REPORT NO. 161-06382-00

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PART OF LOT 4, CONCESSION 3,
PARTS 1, 2, 3, 4 AND 5,
GLOUCESTER, ONTARIO
(3646, 3636 AND 3604 INNES ROAD,
Ottawa, Ontario)

JULY 27, 2016

WSP

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

PART OF LOT 4, CONCESSION 3, PARTS 1, 2, 3, 4 AND 5, GLOUCESTER, ONTARIO (3646, 3636 AND 3604 INNES ROAD, OTTAWA, ONTARIO)

The Builders Warehouse Inc.

Project no: 161-06382-00
Date: July 27 2016

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July 27, 2016

The Builder's Warehouse
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Subject: **Phase Two Environmental Site Assessment**
Lot 4, Concession 4, Parts 1, 2, 3, 4, 5 Gloucester, Ontario
(3646, 3636, 3604 Innes Road, Ottawa, Ontario)
161-06382-00

Dear Mr. Juneau,

We are pleased to forward our report documenting the results of the Phase Two Environmental Site Assessment (ESA) completed at the above-noted property.

The Phase Two ESA was completed in general accordance with *Ontario Regulation (O. Reg.) 153/04* to investigate areas of potential environmental concern (APECs) identified in the Phase One ESA and to document the environmental quality of soil and groundwater at the Site.

Based on the findings of the investigation, elevated concentrations of contaminants of concern were identified in soil and groundwater at the Site. The management of impacted soil and groundwater will be required, either through remediation or risk assessment, before filing a Record of Site Condition.

If you have any questions or require further information, please contact the undersigned.

Yours truly,

WSP Canada Inc.

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EXECUTIVE SUMMARY

WSP Canada Inc. (WSP) was retained by The Builders Warehouse Inc. to conduct a Phase Two Environmental Site Assessment (ESA) of the seven (7) parcels of land located at Part of Lot 4, Concession 4, Parts 1, 2, 3, 4, 5 Gloucester, Ontario (with municipal addresses of 3646, 3636, 3604 Innes Road, Ottawa, Ontario, and Part of Lot 4, Concession 3, Part 2, Plan 5R8348, Gloucester, Ontario) (the "Site"). The Site is a rectangular shaped vacant property with a square portion located on the northeast corner along Innes Road.

There are eight (8) structures present on the north side of the Site, which are currently vacant commercial buildings (a former BMR hardware store). Five of the eight structures are on the east side of 3636 Innes Road and include a main retail building closest to Innes Road with four storage sheds (one of which is three-sided) located south of the main building. The remaining structures are located on the west side of the north portion of the Site, and include two shelters not completely closed in used for material storage and seasonal cashiers and one closed building used to house a circular saw. The remaining south portion of the Site is vacant forested land.

The Phase Two ESA was completed to characterize subsurface conditions according to current industry standards, in general accordance with *Ontario Regulation (O. Reg.) 153/04*. We understand that the Site may be sold and the south, vacant portion of the Site may be developed for residential uses; the north portion of the Site would remain commercial use. Full compliance with *O. Reg. 153/04* would require the filing of a Record of Site Condition (RSC) if the north portion of the Site is used for residential purposes. This Phase Two ESA may be used to support the filing of an RSC, if required by municipal planning approvals or the land conveyance of undevelopable land.

Through an evaluation of the information gathered from a records review, interviews, and a site reconnaissance, WSP identified two Areas of Potential Environmental Concern (APECs) at the Site resulting from two on site PCAs, and one APEC that was attributed to one off-site PCA with the potential for contaminant migration though groundwater movement. The potential environmental concerns are related to a confirmed exceedance of petroleum hydrocarbon compound (PHC) F3 and F4 fractions (GENIVAR, September 2013), historical snow storage (GENIVAR, June 2013) and interview (WSP, 2016) and aerial photographs showing disturbed areas on the north side of the properties located at 3637, 3682 and 3698 Innes Road (70 metres east of the Site), with large commercial vehicle storage/maintenance present.

The Phase Two ESA consisted of the completion of 13 boreholes to a maximum depth of 7.01 m below ground surface (mbgs), installation of three groundwater monitoring wells, and the collection of soil and groundwater samples for chemical analysis. As the Phase One ESA identified multiple well records that may be located on the Site and within the Phase One Study Area (WSP, 2016), the applicable generic soil and groundwater standards selected for evaluating subsurface conditions are the Ontario Ministry of the Environment and Climate Change (MOECC) Table 2: Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for residential/institutional/parkland property uses.

Based on the results of the Phase Two ESA, elevated concentrations of metals and inorganics (MI), and/or PHCs (including BTEX) in soil exceeding the Table 2 SCS were identified within the fill and native soils, extending to at least 6.10 mbgs across the site. In summary:

- Review of the chemical analysis of metals and inorganics of the soil submitted within the fill and native materials across the Site identified exceedances of barium, cobalt, and vanadium. Due to the presence of these chemicals in the native silty clay or clayey silt (in both 2013 and 2016 drilling programs), they

may be representative of background in this area and not necessarily indicative of any off-Site or on-Site sources of contamination.

- The elevated concentrations of electrical conductivity (EC) and sodium adsorption ratio (SAR) identified in BH16-6 and BH16-8 may be attributed to the historic application of road salt on the Site. The salt impacts were identified in the shallow native soils.
- In 2013, elevated concentrations of PHC- F3 and F4 were identified within the fill material at TE-02 (located on the southeast corner of the 'overstock storage yard', from ground surface to 0.35 mbgs. The fill material was described as 55% brick, wood, burnt wood, plastic and 45% sandy silt with trace organic material. In 2016, BH16-4, BH/MW16-5 and BH16-6 were advanced around TE-02 to delineate the PHC F3 and F4 contamination. All samples collected from these boreholes met the applicable Table 2 SCS, indicating that impacts are limited to surface soil at TE-02.
- Elevated concentrations of ethylbenzene and PHC F2 were present in the groundwater of MW16-5 (located in the southeast corner of the 'overstock storage yard') when compared to the Table 2 SCS.

Based on the findings of the investigation, elevated concentrations of contaminants of concern were identified in soil and groundwater at the Site. Based on delineation efforts of the PHC F3 impacted soil located at FE-02, it has been determined that approximately 105 m^2 of impacted soil is in this location. Removal of the impacted soil may address groundwater impacts and it is recommended that groundwater be resampled after soil remediation.

The elevated metal concentrations in soil can be managed through a risk assessment process to identify risk management measures that will allow for this soil to remain onsite. This contaminant management (e.g., remediation and risk assessment) will be required prior to filing a Record of Site Condition.

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1 INTRODUCTION

1.1 BACKGROUND

WSP Canada Inc. (WSP) was retained by The Builders Warehouse Inc. to conduct a Phase Two Environmental Site Assessment (ESA) of the seven (7) parcels of land located at Part of Lot 4, Concession 4, Parts 1, 2, 3, 4, 5 Gloucester, Ontario (with municipal addresses of 3646, 3636, 3604 Innes Road, Ottawa, Ontario, and Part of Lot 4, Concession 3, Part 2, Plan 5R8348, Gloucester, Ontario) (the "Site"). The Site is a rectangular shaped vacant property with a square portion located on the northeast corner along Innes Road. The Site location is shown in Figure 1.

The Phase Two ESA was completed to characterize subsurface conditions according to current industry standards, in general accordance with *Ontario Regulation (O. Reg.) 153/04*. We understand that the Site may be sold and the south, vacant portion of the Site may be developed for residential uses; the north portion of the Site would remain commercial use. Full compliance with *O. Reg. 153/04* would require the filing of a Record of Site Condition (RSC) if the north portion of the Site is used for residential purposes. This Phase Two ESA may be used to support the filing of an RSC, if required by municipal planning approvals or the land conveyance of undevelopable land.

1.2 SITE DESCRIPTION AND PROPERTY OWNERSHIP

The Site is rectangular in shape with a small square portion extending east along Innes Road (on the northeast corner) with approximately 230 m of frontage along Innes Road, and extending 996 m south, covering approximately 23 hectares (57 acres) in plan area. There are eight (8) structures present on the north side of the Site, which are currently vacant commercial buildings (a former BMR hardware store). Five of the eight structures are on the east side of 3636 Innes Road and include a main retail building closest to Innes Road with four storage sheds (one of which is three-sided) located south of the main building. The remaining structures are located on the west side of the north portion of the Site, and include two shelters not completely closed in used for material storage and seasonal cashiers and one closed building used house a circular saw. The remaining south portion of the Site is vacant forested land. The site boundary is shown in Figure 2.

Mr. Martin Juneau of the Builders Warehouse authorized the Phase Two ESA on May 2, 2016. Mr. Juneau can be reached at mjuneau@bmr.co. Property information for the Site is provided in Table 1.

Table 1 Property Information

CRITERIA	PHASE TWO PROPERTY INFORMATION	
Current Property Owners	Part of Lot 4, Concession 3, Part 1 (3646 Innes Road) P.I.N. 0440400470	The Builder's Warehouse Holdings (2004) Inc.
	Part of Lot 4, Concession 3, Part 2, Plan 5R8348 P.I.N. 044040099	The Builder's Warehouse Inc.
	Part of Lot 4, Concession 3, Part 3, Plan 5R8348 (3636 Innes Road) P.I.N. 044040450	The Builder's Warehouse Inc.

CRITERIA	PHASE TWO PROPERTY INFORMATION	
	Part of Lot 4, Concession 3, Part 4 (3604 Innes Road) P.I.N. 044040444	The Builder's Warehouse Inc.
	Part of Lot 4, Concession 3, Part 5 (3636 Innes Road) P.I.N. 044040452	166441 Canada Inc. (in part) The Builder's Warehouse (in part)
	PIN 044040448	The Builder's Warehouse Inc.

1.3 CURRENT AND PROPOSED FUTURE USES

The Site consists of a vacant commercial development (former BMR hardware store) along Innes Road (3636 and 3604 Innes Road), which contained eight vacant buildings. The buildings were present on the north side of the Site, and were comprised of a main retail building on the northeast corner of 3636 Innes Road (building #5 in Figure 2), three sheds south of the main building along the east property line (buildings #1, #2, and #3) (Photo 3), a three sided shelter southwest of the three sheds (building #4), and a partially open self-serve retail shelter (building # 6), cashier shelter with four individual kiosks (building #7) and a shed which formerly contained a large circular saw (building #8) located on the west side of the Site, west of the main building and sheds. The surface of the north side of the property around building #5 was asphalt, with the remaining area around the buildings covered with gravel. Beyond the commercial operation, the ground surface is covered with natural vegetation ranging from grasses to trees. The topography of the Site has a gentle slope down towards the south.

The Builders Warehouse is considering the sale of the Site and recognizes that a residential development may be considered over the south portion of the site. The Phase Two ESA was completed to investigate areas of potential environmental concern (APECs) identified in the Phase One ESA and to document the environmental quality of soil and groundwater at the Site.

1.4 APPLICABLE SITE CONDITION STANDARD

WSP identified the applicable generic soil and groundwater standards based on the following information available for the Site:

- A surface water management ditch runs south along the west side of the Site and connects with the storm water management pond (SWMP) located on the south adjacent property. The ditch is not a watercourse, as defined in O.Reg. 153/04;
- Four well records located on the Site, and 24 well records for the Phase One Study Area. These were identified as public, domestic and public wells. Although the Study Area was rural, many of these wells are not likely still active and the City of Ottawa obtains its potable water from the Ottawa River;
- Surrounding properties are residential, commercial and vacant;
- The Site is not considered an "environmentally sensitive" site, as defined by O. Reg. 153/04;
- Field observations indicate that the soil at the Site is consistent with the definition of 'coarse textured' in O. Reg 153/04; and,
- Residential land use may be proposed for some or all of the Site.

→ Stratified soil conditions were not used for evaluating laboratory results.

Based on the above site specific details, soil and groundwater quality at the Site was compared to Table 2: Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition Site Condition Standards for residential/institutional/parkland property uses set out in the Ministry of the Environment and Climate Change (MOECC) publication *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (April 15, 2011), hereinafter referred to as the "MOECC Table 2 SCS".

2 BACKGROUND INFORMATION

2.1 PHYSICAL SETTING

The Site is situated within the Ottawa Valley Clay Plains physiographic region which consists of clay plains interrupted by ridges of rock or sand and characterized by deep grey silty clays mildly calcareous suggesting an origin from the more acidic rocks of the Canadian Shield (Chapman, et al., 2007). Bedrock within the Phase Two Study Area consists of the Middle Ordovician Rocks of Bobcaygeon Training Group of Simcoe and consists of limestone (Ontario Geological Survey, 2011).

The surface topography of the Site generally slopes southwest, with a 'lumber yard' identified on the north side of the Site. An unnamed water course is identified on the south adjacent property, just southwest of the Site. McKinnon Creek is identified as being approximately 600 m southeast of the Site. The Site is approximately 87 meters above sea level (masl). The principle direction of local groundwater flow in the overburden is inferred to the south/southwest with deeper aquifer groundwater flow expected to be to the north towards the Ottawa River (approximately 5 km away).

2.2 PAST INVESTIGATIONS

2.2.1 PHASE I ESA - 2013

A Phase I Environmental Site Assessment entitled '*Site 38 Orléans, 3636-3646, chemin Innes, Orléans (Ontario), Évaluation environnementale de site Phase I*' was completed by GENIVAR (now known as WSP) in June, 2013. The report outlined the following information:

- The Phase I was completed to the CSA Z768-01 Standards, and consisted of a records review, Site visit and interview.
- The Site consisted of seven (7) lots owned by the Builder's Warehouse Inc.:
  - 3646 Innes Road (PIN 044040470);
  - 3636 Innes Road (PIN 044040452, 044040451, 044040450 and 044040448)
  - 3604 Innes Road (PIN 044040444)
  - The north portion of Part of Lot 4, Concession 3, Part 2, Plan 5R8348, Gloucester, Ontario (PIN 044040099)
- A records review was conducted of the following:
  - ERIS Custom Report:
  - Ministry of the Environment (Now MOECC) FOI request
  - City of Ottawa FOI request
  - Aerial photographs
- The report identified the following environmental concerns:

- Evidence of impacted gravel fill underneath two diesel tanks of 4550 liters and a diesel tank of 2270 liters located outside the storage building No. 3.
- A barrel filled with potentially contaminated water on the northeast corner of the Site (3646 Innes Road). (Note: although not investigated through sampling, this concern is considered the least likely to have resulted in impacts compared to other areas that were investigated and confirmed to be acceptable.)
- Nine (9) barrels of waste oil observed on the southwest portion of the Site with visible evidence of petroleum hydrocarbon impacts.
- A dump was located on the southwest portion of the Site and southwest adjacent land.
- Snow storage historically occurred on the southern land.

→ A Phase II Environmental Site Assessment was recommended to assess soil and groundwater quality for PHC F1-F4 (including BTEX) and PAHs contaminants in the areas of concern.

→ It was recommended that observed wood debris, bricks, plastics, used tires located on the southwest corner of the Site be disposed of.

→ It was also recommended that the floor of Storage building No. 2 be cleaned as a result of some leaking from barrels of hydraulic oil that were stored in the vicinity.

2.2.2 PHASE II ESA - 2013

A Phase II Environmental Site Assessment entitled '*Site 38 Orléans, 3636-3646, chemin Innes, Orléans (Ontario), Évaluation environnementale de site Phase II*' was completed by GENIVAR (now known as WSP) in September, 2013. The report outlined the following information:

→ The Phase II Environmental Site Assessment was completed generally in accordance with O. Reg. 153/04 Records of Site Conditions-XV.1 Part of the Environmental Protection Act, however, the report format is not compliant with the regulation.

→ The program consisted of advancing five test pits and 10 boreholes across the Site, one of which was completed into a monitoring well (located east of building number 2).

→ Five test pits were completed in the following areas:

- TE-01 in the southeast sector of the study site, near a container of waste;
- TE-02 in the southeast section of the Site, where visible staining was observed underneath 9 barrels of waste oil;
- TE-03 in the southern section of the Site, east of observed railway sleepers;
- TE-04 southwest of the Site, north of the brick storage area;
- TE-05 along the south boundary of the Site, north of the brick storage area, on top of the pile of soil.

→ A total of 61 soil samples (including five duplicate samples) were collected from the test pits and boreholes advanced on the Site. Twenty-three samples (including two duplicate samples, with one analysed twice) were analyzed for petroleum hydrocarbons (PHC F1-F4 including BTEX) and polycyclic aromatic hydrocarbons (PAHs), and metals (Ag, As, B, Ba, Be, Cd, Cr, Co, Cu, Mo, Ni, Pb, Se, Sn, Tl, U, V and Zn) at EXOVA laboratory located in Ottawa, Ontario.

→ A total of four samples (including three quality control samples) for groundwater were collected from the monitoring well and submitted to EXOVA laboratory located in Ottawa, Ontario.

- The results of the soil and groundwater chemical analysis were compared with the *Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition*, Industrial/Commercial/Community (ICC) and RPI property use under the *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*.
- The sample collected from 0.00 to 0.35 metres below ground surface (m bgs) in TE-02 had concentrations of PHC F3 and F4 above the Table 7 ICC and RPI criteria.
- A soil sample analysed from F-05 located at depths between 1.32 to 1.83 m bgs and a sample collected from TE-02 between 1.00 to 1.45 m bgs had concentrations of vanadium above the Table 7 SCS ICC and barium above the Table 7 SCS RPI standards. These exceedences were determined to likely be representative of the natural soil conditions of that area.
- All other soil samples submitted for analysis met the Table 7 SCS ICC and RPI criteria.
- The groundwater sample submitted for the monitoring well met the Table 7 SCS ICC and RPI criteria.

  The volume of impacted soil located in the area of TE-02 was estimated to be approximately 105 m^3, assuming the depth of contamination extends to 0.35 m bgs, and a 300m^2 surface area.

2.2.3 PHASE ONE ESA - 2016

A Phase One ESA was completed by WSP on June 27, 2016, in accordance with the requirements of O. Reg. 153/04. The Phase One ESA included a thorough review of the Phase I and II ESAs completed by GENIVAR in 2013.

Two APECs at the Site were identified that were resulting from two on site PCAs, and one APEC that was attributed to one off-site PCA with the potential for contaminant migration though groundwater movement.

The APECs identified at the Site include:

APEC-1 (southeast corner of the 'overstock storage yard'): The former Phase I and II ESA confirmed an exceedance of PHC F3 and F4 to the Table 7 SCS. The extent of the soil contamination should be delineated in order to provide an accurate estimate of the quantity of soil to be removed from the Site.

APEC-2 (south of the overstock storage yard/soil pile and fence/gate running east west south of the 'overstock storage yard'): Historical snow storage identified in the former Phase I ESA and interview may impact the soil and groundwater quality at the Site.

APEC-3 (along the east property line): Review of the 1996 and 2014 aerial photographs revealed that 3637, 3682 and 3698 Innes Road (located 70 metres east of the Site) had disturbed areas on the north side of the properties, with large commercial vehicle storage/maintenance present.

A Phase Two ESA was recommended to investigate soil and groundwater quality in the vicinity of the APECs identified at the Site.

It is also recommended that the miscellaneous plastics, wood, drywall and construction debris located across the north section of the Site be removed for off-site disposal.

2.3 POTENTIAL CONTAMINANTS OF CONCERN

Contaminants of potential concern (COPCs) associated with past activities at the adjacent lands include: metals and inorganics (MI), polycyclic aromatic hydrocarbons (PAHs), and petroleum hydrocarbon compounds (PHCs).

3 SCOPE OF THE INVESTIGATION

3.1 OVERVIEW OF THE SITE INVESTIGATION

The scope of work for the Phase Two ESA is in general accordance with the objectives outlined in O. Reg. 153/04. The sampling methods complied with the requirements established by the MOECC in the Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, 1997 and technical updates provided to support regulatory amendments. The tasks completed during the Phase Two ESA included:

- Preparing a sample and analysis plan to document the rationale for the investigation, including the number of sampling points, sampling frequency, analytical parameters and media to be sampled.
- Co-ordinating with the drilling contractor Strata Group Ltd. (Strata), and private/public locators to obtain utility locates near the proposed borehole locations.
- Providing site supervision during drilling to obtain samples of soil that are representative of the worst case conditions observed during the investigation.
- Advancing 13 boreholes to a maximum depth of 7.01 m. Soil samples were recovered from each borehole. Three of the boreholes were advanced into bedrock and completed as groundwater monitoring wells constructed with 31 mm diameter polyvinyl chloride (PVC) pipe with 3 m long screens and locked monument casings;
- Collecting, screening, and classifying soil samples at each borehole for possible laboratory analysis. Soil sample headspace vapours were monitored using a combustible gas indicator (CGI) and/or photoionization detector (PID) to assess the presence of VOCs and combustible petroleum contaminants;
- Selecting soil samples for submission to AGAT Laboratories, an accredited laboratory for chemical analysis of MI, PHCs, and PAHs.
- Monitoring subsurface vapour concentrations and water levels in the monitoring wells. Groundwater samples were collected from the monitoring wells and submitted and analysed for MIs, PAHs and PHCs;
- Collecting quality assurance/quality control (QA/QC) duplicate samples at a frequency of 10% throughout the field program, in compliance with regulatory requirements; and
- Comparing the results of soil and groundwater analysis to MOECC Table 2 SCS.

3.2 MEDIA INVESTIGATED

A Sampling and Analysis Plan (SAP) was developed prior to the field sampling events which outlined the proposed sampling locations and related analysis for both the soil and groundwater investigation. The sample locations are shown on Figure 2 and the SAPs are provided in Appendix A.

3.3 PHASE ONE CONCEPTUAL SITE MODEL

The preliminary Phase One Conceptual Site Model (CSM) presented in the Phase One ESA report (WSP, 2016) includes figures and narrative that provided the logical basis for the interpretation of PCAs and APECs on the Site. The Phase One CSM is summarized as follows:

- A surface water management ditch runs south along the west side of the Site and connects with the storm water management pond located on the south adjacent property.;
- Four well records located for the Site, and 24 well records for the Phase One Study Area. These were identified as public, domestic and public wells;
- Surrounding properties are residential, commercial and vacant;
- Road names are shown on Figures 2 and 3;
- Eight (8) vacant buildings are located on the north side of the Site, which are currently vacant commercial buildings. The remaining south portion of the Site is vacant/forested land;
- The Site is at approximately 87 masl and slopes slightly down to the south. The surrounding lands generally slope gently down to the south.
- Surficial geology mapping, the Phase II ESA report completed by GENIVAR in 2013 and well records suggest the Site consists of silt and clay. Bedrock consists of Limestone of the Middle Ordovician Rocks typically starting at ground surface in some areas;
- Based on the findings of the records review, interviews, and the site reconnaissance completed as part of the Phase One ESA, two PCAs were identified that have led to APECs at the Site. These PCAs include:
  - Other (snow disposal); and,
  - 52-Storage, maintenance, fueling, and repair of equipment, vehicles, and materials used to maintain transportation systems.

Information considered for the development of this CSM was gathered from numerous sources (i.e., aerial photographs, city directories, environmental database searches, physical setting sources, historical reports, interviews and a site reconnaissance), which reduces the potential for not identifying a former property use or PCA.

3.4 DEVIATIONS FROM SAMPLING AND ANALYSIS PLAN

The SAPs prepared in advance of the Phase Two ESA sampling events are included in Appendix A. The intent of these plans was followed during the investigations to ensure that the subsurface was adequately assessed at the APECs on the Site.

3.5 IMPEDIMENTS

There were no impediments or denial of access that prevented the completion of the original defined scope of the investigation.

4 INVESTIGATION METHOD

4.1 GENERAL

The soil and groundwater quality at the Site was investigated at the locations shown on Figure 2 through the advancement of boreholes and installation of groundwater monitoring wells to characterize environmental conditions at the APECs identified in the Phase One ESA. Investigation methods followed Standard Operating Procedures prepared by WSP for the conduct of environmental investigations. The investigation methods are described in the following sections.

4.2 DRILLING

WSP retained Strata Drilling Group (Strata), a MOECC-licensed driller to conduct the drilling activities at the Site under the supervision of WSP field staff between June 1 and June 2, 2016. The boreholes were advanced to evaluate subsurface locations, collect soil samples, and install groundwater monitoring wells at the Site. The drilling included:

- Six exterior boreholes to delineate the extent of the contaminants identified at TE-02 and F-05, which were advanced during the 2013 Phase II ESA (GENIVAR, September 2013). Two of these boreholes were completed as groundwater monitoring wells (BH/MW16-3 and BH/MW16-5) with screen lengths of 3.05 m in order to determine if the contaminants of concern were present in the groundwater.
- Four exterior boreholes into the areas identified during the Phase I ESA (GENIVAR, June 2013) and Phase One ESA (WSP, 2016) as snow storage areas. One of these boreholes (BH/MW16-8) was completed as a groundwater monitoring well with a screen length of 3.05 m in order to assess the groundwater conditions.
- Three exterior boreholes along the ATV/snowmobile trail running east-west in the vacant southern portion of the Site in order to assess soil quality.
- Monitoring wells BH/MW16-3, BH/MW16-5 were screened at depths from 1.52-4.57 metres below ground surface (mbgs); and BH/MW16-8 was screened at depths from 1.06 to 4.11 mbgs.

Soil samples were recovered from each of the borehole locations, visually inspected and logged. The borehole logs are presented in Appendix B and locations of the boreholes are presented in **Figure 2**.

4.3 SOIL

4.3.1 SOIL SAMPLING

Soil samples were collected continuously using plastic dual tube liners inserted into an outer rod (also known as an outer extension). Prior to sampling at each depth interval (1.2 m), a new tube was inserted into the outer rod to prevent potential cross-contamination of the recovered samples.

The geological conditions at the Phase Two Property were observed in the soil samples and recorded to a field log by a WSP technologist. Soil samples were collected with dedicated nitrile gloves to prevent cross contamination between sampling locations and were split into two portions: one placed

into labeled polyethylene bags for field screening and another jarred into the appropriate laboratory-supplied sample containers and stored in a cooler with ice for possible laboratory analysis. For samples considered for PHC fraction F1 analysis, a core of soil was placed in a pre-weighed laboratory prepared vial containing a measured amount of methanol. Soil samples considered to be representative of "worst-case" environmental conditions were selected for chemical analysis based on visual and olfactory observations made in the field and vapour readings.

A total of 44 soil samples (including 4 field duplicate samples) were submitted to AGAT Laboratories in Ottawa, Ontario. A summary of the soil samples submitted for chemical analysis are summarized in Table 1a to Table 1f, Table 2c, Table 3c and Tables 4 to Table 8 (appended).

4.4 FIELD SCREENING MEASUREMENTS

Soil samples were screened using an RKI Eagle 2, which operates as both a PID and CGI, to measure total organic vapours and combustible vapours, respectively. Results of field screening and the soil samples submitted to the laboratory for chemical analysis are included on the borehole logs (Appendix B).

The PID was equipped with a 10.6 electron-volt (eV) lamp, which was calibrated with a known concentration of isobutylene. This instrument detects VOCs that emit below an ionization potential of 10.6 eV, which includes a wide range of chemicals such as solvents and fuels. The detection limit of the instrument ranges from 0 to 15,000 ppm and accuracy is +/- 10% for VOCs in the range of 0 and 2,000 ppm and +/- 20% of the reading above 2,000 ppm. The resolution of this instrument is 0.1 ppm for VOCs in the range of 0 and 1,000 ppm and 1 ppm for readings above 1,000 ppm. The PID provides an indication of organic contamination in soil but does not measure concentrations of individual contaminants.

The CGI detects combustible vapours such as those associated with fuels. This instrument measures total combustible gases, calibrated to a known concentration of hexane. The instrument was operated in the methane elimination mode. The detection limit of the instrument ranges from 0 to 11,000 ppm (i.e., 100 % LEL of hexane). The CGI has an accuracy of 25 ppm below 1,000 ppm and 5% of the lower explosive limit (LEL) between 1,000 ppm and 100% LEL. As with the PID, it provides an indication of contamination but not chemical specific concentrations.

The instruments were obtained from Pine Environmental Services Inc. (Pine) for this project. Pine calibrates their instruments on a regular basis, including prior to the use on this project, to ensure consistent results. Site calibration of the field instruments was completed each day according to the manufacturer's instructions.

4.5 GROUND WATER: MONITORING WELL INSTALLATION

Three monitoring wells were installed at the Site to investigate the APECs identified during the Phase One ESA. The monitoring wells were constructed as follows:

- Each monitoring well was constructed using 31 mm diameter well screens and PVC riser pipe;
- The screened interval in the monitoring wells was 3.05 m long with a No. 10 slot size screen.
- Sand pack, consisting of No. 2 silica sand, was placed around the well and piezometer screens and the sand pack was extended to a minimum of 0.3 m above the top of the screen;

- A bentonite seal was then placed around the PVC riser pipe up to within 0.3 m of the ground surface; and
- The monitoring wells were completed with locked monument casings which were cemented into place.

The monitoring wells were installed by a licensed well technician from Strata in accordance with O. Reg. 903, as amended. The monitoring well construction details are shown on the attached borehole logs included as Appendix B.

After the monitoring well installations, well development was carried out to remove particulates and fluids that may have collected in the sand pack during drilling activities. The monitoring wells were equipped with dedicated 5/8-inch LDPE Waterra tubing and an inertial pump (footvalve) to facilitate groundwater sampling. The wells were then developed by purging five well volumes or by purging the wells dry five times prior to sampling.

4.6 GROUNDWATER: FIELD MEASUREMENT OF WATER QUALITY PARAMETERS

Following development, groundwater monitoring wells were sampled. Periodic measurements of the groundwater were recorded for temperature, pH, oxidation/reduction potential (ORP), dissolved oxygen (DO) and electrical conductivity (EC).

Prior to sampling, the depth to groundwater and depth to the bottom of each well was measured with an oil/water interface probe.

4.7 GROUNDWATER SAMPLING

On June 7, 2016 following purging of the wells, groundwater samples were collected using waterra tubing and an inertial lift foot valve.

Groundwater samples were conveyed directly into laboratory-supplied sample containers. Samples submitted for metals analysis were filtered in the field with dedicated 0.45 micron (µm) filters. Groundwater samples were placed in a cooler with ice and a completed chain of custody form for submission to the laboratory.

4.8 SEDIMENT SAMPLING

A water body is not present at the Phase Two Property. Therefore, sediment was not sampled as part of the investigation.

4.9 ANALYTICAL TESTING

Soil and groundwater samples were analyzed by AGAT Laboratories in Mississauga, Ontario which is accredited by the Standards Council of Canada (SCC) and analytical work was conducted in accordance with the requirements of O. Reg. 153/04.

Soil and groundwater samples were submitted for analysis of MI, PAHs and PHCs. Laboratory Certificates of Analysis are included in Appendix C.

