595831 Ontario Inc.

SOIL AND GROUNDWATER INVESTIGATION PROGRAM

5646 MANOTICK MAIN STREET
OTTAWA, ONTARIO

FINAL INTERIM REPORT

July 17, 2024

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EXECUTIVE SUMMARY

Terrapex Environmental Ltd. (Terrapex) was retained by 595831 Ontario Inc. (the Client, also known as Hawkins Properties) to conduct a soil and groundwater delineation program and post-remediation groundwater assessment related to the former retail fuel outlet property located at 5646 Manotick Main Street in Ottawa, Ontario.

The objectives of the work program were to delineate the known soil and potential groundwater impacts that extend into the City right-of-way (ROW) located to the east of the Site, and provide preliminary groundwater conditions present in the former remedial excavation. The investigation is required as part of the Site Plan Control (SPC) application to the City of Ottawa associated with the proposed redevelopment of the Site. The purpose of this report is to provide an interim update of the work completed at the Site for the post-remediation groundwater assessment and for the off-site delineation work to meet the City's requirements for the SPC application.

On July 5, 2024, five boreholes (BH301, MW302, MW303, MW304 and BH305) were drilled including four boreholes within the municipal ROW to provide delineation of soil and groundwater impacts apparently emanating from the Site. One monitoring well (MW304) was installed in the former remedial excavation in addition to two monitoring wells installed within the municipal ROW. The depth of the boreholes ranged from 0.8 to 4.6 m bg. On July 9, 2024, groundwater monitoring and sampling was conducted from the newly installed monitoring wells on-Site and within the municipal ROW.

Based on the interim results of the soil and groundwater investigation program the following can be concluded:

- The soil impacts apparently extending from the Site onto the municipal ROW as previously observed during the remedial excavation (specifically at confirmatory soil sample CS167 collected from the apparent property line) have been delineated by the soil analytical results from the soil samples collected from boreholes BH301, MW302 and MW303.
- Based on the groundwater sampling conducted from the newly installed monitoring wells within the ROW, the groundwater impacts apparently emanating from the Site have not been delineated to the northeast.
- Preliminary groundwater sampling conducted at MW304 from within the former remedial excavation indicated that petroleum impacts in the groundwater at the Site have improved following the soil remediation completed in April 2024. It should be noted that this groundwater sampling event was completed 73 days after the last day of remedial activities as opposed to 90 days as required by O. Reg 153/04. Due to the direction of the groundwater flow direction at the property line (to the northeast), it is not suspected that the residual impacts present in the ROW will significantly impact the Site.

Based on the following, Terrapex recommends the following additional assessment work:

- An additional monitoring well be installed on the northern shoulder of the ROW opposite of MW302 to delineate the groundwater impacts to the northeast.
- A groundwater sample be collected from monitoring well MW304 after July 26 (90 days after the last remedial activity) and 90 days after that date (i.e., 180 days following the last remedial activity) to adequately assess the groundwater conditions at the Site in accordance with the requirements of O. Reg. 153/04.

After the completion of the above additional assessment work, the data collected should be used to determine the necessity of a contaminant management plan (CMP).

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1.0 INTRODUCTION

Terrapex Environmental Ltd. (Terrapex) was retained by 595831 Ontario Inc. (the Client, also known as Hawkins Properties) to conduct a soil and groundwater delineation program and post-remediation groundwater assessment related to the former retail fuel outlet that operated at 5646 Manotick Main Street in Ottawa, Ontario (the Site). The Site is composed of two separate adjacent properties, 5646 and 5650 Manotick Main Street which at the time of the investigation were either vacant or in the midst of redevelopment.

The work program was completed based on recommendations provided in the previous Phase Two ESA report titled *Phase Two Environmental Site Assessment, 5646 & 5650 Manotick Main Street, Ottawa, Ontario,* prepared by Terrapex and dated November 1, 2023 and the previous soil remediation report titled *Remedial Soil Excavation 5646 and 5650 Manotick Main Street, Ottawa, ON* prepared by Terrapex for Hawkins Properties dated May 10, 2024.

1.1 MANDATES AND OBJECTIVES

Authorization from Hawkins Properties to proceed with this study was provided by Ms. Jade Hawkins, who is located at 650A Eagleson Road, Kanata ON. The Terrapex project manager was Mr. Greg Sabourin, P.Eng., who is located at 20 Gurdwara Road, Unit 1, Ottawa, Ontario, K2E 8B3.

The objectives of the work program were to delineate the known soil and potential groundwater impacts that extend into the City right-of-way (ROW) located to the east of the Site, and provide preliminary groundwater conditions present in the former remedial excavation. Additional investigation rationale for each borehole location is provided Section 2.1.

The investigation is required as part of the Site Plan Control (SPC) application to the City of Ottawa associated with the proposed redevelopment of the Site. The work was conducted in accordance with the requirements of Ontario Regulation (O. Reg.) 153/04. However, it is understood that a Record of Site Condition (RSC) is not required as there is no proposed change to the land use.

The purpose of this report is to provide an interim update of the work completed at the Site for the post-remediation groundwater assessment and for the off-site delineation work to meet the City's requirements for the SPC application.

1.2 SITE DESCRIPTION

The Site is located on the southwest side of Manotick Main Street, located to the west of the intersection with Mahogany Harbour Lane in Ottawa, Ontario. The Site is composed of two municipal addresses: 5646 Manotick Main Street pertaining to the northern portion of the Site, and 5650 Manotick Main Street pertaining to the southern portion of the Site. The Site is irregular in shape and occupies a total area of 4,090 m^2. The general Site layout is provided in Figure 2.

1.3 BACKGROUND

Terrapex previously completed a Phase One Environmental Assessment (ESA) for the Site. The findings were provided in the report entitled *Phase One Environmental Site Assessment, 5646 & 5650 Manotick Main Street Ottawa, Ontario,* dated December 16, 2022.

Based on the available information the Site was developed between 1946 and 1959. The northern portion of the Site (5646 Manotick Main Street parcel) was a retail fuel outlet from 1965 to 2004. The northern portion of the Site is currently occupied by a carwash.. The southern portion of the Site (5650 Manotick Main Street parcel) is vacant.

Based on the review, evaluation, and interpretation of the information obtained from the records review, interviews, and Site reconnaissance completed as part of the Phase One ESA, four on-Site Potential Contaminating Activities (PCAs) and two off-Site PCAs relating to activities or incidents within the Phase One study area were identified. The four on-Site PCAs were determined to contribute to Areas of Potential Environmental Concern (APECs) on the Phase One property, as described below:

PCA 1 / APEC 1(A/B): The former underground storage tanks (USTs) and associated fuel pumps related to the former use of the Site as retail fuel outlet.

PCA 2 / APEC 2: The presence of fill of unknown quality and unknown origin during redevelopment of the Site in 1965.

PCA 3 / APEC 3: The former use of the commercial building as an automotive garage.

PCA 6 / APEC 4: Staining underneath the ride on lawn mower in the white shed.

PCA 7 / APEC 5: Carwash effluent emanating from the septic system.

Terrapex completed a Phase II Environmental Assessment (ESA) (referred to as the “2022 Phase II ESA”) for the Site in the fall 2022 in conjunction with a geotechnical investigation. The findings were provided in the report entitled *Phase II Environmental Site Assessment, 5646 & 5650 Manotick Main Street, Manotick (Ottawa), Ontario,* dated December 16, 2022.

To provide additional soil and groundwater information, Terrapex completed a supplemental Phase Two Environmental Assessment (ESA) (referred to as the “2023 Phase Two ESA”) for the

Site in the fall 2023. The findings were provided in the report entitled *Phase Two Environmental Site Assessment, 5646 & 5650 Manotick Main Street, Ottawa, Ontario,* dated November 1, 2023. The following is a summary of both reports.

During the 2022 Phase II ESA, a total of thirteen boreholes (MW101, BH102 to BH108, MW109, BH 110, MW111, MW112 and BH113) were drilled across the Site to depths between 1.2 and 9.3 metres below grade (m bg), with four of the twelve boreholes completed as monitoring wells (MW101, MW109, MW111, and MW112). The sampling locations were selected to investigate, in part, the previously identified APECs and for geotechnical purposes at the proposed building locations. Select soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (collectively BTEX), petroleum hydrocarbon (PHC) F1 to F4 fractions (PHC F1 to F4), metals and inorganics.

To further investigate certain APECs, a supplemental investigation was completed in October 2023 that consisted of six additional boreholes (MW201, BH202, BH203, MW204, BH205 and MW206) were drilled to depths between 3.9 and 6.1 m bg, with three of the boreholes completed as monitoring wells (MW201, MW204 and MW206). Select soil and groundwater samples were submitted for laboratory analysis of BTEX, PHC F1 to F4, volatile organic compounds (VOCs), metals and inorganics and/or polycyclic aromatic hydrocarbons (PAHs).

Site Condition Standards (SCS) were determined using the criteria established by O. Reg. 153/04 Records of Site Condition - Part XV.1 of the Act. Based on the intended future use of the Site, the SCS for industrial/commercial/community land use in a potable groundwater situation, with medium to fine textured soil, as specified in Table 2 (hereafter referred to as the Table 2 SCS) of the Ministry of the Environment, Conservation, and Parks (MECP) April 15, 2011, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the "Environmental Protection Act"* document (hereafter referenced as the *Standards*) were used to evaluate the laboratory analytical results.

A conceptual site model (CSM) for the Site was developed based on the results of the 2022 and 2023 assessments. Soil analytical results indicated that concentrations of the analytes in the soil samples submitted for analysis did not exceed the Table 2 SCS with the following exceptions:

- Concentrations of ethylbenzene and PHC F1 fraction were greater than the Table 2 SCS in sample MW112-2 (and blind duplicate sample MW112-12);
- Concentration of PHC F1 fraction was greater than the Table 2 SCS in sample MW204-4 (and blind duplicate sample MW1000);
- Concentrations of benzene and/or ethylbenzene were greater than the Table 2 SCS in samples BH205-3 and BH205-6 (benzene only);
- Concentrations of vanadium were greater than the Table 2 SCS in sample MW109-1B and MW3000 (blind duplicate of sample MW206-2);

- Electrical conductivity (EC) was greater than the Table 2 SCS in sample BH105-2; and,
- Sodium adsorption ratio (SAR) was greater than the Table 2 SCS in soil sample MW3000 (blind duplicate of sample MW206-2).

Laboratory analysis indicated that concentrations of the analytes in all groundwater samples submitted for analysis did not exceed the Table 2 SCS with the following exceptions:

- Groundwater sample MW112 (and its blind duplicate sample MW122) had concentrations of benzene and ethylbenzene greater than the Table 2 SCS; and,
- Groundwater sample MW206 had concentrations of chloride greater than the Table 2 SCS.

Terrapex recommended that a soil remediation be completed to remove the PHC-impacted soil that exceeded the Table 2 SCS. The PHC impacts appeared related to the former pump island and UST tank nest from the former retail fuel outlet.

In April 2024, two remedial excavations were excavated at the Site to depths of up to 5.0 m bg at the locations of the former tank nest and pump island. A total of 520.68 metric tonnes (MT) of PHC-impacted soil was generated from the completion of both excavations. The impacted soil was removed for off-Site disposal as non-hazardous solid waste. Monitoring wells MW112 and MW204 were destroyed during the remedial excavations. Terrapex concluded that based on the soil sampling and visual indications that all soil with concentrations of BTEX and/or PHC F1 to F4 greater than Table 2 SCS have been removed from the Site. Confirmatory soil samples collected from the eastern wall of the northern excavation (CS167, collected at a depth of 2.5 m bg) indicated that PHC impacted soil remained at the property boundary towards the municipally owned ROW along Manotick Main Street.

1.4 STRATIGRAPHY AND HYDROGEOLOGY

A 0.05 to 0.09 m layer of asphalt was present in the surface material for borehole BH202 and BH205, followed by a silty sand layer between 0.1 and 1.5 m bg. At borehole BH203 the silty sand layer was present at surface to a depth of 1.5 m bg. Borehole MW204, drilled in the former UST nest where sandy silt material was encountered from surface to 3.8 m bg. At borehole MW201 (drilled within the building on the 5646 Manotick Main Street property), a 0.10 m thick concrete slab was encountered at surface underlain by a gravel layer from 0.1 to 1.6 m bg. Underlying the silty sand and the gravel layer at these boreholes was a native clayey silt and or silty clay layer to the maximum depth of the investigation (6.1 m bg). Bedrock was not encountered during the previous investigations.

Based on monitoring data from October 2023, the depth to groundwater ranged from 1.32 m bg at MW204 to 3.09 m bg at MW109. The shallow horizontal groundwater flow across the Site was

interpreted to the west/southwest towards Mahogany Creek located to the west of the Site. This groundwater flow direction is similar to the groundwater flow direction observed during the 2022 Phase II ESA. Based It is possible that the northern portions of the Site may be expected to have a flow direction towards the north towards the Rideau River (i.e., a hydrological divide is located on the Site). This notion is further supported based on the results from the soil sampling conduced during the remedial excavation and the groundwater monitoring conducted during the current program (described below).

1.5 SCOPE OF WORK

The scope of work was conducted in general accordance with the proposal submitted by Terrapex to Jade Hawkins of Hawkins Properties titled *Proposal For Off-Site Delineation and Post-Remedial Groundwater Assessment 5646 and 5650 Manotick Main Street, Ottawa, Ontari*o dated June 11, 2024.

