601.SG-L | 50 | mg/kg | <50 | <50 | 0 | Diff <2x LOR | ---- |
| | | F4 (C34-C50) | ---- | E601.SG-L | 50 | mg/kg | <50 | <50 | 0 | Diff <2x LOR | ---- |
| Polycyclic Aromatic Hydrocarbons (QC Lot: 920240) | | | | | | | | | | | |
| WT2310376-001 | Anonymous | Acenaphthene | 83-32-9 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Acenaphthylene | 208-96-8 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Anthracene | 120-12-7 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Benz(a)anthracene | 56-55-3 | E655A | 0.050 | mg/kg | 0.075 | 0.081 | 0.006 | Diff <2x LOR | ---- |
| | | Benzo(a)pyrene | 50-32-8 | E655A | 0.050 | mg/kg | 0.052 | 0.057 | 0.006 | Diff <2x LOR | ---- |
| | | Benzo(b+j)fluoranthene | n/a | E655A | 0.050 | mg/kg | 0.051 | 0.061 | 0.010 | Diff <2x LOR | ---- |



| Sub-Matrix: Soil/Solid | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|--|------------------|------------------------------------|------------|--------|-----------------------------------|-------|-----------------|------------------|----------------------|------------------|-----------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Polycyclic Aromatic Hydrocarbons (QC Lot: 920240) - continued | | | | | | | | | | | |
| WT2310376-001 | Anonymous | Benzo(g,h,i)perylene | 191-24-2 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Benzo(k)fluoranthene | 207-08-9 | E655A | 0.050 | mg/kg | 0.050 | <0.050 | 0.0002 | Diff <2x LOR | ---- |
| | | Chrysene | 218-01-9 | E655A | 0.050 | mg/kg | 0.091 | 0.083 | 0.009 | Diff <2x LOR | ---- |
| | | Dibenz(a,h)anthracene | 53-70-3 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Fluoranthene | 206-44-0 | E655A | 0.050 | mg/kg | 0.160 | 0.158 | 0.001 | Diff <2x LOR | ---- |
| | | Fluorene | 86-73-7 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Indeno(1,2,3-c,d)pyrene | 193-39-5 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | Methylnaphthalene, 1- | 90-12-0 | E655A | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- |
| | | Methylnaphthalene, 2- | 91-57-6 | E655A | 0.030 | mg/kg | <0.030 | <0.030 | 0 | Diff <2x LOR | ---- |
| | | Naphthalene | 91-20-3 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| Phenanthrene | 85-01-8 | E655A | 0.050 | mg/kg | 0.086 | 0.078 | 0.009 | Diff <2x LOR | ---- | | |
| Pyrene | 129-00-0 | E655A | 0.050 | mg/kg | 0.158 | 0.153 | 0.005 | Diff <2x LOR | ---- | | |
| Phthalate Esters (QC Lot: 920240) | | | | | | | | | | | |
| WT2310376-001 | Anonymous | bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Diethyl phthalate | 84-66-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Dimethyl phthalate | 131-11-3 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| Semi-Volatile Organics (QC Lot: 920240) | | | | | | | | | | | |
| WT2310376-001 | Anonymous | Biphenyl | 92-52-4 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| | | bis(2-Chloro-1-methylethyl) ether | 108-60-1 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | bis(2-Chloroethyl) ether | 111-44-4 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Chloroaniline, 4- | 106-47-8 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Dichlorobenzidine, 3,3'- | 91-94-1 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Dinitrotoluene, 2,4- | 121-14-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Dinitrotoluene, 2,6- | 606-20-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Trichlorobenzene, 1,2,4- | 120-82-1 | E655A | 0.050 | mg/kg | <0.050 | <0.050 | 0 | Diff <2x LOR | ---- |
| Chlorinated Phenolics (QC Lot: 920240) | | | | | | | | | | | |
| WT2310376-001 | Anonymous | Chlorophenol, 2- | 95-57-8 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Dichlorophenol, 2,4- | 120-83-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Pentachlorophenol [PCP] | 87-86-5 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Trichlorophenol, 2,4,5- | 95-95-4 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Trichlorophenol, 2,4,6- | 88-06-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| Non-Chlorinated Phenolics (QC Lot: 920240) | | | | | | | | | | | |
| WT2310376-001 | Anonymous | Dimethylphenol, 2,4- | 105-67-9 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Dinitrophenol, 2,4- | 51-28-5 | E655A | 1.0 | mg/kg | <1.0 | <1.0 | 0 | Diff <2x LOR | ---- |

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 Work Order : WT2310622
 Client : Gemtec Consulting Engineers and Scientists Limited
 Project : 61899.04



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

| <i>Laboratory sample ID</i> | <i>Client sample ID</i> | <i>Analyte</i> | <i>CAS Number</i> | <i>Method</i> | <i>LOR</i> | <i>Unit</i> | <i>Original Result</i> | <i>Duplicate Result</i> | <i>RPD(%) or Difference</i> | <i>Duplicate Limits</i> | <i>Qualifier</i> |
|---|-------------------------|----------------|-------------------|---------------|------------|-------------|------------------------|-------------------------|-----------------------------|-------------------------|------------------|
| Non-Chlorinated Phenolics (QC Lot: 920240) - continued | | | | | | | | | | | |
| WT2310376-001 | Anonymous | Phenol | 108-95-2 | E655A | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---------------------------------------|------------|--------|-------|-------|---------|-----------|
| Physical Tests (QCLot: 918454) | | | | | | |
| Conductivity (1:2 leachate) | --- | E100-L | 5 | µS/cm | <5.00 | --- |
| Physical Tests (QCLot: 919994) | | | | | | |
| Moisture | --- | E144 | 0.25 | % | <0.25 | --- |
| Cyanides (QCLot: 920403) | | | | | | |
| Cyanide, weak acid dissociable | --- | E336A | 0.05 | mg/kg | <0.050 | --- |
| Metals (QCLot: 918452) | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Arsenic | 7440-38-2 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Barium | 7440-39-3 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Beryllium | 7440-41-7 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Boron | 7440-42-8 | E440 | 5 | mg/kg | <5.0 | --- |
| Cadmium | 7440-43-9 | E440 | 0.02 | mg/kg | <0.020 | --- |
| Chromium | 7440-47-3 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Cobalt | 7440-48-4 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Copper | 7440-50-8 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Lead | 7439-92-1 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Molybdenum | 7439-98-7 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Nickel | 7440-02-0 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Selenium | 7782-49-2 | E440 | 0.2 | mg/kg | <0.20 | --- |
| Silver | 7440-22-4 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Thallium | 7440-28-0 | E440 | 0.05 | mg/kg | <0.050 | --- |
| Uranium | 7440-61-1 | E440 | 0.05 | mg/kg | <0.050 | --- |
| Vanadium | 7440-62-2 | E440 | 0.2 | mg/kg | <0.20 | --- |
| Zinc | 7440-66-6 | E440 | 2 | mg/kg | <2.0 | --- |
| Metals (QCLot: 918453) | | | | | | |
| Mercury | 7439-97-6 | E510 | 0.005 | mg/kg | <0.0050 | --- |
| Metals (QCLot: 918455) | | | | | | |
| Calcium, soluble ion content | 7440-70-2 | E484 | 0.5 | mg/L | <0.50 | --- |
| Magnesium, soluble ion content | 7439-95-4 | E484 | 0.5 | mg/L | <0.50 | --- |
| Sodium, soluble ion content | 17341-25-2 | E484 | 0.5 | mg/L | <0.50 | --- |
| Metals (QCLot: 918456) | | | | | | |
| Boron, hot water soluble | 7440-42-8 | E487 | 0.1 | mg/kg | <0.10 | --- |



Sub-Matrix: **Soil/Solid**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|-------------|--------|-------|-------|---------|-----------|
| Speciated Metals (QCLot: 921177) | | | | | | |
| Chromium, hexavalent [Cr VI] | 18540-29-9 | E532 | 0.1 | mg/kg | <0.10 | ---- |
| Volatile Organic Compounds (QCLot: 915134) | | | | | | |
| Benzene | 71-43-2 | E611A | 0.005 | mg/kg | <0.0050 | ---- |
| Ethylbenzene | 100-41-4 | E611A | 0.015 | mg/kg | <0.015 | ---- |
| Toluene | 108-88-3 | E611A | 0.05 | mg/kg | <0.050 | ---- |
| Xylene, m+p- | 179601-23-1 | E611A | 0.03 | mg/kg | <0.030 | ---- |
| Xylene, o- | 95-47-6 | E611A | 0.03 | mg/kg | <0.030 | ---- |
| Volatile Organic Compounds (QCLot: 916996) | | | | | | |
| Acetone | 67-64-1 | E611D | 0.5 | mg/kg | <0.50 | ---- |
| Benzene | 71-43-2 | E611D | 0.005 | mg/kg | <0.0050 | ---- |
| Bromodichloromethane | 75-27-4 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Bromoform | 75-25-2 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Bromomethane | 74-83-9 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Carbon tetrachloride | 56-23-5 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Chlorobenzene | 108-90-7 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Chloroform | 67-66-3 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dibromochloromethane | 124-48-1 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dibromoethane, 1,2- | 106-93-4 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichlorodifluoromethane | 75-71-8 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichloromethane | 75-09-2 | E611D | 0.045 | mg/kg | <0.045 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 0.03 | mg/kg | <0.030 | ---- |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 0.03 | mg/kg | <0.030 | ---- |
| Ethylbenzene | 100-41-4 | E611D | 0.015 | mg/kg | <0.015 | ---- |
| Hexane, n- | 110-54-3 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 0.5 | mg/kg | <0.50 | ---- |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 0.5 | mg/kg | <0.50 | ---- |



Sub-Matrix: **Soil/Solid**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|-------------|------------|------|-------|--------|-----------|
| Volatile Organic Compounds (QCLot: 916996) - continued | | | | | | |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 0.04 | mg/kg | <0.040 | ---- |
| Styrene | 100-42-5 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Tetrachloroethylene | 127-18-4 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Toluene | 108-88-3 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Trichloroethane, 1,1,1,- | 71-55-6 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Trichloroethane, 1,1,2,- | 79-00-5 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Trichloroethylene | 79-01-6 | E611D | 0.01 | mg/kg | <0.010 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611D | 0.05 | mg/kg | <0.050 | ---- |
| Vinyl chloride | 75-01-4 | E611D | 0.02 | mg/kg | <0.020 | ---- |
| Xylene, m+p- | 179601-23-1 | E611D | 0.03 | mg/kg | <0.030 | ---- |
| Xylene, o- | 95-47-6 | E611D | 0.03 | mg/kg | <0.030 | ---- |
| Hydrocarbons (QCLot: 915135) | | | | | | |
| F1 (C6-C10) | ---- | E581.F1 | 5 | mg/kg | <5.0 | ---- |
| Hydrocarbons (QCLot: 916997) | | | | | | |
| F1 (C6-C10) | ---- | E581.F1 | 5 | mg/kg | <5.0 | ---- |
| Hydrocarbons (QCLot: 920710) | | | | | | |
| F2 (C10-C16) | ---- | E601.SG-L | 10 | mg/kg | <10 | ---- |
| F3 (C16-C34) | ---- | E601.SG-L | 50 | mg/kg | <50 | ---- |
| F4 (C34-C50) | ---- | E601.SG-L | 50 | mg/kg | <50 | ---- |
| Hydrocarbons (QCLot: 923109) | | | | | | |
| F4G-sg | ---- | E601.F4G-L | 250 | mg/kg | <250 | ---- |
| Polycyclic Aromatic Hydrocarbons (QCLot: 920240) | | | | | | |
| Acenaphthene | 83-32-9 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Acenaphthylene | 208-96-8 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Anthracene | 120-12-7 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Benz(a)anthracene | 56-55-3 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Benzo(a)pyrene | 50-32-8 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Benzo(b+j)fluoranthene | n/a | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Chrysene | 218-01-9 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Fluoranthene | 206-44-0 | E655A | 0.05 | mg/kg | <0.050 | ---- |



Sub-Matrix: **Soil/Solid**

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|---|------------|--------|------|-------|--------|-----------|
| Polycyclic Aromatic Hydrocarbons (QCLot: 920240) - continued | | | | | | |
| Fluorene | 86-73-7 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E655A | 0.03 | mg/kg | <0.030 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E655A | 0.03 | mg/kg | <0.030 | ---- |
| Naphthalene | 91-20-3 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Phenanthrene | 85-01-8 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Pyrene | 129-00-0 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Phthalate Esters (QCLot: 920240) | | | | | | |
| bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Diethyl phthalate | 84-66-2 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Dimethyl phthalate | 131-11-3 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Semi-Volatile Organics (QCLot: 920240) | | | | | | |
| Biphenyl | 92-52-4 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| bis(2-Chloro-1-methylethyl) ether | 108-60-1 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| bis(2-Chloroethyl) ether | 111-44-4 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Chloroaniline, 4- | 106-47-8 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Dichlorobenzidine, 3,3'- | 91-94-1 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Dinitrotoluene, 2,4- | 121-14-2 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Dinitrotoluene, 2,6- | 606-20-2 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Trichlorobenzene, 1,2,4- | 120-82-1 | E655A | 0.05 | mg/kg | <0.050 | ---- |
| Chlorinated Phenolics (QCLot: 920240) | | | | | | |
| Chlorophenol, 2- | 95-57-8 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Dichlorophenol, 2,4- | 120-83-2 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Pentachlorophenol [PCP] | 87-86-5 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Trichlorophenol, 2,4,5- | 95-95-4 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Trichlorophenol, 2,4,6- | 88-06-2 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Non-Chlorinated Phenolics (QCLot: 920240) | | | | | | |
| Dimethylphenol, 2,4- | 105-67-9 | E655A | 0.1 | mg/kg | <0.10 | ---- |
| Dinitrophenol, 2,4- | 51-28-5 | E655A | 1 | mg/kg | <1.0 | ---- |
| Phenol | 108-95-2 | E655A | 0.1 | mg/kg | <0.10 | ---- |



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---------------------------------------|------------|--------|-------|----------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Physical Tests (QCLot: 918454) | | | | | | | | | |
| Conductivity (1:2 leachate) | ---- | E100-L | 5 | µS/cm | 1409 µS/cm | 98.6 | 90.0 | 110 | ---- |
| Physical Tests (QCLot: 919994) | | | | | | | | | |
| Moisture | ---- | E144 | 0.25 | % | 50 % | 100 | 90.0 | 110 | ---- |
| Physical Tests (QCLot: 920404) | | | | | | | | | |
| pH (1:2 soil:CaCl ₂ -aq) | ---- | E108A | ---- | pH units | 7 pH units | 101 | 98.0 | 102 | ---- |
| Cyanides (QCLot: 920403) | | | | | | | | | |
| Cyanide, weak acid dissociable | ---- | E336A | 0.05 | mg/kg | 2.5 mg/kg | 92.5 | 80.0 | 120 | ---- |
| Metals (QCLot: 918452) | | | | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.1 | mg/kg | 100 mg/kg | 103 | 80.0 | 120 | ---- |
| Arsenic | 7440-38-2 | E440 | 0.1 | mg/kg | 100 mg/kg | 105 | 80.0 | 120 | ---- |
| Barium | 7440-39-3 | E440 | 0.5 | mg/kg | 25 mg/kg | 102 | 80.0 | 120 | ---- |
| Beryllium | 7440-41-7 | E440 | 0.1 | mg/kg | 10 mg/kg | 97.5 | 80.0 | 120 | ---- |
| Boron | 7440-42-8 | E440 | 5 | mg/kg | 100 mg/kg | 98.0 | 80.0 | 120 | ---- |
| Cadmium | 7440-43-9 | E440 | 0.02 | mg/kg | 10 mg/kg | 102 | 80.0 | 120 | ---- |
| Chromium | 7440-47-3 | E440 | 0.5 | mg/kg | 25 mg/kg | 102 | 80.0 | 120 | ---- |
| Cobalt | 7440-48-4 | E440 | 0.1 | mg/kg | 25 mg/kg | 101 | 80.0 | 120 | ---- |
| Copper | 7440-50-8 | E440 | 0.5 | mg/kg | 25 mg/kg | 99.5 | 80.0 | 120 | ---- |
| Lead | 7439-92-1 | E440 | 0.5 | mg/kg | 50 mg/kg | 102 | 80.0 | 120 | ---- |
| Molybdenum | 7439-98-7 | E440 | 0.1 | mg/kg | 25 mg/kg | 97.6 | 80.0 | 120 | ---- |
| Nickel | 7440-02-0 | E440 | 0.5 | mg/kg | 50 mg/kg | 100 | 80.0 | 120 | ---- |
| Selenium | 7782-49-2 | E440 | 0.2 | mg/kg | 100 mg/kg | 102 | 80.0 | 120 | ---- |
| Silver | 7440-22-4 | E440 | 0.1 | mg/kg | 10 mg/kg | 91.7 | 80.0 | 120 | ---- |
| Thallium | 7440-28-0 | E440 | 0.05 | mg/kg | 100 mg/kg | 101 | 80.0 | 120 | ---- |
| Uranium | 7440-61-1 | E440 | 0.05 | mg/kg | 0.5 mg/kg | 97.9 | 80.0 | 120 | ---- |
| Vanadium | 7440-62-2 | E440 | 0.2 | mg/kg | 50 mg/kg | 104 | 80.0 | 120 | ---- |
| Zinc | 7440-66-6 | E440 | 2 | mg/kg | 50 mg/kg | 97.1 | 80.0 | 120 | ---- |
| Metals (QCLot: 918453) | | | | | | | | | |
| Mercury | 7439-97-6 | E510 | 0.005 | mg/kg | 0.1 mg/kg | 104 | 80.0 | 120 | ---- |
| Metals (QCLot: 918455) | | | | | | | | | |
| Calcium, soluble ion content | 7440-70-2 | E484 | 0.5 | mg/L | 300 mg/L | 105 | 80.0 | 120 | ---- |
| Magnesium, soluble ion content | 7439-95-4 | E484 | 0.5 | mg/L | 50 mg/L | 100 | 80.0 | 120 | ---- |



Sub-Matrix: Soil/Solid

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|-------------|--------|-------|-------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Metals (QCLot: 918455) - continued | | | | | | | | | |
| Sodium, soluble ion content | 17341-25-2 | E484 | 0.5 | mg/L | 50 mg/L | 100 | 80.0 | 120 | ---- |
| Metals (QCLot: 918456) | | | | | | | | | |
| Boron, hot water soluble | 7440-42-8 | E487 | 0.1 | mg/kg | 1.33333 mg/kg | 98.0 | 70.0 | 130 | ---- |
| Speciated Metals (QCLot: 921177) | | | | | | | | | |
| Chromium, hexavalent [Cr VI] | 18540-29-9 | E532 | 0.1 | mg/kg | 0.8 mg/kg | 89.9 | 80.0 | 120 | ---- |
| Volatile Organic Compounds (QCLot: 915134) | | | | | | | | | |
| Benzene | 71-43-2 | E611A | 0.005 | mg/kg | 3.475 mg/kg | 102 | 70.0 | 130 | ---- |
| Ethylbenzene | 100-41-4 | E611A | 0.015 | mg/kg | 3.475 mg/kg | 81.1 | 70.0 | 130 | ---- |
| Toluene | 108-88-3 | E611A | 0.05 | mg/kg | 3.475 mg/kg | 86.1 | 70.0 | 130 | ---- |
| Xylene, m+p- | 179601-23-1 | E611A | 0.03 | mg/kg | 6.95 mg/kg | 90.5 | 70.0 | 130 | ---- |
| Xylene, o- | 95-47-6 | E611A | 0.03 | mg/kg | 3.475 mg/kg | 89.0 | 70.0 | 130 | ---- |
| Volatile Organic Compounds (QCLot: 916996) | | | | | | | | | |
| Acetone | 67-64-1 | E611D | 0.5 | mg/kg | 3.475 mg/kg | 135 | 60.0 | 140 | ---- |
| Benzene | 71-43-2 | E611D | 0.005 | mg/kg | 3.475 mg/kg | 107 | 70.0 | 130 | ---- |
| Bromodichloromethane | 75-27-4 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 110 | 50.0 | 140 | ---- |
| Bromoform | 75-25-2 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 110 | 70.0 | 130 | ---- |
| Bromomethane | 74-83-9 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 106 | 50.0 | 140 | ---- |
| Carbon tetrachloride | 56-23-5 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 106 | 70.0 | 130 | ---- |
| Chlorobenzene | 108-90-7 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 107 | 70.0 | 130 | ---- |
| Chloroform | 67-66-3 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 109 | 70.0 | 130 | ---- |
| Dibromochloromethane | 124-48-1 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 107 | 60.0 | 130 | ---- |
| Dibromoethane, 1,2- | 106-93-4 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 113 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,2- | 95-50-1 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 104 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,3- | 541-73-1 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 102 | 70.0 | 130 | ---- |
| Dichlorobenzene, 1,4- | 106-46-7 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 103 | 70.0 | 130 | ---- |
| Dichlorodifluoromethane | 75-71-8 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 54.1 | 50.0 | 140 | ---- |
| Dichloroethane, 1,1- | 75-34-3 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 108 | 60.0 | 130 | ---- |
| Dichloroethane, 1,2- | 107-06-2 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 115 | 60.0 | 130 | ---- |
| Dichloroethylene, 1,1- | 75-35-4 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 95.1 | 60.0 | 130 | ---- |
| Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 109 | 70.0 | 130 | ---- |
| Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 105 | 60.0 | 130 | ---- |
| Dichloromethane | 75-09-2 | E611D | 0.045 | mg/kg | 3.475 mg/kg | 110 | 70.0 | 130 | ---- |
| Dichloropropane, 1,2- | 78-87-5 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 110 | 70.0 | 130 | ---- |
| Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 0.03 | mg/kg | 3.475 mg/kg | 114 | 70.0 | 130 | ---- |



| Sub-Matrix: Soil/Solid | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|-------------|------------|-------|-------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | Qualifier |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | |
| Volatile Organic Compounds (QCLot: 916996) - continued | | | | | | | | | |
| Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 0.03 | mg/kg | 3.475 mg/kg | 110 | 70.0 | 130 | ---- |
| Ethylbenzene | 100-41-4 | E611D | 0.015 | mg/kg | 3.475 mg/kg | 101 | 70.0 | 130 | ---- |
| Hexane, n- | 110-54-3 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 92.6 | 70.0 | 130 | ---- |
| Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 0.5 | mg/kg | 3.475 mg/kg | 134 | 60.0 | 140 | ---- |
| Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 0.5 | mg/kg | 3.475 mg/kg | 120 | 60.0 | 140 | ---- |
| Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 0.04 | mg/kg | 3.475 mg/kg | 109 | 70.0 | 130 | ---- |
| Styrene | 100-42-5 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 106 | 70.0 | 130 | ---- |
| Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 108 | 60.0 | 130 | ---- |
| Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 110 | 60.0 | 130 | ---- |
| Tetrachloroethylene | 127-18-4 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 102 | 60.0 | 130 | ---- |
| Toluene | 108-88-3 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 101 | 70.0 | 130 | ---- |
| Trichloroethane, 1,1,1- | 71-55-6 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 108 | 60.0 | 130 | ---- |
| Trichloroethane, 1,1,2- | 79-00-5 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 111 | 60.0 | 130 | ---- |
| Trichloroethylene | 79-01-6 | E611D | 0.01 | mg/kg | 3.475 mg/kg | 108 | 60.0 | 130 | ---- |
| Trichlorofluoromethane | 75-69-4 | E611D | 0.05 | mg/kg | 3.475 mg/kg | 96.3 | 50.0 | 140 | ---- |
| Vinyl chloride | 75-01-4 | E611D | 0.02 | mg/kg | 3.475 mg/kg | 87.7 | 60.0 | 140 | ---- |
| Xylene, m+p- | 179601-23-1 | E611D | 0.03 | mg/kg | 6.95 mg/kg | 102 | 70.0 | 130 | ---- |
| Xylene, o- | 95-47-6 | E611D | 0.03 | mg/kg | 3.475 mg/kg | 102 | 70.0 | 130 | ---- |
| Hydrocarbons (QCLot: 915135) | | | | | | | | | |
| F1 (C6-C10) | --- | E581.F1 | 5 | mg/kg | 69.1875 mg/kg | 115 | 80.0 | 120 | ---- |
| Hydrocarbons (QCLot: 916997) | | | | | | | | | |
| F1 (C6-C10) | --- | E581.F1 | 5 | mg/kg | 69.1875 mg/kg | 116 | 80.0 | 120 | ---- |
| Hydrocarbons (QCLot: 920710) | | | | | | | | | |
| F2 (C10-C16) | --- | E601.SG-L | 10 | mg/kg | 821.775 mg/kg | 106 | 70.0 | 130 | ---- |
| F3 (C16-C34) | --- | E601.SG-L | 50 | mg/kg | 1151.486 mg/kg | 105 | 70.0 | 130 | ---- |
| F4 (C34-C50) | --- | E601.SG-L | 50 | mg/kg | 719.6893 mg/kg | 103 | 70.0 | 130 | ---- |
| Hydrocarbons (QCLot: 923109) | | | | | | | | | |
| F4G-sg | --- | E601.F4G-L | 250 | mg/kg | 1298.6 mg/kg | 89.8 | 70.0 | 130 | ---- |
| Polycyclic Aromatic Hydrocarbons (QCLot: 920240) | | | | | | | | | |
| Acenaphthene | 83-32-9 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 92.8 | 50.0 | 140 | ---- |
| Acenaphthylene | 208-96-8 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 86.1 | 50.0 | 140 | ---- |
| Anthracene | 120-12-7 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 91.7 | 50.0 | 140 | ---- |
| Benz(a)anthracene | 56-55-3 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 90.2 | 50.0 | 140 | ---- |
| Benzo(a)pyrene | 50-32-8 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 94.1 | 50.0 | 140 | ---- |



Sub-Matrix: Soil/Solid

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|---|------------|--------|------|-------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Polycyclic Aromatic Hydrocarbons (QCLot: 920240) - continued | | | | | | | | | |
| Benzo(b+h)fluoranthene | n/a | E655A | 0.05 | mg/kg | 0.8 mg/kg | 97.4 | 50.0 | 140 | ---- |
| Benzo(g,h,i)perylene | 191-24-2 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 77.2 | 50.0 | 140 | ---- |
| Benzo(k)fluoranthene | 207-08-9 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 103 | 50.0 | 140 | ---- |
| Chrysene | 218-01-9 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 98.6 | 50.0 | 140 | ---- |
| Dibenz(a,h)anthracene | 53-70-3 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 76.2 | 50.0 | 140 | ---- |
| Fluoranthene | 206-44-0 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 78.3 | 50.0 | 140 | ---- |
| Fluorene | 86-73-7 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 92.4 | 50.0 | 140 | ---- |
| Indeno(1,2,3-c,d)pyrene | 193-39-5 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 70.2 | 50.0 | 140 | ---- |
| Methylnaphthalene, 1- | 90-12-0 | E655A | 0.03 | mg/kg | 0.8 mg/kg | 90.9 | 50.0 | 140 | ---- |
| Methylnaphthalene, 2- | 91-57-6 | E655A | 0.03 | mg/kg | 0.8 mg/kg | 91.2 | 50.0 | 140 | ---- |
| Naphthalene | 91-20-3 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 92.5 | 50.0 | 140 | ---- |
| Phenanthrene | 85-01-8 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 88.9 | 50.0 | 140 | ---- |
| Pyrene | 129-00-0 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 78.6 | 50.0 | 140 | ---- |
| Phthalate Esters (QCLot: 920240) | | | | | | | | | |
| bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | E655A | 0.1 | mg/kg | 3.2 mg/kg | 74.4 | 50.0 | 140 | ---- |
| Diethyl phthalate | 84-66-2 | E655A | 0.1 | mg/kg | 3.2 mg/kg | 90.7 | 50.0 | 140 | ---- |
| Dimethyl phthalate | 131-11-3 | E655A | 0.1 | mg/kg | 3.2 mg/kg | 87.5 | 50.0 | 140 | ---- |
| Semi-Volatile Organics (QCLot: 920240) | | | | | | | | | |
| Biphenyl | 92-52-4 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 91.7 | 50.0 | 140 | ---- |
| bis(2-Chloro-1-methylethyl) ether | 108-60-1 | E655A | 0.1 | mg/kg | 0.8 mg/kg | 87.0 | 50.0 | 140 | ---- |
| bis(2-Chloroethyl) ether | 111-44-4 | E655A | 0.1 | mg/kg | 0.8 mg/kg | 92.1 | 50.0 | 140 | ---- |
| Chloroaniline, 4- | 106-47-8 | E655A | 0.1 | mg/kg | 0.8 mg/kg | 87.8 | 50.0 | 140 | ---- |
| Dichlorobenzidine, 3,3'- | 91-94-1 | E655A | 0.1 | mg/kg | 0.8 mg/kg | 97.0 | 50.0 | 140 | ---- |
| Dinitrotoluene, 2,4- | 121-14-2 | E655A | 0.1 | mg/kg | 0.8 mg/kg | 93.3 | 50.0 | 140 | ---- |
| Dinitrotoluene, 2,6- | 606-20-2 | E655A | 0.1 | mg/kg | 0.8 mg/kg | 85.4 | 50.0 | 140 | ---- |
| Trichlorobenzene, 1,2,4- | 120-82-1 | E655A | 0.05 | mg/kg | 0.8 mg/kg | 94.9 | 50.0 | 140 | ---- |
| Chlorinated Phenolics (QCLot: 920240) | | | | | | | | | |
| Chlorophenol, 2- | 95-57-8 | E655A | 0.1 | mg/kg | 2.4 mg/kg | 96.5 | 50.0 | 140 | ---- |
| Dichlorophenol, 2,4- | 120-83-2 | E655A | 0.1 | mg/kg | 2.4 mg/kg | 92.6 | 50.0 | 140 | ---- |
| Pentachlorophenol [PCP] | 87-86-5 | E655A | 0.1 | mg/kg | 2.4 mg/kg | 88.0 | 50.0 | 140 | ---- |
| Trichlorophenol, 2,4,5- | 95-95-4 | E655A | 0.1 | mg/kg | 2.4 mg/kg | 97.1 | 50.0 | 140 | ---- |
| Trichlorophenol, 2,4,6- | 88-06-2 | E655A | 0.1 | mg/kg | 2.4 mg/kg | 87.0 | 50.0 | 140 | ---- |
| Non-Chlorinated Phenolics (QCLot: 920240) | | | | | | | | | |

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 Work Order : WT2310622
 Client : Gemtec Consulting Engineers and Scientists Limited
 Project : 61899.04



Sub-Matrix: **Soil/Solid**

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|--|------------|--------|-----|-------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Non-Chlorinated Phenolics (QCLot: 920240) - continued | | | | | | | | | |
| Dimethylphenol, 2,4- | 105-67-9 | E655A | 0.1 | mg/kg | 2.4 mg/kg | 94.9 | 50.0 | 140 | ---- |
| Dinitrophenol, 2,4- | 51-28-5 | E655A | 1 | mg/kg | 2.4 mg/kg | 70.0 | 50.0 | 140 | ---- |
| Phenol | 108-95-2 | E655A | 0.1 | mg/kg | 2.4 mg/kg | 109 | 50.0 | 140 | ---- |



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Soil/Solid

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|------------------|--------------------------------|-------------|--------|--------------------------|-------------|--------------|---------------------|------|-----------|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| Cyanides (QCLot: 920403) | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Cyanide, weak acid dissociable | ---- | E336A | 1.09 mg/kg | 2.5 mg/kg | 88.1 | 70.0 | 130 | ---- |
| Volatile Organic Compounds (QCLot: 915134) | | | | | | | | | | |
| WT2311058-002 | Anonymous | Benzene | 71-43-2 | E611A | 3.95 mg/kg | 3.125 mg/kg | 106 | 60.0 | 140 | ---- |
| | | Ethylbenzene | 100-41-4 | E611A | 3.09 mg/kg | 3.125 mg/kg | 82.9 | 60.0 | 140 | ---- |
| | | Toluene | 108-88-3 | E611A | 3.24 mg/kg | 3.125 mg/kg | 87.0 | 60.0 | 140 | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611A | 6.91 mg/kg | 6.25 mg/kg | 92.6 | 60.0 | 140 | ---- |
| | | Xylene, o- | 95-47-6 | E611A | 3.40 mg/kg | 3.125 mg/kg | 91.2 | 60.0 | 140 | ---- |
| Volatile Organic Compounds (QCLot: 916996) | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Acetone | 67-64-1 | E611D | 3.52 mg/kg | 3.125 mg/kg | 126 | 50.0 | 140 | ---- |
| | | Benzene | 71-43-2 | E611D | 2.79 mg/kg | 3.125 mg/kg | 100 | 50.0 | 140 | ---- |
| | | Bromodichloromethane | 75-27-4 | E611D | 2.88 mg/kg | 3.125 mg/kg | 103 | 50.0 | 140 | ---- |
| | | Bromoform | 75-25-2 | E611D | 2.93 mg/kg | 3.125 mg/kg | 105 | 50.0 | 140 | ---- |
| | | Bromomethane | 74-83-9 | E611D | 3.15 mg/kg | 3.125 mg/kg | 113 | 50.0 | 140 | ---- |
| | | Carbon tetrachloride | 56-23-5 | E611D | 2.76 mg/kg | 3.125 mg/kg | 99.4 | 50.0 | 140 | ---- |
| | | Chlorobenzene | 108-90-7 | E611D | 2.77 mg/kg | 3.125 mg/kg | 99.5 | 50.0 | 140 | ---- |
| | | Chloroform | 67-66-3 | E611D | 2.85 mg/kg | 3.125 mg/kg | 102 | 50.0 | 140 | ---- |
| | | Dibromochloromethane | 124-48-1 | E611D | 2.84 mg/kg | 3.125 mg/kg | 102 | 50.0 | 140 | ---- |
| | | Dibromoethane, 1,2- | 106-93-4 | E611D | 3.00 mg/kg | 3.125 mg/kg | 108 | 50.0 | 140 | ---- |
| | | Dichlorobenzene, 1,2- | 95-50-1 | E611D | 2.72 mg/kg | 3.125 mg/kg | 97.8 | 50.0 | 140 | ---- |
| | | Dichlorobenzene, 1,3- | 541-73-1 | E611D | 2.67 mg/kg | 3.125 mg/kg | 95.9 | 50.0 | 140 | ---- |
| | | Dichlorobenzene, 1,4- | 106-46-7 | E611D | 2.67 mg/kg | 3.125 mg/kg | 96.1 | 50.0 | 140 | ---- |
| | | Dichlorodifluoromethane | 75-71-8 | E611D | 2.92 mg/kg | 3.125 mg/kg | 105 | 50.0 | 140 | ---- |
| | | Dichloroethane, 1,1- | 75-34-3 | E611D | 2.94 mg/kg | 3.125 mg/kg | 106 | 50.0 | 140 | ---- |
| | | Dichloroethane, 1,2- | 107-06-2 | E611D | 3.07 mg/kg | 3.125 mg/kg | 110 | 50.0 | 140 | ---- |
| | | Dichloroethylene, 1,1- | 75-35-4 | E611D | 2.59 mg/kg | 3.125 mg/kg | 93.1 | 50.0 | 140 | ---- |
| | | Dichloroethylene, cis-1,2- | 156-59-2 | E611D | 2.84 mg/kg | 3.125 mg/kg | 102 | 50.0 | 140 | ---- |
| | | Dichloroethylene, trans-1,2- | 156-60-5 | E611D | 2.74 mg/kg | 3.125 mg/kg | 98.6 | 50.0 | 140 | ---- |
| | | Dichloromethane | 75-09-2 | E611D | 2.94 mg/kg | 3.125 mg/kg | 106 | 50.0 | 140 | ---- |
| | | Dichloropropane, 1,2- | 78-87-5 | E611D | 2.88 mg/kg | 3.125 mg/kg | 104 | 50.0 | 140 | ---- |
| | | Dichloropropylene, cis-1,3- | 10061-01-5 | E611D | 3.01 mg/kg | 3.125 mg/kg | 108 | 50.0 | 140 | ---- |
| | | Dichloropropylene, trans-1,3- | 10061-02-6 | E611D | 2.94 mg/kg | 3.125 mg/kg | 106 | 50.0 | 140 | ---- |



Sub-Matrix: Soil/Solid

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|------------------|--------------------------------|-------------|-----------|--------------------------|----------------|--------------|---------------------|------|-----------|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | Qualifier |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | |
| Volatile Organic Compounds (QCLot: 916996) - continued | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | Ethylbenzene | 100-41-4 | E611D | 2.59 mg/kg | 3.125 mg/kg | 93.2 | 50.0 | 140 | ---- |
| | | Hexane, n- | 110-54-3 | E611D | 2.72 mg/kg | 3.125 mg/kg | 97.7 | 50.0 | 140 | ---- |
| | | Methyl ethyl ketone [MEK] | 78-93-3 | E611D | 3.51 mg/kg | 3.125 mg/kg | 126 | 50.0 | 140 | ---- |
| | | Methyl isobutyl ketone [MIBK] | 108-10-1 | E611D | 3.15 mg/kg | 3.125 mg/kg | 113 | 50.0 | 140 | ---- |
| | | Methyl-tert-butyl ether [MTBE] | 1634-04-4 | E611D | 2.90 mg/kg | 3.125 mg/kg | 104 | 50.0 | 140 | ---- |
| | | Styrene | 100-42-5 | E611D | 2.75 mg/kg | 3.125 mg/kg | 99.0 | 50.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,1,2- | 630-20-6 | E611D | 2.79 mg/kg | 3.125 mg/kg | 100 | 50.0 | 140 | ---- |
| | | Tetrachloroethane, 1,1,2,2- | 79-34-5 | E611D | 2.87 mg/kg | 3.125 mg/kg | 103 | 50.0 | 140 | ---- |
| | | Tetrachloroethylene | 127-18-4 | E611D | 2.65 mg/kg | 3.125 mg/kg | 95.3 | 50.0 | 140 | ---- |
| | | Toluene | 108-88-3 | E611D | 2.62 mg/kg | 3.125 mg/kg | 94.2 | 50.0 | 140 | ---- |
| | | Trichloroethane, 1,1,1- | 71-55-6 | E611D | 2.82 mg/kg | 3.125 mg/kg | 101 | 50.0 | 140 | ---- |
| | | Trichloroethane, 1,1,2- | 79-00-5 | E611D | 2.95 mg/kg | 3.125 mg/kg | 106 | 50.0 | 140 | ---- |
| | | Trichloroethylene | 79-01-6 | E611D | 2.79 mg/kg | 3.125 mg/kg | 100 | 50.0 | 140 | ---- |
| | | Trichlorofluoromethane | 75-69-4 | E611D | 2.77 mg/kg | 3.125 mg/kg | 99.6 | 50.0 | 140 | ---- |
| | | Vinyl chloride | 75-01-4 | E611D | 2.80 mg/kg | 3.125 mg/kg | 100 | 50.0 | 140 | ---- |
| | | Xylene, m+p- | 179601-23-1 | E611D | 5.26 mg/kg | 6.25 mg/kg | 94.4 | 50.0 | 140 | ---- |
| | | Xylene, o- | 95-47-6 | E611D | 2.64 mg/kg | 3.125 mg/kg | 95.1 | 50.0 | 140 | ---- |
| Hydrocarbons (QCLot: 915135) | | | | | | | | | | |
| WT2311058-002 | Anonymous | F1 (C6-C10) | ---- | E581.F1 | 71.1 mg/kg | 62.5 mg/kg | 95.4 | 60.0 | 140 | ---- |
| Hydrocarbons (QCLot: 916997) | | | | | | | | | | |
| WT2310622-001 | BH23-01 SA1 | F1 (C6-C10) | ---- | E581.F1 | 45.6 mg/kg | 62.5 mg/kg | 82.0 | 60.0 | 140 | ---- |
| Hydrocarbons (QCLot: 920710) | | | | | | | | | | |
| WT2310694-001 | Anonymous | F2 (C10-C16) | ---- | E601.SG-L | 757 mg/kg | 821.775 mg/kg | 114 | 60.0 | 140 | ---- |
| | | F3 (C16-C34) | ---- | E601.SG-L | 969 mg/kg | 1151.486 mg/kg | 104 | 60.0 | 140 | ---- |
| | | F4 (C34-C50) | ---- | E601.SG-L | 623 mg/kg | 719.6893 mg/kg | 107 | 60.0 | 140 | ---- |
| Polycyclic Aromatic Hydrocarbons (QCLot: 920240) | | | | | | | | | | |
| WT2310376-001 | Anonymous | Acenaphthene | 83-32-9 | E655A | 0.672 mg/kg | 0.8 mg/kg | 85.0 | 50.0 | 140 | ---- |
| | | Acenaphthylene | 208-96-8 | E655A | 0.636 mg/kg | 0.8 mg/kg | 80.5 | 50.0 | 140 | ---- |
| | | Anthracene | 120-12-7 | E655A | 0.681 mg/kg | 0.8 mg/kg | 86.1 | 50.0 | 140 | ---- |
| | | Benz(a)anthracene | 56-55-3 | E655A | 0.734 mg/kg | 0.8 mg/kg | 92.8 | 50.0 | 140 | ---- |
| | | Benzo(a)pyrene | 50-32-8 | E655A | 0.720 mg/kg | 0.8 mg/kg | 91.1 | 50.0 | 140 | ---- |
| | | Benzo(b+j)fluoranthene | n/a | E655A | 0.730 mg/kg | 0.8 mg/kg | 92.3 | 50.0 | 140 | ---- |
| | | Benzo(g,h,i)perylene | 191-24-2 | E655A | 0.542 mg/kg | 0.8 mg/kg | 68.6 | 50.0 | 140 | ---- |
| | | Benzo(k)fluoranthene | 207-08-9 | E655A | 0.701 mg/kg | 0.8 mg/kg | 88.6 | 50.0 | 140 | ---- |



Sub-Matrix: Soil/Solid

| | | | | | Matrix Spike (MS) Report | | | | | |
|---|------------------|------------------------------------|------------|--------|--------------------------|-----------|--------------|---------------------|------|-----------|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | Qualifier |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | |
| Polycyclic Aromatic Hydrocarbons (QCLot: 920240) - continued | | | | | | | | | | |
| WT2310376-001 | Anonymous | Chrysene | 218-01-9 | E655A | 0.675 mg/kg | 0.8 mg/kg | 85.3 | 50.0 | 140 | ---- |
| | | Dibenz(a,h)anthracene | 53-70-3 | E655A | 0.565 mg/kg | 0.8 mg/kg | 71.4 | 50.0 | 140 | ---- |
| | | Fluoranthene | 206-44-0 | E655A | 0.588 mg/kg | 0.8 mg/kg | 74.3 | 50.0 | 140 | ---- |
| | | Fluorene | 86-73-7 | E655A | 0.663 mg/kg | 0.8 mg/kg | 83.8 | 50.0 | 140 | ---- |
| | | Indeno(1,2,3-c,d)pyrene | 193-39-5 | E655A | 0.564 mg/kg | 0.8 mg/kg | 71.3 | 50.0 | 140 | ---- |
| | | Methylnaphthalene, 1- | 90-12-0 | E655A | 0.644 mg/kg | 0.8 mg/kg | 81.4 | 50.0 | 140 | ---- |
| | | Methylnaphthalene, 2- | 91-57-6 | E655A | 0.665 mg/kg | 0.8 mg/kg | 84.1 | 50.0 | 140 | ---- |
| | | Naphthalene | 91-20-3 | E655A | 0.680 mg/kg | 0.8 mg/kg | 86.0 | 50.0 | 140 | ---- |
| | | Phenanthrene | 85-01-8 | E655A | 0.633 mg/kg | 0.8 mg/kg | 80.0 | 50.0 | 140 | ---- |
| | | Pyrene | 129-00-0 | E655A | 0.582 mg/kg | 0.8 mg/kg | 73.6 | 50.0 | 140 | ---- |
| Phthalate Esters (QCLot: 920240) | | | | | | | | | | |
| WT2310376-001 | Anonymous | bis(2-Ethylhexyl) phthalate [DEHP] | 117-81-7 | E655A | 2.41 mg/kg | 3.2 mg/kg | 76.2 | 50.0 | 140 | ---- |
| | | Diethyl phthalate | 84-66-2 | E655A | 2.65 mg/kg | 3.2 mg/kg | 83.8 | 50.0 | 140 | ---- |
| | | Dimethyl phthalate | 131-11-3 | E655A | 2.56 mg/kg | 3.2 mg/kg | 81.0 | 50.0 | 140 | ---- |
| Semi-Volatile Organics (QCLot: 920240) | | | | | | | | | | |
| WT2310376-001 | Anonymous | Biphenyl | 92-52-4 | E655A | 0.672 mg/kg | 0.8 mg/kg | 85.0 | 50.0 | 140 | ---- |
| | | bis(2-Chloro-1-methylethyl) ether | 108-60-1 | E655A | 0.64 mg/kg | 0.8 mg/kg | 80.7 | 50.0 | 140 | ---- |
| | | bis(2-Chloroethyl) ether | 111-44-4 | E655A | 0.70 mg/kg | 0.8 mg/kg | 88.1 | 50.0 | 140 | ---- |
| | | Chloroaniline, 4- | 106-47-8 | E655A | 0.57 mg/kg | 0.8 mg/kg | 72.1 | 50.0 | 140 | ---- |
| | | Dichlorobenzidine, 3,3'- | 91-94-1 | E655A | 0.76 mg/kg | 0.8 mg/kg | 96.7 | 50.0 | 140 | ---- |
| | | Dinitrotoluene, 2,4- | 121-14-2 | E655A | 0.66 mg/kg | 0.8 mg/kg | 83.3 | 50.0 | 140 | ---- |
| | | Dinitrotoluene, 2,6- | 606-20-2 | E655A | 0.65 mg/kg | 0.8 mg/kg | 82.2 | 50.0 | 140 | ---- |
| | | Trichlorobenzene, 1,2,4- | 120-82-1 | E655A | 0.698 mg/kg | 0.8 mg/kg | 88.3 | 50.0 | 140 | ---- |
| Chlorinated Phenolics (QCLot: 920240) | | | | | | | | | | |
| WT2310376-001 | Anonymous | Chlorophenol, 2- | 95-57-8 | E655A | 2.14 mg/kg | 2.4 mg/kg | 90.0 | 50.0 | 140 | ---- |
| | | Dichlorophenol, 2,4- | 120-83-2 | E655A | 1.98 mg/kg | 2.4 mg/kg | 83.7 | 50.0 | 140 | ---- |
| | | Pentachlorophenol [PCP] | 87-86-5 | E655A | 2.00 mg/kg | 2.4 mg/kg | 84.5 | 50.0 | 140 | ---- |
| | | Trichlorophenol, 2,4,5- | 95-95-4 | E655A | 2.19 mg/kg | 2.4 mg/kg | 92.4 | 50.0 | 140 | ---- |
| | | Trichlorophenol, 2,4,6- | 88-06-2 | E655A | 1.94 mg/kg | 2.4 mg/kg | 81.8 | 50.0 | 140 | ---- |
| Non-Chlorinated Phenolics (QCLot: 920240) | | | | | | | | | | |
| WT2310376-001 | Anonymous | Dimethylphenol, 2,4- | 105-67-9 | E655A | 2.08 mg/kg | 2.4 mg/kg | 87.5 | 50.0 | 140 | ---- |
| | | Dinitrophenol, 2,4- | 51-28-5 | E655A | 1.3 mg/kg | 2.4 mg/kg | 53.3 | 50.0 | 140 | ---- |
| | | Phenol | 108-95-2 | E655A | 2.50 mg/kg | 2.4 mg/kg | 105 | 50.0 | 140 | ---- |



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

| Laboratory sample ID | Reference Material ID | Analyte | CAS Number | Method | Reference Material (RM) Report | | | | |
|---|-----------------------|--------------------------------|------------|--------|--------------------------------|-----------------|---------------------|------|-----------|
| | | | | | RM Target Concentration | Recovery (%) RM | Recovery Limits (%) | | Qualifier |
| | | | | | | | Low | High | |
| Physical Tests (QCLot: 918454) | | | | | | | | | |
| | RM | Conductivity (1:2 leachate) | ---- | E100-L | 1875.8 µS/cm | 100 | 70.0 | 130 | ---- |
| Metals (QCLot: 918452) | | | | | | | | | |
| | RM | Antimony | 7440-36-0 | E440 | 3.99 mg/kg | 114 | 70.0 | 130 | ---- |
| | RM | Arsenic | 7440-38-2 | E440 | 3.73 mg/kg | 108 | 70.0 | 130 | ---- |
| | RM | Barium | 7440-39-3 | E440 | 105 mg/kg | 120 | 70.0 | 130 | ---- |
| | RM | Beryllium | 7440-41-7 | E440 | 0.349 mg/kg | 123 | 70.0 | 130 | ---- |
| | RM | Boron | 7440-42-8 | E440 | 8.5 mg/kg | 132 | 40.0 | 160 | ---- |
| | RM | Cadmium | 7440-43-9 | E440 | 0.91 mg/kg | 103 | 70.0 | 130 | ---- |
| | RM | Chromium | 7440-47-3 | E440 | 101 mg/kg | 122 | 70.0 | 130 | ---- |
| | RM | Cobalt | 7440-48-4 | E440 | 6.9 mg/kg | 114 | 70.0 | 130 | ---- |
| | RM | Copper | 7440-50-8 | E440 | 123 mg/kg | 112 | 70.0 | 130 | ---- |
| | RM | Lead | 7439-92-1 | E440 | 267 mg/kg | 109 | 70.0 | 130 | ---- |
| | RM | Molybdenum | 7439-98-7 | E440 | 1.03 mg/kg | 115 | 70.0 | 130 | ---- |
| | RM | Nickel | 7440-02-0 | E440 | 26.7 mg/kg | 113 | 70.0 | 130 | ---- |
| | RM | Silver | 7440-22-4 | E440 | 4.06 mg/kg | 108 | 70.0 | 130 | ---- |
| | RM | Thallium | 7440-28-0 | E440 | 0.0786 mg/kg | 110 | 40.0 | 160 | ---- |
| | RM | Uranium | 7440-61-1 | E440 | 0.52 mg/kg | 110 | 70.0 | 130 | ---- |
| | RM | Vanadium | 7440-62-2 | E440 | 32.7 mg/kg | 118 | 70.0 | 130 | ---- |
| | RM | Zinc | 7440-66-6 | E440 | 297 mg/kg | 108 | 70.0 | 130 | ---- |
| Metals (QCLot: 918453) | | | | | | | | | |
| | RM | Mercury | 7439-97-6 | E510 | 0.0585 mg/kg | 122 | 70.0 | 130 | ---- |
| Metals (QCLot: 918455) | | | | | | | | | |
| | RM | Calcium, soluble ion content | 7440-70-2 | E484 | 59.13 mg/L | 104 | 70.0 | 130 | ---- |
| | RM | Magnesium, soluble ion content | 7439-95-4 | E484 | 19.66 mg/L | 105 | 70.0 | 130 | ---- |
| | RM | Sodium, soluble ion content | 17341-25-2 | E484 | 87.34 mg/L | 103 | 70.0 | 130 | ---- |
| Metals (QCLot: 918456) | | | | | | | | | |
| | RM | Boron, hot water soluble | 7440-42-8 | E487 | 1.84 mg/kg | 115 | 60.0 | 140 | ---- |
| Speciated Metals (QCLot: 921177) | | | | | | | | | |

Page : 21 of 21
 Work Order : WT2310622
 Client : Gemtec Consulting Engineers and Scientists Limited
 Project : 61899.04



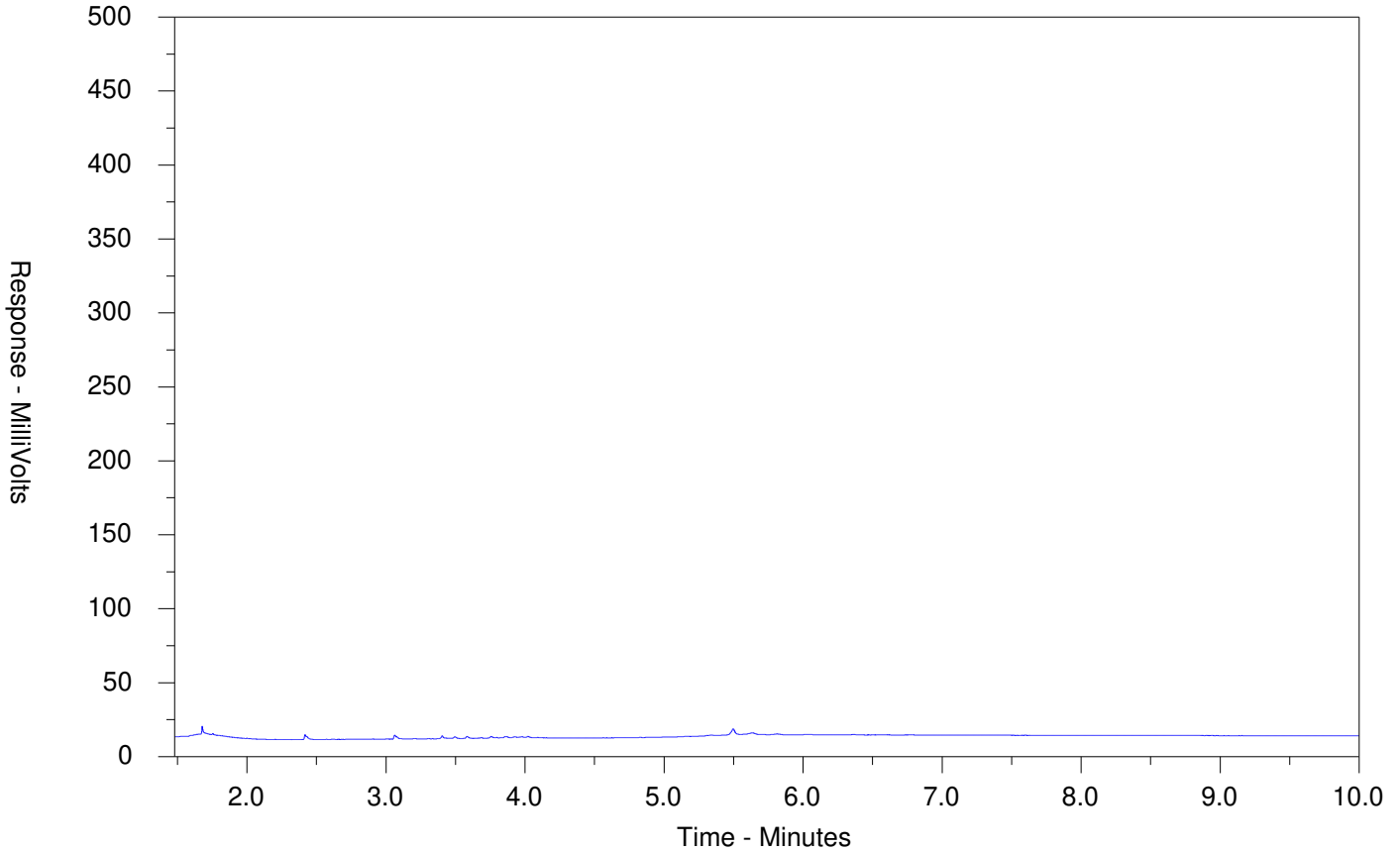
Sub-Matrix:

| Laboratory sample ID | Reference Material ID | Analyte | CAS Number | Method | Reference Material (RM) Report | | | | |
|---|-----------------------|------------------------------|------------|--------|--------------------------------|-----------------|---------------------|------|-----------|
| | | | | | RM Target Concentration | Recovery (%) RM | Recovery Limits (%) | | Qualifier |
| | | | | | | | Low | High | |
| Speciated Metals (QCLot: 921177) - continued | | | | | | | | | |
| | RM | Chromium, hexavalent [Cr VI] | 18540-29-9 | E532 | 172 mg/kg | 98.8 | 70.0 | 130 | ---- |

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: WT2310622-001-E601.SG-L
 Client Sample ID: BH23-01 SA1



| | | | | | |
|----------------------|-------|--------|-------------------------------|--------|--------|
| ← F2 → | | ← F3 → | | ← F4 → | |
| nC10 | nC16 | | nC34 | | nC50 |
| 174°C | 287°C | | 481°C | | 575°C |
| 346°F | 549°F | | 898°F | | 1067°F |
| Gasoline → | | | ← Motor Oils/Lube Oils/Grease | | |
| ← Diesel/Jet Fuels → | | | | | |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

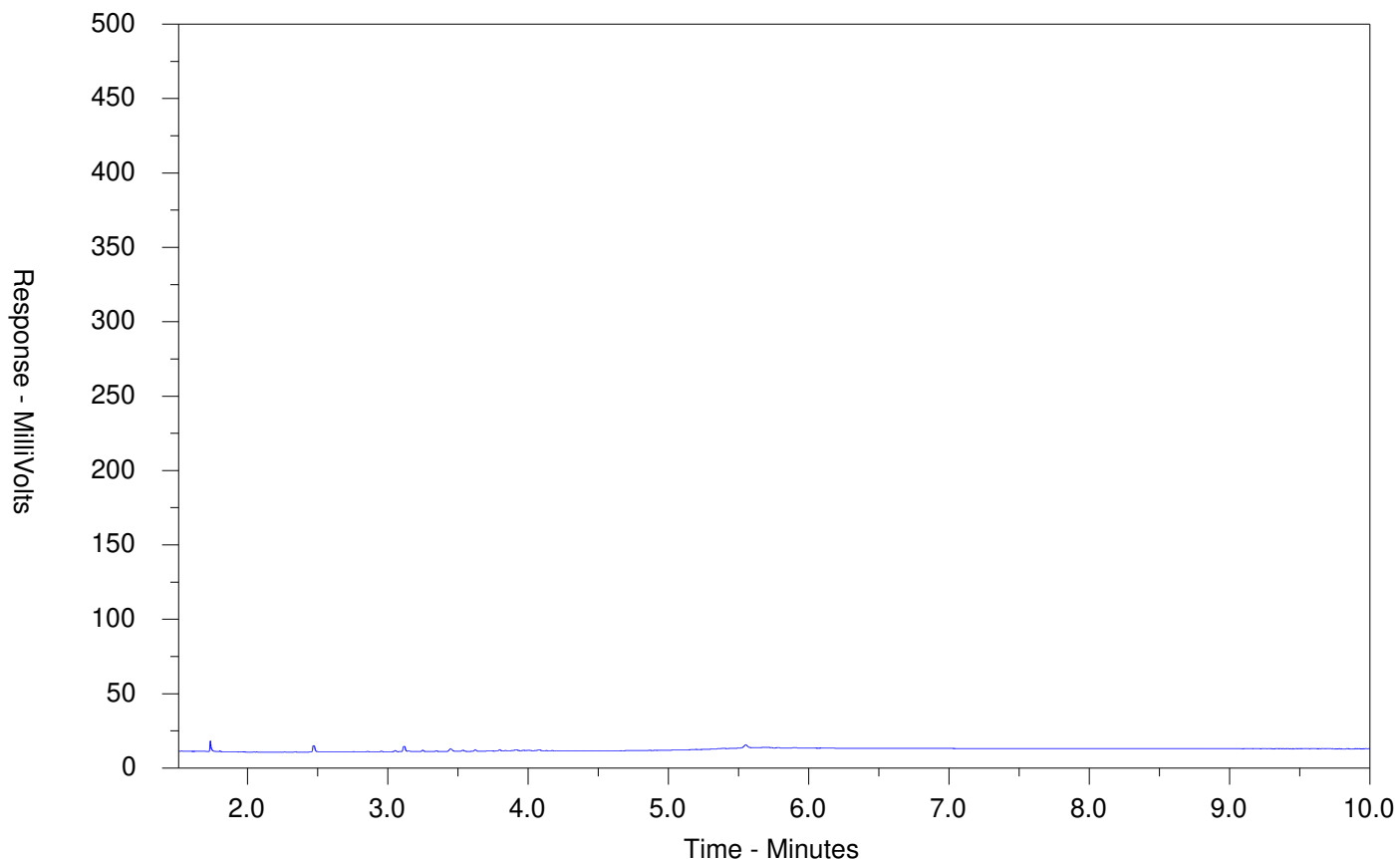
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: WT2310622-002-E601.SG-L
 Client Sample ID: BH23-01 SA101



| | | | | | |
|----------------------|-------|--------|-------------------------------|--------|--------|
| ← F2 → | | ← F3 → | | ← F4 → | |
| nC10 | nC16 | | nC34 | | nC50 |
| 174°C | 287°C | | 481°C | | 575°C |
| 346°F | 549°F | | 898°F | | 1067°F |
| Gasoline → | | | ← Motor Oils/Lube Oils/Grease | | |
| ← Diesel/Jet Fuels → | | | | | |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

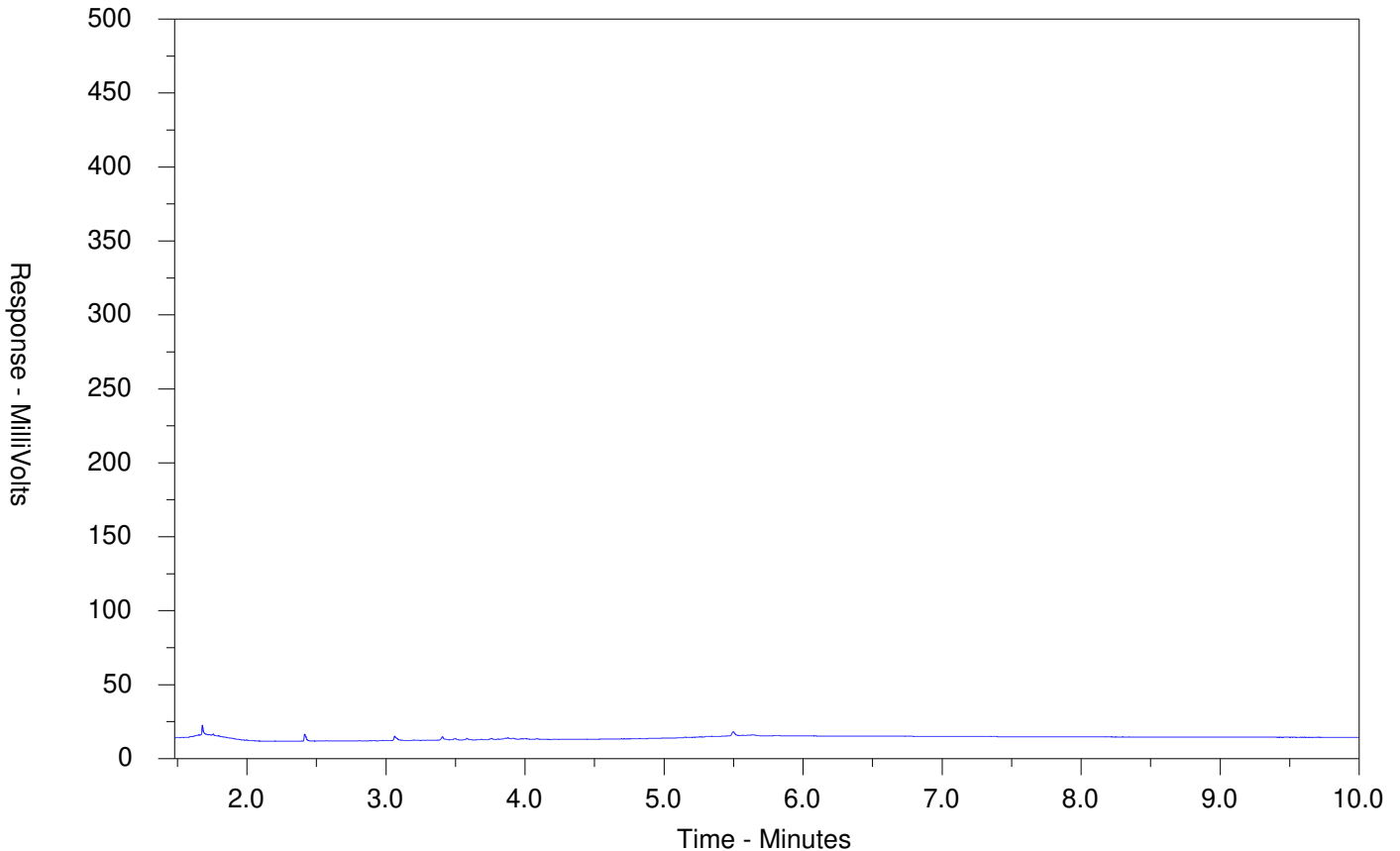
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: WT2310622-003-E601.SG-L
 Client Sample ID: BH23-02 SA1



| | | | | | |
|----------------------|-------|--------|-------------------------------|--------|--------|
| ← F2 → | | ← F3 → | | ← F4 → | |
| nC10 | nC16 | | nC34 | | nC50 |
| 174°C | 287°C | | 481°C | | 575°C |
| 346°F | 549°F | | 898°F | | 1067°F |
| Gasoline → | | | ← Motor Oils/Lube Oils/Grease | | |
| ← Diesel/Jet Fuels → | | | | | |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

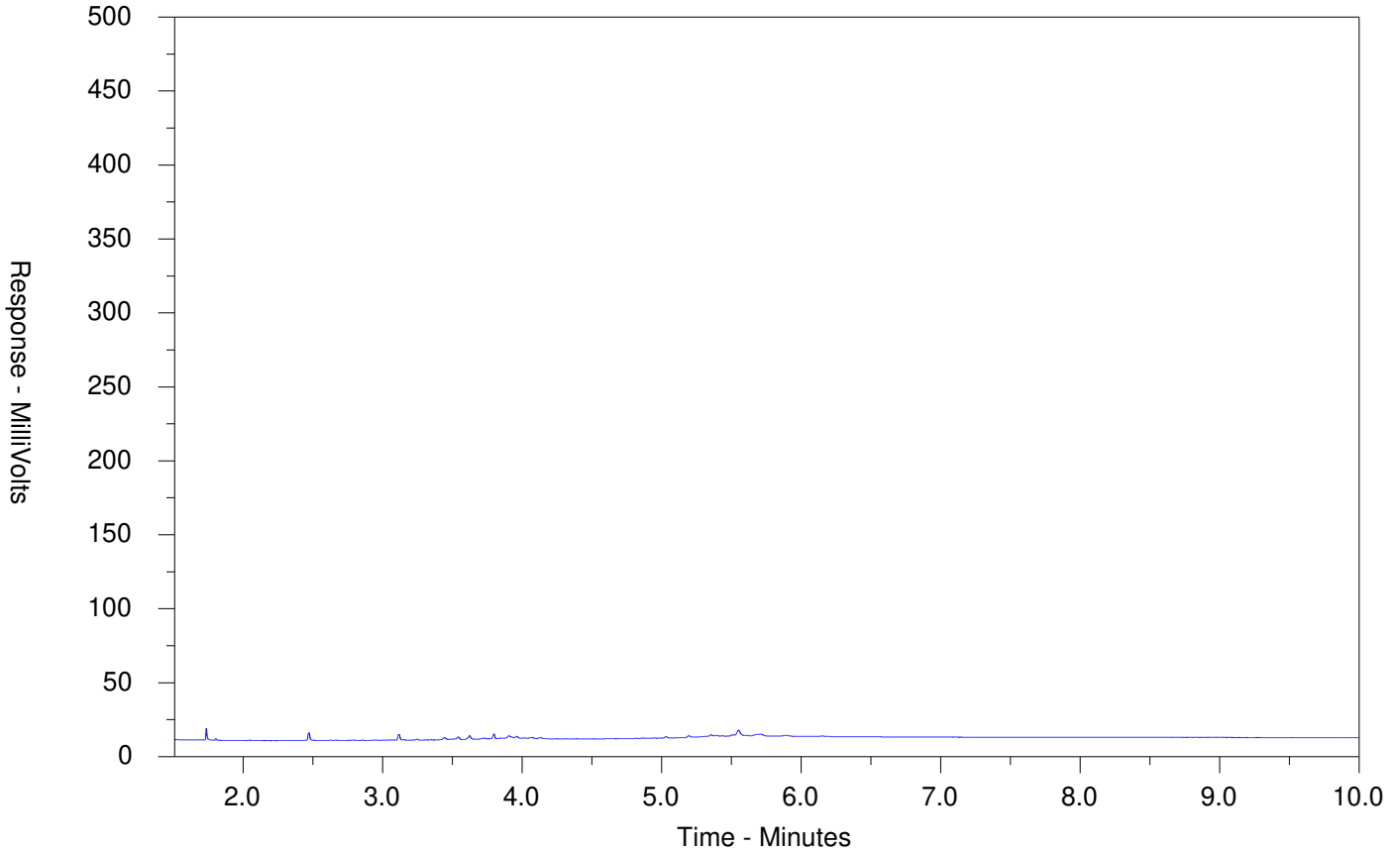
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: WT2310622-004-E601.SG-L
 Client Sample ID: BH23-03 SA1



| | | | | | |
|----------------------|-------|--------|-------------------------------|--------|--------|
| ← F2 → | | ← F3 → | | ← F4 → | |
| nC10 | nC16 | | nC34 | | nC50 |
| 174°C | 287°C | | 481°C | | 575°C |
| 346°F | 549°F | | 898°F | | 1067°F |
| Gasoline → | | | ← Motor Oils/Lube Oils/Grease | | |
| ← Diesel/Jet Fuels → | | | | | |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

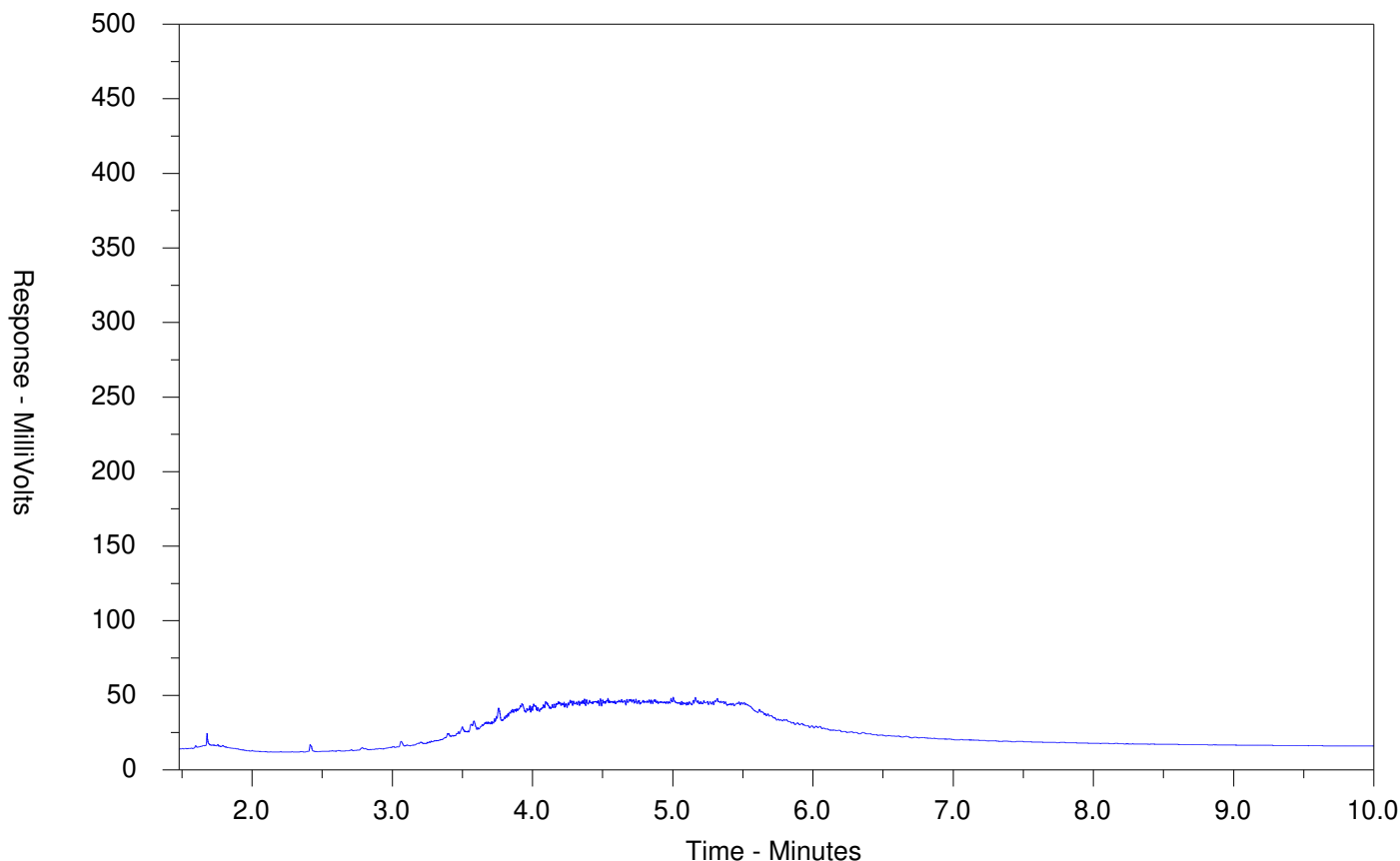
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: WT2310622-005-E601.SG-L
 Client Sample ID: BH23-04 SA1



| | | | | | |
|----------------------|-------|--------|-------------------------------|--------|--------|
| ← F2 → | | ← F3 → | | ← F4 → | |
| nC10 | nC16 | | nC34 | | nC50 |
| 174°C | 287°C | | 481°C | | 575°C |
| 346°F | 549°F | | 898°F | | 1067°F |
| Gasoline → | | | ← Motor Oils/Lube Oils/Grease | | |
| ← Diesel/Jet Fuels → | | | | | |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

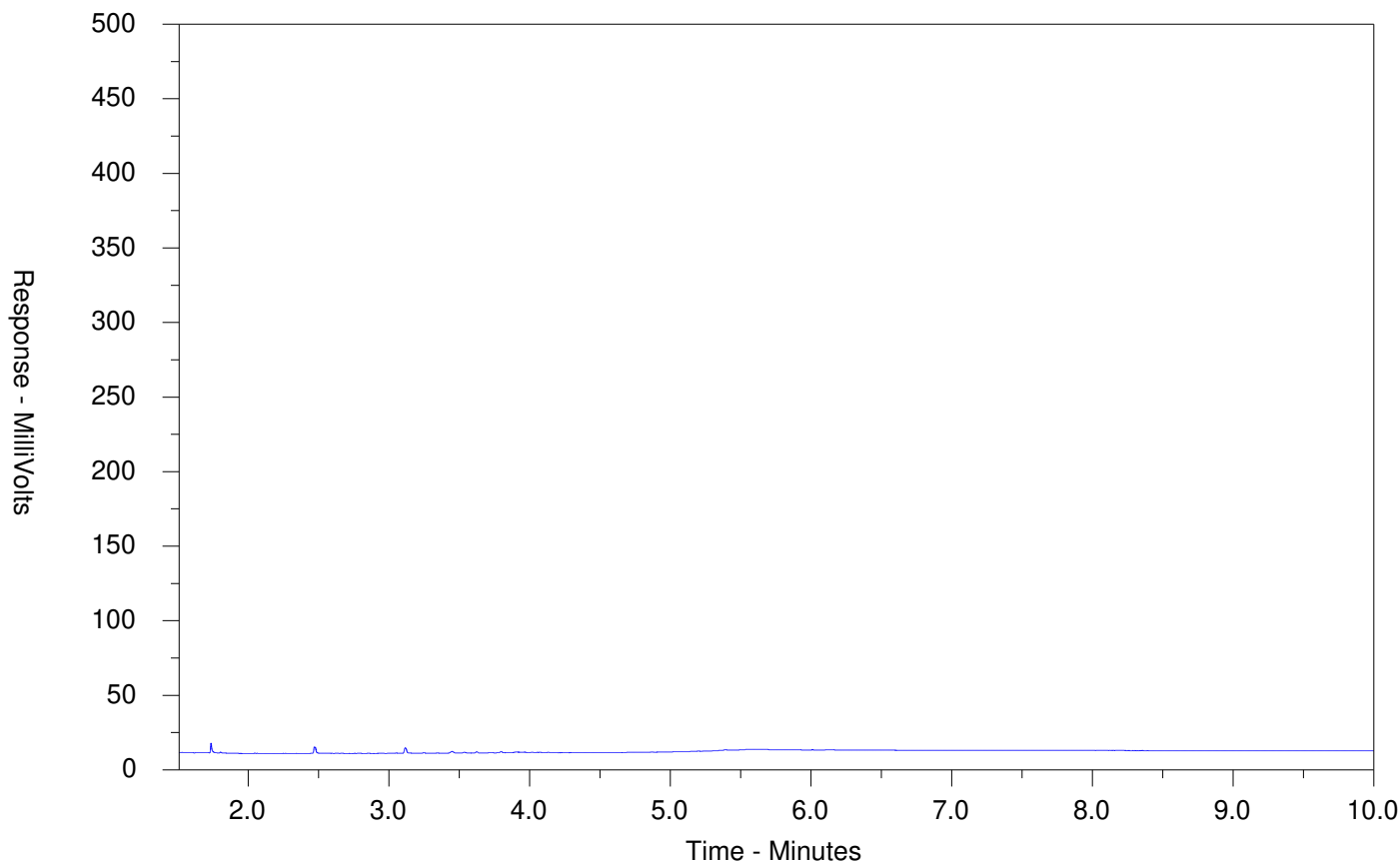
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: WT2310622-006-E601.SG-L
 Client Sample ID: BH23-05 SA2



| | | | | | |
|----------------------|-------|--------|-------------------------------|--------|--------|
| ← F2 → | | ← F3 → | | ← F4 → | |
| nC10 | nC16 | | nC34 | | nC50 |
| 174°C | 287°C | | 481°C | | 575°C |
| 346°F | 549°F | | 898°F | | 1067°F |
| Gasoline → | | | ← Motor Oils/Lube Oils/Grease | | |
| ← Diesel/Jet Fuels → | | | | | |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page of

Canada Toll Free: 1 800 668 9878

Environmental Division
Waterloo

Work Order Reference
WT2310622



Telephone : +1 519 886 6910

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|--|--|---|--------------|------------------------|----------------------------------|-----------------------------|-------------------------------------|-----|-----------|------|---------------|------|------------------------|----------------------------------|-------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Report To Contact and company name below will appear on the final report | | Reports / Recipients | | | Turnaround Time (TAT) Requested | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Company: | Gemtec Consulting Engineers - GESL100 | Select Report Format: | <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) | <input checked="" type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minim <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minim <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minim <input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minim <input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contact: | Connor Shaw | Merge QC/QCI Reports with COA | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A | Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone: | 613-585-3626 | <input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked | | Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Company address below will appear on the final report | | Select Distribution: | <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX | For all tests with rush TATs requested, please contact your AM to confirm availability. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Street: | 142 Industrial Ave. | Email 1 or Fax | connor.shaw@gemtec.ca | Analysis Request | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City/Province: | Petawawa, ON | Email 2 | | Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Postal Code: | 613-585-3626 | Email 3 | | <table border="1"> <tr> <td rowspan="10">NUMBER OF CONTAINERS</td> <td>Metals & Inorganics</td> <td>PAH</td> <td>PHC F1-F4</td> <td>BTEX</td> <td>OC Pesticides</td> <td>VOCs</td> <td rowspan="10">SAMPLES ON HOLD</td> <td rowspan="10">EXTENDED STORAGE REQUIRED</td> <td rowspan="10">SUSPECTED HAZARD (see notes)</td> </tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>4</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> </table> | | | | | NUMBER OF CONTAINERS | Metals & Inorganics | PAH | PHC F1-F4 | BTEX | OC Pesticides | VOCs | SAMPLES ON HOLD | EXTENDED STORAGE REQUIRED | SUSPECTED HAZARD (see notes) | 4 | / | / | / | / | / | 4 | / | / | / | / | / | 4 | / | / | / | / | / | 4 | / | / | / | / | / | 4 | / | / | / | / | / | 4 | / | / | / | / | / | 4 | / | / | / | / | / | 4 | / | / | / | / | / | 4 | / | / | / | / | / |
| NUMBER OF CONTAINERS | Metals & Inorganics | PAH | PHC F1-F4 | BTEX | OC Pesticides | VOCs | SAMPLES ON HOLD | EXTENDED STORAGE REQUIRED | | SUSPECTED HAZARD (see notes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Invoice To | Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | Invoice Recipients | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | Select Invoice Distribution: | <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Company: | | Email 1 or Fax | connor.shaw@gemtec.ca | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contact: | | Email 2 | accountspayable@gemtec.ca | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Information | | Oil and Gas Required Fields (client use) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALS Account # / Quote #: | GESL100/WT2022GESL1000001 | AFE/Cost Center: | PO# | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Job #: | 61899.04 | Major/Minor Code: | Routing Code: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PO / AFE: | | Requisitioner: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LSD: | | Location: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALS Lab Work Order # (ALS use only): | WT2310622 | ALS Contact: | Costas Farassoglou | Sampler: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALS Sample # (ALS use only) | Sample Identification and/or Coordinates (This description will appear on the report) | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BH 23-01 SA1 | 25-Apr-23 | | SOIL | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BH 23-01 SA101 | " | | SOIL | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BH 23-02 SA1 | " | | SOIL | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BH 23-03 SA1 | " | | SOIL | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BH 23-04 SA1 | " | | SOIL | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | BH 23-05 SA2 | " | | SOIL | 4 | / | / | / | / | / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SOIL | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SOIL | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SOIL | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SOIL | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SOIL | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SOIL | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SOIL | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drinking Water (DW) Samples¹ (client use) | | Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only) | | | SAMPLE RECEIPT DETAILS (ALS use only) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | Tavel | | | Cooling Method: <input type="checkbox"/> NONE <input checked="" type="checkbox"/> ICE <input type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | O.Reg. 153/04 Table 2 RPI | | | Submission Comments identified on Sample Receipt Notification: YES NO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Cooler Custody Seals Intact: YES N/A Sample Custody Seals Intact: YES N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | INITIAL COOLER TEMPERATURES °C: 12.7 FINAL COOLER TEMPERATURES °C: 5.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHIPMENT RELEASE (client use) | | INITIAL SHIPMENT RECEPTION (ALS use only) | | | FINAL SHIPMENT RECEPTION (ALS use only) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Released by: | Date: | Time: | Received by: | Date: | Time: | Received by: | Date: | Time: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Car 82 | 25-Apr-23 | | [Signature] | 4/25/23 | 2:45 | [Signature] | 04/26/23 | 4:00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



CERTIFICATE OF ANALYSIS

| | |
|---|---|
| <p>Work Order : WT2308433</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone : ----</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 12</p> <p>No. of samples analysed : 12</p> | <p>Page : 1 of 8</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 04-Apr-2023 13:25</p> <p>Date Analysis Commenced : 11-Apr-2023</p> <p>Issue Date : 13-Apr-2023 21:16</p> |
|---|---|

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Laboratory Department</i> |
|------------------------|--|-------------------------------------|
| Amanda Ganouri-Lumsden | Department Manager - Microbiology and Prep | Centralized Prep, Waterloo, Ontario |
| Amaninder Dhillon | Team Lead - Semi-Volatile Instrumentation | Organics, Waterloo, Ontario |
| Jon Fisher | Production Manager, Environmental | Metals, Waterloo, Ontario |



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

| <i>Unit</i> | <i>Description</i> |
|-------------|-------------------------|
| % | percent |
| mg/kg | milligrams per kilogram |

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.



Analytical Results

Sub-Matrix: Soil/Solid

Client sample ID

(Matrix: Soil/Solid)

| | | | | | GS 23-01 | GS 23-101 | GS 23-02 | GS 23-03 | GS 23-04 |
|----------------------------------|------------|--------|-------|-------|---------------|---------------|---------------|---------------|---------------|
| Client sampling date / time | | | | | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2308433-001 | WT2308433-002 | WT2308433-003 | WT2308433-004 | WT2308433-005 |
| | | | | | Result | Result | Result | Result | Result |
| Physical Tests | | | | | | | | | |
| Moisture | ---- | E144 | 0.25 | % | 21.1 | 22.2 | 23.3 | 24.8 | 22.8 |
| Metals | | | | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Arsenic | 7440-38-2 | E440 | 0.10 | mg/kg | 4.00 | 3.99 | 4.16 | 3.36 | 3.04 |
| Barium | 7440-39-3 | E440 | 0.50 | mg/kg | 155 | 148 | 162 | 113 | 130 |
| Beryllium | 7440-41-7 | E440 | 0.10 | mg/kg | 0.78 | 0.77 | 0.82 | 0.71 | 0.68 |
| Boron | 7440-42-8 | E440 | 5.0 | mg/kg | 9.3 | 9.0 | 7.7 | 6.9 | 6.6 |
| Cadmium | 7440-43-9 | E440 | 0.020 | mg/kg | 0.132 | 0.141 | 0.147 | 0.142 | 0.139 |
| Chromium | 7440-47-3 | E440 | 0.50 | mg/kg | 38.8 | 38.3 | 40.6 | 34.1 | 33.4 |
| Cobalt | 7440-48-4 | E440 | 0.10 | mg/kg | 11.8 | 11.7 | 12.3 | 10.0 | 8.19 |
| Copper | 7440-50-8 | E440 | 0.50 | mg/kg | 18.2 | 18.1 | 17.5 | 14.8 | 13.3 |
| Lead | 7439-92-1 | E440 | 0.50 | mg/kg | 9.69 | 9.67 | 10.5 | 11.4 | 9.86 |
| Molybdenum | 7439-98-7 | E440 | 0.10 | mg/kg | 0.58 | 0.65 | 0.57 | 0.55 | 0.43 |
| Nickel | 7440-02-0 | E440 | 0.50 | mg/kg | 22.3 | 22.5 | 21.9 | 17.4 | 16.8 |
| Selenium | 7782-49-2 | E440 | 0.20 | mg/kg | <0.20 | 0.21 | 0.21 | 0.22 | <0.20 |
| Silver | 7440-22-4 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | <0.10 | <0.10 | <0.10 |
| Thallium | 7440-28-0 | E440 | 0.050 | mg/kg | 0.201 | 0.192 | 0.200 | 0.165 | 0.162 |
| Uranium | 7440-61-1 | E440 | 0.050 | mg/kg | 0.746 | 0.710 | 0.838 | 0.939 | 0.956 |
| Vanadium | 7440-62-2 | E440 | 0.20 | mg/kg | 59.1 | 58.2 | 60.1 | 52.6 | 48.7 |
| Zinc | 7440-66-6 | E440 | 2.0 | mg/kg | 69.8 | 70.9 | 74.7 | 66.0 | 66.7 |
| Organochlorine Pesticides | | | | | | | | | |
| Aldrin | 309-00-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, cis- (alpha) | 5103-71-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, total | 57-74-9 | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Chlordane, trans- (gamma) | 5103-74-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 2,4'- | 53-19-0 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 4,4'- | 72-54-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDE, 2,4'- | 3424-82-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDE, 4,4'- | 72-55-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |



Analytical Results

Sub-Matrix: Soil/Solid

Client sample ID

(Matrix: Soil/Solid)

| | | | | | GS 23-01 | GS 23-101 | GS 23-02 | GS 23-03 | GS 23-04 |
|---|------------|--------|-------|-------|---------------|---------------|---------------|---------------|---------------|
| Client sampling date / time | | | | | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2308433-001 | WT2308433-002 | WT2308433-003 | WT2308433-004 | WT2308433-005 |
| | | | | | Result | Result | Result | Result | Result |
| Organochlorine Pesticides | | | | | | | | | |
| DDE, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDT, 2,4'- | 789-02-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, 4,4'- | 50-29-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Dieldrin | 60-57-1 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, alpha- | 959-98-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, beta- | 33213-65-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Endrin | 72-20-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor | 76-44-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor epoxide | 1024-57-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Hexachlorobenzene | 118-74-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorobutadiene | 87-68-3 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorocyclohexane, gamma- | 58-89-9 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachloroethane | 67-72-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Methoxychlor | 72-43-5 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Organochlorine Pesticides Surrogates | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | E660F | 0.1 | % | 127 | 120 | 116 | 93.5 | 104 |
| Tetrachloro-m-xylene | 877-09-8 | E660F | 0.1 | % | 95.2 | 80.1 | 84.8 | 84.8 | 82.9 |

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil/Solid

Client sample ID

(Matrix: Soil/Solid)

| | | | | | GS 23-05 | GS 23-06 | GS 23-07 | GS 23-08 | GS 23-09 |
|----------------------------------|------------|--------|-------|-------|---------------|---------------|---------------|---------------|---------------|
| Client sampling date / time | | | | | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2308433-006 | WT2308433-007 | WT2308433-008 | WT2308433-009 | WT2308433-010 |
| | | | | | Result | Result | Result | Result | Result |
| Physical Tests | | | | | | | | | |
| Moisture | ---- | E144 | 0.25 | % | 24.1 | 28.3 | 30.0 | 30.6 | 35.6 |
| Metals | | | | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.10 | mg/kg | 0.11 | <0.10 | <0.10 | <0.10 | <0.10 |
| Arsenic | 7440-38-2 | E440 | 0.10 | mg/kg | 4.59 | 4.52 | 3.11 | 3.43 | 3.53 |
| Barium | 7440-39-3 | E440 | 0.50 | mg/kg | 191 | 174 | 105 | 129 | 120 |
| Beryllium | 7440-41-7 | E440 | 0.10 | mg/kg | 1.04 | 0.97 | 0.59 | 0.66 | 0.65 |
| Boron | 7440-42-8 | E440 | 5.0 | mg/kg | 10.8 | 10.3 | 8.1 | 7.2 | 9.4 |
| Cadmium | 7440-43-9 | E440 | 0.020 | mg/kg | 0.212 | 0.249 | 0.209 | 0.203 | 0.240 |
| Chromium | 7440-47-3 | E440 | 0.50 | mg/kg | 48.5 | 45.0 | 30.0 | 34.8 | 34.6 |
| Cobalt | 7440-48-4 | E440 | 0.10 | mg/kg | 14.3 | 14.1 | 7.50 | 10.5 | 9.00 |
| Copper | 7440-50-8 | E440 | 0.50 | mg/kg | 21.7 | 21.5 | 15.6 | 17.6 | 18.3 |
| Lead | 7439-92-1 | E440 | 0.50 | mg/kg | 12.3 | 11.8 | 8.60 | 9.43 | 9.65 |
| Molybdenum | 7439-98-7 | E440 | 0.10 | mg/kg | 0.68 | 0.60 | 0.40 | 0.46 | 0.45 |
| Nickel | 7440-02-0 | E440 | 0.50 | mg/kg | 26.6 | 25.8 | 15.7 | 19.5 | 17.9 |
| Selenium | 7782-49-2 | E440 | 0.20 | mg/kg | 0.26 | 0.23 | 0.25 | 0.22 | 0.33 |
| Silver | 7440-22-4 | E440 | 0.10 | mg/kg | 0.11 | 0.11 | 0.11 | <0.10 | 0.12 |
| Thallium | 7440-28-0 | E440 | 0.050 | mg/kg | 0.259 | 0.243 | 0.143 | 0.177 | 0.163 |
| Uranium | 7440-61-1 | E440 | 0.050 | mg/kg | 1.08 | 1.04 | 1.11 | 1.02 | 1.34 |
| Vanadium | 7440-62-2 | E440 | 0.20 | mg/kg | 69.7 | 66.0 | 47.1 | 51.1 | 53.2 |
| Zinc | 7440-66-6 | E440 | 2.0 | mg/kg | 91.2 | 89.2 | 67.2 | 73.9 | 75.4 |
| Organochlorine Pesticides | | | | | | | | | |
| Aldrin | 309-00-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, cis- (alpha) | 5103-71-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Chlordane, total | 57-74-9 | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Chlordane, trans- (gamma) | 5103-74-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 2,4'- | 53-19-0 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, 4,4'- | 72-54-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDD, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDE, 2,4'- | 3424-82-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDE, 4,4'- | 72-55-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |



Analytical Results

Sub-Matrix: Soil/Solid

Client sample ID

(Matrix: Soil/Solid)

| | | | | | GS 23-05 | GS 23-06 | GS 23-07 | GS 23-08 | GS 23-09 |
|---|------------|--------|-------|-------|---------------|---------------|---------------|---------------|---------------|
| Client sampling date / time | | | | | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 | 04-Apr-2023 |
| Analyte | CAS Number | Method | LOR | Unit | WT2308433-006 | WT2308433-007 | WT2308433-008 | WT2308433-009 | WT2308433-010 |
| | | | | | Result | Result | Result | Result | Result |
| Organochlorine Pesticides | | | | | | | | | |
| DDE, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| DDT, 2,4'- | 789-02-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, 4,4'- | 50-29-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| DDT, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Dieldrin | 60-57-1 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, alpha- | 959-98-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, beta- | 33213-65-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Endosulfan, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | <0.030 | <0.030 | <0.030 |
| Endrin | 72-20-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor | 76-44-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Heptachlor epoxide | 1024-57-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Hexachlorobenzene | 118-74-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorobutadiene | 87-68-3 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachlorocyclohexane, gamma- | 58-89-9 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Hexachloroethane | 67-72-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Methoxychlor | 72-43-5 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | <0.020 | <0.020 | <0.020 |
| Organochlorine Pesticides Surrogates | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | E660F | 0.1 | % | 87.1 | 112 | 109 | 111 | 104 |
| Tetrachloro-m-xylene | 877-09-8 | E660F | 0.1 | % | 102 | 89.2 | 82.4 | 85.3 | 96.8 |

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil/Solid

Client sample ID

| | | | | | GS 23-10 | GS 23-11 | ---- | ---- | ---- |
|----------------------------------|------------|--------|-------|-------|---------------|---------------|-------|-------|-------|
| | | | | | 04-Apr-2023 | 04-Apr-2023 | ---- | ---- | ---- |
| Analyte | CAS Number | Method | LOR | Unit | WT2308433-011 | WT2308433-012 | ----- | ----- | ----- |
| | | | | | Result | Result | ---- | ---- | ---- |
| Physical Tests | | | | | | | | | |
| Moisture | ---- | E144 | 0.25 | % | 25.8 | 29.4 | ---- | ---- | ---- |
| Metals | | | | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | ---- | ---- | ---- |
| Arsenic | 7440-38-2 | E440 | 0.10 | mg/kg | 3.92 | 3.36 | ---- | ---- | ---- |
| Barium | 7440-39-3 | E440 | 0.50 | mg/kg | 146 | 119 | ---- | ---- | ---- |
| Beryllium | 7440-41-7 | E440 | 0.10 | mg/kg | 0.77 | 0.61 | ---- | ---- | ---- |
| Boron | 7440-42-8 | E440 | 5.0 | mg/kg | 9.1 | 8.5 | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | E440 | 0.020 | mg/kg | 0.233 | 0.215 | ---- | ---- | ---- |
| Chromium | 7440-47-3 | E440 | 0.50 | mg/kg | 38.2 | 31.6 | ---- | ---- | ---- |
| Cobalt | 7440-48-4 | E440 | 0.10 | mg/kg | 10.9 | 8.06 | ---- | ---- | ---- |
| Copper | 7440-50-8 | E440 | 0.50 | mg/kg | 18.4 | 17.4 | ---- | ---- | ---- |
| Lead | 7439-92-1 | E440 | 0.50 | mg/kg | 10.7 | 9.17 | ---- | ---- | ---- |
| Molybdenum | 7439-98-7 | E440 | 0.10 | mg/kg | 0.52 | 0.39 | ---- | ---- | ---- |
| Nickel | 7440-02-0 | E440 | 0.50 | mg/kg | 20.1 | 16.6 | ---- | ---- | ---- |
| Selenium | 7782-49-2 | E440 | 0.20 | mg/kg | 0.30 | 0.28 | ---- | ---- | ---- |
| Silver | 7440-22-4 | E440 | 0.10 | mg/kg | 0.11 | 0.11 | ---- | ---- | ---- |
| Thallium | 7440-28-0 | E440 | 0.050 | mg/kg | 0.180 | 0.155 | ---- | ---- | ---- |
| Uranium | 7440-61-1 | E440 | 0.050 | mg/kg | 1.22 | 1.21 | ---- | ---- | ---- |
| Vanadium | 7440-62-2 | E440 | 0.20 | mg/kg | 57.6 | 48.8 | ---- | ---- | ---- |
| Zinc | 7440-66-6 | E440 | 2.0 | mg/kg | 78.0 | 74.0 | ---- | ---- | ---- |
| Organochlorine Pesticides | | | | | | | | | |
| Aldrin | 309-00-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- |
| Chlordane, cis- (alpha) | 5103-71-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- |
| Chlordane, total | 57-74-9 | E660F | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- |
| Chlordane, trans- (gamma) | 5103-74-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- |
| DDD, 2,4'- | 53-19-0 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- |
| DDD, 4,4'- | 72-54-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- |
| DDD, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- |
| DDE, 2,4'- | 3424-82-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- |
| DDE, 4,4'- | 72-55-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- |



Analytical Results

| Sub-Matrix: Soil/Solid | | | | | Client sample ID | GS 23-10 | GS 23-11 | ---- | ---- | ---- |
|---|------------|--------|-------|-------|-----------------------------|---------------|-------------|-------|-------|------|
| (Matrix: Soil/Solid) | | | | | Client sampling date / time | 04-Apr-2023 | 04-Apr-2023 | ---- | ---- | ---- |
| Analyte | CAS Number | Method | LOR | Unit | WT2308433-011 | WT2308433-012 | ----- | ----- | ----- | |
| | | | | | Result | Result | ---- | ---- | ---- | |
| Organochlorine Pesticides | | | | | | | | | | |
| DDE, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | |
| DDT, 2,4'- | 789-02-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| DDT, 4,4'- | 50-29-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| DDT, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | |
| Dieldrin | 60-57-1 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Endosulfan, alpha- | 959-98-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Endosulfan, beta- | 33213-65-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Endosulfan, total | ---- | E660F | 0.030 | mg/kg | <0.030 | <0.030 | ---- | ---- | ---- | |
| Endrin | 72-20-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Heptachlor | 76-44-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Heptachlor epoxide | 1024-57-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Hexachlorobenzene | 118-74-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | ---- | ---- | ---- | |
| Hexachlorobutadiene | 87-68-3 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | ---- | ---- | ---- | |
| Hexachlorocyclohexane, gamma- | 58-89-9 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | ---- | ---- | ---- | |
| Hexachloroethane | 67-72-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | ---- | ---- | ---- | |
| Methoxychlor | 72-43-5 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | ---- | ---- | ---- | |
| Organochlorine Pesticides Surrogates | | | | | | | | | | |
| Decachlorobiphenyl | 2051-24-3 | E660F | 0.1 | % | 94.7 | 104 | ---- | ---- | ---- | |
| Tetrachloro-m-xylene | 877-09-8 | E660F | 0.1 | % | 93.8 | 84.0 | ---- | ---- | ---- | |

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

| | |
|---|---|
| <p>Work Order : WT2308433</p> <p>Client : Gemtec Consulting Engineers and Scientists Limited</p> <p>Contact : Connor Shaw</p> <p>Address : 142 Industrial Drive Petawawa ON Canada K8H 2W8</p> <p>Telephone : ----</p> <p>Project : 61899.04</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : SOA - 2022</p> <p>No. of samples received : 12</p> <p>No. of samples analysed : 12</p> | <p>Page : 1 of 9</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Costas Farassoglou</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : 613 225 8279</p> <p>Date Samples Received : 04-Apr-2023 13:25</p> <p>Issue Date : 13-Apr-2023 21:17</p> |
|---|---|

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|---|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|---------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Metals : Metals in Soil/Solid by CRC ICPCS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-01 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✓ |
| Metals : Metals in Soil/Solid by CRC ICPCS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-02 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✓ |
| Metals : Metals in Soil/Solid by CRC ICPCS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-03 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✓ |
| Metals : Metals in Soil/Solid by CRC ICPCS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-04 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✓ |
| Metals : Metals in Soil/Solid by CRC ICPCS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-05 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✓ |
| Metals : Metals in Soil/Solid by CRC ICPCS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-06 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✓ |
| Metals : Metals in Soil/Solid by CRC ICPCS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-07 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✓ |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|--|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|---------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-08 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-09 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-10 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-101 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✔ |
| Metals : Metals in Soil/Solid by CRC ICPMS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-11 | E440 | 04-Apr-2023 | 12-Apr-2023 | ---- | ---- | | 13-Apr-2023 | 180 days | 10 days | ✔ |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-01 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-02 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-03 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-04 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | | |
|--|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|--|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval | |
| | | | | Rec | Actual | | | Rec | Actual | | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-05 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-06 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-07 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-08 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-09 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-10 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-101 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Organochlorine Pesticides : OCPs by GC-MS-MS or GC-MS | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-11 | E660F | 04-Apr-2023 | 11-Apr-2023 | 60 days | 8 days | ✔ | 12-Apr-2023 | 40 days | 1 days | ✔ | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-01 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | | |



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|--|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-02 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-03 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-04 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-05 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-06 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-07 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-08 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-09 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-10 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

| Analyte Group Container / Client Sample ID(s) | Method | Sampling Date | Extraction / Preparation | | | | Analysis | | | |
|--|--------|---------------|--------------------------|---------------|--------|------|---------------|---------------|--------|------|
| | | | Preparation Date | Holding Times | | Eval | Analysis Date | Holding Times | | Eval |
| | | | | Rec | Actual | | | Rec | Actual | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-101 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |
| Physical Tests : Moisture Content by Gravimetry | | | | | | | | | | |
| Glass soil jar/Teflon lined cap [ON MECP] GS 23-11 | E144 | 04-Apr-2023 | ---- | ---- | ---- | | 11-Apr-2023 | ---- | ---- | |

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

| Quality Control Sample Type | Method | QC Lot # | Count | | Frequency (%) | | |
|---|--------|----------|-------|---------|---------------|----------|------------|
| | | | QC | Regular | Actual | Expected | Evaluation |
| Analytical Methods | | | | | | | |
| Laboratory Duplicates (DUP) | | | | | | | |
| Metals in Soil/Solid by CRC ICPMS | E440 | 893413 | 1 | 16 | 6.2 | 5.0 | ✔ |
| Moisture Content by Gravimetry | E144 | 893025 | 1 | 20 | 5.0 | 5.0 | ✔ |
| OCPs by GC-MS-MS or GC-MS | E660F | 893257 | 1 | 17 | 5.8 | 5.0 | ✔ |
| Laboratory Control Samples (LCS) | | | | | | | |
| Metals in Soil/Solid by CRC ICPMS | E440 | 893413 | 2 | 16 | 12.5 | 10.0 | ✔ |
| Moisture Content by Gravimetry | E144 | 893025 | 1 | 20 | 5.0 | 5.0 | ✔ |
| OCPs by GC-MS-MS or GC-MS | E660F | 893257 | 1 | 17 | 5.8 | 5.0 | ✔ |
| Method Blanks (MB) | | | | | | | |
| Metals in Soil/Solid by CRC ICPMS | E440 | 893413 | 1 | 16 | 6.2 | 5.0 | ✔ |
| Moisture Content by Gravimetry | E144 | 893025 | 1 | 20 | 5.0 | 5.0 | ✔ |
| OCPs by GC-MS-MS or GC-MS | E660F | 893257 | 1 | 17 | 5.8 | 5.0 | ✔ |
| Matrix Spikes (MS) | | | | | | | |
| OCPs by GC-MS-MS or GC-MS | E660F | 893257 | 1 | 17 | 5.8 | 5.0 | ✔ |



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

| <i>Analytical Methods</i> | <i>Method / Lab</i> | <i>Matrix</i> | <i>Method Reference</i> | <i>Method Descriptions</i> |
|---|-----------------------------------|---------------|---------------------------|--|
| Moisture Content by Gravimetry | E144 Waterloo - Environmental | Soil/Solid | CCME PHC in Soil - Tier 1 | Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage. |
| Metals in Soil/Solid by CRC ICPMS | E440 Waterloo - Environmental | Soil/Solid | EPA 6020B (mod) | This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS. |
| OCPs by GC-MS-MS or GC-MS | E660F Waterloo - Environmental | Soil/Solid | EPA 8270E (mod) | OCPs are analyzed by GC-MS-MS or GC-MS |
| <i>Preparation Methods</i> | <i>Method / Lab</i> | <i>Matrix</i> | <i>Method Reference</i> | <i>Method Descriptions</i> |
| Digestion for Metals and Mercury | EP440 Waterloo - Environmental | Soil/Solid | EPA 200.2 (mod) | Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available. |
| Pesticides, PCB, PAH, and Neutral Extractable Chlorinated Hydrocarbons Extraction | EP660 Waterloo - Environmental | Soil/Solid | EPA 3570 (mod) | A homogenized subsample is extracted with organic solvents using a mechanical shaker. |

QUALITY CONTROL REPORT

Work Order : **WT2308433**

Client : Gemtec Consulting Engineers and Scientists Limited

Contact : Connor Shaw

Address : 142 Industrial Drive
Petawawa ON Canada K8H 2W8

Telephone :

Project : 61899.04

PO : ----

C-O-C number : ----

Sampler : ----

Site : ----

Quote number : SOA - 2022

No. of samples received : 12

No. of samples analysed : 12

Page : 1 of 10

Laboratory : Waterloo - Environmental

Account Manager : Costas Farassoglou

Address : 60 Northland Road, Unit 1
Waterloo, Ontario Canada N2V 2B8

Telephone : 613 225 8279

Date Samples Received : 04-Apr-2023 13:25

Date Analysis Commenced : 11-Apr-2023

Issue Date : 13-Apr-2023 21:16

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

| <i>Signatories</i> | <i>Position</i> | <i>Laboratory Department</i> |
|------------------------|--|--|
| Amanda Ganouri-Lumsden | Department Manager - Microbiology and Prep | Waterloo Centralized Prep, Waterloo, Ontario |
| Amaninder Dhillon | Team Lead - Semi-Volatile Instrumentation | Waterloo Organics, Waterloo, Ontario |
| Jon Fisher | Production Manager, Environmental | Waterloo Metals, Waterloo, Ontario |



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

| | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|---|------------------|---------------------------|------------|--------|-----------------------------------|-------|-----------------|------------------|----------------------|------------------|-----------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Physical Tests (QC Lot: 893025) | | | | | | | | | | | |
| WT2308376-001 | Anonymous | Moisture | ---- | E144 | 0.25 | % | 14.0 | 14.9 | 6.11% | 20% | ---- |
| Metals (QC Lot: 893413) | | | | | | | | | | | |
| WT2308432-002 | Anonymous | Antimony | 7440-36-0 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Arsenic | 7440-38-2 | E440 | 0.10 | mg/kg | 3.35 | 3.40 | 1.72% | 30% | ---- |
| | | Barium | 7440-39-3 | E440 | 0.50 | mg/kg | 300 | 300 | 0.0631% | 40% | ---- |
| | | Beryllium | 7440-41-7 | E440 | 0.10 | mg/kg | 0.89 | 0.97 | 8.67% | 30% | ---- |
| | | Boron | 7440-42-8 | E440 | 5.0 | mg/kg | 11.2 | 14.5 | 3.3 | Diff <2x LOR | ---- |
| | | Cadmium | 7440-43-9 | E440 | 0.020 | mg/kg | 0.110 | 0.103 | 0.007 | Diff <2x LOR | ---- |
| | | Chromium | 7440-47-3 | E440 | 0.50 | mg/kg | 78.8 | 78.4 | 0.500% | 30% | ---- |
| | | Cobalt | 7440-48-4 | E440 | 0.10 | mg/kg | 19.9 | 20.3 | 2.04% | 30% | ---- |
| | | Copper | 7440-50-8 | E440 | 0.50 | mg/kg | 36.1 | 36.5 | 1.28% | 30% | ---- |
| | | Lead | 7439-92-1 | E440 | 0.50 | mg/kg | 7.68 | 7.90 | 2.82% | 40% | ---- |
| | | Molybdenum | 7439-98-7 | E440 | 0.10 | mg/kg | 0.80 | 1.16 | 37.1% | 40% | ---- |
| | | Nickel | 7440-02-0 | E440 | 0.50 | mg/kg | 45.1 | 45.6 | 1.12% | 30% | ---- |
| | | Selenium | 7782-49-2 | E440 | 0.20 | mg/kg | <0.20 | <0.20 | 0 | Diff <2x LOR | ---- |
| | | Silver | 7440-22-4 | E440 | 0.10 | mg/kg | <0.10 | <0.10 | 0 | Diff <2x LOR | ---- |
| | | Thallium | 7440-28-0 | E440 | 0.050 | mg/kg | 0.372 | 0.386 | 3.94% | 30% | ---- |
| | | Uranium | 7440-61-1 | E440 | 0.050 | mg/kg | 0.842 | 0.846 | 0.427% | 30% | ---- |
| | | Vanadium | 7440-62-2 | E440 | 0.20 | mg/kg | 96.3 | 95.7 | 0.559% | 30% | ---- |
| | | Zinc | 7440-66-6 | E440 | 2.0 | mg/kg | 113 | 114 | 0.260% | 30% | ---- |
| Organochlorine Pesticides (QC Lot: 893257) | | | | | | | | | | | |
| WT2308524-002 | Anonymous | Aldrin | 309-00-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Chlordane, cis- (alpha) | 5103-71-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Chlordane, trans- (gamma) | 5103-74-2 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | DDD, 2,4'- | 53-19-0 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | DDD, 4,4'- | 72-54-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | DDE, 2,4'- | 3424-82-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | DDE, 4,4'- | 72-55-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | DDT, 2,4'- | 789-02-6 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | DDT, 4,4'- | 50-29-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |



| Sub-Matrix: Soil/Solid | | | | | Laboratory Duplicate (DUP) Report | | | | | | |
|---|------------------|-------------------------------|------------|--------|-----------------------------------|-------|-----------------|------------------|----------------------|------------------|-----------|
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | LOR | Unit | Original Result | Duplicate Result | RPD(%) or Difference | Duplicate Limits | Qualifier |
| Organochlorine Pesticides (QC Lot: 893257) - continued | | | | | | | | | | | |
| WT2308524-002 | Anonymous | Dieldrin | 60-57-1 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Endosulfan, alpha- | 959-98-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Endosulfan, beta- | 33213-65-9 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Endrin | 72-20-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Heptachlor | 76-44-8 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Heptachlor epoxide | 1024-57-3 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |
| | | Hexachlorobenzene | 118-74-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Hexachlorobutadiene | 87-68-3 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Hexachlorocyclohexane, gamma- | 58-89-9 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Hexachloroethane | 67-72-1 | E660F | 0.010 | mg/kg | <0.010 | <0.010 | 0 | Diff <2x LOR | ---- |
| | | Methoxychlor | 72-43-5 | E660F | 0.020 | mg/kg | <0.020 | <0.020 | 0 | Diff <2x LOR | ---- |



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

| Analyte | CAS Number | Method | LOR | Unit | Result | Qualifier |
|--|------------|--------|------|-------|--------|-----------|
| Physical Tests (QCLot: 893025) | | | | | | |
| Moisture | --- | E144 | 0.25 | % | <0.25 | --- |
| Metals (QCLot: 893413) | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Arsenic | 7440-38-2 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Barium | 7440-39-3 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Beryllium | 7440-41-7 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Boron | 7440-42-8 | E440 | 5 | mg/kg | <5.0 | --- |
| Cadmium | 7440-43-9 | E440 | 0.02 | mg/kg | <0.020 | --- |
| Chromium | 7440-47-3 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Cobalt | 7440-48-4 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Copper | 7440-50-8 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Lead | 7439-92-1 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Molybdenum | 7439-98-7 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Nickel | 7440-02-0 | E440 | 0.5 | mg/kg | <0.50 | --- |
| Selenium | 7782-49-2 | E440 | 0.2 | mg/kg | <0.20 | --- |
| Silver | 7440-22-4 | E440 | 0.1 | mg/kg | <0.10 | --- |
| Thallium | 7440-28-0 | E440 | 0.05 | mg/kg | <0.050 | --- |
| Uranium | 7440-61-1 | E440 | 0.05 | mg/kg | <0.050 | --- |
| Vanadium | 7440-62-2 | E440 | 0.2 | mg/kg | <0.20 | --- |
| Zinc | 7440-66-6 | E440 | 2 | mg/kg | <2.0 | --- |
| Organochlorine Pesticides (QCLot: 893257) | | | | | | |
| Aldrin | 309-00-2 | E660F | 0.02 | mg/kg | <0.020 | --- |
| Chlordane, cis- (alpha) | 5103-71-9 | E660F | 0.02 | mg/kg | <0.020 | --- |
| Chlordane, trans- (gamma) | 5103-74-2 | E660F | 0.02 | mg/kg | <0.020 | --- |
| DDD, 2,4'- | 53-19-0 | E660F | 0.02 | mg/kg | <0.020 | --- |
| DDD, 4,4'- | 72-54-8 | E660F | 0.02 | mg/kg | <0.020 | --- |
| DDE, 2,4'- | 3424-82-6 | E660F | 0.02 | mg/kg | <0.020 | --- |
| DDE, 4,4'- | 72-55-9 | E660F | 0.02 | mg/kg | <0.020 | --- |
| DDT, 2,4'- | 789-02-6 | E660F | 0.02 | mg/kg | <0.020 | --- |
| DDT, 4,4'- | 50-29-3 | E660F | 0.02 | mg/kg | <0.020 | --- |
| Dieldrin | 60-57-1 | E660F | 0.02 | mg/kg | <0.020 | --- |
| Endosulfan, alpha- | 959-98-8 | E660F | 0.02 | mg/kg | <0.020 | --- |



Sub-Matrix: **Soil/Solid**

| <i>Analyte</i> | <i>CAS Number</i> | <i>Method</i> | <i>LOR</i> | <i>Unit</i> | <i>Result</i> | <i>Qualifier</i> |
|--|-------------------|---------------|------------|-------------|---------------|------------------|
| Organochlorine Pesticides (QCLot: 893257) - continued | | | | | | |
| Endosulfan, beta- | 33213-65-9 | E660F | 0.02 | mg/kg | <0.020 | ---- |
| Endrin | 72-20-8 | E660F | 0.02 | mg/kg | <0.020 | ---- |
| Heptachlor | 76-44-8 | E660F | 0.02 | mg/kg | <0.020 | ---- |
| Heptachlor epoxide | 1024-57-3 | E660F | 0.02 | mg/kg | <0.020 | ---- |
| Hexachlorobenzene | 118-74-1 | E660F | 0.01 | mg/kg | <0.010 | ---- |
| Hexachlorobutadiene | 87-68-3 | E660F | 0.01 | mg/kg | <0.010 | ---- |
| Hexachlorocyclohexane, gamma- | 58-89-9 | E660F | 0.01 | mg/kg | <0.010 | ---- |
| Hexachloroethane | 67-72-1 | E660F | 0.01 | mg/kg | <0.010 | ---- |
| Methoxychlor | 72-43-5 | E660F | 0.02 | mg/kg | <0.020 | ---- |



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|--|------------|--------|------|-------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Physical Tests (QCLot: 893025) | | | | | | | | | |
| Moisture | ---- | E144 | 0.25 | % | 50 % | 99.5 | 90.0 | 110 | ---- |
| Metals (QCLot: 893413) | | | | | | | | | |
| Antimony | 7440-36-0 | E440 | 0.1 | mg/kg | 100 mg/kg | 109 | 80.0 | 120 | ---- |
| Arsenic | 7440-38-2 | E440 | 0.1 | mg/kg | 100 mg/kg | 108 | 80.0 | 120 | ---- |
| Barium | 7440-39-3 | E440 | 0.5 | mg/kg | 25 mg/kg | 109 | 80.0 | 120 | ---- |
| Beryllium | 7440-41-7 | E440 | 0.1 | mg/kg | 10 mg/kg | 108 | 80.0 | 120 | ---- |
| Boron | 7440-42-8 | E440 | 5 | mg/kg | 100 mg/kg | 105 | 80.0 | 120 | ---- |
| Cadmium | 7440-43-9 | E440 | 0.02 | mg/kg | 10 mg/kg | 105 | 80.0 | 120 | ---- |
| Chromium | 7440-47-3 | E440 | 0.5 | mg/kg | 25 mg/kg | 103 | 80.0 | 120 | ---- |
| Cobalt | 7440-48-4 | E440 | 0.1 | mg/kg | 25 mg/kg | 106 | 80.0 | 120 | ---- |
| Copper | 7440-50-8 | E440 | 0.5 | mg/kg | 25 mg/kg | 103 | 80.0 | 120 | ---- |
| Lead | 7439-92-1 | E440 | 0.5 | mg/kg | 50 mg/kg | 108 | 80.0 | 120 | ---- |
| Molybdenum | 7439-98-7 | E440 | 0.1 | mg/kg | 25 mg/kg | 108 | 80.0 | 120 | ---- |
| Nickel | 7440-02-0 | E440 | 0.5 | mg/kg | 50 mg/kg | 106 | 80.0 | 120 | ---- |
| Selenium | 7782-49-2 | E440 | 0.2 | mg/kg | 100 mg/kg | 100 | 80.0 | 120 | ---- |
| Silver | 7440-22-4 | E440 | 0.1 | mg/kg | 10 mg/kg | 102 | 80.0 | 120 | ---- |
| Thallium | 7440-28-0 | E440 | 0.05 | mg/kg | 100 mg/kg | 104 | 80.0 | 120 | ---- |
| Uranium | 7440-61-1 | E440 | 0.05 | mg/kg | 0.5 mg/kg | 109 | 80.0 | 120 | ---- |
| Vanadium | 7440-62-2 | E440 | 0.2 | mg/kg | 50 mg/kg | 109 | 80.0 | 120 | ---- |
| Zinc | 7440-66-6 | E440 | 2 | mg/kg | 50 mg/kg | 97.4 | 80.0 | 120 | ---- |
| Organochlorine Pesticides (QCLot: 893257) | | | | | | | | | |
| Aldrin | 309-00-2 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 84.2 | 50.0 | 150 | ---- |
| Chlordane, cis- (alpha) | 5103-71-9 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 100.0 | 50.0 | 150 | ---- |
| Chlordane, trans- (gamma) | 5103-74-2 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 127 | 50.0 | 150 | ---- |
| DDD, 2,4'- | 53-19-0 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 118 | 50.0 | 150 | ---- |
| DDD, 4,4'- | 72-54-8 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 94.2 | 50.0 | 150 | LCS-H |
| DDE, 2,4'- | 3424-82-6 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 101 | 50.0 | 150 | ---- |
| DDE, 4,4'- | 72-55-9 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 106 | 50.0 | 150 | ---- |
| DDT, 2,4'- | 789-02-6 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 116 | 50.0 | 150 | ---- |
| DDT, 4,4'- | 50-29-3 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 97.1 | 50.0 | 150 | ---- |
| Dieldrin | 60-57-1 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 105 | 50.0 | 150 | ---- |



Sub-Matrix: Soil/Solid

| | | | | | Laboratory Control Sample (LCS) Report | | | | |
|--|------------|--------|------|-------|--|--------------|---------------------|------|-----------|
| | | | | | Spike | Recovery (%) | Recovery Limits (%) | | |
| Analyte | CAS Number | Method | LOR | Unit | Concentration | LCS | Low | High | Qualifier |
| Organochlorine Pesticides (QCLot: 893257) - continued | | | | | | | | | |
| Endosulfan, alpha- | 959-98-8 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 126 | 50.0 | 150 | ---- |
| Endosulfan, beta- | 33213-65-9 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 141 | 50.0 | 150 | ---- |
| Endrin | 72-20-8 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 129 | 50.0 | 150 | ---- |
| Heptachlor | 76-44-8 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 80.0 | 50.0 | 150 | ---- |
| Heptachlor epoxide | 1024-57-3 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 100 | 50.0 | 150 | ---- |
| Hexachlorobenzene | 118-74-1 | E660F | 0.01 | mg/kg | 0.005 mg/kg | 121 | 50.0 | 150 | ---- |
| Hexachlorobutadiene | 87-68-3 | E660F | 0.01 | mg/kg | 0.005 mg/kg | 112 | 50.0 | 150 | ---- |
| Hexachlorocyclohexane, gamma- | 58-89-9 | E660F | 0.01 | mg/kg | 0.005 mg/kg | 115 | 50.0 | 150 | ---- |
| Hexachloroethane | 67-72-1 | E660F | 0.01 | mg/kg | 0.005 mg/kg | 104 | 50.0 | 150 | ---- |
| Methoxychlor | 72-43-5 | E660F | 0.02 | mg/kg | 0.005 mg/kg | 69.0 | 50.0 | 150 | ---- |

Qualifiers

Qualifier Description

LCS-H Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level $\geq 1 \times$ spike level.

Sub-Matrix: Soil/Solid

| | | | | | Matrix Spike (MS) Report | | | | | |
|--|------------------|-------------------------------|------------|--------|--------------------------|-------------|--------------|---------------------|------|-----------|
| | | | | | Spike | | Recovery (%) | Recovery Limits (%) | | |
| Laboratory sample ID | Client sample ID | Analyte | CAS Number | Method | Concentration | Target | MS | Low | High | Qualifier |
| Organochlorine Pesticides (QCLot: 893257) | | | | | | | | | | |
| WT2308524-002 | Anonymous | Aldrin | 309-00-2 | E660F | 0.008 mg/kg | 0.005 mg/kg | 80.7 | 50.0 | 150 | ---- |
| | | Chlordane, cis- (alpha) | 5103-71-9 | E660F | 0.007 mg/kg | 0.005 mg/kg | 67.2 | 50.0 | 150 | ---- |
| | | Chlordane, trans- (gamma) | 5103-74-2 | E660F | 0.008 mg/kg | 0.005 mg/kg | 79.2 | 50.0 | 150 | ---- |
| | | DDD, 2,4'- | 53-19-0 | E660F | 0.011 mg/kg | 0.005 mg/kg | 115 | 50.0 | 150 | ---- |
| | | DDD, 4,4'- | 72-54-8 | E660F | 0.014 mg/kg | 0.005 mg/kg | 143 | 50.0 | 150 | ---- |
| | | DDE, 2,4'- | 3424-82-6 | E660F | 0.009 mg/kg | 0.005 mg/kg | 93.3 | 50.0 | 150 | ---- |
| | | DDE, 4,4'- | 72-55-9 | E660F | 0.009 mg/kg | 0.005 mg/kg | 95.9 | 50.0 | 150 | ---- |
| | | DDT, 2,4'- | 789-02-6 | E660F | 0.008 mg/kg | 0.005 mg/kg | 83.7 | 50.0 | 150 | ---- |
| | | DDT, 4,4'- | 50-29-3 | E660F | 0.007 mg/kg | 0.005 mg/kg | 72.4 | 50.0 | 150 | ---- |
| | | Dieldrin | 60-57-1 | E660F | 0.009 mg/kg | 0.005 mg/kg | 88.4 | 50.0 | 150 | ---- |
| | | Endosulfan, alpha- | 959-98-8 | E660F | 0.010 mg/kg | 0.005 mg/kg | 103 | 50.0 | 150 | ---- |
| | | Endosulfan, beta- | 33213-65-9 | E660F | 0.009 mg/kg | 0.005 mg/kg | 95.8 | 50.0 | 150 | ---- |
| | | Endrin | 72-20-8 | E660F | 0.011 mg/kg | 0.005 mg/kg | 114 | 50.0 | 150 | ---- |
| | | Heptachlor | 76-44-8 | E660F | 0.008 mg/kg | 0.005 mg/kg | 84.3 | 50.0 | 150 | ---- |
| | | Heptachlor epoxide | 1024-57-3 | E660F | 0.007 mg/kg | 0.005 mg/kg | 70.0 | 50.0 | 150 | ---- |
| | | Hexachlorobenzene | 118-74-1 | E660F | 0.009 mg/kg | 0.005 mg/kg | 94.0 | 50.0 | 150 | ---- |
| | | Hexachlorobutadiene | 87-68-3 | E660F | 0.010 mg/kg | 0.005 mg/kg | 99.7 | 50.0 | 150 | ---- |
| | | Hexachlorocyclohexane, gamma- | 58-89-9 | E660F | 0.010 mg/kg | 0.005 mg/kg | 106 | 50.0 | 150 | ---- |
| | | Hexachloroethane | 67-72-1 | E660F | 0.010 mg/kg | 0.005 mg/kg | 101 | 50.0 | 150 | ---- |
| | | Methoxychlor | 72-43-5 | E660F | 0.008 mg/kg | 0.005 mg/kg | 76.7 | 50.0 | 150 | ---- |



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

| Laboratory sample ID | Reference Material ID | Analyte | CAS Number | Method | Reference Material (RM) Report | | | | |
|-------------------------------|-----------------------|------------|------------|--------|--------------------------------|-----------------|---------------------|------|-----------|
| | | | | | RM Target Concentration | Recovery (%) RM | Recovery Limits (%) | | Qualifier |
| | | | | | | | Low | High | |
| Metals (QCLot: 893413) | | | | | | | | | |
| | RM | Antimony | 7440-36-0 | E440 | 3.99 mg/kg | 101 | 70.0 | 130 | ---- |
| | RM | Arsenic | 7440-38-2 | E440 | 3.73 mg/kg | 99.0 | 70.0 | 130 | ---- |
| | RM | Barium | 7440-39-3 | E440 | 105 mg/kg | 107 | 70.0 | 130 | ---- |
| | RM | Beryllium | 7440-41-7 | E440 | 0.349 mg/kg | 108 | 70.0 | 130 | ---- |
| | RM | Boron | 7440-42-8 | E440 | 8.5 mg/kg | 124 | 40.0 | 160 | ---- |
| | RM | Cadmium | 7440-43-9 | E440 | 0.91 mg/kg | 91.1 | 70.0 | 130 | ---- |
| | RM | Chromium | 7440-47-3 | E440 | 101 mg/kg | 101 | 70.0 | 130 | ---- |
| | RM | Cobalt | 7440-48-4 | E440 | 6.9 mg/kg | 98.1 | 70.0 | 130 | ---- |
| | RM | Copper | 7440-50-8 | E440 | 123 mg/kg | 95.8 | 70.0 | 130 | ---- |
| | RM | Lead | 7439-92-1 | E440 | 267 mg/kg | 100.0 | 70.0 | 130 | ---- |
| | RM | Molybdenum | 7439-98-7 | E440 | 1.03 mg/kg | 102 | 70.0 | 130 | ---- |
| | RM | Nickel | 7440-02-0 | E440 | 26.7 mg/kg | 97.7 | 70.0 | 130 | ---- |
| | RM | Thallium | 7440-28-0 | E440 | 0.0786 mg/kg | 104 | 40.0 | 160 | ---- |
| | RM | Uranium | 7440-61-1 | E440 | 0.52 mg/kg | 102 | 70.0 | 130 | ---- |
| | RM | Vanadium | 7440-62-2 | E440 | 32.7 mg/kg | 100 | 70.0 | 130 | ---- |
| | RM | Zinc | 7440-66-6 | E440 | 297 mg/kg | 92.8 | 70.0 | 130 | ---- |



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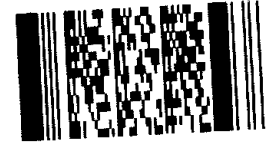
Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page of

Canada Toll Free: 1 800.668.9878

Environmental Division
Waterloo
Work Order Reference
WT2308433



Telephone : +1 519 886 6910

Report To: Gemtec Consulting Engineers - GESL100
Reports / Recipients: Select Report Format: [X] PDF [] EXCEL [] EDD (DIGITAL)
Turnaround Time (TAT) Requested: [] Routine [R] if received by 3pm M-F - no surcharges apply
Invoice To: Same as Report To
Invoice Recipients: Select Invoice Distribution: [X] EMAIL [] MAIL [] FAX
Project Information: ALS Account # / Quote #: GESL100/WT2022GESL1000001
Oil and Gas Required Fields (client use): AFE/Cost Center, PO#, Major/Minor Code, Routing Code, Requisitioner, Location
ALS Lab Work Order # (ALS use only):
Sample Identification and/or Coordinates: GS 23-01, GS 23-10, GS 23-02, GS 23-03, GS 23-04, GS 23-05, GS 23-06, GS 23-07, GS 23-08, GS 23-09, GS 23-10, GS 23-11
Drinking Water (DW) Samples (client use):
Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only): Table 1 RPI/ICC
O.Reg. 153/04 Table 2-RPI
SAMPLE RECEIPT DETAILS (ALS use only): Cooling Method: [] NONE [] ICE [] ICE PACKS [] FROZEN [] COOLING INITIATED
Submission Comments identified on Sample Receipt Notification: YES [] NO [X]
Cooler Custody Seals Intact: YES [X] N/A [] Sample Custody Seals Intact: YES [X] N/A []
INITIAL SHIPMENT RECEPTION (ALS use only): Released by: Connor Shaw, Date: 4-Apr-2023, Time: 1:15
INITIAL SHIPMENT RECEPTION (ALS use only): Received by: Eric Dobbins, Date: 4/04/23, Time: 1:25
FINAL SHIPMENT RECEPTION (ALS use only): Received by: [Signature], Date: 4/5/23, Time: 10:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Soil 500/501

experience • knowledge • integrity



| | |
|-------------------|--------------------------------------|
| civil | civil |
| geotechnical | géotechnique |
| environmental | environnement |
| structural | structures |
| field services | surveillance de chantier |
| materials testing | service de laboratoire des matériaux |

expérience • connaissance • intégrité