4.10 RESIDUE MANAGEMENT PROCEDURES

The management of residues such as soil cuttings, purge and development groundwater, and fluids from equipment cleaning was conducted as indicated in the following table.

Table 2 Summary of Residue Management Procedures

	RESIDUE	MANAGEMENT PROCEDURE
i.	Soil cuttings from drilling and excavations	Soil cuttings from the drilling were left on-site.
ii.	Water from well development and purging	Ground water from the development and purging of the monitoring wells was emptied onto the ground adjacent to the wells consistent with no visual evidence of PHC impacts, and the understanding that the vicinity of MW16-8 is to be excavated during remediation.
iii.	Fluids from equipment cleaning.	Equipment cleaning water was emptied onto the ground adjacent to the wells.

4.11 ELEVATION SURVEYING

The elevation of the groundwater monitoring wells (ground elevation and top of PVC pipe) was surveyed by WSP and referenced to the top of the formed concrete pier located on the southwest corner of the most southerly building (building #4) (88.00 masl).

4.12 QUALITY ASSURANCE AND QUALITY CONTROL MEASURES

Quality assurance and quality control of the soil and groundwater water samples was monitored and maintained in a number of ways:

- This field investigation was completed under WSP standard operating procedures (SOPs). Deviations from the SOPs are documented and referenced in this report;
- Samples were given unique identifications as they were collected, identifying the project number, date, and sample location and depth. The sample numbers were recorded in field notes for each location;
- Sample containers provided by the laboratory were used and laboratory requirements for sample size, container type, preservatives and filtering were followed.
- Non-disposable sampling equipment was cleaned using Alconox and distilled water following each use;
- A chain-of-custody form was filled out for the samples prior to submitting the samples to the laboratory. The chain-of-custody documented sample movement from collection to receipt at the laboratory and provided sample identification, requested analysis and conditions of samples upon arrival at the laboratory (e.g., temperature, container status, etc.);

- Soil samples were randomly selected by the WSP field staff for duplicate testing. The number of QC samples submitted is equivalent to a minimum of 10% of the total number of samples submitted.
- Field monitoring equipment was calibrated according to industry requirements prior to the site visit including onsite calibration; and
- Samples were randomly selected by the laboratory for Quality Assurance checks. Generally, one sample for every ten samples submitted is checked. For each parameter, there is an acceptable upper and lower limit for the measured concentration of the parameter. Measured concentrations of analysed samples must fall within the upper and lower acceptable limits in order for the sample to be valid. If a result exceeds the upper or lower acceptable limits, the sample must be re-analysed.

5 REVIEW AND EVALUATION

5.1 GEOLOGY

The soil conditions encountered at the Site during the 2013 and 2016 drilling activities are presented in the borehole logs (Appendix B). The environmental condition of the overburden was investigated.

Fill (sand and gravel) was encountered in the boreholes advanced into the 'overstock storage yard' (BH16-1 to BH16-6). The depth of this layer of granular fill ranged from 0.23 m to 0.43 m. In 2013, granular fill (sandy gravel/gravelly sand or sand and gravel) was encountered to depths as shallow as 0.20 mbgs to a maximum depth of 0.61 mbgs. A sandy silt fill with some organic materials was encountered in TE-01, TE-02 and TE-05 to depths of 0.35 mbgs to 3.60 mbgs. At many locations, the fill material included foreign constituents such as wood, ash, coal and brick fragments.

Top soil was encountered in BH16-7 to BH16-13 from surface to depths of 0.15 to 0.23 mbgs.

The fill and topsoil was underlain by native clayey silt or silty clay. The 2013 investigation that focused on the north part of the Site observed the native soil to extend from 0.5 mbgs to a maximum depth of 2.34 mbgs. At the south part of the site, the native soil was observed as shallow as 2.53 m and extended to the maximum depth of 6.25 mbgs where BH16-2, BH16-3, BH16-4, BH16-6, and BH16-11 to BH16-13 were terminated on assumed bedrock.

A gravel or sandy gravel was encountered in BH16-1, BH16-3 and BH16-7 to BH16-10 to depths between 2.89 to 7.01 m bgs, where the boreholes were terminated on assumed bedrock (with the exception of BH16-3). BH16-3 and BH16-5 were advanced into bedrock to a depth of 4.57 mbgs where they were terminated.

5.2 GROUNDWATER: ELEVATIONS AND FLOW DIRECTION

The rationale for the location of the monitoring wells was to provide an investigation of APECs in the groundwater that were identified in the former ESA reports completed by WSP. The monitoring wells consisted of 3.05 m screen lengths. The screens typically intersected the inferred water table, based on the soil sampling observations.

Groundwater monitoring was completed at the Site on June 7, 2016. No free product or sheen was observed or measured in any of the monitoring wells as part of this investigation; however a PHC odour was observed in BH/MW16-5, located in the area of TE-02. The measured water levels ranged from 1.45 to 2.27 mbgs in all of the monitoring wells. This corresponds to groundwater elevations across the Site ranging from 85.10 to 85.39 masl. Based on the groundwater elevations, the groundwater flow is determined to be southwest.

5.3 SOIL: FIELD SCREENING

CGI and PID readings are shown on the borehole logs in Appendix B and the results are summarized below. The purpose of the screening was to evaluate whether combustible compounds (e.g., PHCs) and VOCs may be present in the recovered samples.

The PID readings for the soil samples were between 0 ppm to 35 ppm, and the CGI readings were from 0 ppm to 15 ppm. The results of the CGI and PID readings were at levels not indicative of gross PHC or VOC contamination.

5.4 SOIL QUALITY

Laboratory analytical results from the 2013 drilling/excavating program were tabulated with the current sampling results and compared to the MOECC Table 2 SCS. The majority of boreholes encountered on June 1 and 2nd, 2016 had more than 2 metres of overburden; therefore, the Table 7 SCS that was formerly used in the 2013 report is considered to no longer apply.

Comparison of the laboratory analytical results for soil samples to the MOECC Table 2 SCS identified elevated concentrations of MI and PHCs at all 13 locations in the June 2016 drilling program, and two of 15 locations in the 2013 drilling/excavating program.

The locations, depths, and type of chemical analysis of soil samples are provided on the borehole/test pit logs in Appendix B as well as identified in the analytical soil results tables provided in Table 1a to Table 1f (MI), Table 2a to Table 2c (PHCs including BTEX), and Table 3c (PAHs). The certificate of analysis is presented in Appendix C.

5.4.1 METALS AND INORGANICS

The soil analytical results for metals and inorganics are summarized in **Table 1a** to **Table 1f**, and presented in **Figure 3**. A total of 12 soil samples (excluding QA/QC samples) were submitted for analysis of metals in 2013, and 31 (excluding QA/QC samples) were submitted for metals, (inorganics included in 13 of those samples) in June 2016. Initial submission of the samples in June 2016 did not request the full O. Reg. 153 metals and inorganics package for analysis; however, this analysis was requested in subsequent correspondence with AGAT Laboratories.

During the 2013 sampling program, three of the 12 samples, recovered from two locations had one or more metal parameters (barium, cobalt and vanadium) with concentrations exceeding the MOECC Table 2 SCS:

- One sample submitted from FE-05 (located in the 'Overstock Storage Yard') had concentrations of barium and cobalt exceeding the MOECC Table 2 SCS from 1.35 to 1.83 mbgs in the native silty clay soil.
- Two samples from TE-02 (including the duplicate sample) located on the southeast corner of the 'overstock storage yard' had concentrations of vanadium greater than the MOECC Table 2 SCS from 1.00 to 1.45 mbgs in the native clayey silt soil.

During the 2016 sampling program, 25 (including two duplicates) of the 31 samples submitted had one or more metal parameters with elevated concentrations exceeding the Table 2 SCS. These impacts were present at all sampling locations submitted for analysis across the Site. Parameters exceeding the Table 2 SCS included barium, cobalt, vanadium, conductivity and sodium adsorption ratio (SAR).

Details of the frequency and distribution of the soil contaminants exceeding the Table 2 SCS are provided below:

- Three samples submitted from three sampling locations across the Site (BH16-3, BH16-5 and BH16-8) had concentrations of barium exceeding the Table 2 SCS. These exceedances were present at depths ranging from 1.52 to 3.05 mbgs in the native silty clay soils.
- 12 samples submitted from nine sampling locations across the Site (BH16-1, BH16-3, BH16-5, BH16-7, BH16-8, BH16-10, BH16-11, BH16-12, BH16-13) had concentrations of cobalt exceeding the Table 2 SCS. These exceedances were present at depths ranging from 0.20 to 4.57 mbgs in the native clayey silt or silty clay.
- 24 samples submitted from 12 locations across the Site (BH16-1, BH16-2, BH16-3, BH16-4, BH16-5, BH16-7, BH16-8, BH16-9, BH16-10, BH16-11, BH16-12 and BH16-13) had concentrations of vanadium exceeding the Table 2 SCS. These exceedances were present at depths ranging from 0.20 to 6.10 mbgs in the native soils.
- One sample submitted from BH16-6 had a concentration of SAR exceeding the Table 2 SCS. This exceedance was present from 0.23 to 1.52 mbgs in the native clayey silt soil.
- One sample submitted from BH16-8 had a concentration of EC exceeding the Table 2 SCS. This exceedance was present from 0.20 to 1.52 mbgs in the native clayey silt soil.

5.4.2 PETROLEUM HYDROCARBONS (INCLUDING BTEX)

The soil analytical results for petroleum hydrocarbons (PHC) including benzene, toluene, ethylbenzene, and xylenes (BTEX) are summarized in **Table 2a** to **Table 2c**, and presented in **Figure 4**. In 2013, a total of 16 soil samples were submitted for analysis of PHC including BTEX, and 4 soil samples were submitted for analysis of PHC F2 to F4, only. In 2016, three samples (including a duplicate) were submitted for PHC F2 to F4 analysis, and four samples were submitted for PHC F1 to F4 (including BTEX).

One (TE-02) of the 20 samples from 2013 had elevated PHC F2 and F3 concentrations exceeding the Table 2 SCS. This impact was present on the southeast corner of the 'overstock storage yard' in the fill material (55% brick, wood, burnt wood, plastic and 45% sandy silt with trace organic material) located from ground surface to 0.35 mbgs. Sampling conducted in 2016 did not identify any further PHC impacts.

5.4.3 POLYCYCLIC AROMATIC HYDROCARBONS

A total of 20 soil samples were submitted for analysis of polycyclic aromatic hydrocarbons (PAH) in 2013, and three soil samples were submitted in 2016. The soil analytical results for PAHs are summarized in **Table 3a to Table 3c**. The concentrations of PAHs from soil recovered in the 2013 and 2016 drilling programs were less than the Table 2 SCS.

5.5 GROUNDWATER QUALITY

The analytical groundwater results tables are provided in **Table 4 (**MI), **Table 5** (PAHs) and **Table 6** (PHC including BTEX) and presented in **Figure 5**. The certificate of analysis is presented in Appendix C.

A total of 4 samples (including 1 duplicate) were submitted for MI, PHC including BTEX and PAH analysis during the 2016 sampling event. A trip blank was also analysed for PHC F1 and BTEX for

QA/QC purposes. Results from the 2013 groundwater sampling event were not tabulated with the 2016 results, as groundwater quality changes over time.

A comparison of the laboratory analytical results for the groundwater samples to the Table 2 SCS identified elevated concentrations of ethylbenzene and PHC F2 in MW16-5.

All MI and PAH parameters were less than the Table 2 SCS.

5.6 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

AGAT completed a variety of QA/QC measures on the soil and groundwater samples submitted as part of the sampling program. These QA/QC measures include: sample replicates, matrix spiked laboratory blanks, and process blanks.

Soil and groundwater samples were randomly selected by the WSP field staff for field duplicate testing. Duplicate samples were selected for every 10 samples submitted for analysis. WSP submitted the following field duplicate soil and groundwater samples:

Soil

- BH16-4-102 was a blind field duplicate of BH16-4-2 (2.28-3.05 m) and analyzed for MI;
- BH16-5-101B was a blind field duplicate of BH16-5-1B (0.23-1.52 m) and analyzed for MI;
- BH16-13-102A was a blind field duplicate of BH16-13-2A (1.52-2.75 m) and analyzed for MI; and,
- BH16-5-101B was a blind field duplicate of BH16-5-1B (0.23-1.52.66 m) and analyzed for PHC F2 to F4.

Groundwater

- MW16-108 was a blind field duplicate of MW16-8 and analyzed for MI, PAHs, and PHCs;

The results from the duplicate samples were used to assess the accuracy and reliability of the laboratory procedures and instruments.

A calculation of the relative percent difference (RPD) between the sample and its duplicate was performed and compared to the acceptance limits outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, April 2011. The RPD calculation is only applicable when both the sample and the field duplicate concentrations are greater than five times the reported detection limit.

The results are presented in Table 8 and Table 9 for soil and groundwater, respectively. An unacceptable level of agreement between the results of the parent and duplicate samples were identified as follows:

Soil

- Barium at BH16-4-102 exceeded the RPD criteria of 20%; and,

- Barium, Chromium (total), Cobalt, Copper, Nickel, Vanadium and Zinc at BH16-5-101B exceeded the RPD criteria of 20%.

The elevated RPDs may be attributed to the heterogeneity within the soil. These deviations from acceptable RPD criteria are not considered indicative of unacceptable data quality, however, where the concentrations of the contaminants (barium, chromium, cobalt, nickel and vanadium) approach Table 2 SCS, it should be considered that the values may be indicative of an exceedance of the standard.

Groundwater

The RPDs at MW16-106 were all below the 20% RPD criteria.

5.7 PHASE TWO CONCEPTUAL SITE MODEL

5.7.1 POTENTIALLY CONTAMINATING ACTIVITIES AND AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

The Phase One ESA (WSP, 2016) identified two APECs at the Site that were resulting from two on site PCAs, and one APEC that was attributed to one off-site PCA with the potential for contaminant migration though groundwater movement.

The APECs identified at the Site include:

APEC-1 (southeast corner of the 'overstock storage yard'): The former Phase I and II ESA confirmed an exceedance of PHC F3 and F4 to the Table 7 SCS. The extent of the soil contamination should be delineated in order to provide an accurate estimate of the quantity of soil to be removed from the Site.

APEC-2 (south of the overstock storage yard/soil pile and fence/gate running east west south of the 'overstock storage yard'): Historical snow storage identified in the former Phase I ESA and interview may impact the soil and groundwater quality at the Site.

APEC-3 (along the east property line): Review of the 1996 and 2014 aerial photographs revealed that 3637, 3682 and 3698 Innes Road (located 70 metres east of the Site) had disturbed areas on the north side of the properties, with large commercial vehicle storage/maintenance present.

5.7.2 SUBSURFACE UTILITIES

There are no known underground utilities at the Site affecting the local groundwater flow.

5.7.3 PHYSICAL SETTING

Geological conditions encountered on the Site during the 2013 and 2016 drilling programs consisted of granular fill materials on the north side of the Site including foreign constituents in some areas such as wood, charred remains and brick fragments. The fill extended from ground surface to 0.61 mbgs, and was generally underlain by native silty clay and/or clayey silt until the boreholes/test pits were terminated. The boreholes advanced on the south side of the Site had top soil from ground surface to

0.23 mbgs, which was then underlain by native clayey silt or silty clay to a maximum depth of 6.25 mbgs. Bedrock was encountered from 0.5 to 4.57 mbgs.

Bedrock in the area consists of Middle Ordovician Rocks of Bobcaygeon Training Group of Simcoe and consists of limestone (Ontario Geological Survey, 2011).

5.7.4 BUILDINGS AND STRUCTURES

There are eight (8) structures present on the north side of the Site, which are currently vacant commercial buildings (a former BMR hardware store). Five of the eight structures are on the east side of 3636 Innes Road and include a main retail building closest to Innes Road with four storage sheds (one of which is three-sided) located south of the main building. The remaining structures are located on the west side of the north portion of the Site, and include two shelters not completely closed in used for material storage and seasonal cashiers and one closed building used house a circular saw.

5.7.5 ENVIRONMENTALLY SENSITIVE AREAS

No conditions were found on the Site which would apply under Section 41 (Environmentally Sensitive Areas) and Section 43.1 (Shallow Soil Property or lands within 30 m of a water body) of O.Reg. 153/04.

5.7.6 IMPORTED SOIL

During the Phase Two ESA conducted by WSP, no soil was imported onto the Site. Mixed fill conditions were encountered during the drilling and test pitting programs in 2013 and 2016. The origin of the fill material is unknown; however, an interview with the former co-owner of the Site Mr. Richard Laplante during the Phase One EAS indicated that the fill was brought in from local pits/quarries (WSP, 2016).

5.7.7 SOIL AND GROUNDWATER QUALITY

The laboratory analytical results indicate that the maximum measured concentrations of the following soil parameters exceed the applicable Table 2 SCS:

Table 3 Soil Parameters that exceed the Table 2 SCS

Metals and Inorganics	Barium
	Cobalt
	Conductivity
	Sodium Adsorption Ratio
	Vanadium
PHCs	Petroleum Hydrocarbon F3 Fraction
	Petroleum Hydrocarbon F4 Fraction

The laboratory analytical results indicate that the maximum measured concentrations of the following groundwater parameters exceed the applicable Table 2 SCS:

Table 4 Groundwater Parameters that exceed the Table 2 SCS

PHCs	Ethylbenzene
	Petroleum Hydrocarbon F2 Fraction

The distribution of the impacted soil and groundwater identified on the Site is illustrated on Figure 3 to Figure 5.

6 CONCLUSIONS

6.1 SUMMARY OF PHASE TWO FINDINGS

Based on the results of the Phase Two ESA, elevated concentrations of MI, and/or PHCs (including BTEX) in soil exceeding the Table 2 SCS were identified within the fill and native soils, extending to at least 6.10 mbgs across the site. In summary:

- Review of the chemical analysis of metals and inorganics of the soil submitted within the fill and native materials across the Site identified exceedances of barium, cobalt, and vanadium. Due to the presence of these chemicals in the native silty clay or clayey silt (in both 2013 and 2016 drilling programs), they may be representative of background in this area and not necessarily indicative of any off-Site or on-Site sources of contamination.
- The elevated concentrations of electrical conductivity (EC) and sodium adsorption ratio (SAR) identified in BH16-6 and BH16-8 may be attributed to the historic application of road salt on the Site. The salt impacts were identified in the shallow native soils.
- In 2013, elevated concentrations of PHC- F3 and F4 were identified within the fill material at TE-02 (located on the southeast corner of the 'overstock storage yard', from ground surface to 0.35 mbgs. The fill material was described as 55% brick, wood, burnt wood, plastic and 45% sandy silt with trace organic material. In 2016, BH16-4, BH/MW16-5 and BH16-6 were advanced around TE-02 to delineate the PHC F3 and F4 contamination. All samples collected from these boreholes met the applicable Table 2 SCS, indicating that impacts are limited to surface soil at TE-02.
- Elevated concentrations of ethylbenzene and PHC F2 were present in the groundwater of MW16-5 (located in the southeast corner of the 'overstock storage yard') when compared to the Table 2 SCS.

Based on the findings of the investigation, elevated concentrations of contaminants of concern were identified in soil and groundwater at the Site. Based on delineation efforts of the PHC F3 impacted soil located at FE-02, it has been determined that approximately 105 m^2 of impacted soil is in this location. Removal of the impacted soil may address groundwater impacts and it is recommended that groundwater be resampled after soil remediation.

The elevated metal concentrations in soil can be managed through a risk assessment process to identify risk management measures that will allow for this soil to remain onsite. This contaminant management (e.g., remediation and risk assessment) will be required prior to filing a Record of Site Condition.

7 QUALIFICATIONS OF THE ASSESSORS

The Phase Two ESA was completed by **Ms. Kathryn Maton, C.E.T.**, Environmental Technologist. Kathryn has over 6 years of experience in environmental site assessments. She has conducted Phase One and Two Environmental Site Assessments for industrial, commercial and residential properties. In completing this work she has contributed to identifying, defining and quantifying potential environmental liabilities to satisfy due diligence and regulatory obligations.

The Phase Two ESA was managed and reviewed by **Ms. Carolyn Adams, M.A.Sc., P.Eng.**,Senior Project Manager at WSP. Carolyn is a Chemical Engineer with a Master of Applied Science degree in Environmental Engineering. She has 26 years of experience in completing environmental investigations and has the knowledge and experience to identify potential sources of contamination and the fate and behaviour of contaminants in the environment. Carolyn is a Qualified Person (QP_{ESA}) under the Ministry of the Environment O. Reg. 153/04.

7.1 SIGNATURES

WSP carried out this Phase Two ESA and confirms the findings and conclusions presented in this report.

Report prepared by
WSP Canada Inc.

Kathryn Maton, C.E.T.
Environmental Technologist

Reviewed by

Carolyn Adams, M.A.Sc., P.Eng., $QP_{ESA|RA}$
Manager, Environmental Management

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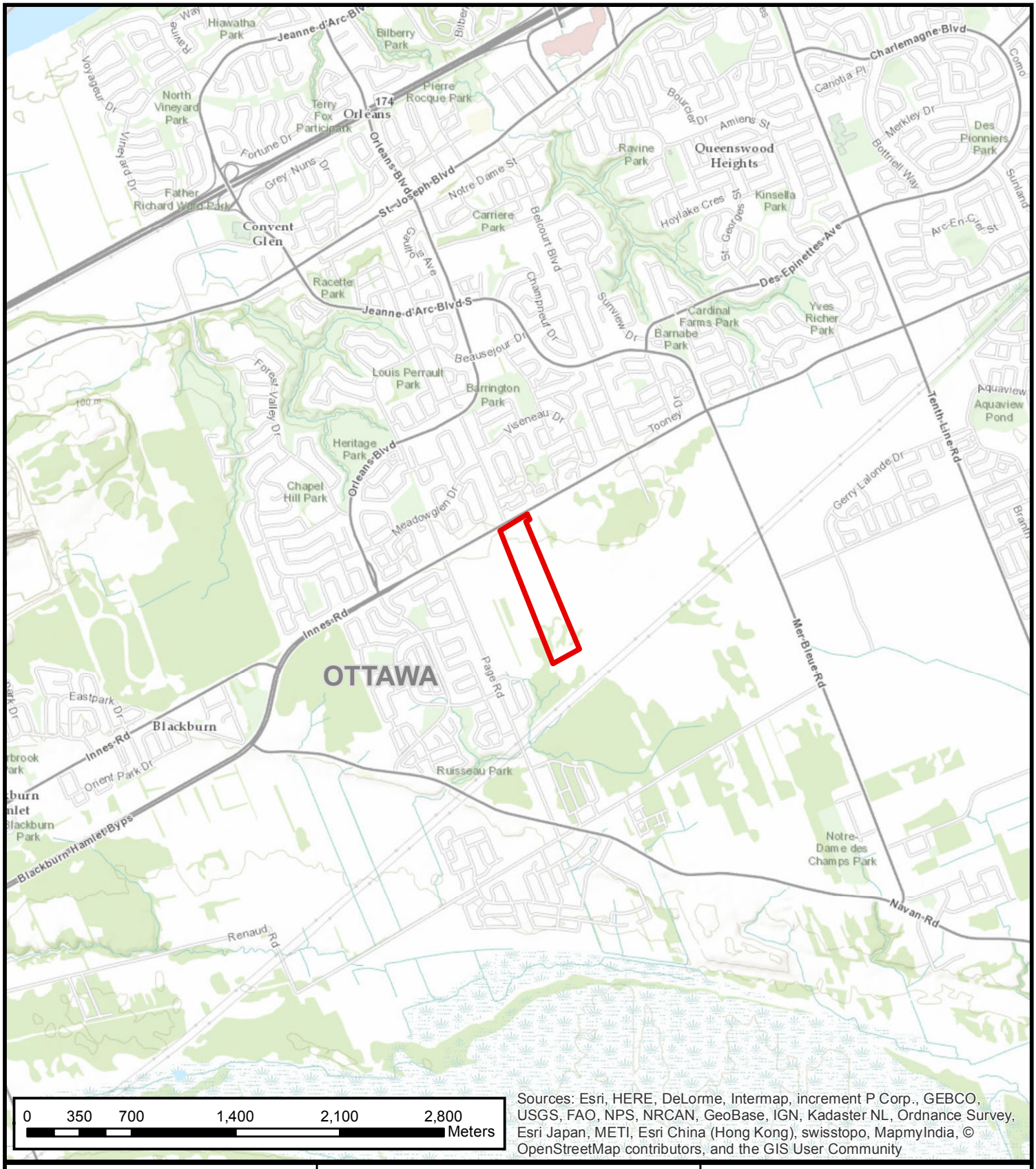
FIGURES



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

WSP

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PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF LOT 4, CONCESSION 3, PARTS 1, 2, 3, 4 AND 5
GLOUCESTER, ONTARIO
(3646, 3636 AND 3604 INNES ROAD, OTTAWA, ONTARIO)
SITE LOCATION PLAN

Scale	1:35,000
Date	JUNE 2016
Drawn By	JS
Job No.	161-06382-00

LEGEND

APPROXIMATE PROPERTY BOUNDARY

Drawing No.

FIG. 1

Path: J:\1442 Projects by Job Number\2016\3316428-001 3636 Innes Road Ottawa\MappingMXD\PHASE II ESA\Fig1_161-06382-00_LocationPlan.mxd

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CANADA, J8T 7W3
WWW.WSPGROUP.COM

CLIENT:

THE BUILDERS WAREHOUSE LTD

PROJECT:

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF LOT 4, CONCESSION 3 PARTS 1,2,3,4 AND 5
GLOUCESTER, ONTARIO
(3646, 3636 AND 3604 INNES ROAD, OTTAWA, ONTARIO)

LEGEND

- Borehole (WSP, 2016)
- Monitoring Well (WSP, 2016)
- Borehole (WSP, 2013)
- Monitoring Well (WSP, 2013)
- Test Pit (WSP, 2013)
- Property Boundary

PROJECT NUMBER: 161-06382-00	DATE: JUNE 2016
DRAWN BY: JS	
CHECKED BY: KM	
SCALE: 1:4,000	

50 25 0 50 100 150 Meters

NAD1983 ZONE 18

TITLE

SITE PLAN AND STUDY AREA

FIGURE 2

Path: J:\1442 Projects by Job Number\2016\3316428-001 3636 Innes Road Ottawa\Mapping\MXD\PHASE II ESA\Fig2_161_06382-00_Site Plan.mxd

Acronym	Parameter	Standard
Metals and Inorganics		
Ba	Barium	390
Co	Cobalt	22
V	Vanadium	86
EC	Electrical Conductivity (mS/cm)	0.7
SAR	Sodium Absorption Ratio	5

Standard: MOECC Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential, Parkland, Institutional (RPI) Property Use with coarse textured soils.

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CLIENT:

THE BUILDERS WAREHOUSE LTD

PROJECT:

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF LOT 4, CONCESSION 3 PARTS 1,2,3,4 AND 5
GLOUCESTER, ONTARIO
(3646, 3636 AND 3604 INNES ROAD, OTTAWA, ONTARIO)

LEGEND

- Borehole (WSP, 2016)
- Monitoring Well (WSP, 2016)
- Borehole (WSP, 2013)
- Monitoring Well (WSP, 2013)
- Test Pit (WSP, 2013)
- Property Boundary

Ba | 398 | 1.52-2.28
Parameter | Concentration (ug/g) | Depth (m)

PROJECT NUMBER:	161-06382-00	DATE:	JUNE 2016
DRAWN BY:	JS		
CHECKED BY:	KM		
SCALE:	1:4,000		

50 25 0 50 100 150 Meters

NAD1983 ZONE 18

TITLE

CONTAMINANT DISTRIBUTION OF METALS AND INORGANICS IN SOIL

FIGURE 3

Path: J:\1442 Projects by Job Number\2016\3316428-001 3636 Innes Road Ottawa\Mapping\MXD\PHASE II ESA\Fig3_161_06382-00_Metal Exceedances_Soil.mxd

F3	31100	0-0.35
F4	10400	0-0.35

Acronym	Parameter	Standard
PHCs		
F3	Petroleum Hydrocarbons F3	300
F4	Petroleum Hydrocarbons F4	2800

Standard: MOECC Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential, Parkland, Institutional (RPI) Property Use with coarse textured soils.

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CANADA, J8T 7W3
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CLIENT:

THE BUILDERS WAREHOUSE LTD

PROJECT:

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF LOT 4, CONCESSION 3 PARTS 1,2,3,4 AND 5
GLOUCESTER, ONTARIO
(3646, 3636 AND 3604 INNES ROAD, OTTAWA, ONTARIO)

LEGEND

- Borehole (WSP, 2016)
- Monitoring Well (WSP, 2016)
- Borehole (WSP, 2013)
- Monitoring Well (WSP, 2013)
- Test Pit (WSP, 2013)
- Property Boundary

F3	31100	0-0.35
Parameter	Concentration (ug/g)	Depth (m)

PROJECT NUMBER: 161-06382-00	DATE: JUNE 2016
DRAWN BY: JS	
CHECKED BY: KM	
SCALE: 1:4,000	

50 25 0 50 100 150 Meters

NAD1983 ZONE 18

TITLE

CONTAMINANT DISTRIBUTION OF PHCS IN SOIL

FIGURE 4

Path: J:\1442 Projects by Job Number\2016\3316428-001 3636 Innes Road Ottawa\Mapping\MXD\PHASE II ESA\Fig4_161_06382-00_PHC Exceedances_Soil.mxd

Acronym	Parameter	Standard
PHCs + BTEX		
EB	Ethylbenzene	2.4
F2	F2 Hydrocarbon Fraction	150

Standard: MOECC Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential, Parkland, Institutional (RPI) Property Use.

WSP

500 BOULEVARD GRÉBER 3E ÉTAGE
GATINEAU, QUÉBEC,
CANADA, J8T 7W3
WWW.WSPGROUP.COM

CLIENT:

THE BUILDERS WAREHOUSE LTD

PROJECT:

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF LOT 4, CONCESSION 3 PARTS 1,2,3,4 AND 5
GLOUCESTER, ONTARIO
(3646, 3636 AND 3604 INNES ROAD, OTTAWA, ONTARIO)

LEGEND

- Monitoring Well (WSP, 2016)
- Monitoring Well (WSP, 2013)
- Property Boundary

F2 | 530
Parameter | Concentration (ug/L)

PROJECT NUMBER: 161-06382-00	DATE: JUNE 2016
DRAWN BY: JS	
CHECKED BY: KM	
SCALE: 1:4,000	

50 25 0 50 100 150 Meters

NAD1983 ZONE 18

TITLE

CONTAMINANT DISTRIBUTION OF PHCS IN GROUNDWATER

FIGURE 5

Path: J:\1442 Projects by Job Number\2016\33164428-001 3636 Innes Road Ottawa\Mapping\MXD\PHASE II ESA\Fig5_161_06382-00_PHC Exceedances_GW.mxd

TABLES

Table 1a: Metals and Inorganics Soil Analytical Results (2013)

Parameter	Units	MOECC 2011[1] Table 2[2]	F-01	F-02	F-03	F-03	F-03	F-05	PO-01	TE-01
Drilling Date			**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**2-Jul-2013**
Depth (m)	m		0.40-0.50	0.45-0.55	0.30-0.50	0.50-0.91	1.01-1.11	1.32-1.83	0.61-0.86	0.30-0.60
pH	N/A	NC	na	na	na	na	na	na	na	na
Antimony	µg/g	7.5	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	µg/g	18	3	2	3	4	2	1	2	3
Barium	µg/g	390	99	65	177	132	61	421	111	153
Beryllium	µg/g	4	<1	<1	<1	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	µg/g	1.5	na	na	na	na	na	na	na	na
Boron (Total)	µg/g	120	20	20	20	20	20	40	20	10
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	µg/g	160	41	36	22	33	18	112	60	59
Chromium (VI)	µg/g	8	na	na	na	na	na	na	na	na
Cobalt	µg/g	22	9	8	4	7	7	27	11	10
Conductivity	mS/cm	0.7	na	na	na	na	na	na	na	na
Copper	µg/g	140	15	11	5	11	15	61	19	21
Cyanide, free	µg/g	0.051	na	na	na	na	na	na	na	na
Lead	µg/g	120	na	na	na	na	na	na	na	na
Mercury	µg/g	0.27	na	na	na	na	na	na	na	na
Molybdenum	µg/g	6.9	<1	<1	1	<1	<1	<1	<1	<1
Nickel	µg/g	100	23	19	16	21	16	70	29	33
Selenium	µg/g	2.4	na	na	na	na	na	na	na	na
Silver	µg/g	20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium Adsorption Ratio	N/A	5	na	na	na	na	na	na	na	na
Thallium	µg/g	1	<1	<1	<1	<1	<1	<1	<1	<1
Uranium	µg/g	23	<0.5	<0.5	0.6	0.5	<0.5	0.6	0.6	<0.5
Vanadium	µg/g	86	39	36	10	32	27	105	53	45
Zinc	µg/g	340	54	33	10	35	24	140	57	58

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011)

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil)

na: Not Analyzed

N/A: Not Applicable

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 1b: Metals and Inorganics Soil Analytical Results (2013)

Parameter	Units	MOECC 2011[1] Table 2[2]	TE-02	TE-02	TE-02	Duplicate (TE-02)	TE-04
Drilling Date			**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**3-Jul-2013**	**2-Jul-2013**
Depth (m)	m		0.00-0.35	0.35-1.00	1.00-1.45	1.00-1.45	1.00-2.30
pH	N/A	NC	na	na	na	na	na
Antimony	µg/g	7.5	<1	<1	<1	<1	<1
Arsenic	µg/g	18	5	6	2	2	3
Barium	µg/g	390	98	150	347	383	175
Beryllium	µg/g	4	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	µg/g	1.5	na	na	na	na	na
Boron (Total)	µg/g	120	20	30	40	40	30
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	µg/g	160	41	62	111	122	82
Chromium (VI)	µg/g	8	na	na	na	na	na
Cobalt	µg/g	22	7	10	18	20	14
Conductivity	mS/cm	0.7	na	na	na	na	na
Copper	µg/g	140	19	24	50	65	28
Cyanide, free	µg/g	0.051	na	na	na	na	na
Lead	µg/g	120	na	na	na	na	na
Mercury	µg/g	0.27	na	na	na	na	na
Molybdenum	µg/g	6.9	1	<1	<1	<1	<1
Nickel	µg/g	100	25	31	60	65	39
Selenium	µg/g	2.4	na	na	na	na	na
Silver	µg/g	20	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium Adsorption Ratio	N/A	5	na	na	na	na	na
Thallium	µg/g	1	<1	<1	<1	<1	<1
Uranium	µg/g	23	<0.5	0.6	0.9	0.9	1
Vanadium	µg/g	86	38	52	98	109	72
Zinc	µg/g	340	138	80	113	135	110

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011)
[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil)
na: Not Analyzed
N/A: Not Applicable
NC: No Criteria
Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 1c: Metals and Inorganics Soil Analytical Results (2016

Parameter	Units	MOECC 2011[1] Table 2[2]	BH16-1-1B	BH16-1-2A	BH16-1-2B	BH16-2-1B	BH16-2-2A	BH16-2-2B	BH16-3-1B	BH16-3-2A	BH16-3-3
Drilling Date			**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**
Depth (m)	m		0.30-1.52	1.52-2.53	2.53-2.89	0.30-1.52	1.52-2.34	2.34-2.44	0.43-1.52	1.52-2.28	3.05-3.12
pH	N/A	NC	7.23	na	na	7.05	na	na	7.15	na	na
Antimony	µg/g	7.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	1	1	1	1	2	2	1	5
Barium	µg/g	390	325	347	198	345	355	271	286	398	346
Beryllium	µg/g	4	0.9	1	0.7	1	0.9	0.8	0.9	0.9	<0.5
Boron (Hot Water Soluble)	µg/g	1.5	0.13	na	na	0.15	na	na	0.24	na	na
Boron (Total)	µg/g	120	<5	<5	6	<5	<5	8	6	5	9
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	µg/g	160	101	108	45	116	99	65	113	111	26
Chromium (VI)	µg/g	8	<0.2	na	na	<0.2	na	na	<0.2	na	na
Cobalt	µg/g	22	19.7	23	10.7	22	20.4	16.7	21.6	22.6	6.8
Conductivity	mS/cm	0.7	0.458	na	na	0.419	na	na	0.465	na	na
Copper	µg/g	140	43	48	28	47	47	33	46	48	15
Cyanide	µg/g	0.051	<0.040	na	na	<0.040	na	na	<0.040	na	na
Lead	µg/g	120	7	7	6	8	7	6	7	7	8
Mercury	µg/g	0.27	<0.10	na	na	<0.10	na	na	<0.10	na	na
Molybdenum	µg/g	6.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1
Nickel	µg/g	100	58	60	25	64	55	40	65	62	11
Selenium	µg/g	2.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium Adsorption Ratio	N/A	5	0.486	na	na	0.855	na	na	1.11	na	na
Thallium	µg/g	1	0.4	0.5	<0.4	0.5	0.4	<0.4	<0.4	0.5	<0.4
Uranium	µg/g	23	0.6	0.6	<0.5	0.7	0.6	0.6	0.6	0.7	0.6
Vanadium	µg/g	86	91	101	57	99	98	76	88	102	25
Zinc	µg/g	340	123	137	71	132	129	101	120	146	56

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil

na: Not Analyzed

N/A: Not Applicable

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 1d: Metals and Inorganics Soil Analytical Results (2016)

Parameter	Units	MOECC 2011[1] Table 2[2]	BH16-4-1B	BH16-4-2B	BH16-4-102B (Duplicate of BH16-4-2B)	BH16-5-1B	BH16-5-101B (Duplicate of BH16-5-1B)	BH16-5-2B	BH16-6-1B	BH16-6-2B	BH16-7-1	BH16-7-2B
Drilling Date			**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**
Depth (m)	m		0.43-1.52	2.28-3.05	2.28-3.05	0.23-1.52	0.23-1.52	2.90-3.05	0.23-1.52	2.90-3.05	0.20-1.52	2.44-3.05
pH	N/A	NC	7.07	na	na	7.24	na	na	7.42	na	7.13	na
Antimony	µg/g	7.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	4	1	2	2	3	3	2	1
Barium	µg/g	390	254	347	250	129	266	412	180	285	302	338
Beryllium	µg/g	4	0.8	1	0.8	0.6	0.9	1	0.6	0.9	1	0.7
Boron (Hot Water Soluble)	µg/g	1.5	0.12	na	na	0.29	na	na	0.55	na	0.11	na
Boron (Total)	µg/g	120	<5	8	9	<5	6	8	<5	9	<5	6
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	µg/g	160	87	70	57	59	125	72	63	61	118	50
Chromium (VI)	µg/g	8	<0.2	na	na	<0.2	na	na	<0.2	na	<0.2	na
Cobalt	µg/g	22	16.3	20.2	18.2	11.2	22.2	19.1	12.4	18.4	22.4	15.1
Conductivity	mS/cm	0.7	0.363	na	na	0.325	na	na	0.569	na	0.579	na
Copper	µg/g	140	35	35	35	16	44	39	27	35	50	30
Cyanide	µg/g	0.051	<0.040	na	na	<0.040	na	na	<0.040	na	<0.040	na
Lead	µg/g	120	6	7	8	8	8	8	9	8	8	6
Mercury	µg/g	0.27	<0.10	na	na	<0.10	na	na	<0.10	na	<0.10	na
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5
Nickel	µg/g	100	47	43	37	27	66	43	34	37	67	32
Selenium	µg/g	2.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium Adsorption Ratio	N/A	5	0.565	na	na	0.657	na	na	5.41	na	1.02	na
Thallium	µg/g	1	<0.4	0.4	<0.4	<0.4	<0.4	0.5	<0.4	<0.4	0.5	<0.4
Uranium	µg/g	23	1	0.6	0.6	0.9	1	0.6	0.6	0.6	0.8	0.6
Vanadium	µg/g	86	89	88	80	53	94	93	60	83	103	68
Zinc	µg/g	340	96	127	112	80	109	134	85	118	128	94

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil

na: Not Analyzed

N/A: Not Applicable

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 1e: Metals and Inorganics Soil Analytical Results (2016)

Parameter	Units	MOECC 2011[1] Table 2[2]	BH16-8-1	BH16-8-2B	BH16-9-1	BH16-9-2B	BH16-9-4	BH16-10-1	BH16-10-2B	BH16-10-4A	BH16-11-2A	BH16-11-3B
Drilling Date			**1-Jun-2016**	**1-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**
Depth (m)	m		0.20-1.52	2.44-3.05	0.17-1.52	2.67-3.05	4.57-6.10	0.23-1.52	2.61-3.05	4.57-6.10	1.52-2.62	4.22-4.57
pH	N/A	NC	7.25	na	7.15	na	na	6.77	na	na	7.05	na
Antimony	µg/g	7.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	2	2	2	1	1	2	1	2	2	1
Barium	µg/g	390	296	524	263	304	84	268	303	294	290	297
Beryllium	µg/g	4	0.9	1	0.9	0.7	<0.5	0.8	0.8	0.7	0.8	0.7
Boron (Hot Water Soluble)	µg/g	1.5	<0.10	na	0.22	na	na	<0.10	na	na	0.25	na
Boron (Total)	µg/g	120	<5	8	<5	<5	<5	<5	<5	8	<5	5
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	µg/g	160	121	77	112	99	14	103	102	80	107	99
Chromium (VI)	µg/g	8		na	<0.2	na	na	<0.2	na	na	<0.2	na
Cobalt	µg/g	22	25.9	22.7	19.3	20	5.4	18.7	22.6	19.6	23.7	21.1
Conductivity	mS/cm	0.7	1.86	na	0.394	na	na	0.215	na	na	0.176	na
Copper	µg/g	140	44	47	47	46	11	44	45	40	48	47
Cyanide	µg/g	0.051	<0.040	na	<0.040	na	na	<0.040	na	na	<0.040	na
Lead	µg/g	120	9	9	8	6	4	7	6	7	7	6
Mercury	µg/g	0.27	<0.10	na	<0.10	na	na	<0.10	na	na	<0.10	na
Molybdenum	µg/g	6.9	0.5	0.5	0.6	<0.5	0.6	<0.5	<0.5	1	<0.5	0.7
Nickel	µg/g	100	67	49	60	56	10	58	59	47	62	56
Selenium	µg/g	2.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium Adsorption Ratio	N/A	5	4.79	na	1.1	na	na	1.04	na	na	0.622	na
Thallium	µg/g	1	0.4	0.6	<0.4	0.4	<0.4	<0.4	0.4	<0.4	0.4	<0.4
Uranium	µg/g	23	0.9	0.7	1	0.9	<0.5	0.8	0.8	1.8	1	1
Vanadium	µg/g	86	98	101	99	102	21	89	96	87	100	94
Zinc	µg/g	340	126	149	114	126	21	106	123	117	124	123

NOTES
[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011
[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil
na: Not Analyzed
N/A: Not Applicable
NC: No Criteria
Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 1f: Metals and Inorganics Soil Analytical Results (2016)

Parameter	Units	MOECC 2011[1] Table 2[2]	BH16-12-2A	BH16-12-3B	BH16-13-2A	BH16-13-102A (Duplicate of BH16-13-2A)	BH16-13-3B
Drilling Date			**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**	**2-Jun-2016**
Depth (m)	m		1.52-2.11	3.81-4.57	1.52-2.75	1.52-2.75	3.53-4.57
pH	N/A	NC	7.13	na	7.13	na	na
Antimony	µg/g	7.5	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	2	1	2	2	2
Barium	µg/g	390	288	369	273	272	246
Beryllium	µg/g	4	0.7	0.7	0.8	0.7	0.7
Boron (Hot Water Soluble)	µg/g	1.5	0.37	na	0.34	na	na
Boron (Total)	µg/g	120	<5	5	5	<5	7
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	µg/g	160	116	99	112	109	84
Chromium (VI)	µg/g	8	<0.2	na	<0.2	na	na
Cobalt	µg/g	22	24.2	23.2	22.2	22.4	18.2
Conductivity	mS/cm	0.7	0.091	na	0.075	na	na
Copper	µg/g	140	51	50	47	46	38
Cyanide	µg/g	0.051	<0.040	na	<0.040	na	na
Lead	µg/g	120	8	7	7	7	6
Mercury	µg/g	0.27	<0.10	na	<0.10	na	na
Molybdenum	µg/g	6.9	<0.5	1	<0.5	<0.5	0.9
Nickel	µg/g	100	66	58	64	63	48
Selenium	µg/g	2.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	20	<0.2	<0.2	<0.2	<0.2	<0.2
Sodium Adsorption Ratio	N/A	5	0.436	na	0.416	na	na
Thallium	µg/g	1	0.4	0.5	<0.4	<0.4	<0.4
Uranium	µg/g	23	1.2	0.9	0.9	0.9	1.9
Vanadium	µg/g	86	105	114	94	93	82
Zinc	µg/g	340	129	141	123	120	108

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil

na: Not Analyzed

N/A: Not Applicable

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 2a: PHC (including BTEX) Soil Analytical Results (2013)

Parameter	Units	MOECC 2011[1] Table 2[2]	F-01	F-02	F-02	F-03	F-03	F-03	F-04	F-05	F-06	F-07
Date Drilled			**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**
Depth (m)	m		0.40-0.50	0.45-0.55	0.55-0.75	0.30-0.50	0.50-0.91	1.01-1.11	0.61-1.22	1.32-1.83	0.00-0.61	0.61-1.22
Benzene	µg/g	0.21	<0.02	na	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.3	<0.02	na	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	µg/g	1.1	<0.05	na	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m/p xylenes	µg/g	NC	<0.05	na	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o xylene	µg/g	NC	<0.05	na	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Xylenes	µg/g	3.1	<0.05	na	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Petroleum Hydrocarbons F1	µg/g	55	<10	20	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F1 - BTEX	µg/g	55	<10	na	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F2	µg/g	98	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F3	µg/g	300	<20	<20	<20	<20	<20	<20	<20	<20	30	<20
Petroleum Hydrocarbons F4	µg/g	2800	40	100	60	20	<20	<20	20	<20	60	<20

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011)

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil)

na: Not Analyzed

N/A: Not Applicable

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 2b: PHC (including BTEX) Soil Analytical Results (2013)

Parameter	Units	MOECC 2011[1] Table 2[2]	F-08	F-09	PO-01	TE-01	TE-02	TE-02	TE-02	TE-03	TE-04	TE-05
Date Drilled			**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**
Depth (m)	m		0.61-1.22	0.00-0.61	0.61-0.86	0.30-0.60	0.00-0.35	0.35-1.00	1.00-1.45	0.30-1.00	1.00-2.30	0.15-2.30
Benzene	µg/g	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	na	na	na
Toluene	µg/g	2.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	na	na	na
Ethylbenzene	µg/g	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	na	na	na
m/p xylenes	µg/g	NC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	na	na	na
o xylene	µg/g	NC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	na	na	na
Total Xylenes	µg/g	3.1	<0.05	<0.05	<0.05	<1	<1	<0.05	<0.05	na	na	na
Petroleum Hydrocarbons F1	µg/g	55	30	<10	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F1 - BTEX	µg/g	55	30	<10	<10	<10	<10	<10	<10	na	na	na
Petroleum Hydrocarbons F2	µg/g	98	<10	<10	<10	<10	20	<10	<10	<10	<10	<10
Petroleum Hydrocarbons F3	µg/g	300	80	60	<20	<20	31100	100	110	<20	30	<20
Petroleum Hydrocarbons F4	µg/g	2800	30	240	140	70	10400	160	60	<20	40	<20

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2] Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil

na: Not Analyzed

N/A: Not Applicable

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 2c: PHC (including BTEX) Soil Analytical Results (2016)

Parameter	Units	MOECC 2011[1] Table 2[2]	BH16-4-1B	BH16-5-1B	BH16-5-101B (Duplicate of BH16-5-1B)	BH16-5-2B	BH16-6-1B	BH16-7-1	BH16-8-1
Date Drilled			**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**
Depth (m)	m		0.43-1.52	0.23-1.52	0.23-1.52	2.9-3.05	0.23-1.52	0.20-1.52	0.20-1.53
Benzene	µg/g	0.21	na	na	na	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.3	na	na	na	<0.08	<0.08	<0.08	<0.08
Ethylbenzene	µg/g	1.1	na	na	na	0.16	<0.05	<0.05	<0.05
Total Xylenes	µg/g	3.1	na	na	na	0.06	<0.05	<0.05	<0.05
Petroleum Hydrocarbons F1	µg/g	55	na	na	na	11	<5	<5	<5
Petroleum Hydrocarbons F1 - BTEX	µg/g	55	na	na	na	11	<5	<5	<5
Petroleum Hydrocarbons F2	µg/g	98	<10	<10	<10	34	<10	<10	<10
Petroleum Hydrocarbons F3	µg/g	300	<50	<50	<50	<50	<50	<50	<50
Petroleum Hydrocarbons F4	µg/g	2800	<50	<50	<50	<50	<50	<50	<50

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011)

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil)

na: Not Analyzed

N/A: Not Applicable

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standards

Table 3a: PAH Soil Analytical Results

Parameter	MOECC 2011[1] Table 2[2]	Units	F-01	F-02	F-02	F-03	F-03	F-03	F-04	F-05	F-06	F-07
Date Drilled			**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**
Depth (m)		m	0.40-0.50	0.45-0.55	0.55-0.75	0.30-0.50	0.50-0.91	1.01-1.11	0.61-1.22	1.32-1.83	0.00-0.61	0.61-1.22
Acenaphthene	7.9	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.15	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	0.67	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.5	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b/j)fluoranthene	0.78	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	6.6	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.78	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	7	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	0.1	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.69	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	62	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.38	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1-Methylnaphthalene	NC	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-Methylnaphthalene	NC	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylnaphthalene, 2-(1-)	0.99	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Naphthalene	0.6	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	6.2	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	78	µg/g	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	0.16	<0.05	<0.05	<0.05

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2] Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soi

Value Yellow Shading indicates parameter concentration exceeds MOECC Table 2 Standards

Table 3b: PAH Soil Analytical Results (2013)

Parameter	MOECC 2011[1] Table 2[2]	Units	F-08	F-09	PO-01	TE-01	TE-02	TE-02	TE-02	TE-03	TE-04	TE-05
Date Drilled			**27-Jun-2013**	**27-Jun-2013**	**27-Jun-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**	**2-Jul-2013**
Depth (m)		m	0.61-1.22	0.00-0.61	0.61-0.86	0.30-0.60	0.00-0.35	0.35-1.00	1.00-1.45	0.30-1.00	1.00-2.30	0.15-2.30
Acenaphthene	7.9	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.15	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	0.67	µg/g	<0.05	<0.05	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.5	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b/j)fluoranthene	0.78	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	6.6	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.78	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	7	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	0.1	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.69	µg/g	<0.05	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	<0.05	0.05
Fluorene	62	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.38	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1-Methylnaphthalene	NC	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-Methylnaphthalene	NC	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylnaphthalene, 2-(1-)	0.99	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Naphthalene	0.6	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	6.2	µg/g	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	78	µg/g	<0.05	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	<0.05	<0.05

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2] Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soi

Value Yellow Shading indicates parameter concentration exceeds MOECC Table 2 Standards

Table 3c: PAH Soil Analytical Results (2016)

Parameter	MOECC 2011[1] Table 2[2]	Units	BH16-5-2B	BH16-7-1	BH16-8-1
Date Drilled			**1-Jun-2016**	**1-Jun-2016**	**1-Jun-2016**
Depth (m)		m	2.90-3.05	0.2-1.52	0.2-1.52
Acenaphthene	7.9	µg/g	<0.05	<0.05	<0.05
Acenaphthylene	0.15	µg/g	<0.05	<0.05	<0.05
Anthracene	0.67	µg/g	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.5	µg/g	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	µg/g	<0.05	<0.05	<0.05
Benzo(b/j)fluoranthene	0.78	µg/g	<0.05	<0.05	<0.05
Benzo(ghi)perylene	6.6	µg/g	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.78	µg/g	<0.05	<0.05	<0.05
Chrysene	7	µg/g	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	0.1	µg/g	<0.05	<0.05	<0.05
Fluoranthene	0.69	µg/g	<0.05	<0.05	<0.05
Fluorene	62	µg/g	0.11	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.38	µg/g	<0.05	<0.05	<0.05
Methylnaphthalene, 2-(1-)	0.99	µg/g	0.50	<0.05	<0.05
Naphthalene	0.6	µg/g	0.06	<0.05	<0.05
Phenanthrene	6.2	µg/g	0.17	<0.05	<0.05
Pyrene	78	µg/g	<0.05	<0.05	<0.05

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011)

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (Coarse Textured Soil)

Value Yellow Shading indicates parameter concentration exceeds MOECC Table 2 Standards

Table 4: Metals and Inorganics Groundwater Analytical Results

Parameter	Units	MOECC 2011[1] Table 2[2]	MW16-3	MW16-5	MW16-8	MW16-108 (Duplicate of MW16-8)
Sample Date			**7-Jun-16**	**7-Jun-16**	**7-Jun-16**	**7-Jun-16**
Antimony	µg/L	6	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/L	25	<1.0	1.9	<1.0	<1.0
Barium	µg/L	1000	89.7	166	224	187
Beryllium	µg/L	4	<0.5	<0.5	<0.5	<0.5
Boron	µg/L	5000	48.5	41.9	21.5	16.3
Cadmium	µg/L	2.7	<0.2	<0.2	<0.2	<0.2
Chloride	ug/L	790000	133000	286000	341000	358000
Chromium	µg/L	50	2.4	4.9	2.6	5
Chromium VI	µg/L	25	<5	<5	<5	<5
Cobalt	µg/L	3.8	<0.5	3.3	0.9	0.8
Copper	µg/L	87	2	<1.0	1.1	<1.0
Cyanide, Free	µg/L	66	<2	<2	<2	<2
Lead	µg/L	10	<0.5	<0.5	<0.5	<0.5
Mercury	µg/L	0.29	<0.02	<0.02	<0.02	<0.02
Molybdenum	µg/L	70	0.6	1.2	<0.5	<0.5
Nickel	µg/L	100	1.3	<1.0	1.4	<1.0
Sodium	µg/L	2300000	63200	65600	66900	65200
Selenium	µg/L	10	1.6	<1.0	<1.0	<1.0
Silver	µg/L	1.5	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	2	<0.3	<0.3	<0.3	<0.3
Vanadium	µg/L	6.2	2.4	1.5	4.8	4.8
Uranium	µg/L	20	1.3	5	4.4	3.7
Zinc	µg/L	1100	<5.0	<5.0	<5.0	<5.0

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential Property Us

na: Not Analyzed

Table 5: PAH Groundwater Analytical Results (2016)

Parameter	Units	MOECC 2011[1] Table 2[2]	MW16-3	MW16-5	MW16-8	MW16-108 (Duplicate of MW16-8)
Sample Date			**7-Jun-16**	**7-Jun-16**	**7-Jun-16**	**7-Jun-16**
Acenaphthene	µg/L	4.1	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	<0.20	<0.20	<0.20	<0.20
Anthracene	µg/L	2.4	<0.10	<0.10	<0.10	<0.10
Benzo(a)anthracene	µg/L	1	<0.20	<0.20	<0.20	<0.20
Benzo(a)pyrene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b/j)fluoranthene	µg/L	0.1	<0.10	<0.10	<0.10	<0.10
Benzo(ghi)perylene	µg/L	0.2	<0.20	<0.20	<0.20	<0.20
Benzo(k)fluoranthene	µg/L	0.1	<0.10	<0.10	<0.10	<0.10
Chrysene	µg/L	0.1	<0.10	<0.10	<0.10	<0.10
Dibenzo(a,h)anthracene	µg/L	0.2	<0.20	<0.20	<0.20	<0.20
Fluoranthene	µg/L	0.41	<0.20	<0.20	<0.20	<0.20
Fluorene	µg/L	120	<0.20	<0.20	<0.20	<0.20
Indeno(1,2,3-cd)pyrene	µg/L	0.2	<0.20	<0.20	<0.20	<0.20
Methylnaphthalene, 2-(1-)	µg/L	3.2	<0.20	<0.20	<0.20	<0.20
Naphthalene	µg/L	11	<0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/L	1	<0.10	<0.10	<0.10	<0.10
Pyrene	µg/L	4.1	<0.20	<0.20	<0.20	<0.20

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential Property Us

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition

Table 6: PHC (including BTEX) Groundwater Analytical Results (2016)

Parameter	Units	MOECC 2011[1] Table 2[2]	MW16-3	MW16-5	MW16-8	MW16-108 (Duplicate of MW16-8)	Trip Blank
Sample Date			**7-Jun-16**	**7-Jun-16**	**7-Jun-16**	**7-Jun-16**	**25-May-16**
Benzene	µg/L	5	<0.20	1.1	<0.20	<0.20	<0.20
Toluene	µg/L	24	<0.20	0.39	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	2.4	<0.10	15	<0.10	<0.10	<0.10
m/p xylenes	µg/L	NC	-	-	-	-	-
o xylene	µg/L	NC	-	-	-	-	-
Total Xylenes	µg/L	300	<0.20	4.2	<0.20	<0.20	<0.20
Petroleum Hydrocarbons F1	µg/L	750	<25	360	<25	<25	<25
Petroleum Hydrocarbons F1-BTEX	µg/L	750	<25	360	<25	<25	<25
Petroleum Hydrocarbons F2	µg/L	150	<100	530	<100	<100	na
Petroleum Hydrocarbons F3	µg/L	500	<100	390	<100	<100	na
Petroleum Hydrocarbons F4	µg/L	500	<100	<100	<100	<100	na

NOTES

[1] MOECC 2011: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011

[2]Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential Property Us

NC: No Criteria

Value Yellow shading indicates parameter concentration exceeds MOECC Table 2 Site Condition Standard

Table 7: Summary of Groundwater Elevations

Location	Depth (m)	Total Depth of Well (mbgs)	Ground Surface Elevation (m)[1]	7-Jun-16					
				Groundwater Level (mbgs)	Liquid Hydrocarbon Thickness (mm)	Groundwater Elevation (masl)[1]	Groundwater Level Above Well Screen? (yes/no)	Well Headspace PID Vapour Readings (ppm)	
								Hexane	Isobulylene
MW16-3	1.52-4.57	4.57	87.23	2.13	0	85.10	no	0	0
MW16-5	1.52-4.57	4.57	87.47	2.27	0	85.20	no	0	0
MW16-8	1.06-4.11	4.11	86.84	1.45	0	85.39	no	0	0

NOTES

[1] Approximate to an assumed elevation (88.00 masl) for the top of the formed concrete pier located on the southwest corner of the most southerly building (building #4).

Table 8: Summary of Relative Percent Differences (RPDs) in Soil

Parameter	RDL	Sample [1]	Duplicate	% Difference	Sample [1]	Duplicate	% Difference	Sample [1]	Duplicate	% Difference	MOECC Criteria
		BH16-4-2B	BH16-4-102B		BH16-5-1B	BH16-5-101B		BH16-13-2A	BH16-13-102A		
Metals and Inorganics											
pH	-	-	-		7.24	-	-	7.13	-	-	
Antimony	0.8	<0.8	<0.8	-	<0.8	<0.8	-	<0.8	<0.8	-	20.0%
Arsenic	1	2	4	-66.7%	1	2	66.7%	2	2	0.0%	20.0%
Barium	2	347	250	32.5%	129	266	69.4%	273	272	0.4%	20.0%
Beryllium	0.5	1	0.8	-	0.6	0.9	40.0%	0.8	0.7	-	20.0%
Boron (Hot Water Soluble)	0.10	-	-	-	0.29	-	-	0.34	-	-	20.0%
Boron (Total)	5	8	9	-11.8%	<5	6	-	5	<5	-	20.0%
Cadmium	0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	20.0%
Chromium (total)	2	70	57	20.5%	59	125	71.7%	112	109	2.7%	20.0%
Chromium (VI)	0.2	-	-	-	<0.2	-	-	<0.2	-	-	20.0%
Cobalt	0.5	20.2	18.2	10.4%	11.2	22.2	65.9%	22.2	22.4	0.9%	20.0%
Conductivity	0.005	-	-	-	0.325	-	-	0.075	-	-	20.0%
Copper	1	35	35	0.0%	16	44	93.3%	47	46	2.2%	20.0%
Cyanide	0.040	-	-	-	<0.040	-	-	<0.040	-	-	20.0%
Lead	1	7	8	13.3%	8	8	0.0%	7	7	0.0%	20.0%
Mercury	0.10	-	-	-	<0.10	-	-	<0.10	-	-	20.0%
Molybdenum	0.5	<0.5	<0.5	-	0.5	<0.5	-	<0.5	<0.5	-	20.0%
Nickel	1	43	37	15.0%	27	66	83.9%	64	63	1.6%	20.0%
Selenium	0.4	<0.4	<0.4	-	<0.4	<0.4	-	<0.4	<0.4	-	20.0%
Silver	0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	20.0%
Sodium Adsorption Ratio	-	-	-	-	0.657	-	-	0.416	-	-	20.0%
Thallium	0.4	0.4	<0.4	-	<0.4	<0.4	-	<0.4	<0.4	-	20.0%
Uranium	0.5	0.6	0.6	0.0%	0.9	1	-	0.9	0.9	0.0%	20.0%
Vanadium	1	88	80	9.5%	53	94	55.8%	94	93	1.1%	20.0%
Zinc	5	127	112	12.6%	80	109	30.7%	123	120	2.5%	20.0%

Parameter	RDL	Sample [1]	Duplicate	% Difference	MOECC Criteria
		BH16-5-1B	BH16-5-101B		
BTEX and PHCs					
Benzene	0.02	na	na	-	20.0%
Toluene	0.08	na	na	-	20.0%
Ethylbenzene	0.05	na	na	-	20.0%
Petroleum Hydrocarbons F1	5	na	na	-	20.0%
Petroleum Hydrocarbons F1 - BTEX	5	na	na	-	20.0%
Petroleum Hydrocarbons F2	10	<10	<10	-	20.0%
Petroleum Hydrocarbons F3	50	<50	<50	-	20.0%
Petroleum Hydrocarbons F4	50	<50	<50	-	20.0%

Notes:

(1) All results reported in micrograms per gram (µg/g) unless otherwise noted.
< Parameter not detected above value specified
% Difference Relative Percent Difference = |(X-Y)/Average(X,Y)| x 100% where X is the sample and Y
- RPD could not be calculated.

Phase Two Environmental Site Assessment
Part of Lot 4, Concession 3, Parts 1 to 5, Gloucester, Ontario
(3646, 3636 and 3604 Innes Road, Ottawa, Ontario)

Client: The Builder's Warehouse
Project number: 161-06383-00

Table 9: Summary of Relative Percent Differences (RPDs) in Groundwater

Parameter	RDL	Sample(1)	Duplicate	% Difference	MOECC Criteria
		MW16-8	MW16-108		
Metals and Inorganics					
Antimony	1.0	<1.0	<1.0	-	20.0%
Arsenic	1.0	<1.0	<1.0	-	20.0%
Barium	2.0	224	187	18.0%	20.0%
Beryllium	0.5	<0.5	<0.5	-	20.0%
Boron	10.0	21.5	16.3	27.5%	20.0%
Cadmium	0.2	<0.2	<0.2	-	20.0%
Chloride	1000	341000	358000	-4.9%	20.0%
Chromium	2.0	2.6	5	-63.2%	20.0%
Chromium VI	5.0	<5	<5	-	20.0%
Cobalt	0.5	0.9	0.8	11.8%	20.0%
Copper	1.0	1.1	<1.0	-	20.0%
Cyanide	2.0	<2	<2	-	20.0%
Lead	0.5	<0.5	<0.5	-	20.0%
Mercury	0.02	<0.02	<0.02	-	20.0%
Molybdenum	0.5	<0.5	<0.5	-	20.0%
Nickel	1.0	1.4	<1.0	-	20.0%
Sodium	2500	66900	65200	-2.6%	20.0%
Selenium	1.0	<1.0	<1.0	-	20.0%
Silver	0.2	<0.2	<0.2	-	20.0%
Thallium	0.3	<0.3	<0.3	-	20.0%
Vanadium	0.4	4.8	4.8	0.0%	20.0%
Uranium	0.5	4.4	3.7	17.3%	20.0%
Zinc	5.0	<5.0	<5.0	-	20.0%

Parameter	RDL	Sample(1)	Duplicate	% Difference	MOECC Criteria
		MW16-8	MW16-108		
BTEX and PHCs					
Benzene	0.20	<0.20	<0.20	-	20.0%
Toluene	0.20	<0.20	<0.20	-	20.0%
Ethylbenzene	0.10	<0.10	<0.10	-	20.0%
m/p xylenes	-	-	-	-	20.0%
o xylene	-	-	-	-	20.0%
Total Xylenes	0.2	<0.20	<0.20	-	20.0%
Petroleum Hydrocarbons F1	25	<25	<25	-	20.0%
Petroleum Hydrocarbons F1-BTEX	25	<25	<25	-	20.0%
Petroleum Hydrocarbons F2	100	<100	<100	-	20.0%
Petroleum Hydrocarbons F3	100	<100	<100	-	20.0%
Petroleum Hydrocarbons F4	100	<100	<100	-	20.0%

Parameter	RDL	Sample(1)	Duplicate	% Difference	MOECCCC Criteria
		MW16-8	MW16-108		
PAHs					
Acenaphthene	0.20	<0.20	<0.20	-	20.0%
Acenaphthylene	0.20	<0.20	<0.20	-	20.0%
Anthracene	0.10	<0.10	<0.10	-	20.0%
Benzo(a)anthracene	0.20	<0.20	<0.20	-	20.0%
Benzo(a)pyrene	0.01	<0.01	<0.01	-	20.0%
Benzo(b/j)fluoranthene	0.10	<0.10	<0.10	-	20.0%
Benzo(ghi)perylene	0.20	<0.20	<0.20	-	20.0%
Benzo(k)fluoranthene	0.10	<0.10	<0.10	-	20.0%
Chrysene	0.10	<0.10	<0.10	-	20.0%
Dibenzo(a,h)anthracene	0.20	<0.20	<0.20	-	20.0%
Fluoranthene	0.20	<0.20	<0.20	-	20.0%
Fluorene	0.20	<0.20	<0.20	-	20.0%
Indeno(1,2,3-cd)pyrene	0.20	<0.20	<0.20	-	20.0%
Methylnaphthalene, 2-(1-)	0.20	<0.20	<0.20	-	20.0%
Naphthalene	0.20	<0.20	<0.20	-	20.0%
Phenanthrene	0.10	<0.10	<0.10	-	20.0%
Pyrene	0.20	<0.20	<0.20	-	20.0%

Notes:

(1)	All results reported in micrograms per gram (µg/L) unless otherwise noted.
<	Parameter not detected above value specified
% Difference	Relative Percent Difference = |(X-Y)/Average(X,Y)| x 100% where X is the sample and Y is
-	RPD could not be calculated.

Appendix A

SAMPLE AND ANALYSIS PLAN

Sampling and Analysis Plan
Phase Two Environmental Site Assessment
Lot 4, Concession 4, Parts 1, 2, 3, 4, 5 Gloucester, Ontario
(3646, 3636, 3604 Innes Road, Ottawa, Ontario)

Soil				
Sample Location	**Proposed Borehole/Test Pit Depth (mbgs)**	**Reg 153 Metals & Inorganics**	**PHC F1-F4**	**PAHs**
BH16-1	6	3	0	0
BH16-2	6	3	0	0
BH/MW16-3	6	3	0	0
BH16-4	6	2	1	0
BH/MW16-5	6	2	2	1
BH16-6	10-15	2	1	0
BH16-7	6	2	1	1
BH/MW16-8	6	2	1	1
BH16-9	6	3	0	0
BH16-10	6	3	0	0
BH16-11	6	2	0	0
BH16-12	6	2	0	0
BH16-13	6	2	0	0
Blind Field Duplicates		**2**	**1**	**0**
TOTALS		**17**	**10**	**7**

*PHC F1-BTEX samples to be placed directly into vials with preservative or using hermetic core.

Sample Location	Groundwater				Environmental Investigation Notes
	Proposed Monitoring Well Depth	Reg 153 Metals & Inorganics	PHC F1-F4	PAHs	
MW-3	4.5 m (Screen: 1.5-4.5 m)	1	1	1	Take headspace vapour readings before purging and collecting samples
MW-5	4.5 m (Screen: 1.5-4.5 m)	1	1	1	
MW-8	4.5 m (Screen: 1.5-4.5 m)	1	1	1	
Blind Field Duplicates		1	1	1	
TOTALS		4	4	4	

Appendix B

BOREHOLE LOGS

BOREHOLE DRILLING RECORD : **BH16-1**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **1/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032601 mE
Y = 459357 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

Water Level ▽ Free Phase

CHEMICAL ANALYSIS

PCB	Poly-Chlorinated Biphenyls	MAH	Monocyclic Aromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	PAH	Polycyclic Aromatic Hydrocarbons
Inorg. C.	Inorganic Compounds	PH C_{10}-C_{50}	Petroleum Hydrocarbons C_{10}-C_{50}
Phenol. C.	Phenolic Compounds	PH F1-F4	Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
VOC	Volatil Organic Compounds (MAH & CAH)	Metals	Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
Diox. & Fur.	Dioxins & Furans	HWR	Leacheate Tests (Haz. Waste Reg.)
CAH	Chlorinated Aliphatic Hydrocarbons		

DEPTH *ELEVATION* (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	ODOUR F M P	VISUAL D S	SAMPLE TYPE	% RECOVERY	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	MONITORING WELL DIAGRAM	MONITORING WELL DESCRIPTION	REMARKS
		Ground surface.												
0.30		**FILL** sand and gravel, brown, dry	H - 0, I - 0			MC	66		BH16-1 1A					
		CLAYEY SILT brown, moist, stiff	H - 0, I - 0						BH16-1 1B	Metals and Inorganics				
1.52		**SILTY CLAY** grey-brown, moist, stiff	H - 0, I - 0			MC	100		BH16-1 2A	Metals and Inorganics				
2.53		**GRAVEL** with sand and some silty clay, grey-brown, wet, soft	H - 0, I - 0						BH16-1 2B	Metals and Inorganics				
2.89		*Refusal at 2.89 m below ground surface on assumed bedrock*												
		End of borehole at 2.89 m.												

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

BOREHOLE DRILLING RECORD : **BH16-2**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **1/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032622 mE
Y = 459337 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS

PCB	Poly-Chlorinated Biphenyls	MAH	Monocyclic Aromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	PAH	Polycyclic Aromatic Hydrocarbons
Inorg. C.	Inorganic Compounds	PH C_{10}-C_{50}	Petroleum Hydrocarbons C_{10}-C_{50}
Phenol. C.	Phenolic Compounds	PH F1-F4	Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
VOC	Volatil Organic Compounds (MAH & CAH)	Metals	Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
Diox. & Fur.	Dioxins & Furans	HWR	Leacheate Tests (Haz. Waste Reg.)
CAH	Chlorinated Aliphatic Hydrocarbons		

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR F M P	OBSERVATIONS: VISUAL D S	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
0.30		**FILL** sand and gravel, brown, dry	H - 0, I - 0			MC	50		BH16-2 1A					
		CLAYEY SILT brown, moist, stiff	H - 20, I - 0						BH16-2 1B	Metals and Inorganics				
			H - 0, I - 0			MC	83		BH16-2 2A	Metals and Inorganics				
2.44		*with some sand* *Refusal at 2.44 m below ground surface on assumed bedrock*	H - 0, I - 0						BH16-2 2B	Metals and Inorganics				
		End of borehole at 2.44 m.												

BOREHOLE DRILLING RECORD : **BH/MW16-3**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5011286 mE
Y = 472354 mN
Surface Elevation: 87.23 m *(Relative)*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: Air
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

CHEMICAL ANALYSIS
PCB Poly-Chlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene, Xylene
Inorg. C. Inorganic Compounds
Phenol. C. Phenolic Compounds
VOC Volatil Organic Compounds (MAH & CAH)
Diox. & Fur. Dioxins & Furans
CAH Chlorinated Aliphatic Hydrocarbons
MAH Monocyclic Aromatic Hydrocarbons
PAH Polycyclic Aromatic Hydrocarbons
PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}
PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
HWR Leacheate Tests (Haz. Waste Reg.)

Water Level ▽ Free Phase ▼

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR F M P	OBSERVATIONS: VISUAL D S	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
87.23		**FILL** sand and gravel, brown, dry	H - 0, I - 0			MC	73		BH/MW16-3 1A					
0.43 / 86.80		**CLAYEY SILT** brown, moist, stiff	H - 0, I - 0						BH/MW16-3 1B	Metals and Inorganics			Bentonite	
1.52 / 85.71		**SILTY CLAY** grey-brown, moist, stiff	H - 0, I - 0			MC	100		BH/MW16-3 2A	Metals and Inorganics			Slotted PVC pipe	
			H - 0, I - 0						BH/MW16-3 2B				Sand	
3.05 / 3.12 / 84.11		**GRAVEL** with sand , brown, wet **BEDROCK**	H - 0, I - 0			MC	5		BH/MW16-3 3	Metals and Inorganics			SCREEN Diam.: 51 mm Open.: 0.25 mm Length: 3.05 m WATER Depth: 2.13 m Elev.: m Date: 6/7/2016	
4.57 / 82.66		End of borehole at 4.57 m.												

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Projet : 161-08368-00 PHASE TWO ESA - 3636 INNES ROAD.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 6/10/2016

BOREHOLE DRILLING RECORD : **BH16-4**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **1/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032619 mE
Y = 459397 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS

PCB	Poly-Chlorinated Biphenyls	MAH	Monocyclic Aromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	PAH	Polycyclic Aromatic Hydrocarbons
Inorg. C.	Inorganic Compounds	PH C_{10}-C_{50}	Petroleum Hydrocarbons C_{10}-C_{50}
Phenol. C.	Phenolic Compounds	PH F1-F4	Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
VOC	Volatil Organic Compounds (MAH & CAH)	Metals	Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
Diox. & Fur.	Dioxins & Furans	HWR	Leacheate Tests (Haz. Waste Reg.)
CAH	Chlorinated Aliphatic Hydrocarbons		

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR F M P	OBSERVATIONS: VISUAL D S	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
0.43		**FILL** sand and gravel, brown, dry	H - 0, I - 0			MC	71		BH16-4 1A					
0.5		**CLAYEY SILT** brown, moist, stiff	H - 0, I - 0						BH16-4 1B	Metals and Inorganics PHCs F2-F4				
1.5			H - 0, I - 0			MC	86		BH16-4 2A					
2.28														
2.5		**SILTY CLAY** grey-brown, moist, stiff *becoming wet and soft*	H - 0, I - 0						BH16-4 2B	Metals and Inorganics	BH16-4-102B			
3.05		*Refusal at 3.05 m below ground surface on assumed bedrock* End of borehole at 3.05 m.												

Projet : 161-08368-00 PHASE TWO ESA - 3636 INNES ROAD.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 6/10/2016

BOREHOLE DRILLING RECORD : **BH/MW16-5**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032607 mE, Y = 459421 mN
Surface Elevation: 87.47 m *(Relative)*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: Air
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS
PCB Poly-Chlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene, Xylene
Inorg. C. Inorganic Compounds
Phenol. C. Phenolic Compounds
VOC Volatil Organic Compounds (MAH & CAH)
Diox. & Fur. Dioxins & Furans
CAH Chlorinated Aliphatic Hydrocarbons
MAH Monocyclic Aromatic Hydrocarbons
PAH Polycyclic Aromatic Hydrocarbons
PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}
PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR F M P	OBSERVATIONS: VISUAL D S	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
87.47 0.23		**FILL** sand and gravel, brown, dry	H - 0, I - 0			MC	76		BH/MW16-5 1A					
87.24		**CLAYEY SILT** brown, moist, stiff	H - 0, I - 0						BH/MW16-5 1B	Metals and Inorganics PHCs F2-F4	BH16-5-101B		Bentonite	
1.52														
85.95		**SILTY CLAY** grey-brown, moist, stiff	H - 0, I - 30			MC	83		BH/MW16-5 2A				Sand	
		becoming wet and soft											Slotted PVC pipe	
3.05			H - 0, I - 35						BH/MW16-5 2B	Metals and Inorganics PH F_1-F_4 BTEX PAH			SCREEN Diam.: 51 mm Open.: 0.25 mm Length: 3.05 m WATER Depth: 2.27 m Elev.: m Date: 6/7/2016	
84.42		**BEDROCK**												
4.57														
82.90		End of borehole at 4.57 m.												

Projet : 161-08368-00 PHASE TWO ESA - 3636 INNES ROAD.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 6/10/2016

BOREHOLE DRILLING RECORD : **BH16-6**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **1/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032622 mE
Y = 459430 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS
PCB Poly-Chlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene, Xylene
Inorg. C. Inorganic Compounds
Phenol. C. Phenolic Compounds
VOC Volatile Organic Compounds (MAH & CAH)
Diox. & Fur. Dioxins & Furans
CAH Chlorinated Aliphatic Hydrocarbons
MAH Monocyclic Aromatic Hydrocarbons
PAH Polycyclic Aromatic Hydrocarbons
PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}
PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR F M P	OBSERVATIONS: VISUAL D S	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
0.23		**FILL** Sand and gravel, brown, dry	H - 15, I - 2			MC	46		BH16-6 1A					
		CLAYEY SILT brown, moist, stiff	H - 0, I - 0						BH16-6 1B	Metals and Inorganics PH F_1-F_4 BTEX				
2.90			H - 0, I - 0			MC	100		BH16-6 2A					
3.05		**SILTY CLAY** grey-brown, moist, stiff *Refusal at 3.05 m below ground surface on assumed bedrock*	H - 0, I - 0						BH16-6 2B	Metals and Inorganics				
		End of borehole at 3.05 m.												

BOREHOLE DRILLING RECORD : **BH16-7**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **1/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032572 mE
Y = 459424 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS
PCB Poly-Chlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene, Xylene
Inorg. C. Inorganic Compounds
Phenol. C. Phenolic Compounds
VOC Volatile Organic Compounds (MAH & CAH)
Diox. & Fur. Dioxins & Furans
CAH Chlorinated Aliphatic Hydrocarbons
MAH Monocyclic Aromatic Hydrocarbons
PAH Polycyclic Aromatic Hydrocarbons
PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}
PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR F M P	OBSERVATIONS: VISUAL D S	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
0.20		**TOP SOIL**				MC	85							
		CLAYEY SILT brown or grey-brown, moist, stiff	H - 10, I - 0						BH16-7 1	Metals and Inorganics PAH PH F_1-F_4 BTEX				
			H - 0, I - 0			MC	100		BH16-7 2A					
2.44														
		SILTY CLAY with some sand, grey-brown, moist, stiff *becoming wet and soft*	H - 0, I - 0						BH16-7 2B	Metals and Inorganics				
3.05														
		SANDY GRAVEL with some silty clay grey-brown, wet, soft	H - 0, I - 0			MC	26		BH16-7 3					
4.11		*Refusal at 4.11 m below ground surface on assumed bedrock*												
		End of borehole at 4.11 m.												

BOREHOLE DRILLING RECORD : **BH/MW16-8**

Prepared by: **Kathryn Maton** Date (Start): **1/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032569 mE, Y = 459449 mN
Surface Elevation: 86.84 m *(Relative)*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: Air
Sampling Method:

ODOUR: F - Light; M - Medium; P - Persistent
VISUAL: D - Disseminated Product; S - Saturated with Product

SAMPLE TYPE: DC - Diamond Corer; SS - Split Spoon; MA - Manual Auger; TR - Trowel; ST - Shelby Tube; TU - DT32 Liner; MC - Macro Core Liner

CHEMICAL ANALYSIS: PCB Poly-Chlorinated Biphenyls; BTEX Benzene, Toluene, Ethylbenzene, Xylene; Inorg. C. Inorganic Compounds; Phenol. C. Phenolic Compounds; VOC Volatile Organic Compounds (MAH & CAH); Diox. & Fur. Dioxins & Furans; CAH Chlorinated Aliphatic Hydrocarbons; MAH Monocyclic Aromatic Hydrocarbons; PAH Polycyclic Aromatic Hydrocarbons; PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}; PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50}); Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.; HWR Leacheate Tests (Haz. Waste Reg.)

▽ Water Level ▼ Free Phase

DEPTH ELEVATION (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	ODOUR F M P	VISUAL D S	SAMPLE TYPE	% RECOVERY	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	MONITORING WELL DIAGRAM	MONITORING WELL DESCRIPTION	REMARKS
		Ground surface.												
86.84		**TOP SOIL**				MC	100							
0.20														
86.64		**CLAYEY SILT** brown or grey-brown, moist, stiff	H - 10, I - 0						BH/MW16-81	Metals and Inorganics PAH PH F_1-F_4 BTEX			Bentonite	
0.5														0.5
1.0														1.0
1.5			H - 10, I - 0			MC	100		BH/MW16-82A				Sand	1.5
2.0													Slotted PVC pipe	2.0
2.44														
84.40		**SILTY CLAY** grey-brown, moist, stiff	H - 5, I - 0						BH/MW16-82B	Metals and Inorganics			SCREEN Diam.: 51 mm Open.: 0.25 mm Length: 3.05 m WATER Depth: 1.45 m Elev.: m Date: 6/7/2016	2.5
3.05														3.0
83.79		**SANDY GRAVEL** with trace to some silty clay grey-brown, wet, soft	H - 0, I - 0			MC	100		BH/MW16-83A					3.5
			H - 15, I - 0						BH/MW16-83B					4.0
4.11														
82.73		End of borehole at 4.11 m.												4.5
5.0														5.0

Projet : 161-08368-00 PHASE TWO ESA - 3636 INNES ROAD.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 6/10/2016

BOREHOLE DRILLING RECORD : **BH16-9**

Prepared by: **Kathryn Maton** Date (Start): **2/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032512 mE
Y = 459382 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS

PCB	Poly-Chlorinated Biphenyls	MAH	Monocyclic Aromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	PAH	Polycyclic Aromatic Hydrocarbons
Inorg. C.	Inorganic Compounds	PH C_{10}-C_{50}	Petroleum Hydrocarbons C_{10}-C_{50}
Phenol. C.	Phenolic Compounds	PH F1-F4	Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
VOC	Volatile Organic Compounds (MAH & CAH)	Metals	Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
Diox. & Fur.	Dioxins & Furans	HWR	Leacheate Tests (Haz. Waste Reg.)
CAH	Chlorinated Aliphatic Hydrocarbons		

DEPTH *ELEVATION* (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	ODOUR F M P	VISUAL D S	SAMPLE TYPE	% RECOVERY	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	DIAGRAM	DESCRIPTION	REMARKS
		Ground surface.												
0.17		**TOP SOIL**	H - 0, I - 0			MC	91		BH16-9 1	Metals and Inorganics				
0.5		**CLAYEY SILT** brown or grey-brown, moist, stiff												
1.0														
1.52		**SILTY CLAY** grey-brown, moist, stiff	H - 0, I - 0			MC	100		BH16-9 2A					
2.0														
2.5		*becoming wet*	H - 0, I - 0						BH16-9 2B	Metals and Inorganics				
3.0			H - 0, I - 0			MC	100		BH16-9 3A					
3.5														
4.0		*-with some sand and some gravel* *-becoming grey*	H - 0, I - 0						BH16-9 3B					
4.57		**SANDY GRAVEL** with some silty clay grey-brown, wet	H - 0, I - 0			MC	53		BH16-9 4	Metals and Inorganics				
5.0														
5.5														
6.0														
6.5			H - 0, I - 0			MC	60		BH16-9 5					
7.01		*Refusal at 7.01 m below ground surface on assumed bedrock*												
7.5		End of borehole at 7.01 m.												
8.0														
8.5														
9.0														
9.5														
10.0														

Projet : 161-08368-00 PHASE TWO ESA - 3636 INNES ROAD.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 6/10/2016

BOREHOLE DRILLING RECORD : **BH16-10**

Prepared by: **Kathryn Maton** Date (Start): **2/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032473 mE
Y = 459402 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS
PCB Poly-Chlorinated Biphenyls
BTEX Benzene, Toluene, Ethylbenzene, Xylene
Inorg. C. Inorganic Compounds
Phenol. C. Phenolic Compounds
VOC Volatile Organic Compounds (MAH & CAH)
Diox. & Fur. Dioxins & Furans
CAH Chlorinated Aliphatic Hydrocarbons
MAH Monocyclic Aromatic Hydrocarbons
PAH Polycyclic Aromatic Hydrocarbons
PH C_{10}-C_{50} Petroleum Hydrocarbons C_{10}-C_{50}
PH F1-F4 Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
Metals Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
HWR Leacheate Tests (Haz. Waste Reg.)

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR (F M P)	OBSERVATIONS: VISUAL (D S)	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
0.23		**TOP SOIL**				MC	80							
0.5		**CLAYEY SILT** brown or grey-brown, moist, stiff	H - 0, I - 0						BH16-10 1	Metals and Inorganics				
1.5			H - 0, I - 0			MC	100		BH16-10 2A					
2.61														
3.0		**SILTY CLAY** grey-brown, wet, soft	H - 0, I - 0						BH16-10 2B	Metals and Inorganics				
3.5			H - 0, I - 0			MC	100		BH16-10 3A					
4.0			H - 0, I - 0						BH16-10 3B					
4.5			H - 0, I - 0			MC	100		BH16-10 4A	Metals and Inorganics				
6.10														
6.40		**SANDY GRAVEL** with some silty clay grey-brown, wet, soft *Refusal at 6.40 m below ground surface on assumed bedrock*	H - 0, I - 0						BH16-10 4B					
		End of borehole at 6.40 m.												

BOREHOLE DRILLING RECORD : **BH16-11**

Prepared by: **Kathryn Maton** Date (Start): **2/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032342 mE
Y = 459432 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS

PCB	Poly-Chlorinated Biphenyls	MAH	Monocyclic Aromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	PAH	Polycyclic Aromatic Hydrocarbons
Inorg. C.	Inorganic Compounds	PH C_{10}-C_{50}	Petroleum Hydrocarbons C_{10}-C_{50}
Phenol. C.	Phenolic Compounds	PH F1-F4	Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
VOC	Volatil Organic Compounds (MAH & CAH)	Metals	Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
Diox. & Fur.	Dioxins & Furans	HWR	Leacheate Tests (Haz. Waste Reg.)
CAH	Chlorinated Aliphatic Hydrocarbons		

DEPTH *ELEVATION* (m)	LITHOLOGY	DESCRIPTION	VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	ODOUR F M P	VISUAL D S	SAMPLE TYPE	% RECOVERY	N (Blow/6")	NUMBER	ANALYSIS	DUPLICATE	DIAGRAM	DESCRIPTION	REMARKS
		Ground surface.												
0.20		**TOP SOIL**				MC	86							
		CLAYEY SILT brown or grey-brown, moist, stiff	H - 0, I - 0						BH16-11 1					
1.52		**SILTY CLAY** grey-brown, wet to very wet, soft to very soft	H - 0, I - 0			MC	100		BH16-11 2A	Metals and Inorganics				
		becoming wet	H - 0, I - 0						BH16-11 2B					
			H - 0, I - 0			MC	100		BH16-11 3A					
		becoming grey and unweathered	H - 0, I - 0						BH16-11 3B	Metals and Inorganics				
			H - 0, I - 0			MC	100		BH16-11 4A					
			H - 0, I - 0						BH16-11 4B					
6.10		*Refusal at 6.10 m below ground surface on assumed bedrock*												
		End of borehole at 6.10 m.												

Projet : 161-08368-00 PHASE TWO ESA - 3636 INNES ROAD.GPJ Type rapport : WSP_EN_WELL-ENVIRONMENTAL Data Template : WSP_TEMPLATE_GEOTECH.GDT 6/10/2016

BOREHOLE DRILLING RECORD : **BH16-12**

Prepared by: **Kathryn Maton** Date (Start): **2/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032334 mE
Y = 459386 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS

PCB	Poly-Chlorinated Biphenyls	MAH	Monocyclic Aromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	PAH	Polycyclic Aromatic Hydrocarbons
Inorg. C.	Inorganic Compounds	PH C_{10}-C_{50}	Petroleum Hydrocarbons C_{10}-C_{50}
Phenol. C.	Phenolic Compounds	PH F1-F4	Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
VOC	Volatil Organic Compounds (MAH & CAH)	Metals	Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
Diox. & Fur.	Dioxins & Furans	HWR	Leacheate Tests (Haz. Waste Reg.)
CAH	Chlorinated Aliphatic Hydrocarbons		

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR (F M P)	OBSERVATIONS: VISUAL (D S)	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
0.15		**TOP SOIL**	H - 0, I - 0			MC	76		BH16-12 1					
		CLAYEY SILT brown or grey-brown, moist, stiff												
1.52		**SILTY CLAY** grey-brown, moist, stiff	H - 0, I - 0			MC	100		BH16-12 2A	Metals and Inorganics				
		becoming wet and soft	H - 0, I - 0						BH16-12 2B					
		becoming grey, very soft and unweathered	H - 0, I - 0			MC	100		BH16-12 3A					
			H - 0, I - 0						BH16-12 3B	Metals and Inorganics				
			H - 0, I - 0			MC	100		BH16-12 4A					
6.25		*with some sand*												
		Refusal at 6.25 m below ground surface on assumed bedrock	H - 0, I - 0						BH16-12 4B					
		End of borehole at 6.25 m.												

BOREHOLE DRILLING RECORD : **BH16-13**

Prepared by: **Kathryn Maton** Date (Start): **2/6/2016**
Reviewed by: **Carolyn Adams** Date (End): **2/6/2016**

Project Name: **Phase Two Environmental Site Assessment**
Site: **Part of Lot 4, Concession 3, Parts 1-5, Gloucester, Ontario**
Sector:
Client: **The Builders Warehouse Inc.**

Project Number: **161-06382-00**
Geographic Coordinates: X = 5032385 mE
Y = 459515 mN
Surface Elevation: m *()*
Top of PVC Elevation:

Drilling Company: Strata Drilling Group
Drilling Equipment: Geomachine GS100
Drilling Method: Probe rod
Borehole Diameter: 50 mm
Drilling Fluid: None
Sampling Method:

ODOUR
F - Light
M - Medium
P - Persistent

VISUAL
D - Disseminated Product
S - Saturated with Product

SAMPLE TYPE
DC - Diamond Corer
SS - Split Spoon
MA - Manual Auger
TR - Trowel
ST - Shelby Tube
TU - DT32 Liner
MC - Macro Core Liner

▽ Water Level ▼ Free Phase

CHEMICAL ANALYSIS

PCB	Poly-Chlorinated Biphenyls	MAH	Monocyclic Aromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	PAH	Polycyclic Aromatic Hydrocarbons
Inorg. C.	Inorganic Compounds	PH C_{10}-C_{50}	Petroleum Hydrocarbons C_{10}-C_{50}
Phenol. C.	Phenolic Compounds	PH F1-F4	Petroleum Hydrocarbons F1-F4 (C_{10}-C_{50})
VOC	Volatil Organic Compounds (MAH & CAH)	Metals	Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Silver, Tin, Zinc.
Diox. & Fur.	Dioxins & Furans	HWR	Leacheate Tests (Haz. Waste Reg.)
CAH	Chlorinated Aliphatic Hydrocarbons		

DEPTH *ELEVATION* (m)	GEOLOGY / LITHOLOGY: LITHOLOGY	GEOLOGY / LITHOLOGY: DESCRIPTION	OBSERVATIONS: VAPOR CONC. I - Isobutylene (ppm) H - Hexane (ppm)	OBSERVATIONS: ODOUR (F M P)	OBSERVATIONS: VISUAL (D S)	SAMPLES: SAMPLE TYPE	SAMPLES: % RECOVERY	SAMPLES: N (Blow/6")	SAMPLES: NUMBER	SAMPLES: ANALYSIS	SAMPLES: DUPLICATE	MONITORING WELL: DIAGRAM	MONITORING WELL: DESCRIPTION	REMARKS
		Ground surface.												
0.18		**TOP SOIL**				MC	73							
		CLAYEY SILT brown or grey-brown, moist, stiff	H - 0, I - 0											
1.52		**SILTY CLAY** grey-brown, moist, stiff	H - 0, I - 0			MC	100			Metals and Inorganics	BH16-13-102A			
		becoming wet												
		becoming wet to very wet	H - 0, I - 0											
		becoming grey and unweathered	H - 0, I - 0			MC	100							
			H - 0, I - 0							Metals and Inorganics				
			H - 0, I - 0			MC	50							
5.18		*Refusal at 5.18 m below ground surface on assumed bedrock*												
		End of borehole at 5.18 m.												

RAPPORT DE FORAGE : **F-01**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5191369842 °O
Y = 45.4458564224 °N
Élévation surface : 90.69 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR *ÉLÉVATION* (m)	STRATIGRAPHIE	DESCRIPTION	CONC. VAPEUR (ppm OU % LIE)	OBSERVATIONS ODEUR F	ODEUR M	ODEUR P	VISUEL D	VISUEL S	TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	PUITS D'OBSERVATION DIAGRAMME	PUITS D'OBSERVATION DESCRIPTION	REMARQUES
		Surface du terrain.															
0.10 *90.59*		Asphalte.															
		Remblai : Gravier sableux sec.							CF	82	11 6 6 11	F-01 (0.30-0.40) F-01 (0.40-0.50) F-01 (0.50-0.91)	HP F1-F4 HAP BTEX Métaux (R153)				
0.50 *90.19*		Sol naturel : Gravier sableux.															
1.06 *89.63*		Fin du forage à 1.06 m de profondeur.							CF	33	15 R/1.06						Refus à 1.06 m sur bloc ou roc.

RAPPORT DE FORAGE : **F-02**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5189257577 °O
Y = 45.445930007 °N
Élévation surface : 90.64 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR *ÉLÉVATION* (m)	GÉOLOGIE / STRATIGRAPHIE		OBSERVATIONS				ÉCHANTILLONS						PUITS D'OBSERVATION		
	STRATIGRAPHIE	DESCRIPTION	CONC. VAPEUR (ppm OU % LIE)	ODEUR	VISUEL		TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	DIAGRAMME	DESCRIPTION	REMARQUES
				F M P	D S										
		Surface du terrain.													
0.10 *90.54*		Asphalte.													
		Remblai : Gravier sableux brun gris sec.													
0.45							CF	41	3 11 9 6	F-02 (0.30-0.45)					
0.55 *90.09*		Sol naturel : Sable silteux noir.								F-02 (0.45-0.55)	HP F1-F4 HAP Métaux (R153)				
0.75 *89.89*		Sol naturel : Sable silteux brun sec.								F-02 (0.55-0.75)	HP F1-F4 HAP BTEX				
		Sol naturel : Sable graveleux.								F-02 (0.75-0.91)					
							CF	66	3 6 R/1.21	F-02 (0.91-1.02)					
1.21 *89.43*		Fin du forage à 1.21 m de profondeur.								F-02 (1.02-1.12)					Refus à 1.21 m sur bloc ou roc.

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

RAPPORT DE FORAGE : **F-03**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5196137735 °O
Y = 45.4456012321 °N
Élévation surface : 90.39 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR ÉLÉVATION (m)	STRATIGRAPHIE	DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	ODEUR F	ODEUR M	ODEUR P	VISUEL D	VISUEL S	ÉCHANTILLONS: TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	DESCRIPTION	REMARQUES
		Surface du terrain.															
0.10 / *90.29*		Asphalte.															
		Remblai : Gravier sableux sec.															
0.30 / *90.09*		Sol naturel : Sable graveleux gris.							CF	49	12 5 5 3	F-03 (0.30-0.50)	HP F1-F4 HAP BTEX Métaux (R153)				
0.50 / *89.89*		Sol naturel : Sable silteux avec trace de gravier.										F-03 (0.50-0.91)	HP F1-F4 HAP BTEX Métaux (R153)				
0.91 / *89.48*		Sol naturel : Sable silteux.							CF	33		F-03 (0.91-1.01)	HP F1-F4 HAP BTEX Métaux (R153)				
												F-03 (1.01-1.11)					
1.52 / *88.87*		Fin du forage à 1.52 m de profondeur.															

RAPPORT DE FORAGE : **F-04**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5201167458 °O
Y = 45.4451939281 °N
Élévation surface : 89.29 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES
BPC — Biphényles polychlorés
BTEX — Benzène, toluène, éthylbenzène, xylène
COT — Carbone organique total
C. Inorg. — Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. — Composés phénoliques
COV — Hydrocarbures HAM et HAC
Diox. & Fur. — Dioxines et furanes
HAC — Hydrocarb. aliphatiques chlorés
HAM — Hydrocarbures aromatiques monocycliques
HAP — Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} — Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 — Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure — Mercure
Métaux — Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD — Lixiviation (mat. dangereuses)

PROFONDEUR / ÉLÉVATION (m)	GÉOLOGIE / STRATIGRAPHIE		OBSERVATIONS				ÉCHANTILLONS						PUITS D'OBSERVATION		
	STRATIGRAPHIE	DESCRIPTION	CONC. VAPEUR (ppm OU % LIE)	ODEUR	VISUEL		TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	DIAGRAMME	DESCRIPTION	REMARQUES
				F M P	D S										
		Surface du terrain.													
89.29		Remblai : Sable graveleux gris et blanc.					CF	74	85 55 30 18	F-04 (0.00-0.20)					
0.20															
89.09		Remblai : Gravier sableux saturé								F-04 (0.20-0.61)					
0.61															
88.68		Sol naturel : Argile silteuse brune grise.					CF	90	1 1 2 6	F-04 (0.61-1.22)	HP F1-F4 HAP BTEX				
1.22															
88.07		Fin du forage à 1.22 m de profondeur.													Refus à 1.22 m sur bloc ou roc.

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

RAPPORT DE FORAGE : **F-05**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5198284892 °O
Y = 45.4453512328 °N
Élévation surface : 89.21 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES

BPC	Biphényles polychlorés
BTEX	Benzène, toluène, éthylbenzène, xylène
COT	Carbone organique total
C. Inorg.	Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol.	Composés phénoliques
COV	Hydrocarbures HAM et HAC
Diox. & Fur.	Dioxines et furanes
HAC	Hydrocarb. aliphatiques chlorés
HAM	Hydrocarbures aromatiques monocycliques
HAP	Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50}	Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4	Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure	Mercure
Métaux	Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD	Lixiviation (mat. dangereuses)

PROFONDEUR / ÉLÉVATION (m)	GÉOLOGIE / STRATIGRAPHIE		OBSERVATIONS					ÉCHANTILLONS						PUITS D'OBSERVATION		
	STRATIGRAPHIE	DESCRIPTION	CONC. VAPEUR (ppm OU % LIE)	ODEUR		VISUEL		TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	DIAGRAMME	DESCRIPTION	REMARQUES
				F	M	P	D	S										
		Surface du terrain.																
89.21 0.20		Remblai : Sable et gravier sec							CF	66	58 69 21 18	F-05 (0.00-0.20)					
89.01 0.61		Sol naturel : Gravier noir et saturé avec un peu de sable.										F-05 (0.20-0.61)					
88.60		Sol naturel : Argile silteuse brune-beige et humide.							CF	100	1 1 5 6	F-05 (0.61-1.22)					
									CF	100		F-05 (1.22-1.32)	HP F1-F4 HAP BTEX Métaux (R153)					
1.83												F-05 (1.32-1.83)						
87.38 2.10		Sol naturel : Argile silteuse grise humide.							CF	82	3 3 22 8	F-05 (1.83-2.10)					
87.11 2.34		Sol naturel : Gravier sableux gris.										F-05 (2.10-2.34)					
86.87	Roc atteint	Fin du forage à 2.34 m de profondeur.															

RAPPORT DE FORAGE : **F-06**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5200570318 °O
Y = 45.4477309683 °N
Élévation surface : 89.22 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES

BPC	Biphényles polychlorés
BTEX	Benzène, toluène, éthylbenzène, xylène
COT	Carbone organique total
C. Inorg.	Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol.	Composés phénoliques
COV	Hydrocarbures HAM et HAC
Diox. & Fur.	Dioxines et furanes
HAC	Hydrocarb. aliphatiques chlorés
HAM	Hydrocarbures aromatiques monocycliques
HAP	Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50}	Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4	Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure	Mercure
Métaux	Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD	Lixiviation (mat. dangereuses)

PROFONDEUR ÉLÉVATION (m)	GÉOLOGIE / STRATIGRAPHIE: STRATIGRAPHIE	GÉOLOGIE / STRATIGRAPHIE: DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	OBSERVATIONS: ODEUR (F M P)	OBSERVATIONS: VISUEL (D S)	ÉCHANTILLONS: TYPE ÉCHANTILLON	ÉCHANTILLONS: % RÉCUPÉRATION	ÉCHANTILLONS: N (Coups/6")	ÉCHANTILLONS: NUMÉRO	ÉCHANTILLONS: ANALYSES	ÉCHANTILLONS: DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	PUITS D'OBSERVATION: DESCRIPTION	REMARQUES
		Surface du terrain.												
89.22		Remblai : Sable graveleux gris-brun et sec.				CF	100	1 3 4 7	F-06 (0.00-0.61)	HP F1-F4 HAP BTEX				
0.61														
88.61		Sol naturel : Argile silteuse grise.				CF	100	1 4 4 6	F-06 (0.61-1.22)					
						CF	49	56 36 19 10	F-06 (1.22-1.83)					
87.70														
1.83		Fin du forage à 1.52 m de profondeur.												

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

RAPPORT DE FORAGE : **F-07**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5199577902 °O
Y = 45.4476971365 °N
Élévation surface : 89.47 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

Niveau d'eau Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR *ÉLÉVATION* (m)	STRATIGRAPHIE	DESCRIPTION	CONC. VAPEUR (ppm OU % LIE)	ODEUR F	ODEUR M	ODEUR P	VISUEL D	VISUEL S	TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	DIAGRAMME	DESCRIPTION	REMARQUES
		Surface du terrain.															
89.47		Remblai : Sable graveleux gris-blanc et sec.							CF	57	110 54 13 11	F-07 (0.00-0.50)					
0.50																	
0.60		Remblai : Sable graveleux gris-blanc et humide.										F-07 (0.50-0.61)					
88.87		Sol naturel : Argile silteuse.							CF	90	1 3 4 6	F-07 (0.61-1.22)	HP F1-F4 HAP BTEX				
									CF			F-07 (1.22-1.83)					
87.95																	
1.83		Fin du forage à 1.52 m de profondeur.															

RAPPORT DE FORAGE : **F-08**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5196453839 °O
Y = 45.4472729549 °N
Élévation surface : 89.2 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage :

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

Niveau d'eau Phase libre

ANALYSES CHIMIQUES

BPC	Biphényles polychlorés
BTEX	Benzène, toluène, éthylbenzène, xylène
COT	Carbone organique total
C. Inorg.	Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol.	Composés phénoliques
COV	Hydrocarbures HAM et HAC
Diox. & Fur.	Dioxines et furanes
HAC	Hydrocarb. aliphatiques chlorés
HAM	Hydrocarbures aromatiques monocycliques
HAP	Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50}	Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4	Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure	Mercure
Métaux	Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD	Lixiviation (mat. dangereuses)

PROFONDEUR *ÉLÉVATION* (m)	GÉOLOGIE / STRATIGRAPHIE: STRATIGRAPHIE	GÉOLOGIE / STRATIGRAPHIE: DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	OBSERVATIONS: ODEUR (F M P)	OBSERVATIONS: VISUEL (D S)	ÉCHANTILLONS: TYPE ÉCHANTILLON	ÉCHANTILLONS: % RÉCUPÉRATION	ÉCHANTILLONS: N (Coups/6")	ÉCHANTILLONS: NUMÉRO	ÉCHANTILLONS: ANALYSES	ÉCHANTILLONS: DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	PUITS D'OBSERVATION: DESCRIPTION	REMARQUES
		Surface du terrain.												
0.10 *89.10*		Remblai : Argile graveleuse.				CF	41	2 11						
		Remblai : Sable graveleux gris.						8 22		HP F1-F4 HAP BTEX				
0.61 *88.59*		Fin du forage à 0.61 m de profondeur.												Refus à 0.61 m sur bloc ou roc.

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

RAPPORT DE FORAGE : **F-09**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5190143537 °O
Y = 45.4460829513 °N
Élévation surface : 89.71 m *()*
Élévation margelle :

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage :

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR ÉLÉVATION (m)	GÉOLOGIE / STRATIGRAPHIE: STRATIGRAPHIE	GÉOLOGIE / STRATIGRAPHIE: DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	OBSERVATIONS: ODEUR (F M P)	OBSERVATIONS: VISUEL (D S)	ÉCHANTILLONS: TYPE ÉCHANTILLON	ÉCHANTILLONS: % RÉCUPÉRATION	ÉCHANTILLONS: N (Coups/6")	ÉCHANTILLONS: NUMÉRO	ÉCHANTILLONS: ANALYSES	ÉCHANTILLONS: DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	PUITS D'OBSERVATION: DESCRIPTION	REMARQUES
		Surface du terrain.												
89.71		Remblai : Sable et gravier. Gris blanc sec devenant humide.				CF	74	64 66 24 16		HP F1-F4 HAP BTEX	DUP7			
0.61														
89.10		Sol naturel : Argile silteuse avec un peu de sable humide.				CF	25	1 2 3 4						
						CF	100	2 3 3 5						
88.19														
1.83		Fin du forage à 1.52 m de profondeur.												

RAPPORT DE FORAGE : **PO-01**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-06-27**
Vérifié par : **Annie Gauthier** Date fin : **2013-06-27**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5189110706 °O
Y = 45.446095328 °N
Élévation surface : 89.99 m *()*
Élévation margelle : 89.99 m *()*

Entrepreneur forage : Marathon Drilling Co. Ltd.
Type de foreuse : CME 75
Équipement de forage : Tarière tige pleine /
Diamètre du forage : 200 mm
Fluide forage : Aucun
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR *ÉLÉVATION* (m)	GÉOLOGIE / STRATIGRAPHIE: STRATIGRAPHIE	GÉOLOGIE / STRATIGRAPHIE: DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	OBSERVATIONS: ODEUR (F M P)	OBSERVATIONS: VISUEL (D S)	ÉCHANTILLONS: TYPE ÉCHANTILLON	ÉCHANTILLONS: % RÉCUPÉRATION	ÉCHANTILLONS: N (Coups/6")	ÉCHANTILLONS: NUMÉRO	ÉCHANTILLONS: ANALYSES	ÉCHANTILLONS: DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	PUITS D'OBSERVATION: DESCRIPTION	REMARQUES
		Surface du terrain.												
89.99		Remblai : Sable graveleux gris avec trace d'oxydation.				CF	57	60 55 35 22	PO-01 (0.00-0.61)			Margelle Bentonite Tube PVC Sable		
0.61														
89.38		Sol naturel : Argile silteuse brune.				CF	90	2 6 8 6	PO-01 (0.61-0.86)	HP F1-F4 HAP BTEX Métaux (R153)				
0.86														
89.13		Sol naturel : Sable silteux humide.							PO-01 (0.86-1.22)					
1.22														
88.77		Sol naturel : Argile silteuse grise et humide.				CF	100	2 2 4 6	PO-01 (1.22-1.83)			CRÉPINE CPV Diam. : 30 mm Ouv. : 0.25 mm Long. : 1.52 m EAU Prof. : 0.48 m Élév. : 89.46 m Date : 2013-07-08		
1.83														
87.91		Fin du forage à 2.08 m de profondeur.										Bouchon		

RAPPORT DE TRANCHÉE : **TE-01**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-07-02**
Vérifié par : **Annie Gauthier** Date fin : **2013-07-02**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5199533185 °O
Y = 45.4457572743 °N
Élévation surface : 89.57 m *()*
Élévation margelle :

Entrepreneur forage : Denis Ladouceur Excavation Ltée
Type de foreuse : Rétrocaveuse
Équipement de forage : Manuelle /
Diamètre du forage :
Fluide forage :
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

Niveau d'eau Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR ÉLÉVATION (m)	STRATIGRAPHIE	DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	ODEUR (F M P)	VISUEL (D S)	ÉCHANTILLONS: TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	DESCRIPTION	REMARQUES
		Surface du terrain.												
89.57		Remblai : Gravier sableux avec trace de silt. Gris et humide.				TR			TE-01 (0.00-0.30)					
0.30 / *89.27*		Remblai : Silt sableux brun avec trace de matière résiduelle (bois brûlé).							TE-01 (0.30-0.60)	HP F1-F4 HAP BTEX Métaux (R153)				
0.60 / *88.97*		*Infiltration d'eau à 0.6 m.* Sol naturel : Silt argileux gris humide.							TE-01 (0.60-1.00)					
1.00 / *88.57*		Sol naturel : Silt sableux graveleux avec trace d'argile. Gris humide.							TE-01 (1.00-3.50)					
3.50 / *86.07*	Roc atteint	*Infiltration d'eau.* Fin de la tranchée												

Projet : 131-13558-00_TE_01.GPJ Type rapport : GENIVAR-PUITS-FR Data Template : GENIVAR_TEMPLATE_GEOTECH.GDT 2013-8-16

RAPPORT DE TRANCHÉE : **TE-02**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-07-02**
Vérifié par : **Annie Gauthier** Date fin : **2013-07-02**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5205637155 °O
Y = 45.4458202359 °N
Élévation surface : 89.59 m *()*
Élévation margelle :

Entrepreneur forage : Denis Ladouceur Excavation Ltée
Type de foreuse : Rétrocaveuse
Équipement de forage : Manuelle /
Diamètre du forage :
Fluide forage :
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

Niveau d'eau Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR / ÉLÉVATION (m)	GÉOLOGIE / STRATIGRAPHIE	DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	ODEUR (F M P)	VISUEL (D S)	ÉCHANTILLONS: TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	DESCRIPTION	REMARQUES
		Surface du terrain.												
89.59		Remblai : Matière résiduelle (55%) (brique, bois, bois brûlé et plastique) et silt sableux avec trace de matière organique. Brun humide.				TR			TE-02 (0.00-0.35)	HP F1-F4 HAP BTEX Métaux (R153)				
0.35 / 89.24		Sol naturel : Silt avec un peu de sable et trace de matière organique.							TE-02 (0.35-1.00)	HP F1-F4 HAP BTEX Métaux (R153)				
1.00 / 88.59		Sol naturel : Silt argileux avec traces de gravier brun-beige.							TE-02 (1.00-1.45)	HP F1-F4 HAP BTEX Métaux (R153)				
1.45 / 88.14		Sol naturel : Silt argileux gris avec traces de gravier.							TE-02 (1.45-3.30)					
3.30 / 86.29	Roc atteint	*Infiltration d'eau.* Fin de la tranchée												

RAPPORT DE TRANCHÉE : **TE-03**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-07-02**
Vérifié par : **Annie Gauthier** Date fin : **2013-07-02**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5206801071 °O
Y = 45.4461519033 °N
Élévation surface : 88.98 m *()*
Élévation margelle :

Entrepreneur forage : Denis Ladouceur Excavation Ltée
Type de foreuse : Rétrocaveuse
Équipement de forage : Manuelle /
Diamètre du forage :
Fluide forage :
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES
BPC Biphényles polychlorés
BTEX Benzène, toluène, éthylbenzène, xylène
COT Carbone organique total
C. Inorg. Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol. Composés phénoliques
COV Hydrocarbures HAM et HAC
Diox. & Fur. Dioxines et furanes
HAC Hydrocarb. aliphatiques chlorés
HAM Hydrocarbures aromatiques monocycliques
HAP Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50} Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4 Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure Mercure
Métaux Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD Lixiviation (mat. dangereuses)

PROFONDEUR / ÉLÉVATION (m)	GÉOLOGIE / STRATIGRAPHIE	DESCRIPTION	OBSERVATIONS: CONC. VAPEUR (ppm OU % LIE)	ODEUR F	ODEUR M	ODEUR P	VISUEL D	VISUEL S	ÉCHANTILLONS: TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	PUITS D'OBSERVATION: DIAGRAMME	DESCRIPTION	REMARQUES
		Surface du terrain.															
88.98		Remblai : Gravier sableux gris saturé. *Eau à la surface.*							TR			TE-03 (0.00-0.30)					
0.30																	
88.68		Sol naturel : Silt argileux gris humide.										TE-03 (0.30-1.00)	HP F1-F4 HAP	DUP8			
1.00																	
87.98		Sol naturel : Silt avec un peu d'argile gris humide.										TE-03 (1.00-2.60)					
2.60																	
86.38	Roc atteint	Fin de la tranchée															

Projet : 131-13558-00_TE_01.GPJ Type rapport : GENIVAR-PUITS-FR Data Template : GENIVAR_TEMPLATE_GEOTECH.GDT 2013-8-16

RAPPORT DE TRANCHÉE : **TE-04**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-07-02**
Vérifié par : **Annie Gauthier** Date fin : **2013-07-02**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5202005926 °O
Y = 45.4465543177 °N
Élévation surface : 90.77 m *()*
Élévation margelle :

Entrepreneur forage : Denis Ladouceur Excavation Ltée
Type de foreuse : Rétrocaveuse
Équipement de forage : Manuelle /
Diamètre du forage :
Fluide forage :
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

▽ Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES

BPC	Biphényles polychlorés
BTEX	Benzène, toluène, éthylbenzène, xylène
COT	Carbone organique total
C. Inorg.	Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol.	Composés phénoliques
COV	Hydrocarbures HAM et HAC
Diox. & Fur.	Dioxines et furanes
HAC	Hydrocarb. aliphatiques chlorés
HAM	Hydrocarbures aromatiques monocycliques
HAP	Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50}	Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4	Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure	Mercure
Métaux	Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD	Lixiviation (mat. dangereuses)

PROFONDEUR / ÉLÉVATION (m)	GÉOLOGIE / STRATIGRAPHIE		OBSERVATIONS				ÉCHANTILLONS						PUITS D'OBSERVATION		
	STRATIGRAPHIE	DESCRIPTION	CONC. VAPEUR (ppm OU % LIE)	ODEUR	VISUEL		TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	DIAGRAMME	DESCRIPTION	REMARQUES
				F M P	D S										
		Surface du terrain.													
90.77		Remblai : Sable graveleux avec trace de matière organique. Brun sec.					TR			TE-04 (0.00-1.00)					
1.00															
89.77		Remblai : Silt argileux avec trace de matière organique. Brun noir humide.								TE-04 (1.00-2.30)	HP F1-F4 HAP Métaux (R153)				
2.30															
88.47		Sol naturel : Silt avec un peu d'argile gris humide.								TE-04 (2.30-3.20)					
3.20		*Infiltration d'eau*													
87.57		Fin de la tranchée													

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Projet : 131-13558-00_TE_01.GPJ Type rapport : GENIVAR-PUITS-FR Data Template : GENIVAR_TEMPLATE_GEOTECH.GDT 2013-8-16

RAPPORT DE TRANCHÉE : **TE-05**

GENIVAR

Préparé par : **Catherine Tardy Laporte** Date début : **2013-07-02**
Vérifié par : **Annie Gauthier** Date fin : **2013-07-02**

Nom du projet : **Évaluation Environnementale de site (ÉES) Phase II**
Site : **Site # 38 Orléans**
Secteur : **3636-3646, chemin Innes, Orléans (Ontario)**
Client : **La Coop fédérée**

Numéro de projet : **131-13558-00**
Coordonnées géographiques : X = 75.5204743629 °O
Y = 45.4472004843 °N
Élévation surface : 92.43 m *()*
Élévation margelle :

Entrepreneur forage : Denis Ladouceur Excavation Ltée
Type de foreuse : Rétrocaveuse
Équipement de forage : Manuelle /
Diamètre du forage :
Fluide forage :
Équip. d'échantillonnage : Carottier fendu

ODEUR
F - Faible odeur
M - Odeur moyenne
P - Odeur persistante

VISUEL
D - Produit disséminé
S - Sol saturé de produit

TYPE D'ÉCHANTILLON
CD - Carottier à diamants
CF - Cuillère fendue
PS - Échantillonneur à piston
TC - Tube creux
TM - Tarière manuelle
TR - Truelle
TS - Tube Shelby
TT - Tube transparent

Niveau d'eau ▼ Phase libre

ANALYSES CHIMIQUES

BPC	Biphényles polychlorés
BTEX	Benzène, toluène, éthylbenzène, xylène
COT	Carbone organique total
C. Inorg.	Autres composés inorganiques (cyanure, fluorure, bromure, soufre total)
C. Phénol.	Composés phénoliques
COV	Hydrocarbures HAM et HAC
Diox. & Fur.	Dioxines et furanes
HAC	Hydrocarb. aliphatiques chlorés
HAM	Hydrocarbures aromatiques monocycliques
HAP	Hydrocarbures aromatiques polycycliques
HP C_{10}-C_{50}	Hydrocarbures pétroliers C_{10}-C_{50}
HP F1-F4	Hydrocarb. pétrol. F1-F4 (C_{10}-C_{50})
Mercure	Mercure
Métaux	Argent, arsenic, baryum, cadmium, cobalt, chrome, cuivre, étain, manganèse, molybdène, nickel, plomb, sélénium, zinc.
RMD	Lixiviation (mat. dangereuses)

PROFONDEUR / ÉLÉVATION (m)	STRATIGRAPHIE	DESCRIPTION	CONC. VAPEUR (ppm OU % LIE)	ODEUR F	ODEUR M	ODEUR P	VISUEL D	VISUEL S	TYPE ÉCHANTILLON	% RÉCUPÉRATION	N (Coups/6")	NUMÉRO	ANALYSES	DUPLICATA	DIAGRAMME	DESCRIPTION	REMARQUES
		Surface du terrain.															
92.43																	
0.15		Terre végétale et un peu de matière résiduelle (20%) (brique).							TR								
92.28		Remblai : Silt sableux graveleux avec trace de matière résiduelle (bois) brun.										TE-05 (0.15-2.30)	HP F1-F4 HAP				
2.30																	
90.13		Remblai : Silt argileux avec trace de matière organique brun noir.										TE-05 (2.30-3.00)					
												TE-05 (3.00-3.60)					
3.60																	
88.83		Fin de la tranchée															

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0

Appendix C

CERTIFICATES OF ANALYSIS

AGAT Laboratories

5835 COOPERS AVENUE
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CLIENT NAME: WSP CANADA INC.
500, BOUL GREBER 3E ETAGE
GATINEAU, QC J8T7W3
(819) 243-2827

ATTENTION TO: Matthieu Rochon

PROJECT: 161-06382-00-101-980

AGAT WORK ORDER: 16Z101291

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Jun 15, 2016

PAGES (INCLUDING COVER): 21

VERSION*: 2

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

*NOTES
VERSION 2: Revised report sent on June 15, 2016. Data for Inorganics has been added this report.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

		SAMPLE DESCRIPTION:		BH16-1-1B	BH16-2-1B	BH16-3-1B	BH16-4-1B	BH16-5-1B	BH16-6-1B	BH16-7-1	BH16-8-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
Parameter	Unit	G / S	RDL	7608015	7608030	7608034	7608053	7608075	7608096	7608105	7608133
Antimony	µg/g		0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g		1	1	1	2	1	1	3	2	2
Barium	µg/g		2	325	345	286	254	129	180	302	296
Beryllium	µg/g		0.5	0.9	1.0	0.9	0.8	0.6	0.6	1.0	0.9
Boron	µg/g		5	<5	<5	6	<5	<5	5	<5	<5
Boron (Hot Water Soluble)	µg/g		0.10	0.13	0.15	0.24	0.12	0.29	0.55	0.11	<0.10
Cadmium	µg/g		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g		2	101	116	113	87	59	63	118	121
Cobalt	µg/g		0.5	19.7	22.0	21.6	16.3	11.2	12.4	22.4	25.9
Copper	µg/g		1	43	47	46	35	16	27	50	44
Lead	µg/g		1	7	8	7	6	8	9	8	9
Molybdenum	µg/g		0.5	<0.5	<0.5	<0.5	0.5	0.5	0.6	<0.5	0.5
Nickel	µg/g		1	58	64	65	47	27	34	67	67
Selenium	µg/g		0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g		0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g		0.4	0.4	0.5	<0.4	<0.4	<0.4	<0.4	0.5	0.4
Uranium	µg/g		0.5	0.6	0.7	0.6	1.0	0.9	0.6	0.8	0.9
Vanadium	µg/g		1	91	99	88	89	53	60	103	98
Zinc	µg/g		5	123	132	120	96	80	85	128	126
Chromium VI	µg/g		0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g		0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm		0.005	0.458	0.419	0.465	0.363	0.325	0.569	0.579	1.86
Sodium Adsorption Ratio	NA		NA	0.486	0.855	1.11	0.565	0.657	5.41	1.02	4.79
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.23	7.05	7.15	7.07	7.24	7.42	7.13	7.25

Certified By: Amanjot Bhela

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Certificate of Analysis

AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

		SAMPLE DESCRIPTION:		BH16-9-1	BH16-10-1	BH16-11-2A	BH16-12-2A	BH16-13-2A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6/2/2016	6/2/2016	6/2/2016	6/2/2016	6/2/2016
Parameter	Unit	G / S	RDL	7608148	7608156	7608164	7608171	7608178
Antimony	µg/g		0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g		1	2	2	2	2	2
Barium	µg/g		2	263	268	290	288	273
Beryllium	µg/g		0.5	0.9	0.8	0.8	0.7	0.8
Boron	µg/g		5	<5	<5	<5	<5	5
Boron (Hot Water Soluble)	µg/g		0.10	0.22	<0.10	0.25	0.37	0.34
Cadmium	µg/g		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g		2	112	103	107	116	112
Cobalt	µg/g		0.5	19.3	18.7	23.7	24.2	22.2
Copper	µg/g		1	47	44	48	51	47
Lead	µg/g		1	8	7	7	8	7
Molybdenum	µg/g		0.5	0.6	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g		1	60	58	62	66	64
Selenium	µg/g		0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g		0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g		0.4	<0.4	<0.4	0.4	0.4	<0.4
Uranium	µg/g		0.5	1.0	0.8	1.0	1.2	0.9
Vanadium	µg/g		1	99	89	100	105	94
Zinc	µg/g		5	114	106	124	129	123
Chromium VI	µg/g		0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g		0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g		0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm		0.005	0.394	0.215	0.176	0.091	0.075
Sodium Adsorption Ratio	NA		NA	1.10	1.04	0.622	0.436	0.416
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.15	6.77	7.05	7.13	7.13

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(All)

7608015-7608178 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Amanjot Bhela

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AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

		SAMPLE DESCRIPTION:		BH16-1-2A	BH16-1-2B	BH16-2-2A	BH16-2-2B	BH16-3-2A	BH16-3-3	BH16-4-2B	BH16-4-102B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016
Parameter	Unit	G / S	RDL	7608016	7608020	7608023	7608027	7608038	7608050	7608062	7608065
Antimony	µg/g		0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g		1	1	1	1	2	1	5	2	4
Boron	µg/g		5	<5	6	<5	8	5	9	8	9
Barium	µg/g		2	347	198	355	271	398	346	347	250
Beryllium	µg/g		0.5	1.0	0.7	0.9	0.8	0.9	<0.5	1.0	0.8
Cadmium	µg/g		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g		2	108	45	99	65	111	26	70	57
Cobalt	µg/g		0.5	23.0	10.7	20.4	16.7	22.6	6.8	20.2	18.2
Copper	µg/g		1	48	28	47	33	48	15	35	35
Lead	µg/g		1	7	6	7	6	7	8	7	8
Molybdenum	µg/g		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5
Nickel	µg/g		1	60	25	55	40	62	11	43	37
Selenium	µg/g		0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g		0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g		0.4	0.5	<0.4	0.4	<0.4	0.5	<0.4	0.4	<0.4
Uranium	µg/g		0.5	0.6	<0.5	0.6	0.6	0.7	0.6	0.6	0.6
Vanadium	µg/g		1	101	57	98	76	102	25	88	80
Zinc	µg/g		5	137	71	129	101	146	56	127	112

Certified By: Amanjot Bhela

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Certificate of Analysis

AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

		SAMPLE DESCRIPTION:		BH16-5-101B	BH16-5-2B	BH16-6-2B	BH16-7-2B	BH16-8-2B	BH16-9-2B	BH16-9-4	BH16-10-2B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/1/2016	6/2/2016	6/2/2016	6/2/2016
Parameter	Unit	G / S	RDL	7608077	7608081	7608100	7608122	7608139	7608151	7608154	7608158
Antimony	µg/g		0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g		1	2	2	3	1	2	1	1	1
Boron	µg/g		5	6	8	9	6	8	<5	<5	<5
Barium	µg/g		2	266	412	285	338	524	304	84	303
Beryllium	µg/g		0.5	0.9	1.0	0.9	0.7	1.0	0.7	<0.5	0.8
Cadmium	µg/g		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g		2	125	72	61	50	77	99	14	102
Cobalt	µg/g		0.5	22.2	19.1	18.4	15.1	22.7	20.0	5.4	22.6
Copper	µg/g		1	44	39	35	30	47	46	11	45
Lead	µg/g		1	8	8	8	6	9	6	4	6
Molybdenum	µg/g		0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.6	<0.5
Nickel	µg/g		1	66	43	37	32	49	56	10	59
Selenium	µg/g		0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g		0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g		0.4	<0.4	0.5	<0.4	<0.4	0.6	0.4	<0.4	0.4
Uranium	µg/g		0.5	1.0	0.6	0.6	0.6	0.7	0.9	<0.5	0.8
Vanadium	µg/g		1	94	93	83	68	101	102	21	96
Zinc	µg/g		5	109	134	118	94	149	126	21	123

Certified By: Amanjot Bhela

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
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Certificate of Analysis

AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - Metals (Comprehensive) (Soil)

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: BH16-10-4A SAMPLE TYPE: Soil DATE SAMPLED: 6/2/2016 7608161	BH16-11-3B Soil 6/2/2016 7608167	BH16-12-3B Soil 6/2/2016 7608174	BH16-13-3B Soil 6/2/2016 7608185	BH16-13-102A Soil 6/2/2016 7608670
Antimony	µg/g		0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g		1	2	1	1	2	2
Boron	µg/g		5	8	5	5	7	<5
Barium	µg/g		2	294	297	369	246	272
Beryllium	µg/g		0.5	0.7	0.7	0.7	0.7	0.7
Cadmium	µg/g		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g		2	80	99	99	84	109
Cobalt	µg/g		0.5	19.6	21.1	23.2	18.2	22.4
Copper	µg/g		1	40	47	50	38	46
Lead	µg/g		1	7	6	7	6	7
Molybdenum	µg/g		0.5	1.0	0.7	1.0	0.9	<0.5
Nickel	µg/g		1	47	56	58	48	63
Selenium	µg/g		0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g		0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g		0.4	<0.4	<0.4	0.5	<0.4	<0.4
Uranium	µg/g		0.5	1.8	1.0	0.9	1.9	0.9
Vanadium	µg/g		1	87	94	114	82	93
Zinc	µg/g		5	117	123	141	108	120

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

Certified By: Amanjot Bhela

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SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

		SAMPLE DESCRIPTION:		BH16-5-2B	BH16-7-1	BH16-8-1
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		6/1/2016	6/1/2016	6/1/2016
Parameter	**Unit**	**G / S**	**RDL**	**7608081**	**7608105**	**7608133**
Naphthalene	µg/g		0.05	0.06	<0.05	<0.05
Acenaphthylene	µg/g		0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g		0.05	<0.05	<0.05	<0.05
Fluorene	µg/g		0.05	0.11	<0.05	<0.05
Phenanthrene	µg/g		0.05	0.17	<0.05	<0.05
Anthracene	µg/g		0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05
Pyrene	µg/g		0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g		0.05	<0.05	<0.05	<0.05
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g		0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g		0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g		0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g		0.05	0.50	<0.05	<0.05
Moisture Content	%		0.1	17.1	26.3	27.7
Surrogate	**Unit**	**Acceptable Limits**				
Chrysene-d12	%	50-140		96	119	104

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

7608081-7608133 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By: N Popowich

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PROJECT: 161-06382-00-101-980

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

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

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

		SAMPLE DESCRIPTION:		BH16-6-1B
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		6/1/2016
Parameter	**Unit**	**G / S**	**RDL**	**7608096**
Benzene	µg/g		0.02	<0.02
Toluene	µg/g		0.08	<0.08
Ethylbenzene	µg/g		0.05	<0.05
Xylene Mixture	µg/g		0.05	<0.05
F1 (C6 to C10)	µg/g		5	<5
F1 (C6 to C10) minus BTEX	µg/g		5	<5
F2 (C10 to C16)	µg/g		10	<10
F3 (C16 to C34)	µg/g		50	<50
F4 (C34 to C50)	µg/g		50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA
Moisture Content	%		0.1	29.7
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		103

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

7608096 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
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 contributions.
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.

Certified By: NPopowich

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AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - PHCs F1 - F4 (Soil) - F2-F4

DATE RECEIVED: 2016-06-03 **DATE REPORTED: 2016-06-15**

		SAMPLE DESCRIPTION:		BH16-4-1B	BH16-5-1B	BH16-5-101B
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		6/1/2016	6/1/2016	6/1/2016
Parameter	**Unit**	**G / S**	**RDL**	**7608053**	**7608075**	**7608077**
F2 (C10 to C16)	µg/g		10	<10	<10	<10
F3 (C16 to C34)	µg/g		50	<50	<50	<50
F4 (C34 to C50)	µg/g		50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA
Moisture Content	%		0.1	19.0	19.8	21.8
Surrogate	**Unit**	**Acceptable Limits**				
Terphenyl	%	60-140		92	116	99

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

7608053-7608077 Results are based on sample dry weight.
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.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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 2-4 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.

Certified By: N Popowich

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ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

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

DATE RECEIVED: 2016-06-03

DATE REPORTED: 2016-06-15

		SAMPLE DESCRIPTION:		BH16-5-2B	BH16-7-1	BH16-8-1
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		6/1/2016	6/1/2016	6/1/2016
Parameter	**Unit**	**G / S**	**RDL**	**7608081**	**7608105**	**7608133**
Benzene	µg/g		0.02	<0.02	<0.02	<0.02
Toluene	µg/g		0.08	<0.08	<0.08	<0.08
Ethylbenzene	µg/g		0.05	0.16	<0.05	<0.05
Xylene Mixture	µg/g		0.05	0.06	<0.05	<0.05
F1 (C6 to C10)	µg/g		5	11	<5	<5
F1 (C6 to C10) minus BTEX	µg/g		5	11	<5	<5
F2 (C10 to C16)	µg/g		10	34	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	34	<10	<10
F3 (C16 to C34)	µg/g		50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50	<50
F4 (C34 to C50)	µg/g		50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA	NA
Moisture Content	%		0.1	17.1	26.3	27.7
Surrogate	**Unit**	**Acceptable Limits**				
Terphenyl	%	60-140		100	85	136

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

7608081-7608133 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
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 and PAH contributions.
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.

Certified By: N Popowich

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ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

Soil Analysis

RPT Date: Jun 15, 2016			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) - Metals (Comprehensive) (Soil)															
Antimony	7608105	7608105	<0.8	<0.8	NA	< 0.8	108%	70%	130%	100%	80%	120%	102%	70%	130%
Arsenic	7608105	7608105	2	2	NA	< 1	105%	70%	130%	93%	80%	120%	95%	70%	130%
Boron	7608105	7608105	<5	5	NA	< 5	76%	70%	130%	91%	80%	120%	79%	70%	130%
Barium	7608105	7608105	302	309	2.3%	< 2	92%	70%	130%	85%	80%	120%	93%	70%	130%
Beryllium	7608105	7608105	1.0	0.9	NA	< 0.5	91%	70%	130%	97%	80%	120%	91%	70%	130%
Cadmium	7608105	7608105	<0.5	<0.5	NA	< 0.5	95%	70%	130%	105%	80%	120%	102%	70%	130%
Chromium	7608105	7608105	118	120	1.7%	< 2	80%	70%	130%	100%	80%	120%	108%	70%	130%
Cobalt	7608105	7608105	22.4	21.7	3.2%	< 0.5	91%	70%	130%	92%	80%	120%	90%	70%	130%
Copper	7608105	7608105	50	51	2.0%	< 1	87%	70%	130%	92%	80%	120%	90%	70%	130%
Lead	7608105	7608105	8	8	0.0%	< 1	101%	70%	130%	87%	80%	120%	85%	70%	130%
Molybdenum	7608105	7608105	<0.5	<0.5	NA	< 0.5	103%	70%	130%	100%	80%	120%	100%	70%	130%
Nickel	7608105	7608105	67	67	0.0%	< 1	90%	70%	130%	91%	80%	120%	92%	70%	130%
Selenium	7608105	7608105	<0.4	<0.4	NA	< 0.4	117%	70%	130%	95%	80%	120%	98%	70%	130%
Silver	7608105	7608105	<0.2	<0.2	NA	< 0.2	100%	70%	130%	102%	80%	120%	99%	70%	130%
Thallium	7608105	7608105	0.5	0.5	NA	< 0.4	93%	70%	130%	101%	80%	120%	99%	70%	130%
Uranium	7608105	7608105	0.8	0.8	NA	< 0.5	91%	70%	130%	84%	80%	120%	84%	70%	130%
Vanadium	7608105	7608105	103	106	2.9%	< 1	85%	70%	130%	89%	80%	120%	99%	70%	130%
Zinc	7608105	7608105	128	130	1.6%	< 5	99%	70%	130%	100%	80%	120%	103%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	7608015	7608015	<0.8	<0.8	NA	< 0.8	109%	70%	130%	104%	80%	120%	105%	70%	130%
Arsenic	7608015	7608015	1	1	NA	< 1	104%	70%	130%	94%	80%	120%	97%	70%	130%
Barium	7608015	7608015	325	342	5.1%	< 2	87%	70%	130%	86%	80%	120%	97%	70%	130%
Beryllium	7608015	7608015	0.9	1.0	NA	< 0.5	99%	70%	130%	108%	80%	120%	103%	70%	130%
Boron	7608015	7608015	<5	<5	NA	< 5	71%	70%	130%	99%	80%	120%	92%	70%	130%
Boron (Hot Water Soluble)	7617440		<0.10	<0.10	NA	< 0.10	85%	60%	140%	101%	70%	130%	104%	60%	140%
Cadmium	7608015	7608015	<0.5	<0.5	NA	< 0.5	91%	70%	130%	110%	80%	120%	103%	70%	130%
Chromium	7608015	7608015	101	105	3.9%	< 2	86%	70%	130%	95%	80%	120%	109%	70%	130%
Cobalt	7608015	7608015	19.7	20.1	2.0%	< 0.5	91%	70%	130%	94%	80%	120%	93%	70%	130%
Copper	7608015	7608015	43	45	4.5%	< 1	84%	70%	130%	93%	80%	120%	90%	70%	130%
Lead	7608015	7608015	7	7	0.0%	< 1	100%	70%	130%	90%	80%	120%	88%	70%	130%
Molybdenum	7608015	7608015	<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	102%	70%	130%
Nickel	7608015	7608015	58	60	3.4%	< 1	86%	70%	130%	92%	80%	120%	94%	70%	130%
Selenium	7608015	7608015	<0.4	<0.4	NA	< 0.4	91%	70%	130%	99%	80%	120%	101%	70%	130%
Silver	7608015	7608015	<0.2	<0.2	NA	< 0.2	99%	70%	130%	103%	80%	120%	99%	70%	130%
Thallium	7608015	7608015	0.4	0.4	NA	< 0.4	97%	70%	130%	103%	80%	120%	102%	70%	130%

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Quality Assurance

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ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

Soil Analysis (Continued)

RPT Date: Jun 15, 2016			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
Uranium	7608015	7608015	0.6	0.6	NA	< 0.5	92%	70%	130%	86%	80%	120%	87%	70%	130%
Vanadium	7608015	7608015	91	93	2.2%	< 1	88%	70%	130%	90%	80%	120%	99%	70%	130%
Zinc	7608015	7608015	123	126	2.4%	< 5	100%	70%	130%	104%	80%	120%	103%	70%	130%
Chromium VI	7614373		<0.2	<0.2	NA	< 0.2	97%	70%	130%	92%	80%	120%	93%	70%	130%
Cyanide	7608015	7608015	<0.040	<0.040	NA	< 0.040	91%	70%	130%	103%	80%	120%	104%	70%	130%
Mercury	7608015	7608015	<0.10	<0.10	NA	< 0.10	97%	70%	130%	96%	80%	120%	89%	70%	130%
Electrical Conductivity	7608015	7608015	0.458	0.458	0.0%	< 0.005	99%	90%	110%	NA			NA		
Sodium Adsorption Ratio	7608015	7608015	0.486	0.470	3.3%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	7608156	7608156	6.77	6.86	1.3%	NA	101%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: Amanjot Bhela

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ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

Trace Organics Analysis

RPT Date: Jun 15, 2016			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) - F2-F4															
F2 (C10 to C16)	7608075	7608075	< 10	< 10	NA	< 10	102%	60%	130%	101%	80%	120%	70%	70%	130%
F3 (C16 to C34)	7608075	7608075	< 50	< 50	NA	< 50	105%	60%	130%	84%	80%	120%	100%	70%	130%
F4 (C34 to C50)	7608075	7608075	< 50	< 50	NA	< 50	100%	60%	130%	96%	80%	120%	100%	70%	130%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
Benzene	7607223		< 0.02	< 0.02	NA	< 0.02	105%	60%	130%	109%	60%	130%	115%	60%	130%
Toluene	7607223		< 0.08	< 0.08	NA	< 0.08	110%	60%	130%	106%	60%	130%	112%	60%	130%
Ethylbenzene	7607223		< 0.05	< 0.05	NA	< 0.05	119%	60%	130%	106%	60%	130%	112%	60%	130%
Xylene Mixture	7607223		< 0.05	< 0.05	NA	< 0.05	117%	60%	130%	108%	60%	130%	112%	60%	130%
F1 (C6 to C10)	7607223		< 5	< 5	NA	< 5	81%	60%	130%	95%	85%	115%	97%	70%	130%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	7599332		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	112%	50%	140%	94%	50%	140%
Acenaphthylene	7599332		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	114%	50%	140%	94%	50%	140%
Acenaphthene	7599332		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	111%	50%	140%	96%	50%	140%
Fluorene	7599332		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	113%	50%	140%	98%	50%	140%
Phenanthrene	7599332		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	107%	50%	140%	92%	50%	140%
Anthracene	7599332		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	112%	50%	140%	96%	50%	140%
Fluoranthene	7599332		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	110%	50%	140%	104%	50%	140%
Pyrene	7599332		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	110%	50%	140%	104%	50%	140%
Benz(a)anthracene	7599332		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	98%	50%	140%	93%	50%	140%
Chrysene	7599332		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	104%	50%	140%	95%	50%	140%
Benzo(b)fluoranthene	7599332		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	125%	50%	140%	108%	50%	140%
Benzo(k)fluoranthene	7599332		< 0.05	< 0.05	NA	< 0.05	122%	50%	140%	140%	50%	140%	125%	50%	140%
Benzo(a)pyrene	7599332		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	129%	50%	140%	105%	50%	140%
Indeno(1,2,3-cd)pyrene	7599332		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	89%	50%	140%	83%	50%	140%
Dibenz(a,h)anthracene	7599332		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	91%	50%	140%	86%	50%	140%
Benzo(g,h,i)perylene	7599332		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	84%	50%	140%	81%	50%	140%
2-and 1-methyl Naphthalene	7599332		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	100%	50%	140%	88%	50%	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 Popowkolof

AGAT Laboratories

5835 COOPERS AVENUE
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TEL (905)712-5100
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Method Summary

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

AGAT Laboratories

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

Method Summary

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16Z101291

PROJECT: 161-06382-00-101-980

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:Phase Two ESA. Orleans GW Monitoring.

SAMPLED BY:Kathryn Maton

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS

AGAT Laboratories

4644 2/46494 7
43495 2
36

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only

Work Order #: 16Z101291

Cooler Quantity: 3

Arrival Temperatures: 4.1/4.9/5.5 | 3.5/4.5/4.3 | 5.5/5.2/5.0 on ice

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Turn... Regu... Rush: RUSH - 3 Day / As per client email !

☐ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply):

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

Report Information:
Company: WSP Canada Inc.
Contact: Kathryn Maton / Mathieu Rochon
Address: 500 Greber 3e etage, Gatineau QC
Phone: 613-617-9237 Fax: 613-243-2019
Reports to be sent to:
1. Email: Kathryn.Maton@wspgroup.com
2. Email: Mathieu.Rochon@wspgroup.com

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☒ Regulation 153/04 — Table ______ (Indicate One)
☐ Ind/Com
☒ Res/Park
☐ Agriculture

Soil Texture (Check One): ☒ Coarse ☐ Fine

☐ Sewer Use — ☐ Sanitary ☐ Storm — Region ______ (Indicate One)

☐ Regulation 558
☐ CCME
☐ 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

Project Information:
Project: Phase Two ESA.
Site Location: 3636 Innes Rd, Ottawa
Sampled By: K. Maton.
AGAT Quote #: ______ 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: 161-06382-00-101-980
Address:
Email:

Sample Matrix Legend
B Biota
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	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr6+ ☐EC ☐FOC ☐NO3/NO2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH3 ☐TKN ☐NO3 ☐NO2 ☐NO3/NO2	Volatiles: ☐VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	153 METALS 93-101	F2-F4 91-107
BH16-1-1B	3/05/16	9:10am	4	Soil	1x250, 1x120, 2xvials.	X															X	
BH16-1-2A			4		↓																X	
BH16-1-2B.			3		2xvials. 1x250.																X	
BH16-2-2A			4		2xvials, 1x250, 1x120																X	
BH16-2-2B			3		1x250, 2xvials																X	
BH16-2-1B			4		1x250, 2xvials, 1x120																X	
BH16-3-1B			4		1x250, 2vials, 1x120																X	
BH16-3-2A			4																		X	
BH16-3-2B			4																			
BH16-3-3			4																		X	
BH16-4-1B	↓	↓	4	↓	↓																X	X

Samples Relinquished By (Print Name and Sign): Kathryn Maton — Date: 21/06/16 — Time: 7:30 pm
Samples Relinquished By (Print Name and Sign): [signature]
Samples Received By (Print Name and Sign): Berthelot [signature] — Date: 3-June-2016 — Time: 8h00
Samples Received By (Print Name and Sign): [signature] — Date: 16/6/4 — Time: 11/05

Page 1 of 6

Nº: T 018583

Document ID: DIV 78 1511 010

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AGAT Laboratories
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 intended for human consumption)

Laboratory Use Only
Work Order #: 16Z101291
Cooler Quantity:
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Report Information:
Company: WSP
Contact: Kathryn Malon / Mathieu Rochon
Address: 500 Gréber, Gatineau, Qc
Phone: 613-617-9237 Fax:
Reports to be sent to:
1. Email: Kathryn.Malon@wspgroup.com
2. Email: Mathieu.Rochon@wspgroup.com

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)
☒ Regulation 153/04 — Table ___ (Indicate One) — ☐ Ind/Com ☒ Res/Park ☐ Agriculture — Soil Texture (Check One): ☒ Coarse ☐ Fine
☐ Sewer Use — ☐ Sanitary ☐ Storm — Region ___ (Indicate One)
☐ Regulation 558 ☐ CCME ☐ 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 ☐ 1 Business Day
OR Date Required (Rush Surcharges May Apply): ___
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:
Project: Phase Two ESA
Site Location: 3636 Innes Rd, Ottawa
Sampled By: K.M.
AGAT Quote #: 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:

Sample Matrix Legend
B Biota
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	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	(Check Applicable) ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr⁶⁺ ☐EC ☐FOC ☐NO_3/NO_2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2	Volatiles: ☐VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	153 Metals 73-101	F2-F4 91-107	CCME F1-F4 TPH 111-114	153 PAH 41-114
BH16-4-2A	31/05/16	10?m.	4	Soil	2xvials, 1x250, 1x120.																X	X	X
BH16-4-2B	"	"	2		1vial, 1x250																X		
BH16-4-10?B			2		↓.																X		
BH16-4-2A			4		2xvials, 1x250, 1x120																		
BH16-5-1B			2		1vial 1x250																X	X	
BH16-5-101B			2		1vial, 1x120.																X	X	
BH16-5-2B			4		2vials, 1x120, 1x250																X	X	X
BH16-5-?A			4		↓.																		
BH16-6-2A																							
BH16-6-1B																					X	X	
BH16-6-2B	↓	↓	↓	↓	↓																X		

Samples Relinquished By (Print Name and Sign): Kathryn Malon — Date: 01/06/16 — Time: 7:30pm
Samples Relinquished By (Print Name and Sign): — Date: — Time:
Samples Received By (Print Name and Sign): — Date: 3-Jun-2016 — Time: 8h02
Samples Received By (Print Name and Sign): Simon — Date: 16/6/4 — Time: 11:05

Page 2 of 6
N°: T 018590

Document ID: DW-78-3551-010

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AGAT Laboratories

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Mississauga Ontario L4Z 1Y2
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webearth.agatlabs.com

Laboratory Use Only
Work Order #: 16Z101291
Cooler Quantity:
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Report Information:
Company: WSP Canada Inc.
Contact: Kathryn Malon/Mathieu Rochon
Address: 500 Grebes
Gatineau, QC.
Phone: 613-617-9237 Fax:
Reports to be sent to:
1. Email: Kathryn.malon@wspgroup.com
2. Email: mathieu.Rochon@wspgroup.com

Project Information:
Project: Phase Two ESA
Site Location: 3636 Innes Rd, Ottawa
Sampled By: KM.
AGAT Quote #: 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: ☐ No Regulatory Requirement
(Please check all applicable boxes)
☒ Regulation 153/04 — Table ___ *Indicate One*: ☐Ind/Com ☒Res/Park ☐Agriculture
Soil Texture (Check One): ☒Coarse ☐Fine
☐Sewer Use: ☐Sanitary ☐Storm — Region ___ *Indicate One*
☐Regulation 558
☐CCME
☐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 ☐ 1 Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Sample Matrix Legend
B Biota
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	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr6+ ☐EC ☐FOC ☐NO3/NO2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH3 ☐TKN ☐NO3 ☐NO2 ☐NO3/NO2	Volatiles: ☐VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	153 Metals 93-101	P2-F4 91-107	153 PAH 91-114	F1-F4+Btex 91-314
BH16-7-1	31/05/16	1pm	3	Soil	2vials, 1x120																X		X	X
BH16-7-101	↓	↓	1	↓	1x250																			
BH16-7-2A	↓	↓	4	↓	2vials, 1x120, 1x250																			
BH16-7-2B	↓	↓	4	↓	2vials 1x120, 1x250																X			
BH16-7-3	↓	↓	3	↓	1vial, 1x120, 1x250																			
BH16-8-1	↓	↓	3	↓	1 vial, 1x120, 1x250																X		X	X
BH16-8-2A	↓	↓	3	↓	↓																			
BH16-8-2B	↓	↓	3	↓	↓																X			
BH16-8-3A	↓	↓	3	↓	↓																			
BH16-8-3B	↓	↓	3	↓	↓																			
BH16-9-1	01/06/16	8am	1	↓	250.																X			

Samples Relinquished By (Print Name and Sign): [signature] Date: 01/06/16 Time: 7:30 Samples Received By (Print Name and Sign): [signature] Date: 3-Jun-16 Time: 8h00 Page 3 of 6
Samples Relinquished By (Print Name and Sign): Kathryn Malon. Date: Time: Samples Received By (Print Name and Sign): [signature] Date: 16/6/4 Time: 11:05 Nº: T 013591

Document ID: DIV-78-1511.010 Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT Date Issued: November 2, 2015

AGAT Laboratories

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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only
Work Order #: 1671012 91
Cooler Quantity:
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Report Information:
Company: WSP
Contact: Kathryn Mahon / Mathieu Rochon
Address: 500 Greber Gatineau, QC.
Phone: 613-617-9237 Fax:
Reports to be sent to:
1. Email: Kathryn.Mahon@wsp.com
2. Email: Mathieu.Rochon@wsp.com

Project Information:
Project: Phase Two ESA
Site Location: 3686 Innes Rd Ottawa
Sampled By: K. Mahon
AGAT Quote #: 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: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☒ Regulation 153/04 — Table ___ (Indicate One) — ☐ Ind/Com ☒ Res/Park ☐ Agriculture — Soil Texture (Check One): ☒ Coarse ☐ Fine
☐ Sewer Use — ☐ Sanitary ☐ Storm — Region ___ (Indicate One)
☐ Regulation 558 ☐ CCME ☐ 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 ☐ 1 Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Sample Matrix Legend
B Biota
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	Metals and Inorganics (Check Applicable)	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr6+ ☐EC ☐FOC ☐NO2/NO3 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH3 ☐TKN ☐NO3 ☐NO2 ☐NO3/NO2	Volatiles: ☐VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	153 Metals 93-101
BH16-9-2A	01/06/16	8am.			250.																
BH16-9-2B																				X	
BH16-9-3A																					
BH16-9-3B																					
BH16-9-4																				X	
BH16-9-5																					
BH16-104																				X	
BH16-10-2A																					
BH16-10-2B																				X	
BH16-10-3A																					
BH16-10-3B																					

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Kathryn Mahon	01/06/16	7:30pm	WSP	3-Jun-16	8h00
Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
				16/6/16	1105

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N°: T 018532

Document ID: DW 7R 551 1010
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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only
Work Order #: 16Z101291
Cooler Quantity:
Arrival Temperatures:
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Report Information:
Company: WSP.
Contact: Kathryn Molon/Mathieu Rochon
Address: ~~3636 Innes Rd - Ot~~ 500 Gretes, Ottawa.
Phone: 6136179237 Fax:
Reports to be sent to:
1. Email: Kathryn.Molon@WSPgroup.com
2. Email: Mathieu.Rochon@WSPgroup.com

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)
☒ Regulation 153/04 Table ___ (Indicate One)
☐ Ind/Com ☒ Res/Park ☐ Agriculture
Soil Texture (Check One): ☒ Coarse ☐ Fine
☐ Sewer Use ☐ Sanitary ☐ Storm
Region ___ (Indicate One)
☐ Regulation 558 ☐ CCME ☐ 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 ☐ 1 Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays

Project Information:
Project: Phase Two ESA
Site Location: 3636 Innes Rd. Ott.
Sampled By: KM
AGAT Quote #: 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:

Sample Matrix Legend
B Biota
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	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	(Check Applicable) ORPs: ☐ B-HWS ☐ Cl ☐ CN; ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ NO_3/NO_2 ☐ pH ☐ SAR; ☐ Total N ☐ Hg; Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3/NO_2; Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	153 Metals 93-101
BH16-10-4A	01/06/16	1pm	1	Soil														X
BH16-10-4B																		
BH16-11-1																	X	
BH16-11-2A																		
BH16-11-2B																		
BH16-11-3A																		
BH16-11-3B																	X	
BH16-11-4A																		
BH16-11-4B																		
BH16-12-1																		
BH16-12-2A																		X

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Kathryn Molon	01/06/16	7:30pm	[illegible]	3-Jan-16	8h00
	Day	Time	Samples Received By (Print Name and Sign): Simon	16/1/4	11h05

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№: T 018578

Document ID: DW 78 2511 010
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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Laboratory Use Only

Work Order #: 16Z101291

Cooler Quantity:

Arrival Temperatures:

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: WSP.

Contact: Kathryn Maton/Matheo Rochon

Address: 500 Greber, Gatineau, QC.

Phone: 613-617-9237. Fax:

Reports to be sent to:

1. Email: kathryn.maton@wspgroup.com

2. Email: matheo.rochon@wspgroup.com

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04 — Table (Indicate One): ☐Ind/Com ☒Res/Park ☐Agriculture

Soil Texture (Check One): ☒Coarse ☐Fine

☐Sewer Use ☐Sanitary ☐Storm

Region (Indicate One):

☐Regulation 558 ☐CCME ☐Prov. Water Quality Objectives (PWQO) ☐Other (Indicate One)

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply):

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

Project Information:

Project: Phase II

Site Location: 3636 Innes Rd, Ottawa

Sampled By: KM.