The scope of work included the following:

- Preparing a site-specific health and safety plan (HASP) for field personnel and sub-contractors as per Terrapex's standard practice for each component of the work program. Job Safety Analyses (JSAs) were completed in the field prior to each task;
- Obtaining buried service locates from local public utilities and retaining a private locating company to identify secondary services and to clear the proposed investigation locations prior to commencing the intrusive investigation;
- Coordinating with the City of Ottawa to arrange for a road cut permit for the drilling of boreholes and installation of the monitoring wells on the City of Cornwall ROW;
- Supervising the completion of three boreholes (BH301, MW302, MW303, MW304 and BH305) to depths ranging from 1.8 m to 6.1 m below grade (bg) using a track-mounted Massenza Mi3 drill rig that included one borehole on-Site within the former excavation (MW304), three boreholes off-Site on the south side of Manotick Main Street (BH301 to MW303), and one off-Site borehole on the north side of Manotick Main Street (BH305);
- Supervising the installation of monitoring wells in three of the of the boreholes (MW302, MW303 and MW304) by a MECP-licensed well technician;
- Collecting representative soil samples during drilling and logging each sample for visual, olfactory, and tactile soil characteristics, as well as any evidence of PHC impacts (if present), and measuring combustible soil vapours (CSV) in recovered soil samples using an RKI Eagle II hydrocarbon surveyor operated in methane elimination mode;
- Submitting selected soil samples from the boreholes within the City ROW for laboratory analyses of BTEX and PHC F1 to F4;
- A groundwater monitoring and sampling event consisting of following:

  - Monitoring the newly installed and the existing wells for depth to water (DTW), presence/thickness of light non-aqueous phase liquid (LNAPL), if any, and headspace combustible vapours (CVs).
  - Submitting groundwater samples from all new and existing monitoring wells for laboratory analyses of BTEX and PHC F1 to F4;
- Further evaluating the appropriate generic SCS from the Ontario MECP April 15, 2011 *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (the Standards) as established by O. Reg. 153/04 Records of Site Condition;
- Evaluating soil and groundwater analytical results with respect to the appropriate SCS; and,
- Preparing a report detailing the findings and results of the project.

Private locating services were provided by Multiview Locates Inc. (Multivew) of Ottawa, Ontario. Drilling and monitoring well installation services were provided by Strata Drilling Group (Strata) of Whitchurch-Stoufville, Ontario. Strata is an MECP-licensed well-drilling contractor.

Laboratory analytical services for this work program were provided by the AGAT Laboratories (AGAT) of Mississauga, Ontario. At the time of this investigation, AGAT was accredited by the Canadian Association for Laboratory Accreditation (CALA) to International Standard ISO/IEC 17025:2017, *General Requirements for the Competence of Testing and Calibration Laboratories* for the parameters included in the analytical program

2.0 FIELD PROGRAM

Terrapex conducted the field components of the work program between July 5 and July 9, 2024. The work program described herein was generally completed in accordance with the requirements of O. Reg. 153/04 and industry-standard practices. Selected photographs are provided in Appendix I.

2.1 PROPOSED INVESTIGATION RATIONALE

In consultation with Hawkins Properties, the objective of the delineation program was to install additional monitoring wells within the City of Ottawa ROW for delineation purposes and assessment of groundwater conditions on-Site within the former remedial excavation. The rationale for the selected borehole locations is provided below:

RATIONALE FOR INVESTIGATION LOCATIONS

SAMPLING LOCATIONS	CONTAMINANTS OF POTENTIAL CONCERN	COMMENTS / RATIONALE
BH301, MW302, MW303 (City ROW)	- PHCs (soil and groundwater)	- Asses the potential impact to soil and/or groundwater on the City ROW emanating from the Site. All locations located on the south shoulder of Manotick Main Street
MW304 (On-Site)	- PHCs (groundwater)	- Completed in former remedial excavation.
BH305 (City ROW) (Not completed due to shallow refusal)	- PHCs (soil and groundwater)	- Monitoring well was to be installed on a contingency basis if impacts extended past borehole/monitoring wells on south shoulder. Borehole not completed due to shallow refusal.

Notes:
PHCs - Includes benzene, toluene, ethylbenzene, xylenes (BTEX) and petroleum hydrocarbon fractions (PHC F1 to F4).
BH – borehole
MW – monitoring well

The locations of the boreholes are provided in Figure 2 and photographs taken during the investigation program are provided in Appendix I.

2.2 FIELD PREPARATION

Prior to conducting the intrusive fieldwork, Terrapex contacted the appropriate public agencies to identify the locations of buried utilities at and near the subject Site. Terrapex also retained Multiview to locate private buried utilities, if any, and provide clearances for buried services at the proposed borehole locations.

Strata obtained a road cut permit (RC241742) from the City of Ottawa on June 17, 2024. On July 2, 2024, as required by the road cut permit Terrapex distributed an information notice to nearby residential and commercial properties to inform them of the drilling work and the required notification was provided to the City.

A site-specific health and safety plan (HASP) and a job safety analysis (JSA) form were prepared by Terrapex prior to commencing the fieldwork. A copy of the HASP and JSA remained with the

field crew on the subject Site for the duration of the field activities. The project team members and subcontractors that conducted the field activities read and signed the HASP and JSA before commencing work.

2.3 BOREHOLE DRILLING AND SOIL SAMPLING

On July 5, 2024, five boreholes (BH301, MW302, MW303, MW304 and BH305) were drilled using a Massenza Mi3 drill rig using standard dual tube samplers and probe rods with disposable liners. The boreholes were drilled to depths of between 3.7 and 4.6 m bg (with the exception of borehole BH305, further discussed below). During drilling, soil samples were collected continuously using 1.2 m core samplers fitted with dedicated sampling tubes.

At borehole BH305, shallow refusal was encountered at approximately 0.8 m bg. The cause of the refusal could not be confirmed. Due to the proximity of the borehole to underground services (waterline and electrical street light), an alternative borehole location was not attempted. Therefore, borehole MW305 was abandoned.

Each sample was logged in the field and visual/olfactory observations of PHC impact, if any, were noted. CSV concentrations were measured in each sample using a RKI Eagle hydrocarbon surveyor, calibrated to *n*-hexane and operated in “methane elimination” mode. Fresh nitrile gloves were used to handle each sample and the soil samples were collected in pre-cleaned, laboratory-supplied jars (with methanol preservative where required) and placed in a cooler with ice. The sampling tool was cleaned with soapy water between the collection of each sample.

Soil samples were submitted for laboratory analysis as summarized below:

- A total of three soil samples from boreholes BH301, MW302 and MW303 representing one sample per borehole (plus one field duplicate) were selected to represent “worst-case” conditions based on visual/olfactory observation or from the assumed depth of the groundwater table and submitted for laboratory analysis of BTEX and PHC F1 to F4.
- One methanol blank submitted for laboratory analysis of BTEX and PHC F1.

Since the imported fill used for backfilling the remedial excavation had previously been analysed during the remedial excavation, no soil samples collected from borehole MW304 were submitted for laboratory analysis. Since borehole BH305 was abandoned before encountering the apparent water table it was determined that there was no value in submitting any soil samples for analysis.

Soil samples selected for laboratory analysis were packed in a cooler with ice and delivered with a signed chain-of-custody by Terrapex staff to AGAT Labs depot in Ottawa, Ontario prior to the shipment to the laboratory in Mississauga, Ontario for analysis as outlined above.

2.4 MONITORING WELL INSTALLATION

Monitoring wells were installed in three of the boreholes (MW302, MW303 and MW304) as shown on Figure 2. The monitoring wells were constructed using of 51-mm diameter polyvinyl chloride (PVC) well pipe and #10 slot screen interval. The annulus of each of the monitoring wells were backfilled with washed silica sand to a minimum depth of approximately 0.15 to 0.3 m above the screened interval. A hydrated bentonite seal was placed above the sand pack to prevent infiltration of surface water into the monitoring well. A flush-mount well casing was cemented in place over each monitoring well for protection.

Monitoring well locations are shown in Figure 2. Monitoring well construction details are provided in the borehole logs included in Appendix II.

On July 8, 2024, Terrapex completed an elevation survey of the ground surface for each borehole and the ground surface and the top of the well pipe for each of the newly installed monitoring wells. The survey was completed using a Trimble Spectra Geospatial SP80 global navigation satellite system (GNSS) receiver.

2.5 MONITORING WELL DEVELOPMENT

The new monitoring wells were developed on July 8, 2024. The monitoring wells were purged in order to remove stagnant water, and entrained particulate in the well standpipe, well screen and filter pack, as well as surrounding formation materials.

Immediately upon removal of the well cap, the depth to water in the well was measured using an interface probe. The presence and apparent thickness of LNAPL, if any, in the well was also measured using the interface probe. To mitigate potential cross-contamination, the interface probe was washed with a solution of Alconox detergent and water and then rinsed with clean water prior to use.

Monitoring wells were instrumented with dedicated inertial samplers comprising low-density polyethylene (LDPE) tubing and LDPE foot valves. Each monitoring well was purged at least three times dry (ranging between 3 and 10 L in total per well).

All groundwater produced during development activities was stored on Site in a plastic drum in anticipation of future disposal.

2.6 GROUNDWATER MONITORING AND SAMPLING

A groundwater monitoring and sampling event was conducted on July 9, 2024. The monitoring wells were monitored for DTW and LNAPL, if any, using an interface probe, and CV concentrations from the well headspace were measured using a RKI Eagle II hydrocarbon surveyor, calibrated to *n*-hexane and operated in “methane elimination” mode. Monitoring wells

MW112 and MW204 were destroyed during the remedial excavation and thus were not able to be monitored. Monitoring wells MW109, MW111 and MW201 were not accessible during the monitoring event and thus were not monitored.

Following monitoring, groundwater samples were collected from each monitoring well using a "low-flow" sampling methodology. Prior to groundwater sampling, standing water in the monitoring wells was removed using a low-flow purging method with a pump and dedicated tubing. Geochemical parameters such as temperature, pH, conductivity, dissolved oxygen, and oxidation-reducing potential were recorded during purging. The samples were collected once these geochemical parameters stabilized (e.g., consecutive readings were within 10% of each of the purging parameters).

The groundwater samples were collected directly into pre-cleaned, laboratory-supplied bottles with preservative (where required), placed in a cooler with ice, and delivered with a signed chain-of-custody by Terrapex staff to AGAT depot in Ottawa, Ontario prior to the shipment to the laboratory in Mississauga, Ontario for analysis of BTEX and PHC F1 to F4.

Due to insufficient water volume present in monitoring well MW303, the amber vials used for the PHC F2 to F4 analysis were unable to filled to the top. This limitation was noted on the chain-of-custody and is not expected to affect the results of the analysis.

2.7 QUALITY ASSURANCE AND QUALITY CONTROL MEASURES

Quality Assurance and Quality Control (QA/QC) measures were implemented during the Phase II ESA in accordance with Terrapex Standard Operating Procedures. A summary of these measures follows.

During drilling, to mitigate cross-contamination the split spoons were cleaned after the collection of each sample. Fresh nitrile gloves were worn for the handling of each sample.

During groundwater sampling, dedicated sampling equipment was used at each monitoring well location. To mitigate cross-contamination, the interface probe was washed with a liquid solution of Alconox detergent and rinsed with potable water between each monitoring well. A fresh pair of nitrile gloves was donned at each well location.

Pre-cleaned sample containers for the specific parameters of interest were provided by the laboratory and used at each borehole and monitoring well location for the collection of soil and groundwater samples. Samples for analyses were placed in an enclosed cooler with loose ice and shipped with a signed chain of custody and custody seals to the laboratory for chemical analysis.

AGAT Labs QA/QC program consisted of the analysis of laboratory replicates, matrix spikes, matrix blanks, method blanks and surrogate percent recoveries, as appropriate for the particular analysis protocol.

Terrapex's QA/QC samples included blind field duplicate soil and groundwater samples, a methanol blank was submitted with the soil samples and a lab-prepared trip blank and trip spike were submitted with the groundwater samples. The laboratory was not informed of the nature or number of field QA/QC samples.

3.0 SUBSURFACE CONDITIONS

3.1 SOIL

In general, the stratigraphy encountered from the boreholes installed in the ROW comprised of a 0.15 m thick layer of asphalt followed by approximately 0.8 to 1.5 m of silty sand with trace gravel. Beneath the silty sand layer, a silty clay or clayey silt layer was encountered to the maximum depth of the boreholes. Refusal was encountered at borehole BH301 at a depth of approximately 3.7 m bg and at BH305 at a depth of 0.8 m bg. The reason for the refusal encountered at boreholes MW301 and BH305 is unknown.

The stratigraphy encountered in the borehole drilled in the former remedial excavation (MW304) comprised of a silty sand fill from surface until overlying native clayey silt which was encountered at a depth of 3.1 m bg. It should be noted that surface of the former remedial excavation was located between 1.0 and 1.5 meters below the existing the grade of the surrounding asphalt parking lot. The soft surface material of the former remedial excavation necessities the placement of borehole MW304 along the western wall of the former remedial excavation due to access concerns with the drill rig.

Visual or olfactory evidence of impact was not observed in any of the soil samples collected from the borehole MW303. A slight petroleum odour was observed in soil samples collected from boreholes BH301 and MW302, generally between approximately 0.8 and 2.3 m bg. The CSV concentration measured in the soil samples varied between a maximum of 50 parts per million (ppm) in a sample collected from borehole MW302 (sample MW302-3, collected between approximately 1.5 and 2.3 m bg) to less than 5 ppm.

The soil stratigraphy and corresponding soil sample CSV readings for each borehole are shown in the graphic borehole logs provided in Appendix II.

3.2 GROUNDWATER

Groundwater monitoring data is provided in Table 1 is summarized below. The interpreted groundwater contours based on the July 9, 2024 monitoring data are shown in Figure 3.

As shown in Table 1, on July 9, 2024, the depth to groundwater in the monitoring wells ranged between 0.90 (MW206) and 4.06 (MW402) m bg, respectively. Monitoring well MW303 exhibited a CV concentration of 85 ppm. The remaining monitoring wells exhibited a CV concentration of less than 5 ppm. LNAPL or hydrocarbon sheen were not observed in any of the monitoring wells.

As shown in Figure 3, the interpreted shallow horizontal groundwater flow at the Site is to the northeast. It should be noted that the monitoring results reported in the previous Phase Two ESA had indicated that the interpreted groundwater flow direction was south towards Mahogany Creek.

The absence of monitoring data from monitoring wells MW109 and MW111 prevents the confirmation of the presence of the hydrogeological divide at the Site however based on the monitoring well's location relative to the Site this result was expected (i.e. groundwater flow at the northern portion of the Site would be northeast towards the Rideau River).

4.0 RESULTS

4.1 SOIL AND GROUNDWATER STANDARDS

The Site-specific details which influenced the soil and groundwater standards selection (as determined during the previous Phase Two ESA) are summarized below:

- the Site is not within or adjacent to an area of natural significance as defined within Section 1 (1) of O. Reg. 153/04, and it does not include any land within 30 m of an area of natural significance, and is not otherwise considered ”potentially sensitive”;
- the pH determined for “surface” soil samples (representative of depths not exceeding 1.5 m below ground surface, excluding any surface treatment) analysed as part of this Phase Two ESA (based on previous on-Site results) ranged from 7.14 to 8.16, which is between the prescribed values of 5 to 9 for the application of generic SCS;
- the pH determined for “subsurface” soil samples (representative of depths greater than 1.5 m below ground surface, excluding any surface treatment) analysed as part of this Phase Two ESA (based on previous on-Site results) ranged from 7.27 to 8.09, which is between the prescribed values of 5 to 11 for the application of generic SCS;
- more than 2 m of overburden was observed over at least two-thirds of the area of the Site;
- the Site and sampling locations within the municipal ROW are not located within 30 m of a waterbody;
- stratified site conditions will not be used when evaluating laboratory analytical results;
- proposed future use of the Site is expected to be commercial;
- the Site and properties located (in whole or in part) within 250 m of the Site have a wells that are used or are intended for use as a source of water for human consumption or for agriculture; and,
- the Site is not located in an area designated in a municipal Official Plan as a well-head protection area, or another designation by the municipality intended for the protection of groundwater; and,
- soil texture at the Site has been classified as “fine- to medium-textured” based on the result of grain size analysis conducted for three representative soil samples.

Based on the preceding information and assumptions, the SCS applicable for industrial/commercial/community land use for fine- to medium-textured soil in a potable groundwater condition that are described in Table 2 of the *Standards* have been selected for evaluating laboratory analytical results from the Site and the municipal ROW at this time.

4.2 ANALYTICAL RESULTS

4.2.1 SOIL

Laboratory results for soil samples submitted for analysis of BTEX and PHC F1 to F4 are summarized in Table 2. The laboratory certificates of analysis for the analysed soil samples are included in Appendix III. Visual representation of the soil analytical results is provided in Figure 4.

As shown, concentrations of BTEX and PHC F1 to F4 in all soil samples submitted for laboratory analysis from the boreholes within the municipal ROW were less than the Table 2 SCS.

4.2.2 GROUNDWATER

Laboratory results for groundwater samples analyzed for BTEX and PHC F1 to F4 is summarized in Table 3. The laboratory certificates of analysis are included in Appendix III. Visual representation of the groundwater analytical results is provided in Figure 5.

As shown, concentrations of BTEX and PHC F1 to F4 in all groundwater samples submitted for laboratory analysis were less than the Table 2 SCS, with exception of the groundwater sample collected MW302 which exhibited a concentration of ethylbenzene greater than the Table 2 SCS.

4.2.3 QUALITY ASSURANCE/QUALITY CONTROL

AGAT Labs QA/QC program consisted of the analysis of laboratory replicates, method blanks, percent recoveries, matrix spikes, and surrogate percent recoveries as appropriate for the particular analytical protocol. A review of the AGAT Labs quality assurance reports attached to the laboratory certificates of analyses indicate that the laboratory QA/QC samples were within quality control limits.

Laboratory results for Terrapex's QA/QC program are provided in Table 2 and Table 3 for soil and groundwater, respectively, including blind field duplicate soil and groundwater samples, a methanol blank sample, and laboratory prepared trip blank and spike water samples.

For blind duplicate samples, relative percent differences (RPDs) were calculated between the sampling pairs when concentrations in both samples were greater than five times the laboratory reportable detection limits (RDLs). The RPDs were compared to an alert criterion of 30% for both soil and groundwater. However, RPDs as high as 50% are considered acceptable for volatile organic compounds in soil (e.g., BTEX and PHC F1).

As shown in Table 2 and Table 3 RPDs were not able to be calculated for either the soil sample and its duplicate pair (BH301-3 and BH301-6) and the groundwater sample and its duplicate pair (MW303 and MW3000) as all parameters were not detected at the laboratory RDLs (i.e., all parameters less than five times the RDLs).

BTEX and PHC F1 were not detected at the laboratory RDLs in the methanol blank.

For the laboratory prepared trip spike sample submitted for analysis of BTEXs, the percent recovery for all parameters was within the alert criteria of ±30%. BTEX and PHC F1 were not detected at the laboratory RDLs in the trip blank.

Based on the above, the QA/QC results for this work program are considered acceptable. The laboratory certificates of analyses are provided in Appendix III

5.0 CONCLUSIONS AND RECOMMENDATIONS

The objectives of the work program were to delineate known soil and potential groundwater impacts that extend into the City ROW located to the east of the Site and provide a preliminary assessment of groundwater conditions at the Site following the April 2024 soil remediation.

On July 9, 2024, five boreholes (BH301, MW302, MW303, MW304 and BH305) were drilled including four boreholes drilled within the municipal ROW to provide delineation of soil and groundwater impacts emanating from the Site. One monitoring well (MW304) was installed in the former remedial excavation in addition to two monitoring wells installed within the municipal ROW. The depth of the boreholes ranged from 0.8 to 4.6 m bg. Groundwater monitoring and sampling was conducted from the newly installed monitoring wells on-Site and within the municipal ROW.

Based on the interim results of the soil and groundwater investigation program the following can be concluded:

- The soil impacts apparently extending from the Site onto the municipal ROW as previously observed during the remedial excavation (specifically at confirmatory soil sample CS167 collected from the apparent property line) have been delineated by the soil analytical results from the soil samples collected from boreholes BH301, MW302 and MW303.
- Based on the groundwater sampling conducted from the newly installed monitoring wells within the ROW, the groundwater impacts apparently emanating from the Site have not been delineated to the northeast.
- Preliminary groundwater sampling conducted at MW304 from within the former remedial excavation indicated that petroleum impacts in the groundwater at the Site have improved following the soil remediation completed in April 2024. It should be noted that this groundwater sampling event was completed 73 days after the last day of remedial activities as opposed to 90 days as required by O. Reg 153/04. Due to the direction of the groundwater flow direction at the property line (to the northeast), it is not suspected that the residual impacts present in the ROW will significantly impact the Site.

Based on the following, Terrapex recommends the following additional assessment work:

- An additional monitoring well be installed on the northern shoulder of the ROW opposite of MW302 to delineate the groundwater impacts to the northeast.
- A groundwater sample be collected from monitoring well MW304 after July 26 (90 days after the last remedial activity) and 90 days after that date (i.e., 180 days following the last remedial activity) to adequately assess the groundwater conditions at the Site in accordance with the requirements of O. Reg. 153/04.

- After the completion of the above additional assessment work, the data collected should be used to determine the necessity of a contaminant management plan (CMP).

6.0 CLOSURE

This report has been completed in accordance with the terms of reference for this project as agreed upon by Hawkins Properties (the Client) and Terrapex Environmental Ltd. (Terrapex) and generally accepted engineering or environmental consulting practices in this area.

The reported information is believed to provide a reasonable representation of the general environmental conditions at the site; however, studies of this nature have inherent limitations. The data were collected at specific locations and conditions may vary at other locations, or with the passage of time. The assessment was also limited to a study of those chemical parameters specifically addressed in this report.

Terrapex has relied in good faith on information and representations obtained from the Client and third parties and, except where specifically identified, has made no attempt to verify such information. Terrapex accepts no responsibility for any deficiency or inaccuracy in this report as a result of any misstatement, omission, misrepresentation, or fraudulent act of those providing information. Terrapex shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time of the study.

This report has been prepared for the sole use of Hawkins Properties. Terrapex accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than Hawkins Properties.

Respectfully Submitted,
TERRAPEX ENVIRONMENTAL LTD.

Greg Sabourin, P.Eng.
Project Manager

Keith Brown, P.Eng.
Senior Reviewer

7.0 REFERENCES

Ontario Regulation 153/04, *Records of Site Condition – Part XV.1 of the Environmental Protection Act*.

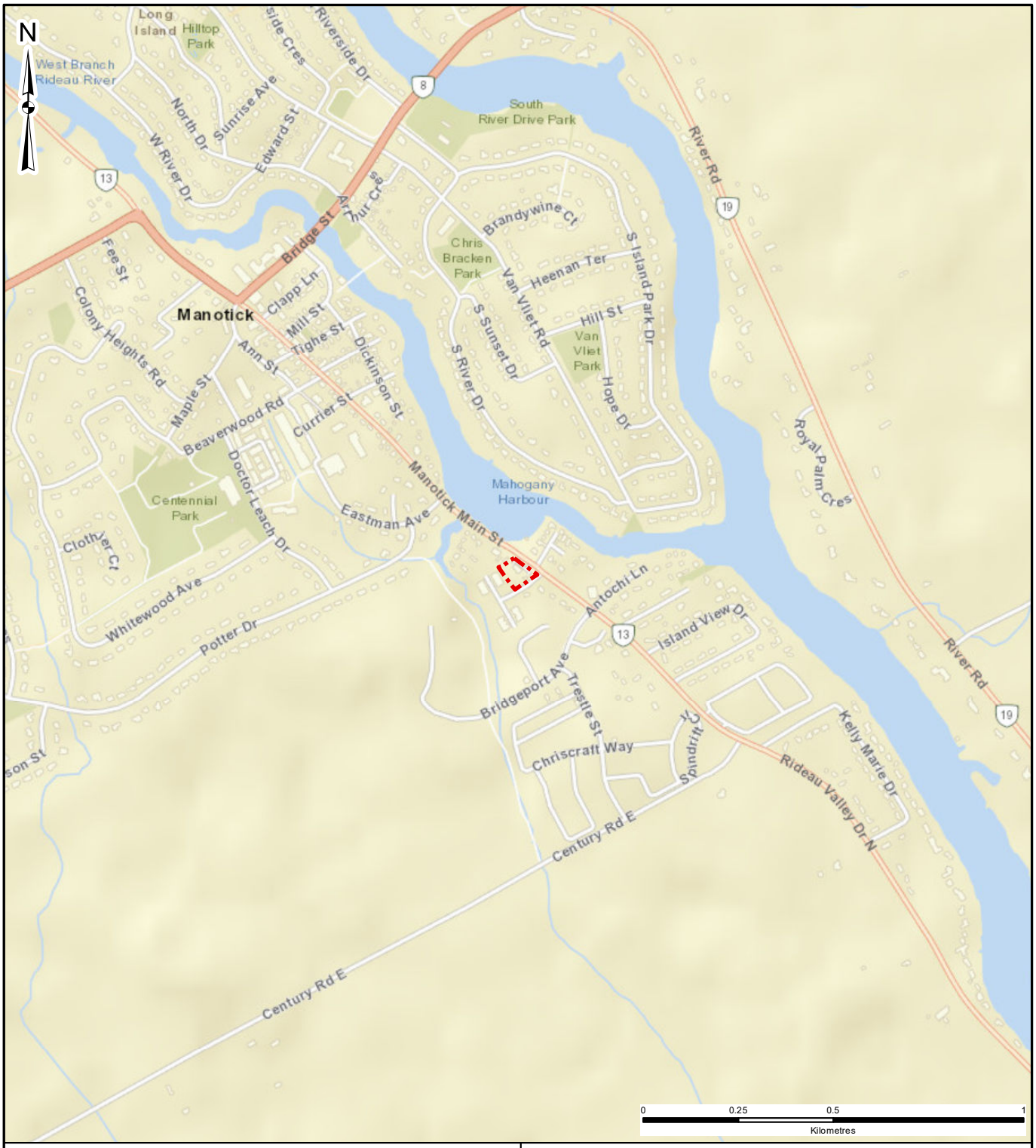
Ministry of the Environment (MOE), *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011.

Phase One Environmental Site Assessment, 5646 & 5650 Manotick Main Street Ottawa, Ontario, dated December 16, 2022.

Phase Two Environmental Site Assessment, 5646 & 5650 Manotick Main Street, Ottawa, Ontario, dated November 1, 2023.

Letter *Subject: Site Plan Control Application 5646 and 5650 Manotick Main Street – First Submission Comments,* To Jillian Simpson from City of Ottawa, Dated August 31, 2023

Remedial Soil Excavation 5646 and 5650 Manotick Main Street, Ottawa, ON prepared by Terrapex Environmental Ltd. For Hawkins Properties dated May 30, 2024.



LEGEND

PROPERTY BOUNDARY

DATA SOURCE: ESRI
MAP PROJECTION: NAD 1983 UTM Zone 18N

CLIENT: HAWKINS PROPERTIES

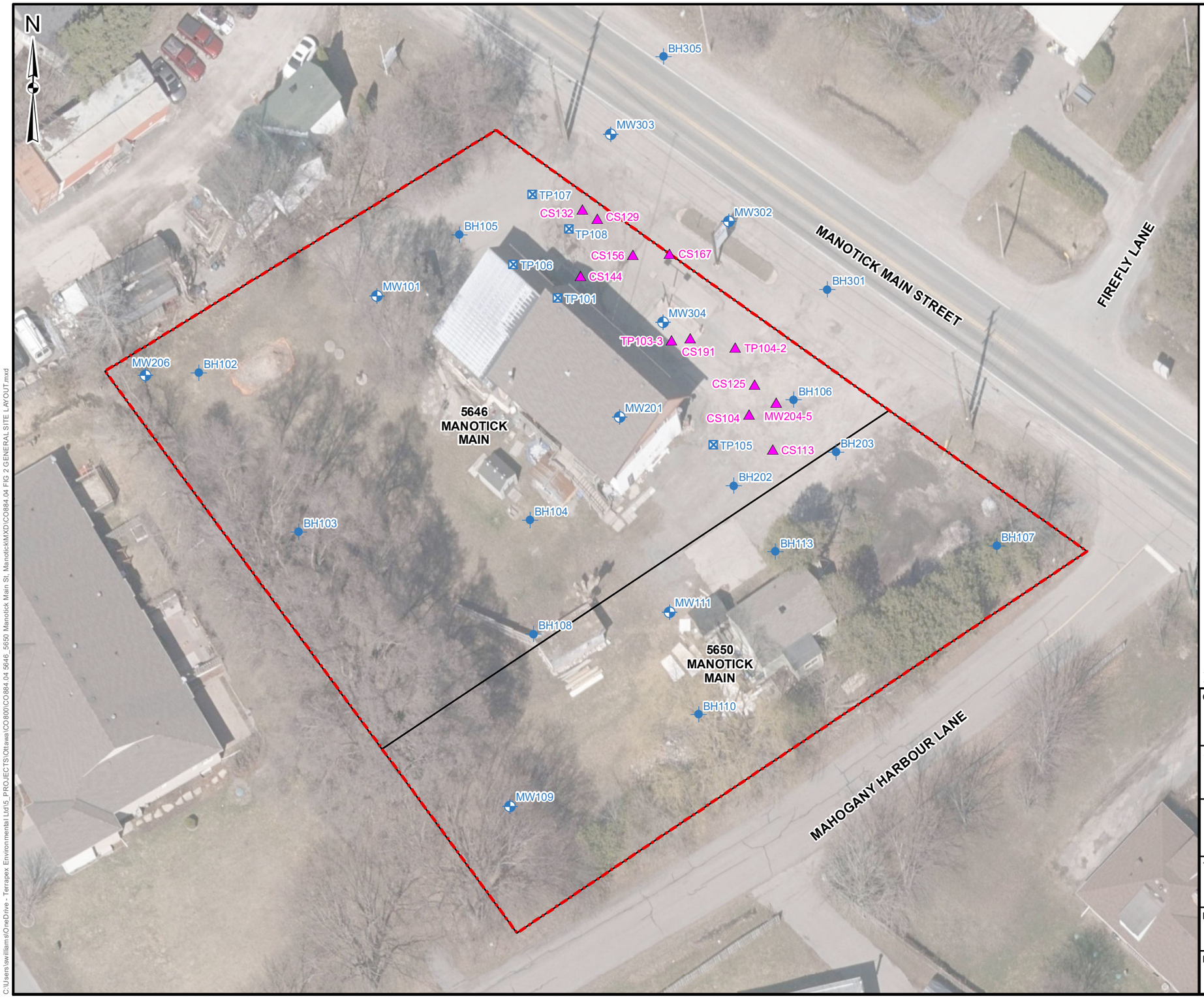
SITE LOCATION: 5646 AND 5650 MANOTICK MAIN STREET MANOTICK, ONTARIO

TERRAPEX

TITLE: **SITE LOCATION**

DRAWN BY: JS	PROJECT NO.: CO884.04	CHECKED BY: GS
REVISION: 00	DATE: JULY 2024	**FIGURE: 1**

SFinlay C:\Users\s.finlay\OneDrive - Terrapex Environmental Ltd\PROJECTS\Ottawa\CO800\CO884.04 5646_5650 Manotick Main St, Manotick\MXD\CO884.03 FIG 1 SITE LOCATION.mxd



C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO800\CO884.04 5646_5650 Manotick Main St, Manotick\MXD\CO884.04 FIG 2 GENERAL SITE LAYOUT.mxd

LEGEND

- PROPERTY BOUNDARY
- PARCEL FABRIC
- BOREHOLE
- MONITORING WELL
- TEST PIT
- CONFIRMATORY SOIL SAMPLE

0 5 10 15 20
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

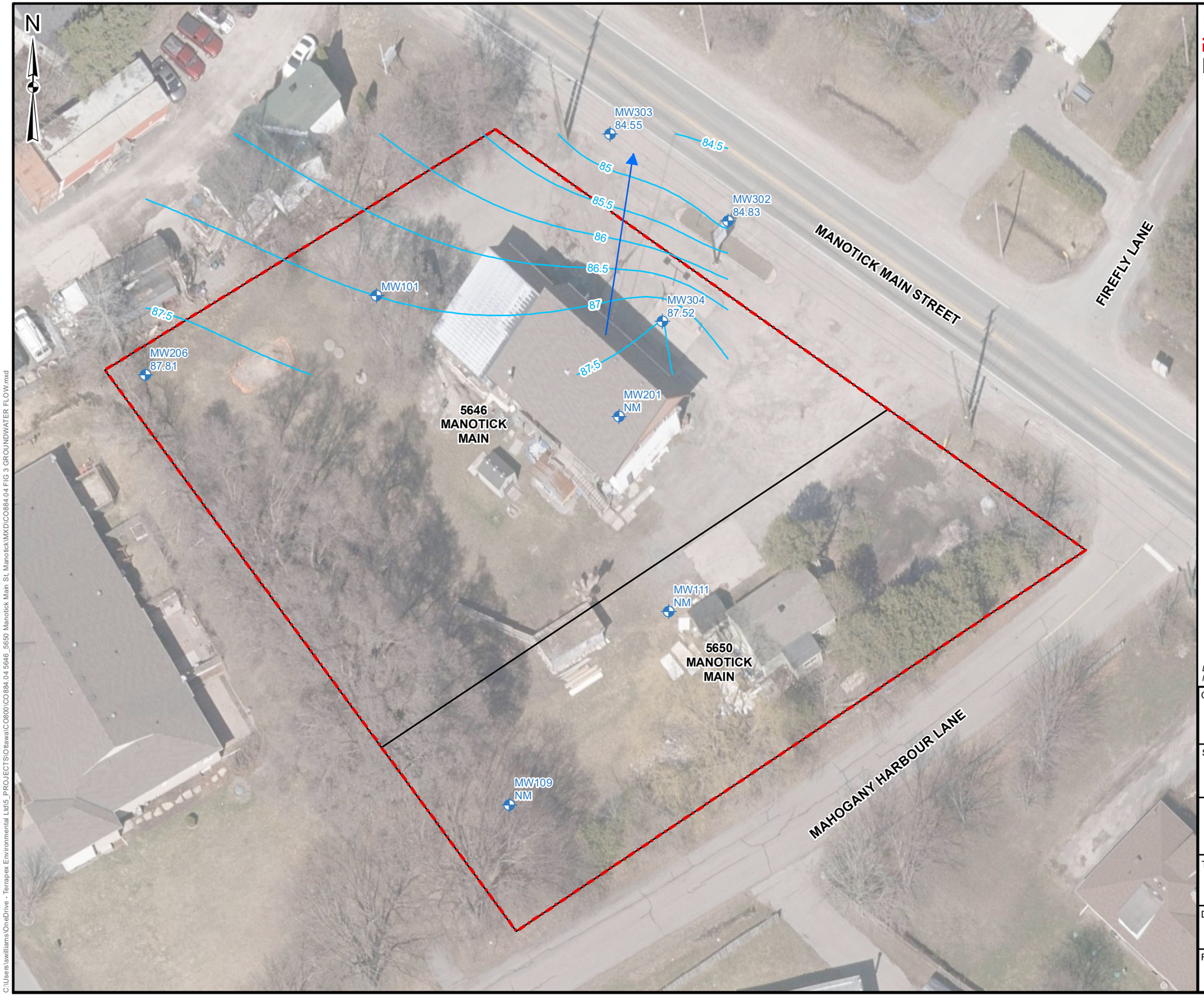
CLIENT:
HAWKINS PROPERTIES

SITE LOCATION:
5646 AND 5650 MANOTICK MAIN STREET, MANOTICK, ONTARIO

TERRAPEX

TITLE:
GENERAL SITE LAYOUT

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SF/SW	CO884.04	GS
REVISION:	DATE:	FIGURE:
00	JULY 2024	**2**



LEGEND

- PROPERTY BOUNDARY
- PARCEL FABRIC
- MONITORING WELL
- EQUIPOTENTIAL CONTOUR
- GROUNDWATER FLOW DIRECTION
- **88.56** STATIC WATER LEVEL (9 July 2024) (m ASL)
- **NM** NOT MONITORED

0 5 10 15 20
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT:
HAWKINS PROPERTIES

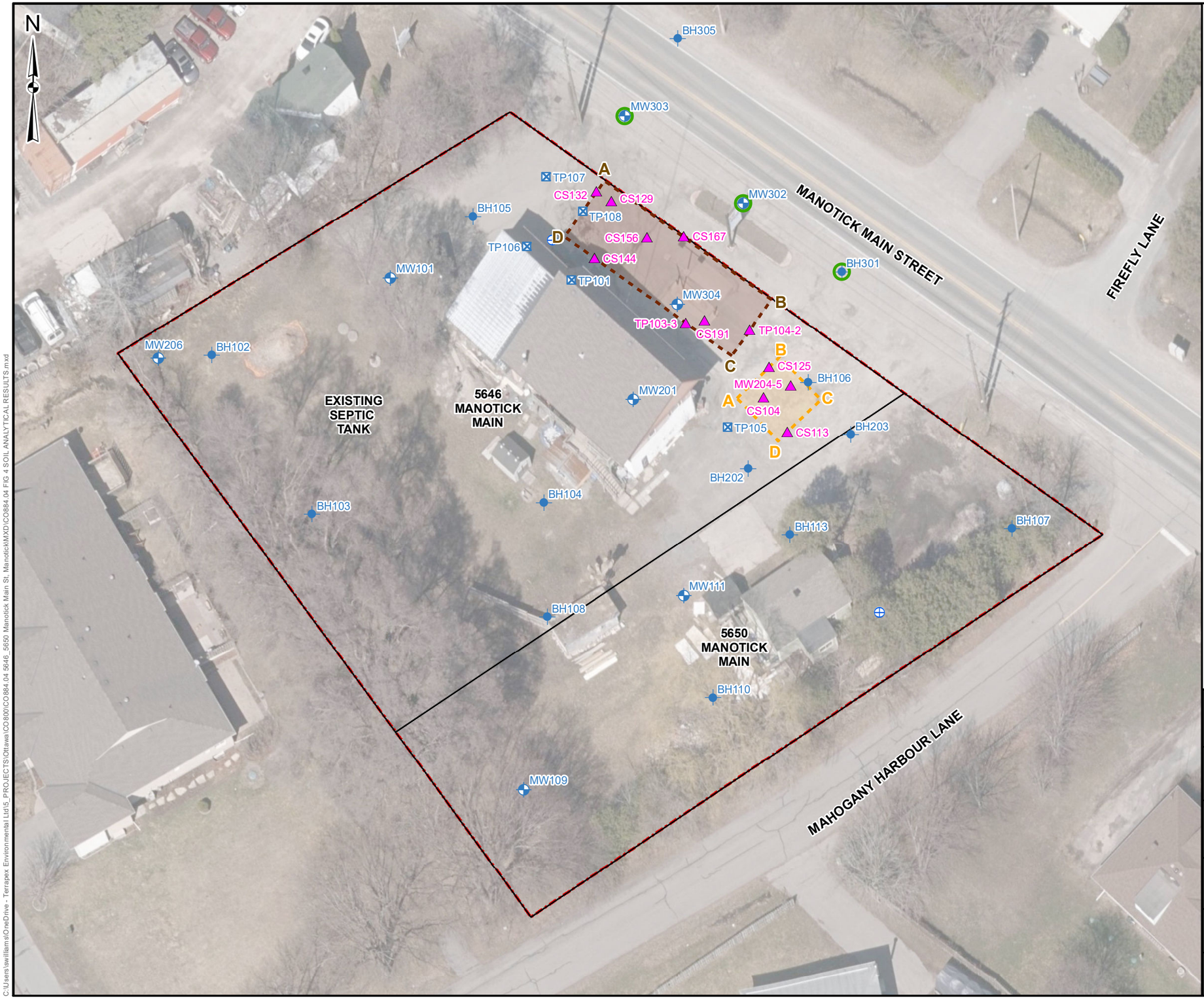
SITE LOCATION:
5646 AND 5650 MANOTICK MAIN STREET, MANOTICK, ONTARIO

TERRAPEX

TITLE:
INTERPRETED GROUNDWATER FLOW (AS OF JULY 9, 2024)

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SF/SW	CO884.04	GS
REVISION:	DATE:	FIGURE:
00	JULY 2024	**3**

C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO800\CO884.04 5646_5650 Manotick Main St, Manotick\MXD\CO884.04 FIG 3 GROUNDWATER FLOW.mxd



C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO800\CO884.04 5646_5650 Manotick Main St, Manotick\MXD\CO884.04 FIG 4 SOIL ANALYTICAL RESULTS.mxd

LEGEND

- PROPERTY BOUNDARY
- PARCEL FABRIC
- FORMER NORTHERN EXCAVATION
- FORMER SOUTHERN EXCAVATION
- BOREHOLE
- MONITORING WELL
- TEST PIT
- CONFIRMATORY SOIL SAMPLE
- DRINKING WATER WELL

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 2 SCS

STANDARD INFORMATION

MECP TABLE 2: FULL DEPTH GENERIC SCS IN A POTABLE GROUND WATER CONDITION FOR INDUSTRIAL/COMMERCIAL/COMMUNITY PROPERTY USE WITH FINE TO MEDIUM TEXTURED SOIL.

NOTES

1. ALL UNITS ARE IN µg/g UNLESS OTHERWISE SPECIFIED
2. DEPTHS ARE IN METRES BELOW GROUND SURFACE (mbgs)
3. RESULTS PRESENTED AS # / # REPRESENTS PARENT SAMPLE / FIELD DUPLICATE.

0 5 10 15 20
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

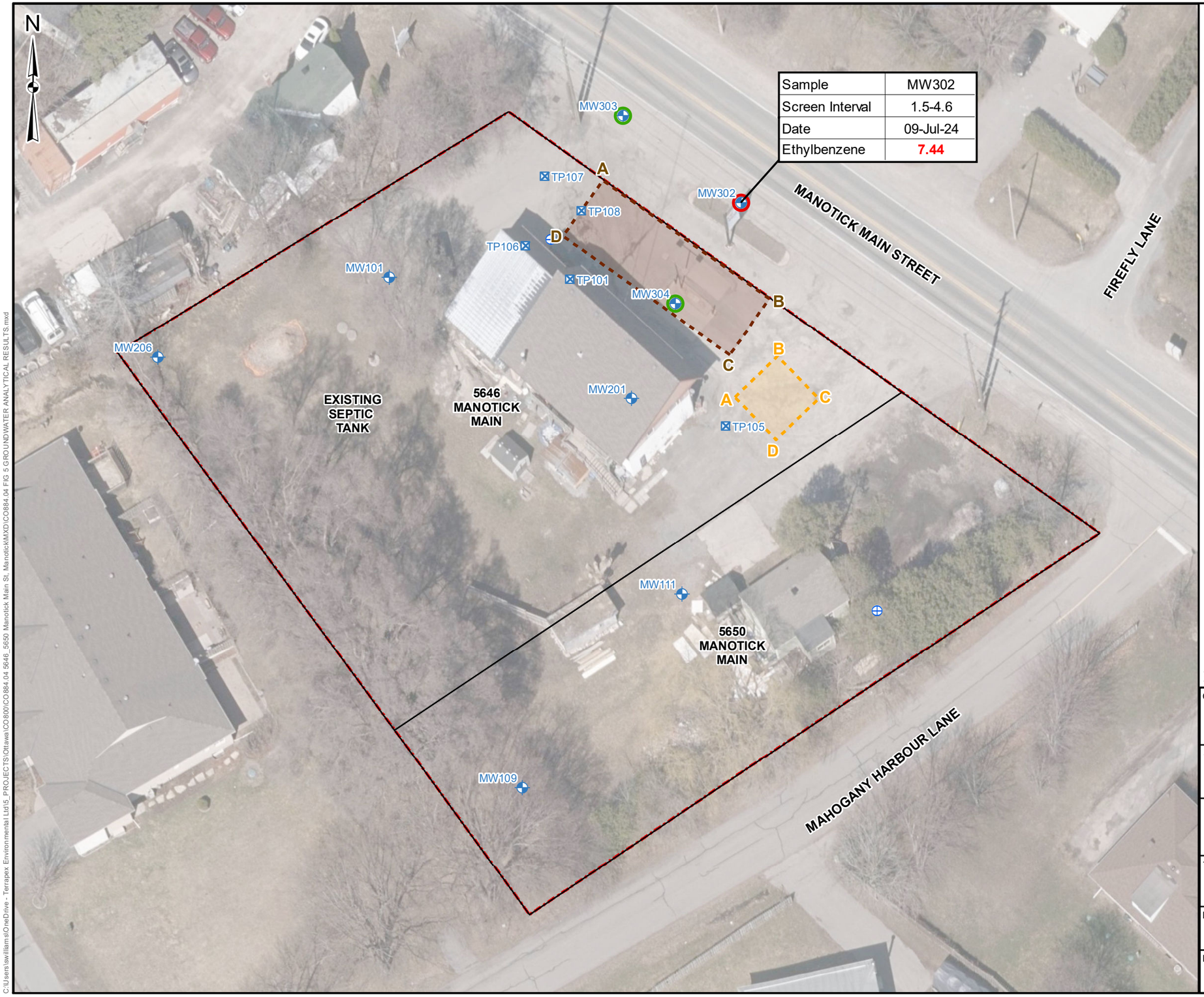
CLIENT:
HAWKINS PROPERTIES

SITE LOCATION:
5646 AND 5650 MANOTICK MAIN STREET, MANOTICK, ONTARIO

TERRAPEX

TITLE:
SOIL ANALYTICAL RESULTS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SF/SW	CO884.04	GS
REVISION:	DATE:	FIGURE:
00	JULY 2024	**4**



C:\Users\swilliams\OneDrive - Terrapex Environmental Ltd\5_PROJECTS\Ottawa\CO800\CO884.04 5646_5650 Manotick Main St, Manotick\MXD\CO884.04 FIG 5 GROUNDWATER ANALYTICAL RESULTS.mxd

LEGEND

- PROPERTY BOUNDARY
- PARCEL FABRIC
- FORMER NORTHERN EXCAVATION
- FORMER SOUTHERN EXCAVATION
- MONITORING WELL
- TEST PIT
- DRINKING WATER WELL

ANALYSIS INFORMATION

- LESS THAN OR EQUAL TO TABLE 2 SCS
- GREATER THAN TABLE 2 SCS

STANDARD INFORMATION

SAMPLE	
SCREEN INTERVAL	
DATE	
PARAMETER	RESULT
Ethylbenzene	

MECP TABLE 2 SCS
2.4

VALUE GREATER THAN SCS
VALUE LESS THAN OR EQUAL TO SCS

MECP TABLE 2: FULL DEPTH GENERIC SCS IN A POTABLE GROUND WATER CONDITION FOR ALL TYPES OF PROPERTY USE WITH FINE TO MEDIUM TEXTURED SOIL.

NOTES
1. ALL UNITS ARE IN µg/L UNLESS OTHERWISE SPECIFIED
2. SCREEN INTERVAL IS IN METRES BELOW GROUND SURFACE (mbgs)
3. RESULTS PRESENTED AS # / # REPRESENTS PARENT SAMPLE / FIELD DUPLICATE

0 5 10 15 20
Metres

DATA SOURCE: CITY OF OTTAWA
MAP PROJECTION: NAD 1983 UTM ZONE 18N

CLIENT:
HAWKINS PROPERTIES

SITE LOCATION:
5646 AND 5650 MANOTICK MAIN STREET, MANOTICK, ONTARIO

TERRAPEX

TITLE:
GROUNWATER ANALYTICAL RESULTS

DRAWN BY:	PROJECT NO.:	CHECKED BY:
JS/SF/SW	CO884.04	GS
REVISION:	**DATE:**	**FIGURE:**
00	JULY 2024	**5**

TABLES

TABLE 1: GROUNDWATER MONITORING DATA
5646 AND 5650 MANOTICK MAIN STREET, MANOTICK, ONTARIO

WELL ID	WELL CONSTRUCTION				WELL MONITORING					
	GROUND ELEVATION[1] (m)	T.O.P. ELEVATION[2] (m)	SCREEN LENGTH (m)	BOTTOM OF SCREEN[3] (m)	DATE	CV[4]	DEPTH TO WATER FROM T.O.P. (m)	DEPTH TO WATER FROM GROUND (m)	GROUNDWATER ELEVATION[5] (m)	LNAPL THICKNESS[6] (m)
MW101	-	-	3.05	-	09-Jul-24	<5 ppm	2.63	-	-	-
MW109	88.60	88.54	3.05	80.00	09-Jul-24	-	-	-	-	-
MW111	89.05	88.94	3.05	82.95	09-Jul-24	-	-	-	-	-
MW201	-	-	-	-	09-Jul-24	-	-	-	-	-
MW206	88.71	89.63	3.05	82.78	09-Jul-24	<5 ppm	1.82	0.90	87.81	None
MW302	88.88	88.83	3.05	84.30	09-Jul-24	<5 ppm	4.01	4.06	84.83	None
MW303	88.56	88.46	3.05	84.00	09-Jul-24	85 ppm	3.91	4.02	84.55	None
MW304	88.29	89.12	2.29	84.50	09-Jul-24	<5 ppm	1.60	1.36	87.52	None

NOTES

[1] Elevation of ground surface at well location, relative to site benchmark
[2] Elevation of highest point of well pipe ("top of pipe"), relative to site benchmark
[3] Elevation of bottom of well screened interval, relative to site benchmark
[4] Combustible vapour concentration in well headspace in parts per million by volume (ppm) or percent of lower explosive limit (%LEL)
[5] Static water level elevation, relatve to site benchmark
[6] Measured thickness of light, non-aqueous phase liquid, if any
- Not measured/not able to be surveyed

Note: Monitoring wells MW112 and MW204 were destroyed during the remedial excavation. Monitoring wells MW109, MW111 and MW201 could not be accessed during the monitoring event.

TABLE 2: SOIL ANALYTICAL RESULTS - BTEX AND PHCs
5646 AND 5650 MANOTICK MAIN STREET, MANOTICK, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 2 I/C/C fine/medium	BH301-3	BH301-6 Duplicate of MW301-3	RPD	MW302-3	MW303-5	Methanol Blank
Vapour Reading	see note	-	15 ppm	-	-	50 ppm	25 ppm	-
Sample Depth	m bg	-	1.5 - 2.3	1.5 - 2.3	-	1.5 - 2.3	3.1 - 3.8	
Sampling Date	dd-mmm-yy	-	5-Jul-24	5-Jul-24	-	5-Jul-24	5-Jul-24	5-Jul-24
Analysis Date (on or before)	dd-mmm-yy	-	10-Jun-24	10-Jun-24	-	10-Jun-24	10-Jun-24	10-Jun-24
Certificate of Analysis No.	-	-	24Z171028	24Z171028	-	24Z171028	24Z171028	24Z171028
BENZENE, TOLUENE, ETHYBENZENE, XYLENES (BTEX)								
Benzene	ug/g	0.40	<0.02	<0.02	-	<0.02	<0.02	<0.02
Toluene	ug/g	9.0	<0.05	<0.05	-	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	1.6	<0.05	<0.05	-	0.89	<0.05	<0.05
m-Xylene & p-Xylene	ug/g	30	<0.05	<0.05	-	1.28	<0.05	<0.05
o-Xylene	ug/g	30	<0.05	<0.05	-	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	30	<0.05	<0.05	-	1.28	<0.05	<0.05
PETROLEUM HYDROCARBONS (PHCs)								
Petroleum Hydrocarbons F1	ug/g	65	7	7	-	11	<5	<5
Petroleum Hydrocarbons F1-BTEX	ug/g	65	7	7	-	9	<5	<5
Petroleum Hydrocarbons F2	ug/g	250	<10	<10	-	<10	<10	-
Petroleum Hydrocarbons F3	ug/g	2,500	<50	<50	-	<50	<50	-
Petroleum Hydrocarbons F4	ug/g	6,600	<50	<50	-	<50	<50	-

Standards from *Soil, Ground Water* and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 15, 2011 and as amended)

Table 2: Full Depth Generic SCS in a Potable Ground Water Condition
Industrial/Commercial/Community Property-Use, Fine- to Medium-Textured Soil

-	Not analyzed
m bg	meters below grade
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
RPD	Relative percent difference
Value	Exceeds standard
Value	Detection limit exceeds standard
[1]	F1 fraction does not include BTEX

TABLE 3: GROUNDWATER ANALYTICAL RESULTS - BTEX AND PHCs
5646 AND 5650 MANOTICK MAIN STREET, MANOTICK, ONTARIO

SAMPLE NAME	UNITS	STANDARDS Table 2 fine/medium	MW302	MW303	MW3000 Duplicate of MW303	RPD	MW304	Trip Blank	Trip Spike
Vapour Reading	see note	-	<5 ppm	85 ppm	-	-	<5 ppm	-	% Recovery
Screen Interval	m bg	-	1.5 - 4.6	1.5 - 4.6	1.5 - 4.6	-	1.5 - 3.8		
Sampling Date	dd-mmm-yy	-	9-Jul-24	9-Jul-24	9-Jul-24	-	9-Jul-24	5-Jul-24	5-Jul-24
Analysis Date (on or before)	dd-mmm-yy	-	11-Jul-24	11-Jul-24	11-Jul-24	-	11-Jul-24	11-Jul-24	11-Jul-24
Certificate of Analysis No.	-	-	24Z172085	24Z172085	24Z172085	-	24Z172087	24Z172090	24Z172090
BENZENE, TOLUENE, ETHYBENZENE, XYLENES (BTEX)									
Benzene	ug/L	5.0	3.57	<0.20	<0.20	-	<0.20	<0.20	92.3
Toluene	ug/L	24	1.78	<0.20	<0.20	-	<0.20	<0.20	97.1
Ethylbenzene	ug/L	2.4	**7.44**	<0.10	<0.10	-	<0.10	<0.10	92.7
m-Xylene & p-Xylene	ug/L	300	1.4	<0.20	<0.20	-	<0.20	<0.20	109
o-Xylene	ug/L	300	0.19	<0.10	<0.10	-	<0.10	<0.10	97.3
Xylenes (Total)	ug/L	300	1.59	<0.20	<0.20	-	<0.20	<0.20	-
PETROLEUM HYDROCARBONS (PHCs)									
Petroleum Hydrocarbons F1	ug/L	750	54	<25	<25	-	<25	<25	-
Petroleum Hydrocarbons F1-BTEX	ug/L	750	40	<25	<25	-	<25	<25	-
Petroleum Hydrocarbons F2	ug/L	150	<100	<100	<100	-	<100	-	-
Petroleum Hydrocarbons F3	ug/L	500	<100	<100	<100	-	<100	-	-
Petroleum Hydrocarbons F4	ug/L	500	<100	<100	<100	-	<100	-	-

Standards from *Soil, Ground Water* and Sediment Standards for Use Under Part XV.1
of the Environmental Protection Act (April 15, 2011 and as amended)
Table 2: Full Depth Generic SCS in a Potable Ground Water Condition
All Types of Property-Use, Fine- to Medium-Textured Soil

-	Not analyzed
m bg	meters below grade
ppm	parts per million by volume
% LEL	percent of the lower explosive limit
NV	No Value; no standard established
NA	Not Applicable; no standard established because a standard is not required
RPD	Relative percent difference
Value	Exceeds standard
Value	Detection limit exceeds standard
[1]	F1 fraction does not include BTEX

APPENDIX I
PHOTOGRAPHS

TERRAPEX	PHOTOGRAPHIC LOG Page 1 of 1		
Client: 595831 Ontario Inc.	**Site Location**:	5646 and 5650 Manotick Main Street, Ottawa, ON	**Project No**: CO884.04

Photo No: 1 **Date:** July 2, 2024 **Viewing Direction:** North **Description:** View of the proposed borehole MW304 location (in white spray paint) in the former remedial excavation.	
Photo No: 2 **Date:** July 2, 2024 **Viewing Direction:** North **Description:** View of proposed location MW302. The proposed location of MW303 is visible in the background.	

APPENDIX II
BOREHOLE LOGS

CLIENT: HAWKINS PROPERTIES	PROJECT NO.: CO884.04	**RECORD OF: BH301**
ADDRESS: 5646 MANOTICK MAIN STREET	STATION:	
CITY/PROVINCE: MANOTICK, ONTARIO	NORTHING (m):	EASTING (m): / ELEV. (m)
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 20	WELL DIAMETER (cm): -	SCREEN SLOT #: - / SAND TYPE: #2 / SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON | GRAB

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		ASPHALT (150mm)	0										
		moist, brown SILTY SAND	0.5				1		0	<5			
		grey, moist SILTY CLAY	1				2		80	<5			
		moist, grey CLAYEY SILT	1.5										
		--- olive	2				3		70	15	BTEX PHC		DUP BH301-6
			2.5				4		80	<5			
			3										
			3.5				5		100	<5			
		END OF BOREHOLE REFUSAL AT 3.66m											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 5-JUL-24
INPUT BY: SW	MONITORING DATE: -
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: HAWKINS PROPERTIES	PROJECT NO.: CO884.04	**RECORD OF: MW302**
ADDRESS: 5646 MANOTICK MAIN STREET	STATION:	
CITY/PROVINCE: MANOTICK, ONTARIO	NORTHING (m): 5007650.56	EASTING (m): 446874.85 ELEV. (m) 88.88
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 20	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON | GRAB

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		ASPHALT (150mm)	0	88.5									
		moist, brown SILTY SAND	0.5				1		50	<5			
		moist to wet, black SILTY SAND trace clay	1	88			2		70	15			
			1.5	87.5									
		moist, grey SILTY CLAY	2	87			3		100	50	BTEX PHC		
		--- olive	2.5	86.5			4		100	25			
			3	86									
		moist, olive CLAYEY SILT	3.5	85.5			5		100	5			
			4	85									
			4.5	84.5			6		100	<5			
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 5-JUL-24
INPUT BY: SW	MONITORING DATE: 9-JUL-24
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: HAWKINS PROPERTIES	PROJECT NO.: CO884.04	**RECORD OF: MW303**
ADDRESS: 5646 MANOTICK MAIN STREET	STATION:	
CITY/PROVINCE: MANOTICK, ONTARIO	NORTHING (m): 5007659.54	EASTING (m): 446862.74 ELEV. (m) 88.56
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 20	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON | GRAB

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		ASPHALT (150mm)	0	88.5									
		moist, brown SILTY SAND trace gravel	0.5	88			1		50	<5			
		moist, grey to black SILTY CLAY	1	87.5			2		50	10			
		--- grey to olive	1.5	87			3		100	10			
			2	86.5									
		moist, olive CLAYEY SILT	2.5	86			4		100	5			
		--- brownish olive	3	85.5			5		60	25	BTEX PHC		
			3.5	85									
			4	84.5			6		100	5			
			4.5	84									
		END OF BOREHOLE											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 5-JUL-24
INPUT BY: SW	MONITORING DATE: 9-JUL-24
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: HAWKINS PROPERTIES	PROJECT NO.: CO884.04	**RECORD OF: MW304**
ADDRESS: 5646 MANOTICK MAIN STREET	STATION:	
CITY/PROVINCE: MANOTICK, ONTARIO	NORTHING (m): 5007637.00	EASTING (m): 446867.01 ELEV. (m) 88.29
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 20	WELL DIAMETER (cm): 5	SCREEN SLOT #: 10 SAND TYPE: #2 SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON | GRAB

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) ● 40 80 120 160 / N-VALUE (Blows/300mm) ▲ 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		FILL moist, grey silty clay	-1 -0.5 0	89 88.5 88									
		FILL moist, greyish brown silty sand trace gravel	0.5 1	87.5									NO SOIL SAMPLES SUBMITTED FROM BOREHOLE
		FILL moist to wet, greyish brown silty sand	1.5	87			1		30	<5			
		FILL wet, brown silty sand trace gravel	2	86.5 86			2		80	5			
		moist, grey and olive CLAYEY SILT	2.5 3 3.5	85.5 85			3		80	5			
		END OF BOREHOLE		84.5			4		80	5			

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 5-JUL-24
INPUT BY: SW	MONITORING DATE: 9-JUL-24
REVIEWED BY: GS	PAGE 1 OF 1

CLIENT: HAWKINS PROPERTIES	PROJECT NO.: CO884.04	**RECORD OF: BH305**
ADDRESS: 5646 MANOTICK MAIN STREET	STATION:	
CITY/PROVINCE: MANOTICK, ONTARIO	NORTHING (m): 5007667.50	EASTING (m): 446868.14 ELEV. (m) 88.76
CONTRACTOR: STRATA DRILLING GROUP	METHOD: DIRECT PUSH	
BOREHOLE DIAMETER (cm): 20	WELL DIAMETER (cm): -	SCREEN SLOT #: - SAND TYPE: - SEALANT TYPE: BENTONITE

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON | GRAB

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	SHEAR STRENGTH (kPa) 40 80 120 160 / N-VALUE (Blows/300mm) 20 40 60 80	WATER CONTENT (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	RECOVERY (%)	SV/TOV (ppm or %LEL)	LABORATORY TESTING	WELL INSTALLATION	REMARKS
		REFUSAL AT 0.76m	0 0.5	88.5 88									
		END OF BOREHOLE REFUSAL AT 0.76m											

TERRAPEX

LOGGED BY: SP	DRILLING DATE: 5-JUL-24
INPUT BY: SW	MONITORING DATE:
REVIEWED BY: GS	PAGE 1 OF 1

APPENDIX III
LABORATORY CERTIFICATES OF ANALYSIS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED
20 GURDWARA ROAD, UNIT 1
OTTAWA, ON K2E 8B3
613 745 6471
ATTENTION TO: Greg Sabourin
PROJECT: CO884.04
AGAT WORK ORDER: 24Z171028
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
DATE REPORTED: Jul 11, 2024
PAGES (INCLUDING COVER): 10
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information is available on request from AGAT Laboratories, in accordance with ISO/IEC 17025:2017, ISO/IEC 17025:2005 (Quebec), DR-12-PALA and/or NELAP Standards.*
- *This document is signed by an authorized signatory who meets the requirements of the MELCCFP, CALA, CCN and NELAP.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

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Certificate of Analysis

AGAT WORK ORDER: 24Z171028

PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street, Manotick, ON

SAMPLED BY:SP

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2024-07-05

DATE REPORTED: 2024-07-11

				SAMPLE DESCRIPTION:	BH301-3	BH301-6	MW302-3	MW303-5
				SAMPLE TYPE:	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2024-07-05 09:10	2024-07-05 09:12	2024-07-05 09:50	2024-07-05 11:33
Parameter	Unit	G / S	RDL		5988698	5988713	5988714	5988715
Benzene	µg/g	0.32	0.02		<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	6.4	0.05		<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	1.1	0.05		<0.05	<0.05	0.89	<0.05
m & p-Xylene	µg/g		0.05		<0.05	<0.05	1.28	<0.05
o-Xylene	µg/g		0.05		<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	µg/g	26	0.05		<0.05	<0.05	1.28	<0.05
F1 (C6 to C10)	µg/g	55	5		7	7	11	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5		7	7	9	<5
F2 (C10 to C16)	µg/g	230	10		<10	<10	<10	<10
F3 (C16 to C34)	µg/g	1700	50		<50	<50	<50	<50
F4 (C34 to C50)	µg/g	3300	50		<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	3300	50		NA	NA	NA	NA
Moisture Content	%		0.1		22.5	26.5	26.8	31.4
Surrogate	Unit	Acceptable Limits						
Toluene-d8	% Recovery	60-140			116	95	108	107
Terphenyl	%	60-140			93	97	94	88

Certified By:

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AGAT WORK ORDER: 24Z171028

PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street, Manotick, ON

SAMPLED BY:SP

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2024-07-05

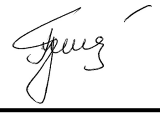
DATE REPORTED: 2024-07-11

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5988698-5988715 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 24Z171028

PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street, Manotick, ON

SAMPLED BY:SP

O. Reg. 153(511) - PHCs F1/BTEX (MeOH)

DATE RECEIVED: 2024-07-05

DATE REPORTED: 2024-07-11

				SAMPLE DESCRIPTION:	Methanol Blank
				SAMPLE TYPE:	MeOH
				DATE SAMPLED:	2024-07-05 11:40
Parameter	Unit	G / S	RDL		5988717
Benzene	µg/g	0.32	0.02		<0.02
Toluene	µg/g	6.4	0.05		<0.05
Ethylbenzene	µg/g	1.1	0.05		<0.05
m & p-Xylene	µg/g		0.05		<0.05
o-Xylene	µg/g		0.05		<0.05
Xylenes (Total)	µg/g	26	0.05		<0.05
F1 (C6 to C10)	µg/g	55	5		<5
F1 (C6 to C10) minus BTEX	µg/g	55	5		<5
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	60-140			94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Industrial/Commercial/Community Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5988717 A small amount of the methanol extract was diluted in water and the purge & trap GC/MS/FID analysis was performed.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Quality Assurance

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z171028

PROJECT: CO884.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street, Manotick, ON

SAMPLED BY:SP

Trace Organics Analysis

RPT Date: Jul 11, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	5986888		<0.02	<0.02	NA	< 0.02	101%	60%	140%	94%	60%	140%	86%	60%	140%
Toluene	5986888		<0.05	<0.05	NA	< 0.05	103%	60%	140%	97%	60%	140%	87%	60%	140%
Ethylbenzene	5986888		<0.05	<0.05	NA	< 0.05	98%	60%	140%	89%	60%	140%	83%	60%	140%
m & p-Xylene	5986888		<0.05	<0.05	NA	< 0.05	100%	60%	140%	90%	60%	140%	84%	60%	140%
o-Xylene	5986888		<0.05	<0.05	NA	< 0.05	103%	60%	140%	93%	60%	140%	87%	60%	140%
F1 (C6 to C10)	5986888		<5	<5	NA	< 5	90%	60%	140%	84%	60%	140%	94%	60%	140%
F2 (C10 to C16)	5986876		< 10	< 10	NA	< 10	107%	60%	140%	100%	60%	140%	106%	60%	140%
F3 (C16 to C34)	5986876		< 50	< 50	NA	< 50	110%	60%	140%	110%	60%	140%	115%	60%	140%
F4 (C34 to C50)	5986876		< 50	< 50	NA	< 50	92%	60%	140%	101%	60%	140%	105%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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AGAT WORK ORDER: 24Z171028
PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5988698	BH301-3	Soil	05-JUL-2024	05-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	10-JUL-2024	10-JUL-2024	VB
Toluene	10-JUL-2024	10-JUL-2024	VB
Ethylbenzene	10-JUL-2024	10-JUL-2024	VB
m & p-Xylene	10-JUL-2024	10-JUL-2024	VB
o-Xylene	10-JUL-2024	10-JUL-2024	VB
Xylenes (Total)	10-JUL-2024	10-JUL-2024	SYS
F1 (C6 to C10)	10-JUL-2024	10-JUL-2024	VB
F1 (C6 to C10) minus BTEX	10-JUL-2024	10-JUL-2024	SYS
Toluene-d8	10-JUL-2024	10-JUL-2024	VB
F2 (C10 to C16)	10-JUL-2024	10-JUL-2024	SS
F3 (C16 to C34)	10-JUL-2024	10-JUL-2024	SS
F4 (C34 to C50)	10-JUL-2024	10-JUL-2024	SS
Gravimetric Heavy Hydrocarbons			
Moisture Content	10-JUL-2024	10-JUL-2024	SD
Terphenyl	10-JUL-2024	10-JUL-2024	SS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5988713	BH301-6	Soil	05-JUL-2024	05-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	10-JUL-2024	10-JUL-2024	VB
Toluene	10-JUL-2024	10-JUL-2024	VB
Ethylbenzene	10-JUL-2024	10-JUL-2024	VB
m & p-Xylene	10-JUL-2024	10-JUL-2024	VB
o-Xylene	10-JUL-2024	10-JUL-2024	VB
Xylenes (Total)	10-JUL-2024	10-JUL-2024	SYS
F1 (C6 to C10)	10-JUL-2024	10-JUL-2024	VB
F1 (C6 to C10) minus BTEX	10-JUL-2024	10-JUL-2024	SYS
Toluene-d8	10-JUL-2024	10-JUL-2024	VB
F2 (C10 to C16)	10-JUL-2024	10-JUL-2024	SS
F3 (C16 to C34)	10-JUL-2024	10-JUL-2024	SS
F4 (C34 to C50)	10-JUL-2024	10-JUL-2024	SS
Gravimetric Heavy Hydrocarbons			
Moisture Content	10-JUL-2024	10-JUL-2024	SD
Terphenyl	10-JUL-2024	10-JUL-2024	SS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5988714	MW302-3	Soil	05-JUL-2024	05-JUL-2024

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AGAT WORK ORDER: 24Z171028
PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5988714	MW302-3	Soil	05-JUL-2024	05-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	10-JUL-2024	10-JUL-2024	VB
Toluene	10-JUL-2024	10-JUL-2024	VB
Ethylbenzene	10-JUL-2024	10-JUL-2024	VB
m & p-Xylene	10-JUL-2024	10-JUL-2024	VB
o-Xylene	10-JUL-2024	10-JUL-2024	VB
Xylenes (Total)	10-JUL-2024	10-JUL-2024	SYS
F1 (C6 to C10)	10-JUL-2024	10-JUL-2024	VB
F1 (C6 to C10) minus BTEX	10-JUL-2024	10-JUL-2024	SYS
Toluene-d8	10-JUL-2024	10-JUL-2024	VB
F2 (C10 to C16)	10-JUL-2024	10-JUL-2024	SS
F3 (C16 to C34)	10-JUL-2024	10-JUL-2024	SS
F4 (C34 to C50)	10-JUL-2024	10-JUL-2024	SS
Gravimetric Heavy Hydrocarbons			
Moisture Content	10-JUL-2024	10-JUL-2024	SD
Terphenyl	10-JUL-2024	10-JUL-2024	SS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5988715	MW303-5	Soil	05-JUL-2024	05-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	10-JUL-2024	10-JUL-2024	VB
Toluene	10-JUL-2024	10-JUL-2024	VB
Ethylbenzene	10-JUL-2024	10-JUL-2024	VB
m & p-Xylene	10-JUL-2024	10-JUL-2024	VB
o-Xylene	10-JUL-2024	10-JUL-2024	VB
Xylenes (Total)	10-JUL-2024	10-JUL-2024	SYS
F1 (C6 to C10)	10-JUL-2024	10-JUL-2024	VB
F1 (C6 to C10) minus BTEX	10-JUL-2024	10-JUL-2024	SYS
Toluene-d8	10-JUL-2024	10-JUL-2024	VB
F2 (C10 to C16)	10-JUL-2024	10-JUL-2024	SS
F3 (C16 to C34)	10-JUL-2024	10-JUL-2024	SS
F4 (C34 to C50)	10-JUL-2024	10-JUL-2024	SS
Gravimetric Heavy Hydrocarbons			
Moisture Content	10-JUL-2024	10-JUL-2024	SD
Terphenyl	10-JUL-2024	10-JUL-2024	SS

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5988717	Methanol Blank	MeOH	05-JUL-2024	05-JUL-2024

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Time Markers

AGAT WORK ORDER: 24Z171028
PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5988717	Methanol Blank	MeOH	05-JUL-2024	05-JUL-2024

O. Reg. 153(511) - PHCs F1/BTEX (MeOH)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	10-JUL-2024	10-JUL-2024	VB
Toluene	10-JUL-2024	10-JUL-2024	VB
Ethylbenzene	10-JUL-2024	10-JUL-2024	VB
m & p-Xylene	10-JUL-2024	10-JUL-2024	VB
o-Xylene	10-JUL-2024	10-JUL-2024	VB
Xylenes (Total)	10-JUL-2024	10-JUL-2024	SYS
F1 (C6 to C10)	10-JUL-2024	10-JUL-2024	VB
F1 (C6 to C10) minus BTEX	10-JUL-2024	10-JUL-2024	SYS
Toluene-d8	10-JUL-2024	10-JUL-2024	VB

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Method Summary

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z171028

PROJECT: CO884.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street, Manotick, ON

SAMPLED BY:SP

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Benzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P&T GC/FID

AGAT Laboratories

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RUSH!

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: TERRAPEX ENVIRONMENTAL LTD
Contact: Greg Sabourin
Address: 1-20 Gurdwara Road
Ottawa, ON, K2E 8B3
Phone: 613.558.7571 Fax:
Reports to be sent to:
1. Email: g.sabourin@terrapex.com
2. Email: cdd@terrapex.com

Project Information:

Project: CO884.04
Site Location: 5646 Manotick Main Street, Manotick, ON
Sampled By: SP
AGAT Quote #: Terrapex SO PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company:
Contact:
Address:
Email:

Regulatory Requirements:

(Please check all applicable boxes)

☑ Regulation 153/04
Table 2 *Indicate One*
☑ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Regulation 406
Table *Indicate One*

☐ Regulation 558

☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
Region

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
Indicate One

Is this submission for a **Record of Site Condition?** ☑ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Sample Matrix Legend

GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #: 24Z171028
Cooler Quantity: One - loose ice
Arrival Temperatures: 12.5 | 12.6 | 12.2 | 9.9 | 8.9 | 9.1
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: F/F

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	VOC	PAHs	PCBs	PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	BTEX F1						Potentially Hazardous or High Concentration (Y/N)
1. MW 301-3	5/7/24	9:10 AM PM	2	S					☑															
2. MW 301-6	"	9:12 AM PM	2	S					/															
3. MW 302-3	"	9:50 AM PM	2	S					/															
4. MW 303-5	"	11:33 AM PM	2	S					/															
5. Methanol Blank	"	11:40 AM PM	1	—														/						
6.		AM PM																						
7.		AM PM																						
8.		AM PM																						
9.		AM PM																						
10.		AM PM																						
11.		AM PM																						

Samples Relinquished By (Print Name and Sign): SREE	Date 5/7/24	Time 16:10	Samples Received By (Print Name and Sign):	Date 07/05/24	Time 16h40
Samples Relinquished By (Print Name and Sign): C to Pick up	Date 07/08/24	Time 15h00	Samples Received By (Print Name and Sign): Anmol B	Date 07/9/24	Time 8:35am
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1
N°:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED
20 GURDWARA ROAD, UNIT 1
OTTAWA, ON K2E 8B3
613 745 6471
ATTENTION TO: Greg Sabourin
PROJECT: CO844.04
AGAT WORK ORDER: 24Z172085
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Jul 11, 2024
PAGES (INCLUDING COVER): 9
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information is available on request from AGAT Laboratories, in accordance with ISO/IEC 17025:2017, ISO/IEC 17025:2005 (Quebec), DR-12-PALA and/or NELAP Standards.
- This document is signed by an authorized signatory who meets the requirements of the MELCCFP, CALA, CCN and NELAP.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.

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Certificate of Analysis

AGAT WORK ORDER: 24Z172085
PROJECT: CO844.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED
SAMPLING SITE:5646 Manotick Main Street

ATTENTION TO: Greg Sabourin
SAMPLED BY:Ali Harris

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2024-07-10

DATE REPORTED: 2024-07-11

				SAMPLE DESCRIPTION:	MW302	MW303	MW3000
				SAMPLE TYPE:	Water	Water	Water
				DATE SAMPLED:	2024-07-09 12:02	2024-07-09 13:32	2024-07-09 13:32
Parameter	Unit	G / S	RDL		5996744	5996745	5996746
Benzene	µg/L	5.0	0.20		3.57	<0.20	<0.20
Toluene	µg/L	24	0.20		1.78	<0.20	<0.20
Ethylbenzene	µg/L	2.4	0.10		7.44	<0.10	<0.10
m & p-Xylene	µg/L		0.20		1.40	<0.20	<0.20
o-Xylene	µg/L		0.10		0.19	<0.10	<0.10
Xylenes (Total)	µg/L	300	0.20		1.59	<0.20	<0.20
F1 (C6 to C10)	µg/L	750	25		54	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25		40	<25	<25
F2 (C10 to C16)	µg/L	150	100		<100	<100	<100
F3 (C16 to C34)	µg/L	500	100		<100	<100	<100
F4 (C34 to C50)	µg/L	500	100		<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500		NA	NA	NA
Sediment					3	3	3
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	60-140			99	72	71
Terphenyl	% Recovery	60-140			84	87	69

Certified By: N Popowkolof

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Certificate of Analysis

AGAT WORK ORDER: 24Z172085

PROJECT: CO844.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street

SAMPLED BY:Ali Harris

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2024-07-10

DATE REPORTED: 2024-07-11

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5996744-5996746 The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amounts

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: 

AGAT Laboratories

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Exceedance Summary

AGAT WORK ORDER: 24Z172085

PROJECT: CO844.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
5996744	MW302	ON T2 PGW CT	O. Reg. 153(511) - PHCs F1 - F4 (Water)	Ethylbenzene	µg/L	2.4	7.44

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Quality Assurance

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z172085

PROJECT: CO844.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street

SAMPLED BY:Ali Harris

Trace Organics Analysis

RPT Date: Jul 11, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Water)															
Benzene	5988115		<0.20	<0.20	NA	< 0.20	72%	60%	140%	75%	60%	140%	98%	60%	140%
Toluene	5988115		0.73	0.68	NA	< 0.20	88%	60%	140%	87%	60%	140%	97%	60%	140%
Ethylbenzene	5988115		<0.10	<0.10	NA	< 0.10	88%	60%	140%	82%	60%	140%	106%	60%	140%
m & p-Xylene	5988115		<0.20	<0.20	NA	< 0.20	91%	60%	140%	91%	60%	140%	86%	60%	140%
o-Xylene	5988115		<0.10	<0.10	NA	< 0.10	89%	60%	140%	93%	60%	140%	87%	60%	140%
F1 (C6 to C10)	5988115		<25	<25	NA	< 25	99%	60%	140%	88%	60%	140%	99%	60%	140%
F2 (C10 to C16)	5989774		<100	<100	NA	< 100	91%	60%	140%	67%	60%	140%	76%	60%	140%
F3 (C16 to C34)	5989774		<100	<100	NA	< 100	98%	60%	140%	75%	60%	140%	88%	60%	140%
F4 (C34 to C50)	5989774		<100	<100	NA	< 100	81%	60%	140%	107%	60%	140%	76%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

AGAT Laboratories

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http://www.agatlabs.com

Time Markers

AGAT WORK ORDER: 24Z172085
PROJECT: CO844.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5996744	MW302	Water	09-JUL-2024	10-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JUL-2024	11-JUL-2024	VB
Toluene	11-JUL-2024	11-JUL-2024	VB
Ethylbenzene	11-JUL-2024	11-JUL-2024	VB
m & p-Xylene	11-JUL-2024	11-JUL-2024	VB
o-Xylene	11-JUL-2024	11-JUL-2024	VB
Xylenes (Total)	11-JUL-2024	11-JUL-2024	SYS
F1 (C6 to C10)	11-JUL-2024	11-JUL-2024	VB
F1 (C6 to C10) minus BTEX	11-JUL-2024	11-JUL-2024	SYS
Toluene-d8	11-JUL-2024	11-JUL-2024	VB
F2 (C10 to C16)	11-JUL-2024	11-JUL-2024	CA
F3 (C16 to C34)	11-JUL-2024	11-JUL-2024	CA
F4 (C34 to C50)	11-JUL-2024	11-JUL-2024	CA
Gravimetric Heavy Hydrocarbons			
Terphenyl	11-JUL-2024	11-JUL-2024	CA
Sediment	11-JUL-2024	11-JUL-2024	NH

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5996745	MW303	Water	09-JUL-2024	10-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JUL-2024	11-JUL-2024	VB
Toluene	11-JUL-2024	11-JUL-2024	VB
Ethylbenzene	11-JUL-2024	11-JUL-2024	VB
m & p-Xylene	11-JUL-2024	11-JUL-2024	VB
o-Xylene	11-JUL-2024	11-JUL-2024	VB
Xylenes (Total)	11-JUL-2024	11-JUL-2024	SYS
F1 (C6 to C10)	11-JUL-2024	11-JUL-2024	VB
F1 (C6 to C10) minus BTEX	11-JUL-2024	11-JUL-2024	SYS
Toluene-d8	11-JUL-2024	11-JUL-2024	VB
F2 (C10 to C16)	11-JUL-2024	11-JUL-2024	CA
F3 (C16 to C34)	11-JUL-2024	11-JUL-2024	CA
F4 (C34 to C50)	11-JUL-2024	11-JUL-2024	CA
Gravimetric Heavy Hydrocarbons			
Terphenyl	11-JUL-2024	11-JUL-2024	CA
Sediment	11-JUL-2024	11-JUL-2024	NH

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5996746	MW3000	Water	09-JUL-2024	10-JUL-2024

AGAT Laboratories

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Time Markers

AGAT WORK ORDER: 24Z172085
PROJECT: CO844.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5996746	MW3000	Water	09-JUL-2024	10-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JUL-2024	11-JUL-2024	VB
Toluene	11-JUL-2024	11-JUL-2024	VB
Ethylbenzene	11-JUL-2024	11-JUL-2024	VB
m & p-Xylene	11-JUL-2024	11-JUL-2024	VB
o-Xylene	11-JUL-2024	11-JUL-2024	VB
Xylenes (Total)	11-JUL-2024	11-JUL-2024	SYS
F1 (C6 to C10)	11-JUL-2024	11-JUL-2024	VB
F1 (C6 to C10) minus BTEX	11-JUL-2024	11-JUL-2024	SYS
Toluene-d8	11-JUL-2024	11-JUL-2024	VB
F2 (C10 to C16)	11-JUL-2024	11-JUL-2024	CA
F3 (C16 to C34)	11-JUL-2024	11-JUL-2024	CA
F4 (C34 to C50)	11-JUL-2024	11-JUL-2024	CA
Gravimetric Heavy Hydrocarbons			
Terphenyl	11-JUL-2024	11-JUL-2024	CA
Sediment	11-JUL-2024	11-JUL-2024	NH

AGAT Laboratories

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Method Summary

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z172085

PROJECT: CO844.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street

SAMPLED BY:Ali Harris

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Toluene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
m & p-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
o-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Xylenes (Total)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F1 (C6 to C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL - 5010	MOE E3421	(P&T)GC/MS
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Sediment			N/A

AGAT Laboratories

Have feedback? Scan here for a quick survey!

PUSH!

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: TERRAPEX ENVIRONMENTAL LTD
Contact: Greg Sabourin
Address: 1-20 Gurdwara Road
Ottawa, ON, K2E 8B3
Phone: 613.558.7571 Fax:
Reports to be sent to:
1. Email: g.sabourin@terrapex.com
2. Email:

Project Information:

Project: CO884.04
Site Location: 5646 Manotick Main Street
Sampled By: Ali HArris
AGAT Quote #: Terrapex SO PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company: Terrapex Environmental Ltd
Contact:
Address:
Email:

Regulatory Requirements:

(Please check all applicable boxes)

☑ Regulation 153/04
Table 2 (Indicate One)
☑ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Regulation 406
Table (Indicate One)
☐ Regulation 558
☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm
(Region)
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Sample Matrix Legend

GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #: 2421720855
Cooler Quantity: One - ICE.
Arrival Temperatures: 16.6 16.5 16.1 / 8.6 13.9 14.7
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):
July 10, 2024 EOD
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	VOC	PAHs	PCBs	PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	Potentially Hazardous or High Concentration (Y/N)
1. MW302	July 9	12:02 PM	5	GW					☑									
2. MW303	July 9	13:32 PM	5	GW	Low recovery, Low Volume				✓									
3. MW3000	July 9	13:32 PM	5	Oil	Low recovery				✓									
4.		AM PM																
5.		AM PM																
6.		AM PM																
7.		AM PM																
8.		AM PM																
9.		AM PM																
10.		AM PM																
11.		AM PM																

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Greg Sabourin	July 10, 2024			07/10/24	13h15
C. TO DUO	07/10/24	15h00	Amel KS	11/7/24	8:30am
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time

Page _____ of _____

N°:

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: Mar 30, 2023

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED
20 GURDWARA ROAD, UNIT 1
OTTAWA, ON K2E 8B3
613 745 6471

ATTENTION TO: Greg Sabourin

PROJECT: CO884.04

AGAT WORK ORDER: 24Z172087

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Jul 11, 2024

PAGES (INCLUDING COVER): 7

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

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Certificate of Analysis

AGAT WORK ORDER: 24Z172087
PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED
SAMPLING SITE:5646 Manotick Main Street

ATTENTION TO: Greg Sabourin
SAMPLED BY:Ali Harris

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2024-07-10

DATE REPORTED: 2024-07-11

				SAMPLE DESCRIPTION:	MW304
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2024-07-09 10:50
Parameter	Unit	G / S	RDL		5996759
Benzene	µg/L	5.0	0.20		<0.20
Toluene	µg/L	24	0.20		<0.20
Ethylbenzene	µg/L	2.4	0.10		<0.10
m & p-Xylene	µg/L		0.20		<0.20
o-Xylene	µg/L		0.10		<0.10
Xylenes (Total)	µg/L	300	0.20		<0.20
F1 (C6 to C10)	µg/L	750	25		<25
F1 (C6 to C10) minus BTEX	µg/L	750	25		<25
F2 (C10 to C16)	µg/L	150	100		<100
F3 (C16 to C34)	µg/L	500	100		<100
F4 (C34 to C50)	µg/L	500	100		<100
Gravimetric Heavy Hydrocarbons	µg/L		500		NA
Sediment					3
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	60-140			118
Terphenyl	% Recovery	60-140			98

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24Z172087

PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street

SAMPLED BY:Ali Harris

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2024-07-10

DATE REPORTED: 2024-07-11

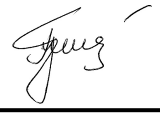
Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5996759 The C6-C10 fraction is calculated using Toluene response factor.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amounts

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Quality Assurance

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z172087

PROJECT: CO884.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street

SAMPLED BY:Ali Harris

Trace Organics Analysis

RPT Date: Jul 11, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Water)															
Benzene	5988115		<0.20	<0.20	NA	< 0.20	72%	60%	140%	75%	60%	140%	98%	60%	140%
Toluene	5988115		0.73	0.68	NA	< 0.20	88%	60%	140%	87%	60%	140%	97%	60%	140%
Ethylbenzene	5988115		<0.10	<0.10	NA	< 0.10	88%	60%	140%	82%	60%	140%	106%	60%	140%
m & p-Xylene	5988115		<0.20	<0.20	NA	< 0.20	91%	60%	140%	91%	60%	140%	86%	60%	140%
o-Xylene	5988115		<0.10	<0.10	NA	< 0.10	89%	60%	140%	93%	60%	140%	87%	60%	140%
F1 (C6 to C10)	5988115		<25	<25	NA	< 25	99%	60%	140%	88%	60%	140%	99%	60%	140%
F2 (C10 to C16)	5989774		<100	<100	NA	< 100	91%	60%	140%	67%	60%	140%	76%	60%	140%
F3 (C16 to C34)	5989774		<100	<100	NA	< 100	98%	60%	140%	75%	60%	140%	88%	60%	140%
F4 (C34 to C50)	5989774		<100	<100	NA	< 100	81%	60%	140%	107%	60%	140%	76%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

AGAT Laboratories

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Time Markers

AGAT WORK ORDER: 24Z172087
PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5996759	MW304	Water	09-JUL-2024	10-JUL-2024

O. Reg. 153(511) - PHCs F1 - F4 (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JUL-2024	11-JUL-2024	VB
Toluene	11-JUL-2024	11-JUL-2024	VB
Ethylbenzene	11-JUL-2024	11-JUL-2024	VB
m & p-Xylene	11-JUL-2024	11-JUL-2024	VB
o-Xylene	11-JUL-2024	11-JUL-2024	VB
Xylenes (Total)	11-JUL-2024	11-JUL-2024	SYS
F1 (C6 to C10)	11-JUL-2024	11-JUL-2024	VB
F1 (C6 to C10) minus BTEX	11-JUL-2024	11-JUL-2024	SYS
Toluene-d8	11-JUL-2024	11-JUL-2024	VB
F2 (C10 to C16)	11-JUL-2024	11-JUL-2024	CA
F3 (C16 to C34)	11-JUL-2024	11-JUL-2024	CA
F4 (C34 to C50)	11-JUL-2024	11-JUL-2024	CA
Gravimetric Heavy Hydrocarbons			
Terphenyl	11-JUL-2024	11-JUL-2024	CA
Sediment	11-JUL-2024	11-JUL-2024	NH

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Method Summary

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z172087

PROJECT: CO884.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:5646 Manotick Main Street

SAMPLED BY:Ali Harris

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Toluene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
m & p-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
o-Xylene	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Xylenes (Total)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F1 (C6 to C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL - 5010	MOE E3421	(P&T)GC/MS
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Sediment			N/A

AGAT Laboratories

Have feedback? Scan here for a quick survey!

RUSH!

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: TERRAPEX ENVIRONMENTAL LTD
Contact: Greg Sabourin
Address: 1-20 Gurdwara Road
Ottawa, ON, K2E 8B3
Phone: 613.558.7571 Fax:
Reports to be sent to:
1. Email: g.sabourin@terrapex.com
2. Email:

Project Information:

Project: CO884.04
Site Location: 5646 Manotick Main Street
Sampled By: Ali HArris
AGAT Quote #: Terrapex SO PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐
Company: Terrapex Environmental Ltd
Contact:
Address:
Email:

Regulatory Requirements:

(Please check all applicable boxes)

☑ Regulation 153/04
Table 2 *Indicate One*
☑ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☐ Regulation 406
Table *Indicate One*

☐ Regulation 558

☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
Region

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
Indicate One

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Sample Matrix Legend

GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #: 24Z172087

Cooler Quantity: One - ice.
Arrival Temperatures: 6.6 16.5 16.1 / 3.6 13.9 14.1
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):
July 11 2024 EOD

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs	VOC	PAHs	PCBs	PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	Potentially Hazardous or High Concentration (Y/N)
1. MW304	July 9	10:50 AM PM	5	GW					☑									
2.		AM PM																
3.		AM PM																
4.		AM PM																
5.		AM PM																
6.		AM PM																
7.		AM PM																
8.		AM PM																
9.		AM PM																
10.		AM PM																
11.		AM PM																

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Greg Sabourin	July 10 2024			07/10/24	13h15
	07/10/24	15h00		11/7/24	8:30am

Page ____ of ____

N°:

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http://www.agatlabs.com

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED
20 GURDWARA ROAD, UNIT 1
OTTAWA, ON K2E 8B3
613 745 6471
ATTENTION TO: Greg Sabourin
PROJECT: CO884.04
AGAT WORK ORDER: 24Z172090
TRACE ORGANICS REVIEWED BY: Radhika Chakraberty, Trace Organics Lab Manager
DATE REPORTED: Jul 11, 2024
PAGES (INCLUDING COVER): 7
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*Notes

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Certificate of Analysis

AGAT WORK ORDER: 24Z172090

PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BTEX (Water)

DATE RECEIVED: 2024-07-10

DATE REPORTED: 2024-07-11

			SAMPLE DESCRIPTION:	Trip Spike
			SAMPLE TYPE:	Water
			DATE SAMPLED:	2024-07-05
Parameter	Unit	G / S	RDL	5996755
Benzene	% Recovery			92.3
Toluene	% Recovery			97.1
Ethylbenzene	% Recovery			92.7
m & p-Xylene	% Recovery			109
o-Xylene	% Recovery			97.3
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	60-140		92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5996755 The C6-C10 fraction is calculated using Toluene response factor.
Total C6-C10 results are corrected for BTEX contributions.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
Extraction and holding times were met for this sample.
NA = Not Applicable

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: R. Chakraberty

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24Z172090
PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED
SAMPLING SITE:

ATTENTION TO: Greg Sabourin
SAMPLED BY:

O. Reg. 153(511) - PHCs F1/BTEX (Water)

DATE RECEIVED: 2024-07-10

DATE REPORTED: 2024-07-11

		SAMPLE DESCRIPTION:		Trip Blank
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2024-07-05
Parameter	Unit	G / S	RDL	5996754
Benzene	µg/L	5.0	0.20	<0.20
Toluene	µg/L	24	0.20	<0.20
Ethylbenzene	µg/L	2.4	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20
o-Xylene	µg/L		0.10	<0.10
Xylenes (Total)	µg/L	300	0.20	<0.20
F1 (C6 to C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	60-140		114

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5996754 The C6-C10 fraction is calculated using Toluene response factor.
Total C6-C10 results are corrected for BTEX contributions.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
Extraction and holding times were met for this sample.
NA = Not Applicable

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: R. Chakraberty

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z172090

PROJECT: CO884.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jul 11, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1/BTEX (Water)															
Benzene	5988115		<0.20	<0.20	NA	< 0.20	72%	60%	140%	75%	60%	140%	98%	60%	140%
Toluene	5988115		0.73	0.68	NA	< 0.20	88%	60%	140%	87%	60%	140%	97%	60%	140%
Ethylbenzene	5988115		<0.10	<0.10	NA	< 0.10	88%	60%	140%	82%	60%	140%	106%	60%	140%
m & p-Xylene	5988115		<0.20	<0.20	NA	< 0.20	91%	60%	140%	91%	60%	140%	86%	60%	140%
o-Xylene	5988115		<0.10	<0.10	NA	< 0.10	89%	60%	140%	93%	60%	140%	87%	60%	140%
F1 (C6 to C10)	5988115		<25	<25	NA	< 25	99%	60%	140%	88%	60%	140%	99%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: R. Chakraberty

AGAT Laboratories

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CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Time Markers

AGAT WORK ORDER: 24Z172090
PROJECT: CO884.04

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

ATTENTION TO: Greg Sabourin

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5996754	Trip Blank	Water	05-JUL-2024	10-JUL-2024

O. Reg. 153(511) - PHCs F1/BTEX (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JUL-2024	11-JUL-2024	VB
Toluene	11-JUL-2024	11-JUL-2024	VB
Ethylbenzene	11-JUL-2024	11-JUL-2024	VB
m & p-Xylene	11-JUL-2024	11-JUL-2024	VB
o-Xylene	11-JUL-2024	11-JUL-2024	VB
Xylenes (Total)	11-JUL-2024	11-JUL-2024	SYS
F1 (C6 to C10)	11-JUL-2024	11-JUL-2024	VB
F1 (C6 to C10) minus BTEX	11-JUL-2024	11-JUL-2024	SYS
Toluene-d8	11-JUL-2024	11-JUL-2024	VB

Sample ID	Sample Description	Sample Type	Date Sampled	Date Received
5996755	Trip Spike	Water	05-JUL-2024	10-JUL-2024

O. Reg. 153(511) - BTEX (Water)

Parameter	Date Prepared	Date Analyzed	Initials
Benzene	11-JUL-2024	11-JUL-2024	VB
Toluene	11-JUL-2024	11-JUL-2024	VB
Ethylbenzene	11-JUL-2024	11-JUL-2024	VB
m & p-Xylene	11-JUL-2024	11-JUL-2024	VB
o-Xylene	11-JUL-2024	11-JUL-2024	VB
Toluene-d8	11-JUL-2024	11-JUL-2024	VB

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Method Summary

CLIENT NAME: TERRAPEX ENVIRONMENTAL LIMITED

AGAT WORK ORDER: 24Z172090

PROJECT: CO884.04

ATTENTION TO: Greg Sabourin

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
Xylenes (Total)	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F1 (C6 to C10)	VOL-91-5010	modified from MOE E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE E3421	(P&T)GC/FID

AGAT Laboratories

Have feedback? Scan here for a quick survey!

PUSH!

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 24Z172090

Cooler Quantity: one - ice

Arrival Temperatures: 6.6 | 6.5 | 6.1
3.8 | 3.9 | 4.1

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: TERRAPEX ENVIRONMENTAL LTD
Contact: Greg Sabourin
Address: 1-20 Gurdwara Road
Ottawa, ON, K2E 8B3
Phone: 613.558.7571 Fax:
Reports to be sent to:
1. Email: g.sabourin@terrapex.com
2. Email:

Regulatory Requirements:

(Please check all applicable boxes)

- ☑ Regulation 153/04 — Table 2 (Indicate One); ☑ Ind/Com; ☐ Res/Park; ☐ Agriculture
- Soil Texture (Check One): ☐ Coarse ☐ Fine
- ☐ Regulation 406 — Table ____ (Indicate One)
- ☐ Regulation 558
- ☐ CCME
- ☐ Sewer Use: ☐ Sanitary ☐ Storm — ____ Region
- ☐ Prov. Water Quality Objectives (PWQO)
- ☐ Other ____ (Indicate One)

Is this submission for a Record of Site Condition? ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply): July 11, 2024

Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: CO884.04
Site Location: 5646 Manotick Main Street
Sampled By: Ali HArris
AGAT Quote #: Terrapex SO PO:

Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terrapex Environmental Ltd
Contact:
Address:
Email:

Sample Matrix Legend

GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	BTEX, F1-F4 PHCs	VOC	PAHs	PCBs	PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	BTEX PHC F1				Potentially Hazardous or High Concentration (Y/N)
1. Trip Blank	–	– AM/PM	3	GW					[crossed out]									✓				
2. Trip Spike	–	– AM/PM	3	GW														✓				
3.		AM/PM																				
4.		AM/PM																				
5.		AM/PM																				
6.		AM/PM																				
7.		AM/PM																				
8.		AM/PM																				
9.		AM/PM																				
10.		AM/PM																				
11.		AM/PM																				

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Greg Sabourin	July 10 2024		C. Griffiths	07/10/24	13h15
CC to Purol	07/10/24	15h00	Amil K	11/7/24	8:30am

Page ____ of ____

N°: