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Appendix K

Preliminary Geotechnical Investigation Report

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Preliminary Geotechnical Investigation Report
Municipal Class Environmental Assessment Study
Golden Mile Area Street Network
City of Toronto, Ontario

Client Name: HDR
Date: September 25, 2026
File: 32339

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1. INTRODUCTION

This report presents the results of a preliminary geotechnical investigation conducted in support of the City of Toronto (City) Municipal Class Environmental Assessment (EA) study of the proposed Golden Mile Area Street Network in Toronto, Ontario. The geotechnical investigation was carried out in general accordance with Thurber's work plan letter dated February 27, 2025, which was prepared in response to the City of Toronto Request for Proposal (RFP) Doc3017513339.

It is understood that the recommended design as per the HDR roll plans dated November 20, 2024, consist of the following:

- Reconfiguration and extension of O'Connor Drive from west of Victoria Park Avenue to Birchmount Road;
- A new east-west public street (Golden Mile Boulevard) north of Eglinton Avenue East and south of Ashtonbee Road, from Victoria Park Avenue to Birchmount Road;
- Widening and reconfiguration of Craigton Drive between Victoria Park Avenue and Pharmacy Avenue; and
- Intersection design for Thermos Road and Sinnott Road at Eglinton Avenue East.
- Streetscape improvements along Ashtonbee Road from Pharmacy Avenue to Birchmount Road and on Jonesville Crescent

The purpose of the investigation was to explore the subsurface conditions within the project limits and based on the data obtained, to provide borehole logs, borehole location plans, a written description of the subsurface conditions, and preliminary geotechnical comments and preliminary recommendations regarding utility installation, excavation, dewatering, backfill, and pavement design.

A Phase I Environmental Site Assessment (ESA) was completed concurrently for this project. The results of the Phase I ESA were reported under separate cover.

A limited analytical testing program was completed on selected soil samples to evaluate the environmental quality and provide preliminary management options for excess excavated soils that may be generated during the proposed construction works. The scope of this assignment was not intended to meet the requirements of Ontario Regulation 406/19 (O. Reg. 406/19), On-Site and Excess Soil Management. Additional documentation and sample collection and analyses may be required to meet the regulation, depending on the project design. The scope of services does not include an environmental site assessment for due diligence related to property acquisition.

The scope of work for this preliminary assignment did not include a hydrogeological site assessment or sampling to a level sufficient to address Ontario Ministry of the Environment, Conservation and Parks (MECP) Environmental Activity and Sector Registry (EASR) registration or Permit to Take Water (PTTW) application.

It is a condition of this report that Thurber's performance of its professional services is subject to the attached Statement of Limitations and Conditions.

2. BACKGROUND INFORMATION

2.1 Site Description

The Golden Mile study area is situated within an urban setting to the east of the Don Valley Parkway in the eastern portion of Toronto. The study area comprises approximately 102 hectares of land and is generally defined by Ashtonbee Road to the north, Birchmount Road to the east, Civic Road / Alvinston Road to the south, and Victoria Park Avenue to the east

The property uses within the site boundaries predominantly comprise commercial and industrial properties, and to a lesser extent, community uses (i.e., roads), institutional properties, and residential subdivisions that exist near the extremities of the Study Area.

The nearest surface water bodies include Taylor-Massey Creek and Tyler Creek. Taylor-Massey Creek intersects the northeast corner of the Site and is oriented in a northwest-southeast direction. The creek generally meanders in a southerly direction towards Lake Ontario within the Study Area. Tyler Creek intersects the western boundary of the Site, with an inferred flow direction to the west towards the Don River East Branch.

Representative photographs of the existing site conditions are provided in Appendix A.

2.2 Geology

Based on the information in *The Physiography of Southern Ontario*¹ by Chapman and Putnam (1984), the site is located within the South Slope physiographic region. The South Slope is characterized by low-lying, fine-grained, undulating ground moraine and knolls.

Based on *Surficial Geology of Southern Ontario*² the surficial deposits on site are characterized as stone-poor sandy silt to silty sand texturized till on Paleozoic terrain throughout the study corridor.

¹ Chapman, L.J. and Putnam, D.F. 1984. *The Physiography of Southern Ontario*, Ontario Geological Survey Special Volume 2, Third Edition. Accompanied by Map P.2715, Scale 1:600,000.

² Ontario Geological Survey, 2010: *Surficial geology of Southern Ontario*; Ontario Geological Survey, Miscellaneous Release--Data 128-REV

According to *Paleozoic Geology of Southern Ontario*³, the bedrock geology below the Site consists of grey shale interbedded with calcareous layers (siltstone and limestone) of the Georgian Bay Formation. According to limited data at the site from the *Metropolitan Toronto Bedrock Contours*⁴ mapping, bedrock ranges widely from Elev. 76 to 107 m and generally slopes downward towards the southeast.

3. INVESTIGATION PROCEDURES

3.1 Borehole Drilling

The field investigation was carried out during the period of May 26 to 28, 2025 and comprised a total of sixteen (16) boreholes. A summary of the borehole program is provided in Table 3.1 below. The approximate locations of the boreholes are shown on Drawings 32339-1 to 32339-6 provided in Appendix B. Borehole details are provided in the Record of Borehole sheets included in Appendix C.

Table 3.1: Summary of Borehole Details

Roadway	Borehole (BH) No.	Approx. Ground Elev. (m)	BH Term. Depth (m)	Approx. BH Term. Elev. (m)	Monitoring Well
Ashtonbee Road	AB-01	159.9	5.2	154.7	☐
	AB-02	160.3	5.2	155.1	☐
	AB-03	159.3	5.0	154.3	☐
Craigton Road	CR-01	153.4	5.2	148.3	☒
	CR-02	157.1	5.2	151.9	☐
Golden Mile Boulevard	GM-01	157.8	5.2	152.6	☐
	GM-02	156.8	5.2	151.6	☐
	GM-03	160.6	2.1	158.5	☐
	GM-04	161.2	1.9	159.2	☐
	GM-05	161.0	0.4	160.6	☐
O'Connor Drive	OC-01	148.0	2.1	145.9	☐
	OC-02	160.4	2.1	158.2	☐
	OC-03	158.7	5.2	153.5	☒
	OC-04	160.6	5.2	155.4	☐
	OC-05	160.9	0.7	160.2	☐
Thermos Road	TS-01	160.0	4.9	155.2	☒

The borehole locations were established in the field by Thurber in coordination with the Client using a portable GPS receiver and verified relative to existing site features. The ground surface elevations at the borehole locations were determined using a Trimble R12 GNSS receiver. The

³ Armstrong, D.K. and Dodge, J.E.P., 2007: Paleozoic geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 219.

⁴ Karrow, P.F., Rogers, D.P., Ostry, R.C., 1961. Metropolitan Toronto bedrock contours, Ontario Department of Mines, Preliminary Map Series, Map P0102, Scale 1:24,000.

ground surface elevations are orthometric derived from GNSS observations and Natural Resources Canada Geoid Model HT2.0, which is a height transformation model that was created by modifying a gravimetric geoid model (CGG2000) to fit the historical CGVD28:78 datum. Borehole location coordinates are presented in the Universal Transverse Mercator (UTM) system (UTM-17 NAD83).

Prior to the start of drilling, public utility locates were obtained through Ontario One Call. The boreholes were repositioned as necessary in consideration of surface features, topography, and underground and overhead utilities. Road occupancy permits (ROP) were obtained prior to commencement of the drilling.

Boreholes were typically advanced using solid stem augers powered by a truck mounted CME-55 drill rig supplied and operated by DBW Drilling Limited. Soil samples were obtained at selected intervals using 50 mm outside diameter split-spoon samplers driven in conjunction with the Standard Penetration Test (SPT). Boreholes GM-05 and OC-05 were advanced with hand augers due to restricted site access on Birchmount Road.

The field investigation was carried out under the full-time supervision of Thurber technical staff. All boreholes were logged in the field. Soil samples were identified in the field, placed in labelled containers and transported back to Thurber's laboratory in Oakville for further examination and testing.

3.2 Groundwater Monitoring

The groundwater conditions at the borehole locations were assessed during drilling by visual examination of the soil, the sampler, and the drill rods as the samples were retrieved and when appropriate by measurement of the water level in the open borehole.

Monitoring wells were installed in selected boreholes to permit monitoring of the groundwater levels at the site. The monitoring wells consisted of 50 mm diameter PVC pipe with a slotted screen sealed at a selected depth within the borehole. The installation details are summarized in Table 3.2 below.

Table 3.2: Summary of Monitoring Well Details

Borehole/ Monitoring Well No.	Ground Surface Elev. (m)	Monitoring Well Tip		Slotted Screen Length (m)	Mid- Screen Depth (m)	Mid- Screen Elev. (m)	Screened Material
		Depth (m)	Elev. (m)				
CR-01	153.4	4.6	148.8	1.5	3.9	149.5	Clay, Silt and Sand Till
OC-03	158.7	4.6	154.1	3.0	3.1	155.6	Silt and Sand Fill, Silt and Sand, Silt and Sand Till
TS-01	160.0	4.6	155.4	1.5	3.9	156.1	Clay, Silt and Sand Till

The remaining boreholes were backfilled with bentonite to the ground surface in general accordance with MOE Regulation 903.

Water levels were measured in the monitoring wells using a groundwater level reader. The water level meter was cleaned between uses at each monitoring well location.

3.3 Field Screening Measurements

The soil samples recovered from the boreholes were screened for both volatile organic compounds (VOCs), calibrated with isobutylene, and combustible gases, calibrated with methane, using an RKI Eagle 2 instrument. The field screening was conducted on soil samples contained in sealed plastic bags in order to measure the concentrations of gases/vapours in the headspace of the bags.

Field screening of soil was conducted to provide a semi-quantitative assessment of volatile parameters in soil which involves the measurement of undifferentiated organic compounds and does not discriminate among the various organic parameters. As such, the gas/vapour readings are not considered to be actual concentrations of gases and vapours in the soil samples but are indicative of the relative concentrations in the samples. The headspace measurements are typically taken to guide the selection of soil samples for chemical analysis of organic compounds such as volatile constituents and/or petroleum hydrocarbons.

4. LABORATORY TESTING

4.1 Geotechnical Laboratory Testing

Geotechnical laboratory testing was carried out at Thurber's laboratory. All recovered soil samples were subjected to visual identification and to natural moisture content determination. Selected samples were also subjected to grain size distribution analysis (hydrometer and/or sieve) and Atterberg Limits testing, where appropriate. Results of the geotechnical soil laboratory testing are presented on the Record of Borehole sheets in Appendix C and in detail in Appendix D, respectively.

4.2 Corrosivity and Sulphates

Selected soil samples were submitted for analytical testing to assess the corrosion potential of soil to ductile iron and the potential for sulphate attack on subsurface concrete structures. The analyses were carried out by SGS Canada Inc. (SGS), an independent Canadian Association for Laboratory Accreditation (CALA) accredited laboratory. The laboratory Certificates of Analysis are included in Appendix E.

4.3 Asbestos

Asphalt samples from selected borehole locations were submitted to a qualified laboratory to test for the presence of asbestos. The analysis was carried out by SGS. The laboratory Certificate of Analysis is included in Appendix F.

4.4 Geoenvironmental

Selected soil samples obtained from the boreholes were submitted for analytical testing under Chain-of-Custody protocol to SGS Laboratories (SGS), an independent Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that meets the requirements of Section 47 of O. Reg. 153/04.

For preliminary evaluation of the environmental quality of the on-site soils, a total of nine (9) samples were submitted for analysis of metals and inorganic (M&I) parameters, petroleum hydrocarbons (PHC) Fractions F1 to F4, including benzene, ethylbenzene, toluene and xylenes (BTEX), volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs). Four (4) of the samples were also submitted for analysis of semi-volatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs).

The submitted sample details and associated analyses are summarized in Table 4.1.

Table 4.1: Analytical Testing Summary Table

Borehole	Sample ID	Depth (m)	Material	Analyses	
				M&I, PHC (incl. BTEX), VOCs, PAHs	SVOCs, PCBs
AB-01	SS4	2.3 - 2.9	Silt and Sand Till	☒	☒
AB-02	SS3	1.5 - 2.1	Silt and Sand	☒	☒
AB-03	SS4	2.3 - 2.7	Silt and Sand Till	☒	☐
CR-01	SS5	3.0 - 3.7	Clay	☒	☐
GM-01	SS3	1.5 - 2.1	Sand	☒	☐
GM-02	SS2	0.8 - 1.4	Sand Fill	☒	☐
OC-03	SS5	3.0 - 3.7	Silt and Sand Till	☒	☐
OC-04	SS4	2.3 - 2.7	Silt and Sand Till	☒	☒
TS-01	SS3	1.5 - 2.1	Silt and Sand	☒	☒

In addition to the above, one composite soil sample (Borehole AB-02 from 0.2 to 5.2 m) was tested for Toxicity Characteristic Leaching Procedure (TCLP) analysis of metals and inorganics, VOCs, PCBs, benzo(a)pyrene (B(a)P), Ignitability, and bulk PCBs in accordance with O. Reg. 347, as amended, to classify materials for transfer to a waste management facility holding appropriate MECP Environmental Compliance Approval (ECA).

The results of the analytical testing are summarized in Section 6 and laboratory Certificates of Analysis (COA) are included in Appendix G.

5. DESCRIPTION OF SUBSURFACE CONDITIONS

Details of the encountered soil stratigraphy are presented on the Record of Borehole sheets included in Appendix C. A general description of the stratigraphy, based on the conditions encountered in the boreholes, is given in the following paragraphs. However, the factual data presented on the Record of Borehole sheets takes precedence over this general description and must be used for interpretation of the site conditions. It should be recognized and expected that soil conditions will vary between and beyond borehole locations.

The subsurface stratigraphy encountered in the boreholes generally consisted of a surficial pavement structure or topsoil, overlying fill, underlain by layers of native silty sand to silt and sand and silty clay, over glacial till deposits.

5.1 Pavement Structure

A pavement structure was encountered at the ground surface of all the boreholes with the exception of GM-05 and OC-05. In Borehole OC-01, a composite pavement structure consisting of 100 mm of asphalt over 200 mm of concrete underlain by 390 mm of granular material was encountered at the ground surface. In the remaining boreholes, the pavement structure typically consisted of 125 to 300 mm of asphalt over 360 to 635 mm of granular material, locally up to 1,020 mm thick in Borehole OC-03.

The results of grain size distribution analyses carried out on selected samples of the granular fill materials are presented on Figure D1 in Appendix D and are summarized in the table below.

Soil Particle	Percentage (%)
Gravel	31 to 32
Sand	55
Silt & Clay	13 to 14

Assessment of road granular materials for reuse was not within the current scope and should be considered for future investigations.

5.2 Topsoil

A 300 mm thick layer of topsoil was encountered at the ground surface of Boreholes GM-05 and OC-05. The topsoil appears to have been placed as fill or developed over fill material. The topsoil thicknesses will vary between and beyond the borehole locations and the reported thicknesses are not meant to be used for estimating quantities.

5.3 Fill

Fill was encountered below the pavement structure and topsoil in all the boreholes. The fill was 0.2 to 1.5 m thick and was penetrated at depths 0.9 to 2.2 m (Elev. 147.1 to 159.5) in Boreholes AB-01 to AB-03, CR-01, CR-02, GM-01, GM-02, OC-01, OC-03, OC-04, and TS-01. In Boreholes GM-03 to GM-05, OC-02, and OC-05 the fill extended to the termination depths of 0.4 to 2.1 m (Elev. 158.2 to 160.6).

The fill consisted of variable earth materials and primarily consisted of non-cohesive silty sand to silt and sand with localized zones of gravelly silty sand and slightly cohesive zones of clayey silt and sand. In Borehole AB-02, a possible buried asphalt layer was encountered at a depth of about 1.3 m (Elev. 159.0).

SPT 'N' values recorded in the fill ranged from 7 to 34 blows per 300 mm of penetration to 38 blows for only 225 mm of penetration, indicating a loose to dense condition. Measured moisture contents within the fill typically ranged from 5% to 23%.

The results of grain size distribution analyses carried out on selected samples of the fill are presented on Figures D2 and D3 in Appendix D. The results of the grain size distribution analyses are summarized in the table below:

Soil Particle	Percentage (%)		
	Gravelly Silty Sand	Silty Sand	Silt and Sand
Gravel	27 to 28	15	0 to 3
Sand	42 to 45	51	38 to 43
Silt	20 to 22	27	40 to 43
Clay	7 to 9	7	14 to 19

Atterberg limits testing was carried out on one sample of the silt and sand fill. The measured liquid limit, plastic limit, and plasticity index were 20, 12, and 8, respectively. These results, which are plotted on Figure D7 in Appendix D, indicate that the sample tested consists of low plasticity silty clay (CL).

5.4 Silty Sand to Silt and Sand

The fill was underlain by deposits of silty sand to silt and sand at depths of 1.5 to 2.2 m (Elev. 154.6 to 158.8) in Boreholes AB-02, CR-02, GM-01, GM-02, OC-03, and TS-01. The deposit was 0.4 to 2.0 m thick and was penetrated at 2.2 to 3.5 m (Elev. 153.3 to 157.1) in the boreholes. The silt and sand contained trace clay to clayey and occasional silty clay layers.

SPT N-values recorded in this deposit ranged from 5 to 15 blows per 0.3 m of penetration, indicating a loose to compact relative density. Insitu moisture contents ranged from 9% to 24%.

5.5 Silty Clay

A layer of silty clay was contacted below the fill and silt and sand at depths of 2.2 and 3.0 m (Elev. 151.2 and 157.1) and was penetrated at 4.1 m (Elev. 149.3 and 155.9) in Boreholes CR-01 and TS-01, respectively. The silty clay contained occasional silt and sand layers.

SPT N-values recorded in the silty clay ranged from 11 to 19 blows for 300 mm of penetration, indicating a stiff to very stiff consistency. Moisture contents of the clay ranged from 10% to 18%.

The results of a grain size distribution analysis carried out on one selected sample of the silty clay are presented on Figure D4 in Appendix D. The results indicated 0% gravel, 9% sand, 24% silt, and 67% clay sized particles.

Atterberg limits testing was carried out on one sample of the silty clay. The measured liquid limit, plastic limit, and plasticity index were 54, 23, and 31, respectively. These results, which are plotted on Figure D8 in Appendix D, indicate that the sample tested consists of high plastic clay (CH).

5.6 Silt and Sand to Sandy Silt Till

Glacial till deposits were encountered below the fill, silty sand to silt and sand deposits, and silty clay at depths of 0.9 to 4.1 m (Elev. 147.1 to 159.5) and extended to the termination depths of 2.1 to 5.2 m (Elev. 145.9 to 155.4) in Boreholes AB-01 to AB-03, CR-01, CR-02, GM-01, GM-02, OC-01, OC-03, OC-04, and TS-01.

The composition of the till material typically comprised non cohesive to cohesive silt and sand and occasionally slightly cohesive sandy silt with occasional silty clay layers. Though not encountered in the boreholes, glacially derived till soils often contain cobbles and boulders, and these should be anticipated when excavating during construction.

SPT N-values recorded in the till deposits ranged from 9 to 89 blows for 300 mm of penetration to 50 to 91 blows for only 100 to 275 mm of penetration, indicating a loose to very dense relative density, typically compact to dense. Moisture contents of 7% to 15% were measured in the till.

The results of grain size distribution analyses carried out on selected samples of the till are presented on Figures D5 and D6 in Appendix D. The results of the grain size distribution analyses are summarized in the table below.

Soil Particle	Percentage (%)
Gravel	1 to 4
Sand	33 to 42
Silt	37 to 50
Clay	12 to 17

The results of Atterberg Limits testing carried out on selected samples of the till indicate that the material is slightly plastic clayey silt to low plastic silty clay (CL-ML to CL). The results of the testing are presented in Figure D9 in Appendix D and are summarized in the table below.

Index Property	Range
Liquid Limit	17 to 23
Plastic Limit	10 to 13
Plasticity Index	7 to 11

5.7 Groundwater Conditions

Upon completion of drilling, cave was observed at depths of 4.9 and 4.7 m (Elev. 155.4 and 154.6) and water levels were observed at 2.4 and 4.7 m (Elev. 157.8 and 154.6) in Boreholes AB-02 and AB-03, respectively. In Boreholes CR-02 and GM-04 water levels were observed at depths of 4.3 and 0.6 m (Elev. 152.8 and 160.5) in the open boreholes upon completion of drilling, respectively. Boreholes AB-01, GM-01 to GM-03, GM-05, OC-01, OC-02, OC-04, and OC-05 were open and dry upon completion.

Monitoring wells were installed in selected boreholes to monitor groundwater levels and to allow for additional testing and sampling. The groundwater levels measured in the monitoring wells are shown on the appended borehole logs and are summarized in Table 5.1 below. The stabilized measured groundwater levels ranged from 1.7 to 2.7 m below the ground surface (Elev. 150.7 to 158.3).

Table 5.1: Summary of Groundwater Level Observations

Borehole/ Monitoring Well No.	Ground Surface Elevation (m)	Mid-Screen Depth (m)	Mid-Screen Elev. (m)	Ground Water Levels Depth (mbgs) Elevation (m)		
				May 27, 2025	May 28, 2025	June 23, 2025
CR-01	153.4	3.9	149.5	4.3 ¹ (149.2)	-	2.7 (150.7)
OC-03	158.7	3.1	155.6	-	4.0 ¹ (154.7)	2.0 (156.7)
TS-01	160.0	3.9	156.1	3.7 ¹ (156.4)	-	1.7 (158.3)

Note:

1. Observed groundwater level does not represent stabilized groundwater level and was recorded immediately after installation.

The groundwater levels are short-term readings and fluctuations of the groundwater levels are to be expected. In particular, the groundwater levels may be at a higher elevation after periods of significant or prolonged precipitation.

5.8 Field Screening Measurements

The measured concentrations on the headspace of recovered soil samples typically ranged from 0 to 3 parts per million (ppm) for VOCs (calibrated to isobutylene). The measured concentrations on the headspace of recovered soil samples for combustible gas (calibrated to hexane), typically ranged from 0 to 10 ppm, locally higher readings ranging up to 25 to 35 ppm in Boreholes OC-01 and OC-03.

6. ANALYTICAL LABORATORY TESTING RESULTS

6.1 Corrosivity and Sulphate Test Results

Samples of the native and fill overburden soils were submitted for analytical testing of corrosivity parameters and sulphate. The results of the analytical tests are shown in Table 6.1 below. The laboratory certificates of analysis are presented in Appendix E.

Table 6.1: Corrosivity and Sulphate Soil Test Results

Sample ID	Sample Depth (m)	Sample Description	Sulphide (%)	Chloride (µg/g)	Sulphate (µg/g)	pH	Resistivity (ohm.cm)	Redox Potential (mV)
CR-01 SS4	2.3 – 2.9	Clay	< 0.01	550	36	7.63	773	277
OC-03 SS3	1.5 – 2.1	Silt and Sand Fill, Silt and Sand	< 0.01	620	40	8.41	653	293
TS-01 SS4	2.3 – 2.9	Silt and Sand	<0.01	940	52	8.33	535	265

6.2 Asbestos

Asphalt core samples obtained from Boreholes OC-01, OC-03, GM-04 and AB-03 were submitted to the laboratory to test for the presence of asbestos. The results indicated that asbestos was not detected in all samples tested. The laboratory certificate of analysis is presented in Appendix F.

6.3 Geoenvironmental

6.3.1 Applicable Standards

6.3.1.1 Re-use of Excavated Soil On-Site (O. Reg. 153/04)

For preliminary assessment of the suitability of excavated soils for on-site reuse as part of the proposed construction works, the MECF Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for industrial / commercial / community (ICC) property uses (Table 3 ICC) were considered to be the applicable site condition standards (SCS) for on-Site soil reuse for the majority of the site.

For soil which may be reused as fill within 30 m of the Taylor-Massey Creek or any other waterbodies, the MECP Table 9: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Groundwater Condition for residential / parkland / institutional / industrial / commercial / community property (RPI/ICC) property uses (Table 9 RPI/ICC) were considered to be the applicable site condition standards (SCS).

6.3.1.2 Re-use of Excavated Soil at a Receiving Site (O. Reg. 406/19)

To assess the potential for reuse of excess soils at sites requiring fill for a beneficial purpose, the analytical results were compared with the following Excess Soil Quality Standards (ESQSs) provided in Appendix 1 of Part II of the Rules for Soil Management and Excess Soil Quality Standards (2019) under O. Reg. 406, as amended (“the Rules”):

- Table 1: “Full Depth Background Site Condition Standards” for Property Uses other than agricultural (Table 1 ESQS).
- Table 2.1: “Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition” for RPI and ICC property uses (Table 2.1 RPI and ICC ESQS).
- Table 3.1: “Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition” for RPI and ICC property uses (Table 3.1 RPI and ICC ESQS).

Analytical requirements and acceptance criteria of a potential reuse site and the associated ESQS/ Leachate Screening Levels (LSLs), as well as consideration to site specific instruments or regulatory requirements, if any, will need to be considered to assess the suitability for potential reuse of the soils at a selected location.

6.3.1.3 Waste Characterization

To classify excess soil materials for disposal at a MECP licenced waste management facility, the TCLP results were compared to the leachate quality criteria defined in Schedule IV of O. Reg. 347 as amended by O. Reg. 558/00.

6.3.2 Analytical Results

6.3.2.1 Soil

The results of the analytical laboratory testing indicate that the concentrations of the tested parameters are below MECP O. Reg. 153/04 Table 3 ICC, Table 9 RPI/ICC and O. Reg. 406/19 Table 1, and Tables 2.1 and 3.1 RPI and ICC ESQS with the exception of the exceedances summarized below:

- All nine (9) of the samples were reported with Electrical Conductivity (EC) and/or Sodium Adsorption Ratio (SAR) values that exceeded one or more of the selected ESQS.

- One sample of sand fill collected from Borehole GM-02 (Sample ID GM-02 SS2) collected from a depth of approximately 0.8 m – 1.4 m below ground surface, was reported with concentrations of benzene that exceeded the MECP O. Reg. 153/04 Table 9 RPI/ICC and O. Reg. 406/19 Table 1, Table 2.1 RPI and ICC, and Table 3.1 RPI ESQS. The measured concentrations of benzene did not exceed the Table 3 ICC and Table 3.1 ICC ESQS.

Summary tables of the analytical results compared to the MECP Table 3 ICC, Table 9 RPI/ICC, Table 1 RPI/ICC, and Tables 2.1 and 3.1 RPI and ICC ESQS and the Laboratory Certificates of Analysis are included in Appendix G. The measured concentrations and corresponding Standards are shown on the certificates of analysis.

6.3.2.2 Waste Characterization

The measured concentrations of the tested parameters are below the Schedule 4 leachate quality criteria for the composite sample tested. Additionally, the sample was not ignitable, and PCBs were not detected. Based on the results of analysis, the soils may be classified as non-hazardous for disposal to a waste management facility with an ECA to receive this material (pending approval of receiving site authorities). Individual waste management facilities may require more testing and other analytes to be tested prior to approval. Laboratory Certificates of Analysis are included in Appendix G.

7. ENGINEERING DISCUSSION AND RECOMMENDATIONS

This section of the report presents interpretation of the data obtained during the field and laboratory investigation and presents comments and preliminary recommendations in support of the Municipal Class Environmental Assessment (EA) study for the Golden Mile Network in the City of Toronto, Ontario.

The comments and recommendations presented in this report are based on the subsurface soil and groundwater conditions encountered during the investigation and on the preliminary design concept available at the time of this report. In this regard, the comments and recommendations are considered preliminary and should be reviewed and/or revised, if required, during the detailed design stage. These recommendations are not to be used by contractors. Subsurface conditions may vary between and beyond the borehole locations.

7.1 Municipal Service Installation

Details of the proposed municipal services have not been provided at the time of this report. In general, excavation for open cut installation of municipal services to an assumed maximum depth of 3.0 m.

The subsurface stratigraphy encountered in the boreholes generally consisted of a surficial pavement structure or topsoil, overlying fill, underlain by layers of native silty sand to silt and sand and silty clay, over till deposits. The stabilized measured groundwater levels ranged from 1.7 to 2.7 m below the ground surface (Elev. 150.7 to 158.3).

Based on the assumed excavation depth and the subsurface stratigraphy encountered in the boreholes, it is anticipated that excavations will extend through the existing roadway pavement structure and fill materials, and into the native silty sand to silt and sand, silty clay, and till deposits. Excavations to these depths are expected to extend below the measured groundwater levels.

7.1.1 Excavation and Dewatering

Use of a hydraulic excavator should be suitable for excavation in the fill and native overburden soils. Provision should be made for handling of the existing pavement structure (asphalt and concrete) and granular material. The fill and native overburden deposits may contain cobbles and boulders and may also contain other obstructions including buried asphalt layers and the contractor must be prepared to handle these obstructions. Highly plastic silty clay soils may become very soft during excavation and require special handling, subexcavation and removal to underlying competent soils.

All temporary excavations must be carried out in accordance with the current Occupational Health and Safety Act (OHSA) of Ontario and local regulations. Provided adequate ground water control is achieved, the soils above the water level are typically classified as Type 3 soils under OHSA. The native very dense till deposits above the water level may be classed as Type 2 soils. Soft clayey soils and loose, wet cohesionless soils are classified as Type 4 soils. Unsupported excavations below the water table are not recommended.

Slopes of temporarily unsupported excavations should conform with the requirements of OHSA but should not be steeper than 1H:1V. Flatter slopes may be required at locations where water seepage or sloughing occurs during excavation. The excavation slopes should be continuously monitored for evidence of instability.

Temporary shoring, if employed, should be designed by a licensed Professional Engineer experienced in design of shoring systems. The design of all members in the shoring system should include the effects of surcharge loads such as those imposed by roadways, buildings, adjacent utilities, and construction equipment.

All trenches must be constructed in the dry. Dewatering requirements for construction in the dry will be dependent upon the water levels at the time of construction and the relative depth of the excavations. In general, dewatering of shallow excavations above the groundwater level is considered feasible using properly filtered sumps and pumps, however, the possibility of requiring additional pumps and/or perimeter wells should not be overlooked. Surface water runoff must be diverted away from the excavations at all times during construction.

7.1.2 Pipe Bedding and Trench Backfill

Prior to placement of the pipe bedding, the base of the trenches should be maintained in a dry condition, free of loose, softened, or disturbed material. The pipe must be placed on a uniformly competent subgrade. Pipe bedding materials, compaction, and cover should follow OPSD 802.010 to 802.034, and/or City of Toronto specifications.

In areas where a less competent subgrade is encountered, it may be necessary to increase the bedding thickness. Any excessively soft, loose, organic, or compressible materials at the pipe subgrade should be subexcavated and replaced with OPSS Granular A material compacted to at least 98% of Standard Proctor maximum dry density (SPMDD).

Trench backfill materials should be placed in loose lift thicknesses not exceeding 200 mm and compacted to at least 98% of its SPMDD. Where utility trenches are located beneath the roadways, OPSS Granular A or B material compacted to 100% SPMDD, 19 mm or 50 mm crusher run limestone, or unshrinkable fill should be employed as backfill.

For trenches located outside of the existing and proposed roadways, the portion of the trench above the pipe cover can be backfilled with unfrozen excavated native soils provided it is free of organics, debris and other deleterious materials. The placement moisture content should be within about 2% of the optimum moisture content for efficient compaction.

Reuse of the existing onsite soils should be subject to the approval of the geotechnical engineer at the time of the construction. The excavated soils may require conditioning (e.g., drying) prior to reuse. Therefore, the excavated materials may require space for stockpiling to allow for moisture content adjustment prior to reuse. Unsuitable material such as organic pockets, boulders, cobbles, frozen soils, etc., should be wasted. Ideally, dissimilar materials should be stockpiled separately during excavation.

Re-use of the high plastic clay as trench backfill is not recommended due to the potential for constructability issues (i.e., achieving optimum moisture and a suitable degree of compaction) and consequential settlement.

The clayey till soils will likely be excavated in cohesive blocks that will have to be broken down and placed in thin layers, provided the moisture content is at or near the optimum moisture content for re-compaction. The clayey till soils will have to be compacted using heavy equipment in order to thoroughly break up the large pieces, which may be difficult to operate in the confines of narrow trenches. Unless the clay soils are properly reduced in size and compacted in sufficiently thin lifts, post-construction settlement could occur. If the use of heavy equipment for compaction of the clayey till soils is not possible in settlement sensitive areas, excavated clayey soil should not be reused as trench backfill.

It should be noted that the foregoing comments pertain to material reusability based solely on geotechnical considerations. Further restrictions on re-use may apply based on geoenvironmental considerations.

7.2 Frost Protection

The depth of frost penetration at this site is 1.2 m, as per OPSD 3090.101. All utilities which are susceptible to freezing should be provided with a minimum of 1.2 m of earth cover or provided with an equivalent thickness of thermal insulation as protection against frost action. A 25 mm thick layer of polystyrene insulation is thermally equivalent to 600 mm of soil cover.

7.3 Pavement Design

The existing pavement structure typically consisted of 125 to 300 mm of asphalt over 360 to 635 mm of granular material, locally up to 1,020 mm thick in Borehole OC-03. Locally, in Borehole OC-01 on O'Connor Drive, a composite pavement structure consisting of 100 mm of asphalt over 200 mm of concrete underlain by 390 mm of granular material was contacted at the ground surface.

Based on the Golden Mile Transportation Master Plan 2041 PM Peak Hour Volumes, the assumed roadway classifications and approximate average annual daily traffic volumes (AADT) for the purpose of this report are presented in Table 7.1 below.

Table 7.1: Summary of Assumed Roadway Classifications and AADT

Road Classification	Roadway	Approx. AADT
Collector	O'Connor Drive	15,000
	Golden Mile Boulevard	7,500
	Ashtonbee Road	5,000
	Craigton Drive	5,000
	Thermos Road	5,000
	Sinnott Road	7,500
	Jonesville Crescent	5,000

The traffic volumes, growth rates, and percentage of heavy vehicles for the proposed roadways in the Golden Mile Network were not known at the time of this report. Based on the borehole data and assuming adequate drainage of the pavement materials, the following flexible pavement structure design for the proposed collector roadways (assuming 30 MPa subgrade and 5% commercial vehicles) should be considered for preliminary planning purposes only for construction, reconstruction, and widening for the roadways:

Component	Thickness (mm)		
	Collector AADT = 15,000	Collector AADT = 7,500	Collector AADT = 5,000
Superpave 12.5 Category B	40	40	40
Superpave 19.0 Category B	125	115	105
OPSS Granular A Base	150	150	150
OPSS Granular B Type II Subbase	150	150	150

The pavement design must be re-assessed during detailed design. Consideration of composite pavement structure designs should also be given and evaluated during detailed design.

Subgrade preparation for roadway construction should include removal of the existing pavement structure and all surficial vegetation, topsoil, organic or compressible material. The exposed subgrade should be compacted and proof-rolled and examined to identify areas of unstable subgrade. Any soft/wet areas identified shall be subexcavated and replaced with approved material within 2% of Optimum Moisture Content (OMC) and compacted to at least 98% of Standard Proctor Maximum Dry Density (SPMDD).

Bulk fill used to raise the grade, if required, should be constructed as engineered fill, consisting of approved inorganic material, placed in maximum 200 mm thick lifts, within 2% of optimum moisture content, and compacted to at least 98% of SPMDD. Bulk fill material for general grade raise must be in accordance with the City's standards and could comprise imported fill or existing site material. Unsuitable material such as organic pockets, boulders, cobbles, frozen soils, etc., should not be used as fill. Standard side slopes of 2H:1V or flatter should be suitable for embankment construction. Exposed embankment surfaces should be provided with a vegetation cover or otherwise protected against erosion in accordance with OPSS 804.

The top of the compacted subgrade should be graded smooth with a minimum crossfall of 3% towards side ditches or subdrains. Continuity of drainage should be maintained at transitions from existing pavement to new pavement.

All asphalt materials should meet the requirements of OPSS.MUNI 1151, as supplemented by the City of Toronto Standard Specification TS 1151. Asphalt cement binders should be in accordance with OPSS.MUNI 1101 as amended by City of Toronto Standard Specification TS 1101, while all paving should be completed in accordance with City of Toronto Specification TS 310, Construction Specification for Hot Mix, Hot Laid Asphaltic Concrete Paving. Aggregates for the asphalt mixes should be in accordance with TS 1003.

If employed, construction of concrete road bases should be completed in accordance with City of Toronto Standard TS 3.40. Materials should meet the requirements of OPSS.MUNI 1350 as amended by City of Toronto Standard TS 1350.

A tack coat shall be utilized between all asphalt lifts, between the concrete base and asphalt, all vertical faces, and at all tie-ins to existing locations. The tack coat should meet the requirement

of City of Toronto Specification TS 3.20. Reclaimed Asphalt Pavement material should not be used in either asphalt mix.

The granular materials should conform to OPSS.MUNI 1010 as amended by the City of Toronto Specification TS 1010 and should be placed in maximum 200 mm thick lifts and compacted to 100 percent of SPMDD within 2 percent of the OMC.

At the paving limits, the transverse tie-in of the existing pavement surface should be cold planed to a depth of the surface course, full width, to provide a straight clean vertical surface so that the new asphalt material can be placed flush with the top of the existing pavement surface. At the longitudinal tie-ins of the widening to the existing pavement, the surface course and top lift of binder asphalt shall extend a minimum of 300 mm over the existing asphalt by milling and placement flush with the top of existing pavement surface.

Acceptance, placement, and compaction of the pavement materials should be carried out in accordance with the applicable City of Toronto and/or OPS specifications.

Portions of the existing pavement granular material may be suitable for re-use as a subbase in the new pavement structure, subject to further evaluation and testing during construction. If these materials are proposed for reuse, care must be taken to avoid mixing with underlying native soils during excavation. All materials should be stockpiled separately and protected from environmental disturbances.

For the pavement to function properly, provision must be made for water to drain out of, and not collect in, the granular courses. In this regard, the top of the compacted subgrade should be graded smooth with a minimum crossfall of 3% towards subdrains, catchbasins and/or manholes. Catchbasins and manholes should be provided with stub drains just above the drain level to permit drainage of the backfill. Continuity of drainage should be maintained at transitions from existing pavement to new pavement. It is recommended that the granular thicknesses for widening should match or exceed the existing pavement structure thicknesses to maintain existing subgrade drainage. A minimum thickness of 150 mm of Granular A should be provided.

7.4 Geoenvironmental Considerations

The chemical sampling and testing program carried out during this investigation was completed to obtain a preliminary understanding of the environmental quality of the soils along the corridor. The environmental characteristics of the soils were inferred from a limited number of samples and sampling locations, and the extent of materials that may be encountered during construction was not delineated. As such, the data and comments are provided as guidance for planners on the requirements for reuse or disposal of materials generated during construction and should not be used to estimate quantities.

The results of the analytical laboratory testing indicate that the concentrations of the tested parameters are below MECP O. Reg. 153/04 Table 3 ICC, Table 9 RPI/ICC and O. Reg. 406/19

Table 1, and Tables 2.1 and 3.1 RPI and ICC ESQS with the exception of the exceedances summarized below:

- All nine (9) of the samples were reported with Electrical Conductivity (EC) and/or Sodium Adsorption Ratio (SAR) values that exceeded one or more of the selected ESQS.
- One sample of sand fill collected from Borehole GM-02 (Sample ID GM-02 SS2) collected from a depth of approximately 0.8 m – 1.4 m below ground surface, was reported with concentrations of benzene that exceeded the MECP O. Reg. 153/04 Table 9 RPI/ICC and O. Reg. 406/19 Table 1, Table 2.1 RPI and ICC, and Table 3.1 RPI ESQS. The measured concentrations of benzene did not exceed the Table 3 ICC and Table 3.1 ICC ESQS.

Elevated EC and SAR are likely the result of de-icing activities on the roadway. The presence of SAR or EC does not impose a risk to human health, but rather may only impact the physical composition of the soil which could affect the growth of vegetation. Where salt has been applied on a highway for the purposes of keeping the highway safe for traffic under conditions of snow or ice or both, the applicable site conditions standard is deemed not to be exceeded under Section 48 (3) of O. Reg. 153/04.

Provided the benzene impacted soils are delineated and segregated, excavated materials that are free of staining and odour may generally be suitable for reuse on site provided the excavated materials are appropriate from a geotechnical perspective, or possibly reused off-site at properties requiring fill for a beneficial purpose. Prior to reuse, the environmental quality of the materials should be reviewed to verify an appropriate end use. This can be completed through additional testing prior to construction, or screening during construction through segregating into separate stockpiles followed by sampling and testing.

The results of TCLP analysis on one composite sample that was obtained during this investigation indicate that the tested materials may be classified as non-hazardous for disposal as waste at a management facility (i.e. landfill and/or treatment facility) with appropriate ECA. However, additional TCLP and bulk polychlorinated biphenyls (PCBs) analysis on the actual excavated materials that require disposal, if any, may be required during construction to verify the waste classification and the acceptance criteria of the waste management facility selected by the Contractor has been met.

O. Reg. 406/19 may or may not apply to the project subject to specific design details (i.e. excavated quantities, soil management strategies involving excess soils that are to be reused off-site, receiving site chemical concentration requirements). If the regulation applies, additional documentation, sampling and testing procedures (including prescribed leachate analysis) may be required to meet the criteria of O. Reg. 406/19. The regulation does not apply to the reuse of excavated soils on Site, and the project may be exempt from the registration, planning and sampling requirements of the regulation if excess soils are to be reused as part of another infrastructure project owned by the Project Leader (as defined by the Regulation) or public body.

No statement made herein should be construed as relieving the Contractor's responsibility to comply with all applicable federal and provincial regulations, municipal by-laws and guidelines related to the handling or disposal of excavated materials (and/or discharge of extracted groundwater).

7.5 Soil Aggressiveness

Samples of overburden were submitted for analytical testing of corrosivity parameters and sulphate.

The results of the testing indicate the overburden soils are corrosive for gray and ductile cast iron pipe. The resistivity values measured in the samples tested from the site indicate that the soils are very severely corrosive to steel. In this regard, protective measures should be provided to resist corrosion of iron and steel elements in contact with the soil or exposed to the effects of road de-icing salts.

Based on the results of the testing, structural concrete will be exposed to chlorides greater than 100 ppm in the soils. The effects of the existing chloride concentrations and future de-icing operations should be considered when selecting the class of concrete to be used for underground structures. The measured sulphate concentrations indicate that buried concrete structures will not be subject to sulphate attack in the overburden soils.

If imported material is required to be used at the site, it is recommended that the fill soil be tested for corrosivity parameters and sulphate content.

7.6 Detailed Geotechnical Investigation

The information presented in this report is provided for preliminary design and planning purposes only. Detailed geotechnical investigation will be required to confirm the subsurface conditions and recommendations. This work should incorporate:

- A detailed pavement investigation including additional boreholes within the existing roadway pavement, widening, and realignment areas to further define the subgrade conditions, determine topsoil/organic thickness, and confirm the pavement design recommendations. Coring of the existing asphalt and non-destructive testing such as Falling Weight Deflectometer (FWD) testing should be considered to further assess suitable rehabilitation options for specific sections of the existing pavement structure;
- Complete additional boreholes and analysis in areas where significant changes in proposed grades, if required, are planned.
- Further assessment of dewatering requirements, impacts and mitigations, and the need for a PTTW or EASR.
- Environmental site assessments and chemical testing of soils in accordance with O.Reg. 406/19, to determine management options for excess excavated soils.

8. CLOSURE

We trust this information meets your present needs. If you have any questions, please contact the undersigned at your convenience.



Karel Furbacher, P. Eng.
Senior Geotechnical Engineer



Renato Pasqualoni, P. Eng.
Review Engineer

Date: September 25, 2026
File: 32339

STATEMENT OF LIMITATIONS AND CONDITIONS

1. STANDARD OF CARE

This Report has been prepared in accordance with generally accepted engineering or environmental consulting practices in the applicable jurisdiction. No other warranty, expressed or implied, is intended or made.

2. COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to Thurber by the Client, communications between Thurber and the Client, and any other reports, proposals or documents prepared by Thurber for the Client relative to the specific site described herein, all of which together constitute the Report.

IN ORDER TO PROPERLY UNDERSTAND THE SUGGESTIONS, RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN, REFERENCE MUST BE MADE TO THE WHOLE OF THE REPORT. THURBER IS NOT RESPONSIBLE FOR USE BY ANY PARTY OF PORTIONS OF THE REPORT WITHOUT REFERENCE TO THE WHOLE REPORT.

3. BASIS OF REPORT

The Report has been prepared for the specific site, development, design objectives and purposes that were described to Thurber by the Client. The applicability and reliability of any of the findings, recommendations, suggestions, or opinions expressed in the Report, subject to the limitations provided herein, are only valid to the extent that the Report expressly addresses proposed development, design objectives and purposes, and then only to the extent that there has been no material alteration to or variation from any of the said descriptions provided to Thurber, unless Thurber is specifically requested by the Client to review and revise the Report in light of such alteration or variation.

4. USE OF THE REPORT

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. NO OTHER PARTY MAY USE OR RELY UPON THE REPORT OR ANY PORTION THEREOF WITHOUT THURBER'S WRITTEN CONSENT AND SUCH USE SHALL BE ON SUCH TERMS AND CONDITIONS AS THURBER MAY EXPRESSLY APPROVE. Ownership in and copyright for the contents of the Report belong to Thurber. Any use which a third party makes of the Report, is the sole responsibility of such third party. Thurber accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report without Thurber's express written permission.

5. INTERPRETATION OF THE REPORT

- a) Nature and Exactness of Soil and Contaminant Description: Classification and identification of soils, rocks, geological units, contaminant materials and quantities have been based on investigations performed in accordance with the standards set out in Paragraph 1. Classification and identification of these factors are judgmental in nature. Comprehensive sampling and testing programs implemented with the appropriate equipment by experienced personnel may fail to locate some conditions. All investigations utilizing the standards of Paragraph 1 will involve an inherent risk that some conditions will not be detected and all documents or records summarizing such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and the Client and all other persons making use of such documents or records with our express written consent should be aware of this risk and the Report is delivered subject to the express condition that such risk is accepted by the Client and such other persons. Some conditions are subject to change over time and those making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. If special concerns exist, or the Client has special considerations or requirements, the Client should disclose them so that additional or special investigations may be undertaken which would not otherwise be within the scope of investigations made for the purposes of the Report.
- b) Reliance on Provided Information: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site inspections and on the basis of information provided to Thurber. Thurber has relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, Thurber does not accept responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of misstatements, omissions, misrepresentations, or fraudulent acts of the Client or other persons providing information relied on by Thurber. Thurber is entitled to rely on such representations, information and instructions and is not required to carry out investigations to determine the truth or accuracy of such representations, information and instructions.
- c) Design Services: The Report may form part of design and construction documents for information purposes even though it may have been issued prior to final design being completed. Thurber should be retained to review final design, project plans and related documents prior to construction to confirm that they are consistent with the intent of the Report. Any differences that may exist between the Report's recommendations and the final design detailed in the contract documents should be reported to Thurber immediately so that Thurber can address potential conflicts.
- d) Construction Services: During construction Thurber should be retained to provide field reviews. Field reviews consist of performing sufficient and timely observations of encountered conditions in order to confirm and document that the site conditions do not materially differ from those interpreted conditions considered in the preparation of the report. Adequate field reviews are necessary for Thurber to provide letters of assurance, in accordance with the requirements of many regulatory authorities.

6. RELEASE OF POLLUTANTS OR HAZARDOUS SUBSTANCES

Geotechnical engineering and environmental consulting projects often have the potential to encounter pollutants or hazardous substances and the potential to cause the escape, release or dispersal of those substances. Thurber shall have no liability to the Client under any circumstances, for the escape, release or dispersal of pollutants or hazardous substances, unless such pollutants or hazardous substances have been specifically and accurately identified to Thurber by the Client prior to the commencement of Thurber's professional services.

7. INDEPENDENT JUDGEMENTS OF CLIENT

The information, interpretations and conclusions in the Report are based on Thurber's interpretation of conditions revealed through limited investigation conducted within a defined scope of services. Thurber does not accept responsibility for independent conclusions, interpretations, interpolations and/or decisions of the Client, or others who may come into possession of the Report, or any part thereof, which may be based on information contained in the Report. This restriction of liability includes but is not limited to decisions made to develop, purchase or sell land.



APPENDIX A

SITE PHOTOGRAPHS



Photo 1: View to the southwest at Ashtonbee Road to the east of Pharmacy Avenue.



Photo 2: View to the southwest of 1941 Eglinton Avenue East, Warden Water Tower (17 Civic Road), and a portion of the Eglinton Avenue East roadway.



Photo 3: View to the south of 1975 Eglinton Avenue East, and a portion of the Eglinton Avenue East roadway.



Photo 4: View to the northeast of Warden Avenue Mobil (933 Warden Avenue).



Photo 5: View to the west of the Eglinton Avenue East alignment.



Photo 6: View to the southeast of the Lebovic Avenue roadway from 2 Lebovic Avenue.



Photo 7: View to the north of the Warden Avenue roadway from 763 Warden Avenue.



Photo 8: View to the south of the Pharmacy Avenue Roadway from 860 Pharmacy Avenue.



Photo 9: View to the southeast of a commercial shopping and restaurant plaza (1871 O'Connor Drive), and a portion of the O'Connor Drive roadway.



Photo 10: View to the north of the Victoria Park Avenue Roadway from 1480 Victoria Park Avenue.



Photo 11: View to the north of the Eglinton Square roadway.

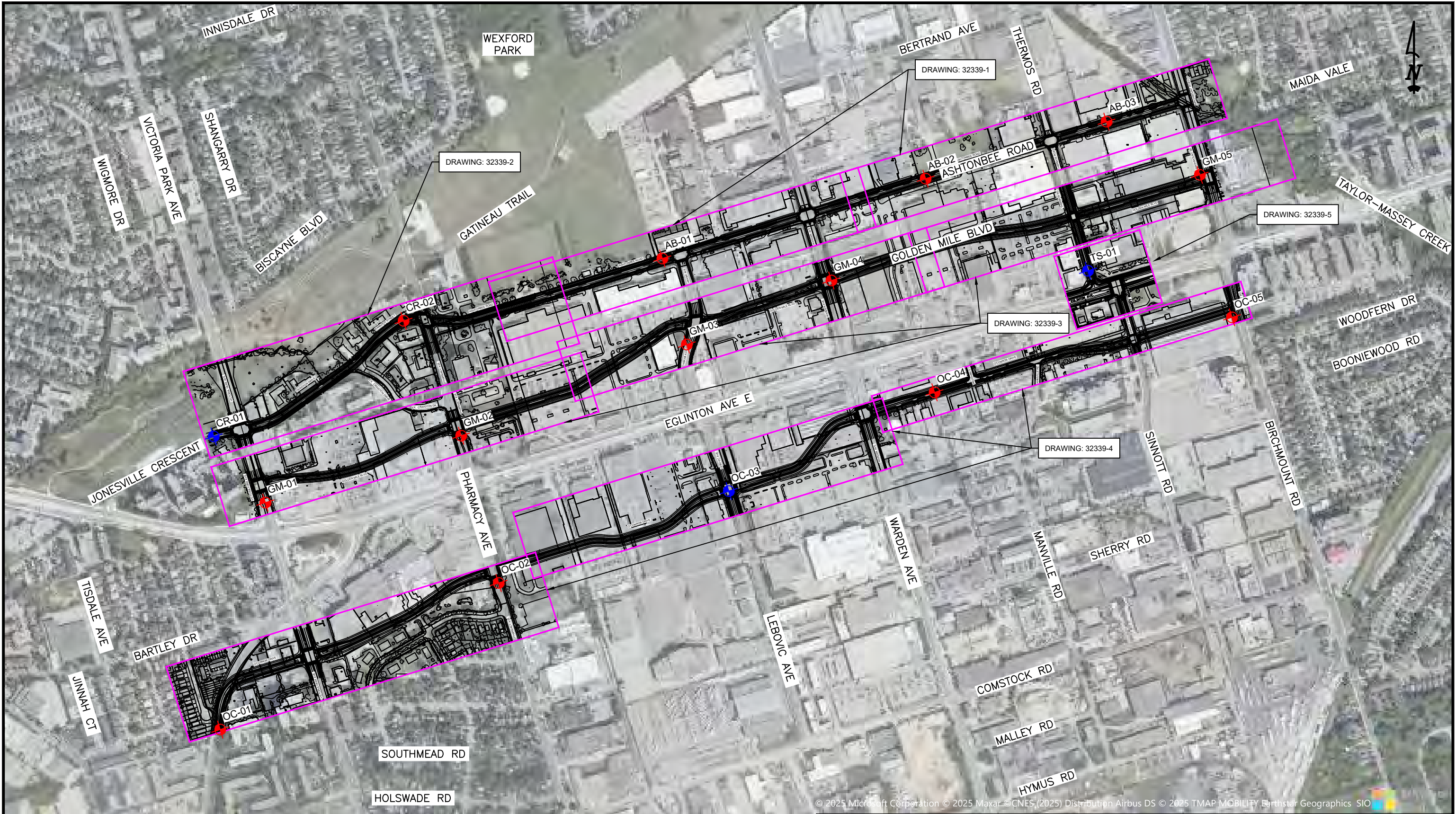


Photo 12: View to the east of 1900 Eglinton Avenue East



APPENDIX B

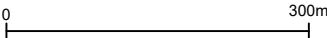
BOREHOLE LOCATION PLAN



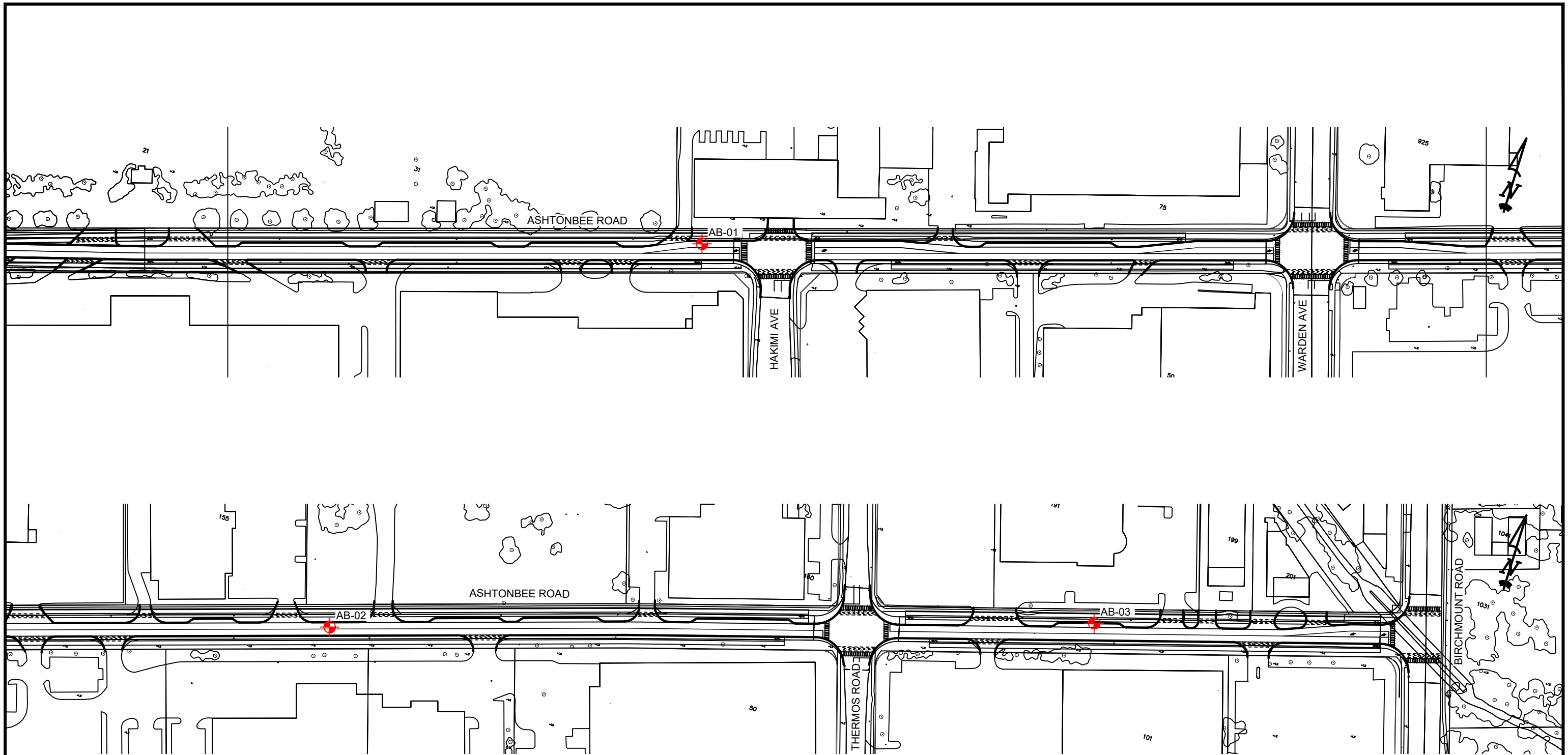
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LEGEND

- BOREHOLE LOCATION
- BOREHOLE/MONITORING WELL LOCATION

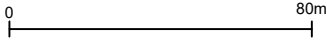


HDR				
GOLDEN MILE AREA ENVIRONMENTAL ASSESSMENT				
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JOB# 32339	TORONTO, ONTARIO	DATE : AUGUST 2025	SCALE : 1:7500	DRAWING No. 32339-0

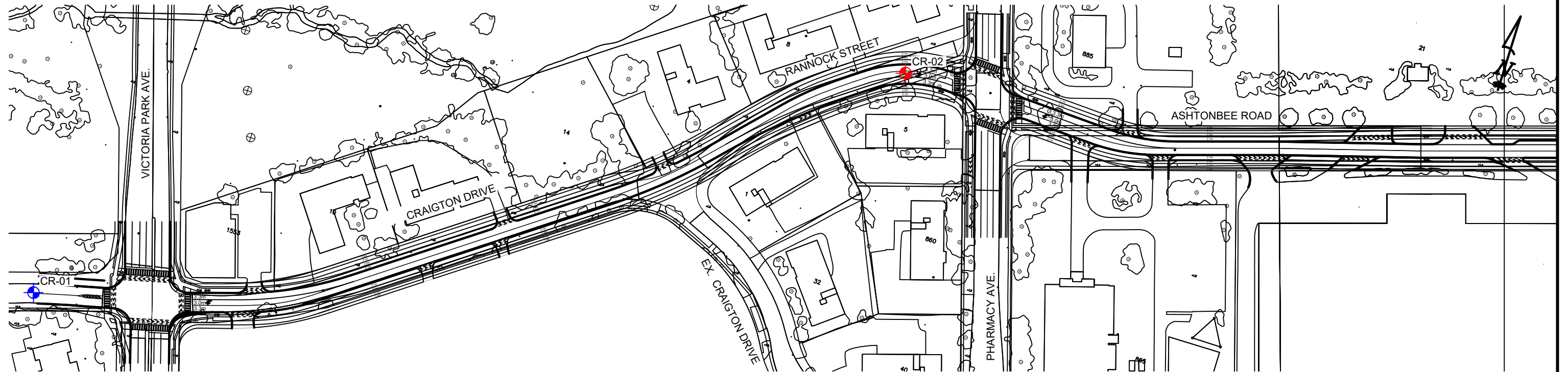


LEGEND

 BOREHOLE LOCATION



HDR			
GOLDEN MILE AREA ENVIRONMENTAL ASSESSMENT ASHTONBEE ROAD BOREHOLE LOCATION PLAN			
JOB# 32339		TORONTO, ONTARIO	
			
DESIGNED : TF	DRAWN : MFA	APPROVED : RP	
DATE : AUGUST 2025	SCALE : 1:2000	DRAWING No. 32339-1	

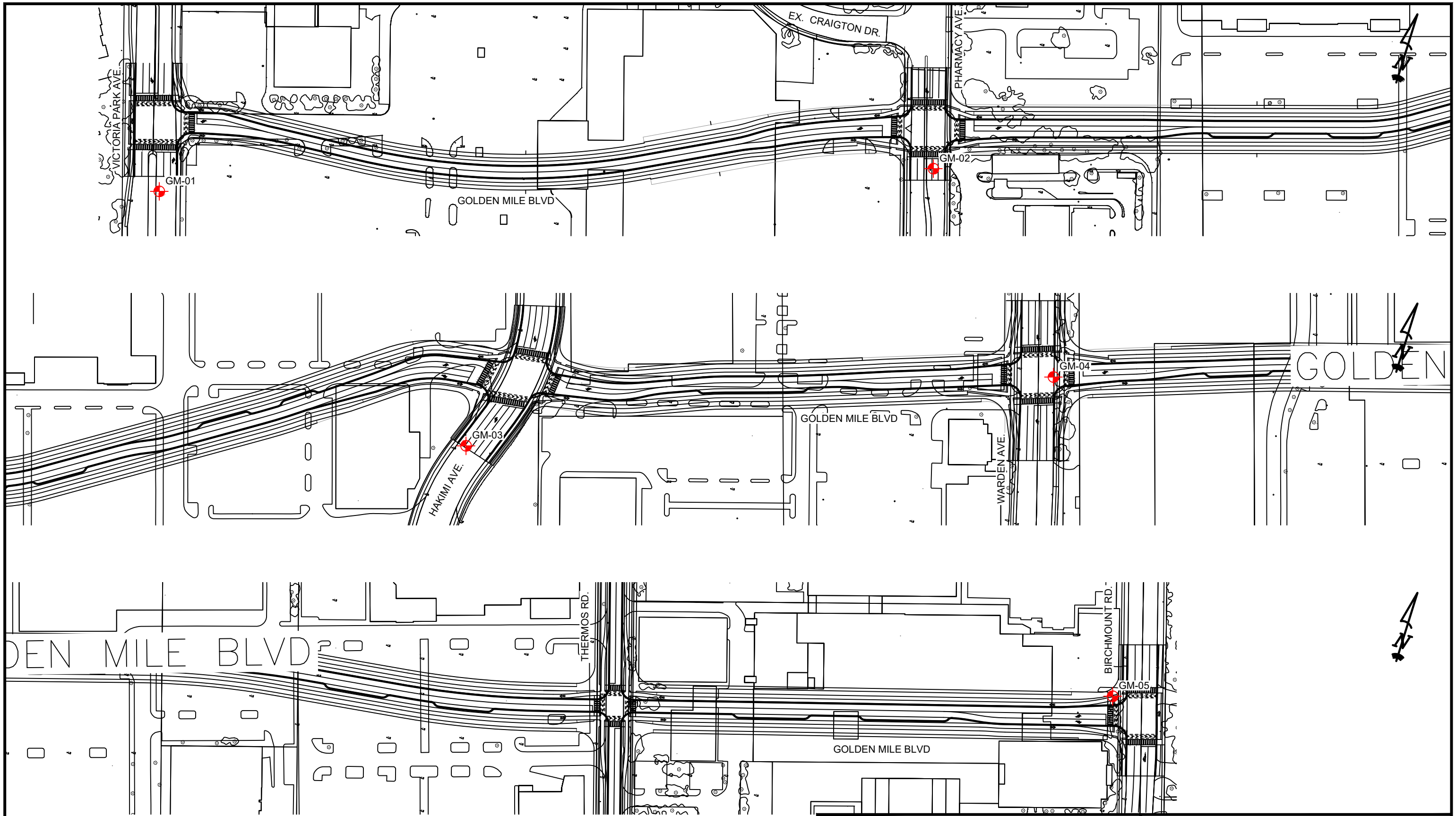


LEGEND

-  BOREHOLE LOCATION
-  BOREHOLE/MONITORING WELL LOCATION

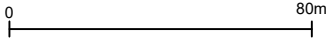


HDR				
GOLDEN MILE AREA ENVIRONMENTAL ASSESSMENT CRAIGTON DRIVE				
BOREHOLE LOCATION PLAN				
JOB# 32339	TORONTO, ONTARIO	DESIGNED : TF	DRAWN : MFA	APPROVED : RP
		DATE : AUGUST 2025	SCALE : 1:2000	DRAWING No. 32339-2



LEGEND

 BOREHOLE LOCATION



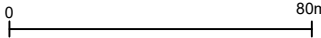
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GOLDEN MILE AREA ENVIRONMENTAL ASSESSMENT GOLDEN MILE BOULEVARD BOREHOLE LOCATION PLAN		
DESIGNED : TF	DRAWN : MFA	APPROVED : RP
DATE : AUGUST 2025	SCALE : 1:2000	DRAWING No. 32339-3
JOB# 32339	TORONTO, ONTARIO	



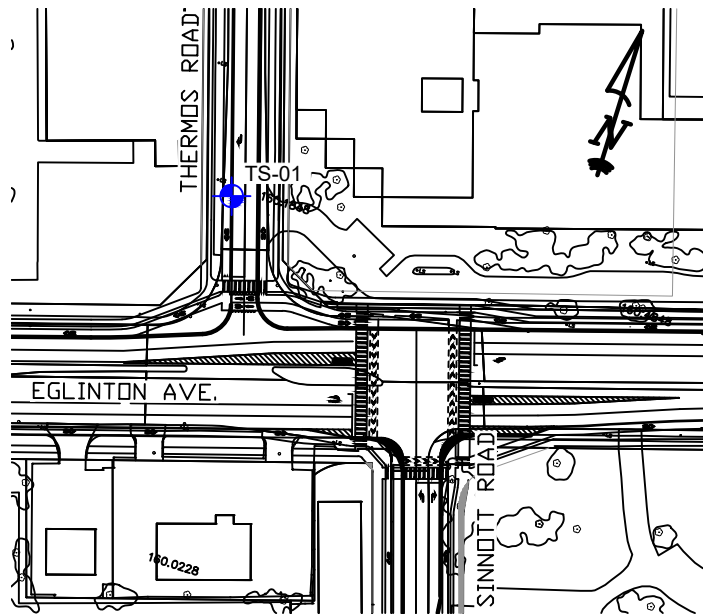


LEGEND

-  BOREHOLE LOCATION
-  BOREHOLE/MONITORING WELL LOCATION

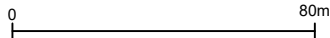


HDR			
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JOB# 32339		TORONTO, ONTARIO	
			
DESIGNED : TF	DRAWN : MFA	APPROVED : RP	
DATE : AUGUST 2025	SCALE : 1:2000	DRAWING No. 32339-4	



LEGEND

 BOREHOLE/MONITORING WELL LOCATION



HDR		
GOLDEN MILE AREA ENVIRONMENTAL ASSESSMENT THERMOS ROAD BOREHOLE LOCATION PLAN		
DESIGNED : TF	DRAWN : MFA	APPROVED : RP
DATE : AUGUST 2025	SCALE : 1:2000	DRAWING No. 32339-5
JOB# 32339	TORONTO, ONTARIO	



APPENDIX C

RECORD OF BOREHOLE SHEETS

SYMBOLS, ABBREVIATIONS AND TERMS USED ON RECORDS OF BOREHOLES

1. TEXTURAL CLASSIFICATION OF SOILS

CLASSIFICATION	PARTICLE SIZE	VISUAL IDENTIFICATION
Boulders	Greater than 200mm	same
Cobbles	75 to 200mm	same
Gravel	4.75 to 75mm	5 to 75mm
Sand	0.075 to 4.75mm	Not visible particles to 5mm
Silt	0.002 to 0.075mm	Non-plastic particles, not visible to the naked eye
Clay	Less than 0.002mm	Plastic particles, not visible to the naked eye

2. COARSE GRAIN SOIL DESCRIPTION (50% greater than 0.075mm)

TERMINOLOGY	PROPORTION
Trace or Occasional	Less than 10%
Some	10 to 20%
Adjective (e.g. silty or sandy)	20 to 35%
And (e.g. sand and gravel)	35 to 50%

3. TERMS DESCRIBING CONSISTENCY (COHESIVE SOILS ONLY)

DESCRIPTIVE TERM	UNDRAINED SHEAR STRENGTH (kPa)	APPROXIMATE SPT ⁽¹⁾ 'N' VALUE
Very Soft	12 or less	Less than 2
Soft	12 to 25	2 to 4
Firm	25 to 50	4 to 8
Stiff	50 to 100	8 to 15
Very Stiff	100 to 200	15 to 30
Hard	Greater than 200	Greater than 30

NOTE: Hierarchy of Soil Strength Prediction

- 1) Laboratory Triaxial Testing
- 2) Field Insitu Vane Testing
- 3) Laboratory Vane Testing
- 4) SPT value
- 5) Pocket Penetrometer

4. TERMS DESCRIBING DENSITY (COHESIONLESS SOILS ONLY)

DESCRIPTIVE TERM	SPT "N" VALUE
Very Loose	Less than 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	Greater than 50

5. LEGEND FOR RECORDS OF BOREHOLES

SYMBOLS AND ABBREVIATIONS FOR SAMPLE TYPE	SS Split Spoon Sample	WS Wash Sample	AS Auger (Grab) Sample
	TW Thin Wall Shelby Tube Sample	TP Thin Wall Piston Sample	
	PH Sampler Advanced by Hydraulic Pressure	PM Sampler Advanced by Manual Pressure	
	WH Sampler Advanced by Self Static Weight	RC Rock Core	SC Soil Core

$$\text{Sensitivity} = \frac{\text{Undisturbed Shear Strength}}{\text{Remoulded Shear Strength}}$$

 Water Level
 Shear Strength Determination by Pocket Penetrometer

- (1) SPT 'N' Value Standard Penetration Test 'N' Value – refers to the number of blows from a 63.5kg hammer free falling a height of 0.76m to advance a standard 50 mm outside diameter split spoon sampler for 0.3 m depth into undisturbed ground.
- (2) DCPT Dynamic Cone Penetration Test – Continuous penetration of a 50 mm outside diameter, 60° conical steel point attached to "A" size rods driven by a 63.5 kg hammer free falling a height of 0.76 m. The resistance to cone penetration is the number of hammer blows required for each 0.3 m advance of the conical point into undisturbed ground.

RECORD OF BOREHOLE AB-01

PROJECT : Golden Mile EA
 LOCATION : Ashtonbee Road, Toronto, ON
 STARTED : May 26, 2025
 COMPLETED : May 26, 2025

Project No. 32339

SHEET 1 OF 1

N 4 843 293.2 E 637 513.9

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES			COMMENTS		SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV.	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC CONE PENETRATION RESISTANCE PLOT	WATER CONTENT, PERCENT						
				DEPTH (m)					wp w wl						
		GROUND SURFACE		159.86											
		ASPHALT: (150mm)		0.00											
		GRANULAR: (360mm)		0.15											
1	Solid Stem Auger	SAND, silty, trace to some gravel, trace clay, compact, brown, moist: (FILL)		159.35	1	SS	18	Grain Size Analysis: Gr 32%/Sa 55%/ Si & Cl 13%							
						2	SS		15						
2		SILT and SAND, trace to some clay, trace gravel, very dense to compact, brown to grey, moist: (TILL)		158.41											
						3	SS	45							
3															
4															
5															
6		END OF BOREHOLE AT 5.18m. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		154.68											
					5.18										
7															
8															
9															

GROUNDWATER ELEVATIONS



WATER LEVEL UPON COMPLETION



WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE AB-02

PROJECT : Golden Mile EA
 LOCATION : Ashtonbee Road, Toronto, ON
 STARTED : May 26, 2025
 COMPLETED : May 26, 2025

N 4 843 470.5 E 638 062.3

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES			COMMENTS		SHEAR STRENGTH: Cu, KPa					ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV.	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC CONE PENETRATION RESISTANCE PLOT	nat V - rem V - Q - Cpen						
				DEPTH (m)					40 80 120 160						
									WATER CONTENT, PERCENT						
									wp	w	wl				
		GROUND SURFACE		160.25											
1	Solid Stem Auger	ASPHALT: (150mm)		0.15				Grain Size Analysis: Gr 1%/ Sa 40%/ Si 45%/ Cl 14%							
		GRANULAR: (610mm)			1	SS	34								
		SAND, silty, trace to some gravel, trace clay, compact, brown, moist, occasional asphalt fragments: (FILL) Possible buried asphalt layer at 1.30m		159.49											
				0.76	2	SS	16								
				158.80											
		SILT and SAND, trace to some clay, trace gravel, compact to loose, brown, moist		1.45	3	SS	15								
					4	SS	5								
SILT and SAND, some clay, trace gravel, loose to compact, grey, moist to wet: (TILL)		156.85	5	SS	9										
		3.40													
			6	SS	26										
5	Solid Stem Auger														
			7	SS	29										
				155.07											
		END OF BOREHOLE AT 5.18m. BOREHOLE CAVED TO 4.88m AND WATER LEVEL OBSERVED AT 2.44m UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		5.18											
6															
7															
8															
9															

GROUNDWATER ELEVATIONS

▽ WATER LEVEL UPON COMPLETION
 May 26, 2025

▽ WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF
 CHECKED : TF



RECORD OF BOREHOLE AB-03

PROJECT : Golden Mile EA
 LOCATION : Ashtonbee Road, Toronto, ON
 STARTED : May 26, 2025
 COMPLETED : May 26, 2025

N 4 843 596.8 E 638 439.1

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE			SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		nat V - ●	rem V - ●	Q - ✕	Cpen ▲		
		GROUND SURFACE		159.32										
		ASPHALT: (125mm)												
		GRANULAR: (635mm)		0.13	1	SS	16							
1		SAND, silty, trace to some gravel, trace clay, compact, brown, moist: (FILL)		158.56 0.76	2	SS	15							
2		SILT and SAND, some clay, trace gravel, very dense, brown, moist: (TILL)		157.87 1.45	3	SS	67	Grain Size Analysis: Gr 2%/ Sa 41%/ Si 45%/ Cl 12%						
					4	SS	91/ 0.275							
3					5	SS	50/ 0.400							
4														
5		Becoming grey, wet			6	SS	89							
5		END OF BOREHOLE AT 5.03m. BOREHOLE CAVED TO AND WATER LEVEL OBSERVED AT 4.72m UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		154.29 5.03										
6														
7														
8														
9														

GROUNDWATER ELEVATIONS



WATER LEVEL UPON COMPLETION



WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



THURBER2S TEL-32339.GPJ 8/26/25

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

N 4 842 903.3 E 636 580.6

GROUNDWATER ELEVATIONS

WATER LEVEL UPON COMPLETION



June 23, 2025

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE CR-02

PROJECT : Golden Mile EA
 LOCATION : Rannock Street, Toronto, ON
 STARTED : May 26, 2025
 COMPLETED : May 26, 2025

N 4 843 152.7 E 636 974.0

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		nat V -  rem V -  Q -  Cpen 	WATER CONTENT, PERCENT wp  w  wl 		
		GROUND SURFACE	157.09								
		ASPHALT: (175mm)	0.00								
		GRANULAR: (450mm)	0.18								
1	Solid Stem Auger	SAND, silty, trace gravel, compact, brown, moist: (FILL)	156.48 0.61	1	SS	19					
				2	SS	10					
2		SILT and SAND, some clay, trace gravel, loose, brown, moist	155.64 1.45	3	SS	5					
				4	SS	22					
3		SILT and SAND, some clay to clayey, trace gravel, compact to dense, brown, moist: (TILL)	154.88 2.21								
				5	SS	31					
4											
5		Becoming grey, wet		6	SS	25	Grain Size Analysis: Gr 2%/ Sa 37%/ Si 46%/ Cl 15% CL-ML				
6		END OF BOREHOLE AT 5.18m. BOREHOLE OPEN AND WATER LEVEL OBSERVED AT 4.27m UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.	151.91 5.18								
7											
8											
9											

GROUNDWATER ELEVATIONS

 WATER LEVEL UPON COMPLETION
 May 26, 2025

 WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF
 CHECKED : TF



RECORD OF BOREHOLE GM-01

PROJECT : Golden Mile EA
 LOCATION : Victoria Park Avenue, Toronto, ON
 STARTED : May 27, 2025
 COMPLETED : May 27, 2025

N 4 842 766.5 E 636 691.4

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES		COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT ELEV. DEPTH (m)	NUMBER	TYPE		nat V - ●	rem V - ●	Q - X	Cpen ▲		
		GROUND SURFACE	157.77									
		ASPHALT: (300mm)	0.00									
			157.47	1	SS	50/						
		GRANULAR: (460mm)	0.30			0.100						
1			157.01									
		SAND, silty, some clay, trace gravel, loose, dark grey, moist: (FILL)	0.76	2	SS	7						
			156.32									
		SAND, silty, some clay, trace gravel, loose, brown, moist	1.45	3	SS	7						
2												
				4	SS	8						
3			154.80									
		SILT and SAND, some clay to clayey, trace gravel, compact, brown to grey, moist to wet: (TILL)	2.97	5	SS	25						
4												
				6	SS	17						
5			152.59									
		END OF BOREHOLE AT 5.18m. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.	5.18									
6												
7												
8												
9												

GROUNDWATER ELEVATIONS



WATER LEVEL UPON COMPLETION



WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE GM-02

PROJECT : Golden Mile EA
 LOCATION : Pharmacy Avenue, Toronto, ON
 STARTED : May 28, 2025
 COMPLETED : May 28, 2025

N 4 842 914.2 E 637 099.0

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE			SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		nat V - ●	rem V - ●	Q - X	Cpen ▲		
		GROUND SURFACE		156.79										
		ASPHALT: (175mm)		0.00										
		GRANULAR: (515mm)		0.18										
1	Solid Stem Auger	SAND, silty, trace clay and gravel, dense to compact, brown, moist: (FILL)		156.10	1	SS	34							
				0.69	2	SS	14							
2					3	SS	13							
3		SAND, silty, trace clay and gravel, loose to compact, brown, moist to wet		154.58	4	SS	7							
				2.21										
4		SILT and SAND, some clay to clayey, trace gravel, compact to dense, brown to grey, moist to wet, occasional sand seams: (TILL)		153.28	5	SS	10	Grain Size Analysis: Gr 2%/ Sa 41%/ Si 41%/ Cl 16% CL						
				3.51										
5					6	SS	39							
6		END OF BOREHOLE AT 5.18m. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		151.61										
				5.18										
7														
8														
9														

GROUNDWATER ELEVATIONS



WATER LEVEL UPON COMPLETION



WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE GM-03

PROJECT : Golden Mile EA
 LOCATION : Hakimi Avenue, Toronto, ON
 STARTED : May 26, 2025
 COMPLETED : May 26, 2025

N 4 843 113.9 E 637 568.4

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV.	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC CONE PENETRATION RESISTANCE PLOT	WATER CONTENT, PERCENT						
				DEPTH (m)											
		GROUND SURFACE		160.59											
	Solid Stem Auger	ASPHALT: (150mm)		0.00				Grain Size Analysis: Gr 15%/Sa 51%/Si 27%/ Cl 7%							
		GRANULAR: (610mm)		0.15											
1		SAND, silty, trace to some clay and gravel, compact, brown, moist: (FILL)		159.83	1	SS	40								
				0.76	2	SS	18								
2															
		END OF BOREHOLE AT 2.13m. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		158.46	3	SS	14								
				2.13											
3															
4															
5															
6															
7															
8															
9															

GROUNDWATER ELEVATIONS

∇ WATER LEVEL UPON COMPLETION

▼ WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE GM-04

PROJECT : Golden Mile EA
 LOCATION : Warden Avenue, Toronto, ON
 STARTED : May 27, 2025
 COMPLETED : May 27, 2025

N 4 843 253.4 E 637 868.7

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE			SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		nat V - ●	rem V - ●	Q - X	Cpen ▲		
		GROUND SURFACE		161.15										
		ASPHALT: (280mm)		0.00										
		GRANULAR: (480mm)		160.87										
				0.28	1	SS	20							
1	Solid Stem Auger	SILT and SAND, some clay, trace gravel, loose to dense, brown to grey, moist to wet: (FILL)		160.39										
				0.76	2	SS	8							
2		END OF BOREHOLE AT 1.91m. BOREHOLE OPEN AND WATER LEVEL OBSERVED AT 0.61m UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		159.24	3	SS	38	Grain Size Analysis: Gr 3%/ Sa 43%/ Si 40%/ Cl 14% CL						
				1.91			0.225							
3														
4														
5														
6														
7														
8														
9														

GROUNDWATER ELEVATIONS

▽ WATER LEVEL UPON COMPLETION
 May 27, 2025

▽ WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF
 CHECKED : TF



RECORD OF BOREHOLE GM-05

PROJECT : Golden Mile EA
 LOCATION : Birchmount Road, Toronto, ON
 STARTED : May 28, 2025
 COMPLETED : May 28, 2025

N 4 843 488.8 E 638 636.6

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE			SAMPLES		COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV.	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC CONE PENETRATION RESISTANCE PLOT	WATER CONTENT, PERCENT					
				DEPTH (m)					wp ----- w ----- wl					
		GROUND SURFACE		160.99										
	Portable Equipment	TOPSOIL: (300mm)		0.00		1	GS	Grain Size Analysis: Gr 28%/Sa 45%/Si 20%/ Cl 7%						
		SAND, gravelly, silty, trace clay, brown, moist: (FILL)		160.69		2	GS							
				0.30 0.41										
1		END OF BOREHOLE AT 0.41m UPON PRACTICAL REFUSAL TO ADVANCE WITH HAND AUGER. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE TO SURFACE.												
2														
3														
4														
5														
6														
7														
8														
9														

GROUNDWATER ELEVATIONS

▽ WATER LEVEL UPON COMPLETION

▼ WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE OC-01

PROJECT : Golden Mile EA
 LOCATION : O'Connor Drive, Toronto, ON
 STARTED : May 28, 2025
 COMPLETED : May 28, 2025

N 4 842 289.1 E 636 605.4

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE			SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		nat V - ●	rem V - ●	Q - X	Cpen ▲		
		GROUND SURFACE		148.03										
		ASPHALT: (100mm)		0.00										
		CONCRETE: (200mm)		0.10										
		GRANULAR: (390mm)		0.30	1	SS	7/	Grain Size Analysis: Gr 31%/Sa 55%/ Si & Cl 14%						
				147.34			0.150							
		SILT and SAND, some clay to clayey, trace gravel, compact, brown, moist: (FILL)		0.69										
1	Solid Stem Auger	SILT and SAND, some clay to clayey, trace gravel, compact to dense, brown, moist: (TILL)		0.91	2	SS	13							
2					3	SS	30							
		END OF BOREHOLE AT 2.13m. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		145.90										
				2.13										
3														
4														
5														
6														
7														
8														
9														

GROUNDWATER ELEVATIONS



WATER LEVEL UPON COMPLETION



WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE OC-02

PROJECT : Golden Mile EA
 LOCATION : Pharmacy Avenue, Toronto, ON
 STARTED : May 28, 2025
 COMPLETED : May 28, 2025

Project No. 32339

SHEET 1 OF 1

N 4 842 606.9 E 637 183.1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE			SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		nat V - ●	rem V - ●	Q - ▲	Cpen - ▲		
		GROUND SURFACE		160.35										
		ASPHALT: (150mm)		0.00										
		GRANULAR: (450mm)		0.15	1	SS	50/							
				159.75			0.125							
1	Solid Stem Auger	SILT and SAND, some clay to clayey, trace gravel, compact, brown, moist: (FILL)		0.60	2	SS	19	Grain Size Analysis: Gr 0%/ Sa 38%/ Si 43%/ Cl 19%						
2					3	SS	10							
		END OF BOREHOLE AT 2.13m. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.		158.22			2.13							
3														
4														
5														
6														
7														
8														
9														

GROUNDWATER ELEVATIONS

▽ WATER LEVEL UPON COMPLETION

▽ WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE OC-03

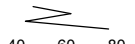
PROJECT : Golden Mile EA
 LOCATION : Lebovic Avenue, Toronto, ON
 STARTED : May 28, 2025
 COMPLETED : May 28, 2025

N 4 842 808.1 E 637 661.8

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES			COMMENTS		SHEAR STRENGTH: Cu, KPa nat V - ● rem V - ● Q - ✕ Cpen ▲ 40 80 120 160			ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV.	NUMBER	TYPE	BLOWS/0.3m	DYNAMIC CONE PENETRATION RESISTANCE PLOT 	WATER CONTENT, PERCENT wp ———— w ———— wl 10 20 30 40				
				DEPTH (m)									
	Solid Stem Auger	GROUND SURFACE		158.68									
		ASPHALT: (200mm)		0.00									
		GRANULAR: (1020mm)		0.20	1	SS	50/0.150						
1					2	SS	50/0.150						
		SILT and SAND, some clay, trace gravel, compact, brown, moist: (FILL)		157.46 1.22									
		SILT and SAND, some clay, trace gravel, compact, brown, moist		156.85 1.83	3	SS	10						
2		SILT and SAND to SILT, sandy some clay to clayey, trace gravel, dense, brown to grey, moist, occasional sandy silty clay layers: (TILL)		156.47 2.21				Grain Size Analysis: Gr 1%/ Sa 33%/ Si 50%/ Cl 16% CL					
				4	SS	36							
3													
				5	SS	33							
4													
5				6	SS	36							
			153.50 5.18										
6		END OF BOREHOLE AT 5.18m. Well installation consists of 50mm diameter schedule 40 PVC pipe with a 3.05m slotted screen.											
		WATER LEVEL READINGS: DATE DEPTH(m) ELEV.(m) May 28/25 3.96 154.72 Jun 23/25 2.02 156.66											
7													
8													
9													

GROUNDWATER ELEVATIONS

▽ WATER LEVEL UPON COMPLETION

▼ WATER LEVEL IN WELL/PIEZOMETER
 June 23, 2025

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE OC-04

PROJECT : Golden Mile EA
 LOCATION : Civic Road, Toronto, ON
 STARTED : May 27, 2025
 COMPLETED : May 27, 2025

N 4 843 022.9 E 638 089.1

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		nat V - ●	rem V - ●	Q - X	Cpen ▲		
		GROUND SURFACE	160.59										
		ASPHALT: (175mm)	0.00										
		GRANULAR: (455mm)	0.18										
1		SAND, silty, some clay, trace gravel, compact to dense, brown, moist: (FILL)	159.96 0.63	1	SS	23							
		SILT and SAND, some clay to clayey, trace gravel, dense to very dense, brown to grey, moist: (TILL)	159.52 1.07	2	SS	31							
2				3	SS	45							
				4	SS	49							
3				5	SS	58	Grain Size Analysis: Gr 2%/ Sa 36%/ Si 45%/ Cl 17% CL						
4													
5				6	SS	42							
6		END OF BOREHOLE AT 5.18m. BOREHOLE OPEN AND DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE, THEN ASPHALT TO SURFACE.	155.41 5.18										
7													
8													
9													

GROUNDWATER ELEVATIONS



WATER LEVEL UPON COMPLETION



WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE OC-05

PROJECT : Golden Mile EA
LOCATION : Birchmount Road, Toronto, ON
STARTED : May 28, 2025
COMPLETED : May 28, 2025

Project No. 32339

SHEET 1 OF 1

DATUM Geodetic

N 4 843 191.5 E 638 709.5

[illegible]

GROUNDWATER ELEVATIONS

 WATER LEVEL UPON COMPLETION

 WATER LEVEL IN WELL/PIEZOMETER

LOGGED : GF

CHECKED : TF



RECORD OF BOREHOLE TS-01

PROJECT : Golden Mile EA
LOCATION : Thermos Road, Toronto, ON
STARTED : May 27, 2025
COMPLETED : May 27, 2025

N 4 843 283.6 E 638 405.9

Project No. 32339
SHEET 1 OF 1
DATUM Geodetic

DEPTH SCALE (metres)	BORING METHOD	SOIL PROFILE		SAMPLES			COMMENTS	SHEAR STRENGTH: Cu, KPa				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV.	NUMBER	TYPE		BLOWS/0.3m	WATER CONTENT, PERCENT					
				DEPTH (m)					wp	w	wl			
		GROUND SURFACE		160.04										
1	Solid Stem Auger	ASPHALT: (150mm)		0.00										
		GRANULAR: (460mm)		0.15										
		SILT and SAND, some clay to clayey, trace gravel, compact to loose, grey, moist: (FILL)		159.43	1	SS	15							
				0.61										
		SILT and SAND, some clay to clayey, trace gravel, loose to compact, grey, moist, occasional clay layers		158.59	2	SS	7							
				1.45										
		CLAY, silty, trace sand, very stiff, grey		157.07	4	SS	10							
				2.97										
		SILT and SAND, some clay to clayey, trace gravel, very dense, grey, moist: (TILL)		155.93	5	SS	17	Grain Size Analysis: Gr 0%/ Sa 9%/ Si 24%/ Cl 67% CH						
	4.11													
5		END OF BOREHOLE AT 4.85m. Well installation consists of 50mm diameter Schedule 40 PVC pipe with a 1.52m slotted screen.		155.19	6	SS	50/ 0.125							
6		WATER LEVEL READINGS: DATE DEPTH(m) ELEV.(m) May 27/25 3.66 156.38 Jun 23/25 1.72 158.32		4.85										
7														
8														
9														

GROUNDWATER ELEVATIONS

WATER LEVEL UPON COMPLETION

WATER LEVEL IN WELL/PIEZOMETER
June 23, 2025

LOGGED : GF
CHECKED : TF





APPENDIX D

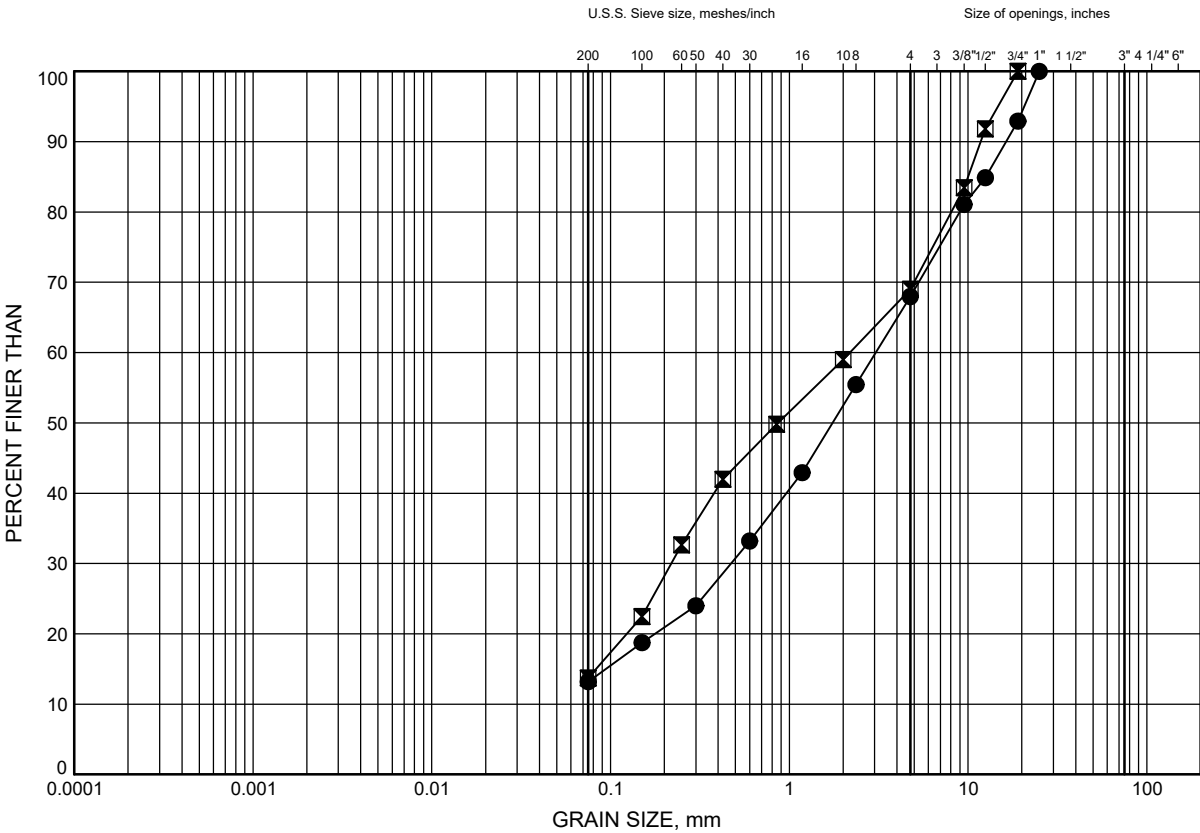
GEOTECHNICAL SOIL LABORATORY TEST RESULTS

Golden Mile EA

GRAIN SIZE DISTRIBUTION

FIGURE D1

GRANULAR FILL



SILT and CLAY	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLE SIZE
FINE GRAINED	SAND			GRAVEL		

LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	AB-01	0.33	159.53
⊠	OC-01	0.46	147.57

Date July 2025
Project 32339



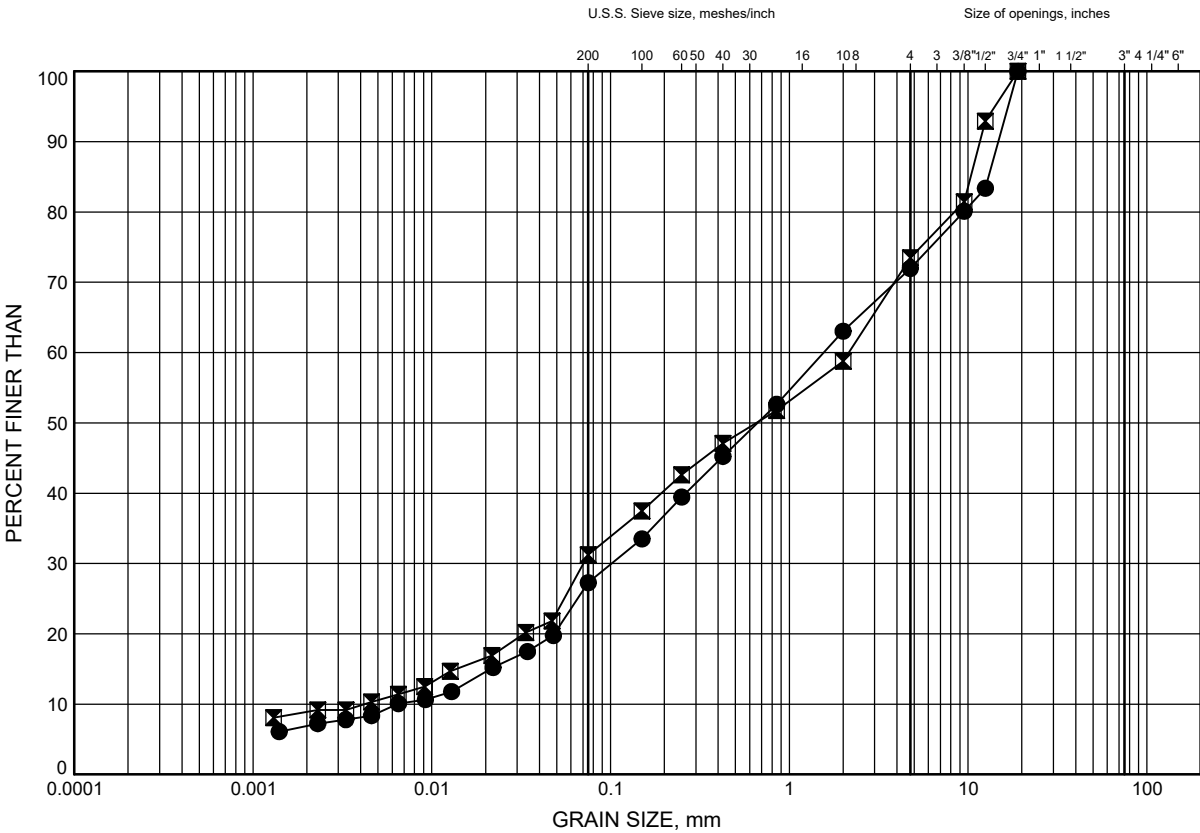
Prep'd AN
Chkd. TF

Golden Mile EA

GRAIN SIZE DISTRIBUTION

FIGURE D2

Gravelly Silty SAND FILL



SILT and CLAY	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLE SIZE
FINE GRAINED	SAND			GRAVEL		

LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	GM-05	0.35	160.64
⊠	OC-05	0.45	160.42

Date July 2025
Project 32339



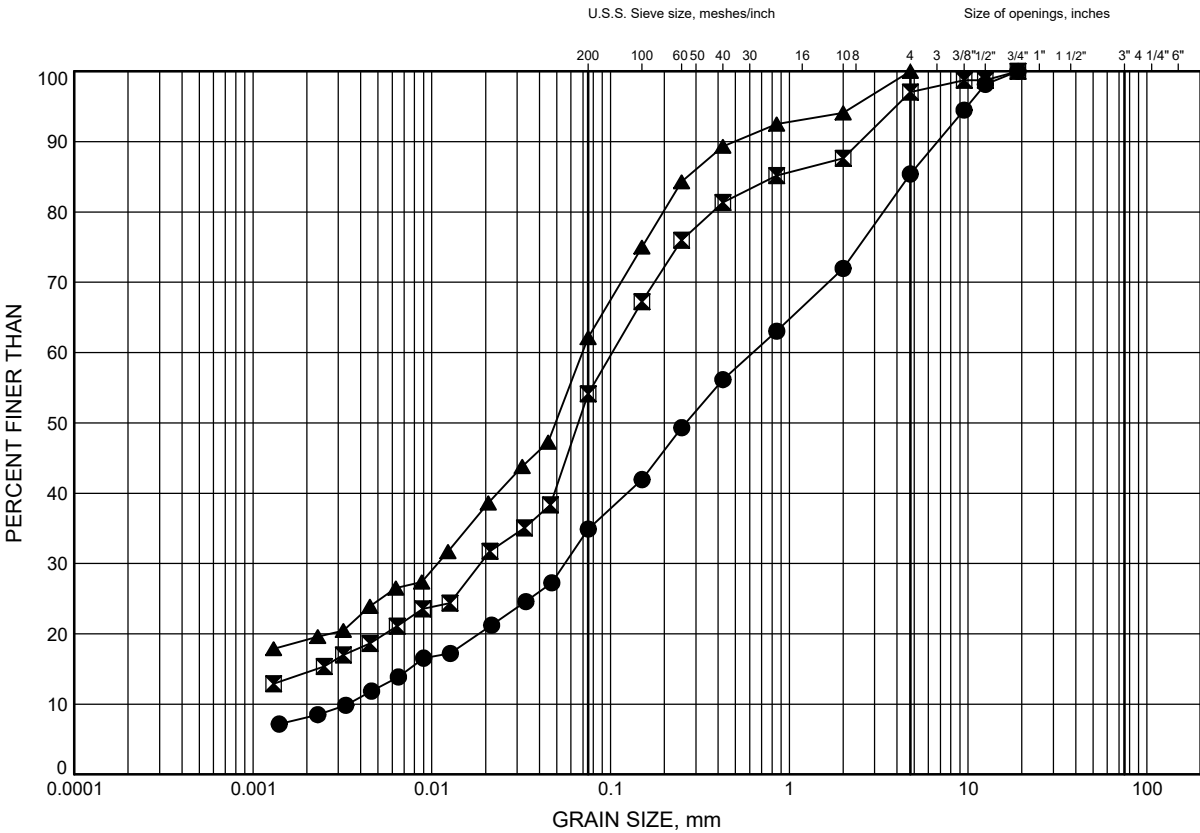
Prep'd AN
Chkd. TF

Golden Mile EA

GRAIN SIZE DISTRIBUTION

FIGURE D3

Silty SAND to SILT and SAND FILL



SILT and CLAY	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLE SIZE
FINE GRAINED	SAND			GRAVEL		

LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	GM-03	1.07	159.52
⊠	GM-04	1.72	159.43
▲	OC-02	1.07	159.28

Date July 2025
Project 32339



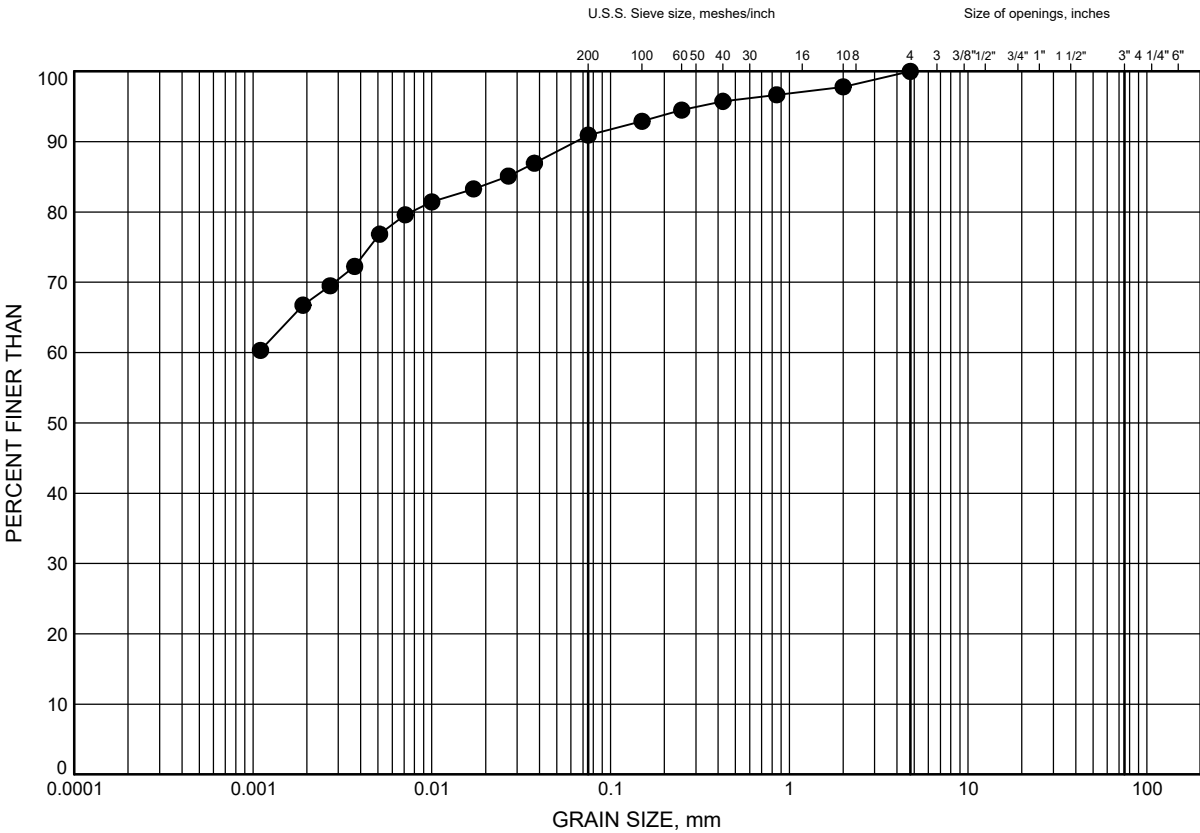
Prep'd AN
Chkd. TF

Golden Mile EA

GRAIN SIZE DISTRIBUTION

FIGURE D4

Silty CLAY



SILT and CLAY	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLE SIZE
FINE GRAINED	SAND			GRAVEL		

LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	TS-01	3.35	156.69

Date July 2025

Project 32339



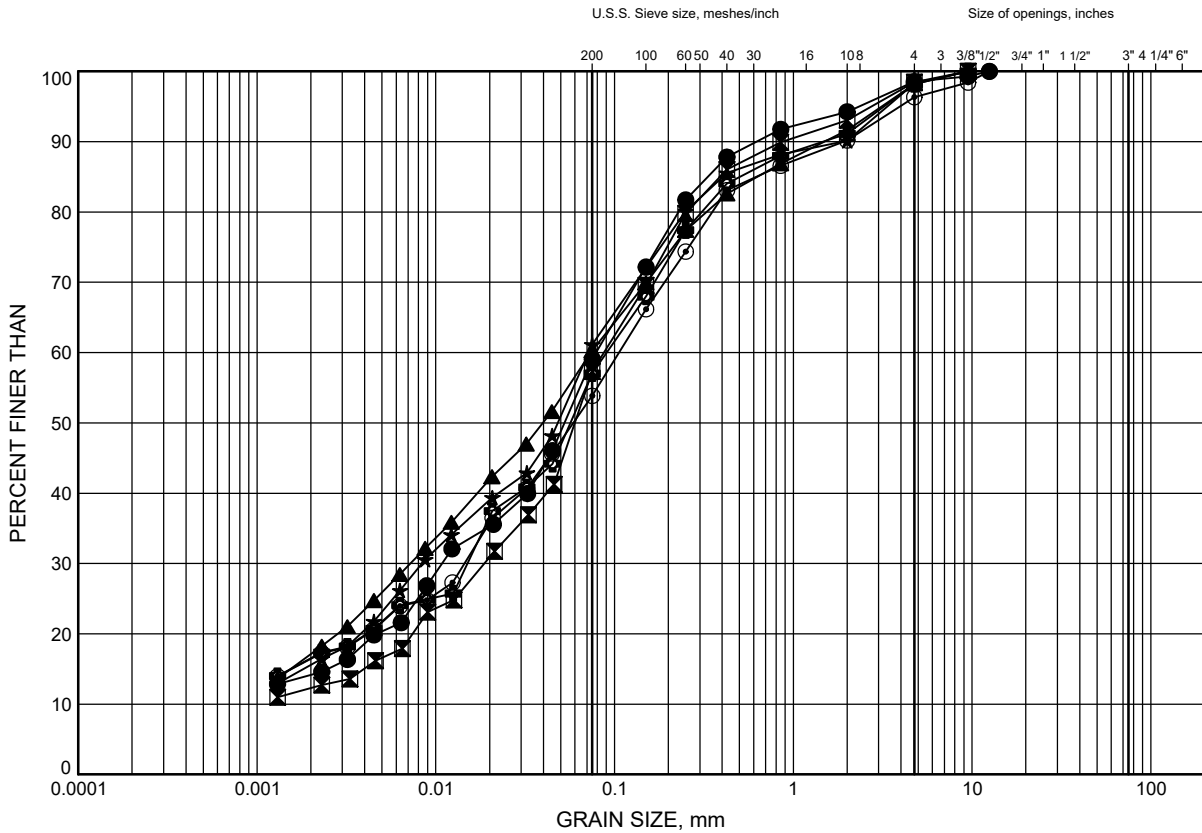
Prep'd AN

Chkd. TF

Golden Mile EA GRAIN SIZE DISTRIBUTION

FIGURE D5

TILL Deposits



SILT and CLAY	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLE SIZE
FINE GRAINED	SAND			GRAVEL		

LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	AB-02	4.11	156.14
⊠	AB-03	1.83	157.49
▲	CR-01	4.88	148.55
★	CR-02	4.88	152.21
⊙	GM-01	4.88	152.89
⊕	GM-02	3.58	153.21

Date July 2025
Project 32339

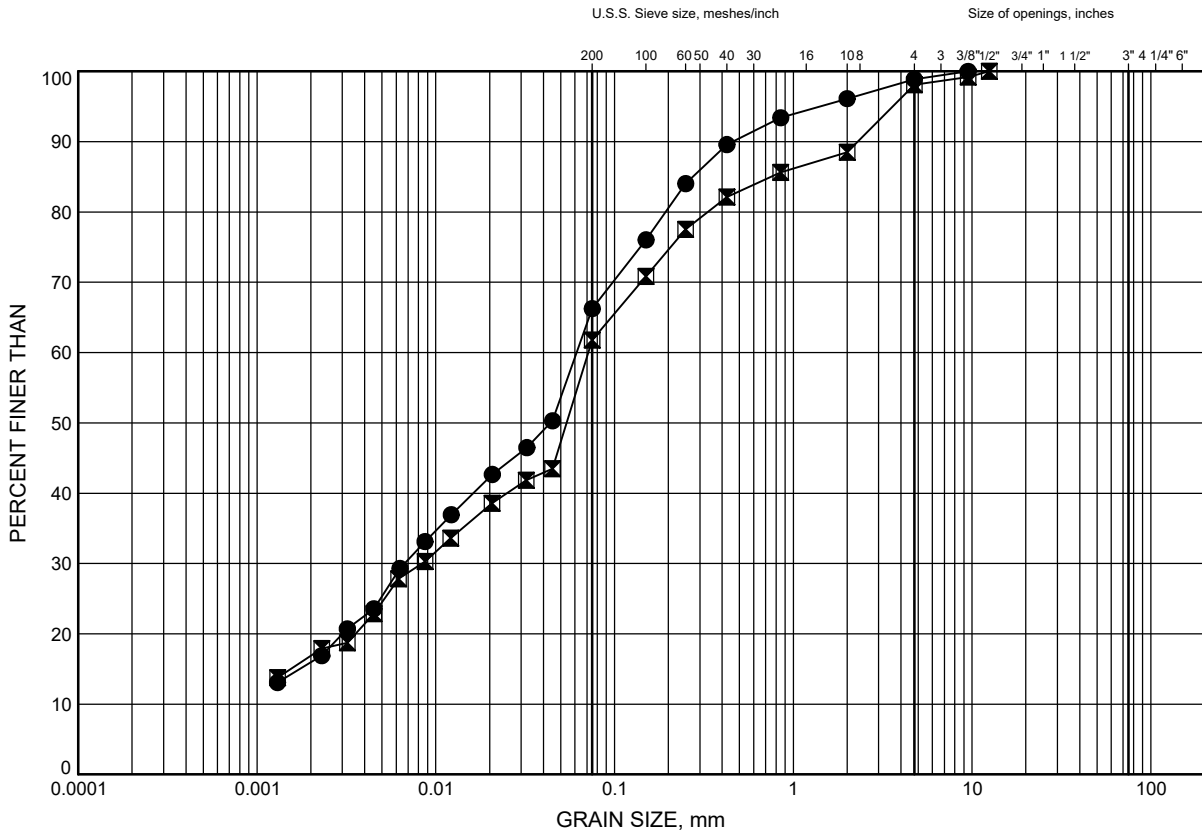


Prep'd AN
Chkd. TF

Golden Mile EA GRAIN SIZE DISTRIBUTION

FIGURE D6

TILL Deposits



SILT and CLAY	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLE SIZE
FINE GRAINED	SAND			GRAVEL		

LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	OC-03	2.59	156.09
⊠	OC-04	3.35	157.24

Date July 2025
Project 32339

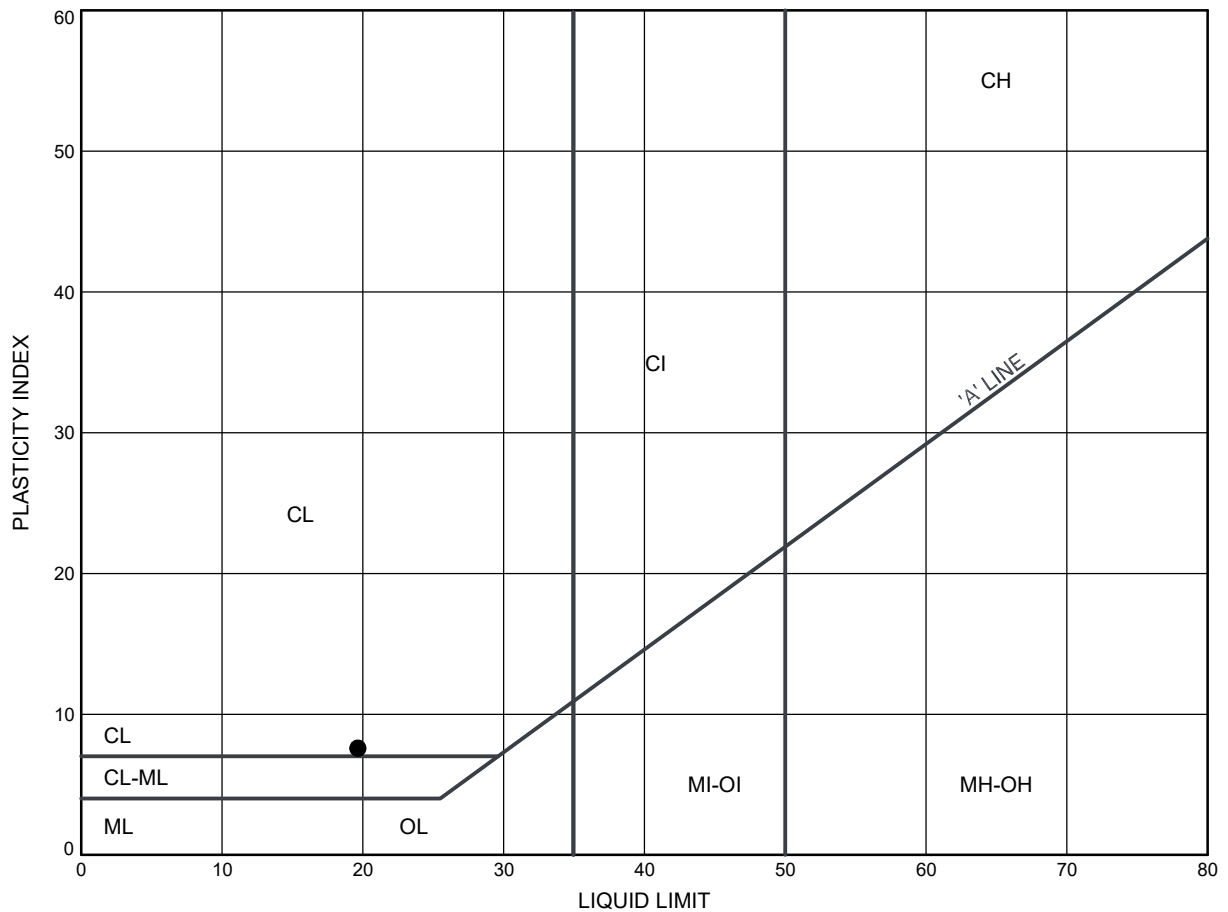


Prep'd AN
Chkd. TF

Golden Mile EA
ATTERBERG LIMITS TEST RESULTS

FIGURE D7

FILL



LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	GM-04	1.72	159.43

Date July 2025
Project 32339

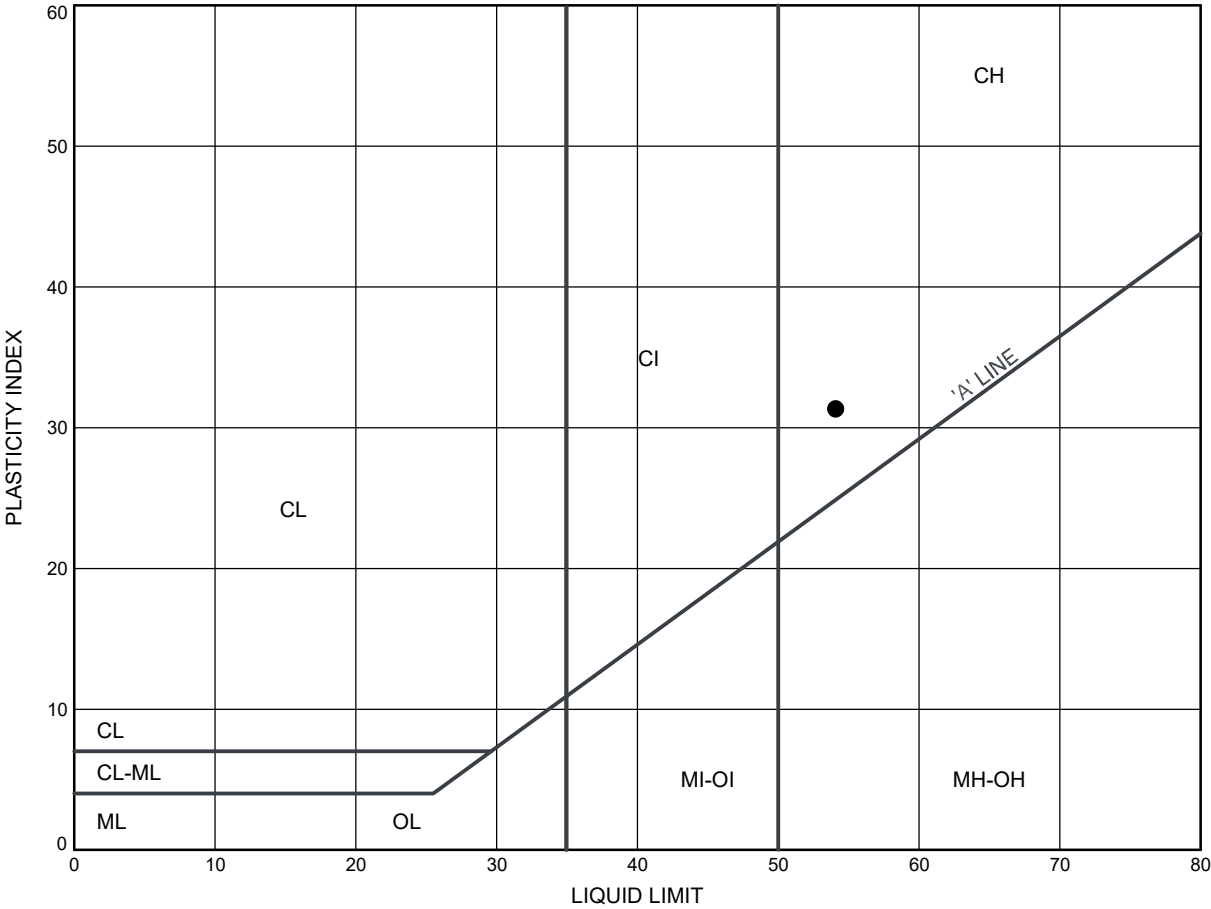


Prep'd AN
Chkd. TF

Golden Mile EA
ATTERBERG LIMITS TEST RESULTS

FIGURE D8

Silty CLAY



LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	TS-01	3.35	156.69

Date July 2025
Project 32339

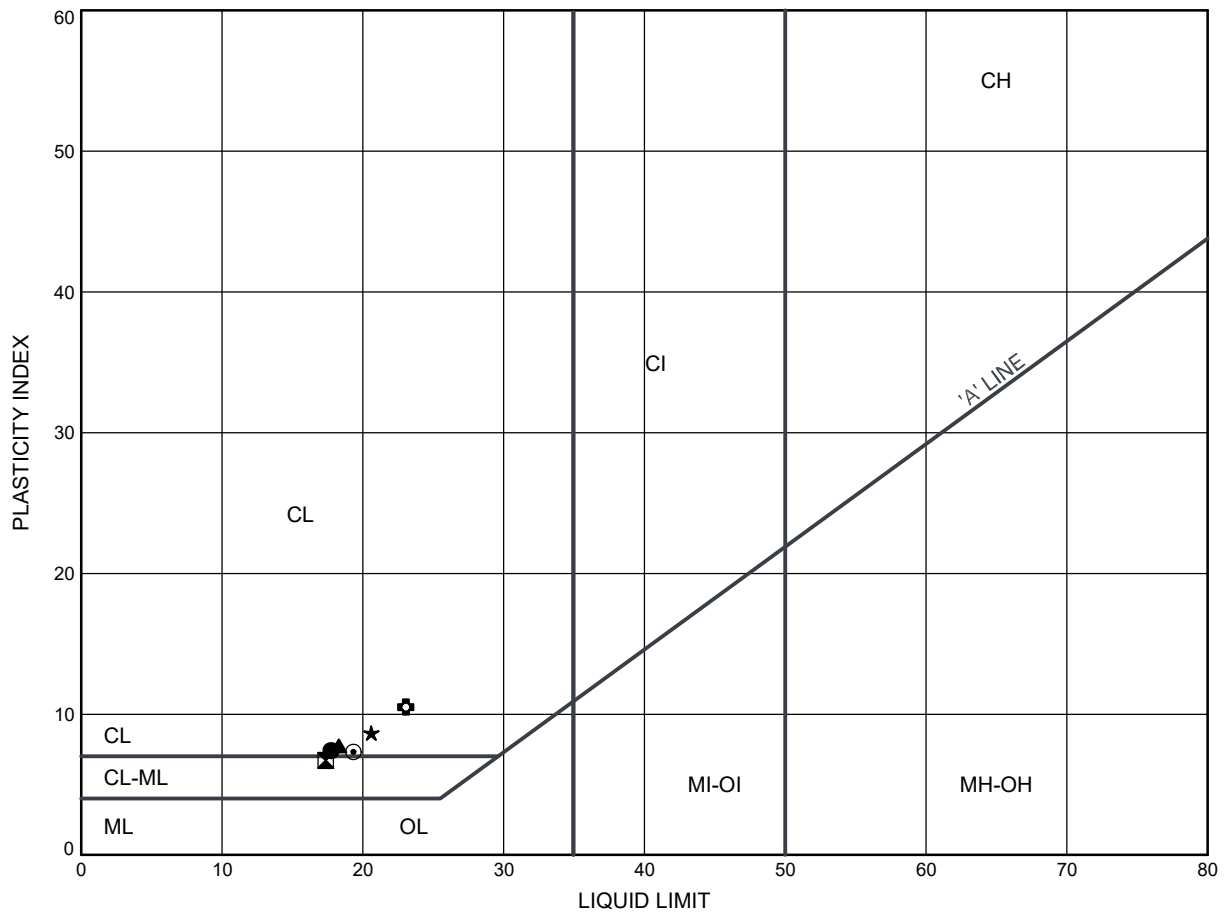


Prep'd AN
Chkd. TF

Golden Mile EA ATTERBERG LIMITS TEST RESULTS

FIGURE D9

TILL Deposits



LEGEND

SYMBOL	BOREHOLE	DEPTH (m)	ELEV. (m)
●	CR-01	4.88	148.55
⊠	CR-02	4.88	152.21
▲	GM-01	4.88	152.89
★	GM-02	3.58	153.21
⊙	OC-03	2.59	156.09
⊕	OC-04	3.35	157.24

Date July 2025
Project 32339



Prep'd AN
Chkd. TF



APPENDIX E

LABORATORY CERTIFICATE OF ANALYSIS – CORROSIVITY



FINAL REPORT

CA40003-JUN25 R1

32339, Golden Mile EA

Prepared for

Thurber Engineering Ltd.



First Page

CLIENT DETAILS		LABORATORY DETAILS	
Client	Thurber Engineering Ltd.	Project Specialist	Brad Moore Hon. B.Sc
Address	235 Martindale Road - Unit 10	Laboratory	SGS Canada Inc.
	St. Catharines, ON	Address	185 Concession St., Lakefield ON, K0L 2H0
	L2W 1A5. Canada		
Contact	Tim Feather	Telephone	705-652-2143
Telephone	905-745-7377	Facsimile	705-652-6365
Facsimile		Email	brad.moore@sgs.com
Email	tfeather@thurber.ca	SGS Reference	CA40003-JUN25
Project	32339, Golden Mile EA	Received	06/02/2025
Order Number		Approved	06/09/2025
Samples	Soil (3)	Report Number	CA40003-JUN25 R1
		Date Reported	06/09/2025

COMMENTS

Temperature of Sample upon Receipt: 8 degrees C

Cooling Agent Present:yes

Custody Seal Present:yes

Chain of Custody Number:C1

Corrosivity Index is based on the American Water Works Corrosivity Scale according to AWWA C-105. An index greater than 10 indicates the soil matrix may be corrosive to cast iron alloys.

SIGNATORIES

Brad Moore Hon. B.Sc



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QC Summary..... 4-5

Legend..... 6

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FINAL REPORT

CA40003-JUN25 R1

Client: Thurber Engineering Ltd.
Project: 32339, Golden Mile EA
Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: SOIL

Sample Number	5	6	7
Sample Name	CR-01 SS4	OC-03 SS3	TS-03 SS4
Sample Matrix	Soil	Soil	Soil
Sample Date	27/05/2025	28/05/2025	27/05/2025

Parameter	Units	RL		Result	Result	Result
Corrosivity Index						
Corrosivity Index	none	1		12	12	12
pH	pH Units	0.05		7.63	8.41	8.33
Soil Redox Potential	mV	no		277	293	265
Sulphide (Na2CO3)	%	0.01		< 0.01	< 0.01	< 0.01
Resistivity (calculated)	ohms.cm	-9999		773	653	535
General Chemistry						
Conductivity	uS/cm	2		1290	1530	1870
Metals and Inorganics						
Sulphate	µg/g	0.4		36	40	52
Other (ORP)						
Chloride	µg/g	0.4		550	620	940



FINAL REPORT

CA40003-JUN25 R1

QC SUMMARY

Anions by IC
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chloride	DIO0091-JUN25	µg/g	0.4	<0.4	6	35	101	80	120	110	75	125
Sulphate	DIO0091-JUN25	µg/g	0.4	<0.4	12	35	100	80	120	106	75	125

Carbon/Sulphur
Method: ASTM E1915-07A | Internal ref.: ME-CA-IENVIARD-LAK-AN-020

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Sulphide (Na2CO3)	ECS0012-JUN25	%	0.01	< 0.01								

Conductivity
Method: SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Conductivity	EWL0076-JUN25	uS/cm	2	< 2	0	20	100	90	110	NA		



FINAL REPORT

CA40003-JUN25 R1

QC SUMMARY

pH
Method: SM 4500 | Internal ref.: ME-CA-|ENVIEWL-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	EWL0076-JUN25	pH Units	0.05	NA	0		100			NA		

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate laboratory accuracy with sample matrix effects.

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.



LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --

Laboratory Information Section - Lab use only

Received By: <u>ED</u>		Received Date (mm/dd/yyyy): <u>C-2-25</u>		Received Time: <u>1100</u>		Received By (signature): _____		Custody Seal Present: ☒		Cooling Agent Present: ☒		Temperature Upon Receipt (°C): <u>8.0</u>		LAB LIMS #: <u>0440003 May 25</u>									
REPORT INFORMATION						INVOICE INFORMATION						PROJECT INFORMATION											
Company: <u>Thurber Engineering Ltd.</u> Contact: <u>Tim Feather</u> Address: <u>Unit 10 - 235 Martindale Road, St. Catharines, Ontario, L2N 3V7</u> Phone: <u>905-745-7377</u> Email: <u>tfeather@thurber.ca</u>						☒ (same as Report Information) Company: _____ Contact: _____ Address: _____ Phone: _____ Email: _____						Quotation # _____ P.O. # _____ Project # <u>32339</u> Site Location/ID: <u>Golden Mile EA</u> TURNAROUND TIME (TAT) REQUIRED ☒ Regular TAT (5-7days) RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION Specify Due Date: _____ Rush Confirmation ID: _____											
REGULATIONS						ANALYSIS REQUESTED						COMMENTS:											
Regulation 153/04: Table 1 ☐ R/P/I Soil Texture: ☐ Table 2 ☐ I/C/C Coarse Table 3 ☐ M/O Medium Fine Other Regulations: Reg 347/556 (3 Day min TAT) ☐ PWCO ☐ MMER ☐ CCME ☐ Other: _____ MISA ☐ Municipality: _____						Sewer By-Law: ☐ Sanitary ☐ Storm ☐ Municipality: _____																	
RECORD OF SITE CONDITION (RSC) ☐ YES ☒ NO																							
SAMPLE IDENTIFICATION						DATE SAMPLED		TIME SAMPLED		# OF BOTTLES		MATRIX											
1 CR-01 SS4						5/27/25		A.M.		1		SOIL											
2 OC-03 SS3						5/28/25		A.M.		1		SOIL											
3 TS-01 SS4						5/27/25		A.M.		1		SOIL											
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
Observations/Comments/Special Instructions						Field Filtered (Y/N)																	
						Metals & Inorganics																	
						PAH ☐ ABN ☐ SVOC(all) ☐																	
						PCB Total ☐ Aroclor ☐																	
						PHC F1-F4 ☐ VOC ☐																	
						BTX ☐ BTX/F1 ☐ F2-F4 ☐																	
						VOC ☐ BTX ☐ THM ☐																	
						Pesticides OC ☐ OP ☐																	
						TCPL M&I ☐ VOC ☐ PCB ☐																	
						B(a)P ☐ ABN ☐ Ignit. ☐																	
						Water Pkg Gen. ☐ Ext. ☐																	
						Sewer Use: ☐																	
						Corrosivity/Resistivity																	



APPENDIX F

LABORATORY CERTIFICATE OF ANALYSIS – ASBESTOS



657 Consortium Ct, London, ON N6E 2S8 / Telephone: (519) 672-4500 1-877-848-8060/ Fax: (519) 672-0361

Bulk Asbestos Analysis

Final Report

(Test Method: ME-ASB-001 PLM EPA/600/R-93/116 By Polarized Light Microscopy)

CALA : 1002764

Thurber Engineering Ltd.
Tim Feather
235 Martindale Road, Unit 10
St. Catharines ON
L2N 3V7, Canada

Phone: 905-745-7377

Fax:

Client ID: 23981
Report Number: CA70001-JUN25
Date Received: Jun-04-25
Date Analyzed: Jun-09-25
Date Reported: Jun-09-25
Copy To: Final # 1

Project Name: 32339
Project No: Golden Mile EA

Total Samples Submitted: 4
Total Samples Analyzed: 4
(0)

Lab Sample Number	Sample ID	Sample Description / Location	Code	Asbestos Type	Percent in Layer	Non asbestos Fibrous* (%)	Non Fibrous (%)
CA70001-JUN25-001	1	OC-01 ASPHALT					
Layer 1	Black, Tar		G	ND			100 %
CA70001-JUN25-002	2	OC-03 ASPHALT					
Layer 1	Black, Tar		G	ND			100 %
CA70001-JUN25-003	3	GM-04 ASPHALT					
Layer 1	Black, Tar		G	ND			100 %
CA70001-JUN25-004	4	AB-03 ASPHALT					
Layer 1	Black, Tar		G	ND			100 %

End of report

Reviewed and approved by:

Bronwyn Kelly-Seigh, B.Sc. (Env)
Technical Manager-London,

Code G: This sample was analyzed by Gravimetric reduction method

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Note													
RL	Reporting Limit by Provincial Regulatory Threshold (See chart below) <table> <tr> <th colspan="2">Regulatory Threshold Chart</th></tr> <tr> <td>ON, BC, NS</td><td>0.5%</td></tr> <tr> <td>AB, YT, NT, NU, PEI, NB, NL</td><td>1%</td></tr> <tr> <td>MB</td><td>0.1% friable 1% non-friable</td></tr> <tr> <td>SK</td><td>0.5% friable 1% non-friable</td></tr> <tr> <td>QC</td><td>0.1%</td></tr> </table>	Regulatory Threshold Chart		ON, BC, NS	0.5%	AB, YT, NT, NU, PEI, NB, NL	1%	MB	0.1% friable 1% non-friable	SK	0.5% friable 1% non-friable	QC	0.1%
Regulatory Threshold Chart													
ON, BC, NS	0.5%												
AB, YT, NT, NU, PEI, NB, NL	1%												
MB	0.1% friable 1% non-friable												
SK	0.5% friable 1% non-friable												
QC	0.1%												
Trace	Note the presence of asbestos below the RL												
ND	None Detected (<0.1%)												
NA	Not Analyzed (analysis stopped due to a previous positive result)												
Non-asbestos-Fibrous													
Ce	Cellulose												
Mi	Mineral wool												
Wo	Wollastonite												
Ta	Talc												
Ot	Other human-made fibres												

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APPENDIX G

LABORATORY CERTIFICATE OF ANALYSIS – GEOENVIRONMENTAL



FINAL REPORT

CA40008-JUN25 R

32339, Golden Mile EA

Prepared for

Thurber Engineering Ltd.



FINAL REPORT

CA40008-JUN25 R

First Page

CLIENT DETAILS		LABORATORY DETAILS	
Client	Thurber Engineering Ltd.	Project Specialist	Brad Moore Hon. B.Sc
Address	235 Martindale Road - Unit 10	Laboratory	SGS Canada Inc.
	St. Catharines, ON	Address	185 Concession St., Lakefield ON, K0L 2H0
	L2W 1A5, Canada		
Contact	Tim Feather	Telephone	705-652-2143
Telephone	905-745-7377	Facsimile	705-652-6365
Facsimile		Email	brad.moore@sgs.com
Email	tfeather@thurber.ca	SGS Reference	CA40008-JUN25
Project	32339, Golden Mile EA	Received	06/02/2025
Order Number		Approved	06/09/2025
Samples	Soil (9)	Report Number	CA40008-JUN25 R
		Date Reported	06/09/2025

COMMENTS
CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.
Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met. nC6 and nC10 response factors within 30% of response factor for toluene: YES nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES C50 response factors within 70% of nC10 + nC16 + nC34 average: YES Linearity is within 15%: YES
Where applicable, BTEX and selected PAHs have been subtracted from the appropriate fractions and are reported as F1-BTEX (C6-C10), F2-naph (C10-C16) and F3-PAH (C16-C34).
F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons. The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.
Hydrocarbon results are expressed on a dry weight basis.
Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.
Temperature of Sample upon Receipt: 8 degrees C Cooling Agent Present:yes Custody Seal Present:yes
Chain of Custody Number:E1

SIGNATORIES
Brad Moore Hon. B.Sc

QCBatchID:GCM0020-JUN25 - Trichloroethylene and 1,1,2,2-Tetrachloroethane Matrix Spike; Recoveries are outside control limits due to sample matrix; the overall quality control for this analysis has been assessed and was determined to be acceptable.

4-Chloroaniline LCS and Matrix spike recovery is outside control limits. The overall quality control was assessed to be okay.



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FINAL REPORT

CA40008-JUN25 R

Client: Thurber Engineering Ltd.
Project: 32339, Golden Mile EA
Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: SOIL				Sample Number	8	9	10	11	12	13	14	15
				Sample Name	AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
				Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Sample Date	26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
ABNs (sVOC)											
Biphenyl	µg/g	0.05	0.05	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Bis(2-chloroethyl)ether	µg/g	0.5	0.5	< 0.5	< 0.5	---	< 0.5	---	---	---	---
Bis(2-ethylhexyl)phthalate	µg/g	1	5	< 1	< 1	---	< 1	---	---	---	---
4-Chloroaniline	µg/g	0.5	0.5	< 0.5	< 0.5	---	< 0.5	---	---	---	---
3,3-Dichlorobenzidine	µg/g	1	1	< 1	< 1	---	< 1	---	---	---	---
Diethyl phthalate	µg/g	0.2	0.5	< 0.2	< 0.2	---	< 0.2	---	---	---	---
Dimethyl phthalate	µg/g	0.05	0.5	< 0.05	< 0.05	---	< 0.05	---	---	---	---
2,4-Dimethylphenol	µg/g	0.2	0.2	< 0.2	< 0.2	---	< 0.2	---	---	---	---
2,4-Dinitrophenol	µg/g	1	2	< 1	< 1	---	< 1	---	---	---	---
2,4-Dinitrotoluene	µg/g	0.1		< 0.1	< 0.1	---	< 0.1	---	---	---	---
2,6-Dinitrotoluene	µg/g	0.5		< 0.5	< 0.5	---	< 0.5	---	---	---	---
Dinitrotoluene, 2,4-(2,6-)	µg/g	0.5	0.5	< 0.5	< 0.5	---	< 0.5	---	---	---	---

BTEX

Benzene	µg/g	0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.03	< 0.02
Ethylbenzene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	µg/g	0.05	0.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05
Xylene (total)	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
m/p-xylene	µg/g	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
o-xylene	µg/g	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

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Project Manager: Tim Feather
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MATRIX: SOIL				Sample Number	8	9	10	11	12	13	14	15
				Sample Name	AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
				Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Sample Date	26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
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Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
Chlorophenols (CPs) sVOC											
2-Chlorophenol	µg/g	0.1	0.1	< 0.1	< 0.1	---	< 0.1	---	---	---	---
2,4-Dichlorophenol	µg/g	0.1	0.1	< 0.1	< 0.1	---	< 0.1	---	---	---	---
2,4,6-Trichlorophenol	µg/g	0.1	0.1	< 0.1	< 0.1	---	< 0.1	---	---	---	---
2,4,5-Trichlorophenol	µg/g	0.1	0.1	< 0.1	< 0.1	---	< 0.1	---	---	---	---
Pentachlorophenol	µg/g	0.1	0.1	< 0.1	< 0.1	---	< 0.1	---	---	---	---
Hydrides											
Antimony	µg/g	0.8	1.3	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Arsenic	µg/g	0.5	18	3.8	3.8	3.1	4.1	4.5	3.4	3.3	3.8
Selenium	µg/g	0.1	1.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Metals and Inorganics											
Moisture Content	%	0.1		8.7	11.0	8.2	21.6	12.2	15.0	9.4	8.4
Barium	µg/g	0.1	220	58	50	24	80	74	39	40	66
Beryllium	µg/g	0.02	2.5	0.30	0.26	0.14	0.39	0.44	0.32	0.24	0.31
Boron	µg/g	1	36	4	4	3	4	5	4	4	4
Cadmium	µg/g	0.05	1.2	< 0.05	0.05	< 0.05	0.07	0.07	0.06	< 0.05	< 0.05
Chromium	µg/g	0.5	70	12	10	6.2	14	15	11	8.7	12
Cobalt	µg/g	0.01	21	5.1	5.5	2.8	5.6	7.3	5.1	3.8	4.8
Copper	µg/g	0.1	92	11	11	5.7	11	16	12	7.7	10
Lead	µg/g	0.1	120	6.0	6.2	4.1	5.5	8.8	6.1	4.6	5.4
Molybdenum	µg/g	0.1	2	0.3	0.3	0.2	0.2	0.4	0.2	0.2	0.3
Nickel	µg/g	0.5	82	11	11	6.0	12	17	11	8.2	11



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MATRIX: SOIL				Sample Number	8	9	10	11	12	13	14	15
				Sample Name	AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
				Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Sample Date	26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
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Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
Metals and Inorganics (continued)											
Silver	µg/g	0.05	0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Thallium	µg/g	0.02	1	0.12	0.12	0.13	0.09	0.15	0.11	0.08	0.11
Uranium	µg/g	0.002	2.5	0.46	0.41	0.39	0.44	0.49	0.40	0.38	0.40
Vanadium	µg/g	3	86	18	15	11	20	20	18	15	17
Zinc	µg/g	0.7	290	27	24	17	25	35	25	20	25
Water Soluble Boron	µg/g	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Other (ORP)

Mercury	ug/g	0.05	0.27	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Sodium Adsorption Ratio	No unit	0.2	2.4	5.7	20.5	11.0	23.7	8.6	19.0	73.0	3.5	3.5
SAR Calcium	mg/L	0.2		24.4	8.9	19.2	20.3	6.8	6.1	4.8	46.0	46.0
SAR Magnesium	mg/L	0.3		2.5	0.8	1.3	1.1	0.8	0.5	< 0.3	3.9	3.9
SAR Sodium	mg/L	0.1		111	238	185	405	89.5	181	605	92.2	92.2
Conductivity	mS/cm	0.002	0.57	0.63	1.4	1.0	2.1	0.47	1.0	3.1	0.51	0.51
pH	pH Units	0.05		7.80	7.87	8.12	7.85	7.83	7.73	8.08	7.92	7.92
Chromium VI	µg/g	0.2	0.66	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Free Cyanide	µg/g	0.05	0.051	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

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Project: 32339, Golden Mile EA
Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: SOIL				Sample Number	8	9	10	11	12	13	14	15
				Sample Name	AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
				Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Sample Date	26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
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Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
PAHs											
Acenaphthene	µg/g	0.05	0.072	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Acenaphthylene	µg/g	0.05	0.093	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Anthracene	µg/g	0.05	0.16	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Benzo(a)anthracene	µg/g	0.05	0.36	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Benzo(a)pyrene	µg/g	0.05	0.3	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Benzo(b+j)fluoranthene	µg/g	0.05	0.47	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Benzo(ghi)perylene	µg/g	0.1	0.68	< 0.1	< 0.1	---	< 0.1	---	---	---	---
Benzo(k)fluoranthene	µg/g	0.05	0.48	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Chrysene	µg/g	0.05	2.8	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Dibenzo(a,h)anthracene	µg/g	0.06	0.1	< 0.06	< 0.06	---	< 0.06	---	---	---	---
Fluoranthene	µg/g	0.05	0.56	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Fluorene	µg/g	0.05	0.12	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Indeno(1,2,3-cd)pyrene	µg/g	0.1	0.23	< 0.1	< 0.1	---	< 0.1	---	---	---	---
1-Methylnaphthalene	µg/g	0.05		< 0.05	< 0.05	---	< 0.05	---	---	---	---
2-Methylnaphthalene	µg/g	0.05		< 0.05	< 0.05	---	< 0.05	---	---	---	---
Methylnaphthalene, 2-(1-)	µg/g	0.05	0.59	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Naphthalene	µg/g	0.05	0.09	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Phenanthrene	µg/g	0.05	0.69	< 0.05	< 0.05	---	< 0.05	---	---	---	---
Pyrene	µg/g	0.05	1	< 0.05	< 0.05	---	< 0.05	---	---	---	---



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MATRIX: SOIL				Sample Number	8	9	10	11	12	13	14	15
				Sample Name	AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
				Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Sample Date	26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
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Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
PCBs											
Polychlorinated Biphenyls (PCBs) - Total	µg/g	0.3	0.3	< 0.3	< 0.3	---	< 0.3	---	---	---	---
PHCs											
F1 (C6-C10)	µg/g	10	25	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F1-BTEX (C6-C10)	µg/g	10		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	µg/g	10	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F3 (C16-C34)	µg/g	50	240	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
F4 (C34-C50)	µg/g	50	120	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chromatogram returned to baseline at nC50	Yes / No	no		YES	YES	YES	YES	YES	YES	YES	YES
SVOC Surrogates											
Surr Nitrobenzene-d5	Surr Rec %	no		90	91	---	88	---	---	---	---
Surr 2-Fluorobiphenyl	Surr Rec %	no		90	94	---	88	---	---	---	---
Surr 4-Terphenyl-d14	Surr Rec %	no		93	99	---	93	---	---	---	---
Surr 2-Fluorophenol	Surr Rec %	no		89	92	---	90	---	---	---	---
Surr Phenol-d6	Surr Rec %	no		89	92	---	89	---	---	---	---
Surr 2,4,6-Tribromophenol	Surr Rec %	no		80	80	---	78	---	---	---	---



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MATRIX: SOIL				Sample Number	8	9	10	11	12	13	14	15
				Sample Name	AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
				Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Sample Date	26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
-----------	-------	----	----	--------	--------	--------	--------	--------	--------	--------	--------

SVOCs

Bis(2-chloro-1-methylethyl)ether soil	µg/g	0.5		< 0.5	< 0.5	---	< 0.5	---	---	---	---
Phenol	µg/g	0.5	0.5	< 0.5	< 0.5	---	< 0.5	---	---	---	---
1,2,4-Trichlorobenzene	µg/g	0.05	0.05	< 0.05	< 0.05	---	< 0.05	---	---	---	---

THMs (VOC)

Bromodichloromethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromoform	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibromochloromethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

VOC Surrogates

Surr 1,2-Dichloroethane-d4	Surr Rec %	no		104	105	105	104	106	108	107	107
Surr 4-Bromofluorobenzene	Surr Rec %	no		89	88	89	89	88	87	86	90
Surr 2-Bromo-1-Chloropropane	Surr Rec %	no		85	85	84	84	85	86	85	85

VOCs

Acetone	µg/g	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon tetrachloride	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dichlorodifluoromethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



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MATRIX: SOIL	Sample Number		8	9	10	11	12	13	14	15
	Sample Name		AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
	Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date		26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (continued)											
1,2-Dichloroethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethylene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,2-Dichloroethylene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethylene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,3-dichloropropene	µg/g	0.03		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
trans-1,3-dichloropropene	µg/g	0.03		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
1,3-dichloropropene (total)	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylenedibromide	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
n-Hexane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methyl ethyl ketone	µg/g	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl isobutyl ketone	µg/g	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl-t-butyl Ether	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene Chloride	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethylene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethylene	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40008-JUN25 R

Client: Thurber Engineering Ltd.
Project: 32339, Golden Mile EA
Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: SOIL				Sample Number	8	9	10	11	12	13	14	15
				Sample Name	AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5
				Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Sample Date	26/05/2025	26/05/2025	26/05/2025	27/05/2025	27/05/2025	27/05/2025	28/05/2025	28/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (continued)											
Trichlorofluoromethane	µg/g	0.05	0.25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Vinyl Chloride	µg/g	0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	µg/g	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

MATRIX: SOIL				Sample Number	16
				Sample Name	OC-04 SS4
				Sample Matrix	Soil
				Sample Date	27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
ABNs (sVOC)				
Biphenyl	µg/g	0.05	0.05	< 0.05
Bis(2-chloroethyl)ether	µg/g	0.5	0.5	< 0.5
Bis(2-ethylhexyl)phthalate	µg/g	1	5	< 1
4-Chloroaniline	µg/g	0.5	0.5	< 0.5
3,3-Dichlorobenzidine	µg/g	1	1	< 1
Diethyl phthalate	µg/g	0.2	0.5	< 0.2
Dimethyl phthalate	µg/g	0.05	0.5	< 0.05
2,4-Dimethylphenol	µg/g	0.2	0.2	< 0.2
2,4-Dinitrophenol	µg/g	1	2	< 1
2,4-Dinitrotoluene	µg/g	0.1		< 0.1
2,6-Dinitrotoluene	µg/g	0.5		< 0.5



FINAL REPORT

CA40008-JUN25 R

Client: Thurber Engineering Ltd.
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Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: SOIL

Sample Number 16
Sample Name OC-04 SS4
Sample Matrix Soil
Sample Date 27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
ABNs (sVOC) (continued)				
Dinitrotoluene, 2,4-(2,6-)	µg/g	0.5	0.5	< 0.5
BTEX				
Benzene	µg/g	0.02	0.02	< 0.02
Ethylbenzene	µg/g	0.05	0.05	< 0.05
Toluene	µg/g	0.05	0.2	< 0.05
Xylene (total)	µg/g	0.05	0.05	< 0.05
m/p-xylene	µg/g	0.05		< 0.05
o-xylene	µg/g	0.05		< 0.05
Chlorophenols (CPs) sVOC				
2-Chlorophenol	µg/g	0.1	0.1	< 0.1
2,4-Dichlorophenol	µg/g	0.1	0.1	< 0.1
2,4,6-Trichlorophenol	µg/g	0.1	0.1	< 0.1
2,4,5-Trichlorophenol	µg/g	0.1	0.1	< 0.1
Pentachlorophenol	µg/g	0.1	0.1	< 0.1



FINAL REPORT

CA40008-JUN25 R

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MATRIX: SOIL

Sample Number 16
Sample Name OC-04 SS4
Sample Matrix Soil
Sample Date 27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
Hydrides				
Antimony	µg/g	0.8	1.3	< 0.8
Arsenic	µg/g	0.5	18	4.1
Selenium	µg/g	0.1	1.5	< 0.1
Metals and Inorganics				
Moisture Content	%	0.1		8.8
Barium	µg/g	0.1	220	85
Beryllium	µg/g	0.02	2.5	0.39
Boron	µg/g	1	36	6
Cadmium	µg/g	0.05	1.2	0.08
Chromium	µg/g	0.5	70	15
Cobalt	µg/g	0.01	21	6.4
Copper	µg/g	0.1	92	14
Lead	µg/g	0.1	120	7.1
Molybdenum	µg/g	0.1	2	0.3
Nickel	µg/g	0.5	82	14
Silver	µg/g	0.05	0.5	< 0.05
Thallium	µg/g	0.02	1	0.13
Uranium	µg/g	0.002	2.5	0.45
Vanadium	µg/g	3	86	20
Zinc	µg/g	0.7	290	32
Water Soluble Boron	µg/g	0.5		< 0.5



FINAL REPORT

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MATRIX: SOIL

Sample Number 16
Sample Name OC-04 SS4
Sample Matrix Soil
Sample Date 27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
Other (ORP)				
Mercury	ug/g	0.05	0.27	< 0.05
Sodium Adsorption Ratio	No unit	0.2	2.4	8.7
SAR Calcium	mg/L	0.2		10.0
SAR Magnesium	mg/L	0.3		1.5
SAR Sodium	mg/L	0.1		112
Conductivity	mS/cm	0.002	0.57	0.65
pH	pH Units	0.05		7.87
Chromium VI	µg/g	0.2	0.66	< 0.2
Free Cyanide	µg/g	0.05	0.051	< 0.05
PAHs				
Acenaphthene	µg/g	0.05	0.072	< 0.05
Acenaphthylene	µg/g	0.05	0.093	< 0.05
Anthracene	µg/g	0.05	0.16	< 0.05
Benzo(a)anthracene	µg/g	0.05	0.36	< 0.05
Benzo(a)pyrene	µg/g	0.05	0.3	< 0.05
Benzo(b+j)fluoranthene	µg/g	0.05	0.47	< 0.05
Benzo(ghi)perylene	µg/g	0.1	0.68	< 0.1
Benzo(k)fluoranthene	µg/g	0.05	0.48	< 0.05
Chrysene	µg/g	0.05	2.8	< 0.05
Dibenzo(a,h)anthracene	µg/g	0.06	0.1	< 0.06
Fluoranthene	µg/g	0.05	0.56	< 0.05



FINAL REPORT

CA40008-JUN25 R

Client: Thurber Engineering Ltd.
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MATRIX: SOIL

Sample Number 16
Sample Name OC-04 SS4
Sample Matrix Soil
Sample Date 27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
PAHs (continued)				
Fluorene	µg/g	0.05	0.12	< 0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.1	0.23	< 0.1
1-Methylnaphthalene	µg/g	0.05		< 0.05
2-Methylnaphthalene	µg/g	0.05		< 0.05
Methylnaphthalene, 2-(1-)	µg/g	0.05	0.59	< 0.05
Naphthalene	µg/g	0.05	0.09	< 0.05
Phenanthrene	µg/g	0.05	0.69	< 0.05
Pyrene	µg/g	0.05	1	< 0.05
PCBs				
Polychlorinated Biphenyls (PCBs) - Total	µg/g	0.3	0.3	< 0.3
PHCs				
F1 (C6-C10)	µg/g	10	25	< 10
F1-BTEX (C6-C10)	µg/g	10		< 10
F2 (C10-C16)	µg/g	10	10	< 10
F3 (C16-C34)	µg/g	50	240	< 50
F4 (C34-C50)	µg/g	50	120	< 50
Chromatogram returned to baseline at nC50	Yes / No	no		YES



FINAL REPORT

CA40008-JUN25 R

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MATRIX: SOIL

Sample Number 16
Sample Name OC-04 SS4
Sample Matrix Soil
Sample Date 27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
SVOC Surrogates				
Surr Nitrobenzene-d5	Surr Rec %	no		90
Surr 2-Fluorobiphenyl	Surr Rec %	no		95
Surr 4-Terphenyl-d14	Surr Rec %	no		99
Surr 2-Fluorophenol	Surr Rec %	no		92
Surr Phenol-d6	Surr Rec %	no		94
Surr 2,4,6-Tribromophenol	Surr Rec %	no		84

SVOCs

Bis(2-chloro-1-methylethyl)ether soil	µg/g	0.5		< 0.5
Phenol	µg/g	0.5	0.5	< 0.5
1,2,4-Trichlorobenzene	µg/g	0.05	0.05	< 0.05

THMs (VOC)

Bromodichloromethane	µg/g	0.05	0.05	< 0.05
Bromoform	µg/g	0.05	0.05	< 0.05
Dibromochloromethane	µg/g	0.05	0.05	< 0.05



FINAL REPORT

CA40008-JUN25 R

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MATRIX: SOIL

Sample Number 16
Sample Name OC-04 SS4
Sample Matrix Soil
Sample Date 27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
VOC Surrogates				
Surr 1,2-Dichloroethane-d4	Surr Rec %	no		106
Surr 4-Bromofluorobenzene	Surr Rec %	no		90
Surr 2-Bromo-1-Chloropropane	Surr Rec %	no		84
VOCs				
Acetone	µg/g	0.5	0.5	< 0.5
Bromomethane	µg/g	0.05	0.05	< 0.05
Carbon tetrachloride	µg/g	0.05	0.05	< 0.05
Chlorobenzene	µg/g	0.05	0.05	< 0.05
1,2-Dichlorobenzene	µg/g	0.05	0.05	< 0.05
1,3-Dichlorobenzene	µg/g	0.05	0.05	< 0.05
1,4-Dichlorobenzene	µg/g	0.05	0.05	< 0.05
Dichlorodifluoromethane	µg/g	0.05	0.05	< 0.05
1,1-Dichloroethane	µg/g	0.05	0.05	< 0.05
1,2-Dichloroethane	µg/g	0.05	0.05	< 0.05
1,1-Dichloroethylene	µg/g	0.05	0.05	< 0.05
trans-1,2-Dichloroethylene	µg/g	0.05	0.05	< 0.05
cis-1,2-Dichloroethylene	µg/g	0.05	0.05	< 0.05
1,2-Dichloropropane	µg/g	0.05	0.05	< 0.05
cis-1,3-dichloropropene	µg/g	0.03		< 0.03
trans-1,3-dichloropropene	µg/g	0.03		< 0.03
1,3-dichloropropene (total)	µg/g	0.05	0.05	< 0.05



FINAL REPORT

CA40008-JUN25 R

Client: Thurber Engineering Ltd.
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Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: SOIL

Sample Number 16
Sample Name OC-04 SS4
Sample Matrix Soil
Sample Date 27/05/2025

L1 = REG406 / SOIL / - - Appendix 1 Table 1 -
Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED

Parameter	Units	RL	L1	Result
VOCs (continued)				
Ethylenedibromide	µg/g	0.05	0.05	< 0.05
n-Hexane	µg/g	0.05	0.05	< 0.05
Methyl ethyl ketone	µg/g	0.5	0.5	< 0.5
Methyl isobutyl ketone	µg/g	0.5	0.5	< 0.5
Methyl-t-butyl Ether	µg/g	0.05	0.05	< 0.05
Methylene Chloride	µg/g	0.05	0.05	< 0.05
Styrene	µg/g	0.05	0.05	< 0.05
Tetrachloroethylene	µg/g	0.05	0.05	< 0.05
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.05	< 0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	< 0.05
1,1,1-Trichloroethane	µg/g	0.05	0.05	< 0.05
1,1,2-Trichloroethane	µg/g	0.05	0.05	< 0.05
Trichloroethylene	µg/g	0.05	0.05	< 0.05
Trichlorofluoromethane	µg/g	0.05	0.25	< 0.05
Vinyl Chloride	µg/g	0.02	0.02	< 0.02
Chloroform	µg/g	0.05	0.05	< 0.05



FINAL REPORT

CA40008-JUN25 R

EXCEEDANCE SUMMARY

				REG406 / SOIL / - - Appendix 1 Table 1 - Residential/Parkland/Institutional/Industrial/Commercial/Community - UNDEFINED
Parameter	Method	Units	Result	L1

AB-01 SS4

Conductivity	EPA 6010/SM 2510	mS/cm	0.63	0.57
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	5.7	2.4

AB-02 SS3

Conductivity	EPA 6010/SM 2510	mS/cm	1.4	0.57
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	20.5	2.4

AB-03 SS4

Conductivity	EPA 6010/SM 2510	mS/cm	1.0	0.57
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	11.0	2.4

TS-01 SS3

Conductivity	EPA 6010/SM 2510	mS/cm	2.1	0.57
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	23.7	2.4

CR-01 SS5

Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	8.6	2.4
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GM-01 SS3

Conductivity	EPA 6010/SM 2510	mS/cm	1.0	0.57
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	19.0	2.4

GM-02 SS2

Benzene	EPA 5035A/5030B/8260C	µg/g	0.03	0.02
Conductivity	EPA 6010/SM 2510	mS/cm	3.1	0.57
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	73.0	2.4

OC-03 SS5

Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	3.5	2.4
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OC-04 SS4

Conductivity	EPA 6010/SM 2510	mS/cm	0.65	0.57
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	8.7	2.4



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Conductivity
Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Conductivity	EWL0055-JUN25	mS/cm	0.002	<0.002	6	10	100	90	110	NA		

Cyanide by SFA
Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Free Cyanide	SKA5016-JUN25	µg/g	0.05	<0.05	ND	35	109	80	120	100	70	130

Hexavalent Chromium by SFA
Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chromium VI	SKA5017-JUN25	ug/g	0.2	<0.2	ND	35	86	80	120	92	70	130



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury	EMS0012-JUN25	ug/g	0.05	<0.05	ND	30	101	80	120	83	70	130

Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-IENVISPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
SAR Calcium	ESG0007-JUN25	mg/L	0.2	<0.2	12	30	95	80	120	105	70	130
SAR Magnesium	ESG0007-JUN25	mg/L	0.3	<0.3	ND	30	97	80	120	109	70	130
SAR Sodium	ESG0007-JUN25	mg/L	0.1	<0.1	8	30	97	80	120	104	70	130



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Metals in Soil - Aqua-regia/ICP-MS
Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver	EMS0012-JUN25	ug/g	0.05	<0.05	ND	30	102	80	120	93	70	130
Arsenic	EMS0012-JUN25	ug/g	0.5	<0.5	5	30	97	80	120	109	70	130
Barium	EMS0012-JUN25	ug/g	0.1	<0.1	0	30	100	80	120	118	70	130
Beryllium	EMS0012-JUN25	ug/g	0.02	<0.02	5	30	97	80	120	96	70	130
Boron	EMS0012-JUN25	ug/g	1	<1	8	30	98	80	120	103	70	130
Cadmium	EMS0012-JUN25	ug/g	0.05	<0.05	ND	30	103	80	120	107	70	130
Cobalt	EMS0012-JUN25	ug/g	0.01	<0.01	2	30	98	80	120	96	70	130
Chromium	EMS0012-JUN25	ug/g	0.5	<0.5	2	30	100	80	120	120	70	130
Copper	EMS0012-JUN25	ug/g	0.1	<0.1	3	30	103	80	120	99	70	130
Molybdenum	EMS0012-JUN25	ug/g	0.1	<0.1	12	30	99	80	120	98	70	130
Nickel	EMS0012-JUN25	ug/g	0.5	<0.5	2	30	99	80	120	98	70	130
Lead	EMS0012-JUN25	ug/g	0.1	<0.1	3	30	100	80	120	111	70	130
Antimony	EMS0012-JUN25	ug/g	0.8	<0.8	ND	30	103	80	120	NV	70	130
Selenium	EMS0012-JUN25	ug/g	0.1	<0.1	ND	30	101	80	120	89	70	130
Thallium	EMS0012-JUN25	ug/g	0.02	<0.02	2	30	96	80	120	119	70	130
Uranium	EMS0012-JUN25	ug/g	0.002	<0.002	6	30	99	80	120	106	70	130
Vanadium	EMS0012-JUN25	ug/g	3	<3	3	30	99	80	120	88	70	130
Zinc	EMS0012-JUN25	ug/g	0.7	<0.7	3	30	103	80	120	96	70	130



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F1 (C6-C10)	GCM0021-JUN25	µg/g	10	<10	ND	30	95	80	120	97	60	140

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F2 (C10-C16)	GCM0023-JUN25	µg/g	10	<10	ND	30	97	80	120	102	60	140
F3 (C16-C34)	GCM0023-JUN25	µg/g	50	<50	ND	30	97	80	120	102	60	140
F4 (C34-C50)	GCM0023-JUN25	µg/g	50	<50	ND	30	97	80	120	102	60	140



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

pH
Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	ARD0011-JUN25	pH Units	0.05		0	20	100	80	120			

Polychlorinated Biphenyls
Method: EPA 3570/8082A/8270C | Internal ref.: ME-CA-IENVIGC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Polychlorinated Biphenyls (PCBs) - Total	GCM0080-JUN25	µg/g	0.3	< 0.3	ND	40	94	60	140	93	60	140



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Semi-Volatile Organics

Method: EPA 3541/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,2,4-Trichlorobenzene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	100	50	140	97	50	140
1-Methylnaphthalene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	103	50	140	99	50	140
2,4,5-Trichlorophenol	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	101	50	140	99	50	140
2,4,6-Trichlorophenol	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	98	50	140	97	50	140
2,4-Dichlorophenol	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	102	50	140	103	50	140
2,4-Dimethylphenol	GCM0041-JUN25	µg/g	0.2	< 0.2	ND	40	92	30	130	88	30	130
2,4-Dinitrophenol	GCM0041-JUN25	µg/g	1	< 1	ND	40	77	30	130	68	30	130
2,4-Dinitrotoluene	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	105	50	140	101	50	140
2,6-Dinitrotoluene	GCM0041-JUN25	µg/g	0.5	< 0.5	ND	40	108	50	140	105	50	140
2-Chlorophenol	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	97	50	140	97	50	140
2-Methylnaphthalene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	102	50	140	100	50	140
3,3-Dichlorobenzidine	GCM0041-JUN25	µg/g	1	< 1	ND	40	103	30	130	93	30	130
4-Chloroaniline	GCM0041-JUN25	µg/g	0.5	< 0.5	ND	40	209	30	130	178	30	130
Acenaphthene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	105	50	140	101	50	140
Acenaphthylene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	107	50	140	101	50	140
Anthracene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	107	50	140	103	50	140
Benzo(a)anthracene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	107	50	140	102	50	140
Benzo(a)pyrene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	108	50	140	103	50	140
Benzo(b+j)fluoranthene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	106	50	140	102	50	140
Benzo(ghi)perylene	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	101	50	140	103	50	140



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Semi-Volatile Organics (continued)
Method: EPA 3541/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Benzo(k)fluoranthene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	109	50	140	104	50	140
Biphenyl	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	98	50	140	96	50	140
Bis(2-chloro-1-methylethyl)ether soil	GCM0041-JUN25	µg/g	0.5	< 0.5	ND	40	100	50	140	97	50	140
Bis(2-chloroethyl)ether	GCM0041-JUN25	µg/g	0.5	< 0.5	ND	40	95	50	140	95	50	140
Bis(2-ethylhexyl)phthalate	GCM0041-JUN25	µg/g	1	< 1	ND	40	112	50	140	104	50	140
Chrysene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	108	50	140	103	50	140
Dibenzo(a,h)anthracene	GCM0041-JUN25	µg/g	0.06	< 0.06	ND	40	101	50	140	104	50	140
Diethyl phthalate	GCM0041-JUN25	µg/g	0.2	< 0.2	ND	40	110	50	140	104	50	140
Dimethyl phthalate	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	108	50	140	105	50	140
Fluoranthene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	109	50	140	104	50	140
Fluorene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	107	50	140	102	50	140
Indeno(1,2,3-cd)pyrene	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	102	50	140	104	50	140
Naphthalene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	102	50	140	99	50	140
Pentachlorophenol	GCM0041-JUN25	µg/g	0.1	< 0.1	ND	40	67	50	140	65	50	140
Phenanthrene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	107	50	140	104	50	140
Phenol	GCM0041-JUN25	µg/g	0.5	< 0.5	ND	40	94	50	140	103	20	130
Pyrene	GCM0041-JUN25	µg/g	0.05	< 0.05	ND	40	108	50	140	101	50	140



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Volatile Organics
Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1,1,2-Tetrachloroethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	99	60	130	109	50	140
1,1,1-Trichloroethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	105	50	140
1,1,2,2-Tetrachloroethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	97	60	130	42	50	140
1,1,2-Trichloroethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	94	60	130	102	50	140
1,1-Dichloroethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	92	60	130	98	50	140
1,1-Dichloroethylene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	91	60	130	93	50	140
1,2-Dichlorobenzene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	100	60	130	105	50	140
1,2-Dichloroethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	104	50	140
1,2-Dichloropropane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	96	50	140
1,3-Dichlorobenzene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	99	60	130	104	50	140
1,4-Dichlorobenzene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	99	60	130	103	50	140
Acetone	GCM0020-JUN25	µg/g	0.5	< 0.5	ND	50	83	50	140	77	50	140
Benzene	GCM0020-JUN25	µg/g	0.02	< 0.02	ND	50	90	60	130	97	50	140
Bromodichloromethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	96	60	130	105	50	140
Bromoform	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	97	60	130	105	50	140
Bromomethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	95	50	140	92	50	140
Carbon tetrachloride	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	106	50	140
Chlorobenzene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	96	60	130	103	50	140
Chloroform	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	102	50	140
cis-1,2-Dichloroethylene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	97	50	140



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Volatile Organics (continued)
Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
cis-1,3-dichloropropene	GCM0020-JUN25	µg/g	0.03	< 0.03	ND	50	93	60	130	92	50	140
Dibromochloromethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	94	60	130	104	50	140
Dichlorodifluoromethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	97	50	140	91	50	140
Ethylbenzene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	100	60	130	107	50	140
Ethylenedibromide	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	95	60	130	103	50	140
n-Hexane	GCM0020-JUN25	µg/g	0.05	< 0.05	46	50	102	60	130	80	50	140
m/p-xylene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	101	60	130	109	50	140
Methyl ethyl ketone	GCM0020-JUN25	µg/g	0.5	< 0.5	ND	50	94	50	140	97	50	140
Methyl isobutyl ketone	GCM0020-JUN25	µg/g	0.5	< 0.5	ND	50	101	50	140	102	50	140
Methyl-t-butyl Ether	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	97	60	130	100	50	140
Methylene Chloride	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	92	60	130	77	50	140
o-xylene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	104	60	130	112	50	140
Styrene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	105	60	130	112	50	140
Tetrachloroethylene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	92	60	130	101	50	140
Toluene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	101	50	140
trans-1,2-Dichloroethylene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	94	60	130	107	50	140
trans-1,3-dichloropropene	GCM0020-JUN25	µg/g	0.03	< 0.03	ND	50	97	60	130	101	50	140
Trichloroethylene	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	60	130	146	50	140
Trichlorofluoromethane	GCM0020-JUN25	µg/g	0.05	< 0.05	ND	50	93	50	140	116	50	140
Vinyl Chloride	GCM0020-JUN25	µg/g	0.02	< 0.02	ND	50	93	50	140	87	50	140



FINAL REPORT

CA40008-JUN25 R

QC SUMMARY

Water Soluble Boron

Method: O.Reg. 15 3/04 | Internal ref.: ME-CA-IENV1 SPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Water Soluble Boron	ESG0004-JUN25	µg/g	0.5	<0.5	ND	40	101	80	120	109	70	130

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate laboratory accuracy with sample matrix effects.

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.



LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --



FINAL REPORT

CA40007-JUN25 R

32339, Golden Mile EA

Prepared for

Thurber Engineering Ltd.



FINAL REPORT

CA40007-JUN25 R

First Page

CLIENT DETAILS		LABORATORY DETAILS	
Client	Thurber Engineering Ltd.	Project Specialist	Brad Moore Hon. B.Sc
Address	235 Martindale Road - Unit 10	Laboratory	SGS Canada Inc.
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Facsimile		Email	brad.moore@sgs.com
Email	tfeather@thurber.ca	SGS Reference	CA40007-JUN25
Project	32339, Golden Mile EA	Received	06/02/2025
Order Number		Approved	06/09/2025
Samples	Leachate (1)	Report Number	CA40007-JUN25 R
		Date Reported	06/09/2025

COMMENTS
Temperature of Sample upon Receipt: 8 degrees C
Cooling Agent Present:yes
Custody Seal Present:yes
Chain of Custody Number:T1
TCLP metals reported at 10x DL

SIGNATORIES
Brad Moore Hon. B.Sc



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FINAL REPORT

CA40007-JUN25 R

Client: Thurber Engineering Ltd.
Project: 32339, Golden Mile EA
Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: LEACHATE

Sample Number 6
Sample Name AB-02 TCLP
Sample Matrix Leachate
Sample Date 26/05/2025

L1 = REG558 / LEACHATE / - - SCHEDULE 4 - Waste Management - ~

Parameter	Units	RL	L1	Result
Acid rock Drainage				
Final pH	no unit	0.01		6.14
Metals and Inorganics				
Sample weight	g	0.001		100
Ext Fluid	#1 or #2	0.01		2
Ext Volume	mL	0.01		2000
Nitrite (as N)	as N mg/L	0.3		< 0.3
Nitrate (as N)	as N mg/L	0.6		< 0.6
Nitrate + Nitrite (as N)	as N mg/L	0.6	1000	< 0.6
Fluoride	mg/L	0.06	150	0.27
Cyanide (total)	mg/L	0.01	20	< 0.01
Arsenic	mg/L	0.002	2.5	< 0.002
Silver	mg/L	0.00005	5	< 0.00005
Barium	mg/L	0.00008	100	0.761
Boron	mg/L	0.02	500	0.07
Cadmium	mg/L	0.00003	0.5	0.00111
Chromium	mg/L	0.0008	5	0.0011
Lead	mg/L	0.00009	5	0.0188
Selenium	mg/L	0.0004	1	< 0.0004
Uranium	mg/L	0.00002	10	0.00498
Ignitability	yes/no			no
Burn Rate	mm/S	1.6		< 1.6



FINAL REPORT

CA40007-JUN25 R

Client: Thurber Engineering Ltd.
Project: 32339, Golden Mile EA
Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: LEACHATE

Sample Number 6
Sample Name AB-02 TCLP
Sample Matrix Leachate
Sample Date 26/05/2025

L1 = REG558 / LEACHATE / - - SCHEDULE 4 - Waste Management - -

Parameter	Units	RL	L1	Result
Other (ORP)				
Mercury	mg/L	0.00001	0.1	< 0.00001
PCBs				
Polychlorinated Biphenyls (PCBs) - Total	mg/L	0.001	0.3	< 0.001
SVOCs - PAHs				
Benzo(a)pyrene	mg/L	0.001	0.001	< 0.001
VOCs				
Methyl ethyl ketone	mg/L	0.8	200	< 0.8
Vinyl Chloride	mg/L	0.008	0.2	< 0.008
Dichloromethane	mg/L	0.02	5	< 0.02
Chloroform	mg/L	0.02	10	< 0.02
Trichloroethylene	mg/L	0.02	5	< 0.02
Tetrachloroethene	mg/L	0.02	3	< 0.02
Monochlorobenzene	mg/L	0.02	8	< 0.02
Carbon tetrachloride	mg/L	0.008	0.5	< 0.008
1,2-Dichlorobenzene	mg/L	0.02	20	< 0.02
1,4-Dichlorobenzene	mg/L	0.02	0.5	< 0.02
1,2-Dichloroethane	mg/L	0.02	0.5	< 0.02
1,1-Dichloroethylene	mg/L	0.02	1.4	< 0.02



FINAL REPORT

CA40007-JUN25 R

Client: Thurber Engineering Ltd.
Project: 32339, Golden Mile EA
Project Manager: Tim Feather
Samplers: Glen Faria

MATRIX: LEACHATE

Sample Number 6
Sample Name AB-02 TCLP
Sample Matrix Leachate
Sample Date 26/05/2025

L1 = REG558 / LEACHATE / - - SCHEDULE 4 - Waste Management - ~

Parameter	Units	RL	L1	Result
VOCs - BTEX				
Benzene	mg/L	0.02	0.5	< 0.02



EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated



FINAL REPORT

CA40007-JUN25 R

QC SUMMARY

Cyanide by SFA
Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Cyanide (total)	SKA0031-JUN25	mg/L	0.01	<0.01	ND	10	94	90	110	85	75	125

Fluoride by Specific Ion Electrode
Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-014

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Fluoride	EWL0131-JUN25	mg/L	0.06	<0.06	ND	10	102	90	110	125	75	125

Inorganics-General
Method: EPA 7471A/SM 3112B | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury	EHG0007-JUN25	mg/L	0.00001	< 0.00001	ND	20	114	80	120	113	70	130



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CA40007-JUN25 R

QC SUMMARY

Metals in aqueous samples - ICP-MS
Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver	EMS0033-JUN25	mg/L	0.00005	<0.00005	ND	20	93	90	110	119	70	130
Arsenic	EMS0033-JUN25	mg/L	0.002	<0.0002	10	20	102	90	110	100	70	130
Barium	EMS0033-JUN25	mg/L	0.00008	<0.00008	4	20	97	90	110	111	70	130
Boron	EMS0033-JUN25	mg/L	0.02	<0.002	6	20	107	90	110	102	70	130
Cadmium	EMS0033-JUN25	mg/L	0.00003	<0.000003	10	20	98	90	110	91	70	130
Chromium	EMS0033-JUN25	mg/L	0.0008	<0.00008	2	20	99	90	110	96	70	130
Lead	EMS0033-JUN25	mg/L	0.00009	<0.00009	2	20	98	90	110	93	70	130
Selenium	EMS0033-JUN25	mg/L	0.0004	<0.00004	6	20	101	90	110	100	70	130
Uranium	EMS0033-JUN25	mg/L	0.00002	<0.000002	1	20	96	90	110	94	70	130

Nitrate by Ion Chromatography
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nitrate (as N)	DIO0105-JUN25	mg/L	0.6	<0.6	0	20	104	90	110	103	75	125



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CA40007-JUN25 R

QC SUMMARY

Nitrite by Ion Chromatography
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nitrite (as N)	DIO0105-JUN25	mg/L	0.3	<0.3	2	20	99	90	110	97	75	125

Polychlorinated Biphenyls
Method: MOE E3400/EPA 8082A | Internal ref.: ME-CA-IENVIGC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Polychlorinated Biphenyls (PCBs) - Total	GCM0075-JUN25	mg/L	0.001	< 0.001	NSS	30	94	60	140	NSS	60	140

Semi-Volatile Organics
Method: EPA 3510C/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Benzo(a)pyrene	GCM0064-JUN25	mg/L	0.001	< 0.01	ND	30	63	50	140	63	50	140



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CA40007-JUN25 R

QC SUMMARY

Total Nitrate/Nitrite by Ion Chromatography
Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-IENVIIC-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Nitrate + Nitrite (as N)	DIO0105-JUN25	mg/L	0.6	<0.6	NA	20	NA	80	120	NA	75	125



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CA40007-JUN25 R

QC SUMMARY

Volatile Organics
Method: EPA 5030B/8260C | Internal ref.: ME-CA-ENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1-Dichloroethylene	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	109	60	130	103	50	140
1,2-Dichlorobenzene	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	101	60	130	95	50	140
1,2-Dichloroethane	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	101	60	130	96	50	140
1,4-Dichlorobenzene	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	101	60	130	96	50	140
Benzene	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	100	60	130	94	50	140
Carbon tetrachloride	GCM0054-JUN25	mg/L	0.008	<0.008	ND	30	101	60	130	96	50	140
Chloroform	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	100	60	130	95	50	140
Dichloromethane	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	100	60	130	94	50	140
Methyl ethyl ketone	GCM0054-JUN25	mg/L	0.8	<0.8	ND	30	100	50	140	96	50	140
Monochlorobenzene	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	101	60	130	96	50	140
Tetrachloroethene	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	99	60	130	95	50	140
Trichloroethylene	GCM0054-JUN25	mg/L	0.02	<0.02	ND	30	101	60	130	94	50	140
Vinyl Chloride	GCM0054-JUN25	mg/L	0.008	<0.008	ND	30	115	50	140	111	50	140



FINAL REPORT

CA40007-JUN25 R

QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate laboratory accuracy with sample matrix effects.

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.



LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --



SGS Engage - Sample Crosstab

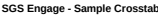
Client Name:					Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering
Job:				REG153-SOIL-TABLE 3 Industrial/Commercial UNDEFINED-COARSE	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25
Client Sample ID:				AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5	OC-04 SS4
Matrix:				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location:												
Sample Date:				5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/28/2025 12:00 AM	5/28/2025 12:00 AM	5/27/2025 12:00 AM
Analysis	Analys	CAS	Unit	CA40008-JUN25-008	CA40008-JUN25-009	CA40008-JUN25-010	CA40008-JUN25-011	CA40008-JUN25-012	CA40008-JUN25-013	CA40008-JUN25-014	CA40008-JUN25-015	CA40008-JUN25-016
SOIL-	1.1.1 ABNs (vOC)		no unit									
SOIL-	1.1.2 Chlorophenols		no unit									
SOIL-	1.1.7 PCB		no unit									
SOIL-	1.3 Other (ORP)		no unit									
SOIL-ABNs (vOC)	2.4-Dimethylphenol		µg/g	390	<0.2	<0.2	<0.2					<0.2
SOIL-ABNs (vOC)	2,4-Dinitrophenol		µg/g	59	<1	<1	<1					<1
SOIL-ABNs (vOC)	2,4-Dinitrotoluene		µg/g		<0.1	<0.1	<0.1					<0.1
SOIL-ABNs (vOC)	2,6-Dinitrotoluene		µg/g		<0.5	<0.5	<0.5					<0.5
SOIL-ABNs (vOC)	3,3-Dichlorobenzidine		µg/g	1	<1	<1	<1					<1
SOIL-ABNs (vOC)	4-Chloroaniline		µg/g	0.5	<0.5	<0.5	<0.5					<0.5
SOIL-ABNs (vOC)	Biphenyl		µg/g	52	<0.05	<0.05	<0.05					<0.05
SOIL-ABNs (vOC)	Bis(2-chloroethyl)ether		µg/g	0.5	<0.5	<0.5	<0.5					<0.5
SOIL-ABNs (vOC)	Bis(2-ethylhexyl)phthalate		µg/g	28	<1	<1	<1					<1
SOIL-ABNs (vOC)	Diethyl phthalate		µg/g	0.5	<0.5	<0.2	<0.2					<0.2
SOIL-ABNs (vOC)	Dimethyl phthalate		µg/g	0.5	<0.05	<0.05	<0.05					<0.05
SOIL-ABNs (vOC)	Dinitrotoluene, 2,4-(2,6-)		µg/g	1.2	<0.5	<0.5	<0.5					<0.5
SOIL-BTEX	1.1.11 BTEX		no unit									
SOIL-BTEX	Benzene		µg/g	0.32	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02
SOIL-BTEX	Ethylbenzene		µg/g	9.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	m,p-xylene		µg/g	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	o-xylene		µg/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	Toluene		µg/g	68	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05
SOIL-BTEX	Xylene (total)		µg/g	26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
L-Chlorophenols (CPs) s1	2,4,5-Trichlorophenol		µg/g	10	<0.1	<0.1	<0.1					<0.1
L-Chlorophenols (CPs) s1	2,4,6-Trichlorophenol		µg/g	3.5	<0.1	<0.1	<0.1					<0.1
L-Chlorophenols (CPs) s1	2,4-Dichlorophenol		µg/g	3.4	<0.1	<0.1	<0.1					<0.1
L-Chlorophenols (CPs) s1	2-Chlorophenol		µg/g	3.1	<0.1	<0.1	<0.1					<0.1
L-Chlorophenols (CPs) s1	Pentachlorophenol		µg/g	2.9	<0.1	<0.1	<0.1					<0.1
SOIL-Hydrides	1.2.3 Hydrides		no unit									
SOIL-Hydrides	Antimony		µg/g	40	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
SOIL-Hydrides	Arsenic		µg/g	18	3.8	3.8	3.1	4.1	4.5	3.4	3.3	4.1
SOIL-Hydrides	Selenium		µg/g	5.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SOIL-Metals and Inorganic	1.2.2 Metals		no unit									
SOIL-Metals and Inorganic	Barium		µg/g	670	58	50	24	80	74	39	40	85
SOIL-Metals and Inorganic	Beryllium		µg/g	5	0.3	0.3	0.14	0.39	0.44	0.32	0.31	0.39
SOIL-Metals and Inorganic	Boron		µg/g	120	4	4	3	4	5	4	4	6
SOIL-Metals and Inorganic	Cadmium		µg/g	1.9	<0.05	0.05	<0.05	0.07	0.07	0.06	<0.05	0.08
SOIL-Metals and Inorganic	Chromium		µg/g	160	12	10	6.2	14	15	11	8.7	15
SOIL-Metals and Inorganic	Cobalt		µg/g	80	5.1	5.5	2.8	5.8	7.3	5.1	3.8	6.4
SOIL-Metals and Inorganic	Copper		µg/g	230	11	11	5.7	11	16	12	7.7	14
SOIL-Metals and Inorganic	Lead		µg/g	120	6	6.2	4.1	5.5	8.8	6.1	4.6	5.4
SOIL-Metals and Inorganic	Moisture Content		%	11	8.7	11	8.2	15	12.2	15	9.4	8.8
SOIL-Metals and Inorganic	Molybdenum		µg/g	40	0.3	0.3	0.2	0.2	0.4	0.2	0.2	0.3
SOIL-Metals and Inorganic	Nickel		µg/g	270	11	11	6	12	17	11	8.2	14
SOIL-Metals and Inorganic	Silver		µg/g	40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-Metals and Inorganic	Thallium		µg/g	3.3	0.12	0.12	0.13	0.09	0.15	0.11	0.08	0.11
SOIL-Metals and Inorganic	Uranium		µg/g	33	0.46	0.41	0.39	0.44	0.49	0.38	0.4	0.45
SOIL-Metals and Inorganic	Vanadium		µg/g	86	18	15	11	20	20	18	15	20
SOIL-Metals and Inorganic	Water Soluble Boron		µg/g	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SOIL-Metals and Inorganic	Zinc		µg/g	340	27	24	25	35	25	20	25	32
SOIL-Other (ORP)	Chromium VI		µg/g	8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SOIL-Other (ORP)	Conductivity		mS/cm	1.4	0.63	1.4	1	2.1	0.47	1	3.1	0.51
SOIL-Other (ORP)	Free Cyanide		µg/g	0.051	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	Mercury		µg/g	3.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	pH Levels				7.87	8.12	7.85	7.83	7.83	8.08	7.92	7.87
SOIL-Other (ORP)	SAR Calcium		mg/L	24.4	8.9	19.2	20.3	6.8	6.1	4.8	46	10
SOIL-Other (ORP)	SAR Magnesium		mg/L	2.5	0.8	1.3	1.1	0.8	0.5	<0.3	3.9	1.5
SOIL-Other (ORP)	SAR Sodium		mg/L	111	238	185	405	89.5	181	605	92.2	112
SOIL-Other (ORP)	Sodium Adsorption Ratio		No unit	12	5.7	29.5	11	29.7	8.6	19	73	8.7
SOIL-PAHs	1-Methylnaphthalene		µg/g		<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	1.1.8 PAHs (vOC)		no unit									
SOIL-PAHs	2-Methylnaphthalene		µg/g		<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Acenaphthene		µg/g	96	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Acenaphthylene		µg/g	0.15	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Anthracene		µg/g	0.67	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Benzo(a)anthracene		µg/g	0.66	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Benzo(a)pyrene		µg/g	0.3	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Benzo(b)fluoranthene		µg/g	0.96	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Benzo(g,h,i)perylene		µg/g	9.6	<0.1	<0.1	<0.1					<0.1
SOIL-PAHs	Benzo(k)fluoranthene		µg/g	0.66	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Chrysene		µg/g	9.6	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Dibenzo(a,h)anthracene		µg/g	0.1	<0.06	<0.06	<0.06					<0.06
SOIL-PAHs	Fluoranthene		µg/g	9.6	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Fluorene		µg/g	62	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Indeno(1,2,3-cd)pyrene		µg/g	0.78	<0.1	<0.1	<0.1					<0.1
SOIL-PAHs	Methylnaphthalene, 2-(1-		µg/g	76	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Naphthalene		µg/g	9.6	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Phenanthrene		µg/g	12	<0.05	<0.05	<0.05					<0.05
SOIL-PAHs	Pyrene		µg/g	96	<0.05	<0.05	<0.05					<0.05
SOIL-PCBs	estimated Biphenyls (PCBs)		µg/g	1.1	<0.3	<0.3	<0.3					<0.3
SOIL-PHCs	1.1.6 PHCs		no unit									
SOIL-PHCs	gram returned to baselin	Yes / No	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SOIL-PHCs	F1 (C6-C10)		µg/g	55	<10	<10	<10	<10	<10	<10	<10	<10
SOIL-PHCs	F1-BL (C6-C10)		µg/g	55	<10	<10	<10	<10	<10	<10	<10	<10
SOIL-PHCs	F2 (C10-C16)		µg/g	230	<10	<10	<10	<10	<10	<10	<10	<10
SOIL-PHCs	F3 (C16-C34)		µg/g	1700	<50	<50	<50	<50	<50	<50	<50	<50
SOIL-PHCs	F4 (C34-C50)		µg/g	3300	<50	<50	<50	<50	<50	<50	<50	<50
SOIL-SVOC Surrogates	Surr 2,4,6-Tribromophenol	Surr Rec %		80	80	80	78					84
SOIL-SVOC Surrogates	Surr 2-Fluorobiphenyl	Surr Rec %		90	94	88	88					95
SOIL-SVOC Surrogates	Surr 2-Chlorophenol	Surr Rec %		89	89	92	93					99
SOIL-SVOC Surrogates	Surr 4-Terphenyl-d14	Surr Rec %		93	99	99	93					99
SOIL-SVOC Surrogates	Surr Nitrobenzene-d5	Surr Rec %		90	91	88	88					90
SOIL-SVOC Surrogates	Surr Phenol-d6	Surr Rec %		89	92	89	89					94
SOIL-SVOCs	1,2,4-Trichlorobenzene		µg/g	3.2	<0.05	<0.05	<0.05					<0.05
SOIL-SVOCs	chloro-1-methyl-ethyl/jeth		µg/g		<0.5	<0.5	<0.5					<0.5
SOIL-SVOCs	Phenol		µg/g	9.4	<0.5	<0.5	<0.5					<0.5
SOIL-THMs (VOC)	Bromodichloromethane		µg/g	18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-THMs (VOC)	Bromofom		µg/g	0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-THMs (VOC)	Dibromochloromethane		µg/g	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-VOC Surrogates	Surr 1,2-Dichloroethane-d4	Surr Rec %		104	105	105	104					106
SOIL-VOC Surrogates	tr 2-Bromo-1-Chloroprope	Surr Rec %		85	85	84	85					84
SOIL-VOC Surrogates	Surr 4-Bromofluorobenzene	Surr Rec %		89	88	89	88					90
SOIL-VOC Surrogates	Sumogates (VOCs)		no unit									
SOIL-VOCs	1.1.1,2-Tetrachloroethane		µg/g	0.067	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-VOCs	1.1.1,Trichloroethane		µg/g	6.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-VOCs	1.1.2,2,2-Tetrachloroethane		µg/g	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-VOCs	1.1,2-Trichloroethane		µg/g	0.05	<0.							



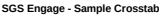


SGS Engage - Sample Crosstab

Client Name:				REG153-SOIL-TABLE 6 Residential/Permeable untrial-UNDEFINED- COARSE >	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering
Job:					CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25
Client Sample ID:					AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS3	GM-02 SS2	OC-03 SS5	OC-04 SS4
Matrix:					Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location:													
Sample Date:					5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/28/2025 12:00 AM	5/28/2025 12:00 AM	5/27/2025 12:00 AM
Analysis	Analys	CAS	Unit		CA40008-JUN25-008	CA40008-JUN25-009	CA40008-JUN25-010	CA40008-JUN25-011	CA40008-JUN25-012	CA40008-JUN25-013	CA40008-JUN25-014	CA40008-JUN25-015	CA40008-JUN25-016
SOIL-	1.1.1 ABNs (vOC)		no unit										
SOIL-	1.1.2 Chlorophenols		no unit										
SOIL-	1.1.7 PCB		no unit										
SOIL-	1.3 Other (ORP)		no unit										
SOIL-ABNs (vOC)	2.4-Dimethylphenol		µg/g	0.2									
SOIL-ABNs (vOC)	2,4-Dinitrophenol		µg/g	2	<1	<1		<1					
SOIL-ABNs (vOC)	2,4-Dinitrotoluene		µg/g		<0.1	<0.1		<0.1					<0.2
SOIL-ABNs (vOC)	2,6-Dinitrotoluene		µg/g		<0.5	<0.5		<0.5					<0.5
SOIL-ABNs (vOC)	3,3-Dichlorobenzidine		µg/g	1	<1	<1		<1					<1
SOIL-ABNs (vOC)	4-Chloroaniline		µg/g	0.5	<0.5	<0.5		<0.5					<0.5
SOIL-ABNs (vOC)	Biphenyl		µg/g	0.05	<0.05	<0.05		<0.05					<0.05
SOIL-ABNs (vOC)	Bis(2-chloroethyl)ether		µg/g	0.5	<0.5	<0.5		<0.5					<0.5
SOIL-ABNs (vOC)	Bis(2-ethylhexyl)phthalate		µg/g	5	<1	<1		<1					<1
SOIL-ABNs (vOC)	Diethyl phthalate		µg/g	0.5	<0.5	<0.2		<0.2					<0.2
SOIL-ABNs (vOC)	Dimethyl phthalate		µg/g	0.5	<0.5	<0.05		<0.05					<0.05
SOIL-ABNs (vOC)	Dinitrotoluene, 2,4-(2,6-)		µg/g	0.5	<0.5	<0.5		<0.5					<0.5
SOIL-BTEX	1.1.11 BTEX		no unit										
SOIL-BTEX	Benzene		µg/g	0.02	<0.02	<0.02		<0.02	<0.02	<0.02	0.03	<0.02	<0.02
SOIL-BTEX	Ethylbenzene		µg/g	0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	m,p-xylene		µg/g	0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	o-xylene		µg/g		<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	Toluene		µg/g	0.2	<0.05	<0.05		<0.05	<0.05	<0.05	0.05	<0.05	<0.05
SOIL-BTEX	Xylene (total)		µg/g	0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
L-Chlorophenols (CPs) s1	2,4,5-Trichlorophenol		µg/g	0.1	<0.1	<0.1		<0.1					<0.1
L-Chlorophenols (CPs) s1	2,4,6-Trichlorophenol		µg/g	0.1	<0.1	<0.1		<0.1					<0.1
L-Chlorophenols (CPs) s1	2,4-Dichlorophenol		µg/g	0.1	<0.1	<0.1		<0.1					<0.1
L-Chlorophenols (CPs) s1	2-Chlorophenol		µg/g	0.1	<0.1	<0.1		<0.1					<0.1
L-Chlorophenols (CPs) s1	Pentachlorophenol		µg/g	0.1	<0.1	<0.1		<0.1					<0.1
SOIL-Hydrides	1.2.3 Hydrides		no unit										
SOIL-Hydrides	Arsenic		µg/g	1.3	<0.8	<0.8		<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
SOIL-Hydrides	Antimony		µg/g	18	3.8	3.8		3.1	4.1	4.5	3.4	3.3	4.1
SOIL-Hydrides	Selenium		µg/g	1.5	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SOIL-Metals and Inorganic	1.2.2 Metals		no unit										
SOIL-Metals and Inorganic	Barium		µg/g	220	58	50		24	80	74	39	40	85
SOIL-Metals and Inorganic	Beryllium		µg/g	2.5	0.3	0.3		0.39	0.44	0.32	0.24	0.31	0.39
SOIL-Metals and Inorganic	Boron		µg/g	36	4	4		3	4	5	4	4	6
SOIL-Metals and Inorganic	Cadmium		µg/g	1.2	<0.05	0.05		<0.05	0.07	0.06	<0.05	<0.05	0.08
SOIL-Metals and Inorganic	Chromium		µg/g	70	12	10		6.2	14	15	11	8.7	15
SOIL-Metals and Inorganic	Cobalt		µg/g	22	11	5.5		2.8	5.8	7.3	5.1	3.8	6.4
SOIL-Metals and Inorganic	Copper		µg/g	62	11	11		5.7	11	16	12	10	14
SOIL-Metals and Inorganic	Lead		µg/g	120	6	6.2		4.1	11	5.5	8.8	6.1	7.1
SOIL-Metals and Inorganic	Moisture Content		%		8.7	11		8.2	15	12.2	15	9.4	8.8
SOIL-Metals and Inorganic	Molybdenum		µg/g	2	0.3	0.3		0.2	0.2	0.4	0.2	0.2	0.3
SOIL-Metals and Inorganic	Nickel		µg/g	82	11	11		6	12	17	11	8.2	11
SOIL-Metals and Inorganic	Silver		µg/g	0.5	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-Metals and Inorganic	Thallium		µg/g	1	0.12	0.12		0.13	0.09	0.15	0.11	0.08	0.11
SOIL-Metals and Inorganic	Uranium		µg/g	2.5	0.46	0.41		0.39	0.44	0.49	0.38	0.4	0.45
SOIL-Metals and Inorganic	Vanadium		µg/g	86	18	15		11	20	20	18	15	20
SOIL-Metals and Inorganic	Water Soluble Boron		µg/g	1.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SOIL-Metals and Inorganic	Zinc		µg/g	20	21	21		8.2	7.85	7.83	8.08	7.92	7.87
SOIL-Other (ORP)	Chromium VI		µg/g	0.66	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SOIL-Other (ORP)	Conductivity		mS/cm	0.7	0.63	1.4		1	2.1	0.47	1	3.1	0.51
SOIL-Other (ORP)	Free Cyanide		µg/g	0.051	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	Mercury		µg/g	0.27	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	pH Levels				7.87	8.07		8.12	7.85	7.83	8.08	7.92	7.87
SOIL-Other (ORP)	SAR Calcium		mg/L	24.4	8.9	19.2		20.3	6.8	6.1	4.8	46	10
SOIL-Other (ORP)	SAR Magnesium		mg/L	2.5	0.8	1.3		1.1	0.8	0.5	<0.3	3.9	1.5
SOIL-Other (ORP)	SAR Sodium		mg/L	111	238	185		405	89.5	181	605	92.2	112
SOIL-Other (ORP)	Sodium Adsorption Ratio		No unit	5	8.7	20.5		29.7	8.6	19	73	3.5	8.7
SOIL-PAHs	1-Methylnaphthalene		µg/g		<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	1.1.8 PAHs (vOC)		no unit										
SOIL-PAHs	2-Methylnaphthalene		µg/g		<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Acenaphthene		µg/g	0.072	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Acenaphthylene		µg/g	0.093	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Anthracene		µg/g	0.22	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Benzo(a)anthracene		µg/g	0.36	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Benzo(a)pyrene		µg/g	0.3	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Benzo(b)fluoranthene		µg/g	0.47	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Benzo(g)perylene		µg/g	0.68	<0.1	<0.1		<0.1					<0.1
SOIL-PAHs	Benzo(k)fluoranthene		µg/g	0.48	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Chrysene		µg/g	2.8	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Dibenzo(a,h)anthracene		µg/g	0.1	<0.06	<0.06		<0.06					<0.06
SOIL-PAHs	Fluoranthene		µg/g	0.69	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Fluorene		µg/g	0.19	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Indeno(1,2,3-cd)pyrene		µg/g	0.1	<0.1	<0.1		<0.1					<0.1
SOIL-PAHs	Methylnaphthalene, 2-(1-		µg/g	0.59	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Naphthalene		µg/g	0.09	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Phenanthrene		µg/g	0.69	<0.05	<0.05		<0.05					<0.05
SOIL-PAHs	Pyrene		µg/g	1	<0.05	<0.05		<0.05					<0.05
SOIL-PCBs	estimated Biphenyls (PCBs)		µg/g	0.3	<0.3	<0.3		<0.3					<0.3
SOIL-PHCs	1.1.6 PHCs		no unit										
SOIL-PHCs	gram returned to baselin		Yes / No	YES	YES	YES		YES	YES	YES	YES	YES	YES
SOIL-PHCs	F1 (C6-C10)		µg/g	25	<10	<10		<10	<10	<10	<10	<10	<10
SOIL-PHCs	F1-8(C6-C10)		µg/g	25	<10	<10		<10	<10	<10	<10	<10	<10
SOIL-PHCs	F2 (C10-C16)		µg/g	10	<10	<10		<10	<10	<10	<10	<10	<10
SOIL-PHCs	F3 (C16-C34)		µg/g	240	<50	<50		<50	<50	<50	<50	<50	<50
SOIL-PHCs	F4 (C34-C50)		µg/g	120	<50	<50		<50	<50	<50	<50	<50	<50
SOIL-SVOC Surrogates	Surr 2,4,6-Tribromophenol		Surr Rec %		80	80		78					84
SOIL-SVOC Surrogates	Surr 2-Fluorobiphenyl		Surr Rec %		90	94		88					95
SOIL-SVOC Surrogates	Surr 2-Toluophenol		Surr Rec %		89	90		89					92
SOIL-SVOC Surrogates	Surr 2-Terphenyl-d14		Surr Rec %		93	99		93					99
SOIL-SVOC Surrogates	Surr Nitrobenzene-d5		Surr Rec %		90	91		88					90
SOIL-SVOC Surrogates	Surr Phenol-d6		Surr Rec %		89	92		89					94
SOIL-SVOCs	1,2,4-Trichlorobenzene		µg/g	0.05	<0.05	<0.05		<0.05					<0.05
SOIL-SVOCs	chloro-1-methyl-ethyl/ethyl		µg/g		<0.5	<0.5		<0.5					<0.5
SOIL-SVOCs	Phenol		µg/g	0.5	<0.5	<0.5		<0.5					<0.5
SOIL-THMs (VOC)	Bromodichloromethane		µg/g	0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-THMs (VOC)	Bromofom		µg/g	0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-THMs (VOC)	Dibromochloromethane		µg/g	0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SOIL-VOC Surrogates	Surr 1,2-Dichloroethane-d4		Surr Rec %		104	105		104					106
SOIL-VOC Surrogates	tr 2-Bromo-1-Chloropropan		Surr Rec %		85	85		84					84
SOIL-VOC Surrogates	Surr 4-Bromofluorobenzene		Surr Rec %		89	88		89					90
SOIL-VOC Surrogates	Sumogates (VOCs)		no unit										
SOIL-VOCs	1.1.1,2-Tetrachloroethane		µg/g										

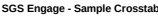
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[illegible]



17 result(s) exceeded regulatory criteria.

[illegible]



14 result(s) exceeded regulatory criteria.



SGS Engage - Sample Crosstab

Client Name:					REG406-SOIL-Appendix 1 Table 2.1-Industrial/Commercial/Community-UNDEFINED	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering
Job:						CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25
Client Sample ID:						AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS2	OC-03 SS5	OC-04 SS4	OC-04 SS4	OC-04 SS4
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location:															
Sample Date:						5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/28/2025 12:00 AM	5/28/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM
Analysis	Analysis	CAS	Unit			CA40008-JUN25-008	CA40008-JUN25-009	CA40008-JUN25-010	CA40008-JUN25-011	CA40008-JUN25-012	CA40008-JUN25-013	CA40008-JUN25-014	CA40008-JUN25-015	CA40008-JUN25-016	CA40008-JUN25-016
SOIL-	1.1.1 ABNs (sVOC)		no unit												
SOIL-	1.1.2 Chlorophenols		no unit												
SOIL-	1.1.7 PCB		no unit												
SOIL-	1.3 Other (ORP)		no unit												
SOIL-ABNs (sVOC)	2,4-Dimethylphenol		µg/g	0.43	<0.2	<0.2			<0.2						<0.2
SOIL-ABNs (sVOC)	2,4-Dinitrophenol		µg/g	2	<1	<1			<1						<1
SOIL-ABNs (sVOC)	2,4-Dinitrotoluene		µg/g		<0.1	<0.1			<0.1						<0.1
SOIL-ABNs (sVOC)	2,6-Dinitrotoluene		µg/g		<0.5	<0.5			<0.5						<0.5
SOIL-ABNs (sVOC)	3,3-Dichlorobenzidine		µg/g	1	<1	<1			<1						<1
SOIL-ABNs (sVOC)	4-Chloroaniline		µg/g	0.5	<0.5	<0.5			<0.5						<0.5
SOIL-ABNs (sVOC)	Biphenyl		µg/g	0.05	<0.05	<0.05			<0.05						<0.05
SOIL-ABNs (sVOC)	Bis(2-chloroethyl)ether		µg/g	0.5	<0.5	<0.5			<0.5						<0.5
SOIL-ABNs (sVOC)	Bis(2-ethylhexyl)phthalate		µg/g	8.9	<1	<1			<1						<1
SOIL-ABNs (sVOC)	Diallyl phthalate		µg/g	0.5	<0.2	<0.2			<0.2						<0.2
SOIL-ABNs (sVOC)	Dimethyl phthalate		µg/g	0.5	<0.05	<0.05			<0.05						<0.05
SOIL-ABNs (sVOC)	Dinitrotoluene, 2,4-(2,6)		µg/g	0.5	<0.5	<0.5			<0.5						<0.5
SOIL-BTEX	1,1,1,1 BTEX		no unit												
SOIL-BTEX	Benzene		µg/g	0.02	<0.02	<0.02			<0.02			<0.02	<0.02	<0.02	<0.02
SOIL-BTEX	Ethylbenzene		µg/g	0.05	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	m,p-xylene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	o-xylene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	Toluene		µg/g	0.2	<0.05	<0.05			<0.05			0.05	<0.05	<0.05	<0.05
SOIL-BTEX	Xylene (total)		µg/g	0.091	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
L-Chlorophenols (CPs) s1	2,4,5-Trichlorophenol		µg/g	0.11	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s1	2,4,6-Trichlorophenol		µg/g	10	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s1	2,4-Dichlorophenol		µg/g	0.1	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s1	2-Chlorophenol		µg/g	0.1	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s1	Pentachlorophenol		µg/g	0.34	<0.1	<0.1			<0.1						<0.1
SOIL-Hydrides	1.2.3 Hydrides		no unit												
SOIL-Hydrides	Antimony		µg/g	40	<0.8	<0.8			<0.8			<0.8	<0.8	<0.8	<0.8
SOIL-Hydrides	Arsenic		µg/g	18	3.8	3.8			4.1			3.4	3.3	3.8	4.1
SOIL-Hydrides	Selenium		µg/g	5.5	<0.1	<0.1			<0.1			<0.1	<0.1	<0.1	<0.1
OIL-Metals and Inorganic	1.2.2 Metals		no unit												
OIL-Metals and Inorganic	Beryllium		µg/g	670	58	50			24			74	39	66	85
OIL-Metals and Inorganic	Boron		µg/g	8	0.3	0.26			0.14			0.39	0.44	0.32	0.31
OIL-Metals and Inorganic	Cadmium		µg/g	120	4	4			3			5	4	4	6
OIL-Metals and Inorganic	Chromium		µg/g	1.9	<0.05	0.05			<0.05			0.07	0.06	<0.05	0.08
OIL-Metals and Inorganic	Chromium		µg/g	180	12	10			6.2			14	15	11	15
OIL-Metals and Inorganic	Cobalt		µg/g	80	5.1	5.5			2.8			5.1	5.1	3.8	4.8
OIL-Metals and Inorganic	Copper		µg/g	230	11	11			5.7			11	16	12	10
OIL-Metals and Inorganic	Lead		µg/g	120	6	6.2			4.1			5.5	8.8	6.1	5.4
OIL-Metals and Inorganic	Manganese		µg/g		8.7	11			8.2			21.6	12.2	15	9.4
OIL-Metals and Inorganic	Molybdenum		µg/g	40	0.3	0.3			0.2			0.4	11	0.2	0.2
OIL-Metals and Inorganic	Nickel		µg/g	11	1.1	1.1			12			17	8.2	14	14
OIL-Metals and Inorganic	Silver		µg/g	40	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
OIL-Metals and Inorganic	Thallium		µg/g	3.3	0.12	0.12			0.13			0.09	0.15	0.11	0.08
OIL-Metals and Inorganic	Thallium		µg/g	33	0.46	0.41			0.39			0.44	0.49	0.4	0.38
OIL-Metals and Inorganic	Vanadium		µg/g	86	18	15			11			20	20	18	15
OIL-Metals and Inorganic	Vanadium		µg/g	86	<0.5	<0.5			<0.5			<0.5	<0.5	<0.5	<0.5
OIL-Metals and Inorganic	Water		µg/g	340	27	24			17			25	35	25	20
OIL-Metals and Inorganic	Zinc		µg/g	3	<0.2	<0.2			<0.2			<0.2	<0.2	<0.2	<0.2
SOIL-Other (ORP)	Chromium VI		µg/g		<0.2	<0.2			<0.2			<0.2	<0.2	<0.2	<0.2
SOIL-Other (ORP)	Conductivity		mS/cm	1.4	0.63	1.4			1			2.1	0.47	1	0.51
SOIL-Other (ORP)	Free Cyanide		µg/g	0.051	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	Mercury		µg/g	0.27	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	pH		pH Units		7.8	7.87			8.12			7.83	7.73	8.08	7.92
SOIL-Other (ORP)	SAR Calcium		mg/L	24.4	8.9	19.2			20.3			6.8	6.1	4.8	46
SOIL-Other (ORP)	SAR Magnesium		mg/L	2.5	0.8	1.3			1.1			0.8	0.5	<0.3	3.9
SOIL-Other (ORP)	SAR Sodium		mg/L	1.7	238	185			405			88.5	181	605	92.2
SOIL-Other (ORP)	Sodium Adsorption Ratio		Na unit	12	5.7	28.5			11			8.6	19	79	3.5
SOIL-PAHs	1-Methylnaphthalene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	1.1.8 PAHs (sVOC)		no unit												
SOIL-PAHs	2-Methylnaphthalene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Acenaphthene		µg/g	2.5	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Acenaphthylene		µg/g	0.003	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Anthracene		µg/g	0.16	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(a)anthracene		µg/g	0.92	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(a)pyrene		µg/g	0.31	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(b)fluoranthene		µg/g	3.2	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(k)fluoranthene		µg/g	1.3	<0.1	<0.1			<0.1			<0.1	<0.1	<0.1	<0.1
SOIL-PAHs	Benzo(l)fluoranthene		µg/g	3.1	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Chrysene		µg/g	9.4	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Dibenz(a,h)anthracene		µg/g	0.7	<0.06	<0.06			<0.06			<0.06	<0.06	<0.06	<0.06
SOIL-PAHs	Fluoranthene		µg/g	2.8	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Fluorene		µg/g	6.8	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Indeno(1,2,3-cd)pyrene		µg/g	0.76	<0.1	<0.1			<0.1			<0.1	<0.1	<0.1	<0.1
SOIL-PAHs	Methylnaphthalene, 2-(1-		µg/g	0.59	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Naphthalene		µg/g	0.2	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Phenanthrene		µg/g	12	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Pyrene		µg/g	28	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PCBs	prinated Biphenyls (PCBs)		µg/g	0.78	<0.3	<0.3			<0.3			<0.3	<0.3	<0.3	<0.3
SOIL-PHCs	1.1.6 PHCs		no unit												
SOIL-PHCs	gram returned to baseline		Yes / No		YES	YES			YES			YES	YES	YES	YES
SOIL-PHCs	F1 (C6-C10)		µg/g	25	<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F1-BTEX (C6-C10)		µg/g		<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F2 (C10-C16)		µg/g	26	<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F3 (C16-C34)		µg/g	240	<50	<50			<50			<50	<50	<50	<50
SOIL-PHCs	F4 (C34-C50)		µg/g	3300	<50	<50			<50			<50	<50	<50	<50
SOIL-SVOC Surrogates	Surr 2,4,6-Trifluorophenol		Surr Rec %		80	80			78			<50	<50	<50	84
SOIL-SVOC Surrogates	Surr 2,4,6-Trifluorophenol		Surr Rec %		94	94			88			<50	<50	<50	86
SOIL-SVOC Surrogates	Surr 2-Fluorophenol		Surr Rec %		89	92			86			<50	<50	<50	92
SOIL-SVOC Surrogates	Surr 4-Terphenyl-d14		Surr Rec %		93	99			93			<50	<50	<50	99
SOIL-SVOC Surrogates	Surr Nitrobenzene-d5		Surr Rec %		90	91			88			<50	<50	<	

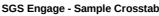


7 result(s) exceeded regulatory criteria.



SGS Engage - Sample Crossstab

Client Name:					REG406-SOIL-Appendix 1 Table 3.1-Residential/Professional/Industrial UNDEFINED...	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering
Job:						CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25
Client Sample ID:						AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS3	GM-02 SS2	OC-03 SS5	OC-04 SS4		
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location:															
Sample Date:						5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/28/2025 12:00 AM	5/28/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM
Analysis	Analysis	CAS	Unit			CA40008-JUN25-008	CA40008-JUN25-009	CA40008-JUN25-010	CA40008-JUN25-011	CA40008-JUN25-012	CA40008-JUN25-013	CA40008-JUN25-014	CA40008-JUN25-015	CA40008-JUN25-016	
SOIL-	1.1.1 ABNs (sVOC)		no unit												
SOIL-	1.1.2 Chlorophenols		no unit												
SOIL-	1.1.7 PCB		no unit												
SOIL-	1.3 Other (ORP)		no unit												
SOILABNs (sVOC)	2,4-Dimethylphenol		µg/g	45	<0.2	<0.2			<0.2						<0.2
SOILABNs (sVOC)	2,4-Dinitrophenol		µg/g	6.7	<1	<1			<1						<1
SOILABNs (sVOC)	2,4-Dinitrotoluene		µg/g		<0.1	<0.1			<0.1						<0.1
SOILABNs (sVOC)	2,6-Dinitrotoluene		µg/g		<0.5	<0.5			<0.5						<0.5
SOILABNs (sVOC)	3,3-Dichlorobenzidine		µg/g	1	<1	<1			<1						<1
SOILABNs (sVOC)	4-Chloroaniline		µg/g	0.5	<0.5	<0.5			<0.5						<0.5
SOILABNs (sVOC)	Biphenyl		µg/g	0.3	<0.05	<0.05			<0.05						<0.05
SOILABNs (sVOC)	Bis(2-chloroethyl)ether		µg/g	0.5	<0.5	<0.5			<0.5						<0.5
SOILABNs (sVOC)	Bis(2-ethylhexyl)phthalate		µg/g	5	<1	<1			<1						<1
SOILABNs (sVOC)	Diallyl phthalate		µg/g	0.5	<0.2	<0.2			<0.2						<0.2
SOILABNs (sVOC)	Dimethyl phthalate		µg/g	0.5	<0.05	<0.05			<0.05						<0.05
SOILABNs (sVOC)	Dinitrotoluene, 2,4-(2,6-)		µg/g	0.92	<0.5	<0.5			<0.5						<0.5
SOILBTEX	1,1,1,1 BTEX		no unit												
SOILBTEX	Benzene		µg/g	0.02	<0.02	<0.02			<0.02			<0.02	0.03	<0.02	<0.02
SOILBTEX	Ethylbenzene		µg/g	1.9	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOILBTEX	m,p-xylene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOILBTEX	o-xylene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOILBTEX	Toluene		µg/g	0.99	<0.05	<0.05			<0.05			<0.05	0.05	<0.05	<0.05
SOILBTEX	Xylene (total)		µg/g	0.9	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
L-Chlorophenols (CPs) s/	2,4,5-Trichlorophenol		µg/g	3.1	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s/	2,4,6-Trichlorophenol		µg/g	0.43	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s/	2,4-Dichlorophenol		µg/g	1.7	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s/	2-Chlorophenol		µg/g	1.6	<0.1	<0.1			<0.1						<0.1
L-Chlorophenols (CPs) s/	Pentachlorophenol		µg/g	0.1	<0.1	<0.1			<0.1						<0.1
SOIL-Hydrides	1.2.3 Hydrides		no unit												
SOIL-Hydrides	Antimony		µg/g	7.5	<0.8	<0.8			<0.8			<0.8	<0.8	<0.8	<0.8
SOIL-Hydrides	Arsenic		µg/g	18	3.8	3.8			4.1			4.5	3.3	3.8	4.1
SOIL-Hydrides	Selenium		µg/g	2.4	<0.1	<0.1			<0.1			<0.1	<0.1	<0.1	<0.1
OIL-Metals and Inorganic	1.2.2 Metals		no unit												
OIL-Metals and Inorganic	Beryllium		µg/g	390	58	50			24			74	39	40	85
OIL-Metals and Inorganic	Boron		µg/g	4	0.3	0.26			0.14			0.39	0.44	0.32	0.31
OIL-Metals and Inorganic	Cadmium		µg/g	1.2	<0.05	0.05			<0.05			0.07	0.06	<0.05	0.08
OIL-Metals and Inorganic	Chromium		µg/g	190	12	10			6.2			14	15	8.7	12
OIL-Metals and Inorganic	Cobalt		µg/g	5.1	5.5	5.5			2.8			5.1	5.1	3.8	4.8
OIL-Metals and Inorganic	Copper		µg/g	140	11	11			5.7			11	16	12	7.7
OIL-Metals and Inorganic	Lead		µg/g	120	6	6.2			4.1			5.5	8.8	6.1	4.6
OIL-Metals and Inorganic	Manganese		µg/g	1.1	8.7	11			8.2			21.6	12.2	15	9.4
OIL-Metals and Inorganic	Molybdenum		µg/g	6.9	0.3	0.3			0.2			0.4	11	0.2	0.2
OIL-Metals and Inorganic	Nickel		µg/g	11	1.1	1.1			12			17	8.2	14	14
OIL-Metals and Inorganic	Silver		µg/g	20	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
OIL-Metals and Inorganic	Thallium		µg/g	1	0.12	0.12			0.13			0.09	0.15	0.11	0.08
OIL-Metals and Inorganic	Uranium		µg/g	23	0.46	0.41			0.39			0.44	0.49	0.4	0.38
OIL-Metals and Inorganic	Vanadium		µg/g	86	18	15			11			20	20	18	15
OIL-Metals and Inorganic	Water-soluble Boron		µg/g	1.5	<0.5	<0.5			<0.5			<0.5	<0.5	<0.5	<0.5
OIL-Metals and Inorganic	Zinc		µg/g	140	27	24			17			25	35	25	20
SOIL-Other (ORP)	Chromium VI		µg/g	8	<0.2	<0.2			<0.2			<0.2	<0.2	<0.2	<0.2
SOIL-Other (ORP)	Conductivity		mS/cm	0.7	0.63	1.4			1			2.1	0.47	1	0.51
SOIL-Other (ORP)	Free Cyanide		µg/g	0.051	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	Mercury		µg/g	0.27	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	pH		pH Units		7.8	7.87			8.12			7.83	7.73	8.08	7.92
SOIL-Other (ORP)	SAR Calcium		mg/L	24.4	8.9	19.2			20.3			6.8	6.1	4.8	46
SOIL-Other (ORP)	SAR Magnesium		mg/L	2.5	0.8	1.3			1.1			0.8	0.5	<0.3	3.9
SOIL-Other (ORP)	SAR Sodium		mg/L	111	238	185			405			89.5	181	605	92.2
SOIL-Other (ORP)	Sodium Adsorption Ratio		No unit	5	5.3	28.5			23.1			5.6	19	79	3.5
SOIL-PAHs	1-Methylnaphthalene		µg/g		<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	1.1.8 PAHs (sVOC)		no unit												
SOIL-PAHs	2-Methylnaphthalene		µg/g		<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Acenaphthene		µg/g	14	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Acenaphthylene		µg/g	0.093	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Anthracene		µg/g	0.16	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Benzo(a)anthracene		µg/g	0.5	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Benzo(a)pyrene		µg/g	0.57	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Benzo(b)fluoranthene		µg/g	5.7	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Benzo(k)fluoranthene		µg/g	6.6	<0.1	<0.1			<0.1						<0.1
SOIL-PAHs	Benzo(l)fluoranthene		µg/g	5.7	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Chrysene		µg/g	7	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Dibenzo(a,h)anthracene		µg/g	0.57	<0.06	<0.06			<0.06						<0.06
SOIL-PAHs	Fluoranthene		µg/g	0.69	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Fluorene		µg/g	4.8	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Indeno(1,2,3-cd)pyrene		µg/g	0.58	<0.1	<0.1			<0.1						<0.1
SOIL-PAHs	Methylnaphthalene, 2-(1-		µg/g	0.92	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Naphthalene		µg/g	0.59	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Phenanthrene		µg/g	6.2	<0.05	<0.05			<0.05						<0.05
SOIL-PAHs	Pyrene		µg/g	7	<0.05	<0.05			<0.05						<0.05
SOIL-PCBs	prinated Biphenyls (PCBs)		µg/g	0.35	<0.3	<0.3			<0.3						<0.3
SOIL-PHCs	1.1.6 PHCs		no unit												
SOIL-PHCs	gram returned to baseline		Yes / No		YES	YES			YES			YES	YES	YES	YES
SOIL-PHCs	F1 (C6-C10)		µg/g	25	<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F1-BTEX (C6-C10)		µg/g		<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F2 (C10-C16)		µg/g	10	<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F3 (C16-C34)		µg/g	300	<50	<50			<50			<50	<50	<50	<50
SOIL-PHCs	F4 (C34-C50)		µg/g	2800	<50	<50			<50			<50	<50	<50	<50
SOIL-SVOC Surrogates	Surr 2,4,6-Trifluorophenol		Surr Rec %		80	80			78						84
SOIL-SVOC Surrogates	Surr 2-Fluorobenzene		Surr Rec %		90	94			88						86
SOIL-SVOC Surrogates	Surr 2-Fluorophenol		Surr Rec %		89	92			86						92
SOIL-SVOC Surrogates	Surr 4-Terphenyl-d14		Surr Rec %		93	99			93						99
SOIL-SVOC Surrogates	Surr Nitrobenzene-d5		Surr Rec %		90	91			88						90
SOIL-SVOC Surrogates	Surr Phenol-d6		Surr Rec %		89	92			89						94
SOIL-SVOCs	1,2,4-Trichlorobenzene		µg/g	0.17	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-SVOCs	chloro-1-methylthylthyl		µg/g		<0.5	<0.5			<0.5						<0.5
SOIL-SVOCs	Phenol		µg/g	5.3	<0.5	<0.5			<0.5						<0.5
SOIL-THMs (VOC)	Bromodichloromethane		µg/g	5.8	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-THMs (VOC)	Bromofom		µg/g	2.5	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	&



14 result(s) exceeded regulatory criteria.



SGS Engage - Sample Crosstab

Client Name:					REG406-SOIL-Appendix 1 Table 3.1-1: Industrial/Commercial/Community-UNDEFINED	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering	Thurber Engineering
Job:						CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25	CA40008-JUN25
Client Sample ID:						AB-01 SS4	AB-02 SS3	AB-03 SS4	TS-01 SS3	CR-01 SS5	GM-01 SS2	GM-02 SS2	OC-03 SS5	OC-04 SS4	OC-04 SS4
Matrix:						Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location:															
Sample Date:						5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/26/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/27/2025 12:00 AM	5/28/2025 12:00 AM	5/28/2025 12:00 AM	5/28/2025 12:00 AM	5/27/2025 12:00 AM
Analysis	Analysis	CAS	Unit			CA40008-JUN25-008	CA40008-JUN25-009	CA40008-JUN25-010	CA40008-JUN25-011	CA40008-JUN25-012	CA40008-JUN25-013	CA40008-JUN25-014	CA40008-JUN25-015	CA40008-JUN25-016	
SOIL-	1.1.1 ABNs (sVOC)		no unit												
SOIL-	1.1.2 Chlorophenols		no unit												
SOIL-	1.1.7 PCB		no unit												
SOIL-	1.3 Other (ORP)		no unit												
SOIL-ABNs (sVOC)	2,4-Dimethylphenol		µg/g	45	<0.2	<0.2			<0.2						<0.2
SOIL-ABNs (sVOC)	2,4-Dinitrophenol		µg/g	6.7	<1	<1			<1						<1
SOIL-ABNs (sVOC)	2,4-Dinitrotoluene		µg/g		<0.1	<0.1			<0.1						<0.1
SOIL-ABNs (sVOC)	2,6-Dinitrotoluene		µg/g		<0.5	<0.5			<0.5						<0.5
SOIL-ABNs (sVOC)	3,3-Dichlorobenzidine		µg/g	1	<1	<1			<1						<1
SOIL-ABNs (sVOC)	4-Chloroaniline		µg/g	0.5	<0.5	<0.5			<0.5						<0.5
SOIL-ABNs (sVOC)	Biphenyl		µg/g	21	<0.05	<0.05			<0.05						<0.05
SOIL-ABNs (sVOC)	Bis(2-chloroethyl)ether		µg/g	0.5	<0.5	<0.5			<0.5						<0.5
SOIL-ABNs (sVOC)	Bis(2-ethylhexyl)phthalate		µg/g	28	<1	<1			<1						<1
SOIL-ABNs (sVOC)	Diallyl phthalate		µg/g	0.5	<0.2	<0.2			<0.2						<0.2
SOIL-ABNs (sVOC)	Dimethyl phthalate		µg/g	0.5	<0.05	<0.05			<0.05						<0.05
SOIL-ABNs (sVOC)	Dinitrotoluene, 2,4-(2,6-)		µg/g	1.2	<0.5	<0.5			<0.5						<0.5
SOIL-BTEX	1,1,1,1 BTEX		no unit												
SOIL-BTEX	Benzene		µg/g	0.034	<0.02	<0.02			<0.02			<0.02	0.03	<0.02	<0.02
SOIL-BTEX	Ethylbenzene		µg/g	1.9	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	m,p-xylene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	o-xylene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-BTEX	Toluene		µg/g	7.8	<0.05	<0.05			<0.05			<0.05	0.05	<0.05	<0.05
SOIL-BTEX	Xylene (total)		µg/g	3	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
L-Chlorophenols (CPs) s/	2,4,5-Trichlorophenol		µg/g	3.1	<0.1	<0.1			<0.1			<0.5	<0.5	<0.5	<0.1
L-Chlorophenols (CPs) s/	2,4,6-Trichlorophenol		µg/g	0.43	<0.1	<0.1			<0.1			<0.5	<0.5	<0.5	<0.1
L-Chlorophenols (CPs) s/	2,4-Dichlorophenol		µg/g	3.4	<0.1	<0.1			<0.1			<0.5	<0.5	<0.5	<0.1
L-Chlorophenols (CPs) s/	2-Chlorophenol		µg/g	2.3	<0.1	<0.1			<0.1			<0.5	<0.5	<0.5	<0.1
L-Chlorophenols (CPs) s/	Pentachlorophenol		µg/g	0.34	<0.1	<0.1			<0.1			<0.5	<0.5	<0.5	<0.1
SOIL-Hydrides	1.2.3 Hydrides		no unit												
SOIL-Hydrides	Antimony		µg/g	40	<0.8	<0.8			<0.8			<0.8	<0.8	<0.8	<0.8
SOIL-Hydrides	Arsenic		µg/g	18	3.8	3.8			4.1			4.5	3.3	3.8	4.1
SOIL-Hydrides	Selenium		µg/g	5.5	<0.1	<0.1			<0.1			<0.1	<0.1	<0.1	<0.1
OIL-Metals and Inorganic	1.2.2 Metals		no unit												
OIL-Metals and Inorganic	Beryllium		µg/g	670	58	50			24			80	74	39	66
OIL-Metals and Inorganic	Boron		µg/g	8	0.3	0.26			0.14			0.39	0.44	0.32	0.24
OIL-Metals and Inorganic	Cadmium		µg/g	120	4	4			3			5	4	4	4
OIL-Metals and Inorganic	Chromium		µg/g	1.9	<0.05	0.05			<0.05			0.07	0.06	<0.05	0.08
OIL-Metals and Inorganic	Chromium		µg/g	190	12	10			6.2			14	15	11	8.7
OIL-Metals and Inorganic	Cobalt		µg/g	5.1	5.1	5.5			2.8			5.1	5.1	3.8	4.8
OIL-Metals and Inorganic	Copper		µg/g	230	11	11			5.7			11	16	12	7.7
OIL-Metals and Inorganic	Lead		µg/g	120	6	6.2			4.1			5.5	8.8	6.1	4.6
OIL-Metals and Inorganic	Moisture Content		%		8.7	11			8.2			21.6	12.2	15	9.4
OIL-Metals and Inorganic	Molybdenum		µg/g	40	0.3	0.3			0.2			0.4	11	0.2	0.2
OIL-Metals and Inorganic	Nickel		µg/g	11	1.1	1.1			12			12	8.2	17	14
OIL-Metals and Inorganic	Silver		µg/g	40	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
OIL-Metals and Inorganic	Thallium		µg/g	3.3	0.12	0.12			0.13			0.09	0.15	0.11	0.08
OIL-Metals and Inorganic	Thallium		µg/g	33	0.46	0.41			0.39			0.44	0.49	0.4	0.38
OIL-Metals and Inorganic	Vanadium		µg/g	86	18	15			11			20	20	18	15
OIL-Metals and Inorganic	Vanadium		µg/g	80	<0.5	<0.5			<0.5			<0.5	<0.5	<0.5	<0.5
OIL-Metals and Inorganic	Water-soluble Boron		µg/g	2	27	24			17			25	35	25	20
OIL-Metals and Inorganic	Zinc		µg/g	340	<0.2	<0.2			<0.2			<0.2	<0.2	<0.2	<0.2
SOIL-Other (ORP)	Chromium VI		µg/g	8	<0.2	<0.2			<0.2			<0.2	<0.2	<0.2	<0.2
SOIL-Other (ORP)	Conductivity		mS/cm	1.4	0.63	1.4			1			2.1	0.47	1	3.1
SOIL-Other (ORP)	Free Cyanide		µg/g	0.051	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	Mercury		µg/g	0.27	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-Other (ORP)	pH		pH Units		7.8	7.87			8.12			7.83	7.73	8.08	7.92
SOIL-Other (ORP)	SAR Calcium		mg/L	24.4	8.9	19.2			20.3			6.8	6.1	4.8	46
SOIL-Other (ORP)	SAR Magnesium		mg/L	2.5	0.8	1.3			1.1			0.8	0.5	<0.3	3.9
SOIL-Other (ORP)	SAR Sodium		mg/L	1.7	238	185			405			89.5	181	605	92.2
SOIL-Other (ORP)	Sodium Adsorption Ratio		No unit		5.7	28.5			23.1			8.6	19	79	3.5
SOIL-PAHs	1-Methylnaphthalene		µg/g	12	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	1.1.8 PAHs (sVOC)		no unit												
SOIL-PAHs	2-Methylnaphthalene		µg/g		<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Acenaphthene		µg/g	19	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Acenaphthylene		µg/g	0.093	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Anthracene		µg/g	0.16	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(a)anthracene		µg/g	1	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(a)pyrene		µg/g	0.7	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(b)fluoranthene		µg/g	7	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Benzo(k)fluoranthene		µg/g	13	<0.1	<0.1			<0.1			<0.1	<0.1	<0.1	<0.1
SOIL-PAHs	Benzo(l)fluoranthene		µg/g	7	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Chrysene		µg/g	14	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Dibenz(a,h)anthracene		µg/g	0.7	<0.06	<0.06			<0.06			<0.06	<0.06	<0.06	<0.06
SOIL-PAHs	Fluoranthene		µg/g	70	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Fluorene		µg/g	6.8	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Indeno(1,2,3-cd)pyrene		µg/g	0.76	<0.1	<0.1			<0.1			<0.1	<0.1	<0.1	<0.1
SOIL-PAHs	Methylnaphthalene, 2-(1-		µg/g	8.7	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Naphthalene		µg/g	1.8	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Phenanthrene		µg/g	12	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PAHs	Pyrene		µg/g	70	<0.05	<0.05			<0.05			<0.05	<0.05	<0.05	<0.05
SOIL-PCBs	prinated Biphenyls (PCBs)		µg/g	0.78	<0.3	<0.3			<0.3			<0.3	<0.3	<0.3	<0.3
SOIL-PHCs	1.1.6 PHCs		no unit												
SOIL-PHCs	gram returned to baseline		Yes / No		YES	YES			YES			YES	YES	YES	YES
SOIL-PHCs	F1 (C6-C10)		µg/g	25	<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F1-BTEX (C6-C10)		µg/g	<10	<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F2 (C10-C16)		µg/g	26	<10	<10			<10			<10	<10	<10	<10
SOIL-PHCs	F3 (C16-C34)		µg/g	1700	<50	<50			<50			<50	<50	<50	<50
SOIL-PHCs	F4 (C34-C50)		µg/g	3300	<50	<50			<50			<50	<50	<50	<50
SOIL-SVOC Surrogates	Surr 2,4,6-Trifluorophenol		Surr Rec %		80	80			78			<50	<50	<50	84
SOIL-SVOC Surrogates	Surr 2,4,6-Trifluorophenol		Surr Rec %		90	94			88			<50	<50	<50	86
SOIL-SVOC Surrogates	Surr 2-Fluorophenol		Surr Rec %		89	92			86			<50	<50	<50	92
SOIL-SVOC Surrogates	Surr 4-Terphenyl-d14		Surr Rec %		93	99			93			<50	<50	<50	99
SOIL-SVOC Surrogates	Surr Nitrobenzene-d5	</													



6 result(s) exceeded regulatory criteria



SGS Engage - Sample Crosstab

Client Name:				REG558-LEACHATE-SCHEDULE 4-Waste Management-~~~ >	Thurber Engineering	Thurber Engineering
Job:					CA40007-JUN25	CA40007-JUN25
Client Sample ID:					AB-02 TCLP	AB-02 TCLP
Matrix:					Leachate	N/A
Location:						
Sample Date:					5/26/2025 12:00 AM	6/2/2025 5:01 PM
Analysis	Analyte	CAS	Unit		CA40007-JUN25-006	CA40007-JUN25-007
Acid rock Drainage	Final pH		no unit			6.14
ACHATE-Acid rock Drainage	Final pH		no unit		6.14	
CHATE-Metals and Inorganics	Arsenic		mg/L	2.5	<0.002	
CHATE-Metals and Inorganics	Barium		mg/L	100	0.761	
CHATE-Metals and Inorganics	Boron		mg/L	500	0.07	
CHATE-Metals and Inorganics	Burn Rate		mm/S		<1.6	
CHATE-Metals and Inorganics	Cadmium		mg/L	0.5	0.00111	
CHATE-Metals and Inorganics	Chromium		mg/L	5	0.0011	
CHATE-Metals and Inorganics	Cyanide (total)		mg/L	20	<0.01	
CHATE-Metals and Inorganics	Ext Fluid		#1 or #2		2	
CHATE-Metals and Inorganics	Ext Volume		mL		2000	
CHATE-Metals and Inorganics	Fluoride		mg/L	150	0.27	
CHATE-Metals and Inorganics	Ignitability		NA		no	
CHATE-Metals and Inorganics	Lead		mg/L	5	0.0188	
CHATE-Metals and Inorganics	Nitrate (as N)		mg/L		<0.6	
CHATE-Metals and Inorganics	Nitrate + Nitrite (as N)		mg/L	1000	<0.6	
CHATE-Metals and Inorganics	Nitrite (as N)		mg/L		<0.3	
CHATE-Metals and Inorganics	Sample weight		g		100	
CHATE-Metals and Inorganics	Selenium		mg/L	1	<0.0004	
CHATE-Metals and Inorganics	Silver		mg/L	5	<0.00005	
CHATE-Metals and Inorganics	Uranium		mg/L	10	0.00498	
LEACHATE-Other (ORP)	Mercury		mg/L	0.1	<0.00001	
LEACHATE-PCBs	Polychlorinated Biphenyls (PCBs)		mg/L	0.3	<0.001	
LEACHATE-SVOCs - PAHs	Benzo(a)pyrene		mg/L	0.001	<0.001	
LEACHATE-VOCs	1,1-Dichloroethylene		mg/L	1.4	<0.02	
LEACHATE-VOCs	1,2-Dichlorobenzene		mg/L	20	<0.02	
LEACHATE-VOCs	1,2-Dichloroethane		mg/L	0.5	<0.02	
LEACHATE-VOCs	1,4-Dichlorobenzene		mg/L	0.5	<0.02	
LEACHATE-VOCs	Carbon tetrachloride		mg/L	0.5	<0.008	
LEACHATE-VOCs	Chloroform		mg/L	10	<0.02	
LEACHATE-VOCs	Dichloromethane		mg/L	5	<0.02	
LEACHATE-VOCs	Methyl ethyl ketone		mg/L	200	<0.8	
LEACHATE-VOCs	Monochlorobenzene		mg/L	8	<0.02	
LEACHATE-VOCs	Tetrachloroethene		mg/L	3	<0.02	
LEACHATE-VOCs	Trichloroethylene		mg/L	5	<0.02	
LEACHATE-VOCs	Vinyl Chloride		mg/L	0.2	<0.008	
LEACHATE-VOCs - BTEX	Benzene		mg/L	0.5	<0.02	
Metals and Inorganics	Arsenic		mg/L			<0.002
Metals and Inorganics	Barium		mg/L			0.758
Metals and Inorganics	Boron		mg/L			0.07
Metals and Inorganics	Cadmium		mg/L			0.00119
Metals and Inorganics	Chromium		mg/L			<0.0008
Metals and Inorganics	Cyanide (total)		mg/L			<0.01
Metals and Inorganics	Ext Fluid		#1 or #2			2
Metals and Inorganics	Ext Volume		mL			2000
Metals and Inorganics	Fluoride		mg/L			0.25
Metals and Inorganics	Lead		mg/L			0.0181
Metals and Inorganics	Nitrate (as N)		mg/L			<0.6
Metals and Inorganics	Nitrate + Nitrite (as N)		mg/L			<0.6
Metals and Inorganics	Nitrite (as N)		mg/L			<0.3
Metals and Inorganics	Sample weight		g			100



SGS Engage - Sample Crosstab

Client Name:				REG558-LEACHATE-SCHEDULE 4-Waste Management-~~~ >	Thurber Engineering	Thurber Engineering
Job:					CA40007-JUN25	CA40007-JUN25
Client Sample ID:					AB-02 TCLP	AB-02 TCLP
Matrix:					Leachate	N/A
Location:						
Sample Date:					5/26/2025 12:00 AM	6/2/2025 5:01 PM
Analysis	Analyte	CAS	Unit		CA40007-JUN25-006	CA40007-JUN25-007
Metals and Inorganics	Selenium		mg/L			<0.0004
Metals and Inorganics	Silver		mg/L			<0.00005
Metals and Inorganics	Uranium		mg/L			0.00478
Other (ORP)	Mercury		mg/L			<0.00001
PCBs	orinated Biphenyls (PCBs)		mg/L			<0.001
SVOCs - PAHs	Benzo(a)pyrene		mg/L			<0.001