AGAT Quote #: PO:

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

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

Report Guideline on Certificate of Analysis ☒ Yes ☐ No

Invoice Information: Bill To Same: Yes ☒ No ☐

Company:

Contact:

Address:

Email:

Sample Matrix Legend

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

Analysis columns (Check Applicable): Metals and Inorganics; Metal Scan; Hydride Forming Metals; Client Custom Metals; ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr6+ ☐EC ☐FOC ☐NO_2/NO_3 ☐Total N ☐Hg ☐pH ☐SAR; Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2; Volatiles: ☐VOC ☐BTEX ☐THM; CCME Fractions 1 to 4; ABNs; PAHs; Chlorophenols; PCBs; Organochlorine Pesticides; TCLP Metals/Inorganics; Sewer Use; 153 Metals 93-101

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	153 Metals 93-101
BH16-12-2B	01/06/16	PM	1	Soil		
BH16-12-3A	↓	↓	↓	↓		
BH16-12-3B	↓	↓	↓	↓		X
BH16-12-4A	↓	↓	↓	↓		
~~BH16-13~~	↓	↓	↓	↓		
BH16-13-1	↓	↓	↓	↓		
BH16-13-2A	↓	↓	↓	↓	+ BH16-13-102A	X
BH16-13-2B	↓	↓	↓	↓		
BH16-13-3A	↓	↓	↓	↓		
BH16-13-3B	↓	↓	↓	↓		X
BH16-13-4	↓	↓	↓	↓		

Samples Relinquished By (Print Name and Sign): Kathryn Maton. Date: 01/06/16 Time: 7:30pm

Samples Received By (Print Name and Sign): [signature] Date: 3-June-16 Time: 8h00

Samples Relinquished By (Print Name and Sign): [signature] Date: Time:

Samples Received By (Print Name and Sign): Sima Date: 16/6/4 Time: 11:05

Page 6 of 6

Nº: T 018579

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

CLIENT NAME: WSP CANADA INC.
500, BOUL GREBER 3E ETAGE
GATINEAU, QC J8T7W3
(819) 243-2827

ATTENTION TO: Matthieu Rochon

PROJECT: 161-06382-00 Phase Two ESA

AGAT WORK ORDER: 16Z102773

TRACE ORGANICS REVIEWED BY: Gyulhan Yalamova, Report Reviewer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Jun 13, 2016

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

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 16Z102773

PROJECT: 161-06382-00 Phase Two ESA

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:3636 Innes Road, Ottawa

SAMPLED BY:Kathryn Maton

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

DATE RECEIVED: 2016-06-07

DATE REPORTED: 2016-06-13

		SAMPLE DESCRIPTION:		MW16-3	MW16-5	MW16-8	MW16-108
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		6/7/2016	6/7/2016	6/7/2016	6/7/2016
Parameter	Unit	G / S	RDL	7615636	7615659	7615681	7615693
Naphthalene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Fluorene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Pyrene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Benz(a)anthracene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L		0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits					
Chrysene-d12	%	50-140		118	92	103	116

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

7615636-7615693 Note: The result for Benzo(b)Flouranthene is the total of the Benzo(b)&(j)Flouranthene isomers because the isomers co-elute on the GC column.

Certified By:

AGAT Laboratories

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CANADA L4Z 1Y2
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Certificate of Analysis

AGAT WORK ORDER: 16Z102773

PROJECT: 161-06382-00 Phase Two ESA

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:3636 Innes Road, Ottawa

SAMPLED BY:Kathryn Maton

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

DATE RECEIVED: 2016-06-07

DATE REPORTED: 2016-06-13

		SAMPLE DESCRIPTION:		Trip Blank
		SAMPLE TYPE:		Water
		DATE SAMPLED:		5/25/2016
Parameter	Unit	G / S	RDL	7615703
Benzene	µg/L		0.20	<0.20
Toluene	µg/L		0.20	<0.20
Ethylbenzene	µg/L		0.10	<0.10
Xylene Mixture	µg/L		0.20	<0.20
F1 (C6 to C10)	µg/L		25	<25
F1 (C6 to C10) minus BTEX	µg/L		25	<25

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

7615703 The C6-C10 fraction is calculated using Toluene response factor.
Total C6-C10 results are corrected for BTEX contributions.
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.
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

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 16Z102773

PROJECT: 161-06382-00 Phase Two ESA

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:3636 Innes Road, Ottawa

SAMPLED BY:Kathryn Maton

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

DATE RECEIVED: 2016-06-07

DATE REPORTED: 2016-06-13

		SAMPLE DESCRIPTION:		MW16-3	MW16-5	MW16-8	MW16-108
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		6/7/2016	6/7/2016	6/7/2016	6/7/2016
Parameter	Unit	G / S	RDL	7615636	7615659	7615681	7615693
Benzene	µg/L		0.20	<0.20	1.1	<0.20	<0.20
Toluene	µg/L		0.20	<0.20	0.39	<0.20	<0.20
Ethylbenzene	µg/L		0.10	<0.10	15	<0.10	<0.10
Xylene Mixture	µg/L		0.20	<0.20	4.2	<0.20	<0.20
F1 (C6 to C10)	µg/L		25	<25	380	<25	<25
F1 (C6 to C10) minus BTEX	µg/L		25	<25	360	<25	<25
F2 (C10 to C16)	µg/L		100	<100	530	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100	530	<100	<100
F3 (C16 to C34)	µg/L		100	<100	390	<100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100	390	<100	<100
F4 (C34 to C50)	µg/L		100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500	NA	NA	NA	NA
Surrogate	Unit	Acceptable Limits					
Terphenyl	%	60-140		80	89	89	68

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

7615636-7615693 The C6-C10 fraction is calculated using Toluene response factor.
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 and PAH contributions.
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.

Certified By:

AGAT Laboratories

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FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 16Z102773

PROJECT: 161-06382-00 Phase Two ESA

CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:3636 Innes Road, Ottawa

SAMPLED BY:Kathryn Maton

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2016-06-07

DATE REPORTED: 2016-06-13

		SAMPLE DESCRIPTION:		MW16-3	MW16-5	MW16-8	MW16-108
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		6/7/2016	6/7/2016	6/7/2016	6/7/2016
Parameter	Unit	G / S	RDL	7615636	7615659	7615681	7615693
Antimony	µg/L		1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/L		1.0	<1.0	1.9	<1.0	<1.0
Barium	µg/L		2.0	89.7	166	224	187
Beryllium	µg/L		0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/L		10.0	48.5	41.9	21.5	16.3
Cadmium	µg/L		0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L		2.0	2.4	4.9	2.6	5.0
Cobalt	µg/L		0.5	<0.5	3.3	0.9	0.8
Copper	µg/L		1.0	2.0	<1.0	1.1	<1.0
Lead	µg/L		0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L		0.5	0.6	1.2	<0.5	<0.5
Nickel	µg/L		1.0	1.3	<1.0	1.4	<1.0
Selenium	µg/L		1.0	1.6	<1.0	<1.0	<1.0
Silver	µg/L		0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L		0.3	<0.3	<0.3	<0.3	<0.3
Uranium	µg/L		0.5	1.3	5.0	4.4	3.7
Vanadium	µg/L		0.4	2.4	1.5	4.8	4.8
Zinc	µg/L		5.0	<5.0	<5.0	<5.0	<5.0
Mercury	µg/L		0.02	<0.02	<0.02	<0.02	<0.02
Chromium VI	µg/L		5	<5	<5	<5	<5
Cyanide	µg/L		2	<2	<2	<2	<2
Sodium	µg/L		2500	63200	65600	66900	65200
Chloride	µg/L		1000	133000	286000	341000	358000
Electrical Conductivity	uS/cm		2	1340	1940	1900	1970
pH	pH Units		NA	7.96	7.89	8.04	8.05

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

7615636-7615693 Elevated RDLs for Anions & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Quality Assurance

CLIENT NAME: WSP CANADA INC.
PROJECT: 161-06382-00 Phase Two ESA
SAMPLING SITE:3636 Innes Road, Ottawa

AGAT WORK ORDER: 16Z102773
ATTENTION TO: Matthieu Rochon
SAMPLED BY:Kathryn Maton

Trace Organics Analysis

RPT Date: Jun 13, 2016			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 (with PAHs) (Water)															
Benzene	7615636	7515636	< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	111%	60%	130%	113%	50%	140%
Toluene	7615636	7515636	< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	104%	60%	130%	115%	50%	140%
Ethylbenzene	7615636	7515636	< 0.10	< 0.10	NA	< 0.10	116%	50%	140%	113%	60%	130%	115%	50%	140%
Xylene Mixture	7615636	7515636	< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	109%	60%	130%	99%	50%	140%
F1 (C6 to C10)	7615636	7515636	< 25	< 25	NA	< 25	104%	60%	140%	118%	60%	140%	94%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	98%	60%	140%	65%	60%	140%	72%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	102%	60%	140%	92%	60%	140%	93%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	86%	60%	140%	71%	60%	140%	101%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	115%	50%	140%	109%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	115%	50%	140%	112%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	118%	50%	140%	113%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	114%	50%	140%	111%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	111%	50%	140%	106%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	114%	50%	140%	111%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	122%	50%	140%	116%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	125%	50%	140%	117%	50%	140%
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	111%	50%	140%	121%	50%	140%	125%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	124%	50%	140%	130%	50%	140%	127%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	113%	50%	140%	110%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	123%	50%	140%	136%	50%	140%	129%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	113%	50%	140%	129%	50%	140%	129%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	105%	50%	140%	111%	50%	140%
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	109%	50%	140%	118%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	110%	50%	140%	119%	50%	140%
2-and 1-methyl Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	57%	50%	140%	60%	50%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
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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http://www.agatlabs.com

Quality Assurance

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16Z102773

PROJECT: 161-06382-00 Phase Two ESA

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:3636 Innes Road, Ottawa

SAMPLED BY:Kathryn Maton

Water Analysis

RPT Date: Jun 13, 2016			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) - Metals & Inorganics (Water)															
Antimony	7615636	7615636	< 1.0	<1.0	NA	< 1.0	102%	70%	130%	91%	80%	120%	93%	70%	130%
Arsenic	7615636	7615636	< 1.0	<1.0	NA	< 1.0	105%	70%	130%	98%	80%	120%	101%	70%	130%
Barium	7615636	7615636	89.7	92.3	2.9%	< 2.0	104%	70%	130%	96%	80%	120%	97%	70%	130%
Beryllium	7615636	7615636	< 0.5	<0.5	NA	< 0.5	96%	70%	130%	100%	80%	120%	92%	70%	130%
Boron	7615636	7615636	48.5	46.1	NA	< 10.0	101%	70%	130%	100%	80%	120%	93%	70%	130%
Cadmium	7615636	7615636	< 0.2	<0.2	NA	< 0.2	102%	70%	130%	98%	80%	120%	97%	70%	130%
Chromium	7615636	7615636	2.4	2.7	NA	< 2.0	109%	70%	130%	100%	80%	120%	99%	70%	130%
Cobalt	7615636	7615636	< 0.5	<0.5	NA	< 0.5	107%	70%	130%	98%	80%	120%	99%	70%	130%
Copper	7615636	7615636	2.0	2.1	NA	< 1.0	107%	70%	130%	99%	80%	120%	98%	70%	130%
Lead	7615636	7615636	< 0.5	<0.5	NA	< 0.5	101%	70%	130%	92%	80%	120%	92%	70%	130%
Molybdenum	7615636	7615636	0.6	0.7	NA	< 0.5	103%	70%	130%	95%	80%	120%	96%	70%	130%
Nickel	7615636	7615636	1.3	1.2	NA	< 1.0	109%	70%	130%	104%	80%	120%	98%	70%	130%
Selenium	7615636	7615636	1.6	<1.0	NA	< 1.0	108%	70%	130%	99%	80%	120%	102%	70%	130%
Silver	7615636	7615636	< 0.2	<0.2	NA	< 0.2	104%	70%	130%	107%	80%	120%	104%	70%	130%
Thallium	7615636	7615636	< 0.3	<0.3	NA	< 0.3	108%	70%	130%	103%	80%	120%	102%	70%	130%
Uranium	7615636	7615636	1.3	1.4	NA	< 0.5	104%	70%	130%	95%	80%	120%	92%	70%	130%
Vanadium	7615636	7615636	2.4	2.5	4.1%	< 0.4	105%	70%	130%	98%	80%	120%	98%	70%	130%
Zinc	7615636	7615636	< 5.0	<5.0	NA	< 5.0	105%	70%	130%	98%	80%	120%	99%	70%	130%
Mercury	7615636	7615636	< 0.02	<0.02	NA	< 0.02	101%	70%	130%	100%	80%	120%	102%	70%	130%
Chromium VI	7615173		<5	<5	NA	< 5	102%	70%	130%	107%	80%	120%	106%	70%	130%
Cyanide	7615636		< 2	< 2	NA	< 2	105%	70%	130%	102%	80%	120%	102%	70%	130%
Sodium	7600828		95400	93000	2.5%	< 500	91%	70%	130%	90%	80%	120%	103%	70%	130%
Chloride	7615565		447000	442000	1.1%	< 100	106%	70%	130%	107%	70%	130%	95%	70%	130%
Electrical Conductivity	7615636	7615636	1340	1350	0.7%	< 2	106%	90%	110%	NA			NA		
pH	7615636	7615636	7.96	8.01	0.6%	NA	101%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
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FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16Z102773

PROJECT: 161-06382-00 Phase Two ESA

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:3636 Innes Road, Ottawa

SAMPLED BY:Kathryn Maton

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Toluene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Ethylbenzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Xylene Mixture	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10)	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Benzene	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
Toluene	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
Xylene Mixture	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC- E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID

AGAT Laboratories

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Method Summary

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16Z102773

PROJECT: 161-06382-00 Phase Two ESA

ATTENTION TO: Matthieu Rochon

SAMPLING SITE:3636 Innes Road, Ottawa

SAMPLED BY:Kathryn Maton

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

AGAT Laboratories

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webearth.agatlabs.com

16K

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Report Information:

Company: WSP Canada Inc.
Contact: Mathieu Rochon / Kathryn Maton
Address: 500 de Gaspé Blvd, 3e etage
Gatineau, QC, J8T 7W3
Phone: 613-617-9237 Fax: 819-243-2019
Reports to be sent to:
1. Email: mathieu.rochon@wspgroup.com
2. Email: kathryn.maton@wspgroup.com

Project Information:

Project: Phase Two ESA
Site Location: 3636 Innes Rd, Ottawa
Sampled By: KM
AGAT Quote #: PO: 161-06382-00
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes [X] No [ ]
Company:
Contact:
Address:
Email:

Regulatory Requirements:

(Please check all applicable boxes)

[ ] No Regulatory Requirement

[X] Regulation 153/04
Table ___ (Indicate One)
[ ] Ind/Com
[X] Res/Park
[ ] Agriculture
Soil Texture (Check One)
[X] Coarse
[ ] Fine

[ ] Sewer Use
[ ] Sanitary
[ ] Storm
Region ___ (Indicate One)

[ ] Regulation 558
[ ] CCME
[ ] Prov. Water Quality Objectives (PWQO)
[ ] Other ___ (Indicate One)

Is this submission for a **Record of Site Condition?** [X] Yes [ ] No

Report Guideline on *Certificate of Analysis* [X] Yes [ ] No

Laboratory Use Only

Work Order #: 16Z102773
Cooler Quantity:
Arrival Temperatures: 8.3 | 6.4 | 6.9
Custody Seal Intact: [ ] Yes [ ] No [X] N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT [ ] 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

[X] 3 Business Days [ ] 2 Business Days [ ] 1 Business Day

OR Date Required (Rush Surcharges May Apply):

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

Sample Matrix Legend

B	Biota
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
~~BARCODE~~			4	GW	
MW16-3	07/06/16	13:31	10		
MW16-5		13:50			
MW16-8		13:24			
MW16-108		13:24			
Trip Blank	25/05/16		2		

(Check Applicable)

Sample Identification	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl⁻ ☐CN⁻ ☐Cr⁶⁺ ☐EC ☐FOC ☐NO_3/NO_2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2	Volatiles: ☐VOC ☐BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	CCME F1-F4+BTEX	Reg 153 PAH's	Reg 153 Metals	CCME F1+BTEX
MW16-3																X	X	X	
MW16-5																X	X	X	
MW16-8																X	X	X	
MW16-108																X	X	X	
Trip Blank																			X

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Kathryn Maton	07/06/16	4:30pm	Shawnie	June 8/16	9:00

Page 1 of 1

Nº: T 018580

EXOVA OTTAWA

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313177
Date Submitted: 2013-06-28
Date Reported: 2013-07-10
Project: 131-13558-00-700
COC #: 157780

Dear David Feghali:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Lorna Wilson
Laboratory Supervisor, Inorganics

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313177
Date Submitted: 2013-06-28
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Project: 131-13558-00-700
COC #: 157780

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1037902 Soil 2013-06-27 P0-1 (0.61-0.86)	1037903 Soil 2013-06-27 F-09 (0-0.61)	1037904 Soil 2013-06-27 DUP-7	1037905 Soil 2013-06-27 F-02 (0.45-0.55)
Inorganics	Antimony	1	ug/g	STD-7.5		<1			<1
	Arsenic	1	ug/g	STD-18		2			2
	Barium	1	ug/g	STD-390		111			65
	Beryllium	1	ug/g	STD-4		<1			<1
	Boron (total)	10	ug/g	STD-120		20			20
	Cadmium	0.5	ug/g	STD-1.2		<0.5			<0.5
	Chromium Total	1	ug/g	STD-160		60			36
	Cobalt	1	ug/g	STD-22		11			8
	Copper	1	ug/g	STD-140		19			11
	Lead	1	ug/g	STD-120		7			4
	Molybdenum	1	ug/g	STD-6.9		<1			<1
	Nickel	1	ug/g	STD-100		29			19
	Selenium	1	ug/g	STD-2.4		<1			<1
	Silver	0.2	ug/g	STD-20		<0.2			<0.2
	Thallium	1	ug/g	STD-1		<1			<1
	Uranium	0.5	ug/g	STD-23		0.6			<0.5
	Vanadium	2	ug/g	STD-86		53			36
	Zinc	2	ug/g	STD-340		57			33
Moisture	Moisture	0.1	%			15.6	1.2	2.6	312.0
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	10	ug/g	STD-55		<10	<10	<10	20
	Petroleum Hydrocarbons F1-BTEX	10	ug/g			<10	<10	<10	
	Petroleum Hydrocarbons F2	10	ug/g	STD-98		<10	<10	<10	<10
	Petroleum Hydrocarbons F3	20	ug/g	STD-300		<20	60	120	<20
	Petroleum Hydrocarbons F4	20	ug/g	STD-2800		140	240	440	100
	Petroleum Hydrocarbons F4g	500	ug/g					1400	
Semi-Volatiles	Acenaphthene	0.05	ug/g	STD-7.9		<0.05	<0.05	<0.05	<0.05

Guideline = O.Reg 153-T7-Res/Park-Coarse *** = Guideline Exceedence**

**-Analysis completed in Mississauga
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313177
Date Submitted: 2013-06-28
Date Reported: 2013-07-10
Project: 131-13558-00-700
COC #: 157780

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1037902 Soil 2013-06-27 P0-1 (0.61-0.86)	1037903 Soil 2013-06-27 F-09 (0-0.61)	1037904 Soil 2013-06-27 DUP-7	1037905 Soil 2013-06-27 F-02 (0.45-0.55)
Semi-Volatiles	Acenaphthylene	0.05	ug/g	STD-0.15		<0.05	<0.05	<0.05	<0.05
	Anthracene	0.05	ug/g	STD-0.67		<0.05	<0.05	<0.05	<0.05
	Benz[a]anthracene	0.05	ug/g	STD-0.5		<0.05	<0.05	<0.05	<0.05
	Benzo[a]pyrene	0.05	ug/g	STD-0.3		<0.05	<0.05	<0.05	<0.05
	Benzo[b]fluoranthene	0.05	ug/g	STD-0.78		<0.05	<0.05	<0.05	<0.05
	Benzo[ghi]perylene	0.05	ug/g	STD-6.6		<0.05	<0.05	<0.05	<0.05
	Benzo[k]fluoranthene	0.05	ug/g	STD-0.78		<0.05	<0.05	<0.05	<0.05
	Chrysene	0.05	ug/g	STD-7		<0.05	<0.05	<0.05	<0.05
	Dibenz[a h]anthracene	0.05	ug/g	STD-0.1		<0.05	<0.05	<0.05	<0.05
	Fluoranthene	0.05	ug/g	STD-0.69		<0.05	<0.05	<0.05	<0.05
	Fluorene	0.05	ug/g	STD-62		<0.05	<0.05	<0.05	<0.05
	Indeno[1 2 3-cd]pyrene	0.05	ug/g	STD-0.38		<0.05	<0.05	<0.05	<0.05
	Methlynaphthalene, 1-	0.05	ug/g	STD-0.99		<0.05	<0.05	<0.05	<0.05
	Methlynaphthalene, 2-	0.05	ug/g	STD-0.99		<0.05	<0.05	<0.05	<0.05
	Naphthalene	0.05	ug/g	STD-0.6		<0.05	<0.05	<0.05	<0.05
	Phenanthrene	0.05	ug/g	STD-6.2		<0.05	<0.05	<0.05	<0.05
	Pyrene	0.05	ug/g	STD-78		<0.05	<0.05	<0.05	<0.05
VOCs	Benzene	0.02	ug/g	STD-0.21		<0.02	<0.02	<0.02	
	Ethylbenzene	0.05	ug/g	STD-2		<0.05	<0.05	<0.05	
	m/p-xylene	0.05	ug/g			<0.05	<0.05	<0.05	
	o-xylene	0.05	ug/g			<0.05	<0.05	<0.05	
	Toluene	0.20	ug/g	STD-2.3		<0.20	<0.20	<0.20	
	Xylene Mixture	0.05	ug/g	STD-3.1		<0.05	<0.05	<0.05	
VOCs Surrogates (%	Toluene-d8	0	%			98	99	97	

Guideline = O.Reg 153-T7-Res/Park-Coarse *** = Guideline Exceedence**

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Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313177
Date Submitted: 2013-06-28
Date Reported: 2013-07-10
Project: 131-13558-00-700
COC #: 157780

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1037906 Soil 2013-06-27 F-02 (0.55-0.75)	1037907 Soil 2013-06-27 F-01 (0.4-0.5)	1037908 Soil 2013-06-27 F-04 (0.61-1.22)	1037909 Soil 2013-06-27 F-03 (0.3-0.5)
Inorganics	Antimony	1	ug/g	STD-7.5		<1		<1	
	Arsenic	1	ug/g	STD-18		3		3	
	Barium	1	ug/g	STD-390		99		177	
	Beryllium	1	ug/g	STD-4		<1		<1	
	Boron (total)	10	ug/g	STD-120		20		20	
	Cadmium	0.5	ug/g	STD-1.2		<0.5		<0.5	
	Chromium Total	1	ug/g	STD-160		41		22	
	Cobalt	1	ug/g	STD-22		9		4	
	Copper	1	ug/g	STD-140		15		5	
	Lead	1	ug/g	STD-120		13		7	
	Molybdenum	1	ug/g	STD-6.9		<1		1	
	Nickel	1	ug/g	STD-100		23		16	
	Selenium	1	ug/g	STD-2.4		<1		<1	
	Silver	0.2	ug/g	STD-20		<0.2		<0.2	
	Thallium	1	ug/g	STD-1		<1		<1	
	Uranium	0.5	ug/g	STD-23		<0.5		0.6	
	Vanadium	2	ug/g	STD-86		39		10	
	Zinc	2	ug/g	STD-340		54		10	
Moisture	Moisture	0.1	%			14.8	15.5	15.7	3.6
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	10	ug/g	STD-55		<10	<10	<10	<10
	Petroleum Hydrocarbons F1-BTEX	10	ug/g			<10	<10	<10	<10
	Petroleum Hydrocarbons F2	10	ug/g	STD-98		<10	<10	<10	<10
	Petroleum Hydrocarbons F3	20	ug/g	STD-300		<20	<20	<20	<20
	Petroleum Hydrocarbons F4	20	ug/g	STD-2800		60	40	20	20
Semi-Volatiles	Acenaphthene	0.05	ug/g	STD-7.9		<0.05	<0.05	<0.05	<0.05
	Acenaphthylene	0.05	ug/g	STD-0.15		<0.05	<0.05	<0.05	<0.05

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Semi-Volatiles	Anthracene	0.05	ug/g	STD-0.67		<0.05	<0.05	<0.05	<0.05
	Benz[a]anthracene	0.05	ug/g	STD-0.5		<0.05	<0.05	<0.05	<0.05
	Benzo[a]pyrene	0.05	ug/g	STD-0.3		<0.05	<0.05	<0.05	<0.05
	Benzo[b]fluoranthene	0.05	ug/g	STD-0.78		<0.05	<0.05	<0.05	<0.05
	Benzo[ghi]perylene	0.05	ug/g	STD-6.6		<0.05	<0.05	<0.05	<0.05
	Benzo[k]fluoranthene	0.05	ug/g	STD-0.78		<0.05	<0.05	<0.05	<0.05
	Chrysene	0.05	ug/g	STD-7		<0.05	<0.05	<0.05	<0.05
	Dibenz[a h]anthracene	0.05	ug/g	STD-0.1		<0.05	<0.05	<0.05	<0.05
	Fluoranthene	0.05	ug/g	STD-0.69		<0.05	<0.05	<0.05	<0.05
	Fluorene	0.05	ug/g	STD-62		<0.05	<0.05	<0.05	<0.05
	Indeno[1 2 3-cd]pyrene	0.05	ug/g	STD-0.38		<0.05	<0.05	<0.05	<0.05
	Methlynaphthalene, 1-	0.05	ug/g	STD-0.99		<0.05	<0.05	<0.05	<0.05
	Methlynaphthalene, 2-	0.05	ug/g	STD-0.99		<0.05	<0.05	<0.05	<0.05
	Naphthalene	0.05	ug/g	STD-0.6		<0.05	<0.05	<0.05	<0.05
	Phenanthrene	0.05	ug/g	STD-6.2		<0.05	<0.05	<0.05	<0.05
	Pyrene	0.05	ug/g	STD-78		0.12	<0.05	0.16	<0.05
VOCs	Benzene	0.02	ug/g	STD-0.21		<0.02	<0.02	<0.02	<0.02
	Ethylbenzene	0.05	ug/g	STD-2		<0.05	<0.05	<0.05	<0.05
	m/p-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	o-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Toluene	0.20	ug/g	STD-2.3		<0.20	<0.20	<0.20	<0.20
	Xylene Mixture	0.05	ug/g	STD-3.1		<0.05	<0.05	<0.05	<0.05
VOCs Surrogates (%	Toluene-d8	0	%			98	97	97	100

Guideline = O.Reg 153-T7-Res/Park-Coarse *** = Guideline Exceedence**

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Date Reported: 2013-07-10
Project: 131-13558-00-700
COC #: 157780

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1037910 Soil 2013-06-27 F-03 (0.5-0.91)	1037911 Soil 2013-06-27 F-08 (0.10-0.61)	1037912 Soil 2013-06-27 F-07 (0.61-1.22)	1037913 Soil 2013-06-27 F-06 (0-0.61)
Inorganics	Antimony	1	ug/g	STD-7.5		<1			
	Arsenic	1	ug/g	STD-18		4			
	Barium	1	ug/g	STD-390		132			
	Beryllium	1	ug/g	STD-4		<1			
	Boron (total)	10	ug/g	STD-120		20			
	Cadmium	0.5	ug/g	STD-1.2		<0.5			
	Chromium Total	1	ug/g	STD-160		33			
	Cobalt	1	ug/g	STD-22		7			
	Copper	1	ug/g	STD-140		11			
	Lead	1	ug/g	STD-120		7			
	Molybdenum	1	ug/g	STD-6.9		<1			
	Nickel	1	ug/g	STD-100		21			
	Selenium	1	ug/g	STD-2.4		<1			
	Silver	0.2	ug/g	STD-20		<0.2			
	Thallium	1	ug/g	STD-1		<1			
	Uranium	0.5	ug/g	STD-23		0.5			
	Vanadium	2	ug/g	STD-86		32			
	Zinc	2	ug/g	STD-340		35			
Moisture	Moisture	0.1	%			14.1	3.8	26.8	3.2
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	10	ug/g	STD-55		<10	30	<10	<10
	Petroleum Hydrocarbons F1-BTEX	10	ug/g			<10	30	<10	<10
	Petroleum Hydrocarbons F2	10	ug/g	STD-98		<10	<10	<10	<10
	Petroleum Hydrocarbons F3	20	ug/g	STD-300		<20	80	<20	30
	Petroleum Hydrocarbons F4	20	ug/g	STD-2800		<20	30	<20	60
Semi-Volatiles	Acenaphthene	0.05	ug/g	STD-7.9		<0.05	<0.05	<0.05	<0.05
	Acenaphthylene	0.05	ug/g	STD-0.15		<0.05	<0.05	<0.05	<0.05

Guideline = O.Reg 153-T7-Res/Park-Coarse *** = Guideline Exceedence**

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Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1037910 Soil 2013-06-27 F-03 (0.5-0.91)	1037911 Soil 2013-06-27 F-08 (0.10-0.61)	1037912 Soil 2013-06-27 F-07 (0.61-1.22)	1037913 Soil 2013-06-27 F-06 (0-0.61)
Semi-Volatiles	Anthracene	0.05	ug/g	STD-0.67		<0.05	<0.05	<0.05	<0.05
	Benz[a]anthracene	0.05	ug/g	STD-0.5		<0.05	<0.05	<0.05	<0.05
	Benzo[a]pyrene	0.05	ug/g	STD-0.3		<0.05	<0.05	<0.05	<0.05
	Benzo[b]fluoranthene	0.05	ug/g	STD-0.78		<0.05	<0.05	<0.05	<0.05
	Benzo[ghi]perylene	0.05	ug/g	STD-6.6		<0.05	<0.05	<0.05	<0.05
	Benzo[k]fluoranthene	0.05	ug/g	STD-0.78		<0.05	<0.05	<0.05	<0.05
	Chrysene	0.05	ug/g	STD-7		<0.05	<0.05	<0.05	<0.05
	Dibenz[a h]anthracene	0.05	ug/g	STD-0.1		<0.05	<0.05	<0.05	<0.05
	Fluoranthene	0.05	ug/g	STD-0.69		<0.05	<0.05	<0.05	<0.05
	Fluorene	0.05	ug/g	STD-62		<0.05	<0.05	<0.05	<0.05
	Indeno[1 2 3-cd]pyrene	0.05	ug/g	STD-0.38		<0.05	<0.05	<0.05	<0.05
	Methlynaphthalene, 1-	0.05	ug/g	STD-0.99		<0.05	<0.05	<0.05	<0.05
	Methlynaphthalene, 2-	0.05	ug/g	STD-0.99		<0.05	<0.05	<0.05	<0.05
	Naphthalene	0.05	ug/g	STD-0.6		<0.05	<0.05	<0.05	<0.05
	Phenanthrene	0.05	ug/g	STD-6.2		<0.05	<0.05	<0.05	<0.05
	Pyrene	0.05	ug/g	STD-78		<0.05	<0.05	<0.05	<0.05
VOCs	Benzene	0.02	ug/g	STD-0.21		<0.02	<0.02	<0.02	<0.02
	Ethylbenzene	0.05	ug/g	STD-2		<0.05	<0.05	<0.05	<0.05
	m/p-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	o-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Toluene	0.20	ug/g	STD-2.3		<0.20	<0.20	<0.20	<0.20
	Xylene Mixture	0.05	ug/g	STD-3.1		<0.05	<0.05	<0.05	<0.05
VOCs Surrogates (%	Toluene-d8	0	%			97	96	100	99

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 0 **Analysis Date** 2013-07-08 **Method** CCME			
Petroleum Hydrocarbons F1-BTEX			
Xylene Mixture			
Run No 253766 **Analysis Date** 2013-07-08 **Method** C SM2540B			
Moisture	<0.1 %	102	80-120
Run No 253770 **Analysis Date** 2013-07-08 **Method** CCME			
Petroleum Hydrocarbons F2	<10 ug/g	83	50-120
Petroleum Hydrocarbons F3	<20 ug/g	83	50-120
Petroleum Hydrocarbons F4	<20 ug/g	83	50-120
Run No 253806 **Analysis Date** 2013-07-08 **Method** CCME			
Petroleum Hydrocarbons F4g	<500 ug/g		
Run No 253828 **Analysis Date** 2013-07-08 **Method** EPA 200.8			
Silver	<0.2 ug/g	87	70-130
Arsenic	<1 ug/g	103	70-130
Barium	<1 ug/g	103	70-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Beryllium	<1 ug/g	102	70-130
Cadmium	<0.5 ug/g	98	70-130
Cobalt	<1 ug/g	105	70-130
Chromium Total	<1 ug/g	103	70-130
Copper	<1 ug/g	108	70-130
Molybdenum	<1 ug/g	106	70-130
Nickel	<1 ug/g	106	70-130
Lead	<1 ug/g	92	70-130
Antimony	<1 ug/g	90	70-130
Selenium	<1 ug/g	103	70-130
Thallium	<1 ug/g	92	70-130
Uranium	<0.5 ug/g	87	70-130
Vanadium	<2 ug/g	114	70-130
Zinc	<2 ug/g	113	70-130
Run No 253831 **Analysis Date** 2013-07-05 **Method** V 8260B			
Benzene	<0.02 ug/g	96	80-120
Ethylbenzene	<0.05 ug/g	94	80-120

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Analyte	Blank	QC % Rec	QC Limits
m/p-xylene	<0.05 ug/g	97	80-120
o-xylene	<0.05 ug/g	97	80-120
Toluene	<0.20 ug/g	99	80-120
Toluene-d8	92 %	101	
Run No 253832 **Analysis Date** 2013-07-05 **Method** CCME			
Petroleum Hydrocarbons F1	<10 ug/g		80-120
Run No 253841 **Analysis Date** 2013-07-05 **Method** CCME			
Petroleum Hydrocarbons F1	<10 ug/g	95	80-120
Run No 253842 **Analysis Date** 2013-07-05 **Method** CCME			
Petroleum Hydrocarbons F1-BTEX			
Run No 253843 **Analysis Date** 2013-07-05 **Method** CCME			
Petroleum Hydrocarbons F1	<10 ug/g	95	80-120
Run No 253857 **Analysis Date** 2013-07-08 **Method** M SM3120B-3050B			
Boron (total)	<10 ug/g	83	
Run No 254009 **Analysis Date** 2013-07-10 **Method** P 8270			
Methlynaphthalene, 1-	<0.05 ug/g	62	20-150
Methlynaphthalene, 2-	<0.05 ug/g	61	20-150

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Acenaphthene	<0.05 ug/g	63	20-150
Acenaphthylene	<0.05 ug/g	62	20-150
Anthracene	<0.05 ug/g	70	20-150
Benz[a]anthracene	<0.05 ug/g	77	20-150
Benzo[a]pyrene	<0.05 ug/g	76	20-150
Benzo[b]fluoranthene	<0.05 ug/g	77	20-150
Benzo[ghi]perylene	<0.05 ug/g	85	20-150
Benzo[k]fluoranthene	<0.05 ug/g	75	20-150
Chrysene	<0.05 ug/g	72	20-150
Dibenz[a h]anthracene	<0.05 ug/g	86	20-150
Fluoranthene	<0.05 ug/g	73	20-150
Fluorene	<0.05 ug/g	64	20-150
Indeno[1 2 3-cd]pyrene	<0.05 ug/g	86	20-150
Naphthalene	<0.05 ug/g	59	20-150
Phenanthrene	<0.05 ug/g	68	20-150
Pyrene	<0.05 ug/g	73	20-150

Guideline = O.Reg 153-T7-Res/Park-Coarse *** = Guideline Exceedence**

**-Analysis completed in Mississauga

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number:	1313177
Date Submitted:	2013-06-28
Date Reported:	2013-07-10
Project:	131-13558-00-700
COC #:	157780

Guideline = O.Reg 153-T7-Res/Park-Coarse *** = Guideline Exceedence**

**-Analysis completed in Mississauga

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Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313177
Date Submitted: 2013-06-28
Date Reported: 2013-07-10
Project: 131-13558-00-700
COC #: 157780

Sample Comment Summary

Sample ID: 1037904 DUP-7 The result for F4 (C34-C50) gravimetric must be substituted if it is greater than the result for F4 (C34-C50).

Guideline = O.Reg 153-T7-Res/Park-Coarse *** = Guideline Exceedence**

**-Analysis completed in Mississauga
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Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1314739
Date Submitted: 2013-06-28
Date Reported: 2013-07-15
Project: 131-13558-00-700
COC #: 157780

Dear David Feghali:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Lorna Wilson
Laboratory Supervisor, Inorganics

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
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Attention: Ms. David Feghali
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Report Number: 1314739
Date Submitted: 2013-06-28
Date Reported: 2013-07-15
Project: 131-13558-00-700
COC #: 157780

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1037930 Soil 2013-06-27 F-03 (1.01-1.11)	1037935 Soil 2013-06-27 F-05 (1.32-1.83)
General Chemistry	Moisture	0.1	%			12.2	30.0
Hydrocarbons	F1 (C6-C10)	10	ug/g			<10	<10
	F1-BTEX (C6-C10)	10	ug/g			<10	<10
	F2 (C10-C16)	10	ug/g			<10	<10
	F3 (C16-C34)	20	ug/g			<20	<20
	F4 (C34-C50)	20	ug/g			<20	<20
Metals	Ag	0.2	ug/g			<0.2	<0.2
	As	1	ug/g			2	1
	B	10	ug/g			20	40
	Ba	1	ug/g			61	421
	Be	1	ug/g			<1	<1
	Cd	0.5	ug/g			<0.5	<0.5
	Co	1	ug/g			7	27
	Cr	1	ug/g			18	112
	Cu	1	ug/g			15	61
	Mo	1	ug/g			<1	<1
	Ni	1	ug/g			16	70
	Pb	1	ug/g			6	8
	Sb	1	ug/g			<1	<1
	Se	1	ug/g			<1	<1
	Tl	1	ug/g			<1	<1
	U	0.5	ug/g			<0.5	0.6
	V	2	ug/g			27	105
	Zn	2	ug/g			24	140
Semi-Volatiles	1-methylnaphthalene	0.05	ug/g			<0.05	<0.05
	2-methylnaphthalene	0.05	ug/g			<0.05	<0.05

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J8T 7W3
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Invoice to: Genivar Inc.

Report Number: 1314739
Date Submitted: 2013-06-28
Date Reported: 2013-07-15
Project: 131-13558-00-700
COC #: 157780

				Lab I.D.	1037930	1037935
				Sample Matrix	Soil	Soil
				Sample Type		
				Sampling Date	2013-06-27	2013-06-27
				Sample I.D.	F-03 (1.01-1.11)	F-05 (1.32-1.83)
Group	**Analyte**	**MRL**	**Units**	**Guideline**		
Semi-Volatiles	Acenaphthene	0.05	ug/g		<0.05	<0.05
	Acenaphthylene	0.05	ug/g		<0.05	<0.05
	Anthracene	0.05	ug/g		<0.05	<0.05
	Benzo(a)anthracene	0.05	ug/g		<0.05	<0.05
	Benzo(a)pyrene	0.05	ug/g		<0.05	<0.05
	Benzo(b)fluoranthene	0.05	ug/g		<0.05	<0.05
	Benzo(g,h,i)perylene	0.05	ug/g		<0.05	<0.05
	Benzo(k)fluoranthene	0.05	ug/g		<0.05	<0.05
	Chrysene	0.05	ug/g		<0.05	<0.05
	Dibenzo(a,h)anthracene	0.05	ug/g		<0.05	<0.05
	Fluoranthene	0.05	ug/g		<0.05	<0.05
	Fluorene	0.05	ug/g		<0.05	<0.05
	Indeno(1,2,3-c,d)pyrene	0.05	ug/g		<0.05	<0.05
	Naphthalene	0.05	ug/g		<0.05	<0.05
	Phenanthrene	0.05	ug/g		<0.05	<0.05
	Pyrene	0.05	ug/g		<0.05	<0.05
VOCs	Benzene	0.02	ug/g		<0.02	<0.02
	Ethylbenzene	0.05	ug/g		<0.05	<0.05
	m/p-xylene	0.05	ug/g		<0.05	<0.05
	o-xylene	0.05	ug/g		<0.05	<0.05
	Toluene	0.20	ug/g		<0.20	<0.20
	Toluene-d8	0	%		101	104
	Xylene; total	0.05	ug/g		<0.05	<0.05

Guideline = *** = Guideline Exceedence**
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Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1314739
Date Submitted: 2013-06-28
Date Reported: 2013-07-15
Project: 131-13558-00-700
COC #: 157780

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 0 **Analysis Date** 2013-07-15 **Method** V 8260B			
Xylene; total			
Run No 254258 **Analysis Date** 2013-07-12 **Method** V 8260B			
Benzene	<0.02 ug/g	83	80-120
Ethylbenzene	<0.05 ug/g	100	80-120
m/p-xylene	<0.05 ug/g	106	80-120
o-xylene	<0.05 ug/g	110	80-120
Toluene	<0.20 ug/g	107	80-120
Toluene-d8	100 %	107	
Run No 254259 **Analysis Date** 2013-07-15 **Method** CCME			
F1 (C6-C10)	<10 ug/g	80	80-120
F1-BTEX (C6-C10)			
Run No 254297 **Analysis Date** 2013-07-12 **Method** P 8270			
1-methylnaphthalene	<0.05 ug/g	52	20-150
2-methylnaphthalene	<0.05 ug/g	51	20-150

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Invoice to: Genivar Inc.

Report Number: 1314739
Date Submitted: 2013-06-28
Date Reported: 2013-07-15
Project: 131-13558-00-700
COC #: 157780

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Acenaphthene	<0.05 ug/g	58	20-150
Acenaphthylene	<0.05 ug/g	54	20-150
Anthracene	<0.05 ug/g	72	20-150
Benzo(a)anthracene	<0.05 ug/g	84	20-150
Benzo(a)pyrene	<0.05 ug/g	81	20-150
Benzo(b)fluoranthene	<0.05 ug/g	81	20-150
Benzo(g,h,i)perylene	<0.05 ug/g	92	20-150
Benzo(k)fluoranthene	<0.05 ug/g	83	20-150
Chrysene	<0.05 ug/g	81	20-150
Dibenzo(a,h)anthracene	<0.05 ug/g	90	20-150
Fluoranthene	<0.05 ug/g	83	20-150
Fluorene	<0.05 ug/g	63	20-150
Indeno(1,2,3-c,d)pyrene	<0.05 ug/g	96	20-150
Naphthalene	<0.05 ug/g	47	20-150
Phenanthrene	<0.05 ug/g	73	20-150
Pyrene	<0.05 ug/g	84	20-150
Run No 254314	**Analysis Date** 2013-07-15	**Method** C SM2540B	

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Invoice to: Genivar Inc.

Report Number: 1314739
Date Submitted: 2013-06-28
Date Reported: 2013-07-15
Project: 131-13558-00-700
COC #: 157780

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Moisture	<0.1 %	102	80-120
Run No 254316 **Analysis Date** 2013-07-15 **Method** CCME			
F2 (C10-C16)	<10 ug/g	81	50-120
F3 (C16-C34)	<20 ug/g	81	50-120
F4 (C34-C50)	<20 ug/g	81	50-120
Run No 254336 **Analysis Date** 2013-07-15 **Method** EPA 200.8			
Ag	<0.2 ug/g	95	70-130
As	<1 ug/g	103	70-130
Ba	<1 ug/g	97	70-130
Be	<1 ug/g	102	70-130
Cd	<0.5 ug/g	101	70-130
Co	<1 ug/g	116	70-130
Cr	<1 ug/g	111	70-130
Cu	<1 ug/g	108	70-130
Mo	<1 ug/g	113	70-130
Ni	<1 ug/g	109	70-130
Pb	<1 ug/g	99	70-130

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500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1314739
Date Submitted: 2013-06-28
Date Reported: 2013-07-15
Project: 131-13558-00-700
COC #: 157780

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Sb	<1 ug/g	99	70-130
Se	<1 ug/g	106	70-130
Tl	<1 ug/g	101	70-130
U	<0.5 ug/g	97	70-130
V	<2 ug/g	111	70-130
Zn	<2 ug/g	108	70-130
Run No 254339 **Analysis Date** 2013-07-15 **Method** M SM3120B-3050B			
B	<10 ug/g	83	

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EXOVA OTTAWA

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

Dear David Feghali:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Lorna Wilson
Laboratory Supervisor, Inorganics

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
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J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1038273 Soil 2013-07-02 TE-01 (0.30-0.60)	1038274 Soil 2013-07-02 TE-02 (0 - 0.35)	1038275 Soil 2013-07-02 TE-02 (0.35 - 1.00)	1038276 Soil 2013-07-02 TE-02 (1.00-1.45)
General Chemistry	Moisture	0.1	%			23.2	11.7	15.3	26.1
Hydrocarbons	F1 (C6-C10)	10	ug/g			<10	<10	<10	<10
	F1-BTEX (C6-C10)	10	ug/g			<10	<10	<10	<10
	F2 (C10-C16)	10	ug/g			<10	20	<10	<10
	F3 (C16-C34)	20	ug/g			<20	31100	100	110
	F4 (C34-C50)	20	ug/g			70	10400	160	60
	F4 (C34-C50) gravimetric	500	ug/g				40400		
Metals	Ag	0.2	ug/g			<0.2	<0.2	<0.2	<0.2
	As	1	ug/g			3	5	6	2
	B	10	ug/g			10	20	30	40
	Ba	1	ug/g			153	98	150	347
	Be	1	ug/g			<1	<1	<1	<1
	Cd	0.5	ug/g			<0.5	<0.5	<0.5	<0.5
	Co	1	ug/g			10	7	10	18
	Cr	1	ug/g			59	41	62	111
	Cu	1	ug/g			21	19	24	50
	Mo	1	ug/g			<1	1	<1	<1
	Ni	1	ug/g			33	25	31	60
	Pb	1	ug/g			8	11	10	7
	Sb	1	ug/g			<1	<1	<1	<1
	Se	1	ug/g			<1	<1	<1	<1
	Tl	1	ug/g			<1	<1	<1	<1
	U	0.5	ug/g			<0.5	<0.5	0.6	0.9
	V	2	ug/g			45	38	52	98
	Zn	2	ug/g			58	138	80	113
Semi-Volatiles	1-methylnaphthalene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05

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Certificate of Analysis

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Invoice to: Genivar Inc.

Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1038273 Soil 2013-07-02 TE-01 (0.30-0.60)	1038274 Soil 2013-07-02 TE-02 (0 - 0.35)	1038275 Soil 2013-07-02 TE-02 (0.35 - 1.00)	1038276 Soil 2013-07-02 TE-02 (1.00-1.45)
Semi-Volatiles	2-methylnaphthalene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Acenaphthene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Acenaphthylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Anthracene	0.05	ug/g			<0.05	0.15	<0.05	<0.05
	Benzo(a)anthracene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(a)pyrene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(b)fluoranthene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(g,h,i)perylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(k)fluoranthene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Chrysene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Dibenzo(a,h)anthracene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Fluoranthene	0.05	ug/g			<0.05	0.17	<0.05	<0.05
	Fluorene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Indeno(1,2,3-c,d)pyrene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Naphthalene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Phenanthrene	0.05	ug/g			<0.05	0.07	<0.05	<0.05
	Pyrene	0.05	ug/g			<0.05	0.17	<0.05	<0.05
VOCs	Benzene	0.02	ug/g			<0.02	<0.02	<0.02	<0.02
	Ethylbenzene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	m/p-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	o-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Toluene	0.20	ug/g			<0.20	<0.20	<0.20	<0.20
	Toluene-d8	0	%			96	95	96	94
	Xylene; total	1.0	ug/L			<1.0	<1.0	<1.0	<1.0

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500 Boul. Greber, 3rd Floor
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J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 253766 **Analysis Date** 2013-07-08 **Method** C SM2540B			
Moisture	<0.1 %	102	80-120
Run No 253770 **Analysis Date** 2013-07-08 **Method** CCME			
F2 (C10-C16)	<10 ug/g	83	50-120
F3 (C16-C34)	<20 ug/g	83	50-120
F4 (C34-C50)	<20 ug/g	83	50-120
Run No 253806 **Analysis Date** 2013-07-08 **Method** CCME			
F4 (C34-C50) gravimetric	<500 ug/g		
Run No 253828 **Analysis Date** 2013-07-08 **Method** EPA 200.8			
Ag	<0.2 ug/g	87	70-130
As	<1 ug/g	103	70-130
Ba	<1 ug/g	103	70-130
Be	<1 ug/g	102	70-130
Cd	<0.5 ug/g	101	70-130
Co	<1 ug/g	105	70-130

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Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Cr	<1 ug/g	103	70-130
Cu	<1 ug/g	108	70-130
Mo	<1 ug/g	106	70-130
Ni	<1 ug/g	106	70-130
Pb	<1 ug/g	92	70-130
Sb	<1 ug/g	90	70-130
Se	<1 ug/g	103	70-130
Tl	<1 ug/g	92	70-130
U	<0.5 ug/g	87	70-130
V	<2 ug/g	114	70-130
Zn	<2 ug/g	109	70-130
Run No 253852 **Analysis Date** 2013-07-06 **Method** V 8260B			
Benzene	<0.02 ug/g	96	80-120
Ethylbenzene	<0.05 ug/g	94	80-120
m/p-xylene	<0.05 ug/g	97	80-120
o-xylene	<0.05 ug/g	97	80-120
Toluene	<0.20 ug/g	99	80-120

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Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Toluene-d8	92 %	101	
Xylene; total			
Run No 253856 **Analysis Date** 2013-07-05 **Method** CCME			
F1 (C6-C10)	<10 ug/g	104	80-120
Run No 253857 **Analysis Date** 2013-07-08 **Method** M SM3120B-3050B			
B	<10 ug/g	83	
Run No 253859 **Analysis Date** 2013-07-05 **Method** CCME			
F1-BTEX (C6-C10)			
Run No 254078 **Analysis Date** 2013-07-11 **Method** P 8270			
1-methylnaphthalene	<0.05 ug/g	62	20-150
2-methylnaphthalene	<0.05 ug/g	61	20-150
Acenaphthene	<0.05 ug/g	63	20-150
Acenaphthylene	<0.05 ug/g	62	20-150
Anthracene	<0.05 ug/g	70	20-150
Benzo(a)anthracene	<0.05 ug/g	77	20-150
Benzo(a)pyrene	<0.05 ug/g	76	20-150
Benzo(b)fluoranthene	<0.05 ug/g	77	20-150

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Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Benzo(g,h,i)perylene	<0.05 ug/g	85	20-150
Benzo(k)fluoranthene	<0.05 ug/g	75	20-150
Chrysene	<0.05 ug/g	72	20-150
Dibenzo(a,h)anthracene	<0.05 ug/g	86	20-150
Fluoranthene	<0.05 ug/g	73	20-150
Fluorene	<0.05 ug/g	64	20-150
Indeno(1,2,3-c,d)pyrene	<0.05 ug/g	86	20-150
Naphthalene	<0.05 ug/g	59	20-150
Phenanthrene	<0.05 ug/g	68	20-150
Pyrene	<0.05 ug/g	73	20-150
Run No 254082 **Analysis Date** 2013-07-11 **Method** P 8270			
1-methylnaphthalene	<0.05 ug/g	62	20-150
2-methylnaphthalene	<0.05 ug/g	61	20-150
Acenaphthene	<0.05 ug/g	63	20-150
Acenaphthylene	<0.05 ug/g	62	20-150
Anthracene	<0.05 ug/g	70	20-150
Benzo(a)anthracene	<0.05 ug/g	77	20-150

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Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Benzo(a)pyrene	<0.05 ug/g	76	20-150
Benzo(b)fluoranthene	<0.05 ug/g	77	20-150
Benzo(g,h,i)perylene	<0.05 ug/g	85	20-150
Benzo(k)fluoranthene	<0.05 ug/g	75	20-150
Chrysene	<0.05 ug/g	72	20-150
Dibenzo(a,h)anthracene	<0.05 ug/g	86	20-150
Fluoranthene	<0.05 ug/g	73	20-150
Fluorene	<0.05 ug/g	64	20-150
Indeno(1,2,3-c,d)pyrene	<0.05 ug/g	86	20-150
Naphthalene	<0.05 ug/g	59	20-150
Phenanthrene	<0.05 ug/g	68	20-150
Pyrene	<0.05 ug/g	73	20-150

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Attention: Ms. David Feghali
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Invoice to: Genivar Inc.

Report Number: 1313315
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 144561

Sample Comment Summary

Sample ID: 1038274 TE-02 (0 - 0.35) The result for F4 (C34-C50) gravimetric must be substituted if it is greater than the result for F4 (C34-C50).

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Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. Catherine Tardy Laporte
PO#:
Invoice to: Genivar INC.

Report Number: 1314497
Date Submitted: 2013-07-11
Date Reported: 2013-07-15
Project: 131-13558-00
COC #: 144561

Dear Catherine Tardy Laporte:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Lorna Wilson
Laboratory Supervisor, Inorganics

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. Catherine Tardy Laporte
PO#:
Invoice to: Genivar INC.

Report Number: 1314497
Date Submitted: 2013-07-11
Date Reported: 2013-07-15
Project: 131-13558-00
COC #: 144561

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D. 1041600 Soil 2013-07-02 TE-02 (1.00-1.45)
Metals	Ag	0.2	ug/g		<0.2
	As	1	ug/g		2
	B	10	ug/g		40
	Ba	1	ug/g		383
	Be	1	ug/g		<1
	Cd	0.5	ug/g		<0.5
	Co	1	ug/g		20
	Cr	1	ug/g		122
	Cu	1	ug/g		65
	Mo	1	ug/g		<1
	Ni	1	ug/g		65
	Pb	1	ug/g		19
	Sb	1	ug/g		<1
	Se	1	ug/g		<1
	Tl	1	ug/g		<1
	U	0.5	ug/g		0.9
	V	2	ug/g		109
	Zn	2	ug/g		135

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500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. Catherine Tardy Laporte
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Invoice to: Genivar INC.

Report Number: 1314497
Date Submitted: 2013-07-11
Date Reported: 2013-07-15
Project: 131-13558-00
COC #: 144561

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 254229 **Analysis Date** 2013-07-12 **Method** EPA 200.8			
Ag	<0.2 ug/g	90	70-130
As	<1 ug/g	96	70-130
Ba	<1 ug/g	101	70-130
Be	<1 ug/g	98	70-130
Cd	<0.5 ug/g	102	70-130
Co	<1 ug/g	97	70-130
Cr	<1 ug/g	98	70-130
Cu	<1 ug/g	102	70-130
Mo	<1 ug/g	100	70-130
Ni	<1 ug/g	99	70-130
Pb	<1 ug/g	90	70-130
Sb	<1 ug/g	87	70-130
Se	<1 ug/g	95	70-130
Tl	<1 ug/g	86	70-130

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500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. Catherine Tardy Laporte
PO#:
Invoice to: Genivar INC.

Report Number: 1314497
Date Submitted: 2013-07-11
Date Reported: 2013-07-15
Project: 131-13558-00
COC #: 144561

QC Summary

Analyte	Blank	QC % Rec	QC Limits
U	<0.5 ug/g	86	70-130
V	<2 ug/g	104	70-130
Zn	<2 ug/g	101	70-130
Run No 254302 **Analysis Date** 2013-07-15 **Method** M SM3120B-3050B			
B	<10 ug/g	93	

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EXOVA OTTAWA

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313316
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 157046

Dear David Feghali:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Lorna Wilson
Laboratory Supervisor, Inorganics

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313316
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 157046

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1038279 Soil 2013-07-02 TE-03 (0.30 - 1.00)	1038280 Soil 2013-07-02 TE-04 (1.00 - 2.30)	1038281 Soil 2013-07-02 TE-05 (0.15 - 2.30)	1038282 Soil 2013-07-02 DUP - 8
General Chemistry	Moisture	0.1	%			30.2	21.4	21.3	29.4
Hydrocarbons	F1 (C6-C10)	10	ug/g			<10	<10	<10	<10
	F2 (C10-C16)	10	ug/g			<10	<10	<10	<10
	F3 (C16-C34)	20	ug/g			<20	30	<20	<20
	F4 (C34-C50)	20	ug/g			<20	40	<20	<20
Metals	Ag	0.2	ug/g				<0.2		
	As	1	ug/g				3		
	B	10	ug/g				30		
	Ba	1	ug/g				175		
	Be	1	ug/g				<1		
	Cd	0.5	ug/g				<0.5		
	Co	1	ug/g				14		
	Cr	1	ug/g				82		
	Cu	1	ug/g				28		
	Mo	1	ug/g				<1		
	Ni	1	ug/g				39		
	Pb	1	ug/g				9		
	Sb	1	ug/g				<1		
	Se	1	ug/g				<1		
	Tl	1	ug/g				<1		
	U	0.5	ug/g				1.0		
	V	2	ug/g				72		
	Zn	2	ug/g				110		
Semi-Volatiles	1-methylnaphthalene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	2-methylnaphthalene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Acenaphthene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05

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COC #: 157046

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1038279 Soil 2013-07-02 TE-03 (0.30 - 1.00)	1038280 Soil 2013-07-02 TE-04 (1.00 - 2.30)	1038281 Soil 2013-07-02 TE-05 (0.15 - 2.30)	1038282 Soil 2013-07-02 DUP - 8
Semi-Volatiles	Acenaphthylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Anthracene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(a)anthracene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(a)pyrene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(b)fluoranthene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(g,h,i)perylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Benzo(k)fluoranthene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Chrysene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Dibenzo(a,h)anthracene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Fluoranthene	0.05	ug/g			<0.05	<0.05	0.05	<0.05
	Fluorene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Indeno(1,2,3-c,d)pyrene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Naphthalene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Phenanthrene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Pyrene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05

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Report Number: 1313316
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 157046

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 253766 **Analysis Date** 2013-07-08 **Method** C SM2540B			
Moisture	<0.1 %	102	80-120
Run No 253770 **Analysis Date** 2013-07-08 **Method** CCME			
F2 (C10-C16)	<10 ug/g	83	50-120
F3 (C16-C34)	<20 ug/g	83	50-120
F4 (C34-C50)	<20 ug/g	83	50-120
Run No 253828 **Analysis Date** 2013-07-08 **Method** EPA 200.8			
Ag	<0.2 ug/g	87	70-130
As	<1 ug/g	103	70-130
Ba	<1 ug/g	103	70-130
Be	<1 ug/g	102	70-130
Cd	<0.5 ug/g	101	70-130
Co	<1 ug/g	105	70-130
Cr	<1 ug/g	103	70-130
Cu	<1 ug/g	108	70-130

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Date Submitted: 2013-07-02
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Project: 131-13558-00
COC #: 157046

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Mo	<1 ug/g	106	70-130
Ni	<1 ug/g	106	70-130
Pb	<1 ug/g	92	70-130
Sb	<1 ug/g	90	70-130
Se	<1 ug/g	103	70-130
Tl	<1 ug/g	92	70-130
U	<0.5 ug/g	87	70-130
V	<2 ug/g	114	70-130
Zn	<2 ug/g	109	70-130
Run No 253856 **Analysis Date** 2013-07-05 **Method** CCME			
F1 (C6-C10)	<10 ug/g	104	80-120
Run No 253857 **Analysis Date** 2013-07-08 **Method** M SM3120B-3050B			
B	<10 ug/g	83	
Run No 253864 **Analysis Date** 2013-07-05 **Method** CCME			
F1 (C6-C10)	<10 ug/g	104	80-120
Run No 253953 **Analysis Date** 2013-07-09 **Method** CCME			
F1 (C6-C10)	<10 ug/g	90	80-120

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Report Number: 1313316
Date Submitted: 2013-07-02
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Project: 131-13558-00
COC #: 157046

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 254078 **Analysis Date** 2013-07-11 **Method** P 8270			
1-methylnaphthalene	<0.05 ug/g	62	20-150
2-methylnaphthalene	<0.05 ug/g	61	20-150
Acenaphthene	<0.05 ug/g	63	20-150
Acenaphthylene	<0.05 ug/g	62	20-150
Anthracene	<0.05 ug/g	70	20-150
Benzo(a)anthracene	<0.05 ug/g	77	20-150
Benzo(a)pyrene	<0.05 ug/g	76	20-150
Benzo(b)fluoranthene	<0.05 ug/g	77	20-150
Benzo(g,h,i)perylene	<0.05 ug/g	85	20-150
Benzo(k)fluoranthene	<0.05 ug/g	75	20-150
Chrysene	<0.05 ug/g	72	20-150
Dibenzo(a,h)anthracene	<0.05 ug/g	86	20-150
Fluoranthene	<0.05 ug/g	73	20-150
Fluorene	<0.05 ug/g	64	20-150
Indeno(1,2,3-c,d)pyrene	<0.05 ug/g	86	20-150
Naphthalene	<0.05 ug/g	59	20-150

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Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. David Feghali
PO#:
Invoice to: Genivar Inc.

Report Number: 1313316
Date Submitted: 2013-07-02
Date Reported: 2013-07-11
Project: 131-13558-00
COC #: 157046

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Phenanthrene	<0.05 ug/g	68	20-150
Pyrene	<0.05 ug/g	73	20-150

Guideline = *** = Guideline Exceedence**
** = Analysis completed at Mississauga, Ontario.
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

EXOVA OTTAWA

Certificate of Analysis

Client: Genivar INC.
500 Boul. Greber, 3rd Floor
Gatineau, QC
J8T 7W3
Attention: Ms. Catherine Tardy Laporte
PO#:
Invoice to: Genivar INC.

Report Number:	1314097
Date Submitted:	2013-07-08
Date Reported:	2013-07-11
Project:	131-13558-00-700-001
COC #:	500429

Dear Catherine Tardy Laporte:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Lorna Wilson
Laboratory Supervisor, Inorganics

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics