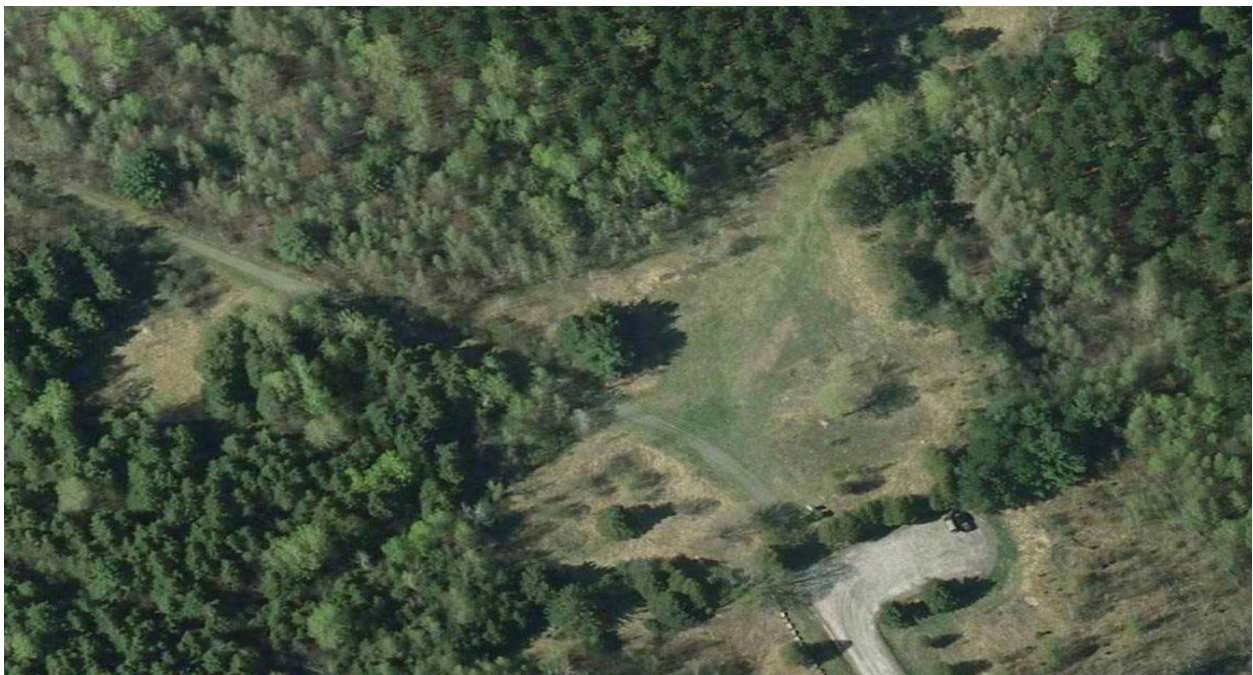


Phase II Environmental Site Assessment

NCC Property Asset 97390, P19 Leitrim Road

Ottawa, Ontario



Submitted to:

National Capital Commission
202-40 Elgin Street
Ottawa, Ontario
K1P 1C7

Prepared by:
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Project No.: TZ14024.2000
March 2016

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31 March 2016

Reference No. TZ14024.2000

National Capital Commission
202-40 Elgin Street
Ottawa, Ontario
K1P 1C7

Attention: Allison Myatt, P.Eng.
Environmental Officer, Capital Planning Branch

Dear Ms. Myatt:

RE: Final Report - Phase II Environmental Site Assessment
NCC Property Asset 97390
P19 Leitrim Road, Ottawa, Ontario

Please find enclosed one (1) hard copy and one (1) electronic copy, in PDF format, of our final report entitled "*Phase II Environmental Site Assessment, NCC Property Asset 97390, P19 Leitrim Road, Ottawa Ontario*".

We thank you for entrusting us with this assignment and look forward to future opportunities with your department. In the meantime, should you have any questions or require any additional information, please do not hesitate to contact the undersigned.

Yours truly,

Amec Foster Wheeler Environment & Infrastructure,
a Division of Amec Foster Wheeler Americas Limited

Susan Pfister, M.Eng., P.Eng.
Environmental Engineer

Enclosures (1)

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EXECUTIVE SUMMARY

Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited (“Amec Foster Wheeler”), was retained by the National Capital Commission (NCC) to conduct a Phase II Environmental Site Assessment (ESA) of several portions of a rural open greenspace property located within the Greenbelt on the north side of Leitrim Road, between Hawthorne and Ramsayville Roads, in Ottawa, Ontario (the “Site”). The Site, also known as NCC Property Asset 97390, is currently owned by the NCC and is occupied by an on-Site parking lot (‘P19’) for access by the public to a series of walking and cross country skiing trails across the Site.

The Phase II ESA was undertaken to assess soil and groundwater quality beneath the Site with respect to one area of environmental concern (AEC) previously identified at the Site and seven areas of potential environmental concern (APEC) as identified in a Phase I ESA previously carried out at the Site by Amec Foster Wheeler, as documented in *‘Phase I Environmental Site Assessment, NCC Asset ID 97390, P19 Leitrim Road, Ottawa, Ontario’*, dated March 2015. In addition to previously known concerns with respect to chlorinated solvent groundwater impacts, results of the Phase I ESA identified areas of potential concern related to historic activities at the Site, including the storage of petroleum hydrocarbons (PHC) as motive and heating fuels and storage and use pesticides/herbicides. Suspected historic disposal of waste in pits in several locations was also identified as a potential concern.

This Phase II ESA was carried out to assess the environmental condition of the soil and groundwater at the Site from the APECs identified in the Phase I ESA noted above. This Phase II ESA was conducted in accordance with the Phase II ESA standard as defined by the Canadian Standards Association (CSA) document entitled *Phase II Environmental Site Assessment, Z769-00* (March 2000, reaffirmed 2013), *Ontario Regulation 153/04 - Records of Site Condition, Part XV.1 of the Environmental Protection Act (EPA)* (O.Reg. 153/04) and the Terms of Reference provided in Amec Foster Wheeler’s proposal OP9251 dated 23 January 2015 and subsequent revisions dated 28 April 2015 and 20 October 2015, as well as written and verbal communication with the NCC. While the scope of work was carried out in accordance with O.Reg. 153/04 this report is not intended to support the filing of a Record of Site condition (RSC) and thus does not conform to the format dictated by O.Reg 153/04.

The work program included surficial soil sampling at nine locations, the excavation of 16 test pits and the drilling of 36 boreholes. Twenty-six of the boreholes were instrumented as groundwater monitoring wells to permit the collection of groundwater samples and the determination of the direction of shallow and deep horizontal groundwater flow. Nine composite surficial soil samples, 63 discrete subsurface soil samples collected from the test pits and boreholes, and 48 groundwater samples were submitted for laboratory analysis of a variety of contaminants of potential concern including volatile organic compounds (VOC), petroleum hydrocarbons (PHC), metals, polynuclear aromatic hydrocarbon (PAH), polychlorinated biphenyls (PCB), organochlorine and other pesticides, herbicides, fraction organic carbon (FOC), and selected inorganic parameters.

Based on the results of the soil and groundwater sampling and laboratory analytical programs, Amec Foster Wheeler offers the following conclusions and recommendations regarding the environmental Site conditions:

In general, the subsurface conditions at the Site consisted of brown sand with trace silt overlying grey silty clay to clay. In some locations, sandy fill with occasional traces of silt and or gravel overlies the sand; waste materials including as concrete, insulation and foam were noted in this fill layer at one location (BH15-7 in APEC 2). In 27 locations (BH15-1 to BH15-10, MW15-38C, MW15-42C, MW15-44 to MW15-55, MW15-57 and MW15-59), one or more thin sand seams were observed within the clay formation. Bedrock was not encountered at any of the borehole locations, the deepest of which extended to 6.71 mbgs. The grain size distribution indicated the subsurface soil across the Site to be considered coarse textured for the purposes of assessment.

The results of the groundwater monitoring indicate that the primary near surface water table resides within the sand overburden unit at depths ranging from 0.56 m to 2.09 mbgs. The groundwater table elevations recorded at the Site's monitoring wells on 09 March 2015 varied between 83.79 masl (MW13-36) and 84.99 masl (MW15-56). Based on the recorded groundwater elevations, the groundwater flow in the overburden layer is inferred to be in an easterly direction at the southern property boundary.

Results of aquifer response testing indicate geometric mean hydraulic conductivities of 3.77×10^{-5} m/sec in the sand unit and 1.42×10^{-8} in the clay unit. The average horizontal hydraulic gradient for the shallow sand aquifer across AEC 1 based on the water level recorded on March 9, 2015 was 0.425%. Assuming an effective porosity of 30%, the average linear groundwater velocity beneath the AEC 1 is estimated to be 16.8 m/year.

No significant odours, staining and/or sheen/iridescence were detected in any of the soil or samples collected at the Site. No visible LPH, LNAPL and/or DNAPL were observed in any of the soil or groundwater samples collected at the Site.

COV and TOV concentration headspace measurements recorded in the soil samples collected at the Site were generally less than or equal to 35 parts per million (ppm). COV concentration headspace measurements recorded in several soil samples collected at the Site (MW15-54-SS1, MW15-54-SS3, BH15-2-SS1 and BH15-7-SS3) ranged from 85 to 150 ppm. These concentrations may be indicative of impact by petroleum hydrocarbons or volatile organic compounds. The COV and TOV results are semi-quantitative at best and are generally only used for relative sample comparison purposes when selecting samples for laboratory analysis.

Soil samples collected at the Site were evaluated through comparison with Federal Guidelines including the CCME *Canadian Soil Quality Guidelines (CSoQG) for the Protection of Environmental and Human Health* (accessed online October 30, 2015) and the *Canada-Wide Standards (CWS) for Petroleum Hydrocarbons in Soil* (revised January 2008). Soil samples were evaluated using criteria established for residential/parkland land uses in a coarse textured soil setting. Owing to the presence of a potable water wells at residences within close proximity (less

than 250 m) from the Site, groundwater analytical results were evaluated through comparison with the *Guidelines for Canadian Drinking Water Quality* (HC, 2012), as well as the FIGQG Tier 1 guidelines established for residential/parkland land use in a coarse textured soil setting.

Soil and groundwater were also evaluated through comparison with the 2011 Provincial SCS established under *O.Reg. 153/04 – Records of Site Condition*, as amended. Analytical results were compared to the generic EPA 2011 Table 2 SCS established for residential/parkland property use, coarse textured soil, and potable groundwater use for a site greater than 30 metres from a water body.

Results of the soil and groundwater analyses indicate that three AEC are present at the Site: AEC 1 – TCE Plume (TCE soil impacts and cis-1,2-DCE, 1,2-DCB and TCE groundwater impacts), AEC 6 – Former Structures(s) and Disturbed Ground (copper soil impacts and pesticide groundwater impacts) and AEC 8 – Former Dumping Area (zinc and PAH soil impacts).

Based on the soil and groundwater conditions in AEC 1, it is inferred that dissolved phase TCE and its associated degradation products, including cis-1,2-DCE, are present in the lower portion of the shallow sand aquifer at the Site. The areas of soil impact in AEC 1 generally mirror the groundwater conditions, with the areas reporting exceedances of Federal and Provincial soil quality guidelines and standards underlying the areas of the highest observed groundwater TCE concentrations.

Groundwater elevation data indicates that the groundwater flow direction in the shallow sand aquifer is east-northeasterly in close proximity to P19, and then becomes easterly in the vicinity of MW15-41. The change in groundwater flow direction and width of the plume may be related to localized variation in the grain size and/or thickness of the shallow sand aquifer.

MW15-41 is within a few metres of the Site boundary, and levels of both TCE and cis-1,2-DCE have been measured in excess of the applicable Federal and Provincial guidelines and standards, including standards for potable groundwater use, at this groundwater monitoring well. Groundwater analytical data gathered to date indicates a narrowing of the plume to a width of less than 20 metres adjacent to the Site's southern boundary.

The TCE velocity in groundwater is estimated at 7.5 m/year based on an estimated retardation factor of 2.24 without consideration of other natural attenuation effects. The estimated time for TCE to travel from the suspected source area (i.e. in the general vicinity of the former building complex (APEC 2)) to the south property boundary over a distance of 170 metres is 22.6 years. This estimate lies well within the time frame for the suspected use of TCE at the Site.

Based on the data gathered as part of this Phase II ESA, it is possible that the TCE and cis-1,2-DCE impacts in AEC 1 extend off Site.

The copper soil impacts observed in AEC 6 are likely a direct result of the corroding metal locally observed in the test pits advanced in this area of the Site. The groundwater pesticides impacts

observed in this portion of the Site (deltamethrin and permethrin) may relate to historic application and/or storage of insecticides in this area.

AEC 8 showed soil impacts by various PAH compounds in the shallow subsurface. The magnitude of these impacts was observed to decrease with depth. The PAH impacts in shallow soil may be attributed to former heating activities at the Site, including the storage of coal and/or management of heating derived waste and residues.

Based on the results of the soil and groundwater sampling and laboratory analytical programs, the Site is out of compliance with the applicable Federal Guidelines and Provincial Standards. As such, additional investigations are warranted or recommended, as follows:

Consultation with the adjacent landowner (i.e., the City of Ottawa) for permission to complete off Site investigation of soil and groundwater conditions through the advancement of boreholes, installation of groundwater monitoring wells, and collection of soil and groundwater samples to establish a preliminary assessment of potential risks to off-Site receptors including neighbouring homeowners on the south side of Leitrim Road. The cost of completing a preliminary investigation with up to four monitoring wells installed in the shallow sand aquifer on the south side of Leitrim Road is estimated at [REDACTED]. This process is currently underway and access to the appropriate off-Site locations is being negotiated by the NCC as this report is being submitted.

Completion of a comprehensive groundwater monitoring event (preferably following installation and development of the proposed off Site wells listed above) where all monitoring wells in AEC 1 are sampled for VOCs and MW15-60 in AEC 6 is sampled for pesticides and herbicides. The preferred timing of such an event would be in early spring when the water table is highest (which would be expected to correlate directly with precipitation events given the shallow and permeable nature of the sand aquifer at the Site). The cost of this monitoring event is estimated at [REDACTED].

Completion of a screening level ecological risk assessment (SLERA) and a Site-specific human health risk assessment (HHRA) to assess the potential risks to members of the general public associated with the soil impacts including VOCs, metals and PAH identified in soil throughout AECs 1, 6 and 8, and the organochlorine pesticides groundwater impacts observed in AEC 6. The appropriate next steps to address potential risks posed by VOC impacts to groundwater in AEC 1 are outlined in the foregoing recommendations. The risk assessment report should include plain language description of the potential risks and any risk mitigation measures required for staff and members of the public accessing the Site to ensure they are properly understood. The cost to complete these studies is estimated at [REDACTED].

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1.0 INTRODUCTION

Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited (“Amec Foster Wheeler”), was retained by the National Capital Commission (NCC) to conduct a Phase II Environmental Site Assessment (ESA) of several portions of a rural open greenspace property located within the Greenbelt on the north side of Leitrim Road, between Hawthorne and Ramsayville Roads, in Ottawa, Ontario (the “Site”). A key plan showing the location of the Site is provided on Figure 1. The Site, also known as NCC Property Asset 97390, is currently owned by the NCC and is occupied by an on-Site parking lot (‘P19’) for access by the public to a series of walking and cross country skiing trails across the Site.

The Phase II ESA was undertaken to assess soil and groundwater quality beneath the Site with respect to one area of environmental concern (AEC) previously identified at the Site and seven areas of potential environmental concern (APEC) as identified in a Phase I ESA previously carried out at the Site by Amec Foster Wheeler, as documented in *‘Phase I Environmental Site Assessment, NCC Asset ID 97390, P19 Leitrim Road, Ottawa, Ontario, dated March 2015*. In addition to previously known concerns with respect to chlorinated solvent groundwater impacts, results of the Phase I ESA identified areas of potential concern related to historic activities at the Site, including the storage of petroleum hydrocarbons (PHC) as motive and heating fuels and storage and use pesticides/herbicides. Suspected historic disposal of waste in pits in several locations was also identified as a potential concern.

This Phase II ESA was conducted in accordance with the Canadian Standards Association (CSA) document entitled *Phase II Environmental Site Assessment, Z769-00* (March 2000, reaffirmed 2013), *Ontario Regulation 153/04 - Records of Site Condition, Part XV.1 of the Environmental Protection Act*, as amended (“O.Reg. 153/04”) and the Terms of Reference provided in Amec Foster Wheeler’s proposal OP9251 dated 23 January 2015 and subsequent revisions dated 28 April 2015 and 20 October 2015, as well as written and verbal communication with the NCC.

While the scope of work was carried out in general accordance with *O.Reg. 153/04* this report is not intended to support the filing of a Record of Site condition (RSC) and thus does not conform to the report format dictated by *O.Reg. 153/04*.

1.1 Site Description

The Site consists of a parcel of vacant forested land located within the NCC Greenbelt, which surrounds the urban core of the City of Ottawa (Figure 1). It is known colloquially as Pine Grove Forest and is accessed by the public from the on-Site parking lot (‘P19’) for walking and cross country skiing on a series of trails. The Site is located on the north side of Leitrim Road at the southern boundary of the Greenbelt, directly across from a series of residential and/or commercial lots.

Figure 2 illustrates the general configuration of the Site. Relevant information regarding the Site is provided in the table below.

Property Information

Municipal Address:	3799 Hawthorne Road (per City of Ottawa (maps.geoOttawa.ca); none given by NCC)					
Legal Description:	Part of Lots 11, 12, 13, 14 & 15, Concession 6, Rideau Front, being Parts 1 to 19, inclusive, Plan 5R-3453, formerly City of Gloucester, now City of Ottawa. Various parts are subject to Trans Canada Pipeline, Bell Canada, and Ontario Hydro easements.					
Property Identification Number (PIN):	PIN 04161-0017					
Property Owner:	NCC					
Property Use:	Parkland					
Area:	204.7 hectares					
UTM (NAD 83):	Zone:	18	Easting:	455 435 m	Northing:	5 022 025 m

The NCC has owned the Site since approximately 1966. The Site is currently unoccupied and is generally void of any development or improvements, with the exception of the public parking area and access laneway on the north side of Leitrim Road and several walking or recreational trails that transect the Site. According to the historical reports available, a portion of the Site in the vicinity of the gravel parking area previously operated as a Royal Canadian Navy (RCN) High Frequency Direction Finding (HFDF) radar research station prior to 1960; it was leased and occupied by the Ontario Ministry of Natural Resources (MNR) from 1961 until the late 1980s as a maintenance and storage depot; and was later occupied by the City of Gloucester from 1982 until the late 1990s for the storage of equipment and materials.

1.2 Objective and Scope of Work

Based on the findings of Amec Foster Wheeler's 2015 Phase I ESA, which included the review of previously completed environmental studies at the Site, the following AEC and APECs were identified:

- AEC 1: Trichloroethylene (TCE) is present in groundwater comprising a plume in the shallow sand overburden aquifer extending in a southeasterly direction from the historic building complex towards Leitrim Road;
- APEC 2: Use of solvents (e.g., degreasers), PHC as motive and heating fuels, transformer oil and other chemicals in the historic building complex, including the possibility of inappropriate disposal of such items to the subsurface via drains to the former septic system, etc.;
- APECs 3 through 6: Use of pesticides and/or herbicides in the areas of historic structures as per the aerial photographs of the Site, including limited investigation of some of these areas during previous work at the Site;
- APEC 7: Historic areas of documented hydrocarbon staining in soil on the western side of the Site; and,
- AEC 1, APEC 6, and APEC 8: Possible disposal of waste in pits during the tenure of the RCN, as well as by members of the public in the southeast corner of the Site (APEC 8).

Based on the findings the Phase I ESA, a Phase II ESA was completed at the Site to assess the potential presence of impacts to soil and groundwater quality at the Site. The scope of work for the Phase II ESA included of the following tasks:

- Arranging for the location of underground and overhead utilities including natural gas pipelines, storm and sanitary sewers, and telephone and electrical conduits to be marked by the local utility companies and/or their representative agents and for a private locator to clear the planned test pit and borehole locations in advance of excavating and drilling operations;
- Completion of a selective tree removal program to facilitate access to areas where it was deemed necessary to advance test pits and/or drill boreholes to complete the Phase II ESA;
- A subsurface soil sampling program including the excavation of 16 test pits and the drilling of 36 boreholes to facilitate the collection of fill and/or soil samples; logging and field screening for evidence of negative impact using visual, olfactory and sample headspace screening methods;
- Installing groundwater monitoring wells in 26 of the boreholes to assess the quality of groundwater at Site and the direction of shallow, horizontal groundwater flow;
- Collecting surface soil samples from nine locations;
- Submitting select soil and groundwater samples for laboratory analyses of suspect parameters of concern including: pH and metals; polycyclic aromatic hydrocarbons (PAH); volatile organic compounds (VOC); petroleum hydrocarbon fractions F1 – F4 (PHC - F1-F4); polychlorinated biphenyls (PCB); organochlorine and other pesticides, herbicides; and fraction organic carbon (FOC), and selected inorganic parameters;
- Comparing the analytical results reported for the soil and groundwater samples to the appropriate Federal guidelines and Provincial standards applicable to the Site; and,
- Preparing a report documenting the findings of the Phase II ESA, including an outline of the methodologies used, stratigraphic and instrumentation logs, analytical results for all samples, an interpretation of the findings and recommendations for further investigation and/or remedial activities.

2.0 WORK PROGRAM AND METHODOLOGY

Details of the investigation activities are provided in the following sections.

2.1 Field Preparation

2.1.1 Subsurface Utility Locates

The locations of all buried and overhead services were obtained prior to the initiation of any of the subsurface investigations. multiVIEW Locates Inc., a specialist utility locating firm, was retained to contact and coordinate locates by the respective utility companies and agencies, mark the locations of any private on-Site underground utilities that were not marked by the public utility locating services, and to clear the individual test pit, borehole and monitoring well locations prior to their advancement.

2.1.2 Quality Assurance/Quality Control Program

A strict Quality Assurance/Quality Control (QA/QC) program was implemented and maintained throughout the project to ensure the Site data to be representative of the actual Site conditions. The QA/QC program provides a method of documented checks to assess the precision and accuracy of collected data. The QA/QC program includes a set of standard procedures or protocols to be followed throughout the investigations. To this end, Amec Foster Wheeler field and QA/QC protocols have been developed to meet or exceed those defined in the Canadian Council of Ministers of the Environment (CCME) *Guidance Manual Sampling, Analysis, and Data Management for Contaminated Sites* (1993) and the Ontario Ministry of the Environment and Climate Change (MOECC) documents entitled *Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04* (June 2011) and *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (1996). The field QA/QC program included the following components:

- The use of personal protective equipment (PPE) including hard hats, safety glasses, safety work boots, and chemically resistant latex/nitrile gloves for sample handling;
- The use of standard operating procedures (SOP) developed to meet or exceed industry standard practices;
- Thorough documentation of all field activities and sample handling practices including field notes, chain of custody forms, memos to file, etc.;
- The use of dedicated or disposable sampling equipment where practical, or the implementation of thorough decontamination procedures to prevent cross contamination between sample locations;
- The incorporation of blind duplicate samples into the sampling and analytical programs to assess the validity of the data received from the analytical laboratory; and,
- The use of laboratory analytical protocols and method detection limits that have been established in accordance with Federal and Provincial (Ontario) regulatory requirements.

2.2 Selective Tree Removal Program

Amec Foster Wheeler engaged Ottawa Valley Tree Experts (OVTE), a company employing Ontario certified arborists, to complete a preliminary site visit to assess the trees which would need to be removed to facilitate access to portions of the Site targeted for intrusive investigation of soil and groundwater conditions through the digging of test pits and/or the drilling of boreholes. OVTE provided a list of trees to be removed to Amec Foster Wheeler and the NCC in advance of any removal work to ensure no American Butternuts would be affected by the work plan. Prior to completion of the test pitting and borehole drilling programs, OVTE completed removal of trees and scrub brush as identified in the preliminary Site visit, and submitted an inventory of those trees greater than 10 centimetre diameter at breast height to Amec Foster Wheeler. A copy of this report is appended to the Phase II ESA as Appendix A.

2.3 Surficial Soil Sampling

A total of nine composite surficial soil samples, to a maximum depth of 0.15 metres below ground surface (mbgs), (2-S1 to 2-S2, 5-S1 to 5-S3 and 8-S1* to 8-S4*) and one duplicate sample were collected to determine the potential for impact to surficial soils in APEC 2, APEC 5 and APEC 8. The locations of the surficial soil samples are shown on Figures 3A through 3C. The rationale for each surficial soil sample is summarized as follows:

Summary of Surface Soil Sample Chemical Analyses

Sample I.D.	Depth (Metres)	Chemical Analyses	Rationale
APEC 2 – Historic Building Complex			
2-S1	0.0 – 0.15	PCB, pH	Assess surficial soil for possible presence of PCB near location of historic transformer.
2-S2			
APEC 5 – Former Antenna Location			
5-S1/DUP-1	0.0 – 0.15	Pesticides, herbicides, PCB, pH	Assess surficial soil for possible presence of pesticides, herbicides and/or PCB near location of former antenna.
5-S2			
5-S3			
APEC 8 – Former Dumping Area			
8-S1* (TP15-15)	0.0 – 0.15	Metals, PAH, pesticides, herbicides, PCB, pH	Assess surficial soil within a 2 metre radius of test pit locations as noted for possible presence of metals, PAH, pesticides, herbicides and/or PCB near suspected location of potential former dumping area.
8-S2* (TP15-16)			
8-S3* (TP15-14)			*Due to composite nature of samples, only the locations of the test pits associated with these samples are shown on Figure 3C.
8-S4* (TP15-13)			

All surficial soil samples were collected on 28 October 2015. Each surficial soil sample consisted of ten to twenty equal size cores or grab samples (aliquots) collected from within a 2-metre sample radius. The sample aliquots were collected using an Oakfield sampler and homogenized in a

stainless steel mixing bowl to create a single composite sample from each sample location. The composite surface soil samples were then placed directly into laboratory supplied sample containers, labelled, and stored in coolers, on ice, immediately after collection and during transport to the laboratory. Continuous chain of custody documentation was maintained. All soil sampling and handling equipment was decontaminated between sample locations to prevent cross contamination; similarly, new nitrile gloves were donned at each sample location. Details of the surface soil sampling are summarized in the sampling records provided in Appendix B.

2.4 Subsurface Investigations and Soil Sampling

Subsurface conditions were evaluated and representative samples of soil and groundwater media were obtained through the completion of a multi-faceted investigation and sampling program that included the excavation of test pits, drilling of boreholes and the installation of groundwater monitoring wells. Subsurface soil is defined as any soil underlying topsoil at the Site. The depth of these samples varied with the thickness of topsoil observed at the Site; the shallowest subsurface samples were collected at a depth of 0.3-0.4 mbgs and the deepest at 3.6 mbgs. Subsurface geological conditions were established from visual observations and soil samples collected during the test pit excavation and borehole drilling programs. Soil and groundwater quality data was obtained from visual and olfactory observations, field screening methods and laboratory analytical data.

2.4.1 Test Pit Excavations and Soil Sampling

The test pit investigation program was undertaken at the Site on 30 October 2015 and 03 November 2015. A total of 16 test pits (TP15-1 to TP15-16) were excavated to depths ranging from 0.8 m to 3.2 m below surface grade by Ottawa Valley Tree Experts using a John Deere 60G compact excavator. The test pit locations were chosen to establish the general nature and quality of the fill materials present at the Site and to provide an assessment of the subsurface soil conditions within specific areas of concern. The locations of the test pit excavations are shown on Figures 3A through 3C. The rationale for the selection of these locations is as follows:

Summary of Test Pit Locations

Test Pit I.D.	Depth (Metres)	Soil Sample I.D. Range	Rationale
APEC 3 – Former Pesticide Storage and Antenna			
TP15-1	2.0	TP1-1 to TP1-3	Assess subsurface soil for possible impacts associated with former pesticide storage area and historic antenna.
TP15-2	2.6	TP2-1 to TP2-3	
APEC 4 – Former Equipment Area			
TP15-3	3.0	TP3-1 to TP3-2	Assess subsurface soil for possible impacts associated with former equipment area.
TP15-4	3.0	TP4-1 to TP4-2	
TP15-5	3.0	TP5-1 to TP5-2	
TP15-6	2.4	TP6-1 to TP6-3	
TP15-7	2.9	TP7-1 to TP7-3	
APEC 5 – Former Antenna Location			

TP15-8	1.9	TP8-1 to TP8-3	Assess subsurface soil for possible impacts associated with former antenna area.
TP15-9	1.9	TP9-1 to TP9-3	
APEC 6 – Former Structure(s) and Disturbed Ground			
TP15-10	3.2	TP10-1 to TP10-2	Assess subsurface soil for possible impacts associated with former structure(s) and disturbed ground.
TP15-11	1.6	TP11-1 to TP11-3	
TP15-12	2.0	TP12-1 to TP12-3	
APEC 8 – Former Dumping Area			
TP15-13	0.8	8-S4, TP13-1 to TP13-2	Assess surface and subsurface soil for possible presence of metals, PAH, pesticides, herbicides and/or PCB near location of former suspected dumping area.
TP15-14	1.1	8-S3, TP14-1 to TP14-2	
TP15-15	1.3	8-S1, TP15-1 to TP15-2	
TP15-16	1.0	8-S2, TP16-1 to TP16-2	

All test pit excavations were completed under the full time supervision of Amec Foster Wheeler personnel. Representative soil samples were collected throughout the depth of each test pit at changes in the subsurface geological units and/or at any indication of the presence of deleterious fill material or gross evidence (i.e., staining or odours) of negative impact. At depths greater than one metre samples of the fill and native material were collected from the excavator bucket. Details of the test pit excavations and soil sampling are summarized in the test pit records provided in Appendix C.

2.4.2 Borehole Drilling and Soil Sampling

A total of 36 boreholes (MW15-38C to MW15-63, and BH15-1 to BH15-10) were advanced at strategic locations at the Site. The borehole locations were chosen to assess subsurface conditions, intersect potential subsurface soil and groundwater plumes, if and where present, in order to facilitate a reasonable assessment of their extent, magnitude and migration, and established the subsurface geologic and hydrostratigraphy conditions beneath the Site. The locations of the boreholes and monitoring wells, along with 35 monitoring wells installed by other consultants previously engaged at the Site (MW08-1 to MW08-5, MW09-8, MW09-9, MW10-10 to MW10-25, and MW13-26 to MW13-37), are shown on Figures 3A through 3C. The rationale for the selection of these locations is as follows:

Summary of Borehole Locations

Summary of Borehole Locations		
Borehole I.D.	Depth (Metres)	Rationale
AEC 1 – TCE Plume		
MW15-38C to MW15-57	2.01 – 6.71	Assess subsurface soil and groundwater for possible impacts associated with TCE plume and further define the extent of the TCE groundwater plume.
MW15-63	3.05	
BH15-10	4.57	
APEC 2 – Historic Building Complex		
MW15-58	3.05	Assess subsurface soil and groundwater for possible impacts associated with historic building complex.
MW15-59	3.05	

MW15-62	3.05	
BH15-1 to BH15-9	3.05 – 3.96	
APEC 3 – Former Pesticide Storage and Antenna		
MW15-61	3.05	Assess subsurface soil and groundwater for possible impacts associated with former pesticide storage area and antenna.
APEC 6 – Former Structure(s) and Disturbed Ground		
MW15-60	3.05	Assess subsurface soil and groundwater for possible impacts associated with former structure(s) and disturbed ground.

The borehole investigations were completed on February 26 and 27, March 2, 3, 5, and 6, and November 16, 2015 by Strata Drilling Group of Perth, Ontario. The boreholes were advanced to depths between approximately 2.01 mbgs and 6.71 mbgs using direct push soil sampling method through the overburden using a Geoprobe 7822DT track-mounted drilling rig. Soil samples were collected continuously throughout the length of each borehole using a 50 mm diameter 1.5 metre long Dual Tube Sampling System (DTSS) to facilitate the characterization of subsurface soil conditions and an assessment of soil quality.

Boreholes not instrumented with groundwater monitoring wells were backfilled with 10 mm bentonite chips (Holeplug™) in accordance with *Ontario Regulation 903 – Wells*, as amended. Details of the borehole drilling and soil sampling are provided in the stratigraphic and instrumentation logs in Appendix D. All drilling activities were completed under the supervision of Amec Foster Wheeler field staff.

2.4.3 Sample Logging and Handling

The soil samples retrieved during the test pit excavation and borehole investigations were examined, classified, and logged according to soil type, moisture content, colour, consistency, and presence of visual and/or olfactory indicators of negative impact. Soil samples were split into duplicate fractions upon recovery at the surface. The primary sample fractions were placed in sample jars with Teflon-lined lids or were micro-cored and field preserved with methanol in 40 ml amber vials to minimize potential losses due to volatilization (samples for VOC and PHC F1 only). All samples were stored on ice for future potential laboratory analysis. The duplicate sample fractions were placed in “Ziploc” sample bags and stored at ambient temperature for subsequent field vapour screening purposes. All samples were stored in coolers, on ice, immediately after collection and during transport to the laboratory. Continuous chain of custody documentation was maintained.

All soil samples were collected in accordance with strict environmental sampling protocols to minimize loss of volatile organics and to ensure reliable and representative results. Disposable nitrile gloves were used and replaced between the handling of successive samples. All soil sampling equipment (stainless steel trowels, spatulas, etc.) was thoroughly decontaminated between soil sample locations to prevent potential cross-contamination. Decontamination activities included:

- Physical removal of any adhered debris;

- Wash/scrub in “Alconox” soap solution;
- Distilled water rinse;
- Methanol rinse; and
- Air dry.

2.4.4 Sample Screening

All soil samples were screened in the field for gross evidence of negative environmental impact including staining and odours. Soil sample headspace screening was also performed to facilitate sample selections for laboratory analysis and to provide an assessment of the vertical contaminant distributions at each test pit and borehole location. The duplicate soil sample fractions were screened for combustible organic vapour (COV) and total organic vapour (TOV) concentrations using the sample headspace method with an RKI Eagle 2 combined combustible vapour analyzer and photoionization detector calibrated to known hexane and isobutylene standards and operated in methane elimination mode.

2.4.5 Soil Sample Analyses

Soil samples deemed to be representative of the Site conditions were selected on the basis of visual/olfactory evidence of contamination and/or field screening results. Subsurface samples were also selected from the vicinity of the apparent water table or features such as inferred confining layers or sand seams.

In addition to the nine surface soil samples submitted for laboratory analysis (as described above in Section 2.2), a total of 63 discrete (i.e., exclusive of field duplicates) subsurface soil samples were submitted to the laboratory for analysis. The subsurface soil samples, selected analytes and rationale are outlined in the following table.

Summary of Subsurface Soil Sample Chemical Analyses

Sample I.D.	Depth (Metres)	Chemical Analyses	Rationale
<i>AEC 1 – TCE Plume</i>			
MW15-38C-SS5	3.05 – 3.81	VOC	Further assess and characterize the TCE plume previously identified at the Site and assess possible off-Site migration.
MW15-38C-SS6SS	4.19 – 4.20		
MW15-40C-SS4	2.29 – 3.05	VOC, FOC	
MW15-40C-SS9	6.10 – 6.86	VOC	Determination of FOC for Site soil classification purposes.
MW15-42C-SS3	1.52 – 2.29		
MW15-44-SS5	3.05 – 3.81	VOC	Further assess and characterize the TCE plume previously identified at the Site.
MW15-44-SS6SS	4.52 – 4.53		
MW15-44-SS8	5.33 – 6.10		Determination of FOC and pH for Site soil classification purposes.
MW15-46C-SS3	1.52 – 2.29		
MW15-46C-SS3SS	2.29 – 2.34		

Summary of Subsurface Soil Sample Chemical Analyses

Sample I.D.	Depth (Metres)	Chemical Analyses	Rationale
MW15-47-SS3	1.52 – 2.29	VOC, pH	
MW15-47-SS4SS	2.74 – 2.97	VOC	
MW15-48C-SS5	3.05 – 3.81	VOC, pH	
MW15-48C-SS8SS	5.61 – 5.64	VOC	
MW15-49-SS4SS	1.73 – 1.78		
MW15-50-SS3	1.52 – 2.29		
MW15-50-SS4SS	2.54 – 2.62		
MW15-51-SS5	3.05 – 3.81		
MW15-52-SS4	2.29 – 3.05	VOC, pH	
MW15-53-SS3	1.52 – 2.29	VOC, FOC	
MW15-54-SS3	1.52 – 2.29	VOC, PHC F1-F4	Further assess and characterize the TCE plume previously identified at the Site. Identify potential PAH, metals and/or PHC F1-F4 impacts in AEC 1 associated with historical activities in APEC 2. Determination of FOC and pH for Site soil classification purposes.
MW15-55-SS1B	0.66 – 1.07	PAH, metals, pH	
MW15-55-SS3	1.52 – 2.29	VOC	
MW15-56-SS1B	0.46 – 0.76	PAH, metals, pH	
MW15-56-SS3	1.52 – 2.29	VOC, PHC F1-F4	
MW15-57-SS1A	0.0 – 0.46	Metals	
MW15-57-SS5	3.05 – 3.81	VOC	
MW15-57-SS6SS	4.24 – 4.28		
MW15-63-SS2	2.2	VOC, FOC	
BH15-10-SS3	1.52 – 2.29	VOC, PHC F1-F4, pH	Further assess TCE plume, as well as former UST area.
APEC 2 – Historic Building Complex			
MW15-58-SS3	1.52 – 2.29	VOC, PHC F1-F4	Assess northern quadrant of TCE plume area, downgradient of former equipment preparation and chemical storage areas.
MW15-59-SS3	1.52 – 2.29	VOC, pH	Assess TCE plume and former chemical storage building area.
BH15-1-SS4	2.29 – 3.05	VOC, PHC F1-F4	Assess TCE plume and former cold storage building area.
BH15-1-SS5	3.05 – 3.81	PHC F1-F4	
BH15-2-SS1	0.0 – 0.76	PHC F1-F4	Assess former equipment preparation area.
BH15-3-SS1	0.0 – 0.76	Metals	Assess TCE plume, former heating oil AST area and former septic area.
BH15-4-SS2	0.76 – 1.52		
BH15-5-SS3	1.52 – 2.29	PHC F1-F4, FOC	
BH15-6-SS2	0.76 – 1.52	Metals	
BH15-6-SS3	1.52 – 2.29	VOC	
MW15-62-SS2	2.2	VOC, FOC	Assess former diesel shed area.
BH15-7-SS1	0.0 – 1.52	PAH, metals	
BH15-7-SS3	3.05 – 3.81	PHC F1-F4	
BH15-8-SS3	1.52 – 2.29	PHC F1-F4	Assess former transformer area.

Summary of Subsurface Soil Sample Chemical Analyses

Sample I.D.	Depth (Metres)	Chemical Analyses	Rationale
BH15-9-SS1	0.0 – 0.76	PAH, PCB	
APEC 3 – Former Pesticide Storage and Antenna			
MW15-61-SS2	1.9	VOC	Assess area where herbicides and/or pesticides were stored and may have been applied to reduce vegetation and/or insect pests, particularly around former antenna.
TP1-1	0.05 – 0.2	PCB, pesticides, herbicides, pH	
TP2-1	0.2 – 0.4		
APEC 4 – Former Equipment Area			
TP3-1	0.2 – 0.4	PAH, metals, PCB, pesticides, herbicides, pH	Assess former equipment area, where herbicides and/or pesticides may have been applied to reduce vegetation and/or insect pests.
TP4-1	0.1 – 0.3		
TP5-1	0.1 – 0.2		
TP6-1	0.1 – 0.2		
TP7-1	0.1 – 0.2		
APEC 5 – Former Antenna Location			
TP8-1	0.3 – 0.4	PCB, pesticides, herbicides, pH	Assess former antenna area, where herbicides and/or pesticides may have been applied to reduce vegetation and/or insect pests, particularly around former antenna.
TP9-1	0.3 – 0.4		
APEC 6 – Former Structure(s) and Disturbed Ground			
MW15-60-SS2	1.7	VOC, FOC	Assess possible former structure(s) and disturbed area, where herbicides and/or pesticides may have been applied to reduce vegetation and/or insect pests.
TP10-1	0.1 – 0.3	PAH, metals, PCB, pesticides, herbicides, pH	
TP11-1	0.3 – 0.4		
TP12-1	0.2 – 0.3		
APEC 7 – Stained Area Near Western Residences			
Previous environmental report identified stained surface soils exceeding applicable Site criteria for petroleum hydrocarbons. Area could not be conclusively located during 2015 Phase II ESA, so no samples were collected.			
APEC 8 – Former Dumping Area			
TP13-1	0.1 – 0.3	PAH, metals, PCB, pesticides, herbicides, pH	Assess former dumping area.
TP14-1	0.3 – 0.4		
TP15-1	0.4 – 0.6		
TP16-1	0.3 – 0.4		

Ten blind duplicate samples were collected for analysis of one or more contaminants of potential concern (COPC), as well as pH. The blind duplicate sample submissions were as follows:

Summary of Duplicate Subsurface Soil Samples

Duplicate Sample	Sample Date	Primary Sample	Chemical Analyses
DUP-1	27 February 2015	MW15-38C-SS5	VOC
DUP-1	16 November 2015	MW15-62-SS2	VOC

DUP-2	02 March 2015	MW15-47-SS3	VOC
DUP-2	30 October 2015	TP6-1	PAH, metals, pH
DUP-3	03 March 2015	MW15-58-SS3	VOC, PHC F1-F4
DUP-3	03 November 2015	TP13-1	PAH, metals, PCB, pesticides, herbicides, pH
DUP-4	05 March 2015	MW15-50-SS3	VOC
DUP-4	03 November 2015	TP12-1	PAH, metals, PCB, pesticides, herbicides, pH
DUP-5	06 March 2015	BH15-9-SS1	PAH, PCB
DUP-6	06 March 2015	BH15-6-SS2	Metals

In addition to the above note chemical analyses, three soil samples collected at the Site (MW15-9-SS4, MW15-40C-SS3 and MW15-51C-SS5) were submitted for grain size determination; results are provided in Appendix E.

2.5 Monitoring Well Installations

A total of 26 boreholes (MW15-38C to MW15-63) were instrumented with groundwater monitoring wells upon completion to permit the collection of groundwater samples and the determination of the direction of shallow and deep horizontal groundwater flow. The monitoring wells were constructed using 38 mm diameter, schedule 40, flush-joint threaded PVC monitoring well supplies. Most monitoring wells were completed with a 1.5 m length of #10 mil slotted intake screen; several shallow wells were completed with screens between 0.9 and 1.2 m in length. The tops of the intake screens were then extended to the ground surface using solid riser pipe. A silica sand filter pack was placed between the intake screen and the wall of the borehole. The filter pack was extended approximately 0.3 m above the top of the well screen to allow for settlement of the sand and to accommodate expansion of the overlying well seal. A bentonite grout seal was placed above the sand pack and extended to approximately 0.3 metres below grade. The monitoring wells were finished at the surface with upright steel casing set in bentonite chips and silica sand (monitoring well MW15-54, located within the parking lot, was finished with a flush mount casing). The locations of the monitoring wells are shown in Figures 3A through 3C. Details of the monitoring well constructions are included in the stratigraphic and instrumentation logs in Appendix D and are summarized in Table 1.

All monitoring wells were installed using a direct push sampling rig equipped with a 101 millimetre outside diameter dual tube sampling system (DTSS). The presence of the DTSS allows for the collection of soil samples continuously throughout borehole advancement within the overburden, as well as the ability to install monitoring well screens within the stratigraphic unit of interest without groundwater from overlying units mixing with groundwater present in the stratigraphic interval under investigation. All monitoring wells completed in clay were isolated from the overlying sand unit using bentonite, as per the details provided in the borehole logs (Appendix D).

All groundwater monitoring wells installed at the Site were instrumented with dedicated Waterra inertial lift pumps and sufficient lengths of low density polyethylene (LDPE) tubing to facilitate well development, purging, and sampling requirements. Approximately one week following installation, each monitoring well was developed by extracting approximately five to ten well

volumes to remove any residual sediment and/or drill cuttings introduced during the borehole drilling and well installation process, stabilize and grade the filter pack, retrieve lost drilling fluids, improve connectivity between the well and the formation, and restore groundwater that may have been disturbed or altered during the drilling process. Once developed, the shallow monitoring wells were instrumented with dedicated 6 mm inside diameter LDPE tubing to facilitate low flow sampling using a peristaltic pump (for wells < 8 m depth) or gas driven bladder pump (for wells > 8 metres depth).

2.6 Surveying

The locations of all surface soil samples, test pits and boreholes were located in the field using a measuring wheel/tape and referenced to existing features at the Site. The ground surface elevations and tops of all monitoring well casings installed in February and March 2015 were surveyed by Annis O'Sullivan Vollebekk Land Surveying Ltd. (AOV) on 13 March 2015. AOV established the Site benchmark at an elevation of 77.08 metres above sea level (masl) using GPS technology, verifying it with NCC monument 019760735. The accuracy of the elevations is +/- 1 cm, which was achieved using a Trimble S-3 total station. Four monitoring wells were installed in November 2015 (MW15-60 to MW15-63); it was beyond the program scope to survey them. Surveying of these wells can be completed at a future date, as required.

2.7 Groundwater Monitoring and Sampling

Groundwater monitoring, including measuring depths to static water levels and assessing the presence/absence of measurable accumulations of light and/or dense non-aqueous phase liquid (LNAPL/DNAPL) was conducted on 09 March 2015 and included all on-Site monitoring wells (with the exception of MW15-60 through MW15-63, which had water level observations recorded on December 4, 2015). Measurements of groundwater depth were made using a Solinst interface probe and reduced to static elevations based on the monitoring well survey data; refer to Table 2.

Groundwater sampling was undertaken at the majority of the Site's monitoring wells between 10 and 12 March 2015. A small confirmatory follow-up groundwater sampling event was undertaken at select monitoring wells on 29 May 2015. The four monitoring wells installed in November 2015 (MW15-60 to MW15-63) were sampled on 04 December 2015.

Low-flow sampling techniques were utilized in order to minimize potential sample biasing due to sediment entrainment. Using this sampling method, wells were purged and sampled at a maximum flow rate of 100 ml per minute while measuring the water level in order to ensure a maximum drawdown of not more than 0.3 metres. Purging and sampling was performed using a Waterra peristaltic pump and dedicated sample tubing for wells less than 8 m depth and a Geotech gas-driven bladder pump for wells deeper than 8 m. The bladder pump was decontaminated between each sampling location.

Field parameters including temperature, pH, conductivity and oxidation-reduction potential (ORP) were measured throughout the purging and sampling process using a YSI 556 multi-parameter

water quality probe with the samples being collected upon stabilization of these parameters. Monitoring wells incapable of yielding sufficient water to sustain the 0.3 m maximum drawdown were purged dry and sampled on recovery. Groundwater field parameters data and general observations are provided in Table 3.

Groundwater samples were collected directly into laboratory supplied sample containers pre-inoculated with any necessary preservatives. Dedicated (one pair per sample), disposable nitrile gloves were used throughout the proceedings. Vials that contained samples to be analyzed for volatile compounds were inverted after filling and inspected to ensure that no head space was present in any vial. Samples were placed in a cooler and stored on ice until delivered to the analytical laboratory.

A total of 41 discrete (i.e., exclusive of field duplicates) groundwater samples were submitted to the laboratory for analysis. The groundwater samples, selected analytes and rationale are outlined in the following table. The samples were collected in March 2015, unless otherwise noted.

Summary of Groundwater Sample Chemical Analyses

Sample I.D.	Chemical Analyses	Rationale
<i>AEC 1 – TCE Plume</i>		
MW08-1	VOC, PHC	Further assess TCE plume, as well as former UST area.
MW08-4	VOC	Further assess and characterize the TCE plume previously identified at the Site. Select monitoring wells resampled in May to confirm March results.
MW08-5		
MW10-11		
MW10-15		
MW10-17		
MW10-19		
MW10-24 (March and May)		
MW10-25 (March and May)		
MW13-31		
MW13-33		
MW15-38C	VOC	Further assess and characterize the TCE plume previously identified at the Site and assess possible off-Site migration. Select monitoring wells resampled in May to confirm March results.
MW15-39 (March and May)		
MW15-40C		
MW15-41 (March and May)		
MW15-42C		
MW15-43		
MW15-44C		
MW15-45		
MW15-46C		
MW15-47C		
MW15-48C		
		Further assess and characterize the TCE plume previously identified at the Site.

Summary of Groundwater Sample Chemical Analyses

Sample I.D.	Chemical Analyses	Rationale
MW15-49C	VOC	
MW15-50		
MW15-51		
MW15-52		
MW15-53		
MW15-55		
MW15-56		
MW15-57		
MW15-63 (December)		
MW15-54	VOC, PHC	Further assess and characterize the TCE plume previously identified at the Site. Identify potential PHC F1-F4 impacts in AEC 1 associated with historical activities in APEC 2.
APEC 2 – Historic Building Complex		
MW15-58	VOC	Further assess and characterize the TCE plume previously identified at the Site.
MW15-59		
MW15-62 (December)		
APEC 3 – Former Pesticide Storage and Antenna		
MW15-61 (December)	Metals, general chemistry, pesticides, herbicides	Assess area where herbicides and/or pesticides were stored and may have been applied to reduce vegetation and/or insect pests, particularly around former antenna.
APEC 6 – Former Structure(s) and Disturbed Ground		
MW15-60 (December)	PAH, metals, general chemistry, pesticides, herbicides	Assess possible former structure(s) and disturbed area, where herbicides and/or pesticides may have been applied to reduce vegetation and/or insect pests.

Nine blind duplicate samples were collected for analysis of one or more COPC, as well as general chemistry parameters. The blind duplicate sample submissions were as follows:

Summary of Duplicate Groundwater Samples

Duplicate Sample	Sample Date	Primary Sample	Chemical Analyses
DUP-1	10 March 2015	MW15-50	VOC
DUP-1	29 May 2015	MW15-39	VOC
DUP-1	04 December 2015	MW15-60	PAH
DUP-2	11 March 2015	MW15-54	VOC, PHC F1-F4
DUP-2	04 December 2015	MW15-61	Metals, general chemistry

DUP-3	04 December 2015	MW15-63	VOC
DUP-3	11 March 2015	MW15-44C	VOC
DUP-4	11 March 2015	MW10-11	VOC
DUP-5	12 March 2015	MW15-57	VOC

2.8 Hydraulic Testing

Hydraulic conductivity field testing was carried out at selected groundwater monitors using rising head slug test methods. In this method, a volume (slug) of water is instantaneously removed from the well and the subsequent rise in water level in the well is recorded against time. The field data were analyzed according to the method of Bouwer and Rice (1976) to obtain estimates of the hydraulic conductivity at each test location. The results of the hydraulic conductivity field testing and slug test solutions are provided in Appendix F.

2.9 Laboratory Analyses

Representative soil and groundwater samples collected during the investigation were submitted for laboratory analysis of suspect parameters of concern. Laboratory chemical analyses of all soil samples collected as part of this Phase II ESA, as well as of all groundwater samples collected in March and May 2015, were conducted by Caduceon Environmental Laboratories ("Caduceon") of Ottawa, Ontario. Caduceon is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) in accordance with ISO/IEC 17025:1999 – "General Requirements for the Competence of Testing and Calibration Laboratories" for the tested parameters set out in the Soil, Ground Water and Sediment Standards.

All laboratory chemical analyses of groundwater samples collected in December 2015, which included pesticide and herbicide suites, were conducted by Maxxam Analytics Inc. ("Maxxam") at several of their locations across Canada. Maxxam's capabilities included the ability to analyze more comprehensive suites of pesticide and herbicide parameters at lower method detection limits. Maxxam is also accredited by CALA in accordance with ISO/IEC 17025:1999 – "General Requirements for the Competence of Testing and Calibration Laboratories" for the tested parameters set out in the Soil, Ground Water and Sediment Standards.

3.0 RESULTS OF THE FIELD INVESTIGATIONS

3.1 Site Geology

The surficial and subsurface conditions encountered at the Site are described in the surface soil sampling records, test pit records, and stratigraphic and instrumentation logs provided in Appendices A, B and C. In general, the subsurface conditions at the Site consisted of brown sand with trace silt overlying grey silty clay / clay. In some locations, sandy fill with occasional traces of silt and or gravel overlies the sand; waste materials including as concrete, insulation and foam were noted in this fill layer at one location (BH15-7 in APEC 2). In 27 locations (BH15-1 to BH15-10, MW15-38C, MW15-42C, MW15-44 to MW15-55, MW15-57 and MW15-59), one or more thin sand seams were observed within the clay formation. Bedrock was not encountered at any of the borehole locations, the deepest of which extended to 6.71 mbgs.

Three soil samples (MW15-39-SS4, MW15-40C-SS3 and MW15-51C-SS5) were submitted for grain size analyses. The grain size distribution curves are presented in Appendix E. Based on the grain size distribution, the predominant subsurface soil conditions across the Site are considered coarse textured sand for the purposes of this assessment.

3.2 Site Hydrogeology

Groundwater was present at depths of 0.56 (MW10-22) to 2.09 (MW15-39) metres below ground surface (mbgs) in the wells monitored on 09 March 2015. The results of the groundwater monitoring program indicate that the primary near surface water table resides within the sand unit and are provided in Table 2.

The groundwater table elevations recorded at the Site's monitoring wells on 09 March 2015 varied between 83.79 masl (MW13-36) and 84.99 masl (MW15-56). Based on the recorded groundwater elevations, the groundwater flow in the overburden layer is inferred to be in a southeasterly direction (refer to Figures 4A through 4C).

3.3 Aquifer Response Testing

Aquifer response testing was carried out at selected monitoring wells newly installed at the Site within the overlying sand layer (MW15-45, MW15-50, MW15-51 and MW15-57) and within the underlying clay layer (MW15-38C, MW15-46C and MW15-48C) to estimate the hydraulic conductivities of the subsurface formations in which the wells are screened. The data was reduced to hydraulic conductivities estimates using the method of Bouwer and Rice¹. Copies of the slug test solutions are provided in Appendix F.

The results of the aquifer response testing are summarized in the following table:

¹ A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with completely or Partially Penetrating Wells, Water Resources research, Vol. 12, No. 3, June 1976.

Summary of Aquifer Response Testing Results

Well I.D.	Test Method	Solution Method	Hydraulic Conductivity (m/sec)
<i>Sand Unit</i>			
MW15-45	Rising head	Bouwer and Rice, fully penetrating	2.6×10^{-5}
MW15-50 (Trial 1)	Rising head	Bouwer and Rice, fully penetrating	5.7×10^{-5}
MW15-50 (Trial 2)	Rising head	Bouwer and Rice, fully penetrating	3.9×10^{-5}
MW15-51	Rising head	Bouwer and Rice, fully penetrating	1.2×10^{-5}
MW15-57	Rising head	Bouwer and Rice, partially penetrating	1.1×10^{-4}
<i>Geometric Mean:</i>			3.77×10^{-5}
<i>Silty Clay / Clay Unit</i>			
MW15-38C (Trial 1)	Rising head	Bouwer and Rice, partially penetrating	1.3×10^{-8}
MW15-38C (Trial 2)	Rising head	Bouwer and Rice, partially penetrating	1.1×10^{-8}
MW15-46C (Trial 1)	Rising head	Bouwer and Rice, partially penetrating	2.5×10^{-8}
MW15-46C (Trial 2)	Rising head	Bouwer and Rice, partially penetrating	2.4×10^{-8}
MW15-48C	Rising head	Bouwer and Rice, partially penetrating	6.7×10^{-9}
<i>Geometric Mean:</i>			1.42×10^{-8}

The average horizontal hydraulic gradient for the shallow sand aquifer across AEC 1 based on the water level recorded on March 9, 2015 was 0.425%. Assuming an effective porosity of 30%, the average linear groundwater velocity beneath the AEC 1 is estimated to be 16.8 m/year.

3.4 Field Measurements and Observations

3.4.1 Staining and Odours

Black staining was noted in soil sample BH15-1-SS4 (APEC 2). No other odours or staining suggestive of impacts were detected in any of the soil or groundwater samples collected at the Site.

3.4.2 COV and TOV Concentrations

COV and TOV concentration headspace measurements recorded in the soil samples collected at the Site were generally less than or equal to 35 parts per million (ppm). COV concentration headspace measurements recorded in several soil samples collected at the Site (MW15-54-SS1, MW15-54-SS3 (AEC 1), BH15-2-SS1 (APEC 2) and BH15-7-SS3 (APEC 2)) ranged from 85 to 150 ppm. These concentrations may be indicative of impact by petroleum hydrocarbons or volatile organic compounds. The COV and TOV results are semi-quantitative at best and are generally only used for relative sample comparison purposes when selecting samples for laboratory analysis. The COV and TOV concentration headspace measurements are summarized in the test pit records and stratigraphic and instrumentation logs in Appendices C and D.

3.4.3 Liquid Petroleum Hydrocarbons/LNAPL/DNAPL

No visible liquid petroleum hydrocarbons (LPH) were observed in any of the soil samples obtained from the Site. No measurable accumulations of floating LPH, light and/or dense non-aqueous phase liquid (LNAPL/DNAPL) were detected in any of the monitoring wells installed at the Site. No evidence of hydrocarbon sheen or iridescence was noted during the monitoring well development and/or groundwater purging and sampling activities.

4.0 REGULATORY FRAMEWORK

Federal contaminated sites are generally evaluated using generic guidelines developed by the CCME, Health Canada (HC) and Environment Canada (EC) in the following documents:

- *Canadian Environmental Quality Guidelines* (CCME, 1999)
- *Canada-Wide Standards for Petroleum Hydrocarbons in Soil* (CCME, 2008)
- *Guidelines for Canadian Drinking Water Quality* (HC, 2012); and,
- *Federal Interim Groundwater Quality Guidelines* (FCSAP, 2015).

4.1.1 Canadian Environmental Quality Guidelines

Canadian Environmental Quality Guidelines (CEQG) are primarily risk-based numerical guidelines set at levels at which it is believed that unacceptable adverse effects to human or environmental health will not occur. CEQG have been developed for various media including soil, water, sediment, and biological tissue. For some media, such as surface water and soil, a multi-tiered framework allows for the application of: 1) generic numerical guidelines (Tier 1); 2) the modification of guidelines based on site-specific conditions (Tier 2); or 3) the use of site-specific risk assessment to develop site-specific remediation objectives or trigger values (Tier 3). While the *Canadian Soil Quality Guidelines (CSoQG)* for the Protection of Environmental and Human Health are considerate of the protection of groundwater for organic chemicals, there are currently no CEQG for groundwater. The CEQG are updated from time to time including revisions to existing guideline values and/or the addition of guidelines for new parameters. The most up to date version of the CEQG are available online at <http://st-ts.ccme.ca/>.

4.1.2 Canada-Wide Standards for Petroleum Hydrocarbons in Soil

The CCME *Canada-Wide Standards (CWS) for Petroleum Hydrocarbons in Soil* are typically used as a preliminary means of evaluating petroleum hydrocarbons in soil at federal sites. CWS have also been adopted by some provincial and territorial regulatory agencies. CWS are dependent on the nature of the hydrocarbon type. That is, the CWS group petroleum hydrocarbons into four practical fractions (F1, F2, F3 and F4) with different standards for each. CWS have been developed based on land use, soil type and soil depth. Different generic levels exist for agricultural, residential, commercial and industrial sites and are based on coarse textured soil versus fine textured soil. The standards also change with depth of soil as related to exposure. Allowable concentrations for surface soil (less than 1.5 metres below grade) are different from those for subsurface soil (that which is deeper than 1.5 metres below grade).

Additional generic standards have also been developed according to exposure pathways. If potential exposure pathways can be identified at a site, different generic standards exist for exposure pathways including soil ingestion, dermal contact, vapour inhalation, protection of groundwater for aquatic life, protection of groundwater for livestock watering, nutrient cycling, eco-soil contact, eco-soil ingestion, produce and off-site migration.

4.1.3 Guidelines for Canadian Drinking Water Quality

The federal *Guidelines for Canadian Drinking Water Quality* (GCDWQ) have been developed from both health-related and aesthetic-related perspectives. Drinking water quality guidelines are developed by the Federal-Provincial Subcommittee on Drinking Water and are published periodically. Most provincial and territorial agencies use these guidelines as the basis for developing their own drinking water objectives and standards; some of the provinces incorporate the guidelines directly into their own regulations.

GCDWQ are intended to protect human health through the provision of Maximum Acceptable Concentrations (MAC) or Interim Maximum Acceptable Concentrations (IMAC) and to provide water of good aesthetic quality (e.g., taste, odour, colour, etc.) through the provision of Aesthetic Objectives (AO). They do not imply that the quality of the drinking water may be degraded to the specified levels. Indeed, a continuous effort should be made to ensure that drinking water is of the highest possible quality. This includes the implementation of measures to protect raw water supplies from contamination, where feasible. If an activity is likely to change source water quality, steps should be taken to minimize the human health risks and to avoid causing an unacceptable increase in the cost of providing a safe and high-quality drinking water to the downstream utility.

4.1.4 Federal Interim Groundwater Quality Guidelines

Given the absence of CEQG for groundwater and in recognizing the need for a nationally-consistent approach for assessing and managing groundwater at federal contaminated sites, the Federal Interim Groundwater Quality Guidelines (FIGQG) were developed under the Federal Contaminated Site Action Plan (FCSAP) based on a study conducted Meridian Environmental Inc. for Environment Canada (EC) to develop a federal approach that would be based on a critical review and evaluation of existing approaches used by other jurisdictions in Canada and in other countries. The FIGQG are intended to be used as an interim measure until CEQG for groundwater become available and have been designed to be used in connection with groundwater investigation and remediation activities at federal contaminated sites.

The FIGQG follow a tiered framework consisting of:

- Tier 1: direct application of the generic numerical guidelines; specifically, application of the lowest guideline for any pathway;
- Tier 2: allows for the development of site-specific remediation objectives through the consideration of site-specific conditions, by modifying (within limits) the numerical guidelines based on site-specific conditions and focusing on exposure pathways and receptors that are applicable to the site; and,
- Tier 3: use of site-specific risk assessment to develop site-specific remediation objectives.

4.2 Provincial Standards

4.2.1 Soil, Groundwater and Sediment Standards

The legislative and regulatory requirements for contaminated sites in Ontario are established by *Ontario Regulation 153/04 - Records of Site Condition, Part XV.1 of the Environmental Protection Act, as amended ("O.Reg. 153/04")*. O.Reg. 153/04 provides two approaches for cleaning up contaminated sites including: 1) restoration to generic Site Condition Standards (SCS) comprised of background standards and effects-based standards; and 2) preparation of a risk assessment. The generic SCS are set out in the document entitled *Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act* dated April 15, 2011 (the "EPA Standards"). The application of the appropriate generic effects-based SCS is dependent upon several site-specific conditions including: 1) the existing/proposed property use; 2) the existing/potential groundwater use; 3) depth of clean-up; 4) soil texture; 5) depth to bedrock; 6) proximity to a water body; and 7) soil pH.

The application of the generic effects-based SCS requires that the Site be classified to determine which remediation standards are appropriate. The classification of the Site was based on the following Site characteristics:

- Based on the information available, no known areas of natural significance were identified at or within the vicinity of the Site;
- Based on the results of the borehole drilling, the depth of the soil across the Site is greater than 2 metres;
- The Site boundary is greater than 30 m from the nearest water body;
- The current use of the Site is parkland;
- Grain size analyses of soil samples collected at the Site indicate that it is coarse textured;
- Based on observations made during the subsurface investigation program, the coarse textured soil comprises at least 1/3 of the soil at the Site;
- The majority (28 out of 31) soil samples collected at the Site and submitted for pH determination that are classified as "surface" soil under O.Reg. 153/04 (soil that is no more than 1.5 metres beneath the soil surface, including the bottom 0.5 metres of any non-soil surface treatment such as asphalt, concrete or aggregate above the soil surface, but excluding the thickness of any such non-soil surface treatment that is greater than 0.5 metres) yielded pH values within the required range of 5 – 9. All soil samples collected at the Site and submitted for pH determination that are classified as "subsurface" soil under O.Reg. 153/04 (soil that is more than 1.5 metres beneath the soil surface, including the bottom 0.5 metres of any non-soil surface treatment such as asphalt, concrete or aggregate above the soil surface, but excluding the thickness of any such non-soil surface treatment that is greater than 0.5 metres) yielded pH values within the required range of 5 – 11; and,
- Properties located within 250 metres of the Site are serviced by groundwater drinking wells.

4.3 Application of Federal Guidelines and Provincial Standards

4.3.1 Federal Guidelines

As the Site is currently a federal property, soil and groundwater samples were evaluated through comparison of Federal Guidelines. Soil samples collected at the Site were evaluated through comparison with Federal Guidelines taken from the *Canadian Soil Quality Guidelines (CSoQG) for the Protection of Environmental and Human Health* (accessed online October 30, 2015) and the *Canada-Wide Standards (CWS) for Petroleum Hydrocarbons in Soil* (revised January 2008). Soil samples were evaluated using criteria established for residential/parkland land uses in a coarse textured soil setting.

Soil analytical data for PAH was evaluated in accordance with the CSOQG June 2010 update for PAH. In accordance with the CSOQG, potential risks to human health by carcinogenic effects of PAH were assessed through calculation of the benzo(a)pyrene Total Potency Equivalents (TPE) while potential risks to human health by non-carcinogenic effects of PAH were assessed through comparison with the appropriate Provincial Standards. In these cases, the EPA 2011 Table 2 SCS for potable groundwater, residential/parkland property use and coarse textured soil were applied to assess potential human health risks from the non-carcinogenic effects of PAH. In cases where no CSOQG exist that are protective of environmental health for particular PAH parameters, their effects were also assessed through comparison with the appropriate Provincial Standards, again being the EPA 2011 Table 2 SCS for potable groundwater, residential/parkland property use and coarse textured soil.

Owing to the presence of a potable water wells at residences within close proximity (i.e., less than 250 m) from the Site, groundwater analytical results were evaluated through comparison with the *Guidelines for Canadian Drinking Water Quality* (HC, 2012), as well as the FIGQG Tier 1 guidelines established for residential/parkland land use in a coarse textured soil setting.

4.3.2 Provincial Standards

For information purposes, the results of the Phase II ESA were also compared to Provincial Standards. Soil and groundwater were evaluated through comparison with the 2011 Provincial Site Conditions Standards (SCS) established under *O.Reg. 153/04*. Analytical results were compared to the EPA 2011 Table 2 SCS established for residential/parkland property use, coarse textured soil, and potable groundwater use for a site greater than 30 metres from a water body.

5.0 LABORATORY ANALYSES

The results of the soil and groundwater sample analyses carried out as part of this investigation are summarized in Tables 4 through 20. A discussion of the results of the laboratory analyses in the context of the applicable Federal Guidelines and Provincial Standards is provided in the following sections. Copies of the laboratory certificates of analysis are provided in Appendix G.

5.1 Soil Sample Analyses

The results of the soil sample analyses were evaluated with respect to the CCME CSoQG (CCME, 1999) and CWS (CCME, 2008) and EPA 2011 Table 2 SCS (MOECC, 2011) and are summarized in Tables 4 through 12. Soil samples exceeding applicable Federal Guidelines are identified by **bold** highlighting whereas those exceeding applicable Provincial Standards are underlined. A discussion of laboratory analytical results in context of the applicable Federal Guidelines and Provincial Standards is provided in the following sections. The locations of parameter exceedances in soil are presented on Figures 5A through 5C.

5.1.1 Volatile Organic Compounds

Thirty-nine (39) soil samples, including five QA/QC duplicate samples, collected during the Phase II ESA sampling program were submitted for laboratory analysis of VOC. The results of the VOC soil analyses and their respective Federal Guidelines and Provincial Standards are summarized in Table 4 and as follows:

- cis-1,2-Dichloroethylene (cis-1,2-DCE), a breakdown product of trichloroethylene (TCE), was detected in one of the soil samples submitted for VOC analysis (MW15-40C-SS4, AEC 1) with a reported concentration of 0.05 µg/g; this concentration was below both the applicable Federal Guideline (5 µg/g) and Provincial Standard (1.9 µg/g);
- TCE was detected in excess of the applicable Federal Guideline (0.01 µg/g) and Provincial Standard (0.061 µg/g) in three of the soil samples submitted for VOC analysis (MW15-40C-SS4, MW15-44-SS5 and MW15-51C-SS5 (all in AEC 1)), with reported concentrations of 0.21 µg/g to 0.85 µg/g; and,
- TCE was detected in excess of the applicable Federal Guideline (0.01 µg/g), but below the Provincial Standard (0.061 µg/g), in one of the soil samples submitted for VOC analysis (BH15-10-SS3, AEC 1), with a reported concentration of 0.04 µg/g.

No other parameters were detected above the laboratory reporting limits (RL). Based on the reported laboratory RLs, all other reported results for VOC parameters are considered to have met the applicable Federal Guidelines and Provincial Standards, with the exception of TCE. The lowest RL for TCE that the laboratory was capable of achieving was 0.03 µg/g, which is below the applicable Provincial Standard of 0.061 µg/g, but is three times higher than the applicable Federal Guideline of 0.01 µg/g. Therefore, TCE concentrations reported below the laboratory RL of 0.03 µg/g are considered to have met the applicable Provincial Standard, however, the possibility exists that one or more of these samples may have exceeded the applicable Federal Standard.

5.1.2 Petroleum Hydrocarbons

Eleven (11) soil samples, including one QA/QC duplicate sample, collected during the Phase II ESA sampling program were submitted for analysis of PHC F1-F4. Six of these samples were also analyzed for BTEX. The results of the BTEX and PHC F1-F4 soil analyses and their respective Federal Guidelines and Provincial Standards are summarized in Table 5 and as follows:

- BTEX compounds and PHC F1 (C6 to C10) were not detected in any of the soil samples submitted for BTEX and PHC analysis;
- PHC F2 (>C10 to C16) was detected in one of the soil samples submitted for PHC analysis (DUP-3, a blind duplicate of MW15-58-SS3, APEC 2) at a reported concentration of 6 µg/g; this concentration was below both the applicable Federal Guideline (150 µg/g) and Provincial Standard (98 µg/g);
- PHC F3 (>C16 to C34) was detected in two of the soil samples submitted for PHC analysis at reported concentrations of 30 µg/g to 120 µg/g (BH15-10-SS3, AEC 1 and DUP-3, a blind duplicate of MW15-58-SS3, APEC 2); these concentrations were below both the applicable Federal Guideline (300 µg/g) and Provincial Standard (300 µg/g); and,
- PHC F4 (>C34) was detected in one of the soil samples submitted for PHC analysis (DUP-3, a blind duplicate of MW15-58-SS3, APEC 2) at a reported concentration of 30 µg/g; this concentration was below both the applicable Federal Guideline (2,800 µg/g) and Provincial Standard (2,800 µg/g).

Based on the reported laboratory RLs, all non-detect results reported for BTEX and PHC F1-F4 are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.1.3 Polycyclic Aromatic Hydrocarbons

Twenty-four (24) soil samples, including four QA/QC duplicate samples, collected during the Phase II ESA sampling program were submitted for analysis of PAH. An additional eight soil samples were submitted for analysis of pesticides; results for benzo(a)pyrene, a PAH compound, were also reported along with the pesticide results. The benzo(a)pyrene results from those eight samples have been included in this discussion. The results of the PAH soil analyses and their respective Federal Guidelines and Provincial Standards are summarized in Table 6 and as follows:

- Detectable concentrations of four to 16 PAH compounds were reported in ten of the soil samples submitted for a full suite of PAH analyses; benzo(a)pyrene was detected in two of the soil samples submitted for pesticide analysis;
- Concentrations of PAH compounds in excess of applicable Federal Guidelines and Provincial Standards were reported in one sample submitted for PAH analysis (8-S3, collected at the surface of test pit TP15-14, APEC 8); concentrations of benzo(a)anthracene, benzo(b)fluoranthene, naphthalene and phenanthrene exceeded their respective applicable Federal Guidelines; concentrations of acenaphthylene,

benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, fluoranthene and indeno(1,2,3,c,d)pyrene exceeded their respective applicable Provincial Standards;

- The benzo(a)pyrene Total Potency Equivalent (B(a)P TPE) was calculated for all soil samples submitted for PAH analysis following CCME protocols; the calculated B(a)P TPE values ranged from <0.01 to 1.80; none exceeded the Federal Guideline (5.3 TPE);
- The Index of Additive Cancer Risk (IACR) was calculated for all soil samples submitted for PAH analysis following CCME protocols; IACR values exceeding the Federal Guideline (1.0) were calculated in three soil samples (8-S4, collected at the surface of test pit TP15-13 and samples 8-S3 and TP14-1, both collected from test pit TP15-14, all in APEC 8) at reported values of 1.05 to 22.76;
- Under the Federal Guidelines, the protection of human health from the non-carcinogenic effects of certain PAH (acenaphthene, acenaphthylene, anthracene, fluoranthene, fluorene, naphthalene, phenanthrene and pyrene) is not assessed and applicable guidelines from other jurisdictions (e.g., Provincial Standards) must be consulted; exceedances of the Provincial Standards for two of these particular PAH compounds (acenaphthylene and fluoranthene) were reported in one sample (8-S3, located at TP15-14, APEC 8); and,
- Under the Federal Guidelines, the protection of environmental health from the effects of certain PAH (acenaphthene, acenaphthylene, benzo(g,h,i)perylene, chrysene and fluorene) is not assessed and applicable guidelines from other jurisdictions (e.g., Provincial Standards) must be consulted; an exceedance of the Provincial Standard for one of these particular PAH compounds (acenaphthylene) was reported in one sample (8-S3, TP15-14, APEC 8).

Based on the reported laboratory RLs, all non-detect results reported for PAH parameters are considered to have met the applicable Federal Guidelines and Provincial Standards, with the potential exception of naphthalene in three samples (BH15-7-SS1, BH15-9-SS1 and its blind duplicate, DUP-5, APEC 2). The reported RLs for naphthalene in these three samples were 0.02 µg/g and 0.03 µg/g, which are below the applicable Provincial Standard of 0.6 µg/g, but are higher than the applicable Federal Guideline of 0.013 µg/g. Therefore, naphthalene concentrations in these three samples that were reported below the laboratory RLs of 0.02 µg/g to 0.03 µg/g are considered to have met the applicable Provincial Standard, but the possibility exists that one or more of these samples may have exceeded the applicable Federal Standard.

5.1.4 Metals

Twenty-seven (27) soil samples, including four QA/QC duplicate samples, collected during the Phase II ESA program were submitted for analysis of metal compounds. The results of the metals soil analyses and their respective Federal Guidelines and Provincial Standards are summarized in Table 7 and as follows:

- Copper was detected at a concentration in excess of the applicable Federal Guideline (63 µg/g), but below the Provincial Standard (140 µg/g) in one of the soil samples submitted for metals analysis (TP11-1, APEC 6) at a reported concentration of 113 µg/g;
- Selenium was detected at a concentration in excess of the applicable Federal Guideline (1 µg/g), but below the Provincial Standard (2.4 µg/g) in one of the soil samples submitted for metals analysis (TP7-1, APEC 4) at a reported concentration of 1.2 µg/g;
- Vanadium was detected at a concentration in excess of the applicable Provincial Standard (86 µg/g), but below the Federal Guideline (130 µg/g) in one of the soil samples submitted for metals analysis (TP7-1, APEC 4) at a reported concentration of 101 µg/g; and,
- Zinc was detected at concentrations in excess of the Federal Guideline (200 µg/g), but below the Provincial Standard (340 µg/g) in two of the soil samples submitted for metals analysis (8-S1 and 8-S2, collected from the surfaces of test pits TP15-15 and TP15-16, respectively, APEC 8) at reported concentrations of 202 µg/g to 310 µg/g.

All other samples collected from the Site reported either non-detect parameter concentrations or contained detectable metals concentrations below the applicable Federal Guidelines and Provincial Standards. Based on the reported laboratory RLs, all non-detect results reported for metals are considered to have met the applicable Federal Guidelines and Provincial Standards, with the potential exception of hexavalent chromium (Cr(VI)) in eight samples (MW15-55-SS1B (AEC 1), MW15-56-SS1B (AEC 1), MW15-57-SS1A (AEC 1), BH15-3-SS1 (APEC 2), BH15-4-SS2 (APEC 2), BH15-6-SS2 (APEC 2) and its blind duplicate DUP-6, and BH15-7-SS1 (APEC 2)). The reported RL for Cr(VI) in these eight samples was 0.5 µg/g, which is below the applicable Provincial Standard of 8 µg/g, but is slightly higher than the applicable Federal Guideline of 0.4 µg/g. Therefore, Cr(VI) concentrations in these eight samples that were reported below the laboratory RL of 0.5 µg/g are considered to have met the applicable Provincial Standard, but the possibility exists that one or more of these samples may have exceeded the applicable Federal Standard.

5.1.5 PCB

Thirty (30) soil samples, including four QA/QC duplicate samples, collected during the Phase II ESA program were submitted for analysis of polychlorinated biphenyls (PCB). The results of the PCB soil analyses and their respective Federal Guidelines and Provincial Standards are summarized in Table 8. All samples collected from the Site and submitted for PCB analysis reported non-detect concentrations. Based on the reported laboratory RLs, the reported results for PCB are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.1.6 General Chemistry

Thirty-six (36) soil samples collected during the Phase II ESA program were submitted for pH determination. The results of the pH soil analyses and their respective Federal Guidelines are summarized in Table 9. It should be noted that while a Provincial Standard does not exist for pH

in soil, *O.Reg. 153/04* specifies the acceptable soil pH ranges for the application of the generic SCS in both surface (0 – 1.5 mbgs) and subsurface soil (> 1.5 mbgs).

The pH values reported for the soil samples collected at the Site were acidic to relatively neutral, ranging from 4.61 (5-S2, APEC 5) to 7.07 (MW15-48C-SS5, AEC 1). Nineteen (19) of the pH values reported for soil samples collected at the Site exceeded the Federal Guidelines of 6 to 8 (all 19 reported pH values less than 5).

As noted in Section 4.2.1, the majority (28 out of 31) soil samples collected at the Site and submitted for pH determination that are classified as “surface” soil under *O.Reg. 153/04* yielded pH values within the required range of 5 – 9. All soil samples collected at the Site and submitted for pH determination classified as “subsurface” soil under *O.Reg. 153/04* yielded pH values within the required range of 5 – 11.

5.1.7 Pesticides and Herbicides

Twenty-six (26) soil samples, including three QA/QC duplicate samples, collected during the Phase II ESA program were submitted for analysis of both organochlorine and other types of pesticides and herbicides. The results of the pesticide and herbicide soil analyses and their respective Federal Guidelines and Provincial Standards are summarized in Tables 10 to 12. All samples collected from the Site and submitted for pesticide and herbicide analyses reported non-detect concentrations. Based on the reported laboratory RLs, all of the reported results for pesticides and herbicides are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.2 Groundwater Sample Analyses

The results of the groundwater sample analyses were evaluated with respect to the FIGQG (FCSAP, 2015), the GCDWQ (HC, 2012) and EPA 2011 Table 2 SCS (MOECC, 2011) and are summarized in Tables 13 through 20. Groundwater samples exceeding applicable Federal Guidelines are identified by **bold** highlighting (FIGQG) and *italics* (GCDWQ) whereas those exceeding applicable Provincial Standards are underlined. A discussion of laboratory analytical results in context of the applicable Federal Guidelines and Provincial Standards is provided in the following sections. The locations of parameter exceedances in groundwater are presented on Figures 6A through 6C.

5.2.1 Volatile Organic Compounds

Forty-six (46) groundwater samples, including seven QA/QC duplicate samples, collected from the existing and newly installed monitoring wells were submitted for laboratory analysis of VOC. The results of the VOC groundwater analyses and their respective Federal Guidelines (FIGQG and GCDWQ) and Provincial Standards are summarized in Table 13 and are discussed below:

- Detectable concentrations of one to seven VOC parameters were reported in 32 of the groundwater samples submitted for laboratory analysis;

- 1,2-Dichlorobenzene (1,2-DCB) was detected in excess of the FIGQG (0.7 µg/L), but below the GCDWQ and the applicable Provincial Standard (both 3 µg/L) in one of the samples submitted for VOC analysis (MW15-56, AEC 1) at a reported concentration of 1.3 µg/L;
- cis-1,2-DCE was detected in excess of the FIGQG and the Provincial Standard (both 1.6 µg/L) in six groundwater samples submitted for VOC analysis (MW10-11 and its duplicate DUP-4, MW10-17, MW15-41 (in March and May 2015) and MW15-51 (all AEC 1)), with reported concentrations of 2.4 µg/L to 4.7 µg/L; there is no GCDWQ for cis-1,2-DCE;
- TCE was reported at detectable concentrations in 15 of the groundwater samples submitted for VOC analysis; TCE was detected in excess of the FIGQG (20 µg/L), the GCDWQ (5 µg/L) and the applicable Provincial Standard (1.6 µg/L) in one groundwater sample (MW15-51, AEC 1) at a reported concentration of 26.5 µg/L;
- TCE was detected in excess of the GCDWQ (5 µg/L) and the applicable Provincial Standard (1.6 µg/L), but below the FIGQG (20 µg/L) in eight of the groundwater samples (MW08-1, MW10-11 and its duplicate DUP-4, MW10-15, MW10-17, MW15-41 (in March and May 2015) and MW15-53, all AEC 1) at reported concentrations of 5 µg/L to 20 µg/L; and,
- TCE was detected in excess of the applicable Provincial Standard (1.6 µg/L), but below the GCDWQ (5 µg/L) in two of the groundwater samples submitted for laboratory analysis (MW13-31 and MW15-48C, AEC 1) at reported concentrations of 1.9 µg/L to 2.1 µg/L.

All other VOC parameters were either reported as non-detect or at detectable concentrations below the applicable Federal Guidelines and Provincial Standards. Based on the reported laboratory RLs, all non-detect results reported for VOC parameters are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.2.2 Petroleum Hydrocarbons

Three groundwater samples, including one QA/QC duplicate sample, collected from the existing and newly installed monitoring wells were submitted for laboratory analysis of BTEX and PHC F1-F4. The results of the BTEX and PHC F1-F4 groundwater analyses and their respective Federal Guidelines (FIGQG and GCDWQ) and Provincial Standards are summarized in Table 14. All samples collected from the Site and submitted for BTEX and PHC F1-F4 analysis reported non-detect concentrations. Based on the reported laboratory RLs, the reported results for BTEX and PHC F1-F4 are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.2.3 Polycyclic Aromatic Hydrocarbons

Two groundwater samples, including one QA/QC duplicate sample, collected from the one of the newly installed monitoring wells were submitted for laboratory analysis of PAH. The results of the PAH groundwater analyses and their respective Federal Guidelines (FIGQG and GCDWQ) and

Provincial Standards are summarized in Table 15. All samples collected from the Site and submitted for PAH analysis reported non-detect concentrations. Based on the reported laboratory RLs, the reported results for PAH are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.2.4 Metals

Three groundwater samples, including one QA/QC duplicate sample, collected from the newly installed monitoring wells were submitted for laboratory analysis of metals. The results of the metals groundwater analyses and their respective Federal Guidelines (FIGQG and GCDWQ) and Provincial Standards are summarized in Table 16 and as follows:

- Iron was detected at concentrations in excess of the FIGQG and GCDWQ (both 300 µg/L) in all three samples (MW15-60 (APEC 6), MW15-61 (APEC 3) and its blind duplicate DUP-2) at reported concentrations of 1,375 µg/L (average of MW15-61 and DUP-2) to 1,750 µg/L; there is no Provincial Standard for iron; and,
- Manganese was detected at concentrations in excess of the GCDWQ (50 µg/L) in all three samples (MW15-60 (APEC 6), MW15-61 (APEC 3) and its blind duplicate DUP-2) at reported concentrations of 148 µg/L to 2,170 µg/L; there is no FIGQG for manganese in a residential/parkland land use scenario; there is no or Provincial Standard for manganese in any land use scenario.

All other metals parameters were either reported as non-detect or at detectable concentrations below the applicable Federal Guidelines and Provincial Standards. Based on the reported laboratory RLs, all non-detect results reported for metals are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.2.5 General Chemistry

Three groundwater samples, including one QA/QC duplicate sample, collected from the newly installed monitoring wells were submitted for laboratory analysis of general chemistry parameters. The results of the general chemistry groundwater analyses and their respective Federal Guidelines (FIGQG and GCDWQ) and Provincial Standards are summarized in Table 17. All samples collected from the Site and submitted for general chemistry analysis reported concentrations below the applicable Federal Guidelines and Provincial Standards.

5.2.6 Pesticides and Herbicides

Two groundwater samples collected from the newly installed monitoring wells were submitted for laboratory analysis of pesticides (organochlorine and other types of pesticides) and herbicides. The results of the pesticide and herbicide groundwater analyses and their respective Federal Guidelines (FIGQG and GCDWQ) and Provincial Standards are summarized in Tables 18 to 20 and as follows:

- Deltamethrin (a synthetic pyrethroid pesticide) was detected in excess of the FIGQG (0.0004 µg/L) in one groundwater sample (MW15-60, APEC 6) at a reported concentration of 0.0031 µg/L; there are no GCDWQ or Provincial Standards for deltamethrin; and,
- Permethrin (also a synthetic pyrethroid pesticide) was detected in excess of the FIGQG (0.001 µg/L) in one groundwater sample (MW15-60, APEC 6) at a reported concentration of 0.0042 µg/L; there are no GCDWQ or Provincial Standards for permethrin.

No other parameters were detected above the laboratory RLs. Based on the reported laboratory RLs, the reported results for all pesticide and herbicide parameters are considered to have met the applicable Federal Guidelines and Provincial Standards.

5.3 Quality Assurance Program

5.3.1 Accreditation

The analytical laboratories employed to perform the laboratory analyses are accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) in accordance with ISO/IEC 17025:1999 – “*General Requirements for the Competence of Testing and Calibration Laboratories*” for the tested parameters set out in the Soil, Ground Water and Sediment Standards.

5.3.2 Criteria

The “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*” (the “Analytical Protocol”), July 2011, establishes performance criteria for use when assessing the reliability of data reported by analytical laboratories. These include maximum hold times for the storage of samples/sample extracts between collection and analysis, specified/approved analytical methods, required field and/or laboratory quality assurance samples such as blanks and field and laboratory duplicates, specified recovery ranges for spiked samples and surrogates (compounds added to samples in known concentrations for calibration purposes), reporting limits (RL) and specified precision required when analyzing laboratory duplicate and spike/controlled reference material samples.

Although this document is intended for use under *O.Reg. 153/04*, it provides reasonable guidance and performance objectives for assessing analytical data that can be applied to other jurisdictions where such guidance and objectives are lacking or absent.

5.3.3 Data Validation

Sample analysis dates provided on the reports of analysis issued by Caduceon and Maxxam indicate that all sample analyses were performed within the required sample/extract hold times.

Laboratory RLs were generally below the Federal Guidelines, with the exception of TCE in all 39 soil samples submitted for VOC analysis, naphthalene in three soil samples submitted for PAH analysis and hexavalent chromium in eight soil samples submitted for metals analysis. The

analytical laboratory (Caduceon) has established its VOC protocols to meet the required RLs specified in the O.Reg. 153/04 Analytical Protocol, which mandates an RL for TCE of 0.03 µg/g; this value is three times higher than the Federal Guideline of 0.01 µg/g. No explanation of the elevated RLs for naphthalene or hexavalent chromium were provided by the laboratory; the possibility exists that matrix interference may have been a contributing factor. Laboratory RLs were below the Provincial Standards for all parameters.

Agreement between the corresponding datasets for the laboratory duplicate samples is considered acceptable. Reported laboratory control sample recoveries were found to be within acceptable ranges. No tested parameter was present in a detectable concentration in any laboratory method blank, with the exception of low level detections of barium (2 µg/g) and copper (1 µg/g) in the laboratory blank for report of analysis B15-04508. The reported concentrations are not of sufficient magnitude to warrant concern when considering the magnitude of the reported sample concentrations relative to the Federal Guidelines and Provincial Standards.

Reported recoveries for matrix spike samples (samples to which a known amount of the analyte has been added; used to evaluate sample matrix interference) were found to be within acceptable ranges.

Reported recoveries for spiked blank samples (blank matrix samples to which a known amount of the analyte has been added; used to evaluate method accuracy) were found to be within acceptable ranges, with the exception of several pesticide/herbicide parameters in report of analysis B5P0147. The reported spiked blank recoveries for aldicarb, picloram and captan in water ranged from 145% to 210%. These parameters are not regulated by O.Reg. 153/04; the acceptable recovery range provided by the analytical laboratory for these parameters is 50-130%. Notation on report of analysis B5P0147 indicates that while these recoveries were outside of the recommended control limits, the overall quality control for this analysis met the laboratory's acceptability criteria; consequently, these elevated recoveries do not warrant concern with respect to the overall interpretation of the results.

Laboratory surrogate recoveries reported as part of the laboratory reports of analysis were found to be within acceptable ranges, with the exception of decachlorobiphenyl (PCB surrogate) in seven soil samples (5-S1, 5-S2, 8-S1, 8-S2, DUP-1 (a blind duplicate of 5-S1), TP1-1 and TP7-1). PCB surrogate recoveries reported for these soil samples ranged from 30% to 50%; the acceptable range indicated in the O.Reg. 153/04 Analytical Protocol is 60-140%.

5.3.4 Field QA/QC Samples

The results of the field duplicate sample analyses indicate that the sampling results are generally reproducible with relative percent differences (RPD) for the primary and duplicate samples reporting within acceptable ranges, with the exception of one soil and one groundwater sample. RPD is a measure of the correlation between primary and duplicate samples, and is calculated as follows:

$$\text{RPD} = \text{abs}(D1-D2) / \text{avg}(D1+D2) \times 100 \%$$

Where:

D1 = measured value of primary sample;
D2 = measured value of duplicate sample;
abs = absolute value of D1-D2; and,
avg = average value of D1 and D2.

The RPD for total chromium between primary soil sample BH15-6-SS2 and its duplicate DUP-6 was 37.0%, which slightly exceeds the recommended alert criterion of 35% for metals in soil. The RPDs for arsenic, copper and zinc in groundwater sample MW15-61 and its duplicate DUP-2 ranged from 26.7% to 34.7%, which exceed the recommended alert criterion of 25% for metals in water. These elevated RPDs could be a result of heterogeneity in the sample matrices. In most instances, RPD values were not calculable due to the absence of contaminants of concern at detectable concentrations, or at concentrations greater than ten times the laboratory RL, in the duplicate sample pairs.

All travel blanks employed during the sampling programs reported non-detect concentrations for all parameters analyzed, inferring no sample cross contamination during sample field storage and shipment.

5.3.5 Summary

In summary, the field and laboratory QA/QC data indicate that the sampling results are unbiased and generally reproducible and can be relied upon in the context of this report.

6.0 DATA INTERPRETATION AND ASSESSMENT

The results of the soil and groundwater sampling program and laboratory analytical data were evaluated in the context of the current Federal legislative framework. A discussion of the results of the Phase II ESA sampling and analytical programs is provided in the following sections.

6.1 Soil Quality

Soil samples collected at the Site deemed to be representative of the worst case soil conditions were submitted for quantification of various COPC including VOC, PHC F1-F4, PAH, metals, PCB, pesticides and herbicides. Analytical results indicating exceedances of the applicable Federal Guidelines for one or more VOC, PAH, metals and/or pH in soil were noted in 22 of the samples submitted for laboratory analysis. The locations of these exceedances are shown on Figures 5A through 5C. The exceedances are summarized in the following table orange shading indicates exceedances for one or more parameters:

Summary of Soil Exceedances

Sample I.D.	Depth (Metres)	Chemical Analyses	Exceedances of Federal Guidelines and/or Provincial Standards
AEC 1 – TCE Plume			
MW15-38C-SS5/DUP-1	3.05 – 3.81	VOC	None reported ¹
MW15-38C-SS6SS	4.19 – 4.20		
MW15-40C-SS4	2.85	VOC, FOC	TCE: 0.85 µg/g (CSoQG: 0.01 µg/g; SCS: 0.061 µg/g)
MW15-40C-SS9	6.10 – 6.86	VOC	None reported ¹
MW15-42C-SS3	1.52 – 2.29		
MW15-44-SS5	3.1	VOC	TCE: 0.21 µg/g (CSoQG: 0.01 µg/g; SCS: 0.061 µg/g)
MW15-44-SS6SS	4.52 – 4.53	VOC	None reported ¹
MW15-44-SS8	5.33 – 6.10		
MW15-46C-SS3	1.52 – 2.29		
MW15-46C-SS3SS	2.29 – 2.34		
MW15-47-SS3/DUP-2	1.52 – 2.29	VOC, pH	
MW15-47-SS4SS	2.74 – 2.97	VOC	
MW15-48C-SS5	3.15	VOC, pH	
MW15-48C-SS8SS	5.61 – 5.64	VOC	
MW15-49-SS4SS	1.73 – 1.78		
MW15-50-SS3/DUP-4	1.52 – 2.29		
MW15-50-SS4SS	2.54 – 2.62		
MW15-51-SS5	3.3	VOC	TCE: 0.46 µg/g (CSoQG: 0.01 µg/g; SCS: 0.061 µg/g)
MW15-52-SS4	2.29 – 3.05	VOC, pH	None reported ¹
MW15-53-SS3	1.8	VOC, FOC	

Summary of Soil Exceedances

Sample I.D.	Depth (Metres)	Chemical Analyses	Exceedances of Federal Guidelines and/or Provincial Standards
MW15-54-SS3	1.52 – 2.29	VOC, PHC F1-F4	None reported ¹
MW15-55-SS1B	0.66 – 1.07	PAH, metals, pH	None reported ²
MW15-55-SS3	1.52 – 2.29	VOC	None reported ¹
MW15-56-SS1B	0.46 – 0.76	PAH, metals, pH	None reported ²
MW15-56-SS3	1.52 – 2.29	VOC, PHC F1-F4	None reported ¹
MW15-57-SS1A	0.0 – 0.46	Metals	None reported ²
MW15-57-SS5	3.05 – 3.81	VOC	None reported ¹
MW15-57-SS6SS	4.24 – 4.28		
MW15-63-SS2	2.2	VOC, FOC	
BH15-10-SS3	1.52 2.25	PHC F1-F4, pH, VOC	None reported; TCE: 0.04 µg/g (CSoQG: 0.01 µg/g)
APEC 2 – Historic Building Complex			
MW15-58-SS3/DUP-3	1.52 – 2.29	VOC, PHC F1-F4	None reported ¹
MW15-59-SS3	1.52 – 2.29	VOC, pH	
MW15-62-SS2/DUP-1	2.2	VOC, FOC	
BH15-1-SS4	2.29 – 3.05	VOC, PHC F1-F4	None reported
BH15-1-SS5	3.05 – 3.81	PHC F1-F4	
BH15-2-SS1	0.0 – 0.76		
BH15-3-SS1	0.0 – 0.76	Metals	None reported ²
BH15-4-SS2	0.76 – 1.52		
BH15-5-SS3	1.52 – 2.29	PHC F1-F4, FOC	None reported
BH15-6-SS2/DUP-6	0.76 – 1.52	Metals	None reported ²
BH15-6-SS3	1.52 – 2.29	VOC	None reported ¹
BH15-7-SS1	0.0 – 1.52	PAH, metals	None reported ^{2,3}
BH15-7-SS3	3.05 – 3.81	PHC F1-F4	None reported
BH15-8-SS3	1.52 – 2.29		
BH15-9-SS1/DUP-5	0.0 – 0.76	PAH, PCB	None reported ³
2-S1	0.0 – 0.15	PCB, pH	None reported
2-S2	0.0 – 0.15		
APEC 3 – Former Pesticide Storage and Antenna			
MW15-61-SS2	1.9	VOC	None reported ¹
TP1-1	0.05 – 0.2	PCB, pesticides, herbicides, pH	None reported
TP2-1	0.2 – 0.4		
APEC 4 – Former Equipment Area			
TP3-1	0.2 – 0.4	PAH, metals, PCB, pesticides, herbicides, pH	None reported
TP4-1	0.1 – 0.3		
TP5-1	0.1 – 0.2		pH: 5.22 (CSoQG: 6-8)
TP6-1/DUP-2	0.1 – 0.2		pH (avg.): 5.55 (CSoQG: 6-8)

Summary of Soil Exceedances

Sample I.D.	Depth (Metres)	Chemical Analyses	Exceedances of Federal Guidelines and/or Provincial Standards
TP7-1	0.1 – 0.2		pH: 5.62 (CSoQG: 6-8) V: 101 µg/g (SCS: 86 µg/g) Se: 1.2 µg/g (CSoQG: 1 µg/g)
APEC 5 – Former Antenna Location			
TP8-1	0.3 – 0.4	PCB, pesticides, herbicides, pH	pH: 5.10 (CSoQG: 6-8)
TP9-1	0.3 – 0.4		pH: 5.42 (CSoQG: 6-8)
5-S1/DUP-1	0.0 – 0.15	pH, pesticides, herbicides, PCB	pH (avg.): 5.76 (CSoQG: 6-8)
5-S2			pH: 4.61 (CSoQG: 6-8; SCS: 5-9)
5-S3			pH: 4.90 (CSoQG: 6-8; SCS: 5-9)
APEC 6 – Former Structure(s) and Disturbed Ground			
MW15-60-SS2	1.7	VOC, FOC	None reported ¹
TP10-1	0.1 – 0.3	PAH, metals, PCB, pesticides, herbicides, pH	pH: 5.10 (CSoQG: 6-8)
TP11-1	0.3 – 0.4		pH: 4.97 (CSoQG: 6-8; SCS: 5-9) Cu: 113 µg/g (CSoQG: 63 µg/g)
TP12-1/DUP-4	0.2 – 0.3		pH (avg.): 5.03 (CSoQG: 6-8)
APEC 8 – Former Dumping Area			
8-S4 (above TP13-1)	0.0 – 0.15	PAH, metals, PCB, pesticides, herbicides, pH	pH: 5.66 (CSoQG: 6-8) IACR: 1.05 (CSoQG: 1)
TP13-1/DUP-3	0.1 – 0.3		pH (avg.): 5.22 (CSoQG: 6-8)
8-S3 (above TP14-1)	0.0 – 0.15		Acenaphthylene: 0.164 µg/g (SCS ⁴ : 0.15 µg/g) Benzo(a)anthracene: 1.16 µg/g (CSoQG: 1 µg/g; SCS: 0.5 µg/g) Benzo(a)pyrene: 1.22 µg/g (SCS: 0.3 µg/g) Benzo(b)fluoranthene: 1.84 µg/g (CSoQG: 1 µg/g; SCS: 0.78) Benzo(a)anthracene: 1.16 µg/g (CSoQG: 1 µg/g; SCS: 0.5 µg/g) Dibenzo(a,h)anthracene: 0.162 µg/g (SCS: 0.38 µg/g) Fluoranthene: 1.41 (SCS ⁴ : 0.69 µg/g) Indeno(1,2,3,c,d)pyrene: 0.618 µg/g (SCS: 0.1 µg/g) Naphthalene: 0.018 µg/g (CSoQG: 0.013 µg/g) Phenanthrene: 0.225 µg/g (CSoQG: 0.046 µg/g) IACR: 22.76 (CSoQG: 1)
TP14-1	0.3 – 0.4		IACR: 1.81 (CSoQG: 1)
8-S1 (above TP15-1)	0.0 – 0.15		pH: 5.69 (CSoQG: 6-8) Zn: 202 µg/g (CSoQG: 200 µg/g)
TP15-1	0.4 – 0.6	pH: 5.99 (CSoQG: 6-8)	
8-S2 (above TP16-1)	0.0 – 0.15	Zn: 202 µg/g (CSoQG: 310 µg/g)	

Summary of Soil Exceedances

Sample I.D.	Depth (Metres)	Chemical Analyses	Exceedances of Federal Guidelines and/or Provincial Standards
TP16-1	0.3 – 0.4		None reported
1. TCE results reported at < 0.03 µg/g could exceed CSoQG of 0.01 µg/g; as TCE is the primary contaminant of concern (COC) at the Site, this should be considered when evaluating the results of this Phase II ESA.			
2. Cr(VI) results reported at < 0.5 µg/g could exceed the CSoQG of 0.4 µg/g; however, as Cr(VI) was not detected in any of the 27 soil samples submitted for metals analysis, elevated RLs in these samples are not considered to impact the overall interpretation of the Phase II ESA results.			
3. Naphthalene results reported at < 0.02 to < 0.03 µg/g could exceed CSoQG of 0.013 µg/g; however, as naphthalene was only detected in one of the 24 soil samples submitted for PAH analysis, and as the CSoQG is protective of freshwater life, which is a conservative approach for the Site, elevated RLs in these samples are not considered to impact the overall interpretation of the Phase II ESA results.			
4. Some PAH CSoQG require other jurisdiction to be consulted; Ontario Site Condition Standards (SCS) applied.			

All soils naturally contain trace levels of metals. The presence of metals in soils is, therefore, not necessarily indicative of contamination. The concentration of metals in uncontaminated soil is primarily related to the geology of the parent material from which the soil was formed. However, elevated concentrations of specific metals may accumulate in soil and fill materials due to anthropogenic activities and or as a result of the nature and origin of fill materials. The slight selenium and vanadium exceedances of the Federal Guideline reported in a single sample (TP7-1 in APEC 4) is not considered to be indicative of environmental impact in that location.

Exceedances of Federal Guideline and Provincial Standards for pH were noted in several soil samples submitted for laboratory analysis from APEC 4, APEC 5, APEC 6 and APEC 8. There are several methods by which soils may become acidic. The first, and most common, is organic matter and minerals that break down in a soil over time are acidic in nature, and thus render the soil acidic. This is common in pine forests and peat bogs. The second way soil becomes acidic is via leaching due to excessive rainfall. Too much rainfall results in key nutrients, such as potassium, magnesium, and calcium, being leached from soil. These elements all prevent soil from being acidic. When they are leached out, the pH level of the soil drops, resulting in acidic soil. pH does not represent a COPC but rather has the ability to impact the mobility of contaminants, specifically metals are of interest at this Site. This is of particular interest when evaluating potential risks to plants. The presence of a low pH can increase the mobility of some metals and decrease the mobility of others. Therefore, a low pH may increase exposure and potential toxicity of some metals. Given the presence of a significant faunal community at the Site which exhibits no signs of undue stress such as discoloured foliage and/or barren areas and/or stunted growth, it is inferred that the pH values measured have not adversely affected ecological health at the Site.

6.2 Groundwater Quality

Groundwater samples collected at the Site were submitted for quantification of various COPC including VOC, PHC F1-F4, PAH, metals, PCB, pesticides and herbicides. Analytical results indicating exceedances of the applicable Federal Guidelines for one or more VOC, metals and/or

pesticides in groundwater were noted at 12 of the monitoring wells sampled (refer to Figures 6A through 6C). The exceedances are summarized in the following table, where orange shading indicates exceedances for one or more parameters:

Summary of Groundwater Exceedances

Sample I.D.	Chemical Analyses	Exceedances of Federal Guidelines
<i>AEC 1 – TCE Plume</i>		
MW08-1	VOC, PHC	TCE: 6.6 µg/L (GCDWQ: 5 µg/L; SCS: 1.6 µg/L)
MW08-4	VOC	None reported
MW08-5		
MW10-11/DUP-4	VOC	cis-1,2-DCE (average): 3.55 µg/L (FIGQG: 1.6 µg/L; SCS: 1.6 µg/L) TCE (average): 7.1 µg/L (GCDWQ: 5 µg/L; SCS: 1.6 µg/L)
MW10-15	VOC	TCE: 5.9 µg/L (GCDWQ: 5 µg/L; SCS: 1.6 µg/L)
MW10-17	VOC	cis-1,2-DCE: 4.7 µg/L (FIGQG: 1.6 µg/L; SCS: 1.6 µg/L) TCE: 20 µg/L (GCDWQ: 5 µg/L; SCS: 1.6 µg/L)
MW10-19	VOC	None reported
MW10-24 (March and May)		
MW10-25 (March and May)		
MW13-31	VOC	TCE: 1.9 µg/L (SCS: 1.6 µg/L)
MW13-33	VOC	None reported
MW15-38C		
MW15-39/DUP-1 (March and May)		
MW15-40C		
MW15-41 (March)	VOC	cis-1,2-DCE: 3.4 µg/L (FIGQG: 1.6 µg/L; SCS: 1.6 µg/L) TCE: 15.7 µg/L (GCDWQ: 5 µg/L; SCS: 1.6 µg/L)
MW15-41 (May)	VOC	cis-1,2-DCE: 2.4 µg/L (FIGQG: 1.6 µg/L; SCS: 1.6 µg/L) TCE: 10.5 µg/L (GCDWQ: 5 µg/L; SCS: 1.6 µg/L)
MW15-42C	VOC	None reported
MW15-43		
MW15-44C/DUP-3		
MW15-45		
MW15-46C		
MW15-47C		
MW15-48C	VOC	TCE: 2.1 µg/L (SCS: 1.6 µg/L)
MW15-49C	VOC	None reported
MW15-50/DUP-1		
MW15-51	VOC	cis-1,2-DCE: 2.6 µg/L (FIGQG: 1.6 µg/L; SCS: 1.6 µg/L)

Summary of Groundwater Exceedances

Sample I.D.	Chemical Analyses	Exceedances of Federal Guidelines
		TCE: 26.5 µg/L (GCDWQ: 5 µg/L; FIGQG: 20 µg/L; SCS: 1.6 µg/L)
MW15-52	VOC	None reported
MW15-53	VOC	TCE: 6.8 µg/L (GCDWQ: 5 µg/L; SCS: 1.6 µg/L)
MW15-54/DUP-2	VOC, PHC	None reported
MW15-55	VOC	
MW15-56	VOC	1,2-DCB: 1.3 µg/L (FIGQG: 0.7 µg/L)
MW15-57/DUP-5	VOC	None reported
MW15-63/DUP-3		
APEC 2 – Historic Building Complex		
MW15-58	VOC	None reported
MW15-59		
MW15-62 (December)		
APEC 3 – Former Pesticide Storage and Antenna		
MW15-61/DUP-2	Metals, general chemistry, pesticides, herbicides	Fe (avg.): 1375 µg/L (GCDWQ and FIGQG: 300 µg/L) Mn (avg.): 1965 µg/L (GCDWQ: 50 µg/L)
APEC 6 – Former Structure(s) and Disturbed Ground		
MW15-60/DUP-1	PAH, metals, general chemistry, organochlorine pesticides, pesticides, herbicides	Fe: 1750 µg/L (GCDWQ and FIGQG: 300 µg/L) Mn: 148 µg/L (GCDWQ: 50 µg/L) Deltamethrin: 0.0031 µg/L (FIGQG: 0.0004 µg/L) Permethrin: 0.0042 µg/L (FIGQG: 0.001 µg/L)

Note: where an average ('avg.') concentration is reported, the average is of the sample and an associated duplicate taken during the same sampling event.

Geologic materials naturally contain trace levels of heavy metals, particularly iron and manganese. The presence of iron and manganese in groundwater is, therefore, not necessarily indicative of contamination. The concentration of iron and manganese in groundwater is in part related to the geology of the hydrostratigraphic unit(s) which hosts the groundwater. The exceedances of the FIGQG and/or GCDWQ for iron and manganese in groundwater at MW15-60 and MW15-61 are not considered to be indicative of environmental impacts in these locations.

6.3 Areas of Environmental Concern

Based on the results of this Phase II ESA, the following Areas of Potential Environmental Concern are considered to be Areas of Environmental Concern:

Summary of Areas of Environmental Concern

Location	Soil Impacts	Groundwater Impacts
<i>AEC 1 – TCE Plume</i>		
MW08-1	Not analyzed by Amec Foster Wheeler as these monitoring wells were installed and evaluated for soil contamination by others in the years 2008, 2010, and 2013.	TCE (screened across sand/clay interface)
MW10-11		cis-1,2-DCE, TCE (screened in sand)
MW10-15		TCE (screened in sand)
MW10-17		cis-1,2-DCE, TCE (screened in sand)
MW13-31		TCE (screened in clay)
MW15-40C	Bottom of sand: TCE Clay: None reported*	None reported (screened in clay)
MW15-41	Not analyzed (MW15-40C conditions representative)	cis-1,2-DCE, TCE (screened in sand)
MW15-44C	Bottom of sand: TCE Clay: None reported*	None reported (screened in clay)
MW15-48C	Bottom of sand: None reported* Clay: None reported*	TCE (screened in clay)
MW15-51	Bottom of sand: TCE	cis-1,2-DCE, TCE (screened in sand)
MW15-53	Bottom of sand: None reported*	TCE (screened in sand)
MW15-56	None reported*	1,2-DCB (screened in sand)
BH15-10	Bottom of sand: TCE	Not analyzed (borehole only)
<i>AEC 6 – Former Structure(s) and Disturbed Ground</i>		
MW15-60	None reported	Deltamethrin, Permethrin
TP15-11	Copper	Not analyzed (test pit only)
<i>AEC 8 – Former Dumping Area</i>		
TP15-13	IACR	Not analyzed (test pit only)
TP15-14	9 PAH compounds, IACR	Not analyzed (test pit only)
TP15-15	Zinc	Not analyzed (test pit only)
TP15-16	Zinc	Not analyzed (test pit only)

* Note: detection limits for TCE in soil exceeded Federal Guideline in these samples and as a result the non-detect results in these locations may still include exceedances of Federal Guideline values.

Based on the soil and groundwater conditions in AEC 1, it is inferred that dissolved phase TCE and its associated degradation products, including cis-1,2-DCE, are present in the lower portion of the shallow sand aquifer at the Site. No source areas or other areas of high concentrations of TCE indicating the presence of free phase DNAPL at the Site were found during the course of the investigation. A single monitoring well (MW15-56) reported an exceedance for 1,2-DCB, which may have been associated with the use of urinal pucks in the former administrative offices at the Site during the tenure of the MNR, as this well was located downgradient of the former septic bed.

Groundwater elevation data indicates that the groundwater flow direction in the shallow sand aquifer is east-northeasterly in close proximity to P19, and then becomes easterly in the vicinity of MW15-41. This location is within a few metres of the Site boundary, and levels of both TCE

and cis-1,2-DCE have been measured in excess of the applicable Federal and Provincial guidelines and standards, including standards for potable groundwater use, at this groundwater monitoring well. It is noted that not all existing monitoring wells had groundwater samples collected during this Phase II ESA, therefore the isoconcentration contour plan for TCE shown on Figure 6A includes consideration of the monitoring data from 2014, as well as the exceedances specifically measured in the 2015 Phase II ESA. The groundwater analytical data gathered to date indicates a narrowing of the plume to a width of less than 20 metres adjacent to the Site's southern boundary.

The areas of soil impact in AEC 1 generally mirror the groundwater conditions, with the areas reporting exceedances of Federal and Provincial soil quality guidelines and standards underlying the areas of the highest observed groundwater TCE concentrations. While the area of impact as defined by Federal guidelines may be underestimated when taking into consideration potential TCE exceedances that were below laboratory reporting limits, the concentrations measured are such that they may be a result of pore water included in the soil and/or within organic matter contained in the soil and do not materially influence the findings of this Phase II ESA with respect to the position or distribution of the TCE plume.

Based on the data gathered as part of this Phase II ESA, it is probable that the TCE and cis-1,2-DCE impacts in AEC 1 extend off Site. The change in groundwater flow direction and width of the plume may be related to localized variation in the grain size and/or thickness of the shallow sand aquifer commonly associated with ancient channel cutting and infilling.

The copper soil impacts observed in AEC 6 are likely a direct result of the corroding metal locally observed in the test pits advanced in this area of the Site. The groundwater pesticides impacts observed in this portion of the Site (Deltamethrin and Permethrin) may relate to historic application and/or storage of insecticides in this area. Large ceramic objects, which resembled electric insulators, were found in the test pits advanced in this area of the Site. The review of historical aerial photographs indicated the presence of a disturbed area which may or may not have included the presence of a structure during the time the Royal Canadian Navy occupied the Site. Very little further information regarding the former use of this part of the Site is available.

AEC 8, on the eastern portion of the Site, near the former location of what appeared to be farm buildings based on aerial photos reviewed in the 2015 Phase I ESA (Amec Foster Wheeler) and what was described as a 'former dumping area' in previous consultants' reports on the Site, exhibited impacts by various PAH compounds in the shallow subsurface (i.e. in sample 8-S3 collected from the surficial soil within 2 m of TP15-14). The magnitude of these impacts was observed to decrease with depth in the vicinity of TP15-14; the sample with the highest magnitude of impacts (8-S3) was located near the surface in this area, while the nearby deeper sample TP14-1 (collected at a depth of 0.3 to 0.4 mbgs within TP15-14) reported only an exceedance of the IACR, and not individual PAH compounds.

The PAH impacts in shallow soil may be attributed to former heating activities at the Site, including the storage of coal and/or the management of heating derived waste and residues. Throughout

much of the coal and wood heating era it was a common practice to blend or mix such wastes into garden and growing soils with the understanding that they were a beneficial amendment to raise the soil pH and lower acidity as well as control pests such as slugs and snails. Given the mature tree cover at the Site, particularly within this AEC, a layer of organic material such as leaves and decaying bark was present over the soil surface. The presence of these materials may provide a biogenic (i.e, naturally occurring) source of some PAH compounds.

6.4 TCE Plume Migration

The average linear groundwater velocity within the shallow sand aquifer beneath the AEC 1 is estimated to be 16.8 m/year. The transport of organic contaminants such as TCE within the shallow sand aquifer would be subject to the effects of contaminant sorption onto natural organic matter in the soil. A retardation factor (Rf) is a correction factor that accounts for the effects of contaminant sorption in the groundwater flow regime on the velocity of a dissolved contaminant.

The Rf is a measure of the bulk density (δ) of the soil matrix, the soil-water distribution or partition coefficient (K_d), and the porosity (n). The retardation factor is defined by the following equation:

$$Rf = 1 + \frac{\delta K_d}{n} \quad (1)$$

The soil-water distribution coefficient (K_d) is often approximated by an assumed relationship between the partitioning of hydrophobic chemicals to organic carbon. In this approach the chemical is assumed to partition to the organic carbon in the aquifer and not the mineral surfaces.

Therefore K_d is defined by:

$$K_d = K_{oc} f_{oc} \quad (3)$$

where (f_{oc}) is the fraction organic carbon of the aquifer medium, and K_{oc} is the organic carbon partitioning coefficient of the contaminant.

The fraction organic carbon content for the sand aquifer ranged from < 0.005 to 0.006 with an average of 0.003 (assumes a value of 0.0025 for samples reporting $f_{oc} < MDL$). The K_{oc} of TCE is 67.7 cm³/g (MOECC, 2011, Rationale for the Development of Soil and Ground Water Standards for Use At Contaminated Sites in Ontario, Appendix B1, page 15). By equation (3) the soil-water distribution coefficient is:

$$K_d = 0.003 * 67.7 = 0.2031$$

The retardation factor (Rf) is therefore estimated by:

$$Rf = 1 + (1.835 * 0.2031) / 0.30 = 2.24$$

Where a bulk density of 1.835 was measured at the Site, and a porosity of 30% or 0.3 is assumed to be representative of the conditions in a sand aquifer.

Applying the R_f to the results of the groundwater velocity estimates and without consideration of other natural attenuation effects, the TCE velocity is estimated to be approximately 7.5 m/year. The travel distance of the centreline of the TCE plume from the Site boundary to the suspected source area (i.e., the upgradient end of the plume as it is currently defined, in the general vicinity of the former building complex (APEC 2)) is estimated at approximately 170 metres. At this distance and contaminant velocity (i.e. 170 m/7.5 m per year), it would take approximately 22.6 years for TCE to travel the length of the plume from the suspected source to the south property boundary. This estimate lies well within the time frame for the suspected use of TCE at the Site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the soil and groundwater sampling and laboratory analytical programs, Amec Foster Wheeler offers the following conclusions and recommendations regarding the environmental Site conditions:

- In general, the subsurface conditions at the Site consisted of brown sand with trace silt overlying grey silty clay to clay. In some locations, sandy fill with occasional traces of silt and or gravel overlies the sand; waste materials including as concrete, insulation and foam were noted in this fill layer at one location (BH15-7 in APEC 2). In 27 locations (BH15-1 to BH15-10, MW15-38C, MW15-42C, MW15-44 to MW15-55, MW15-57 and MW15-59), one or more thin sand seams were observed within the clay formation. Bedrock was not encountered at any of the borehole locations, the deepest of which extended to 6.71 mbgs. The grain size distribution indicated the subsurface soil across the Site to be considered coarse textured for the purposes of assessment;
- The results of the groundwater monitoring indicate that the primary near surface water table resides within the sand overburden unit at depths ranging from 0.56 m to 2.09 mbgs. The groundwater table elevations recorded at the Site's monitoring wells on 09 March 2015 varied between 83.79 masl (MW13-36) and 84.99 masl (MW15-56). Based on the recorded groundwater elevations, the groundwater flow in the overburden layer is inferred to be in an easterly direction at the southern property boundary;
- Results of aquifer response testing indicate geometric mean hydraulic conductivities of 3.77×10^{-5} m/sec in the sand unit and 1.42×10^{-8} in the clay unit. The average horizontal hydraulic gradient for the shallow sand aquifer across AEC 1 based on the water level recorded on March 9, 2015 was 0.425%. Assuming an effective porosity of 30%, the average linear groundwater velocity beneath the AEC 1 is estimated to be 16.8 m/year;
- No significant odours, staining and/or sheen/iridescence were detected in any of the soil or samples collected at the Site. No visible LPH, LNAPL and/or DNAPL were observed in any of the soil or groundwater samples collected at the Site;
- COV and TOV concentration headspace measurements recorded in the soil samples collected at the Site were generally less than or equal to 35 parts per million (ppm). COV concentration headspace measurements recorded in several soil samples collected at the Site (MW15-54-SS1, MW15-54-SS3, BH15-2-SS1 and BH15-7-SS3) ranged from 85 to 150 ppm. These concentrations may be indicative of impact by petroleum hydrocarbons or volatile organic compounds. The COV and TOV results are semi-quantitative at best and are generally only used for relative sample comparison purposes when selecting samples for laboratory analysis;
- Soil samples collected at the Site were evaluated through comparison with Federal Guidelines including the CCME *Canadian Soil Quality Guidelines (CSoQG) for the Protection of Environmental and Human Health* (accessed online October 30, 2015) and the *Canada-Wide Standards (CWS) for Petroleum Hydrocarbons in Soil* (revised January 2008). Soil samples were evaluated using criteria established for residential/parkland land uses in a coarse textured soil setting. Owing to the presence of a potable water wells at

residences within close proximity (less than 250 m) from the Site, groundwater analytical results were evaluated through comparison with the *Guidelines for Canadian Drinking Water Quality* (HC, 2012), as well as the FIGQG Tier 1 guidelines established for residential/parkland land use in a coarse textured soil setting;

- Soil and groundwater were also evaluated through comparison with the 2011 Provincial SCS established under *O.Reg. 153/04 – Records of Site Condition*, as amended. Analytical results were compared to the generic EPA 2011 Table 2 SCS established for residential/parkland property use, coarse textured soil, and potable groundwater use for a site greater than 30 metres from a water body;
- Results of the soil and groundwater analyses indicate that three AEC are present at the Site: AEC 1 – TCE Plume (TCE soil impacts and cis-1,2-DCE, 1,2-DCB and TCE groundwater impacts), AEC 6 – Former Structures(s) and Disturbed Ground (copper soil impacts and pesticide groundwater impacts) and AEC 8 – Former Dumping Area (zinc and PAH soil impacts);
- Based on the soil and groundwater conditions in AEC 1, it is inferred that dissolved phase TCE and its associated degradation products, including cis-1,2-DCE, are present in the lower portion of the shallow sand aquifer at the Site. The areas of soil impact in AEC 1 generally mirror the groundwater conditions, with the areas reporting exceedances of Federal and Provincial soil quality guidelines and standards underlying the areas of the highest observed groundwater TCE concentrations;
- Groundwater elevation data indicates that the groundwater flow direction in the shallow sand aquifer is east-northeasterly in close proximity to P19, and then becomes easterly in the vicinity of MW15-41. The change in groundwater flow direction and width of the plume may be related to localized variation in the grain size and/or thickness of the shallow sand aquifer;
- MW15-41 is within a few metres of the Site boundary, and levels of both TCE and cis-1,2-DCE have been measured in excess of the applicable Federal and Provincial guidelines and standards, including standards for potable groundwater use, at this groundwater monitoring well. Groundwater analytical data gathered to date indicates a narrowing of the plume to a width of less than 20 metres adjacent to the Site's southern boundary;
- The TCE velocity in groundwater is estimated at 7.5 m/year based on an estimated retardation factor of 2.24 without consideration of other natural attenuation effects. The estimated time for TCE to travel from the suspected source area (i.e. in the general vicinity of the former building complex (APEC 2)) to the south property boundary over a distance of 170 metres is 22.6 years. This estimate lies well within the time frame for the suspected use of TCE at the Site;
- Based on the data gathered as part of this Phase II ESA, it is possible that the TCE and cis-1,2-DCE impacts in AEC 1 extend off Site;

- The copper soil impacts observed in AEC 6 are likely a direct result of the corroding metal locally observed in the test pits advanced in this area of the Site. The groundwater pesticides impacts observed in this portion of the Site (deltamethrin and permethrin) may relate to historic application and/or storage of insecticides in this area;
- AEC 8 showed soil impacts by various PAH compounds in the shallow subsurface. The magnitude of these impacts was observed to decrease with depth. The PAH impacts in shallow soil may be attributed to former heating activities at the Site, including the storage of coal and/or management of heating derived waste and residues.

Based on the results of the soil and groundwater sampling and laboratory analytical programs, the Site is out of compliance with the applicable Federal Guidelines and Provincial Standards. As such, additional investigations are warranted or recommended, as follows:

- Consultation with the adjacent landowner (i.e., the City of Ottawa) for permission to complete off Site investigation of soil and groundwater conditions through the advancement of boreholes, installation of groundwater monitoring wells, and collection of soil and groundwater samples to established a preliminary assessment of potential risks to off-Site receptors including neighbouring homeowners on the south side of Leitrim Road. The cost of completing a preliminary investigation with up to four monitoring wells installed in the shallow sand aquifer on the south side of Leitrim Road is estimated at [REDACTED]. This process is currently underway and access to the appropriate off-Site locations is being negotiated by the NCC as this report is being submitted;
- Completion of a comprehensive groundwater monitoring event (preferably following installation and development of the proposed off Site wells listed above) where all monitoring wells in AEC 1 are sampled for VOCs and MW15-60 in AEC 6 is sampled for pesticides and herbicides. The preferred timing of such an event would be in early spring when the water table is highest (which would be expected to correlate directly with precipitation events given the shallow and permeable nature of the sand aquifer at the Site). The cost of this monitoring event is estimated at [REDACTED]; and,
- Completion of a screening level ecological risk assessment (SLERA) and a Site-specific human health risk assessment (HHRA) to assess the potential risks to members of the general public associated with the soil impacts including VOCs, metals and PAH identified in soil throughout AECs 1, 6 and 8, and the organochlorine pesticides groundwater impacts observed in AEC 6. The appropriate next steps to address potential risks posed by VOC impacts to groundwater in AEC 1 are outlined in the foregoing recommendations. The risk assessment report should include plain language description of the potential risks and any risk mitigation measures required for staff and members of the public accessing the Site to ensure they are properly understood. The cost to complete these studies is estimated at [REDACTED].

8.0 LIMITATIONS

This report was prepared for the exclusive use of the NCC and is intended to provide a Phase II Environmental Site Assessment (ESA) of NCC Property Asset 97390 located on the north side of Leitrim Road, between Hawthorne and Ramsayville Roads, in Ottawa, Ontario at the time of the Site visits. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Amec Foster Wheeler will be required. With respect to third parties, Amec Foster Wheeler has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The investigation undertaken by Amec Foster Wheeler with respect to this report and any conclusions or recommendations made in this report reflect Amec Foster Wheeler's judgment based on the Site conditions observed at the time of the Site inspections on the dates set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observations of the Site, subsurface investigations at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Amec Foster Wheeler has used its professional judgment in analysing this information and formulating these conclusions.

Amec Foster Wheeler makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This report is also subject to the further standard limitations contained in Appendix H.

9.0 CLOSURE

We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Yours truly,

**Amec Foster Wheeler Earth & Environmental,
A Division of Amec Foster Wheeler Americas Limited**



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Table 1. Groundwater Monitoring Well Construction Details

Monitor Well I.D.	Coordinates (MTM)		Date of Construction (mm/dd/yy)	Well Constructed By	Borehole and Groundwater Monitoring Interval Construction Data								Geologic Media Intersected by Well Screen
	Easting	Northing			Ground Surface Elevation (masl)	Borehole Depth (m)	Borehole Bottom Elevation (masl)	Top of PVC Elevation (masl)	PVC Stick-up (m, 2015)	Depth to Bottom of Well Screen (m)	Well Screen Interval (masl)	Well Screen Length (m)	
MW08-1	378159	5023472	06/18/08	Aqua Terre	86.482	4.28	82.20	87.25	0.77	4.27	85.26 - 82.21	3.05	Sand / silty clay
MW08-2	378157	5023482	06/18/08	Aqua Terre	86.434	4.28	82.15	87.31	0.88	4.27	85.21 - 82.17	3.05	Sand / silty clay
MW08-3	378161	5023498	06/18/08	Aqua Terre	86.225	4.28	81.94	87.00	0.78	4.27	85.01 - 81.96	3.05	Sand / silty clay
MW08-4	378173	5023454	06/18/08	Aqua Terre	86.288	4.28	82.01	87.05	0.76	4.27	85.07 - 82.02	3.05	Sand / silty clay
MW08-5	378141	5023457	08/26/08	Aqua Terre	86.673	4.89	81.78	87.53	0.86	2.13	86.06 - 84.54	1.52	Sand
MW09-8	378181	5023473	08/13/09	Aqua Terre	86.054	3.67	82.38	87.21	1.16	2.44	85.14 - 83.62	1.52	Sand
MW09-9	378171	5023490	08/13/09	Aqua Terre	85.882	3.67	82.21	86.93	1.05	2.44	84.97 - 83.44	1.52	Sand
MW10-10	378206	5023469	08/25/10	SNC	85.918	6.73	79.19	87.15	1.23	2.44	85.00 - 83.48	1.52	Sand
MW10-11	378196	5023486	08/25/10	SNC	85.816	4.28	81.53	86.96	1.14	2.44	84.90 - 83.38	1.52	Sand
MW10-12	378188	5023504	08/25/10	SNC	85.662	4.28	81.38	86.78	1.12	2.44	84.75 - 83.22	1.52	Sand
MW10-13	378224	5023478	08/25/10	SNC	86.288	4.28	82.01	87.38	1.09	2.44	85.37 - 83.85	1.52	Sand
MW10-14	378205	5023514	08/25/10	SNC	86.458	4.28	82.18	87.52	1.06	2.44	85.54 - 84.02	1.52	Sand
MW10-15	378214	5023496	08/26/10	SNC	86.412	5.50	80.91	87.46	1.05	2.44	85.50 - 83.97	1.52	Sand
MW10-16	378233	5023461	09/28/10	SNC	86.034	4.28	81.75	87.19	1.16	3.05	84.51 - 82.99	1.52	Sand
MW10-17	378251	5023470	09/28/10	SNC	86.437	4.28	82.16	87.51	1.07	3.96	84.00 - 82.47	1.52	Sand
MW10-18	378268	5023478	09/28/10	SNC	86.183	4.28	81.90	87.25	1.07	3.05	84.66 - 83.14	1.52	Sand / silty clay
MW10-19	378258	5023496	09/28/10	SNC	86.255	4.28	81.97	87.29	1.04	3.05	84.73 - 83.21	1.52	Sand / silty clay
MW10-20	378242	5023487	09/29/10	SNC	86.359	4.28	82.08	87.47	1.11	3.20	84.68 - 83.16	1.52	Sand
MW10-21	378297	5023468	09/29/10	SNC	85.279	3.06	82.22	86.46	1.18	2.44	84.36 - 82.84	1.52	Sand / silty clay
MW10-22	378332	5023488	09/29/10	SNC	84.650	3.06	81.59	85.78	1.13	2.44	83.74 - 82.21	1.52	Sand / silty clay
MW10-23	378313	5023479	09/29/10	SNC	84.983	3.06	81.93	86.17	1.19	2.44	84.07 - 82.54	1.52	Sand / silty clay
MW10-24	378262	5023447	09/29/10	SNC	86.565	4.28	82.28	87.81	1.25	3.96	84.13 - 82.60	1.52	Sand
MW10-25	378279	5023458	09/29/10	SNC	86.186	3.06	83.13	87.24	1.05	2.74	84.97 - 83.44	1.52	Sand / silty clay
MW13-26	378182	5023413	05/15/13	Stantec	85.729	9.17	76.56	86.51	0.78	9.14	78.11 - 76.59	1.52	Silty clay
MW13-27	378180	5023414	05/15/13	Stantec	85.754	3.36	82.39	86.58	0.83	3.35	83.93 - 82.40	1.52	Silty clay
MW13-28	378207	5023425	05/15/13	Stantec	85.644	9.17	76.47	86.47	0.83	9.14	78.02 - 76.50	1.52	Silty clay
MW13-29	378205	5023424	05/15/13	Stantec	85.691	4.57	81.12	86.52	0.83	4.57	82.65 - 81.12	1.52	Silty clay
MW13-30	378275	5023455	05/17/13	Stantec	86.304	9.17	77.13	87.11	0.81	9.14	78.68 - 77.16	1.52	Silty clay
MW13-31	378273	5023454	05/17/13	Stantec	86.379	6.73	79.65	87.09	0.71	6.71	81.20 - 79.67	1.52	Silty clay
MW13-32	378291	5023465	05/16/13	Stantec	85.650	9.17	76.48	86.54	0.89	9.14	78.03 - 76.51	1.52	Silty clay
MW13-33	378289	5023465	05/17/13	Stantec	85.735	6.12	79.62	86.65	0.92	6.10	81.16 - 79.64	1.52	Silty clay
MW13-34	378307	5023475	05/16/13	Stantec	84.994	9.17	75.82	85.82	0.83	9.14	77.37 - 75.85	1.52	Silty clay
MW13-35	378305	5023473	05/16/13	Stantec	85.238	6.12	79.12	85.86	0.62	6.10	80.67 - 79.14	1.52	Silty clay
MW13-36	378327	5023486	05/16/13	Stantec	84.739	9.17	75.57	85.53	0.79	9.14	77.12 - 75.60	1.52	Silty clay
MW13-37	378326	5023484	05/16/13	Stantec	84.745	6.12	78.63	85.59	0.85	6.10	80.17 - 78.65	1.52	Silty clay
MW15-38C	378266	5023444	02/27/15	AFW	86.573	6.71	79.86	87.36	0.79	6.61	81.48 - 79.96	1.52	Clay
MW15-39	378266	5023445	02/27/15	AFW	86.545	3.20	83.35	87.39	0.85	3.16	84.91 - 83.39	1.52	Sand
MW15-40C	378280	5023450	02/27/15	AFW	86.141	6.71	79.43	86.89	0.75	2.43	85.23 - 83.71	1.52	Clay
MW15-41	378280	5023450	02/27/15	AFW	86.156	2.93	83.23	86.97	0.81	1.75	85.93 - 84.41	1.52	Sand
MW15-42C	378288	5023455	02/27/15	AFW	85.846	6.10	79.75	86.71	0.86	6.01	81.36 - 79.84	1.52	Clay
MW15-43	378289	5023455	02/27/15	AFW	85.791	2.13	83.66	86.49	0.70	2.07	84.94 - 83.72	1.22	Sand

Table 1. Groundwater Monitoring Well Construction Details

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	Easting	Northing			Ground Surface Elevation (masl)	Borehole Depth (m)	Borehole Bottom Elevation (masl)	Top of PVC Elevation (masl)	PVC Stick-up (m, 2015)	Depth to Bottom of Well Screen (m)	Well Screen Interval (masl)	Well Screen Length (m)	
MW15-44C	378273	5023454	02/27/15	AFW	86.411	6.71	79.70	87.30	0.89	2.71	85.23 - 83.71	1.52	Clay
MW15-45	378240	5023434	02/26/15	AFW	85.922	2.44	83.48	86.76	0.84	1.88	84.96 - 84.04	0.91	Sand
MW15-46C	378239	5023433	02/26/15	AFW	85.716	6.10	79.62	86.63	0.91	5.86	81.38 - 79.86	1.52	Clay
MW15-47C	378238	5023456	03/02/15	AFW	86.054	4.27	81.78	86.93	0.88	4.29	83.29 - 81.76	1.52	Clay
MW15-48C	378254	5023469	03/02/15	AFW	86.410	6.10	80.31	87.28	0.87	4.38	83.55 - 82.03	1.52	Clay
MW15-49C	378271	5023485	03/02/15	AFW	86.137	3.96	82.18	86.95	0.81	1.64	86.02 - 84.50	1.52	Clay
MW15-50	378198	5023452	03/05/15	AFW	85.888	3.05	82.84	86.78	0.89	1.87	84.93 - 84.02	0.91	Sand
MW15-51	378205	5023480	03/02/15	AFW	85.933	6.10	79.83	86.75	0.82	3.68	83.78 - 82.26	1.52	Sand
MW15-52	378230	5023500	03/02/15	AFW	86.353	4.57	81.78	87.14	0.79	2.99	84.89 - 83.37	1.52	Sand
MW15-53	378180	5023491	03/03/15	AFW	85.660	3.05	82.61	86.44	0.78	1.83	84.86 - 83.83	1.04	Sand
MW15-54	378153	5023445	02/26/15	AFW	86.230	4.57	81.66	86.23	0.00	2.20	85.55 - 84.03	1.52	Sand
MW15-55	378133	5023445	03/03/15	AFW	86.661	3.05	83.61	87.56	0.90	2.18	86.01 - 84.48	1.52	Sand
MW15-56	378124	5023456	03/03/15	AFW	86.944	3.05	83.89	87.77	0.83	2.71	85.76 - 84.23	1.52	Sand
MW15-57	378135	5023472	03/03/15	AFW	86.823	4.57	82.25	87.70	0.88	3.75	84.60 - 83.07	1.52	Sand
MW15-58	378147	5023488	03/03/15	AFW	86.623	3.05	83.57	87.29	0.67	2.49	85.04 - 84.13	0.91	Sand
MW15-59	378160	5023513	03/03/15	AFW	86.261	3.05	83.21	87.01	0.75	2.41	85.37 - 83.85	1.52	Sand
MW15-60	377945	5023684	11/16/15	AFW	n/m	3.05	n/c	n/c	0.87	2.74	n/c - n/c	1.52	Sand / clay
MW15-61	378011	5023493	11/16/15	AFW	n/m	3.05	n/c	n/c	0.84	3.05	n/c - n/c	1.52	Sand / clay
MW15-62	378097	5023443	11/16/15	AFW	n/m	3.05	n/c	n/c	0.88	2.74	n/c - n/c	1.52	Sand / clay
MW15-63	378279	5023469	11/16/15	AFW	n/m	3.05	n/c	n/c	0.85	2.74	n/c - n/c	1.52	Sand / clay

Notes:

masl = Metres Above Sea Level.

n/m = Not Measured.

n/c = Not Calculated.

Elevations referenced in previous reports for the Site by others to a temporary benchmark (100.000 masl) established on southwest corner of concrete slab at east side of entrance gate; reference in this table to survey conducted by OLS Annis, O'Sullivan, Vollebakk, in March, 2015. Wells installed after that date have not been surveyed.

* Denotes top of casing elevation revised based on verification survey by Amec Foster Wheeler 10/10/14.

SNC = SNC Lavalin, Formerly Aqua Terre.

AFW = Amec Foster Wheeler.

Table 2. Groundwater Measurement and Elevation Data

Monitoring Well I.D.	Geologic Media Intersected by Well Screen	Ground Surface Elevation (masl)	Top of Casing Elevation (masl)	June 17, 2014		October 9, 2014		March 9, 2015		December 4, 2015	
				Depth to Water (m)	Static Elevation (masl)	Depth to Water (m)	Static Elevation (masl)	Depth to Water (m)	Static Elevation (masl)	Depth to Water (m)	Static Elevation (masl)
MW08-1	Sand / silty clay	86.482	87.25	1.834	85.416	2.446	84.804	2.373	84.877	n/m	n/c
MW08-2	Sand / silty clay	86.434	87.31	1.899	85.411	2.525	84.785	2.447	84.863	n/m	n/c
MW08-3	Sand / silty clay	86.225	87.00	1.621	85.379	2.250	84.750	2.162	84.838	n/m	n/c
MW08-4	Sand / silty clay	86.288	87.05	1.684	85.366	2.249	84.801	2.190	84.860	n/m	n/c
MW08-5	Sand	86.673	87.53	2.025	85.505	2.647	84.883	2.605	84.925	n/m	n/c
MW09-8	Sand	86.054	87.21	1.932	85.278	2.501	84.709	2.432	84.778	n/m	n/c
MW09-9	Sand	85.882	86.93	1.607	85.323	2.220	84.710	2.135	84.795	n/m	n/c
MW10-10	Sand	85.918	87.15	1.990	85.160	2.490	84.660	2.414	84.736	n/m	n/c
MW10-11	Sand	85.816	86.96	1.754	85.206	2.300	84.660	2.219	84.741	n/m	n/c
MW10-12	Sand	85.662	86.78	1.577	85.203	2.148	84.632	2.052	84.728	n/m	n/c
MW10-13	Sand	86.288	87.38	2.365	85.015	2.838	84.542	2.735	84.645	n/m	n/c
MW10-14	Sand	86.458	87.52	2.336	85.184	2.914	84.606	2.812	84.708	n/m	n/c
MW10-15	Sand	86.412	87.46	2.339	85.121	2.859	84.601	2.761	84.699	n/m	n/c
MW10-16	Sand	86.034	87.19	2.284	84.906	2.695	84.495	2.490	84.700	n/m	n/c
MW10-17	Sand	86.437	87.51	2.720	84.790	3.080	84.430	2.985	84.525	n/m	n/c
MW10-18	Sand / silty clay	86.183	87.25	2.514	84.736	2.842	84.408	2.749	84.501	n/m	n/c
MW10-19	Sand / silty clay	86.255	87.29	2.459	84.831	2.823	84.467	2.765	84.525	n/m	n/c
MW10-20	Sand	86.359	87.47	2.851	84.619	2.988	84.482	2.870	84.600	n/m	n/c
MW10-21	Sand / silty clay	85.279	86.46	2.068	84.392	2.279	84.181	2.152	84.308	n/m	n/c
MW10-22	Sand / silty clay	84.650	85.78	1.565	84.215	1.749	84.031	1.685	84.095	n/m	n/c
MW10-23	Sand / silty clay	84.983	86.17	1.882	84.288	2.078	84.092	1.983	84.187	n/m	n/c
MW10-24	Sand	86.565	87.81	3.168	84.642	3.382	84.428	3.327	84.483	n/m	n/c
MW10-25	Sand / silty clay	86.186	87.24	2.676	84.564	2.983	84.257	2.818	84.422	n/m	n/c
MW13-26	Silty clay	85.729	86.51	1.328	85.182	1.641	84.869	1.718	84.792	n/m	n/c
MW13-27	Silty clay	85.754	86.58	1.284	85.296	1.643	84.937	1.702	84.878	n/m	n/c
MW13-28	Silty clay	85.644	86.47	1.465	85.005	2.014	84.456	2.006	84.464	n/m	n/c
MW13-29	Silty clay	85.691	86.52	1.450	85.070	1.778	84.742	1.740	84.780	n/m	n/c
MW13-30	Silty clay	86.304	87.11	2.931	84.179	3.122	83.988	2.981	84.129	n/m	n/c
MW13-31	Silty clay	86.379	87.09	2.608	84.482	2.768	84.322	2.875	84.215	n/m	n/c
MW13-32	Silty clay	85.650	86.54	2.594	83.946	2.689	83.851	2.630	83.910	n/m	n/c
MW13-33	Silty clay	85.735	86.65	2.326	84.324	3.464	83.186	2.421	84.229	n/m	n/c
MW13-34	Silty clay	84.994	85.82	1.844	83.976	2.029	83.791	1.962	83.858	n/m	n/c
MW13-35	Silty clay	85.238	85.86	1.620	84.240	1.964	83.896	1.748	84.112	n/m	n/c
MW13-36	Silty clay	84.739	85.53	1.650	83.880	1.813	83.717	1.736	83.794	n/m	n/c
MW13-37	Silty clay	84.745	85.59	1.407	84.183	1.647	83.943	1.545	84.045	n/m	n/c
MW15-38C	Clay	86.573	87.36	n/m	n/c	n/m	n/c	3.263	84.097	n/m	n/c
MW15-39	Sand	86.545	87.39	n/m	n/c	n/m	n/c	2.933	84.457	n/m	n/c
MW15-40C	Clay	86.141	86.89	n/m	n/c	n/m	n/c	2.968	83.922	n/m	n/c
MW15-41	Sand	86.156	86.97	n/m	n/c	n/m	n/c	2.540	84.430	n/m	n/c
MW15-42C	Clay	85.846	86.71	n/m	n/c	n/m	n/c	2.898	83.812	n/m	n/c
MW15-43	Sand	85.791	86.49	n/m	n/c	n/m	n/c	2.129	84.361	n/m	n/c
MW15-44C	Clay	86.411	87.30	n/m	n/c	n/m	n/c	3.208	84.092	n/m	n/c
MW15-45	Sand	85.922	86.76	n/m	n/c	n/m	n/c	2.027	84.733	n/m	n/c
MW15-46C	Clay	85.716	86.63	n/m	n/c	n/m	n/c	2.388	84.242	n/m	n/c
MW15-47C	Clay	86.054	86.93	n/m	n/c	n/m	n/c	2.351	84.579	n/m	n/c
MW15-48C	Clay	86.410	87.28	n/m	n/c	n/m	n/c	3.415**	n/c	n/m	n/c
MW15-49C	Clay	86.137	86.95	n/m	n/c	n/m	n/c	2.440	84.510	n/m	n/c
MW15-50	Sand	85.888	86.78	n/m	n/c	n/m	n/c	1.970	84.810	n/m	n/c
MW15-51	Sand	85.933	86.75	n/m	n/c	n/m	n/c	2.020	84.730	n/m	n/c
MW15-52	Sand	86.353	87.14	n/m	n/c	n/m	n/c	2.508	84.632	n/m	n/c
MW15-53	Sand	85.660	86.44	n/m	n/c	n/m	n/c	1.660	84.780	n/m	n/c
MW15-54	Sand	86.230	86.23	n/m	n/c	n/m	n/c	1.338	84.892	n/m	n/c
MW15-55	Sand	86.661	87.56	n/m	n/c	n/m	n/c	2.582	84.978	n/m	n/c
MW15-56	Sand	86.944	87.77	n/m	n/c	n/m	n/c	2.783	84.987	n/m	n/c
MW15-57	Sand	86.823	87.70	n/m	n/c	n/m	n/c	2.765	84.935	n/m	n/c
MW15-58	Sand	86.623	87.29	n/m	n/c	n/m	n/c	2.414	84.876	n/m	n/c
MW15-59	Sand	86.261	87.01	n/m	n/c	n/m	n/c	2.198	84.812	n/m	n/c

Table 2. Groundwater Measurement and Elevation Data

Monitoring Well I.D.	Geologic Media Intersected by Well Screen	Ground Surface Elevation (masl)	Top of Casing Elevation (masl)	June 17, 2014		October 9, 2014		March 9, 2015		December 4, 2015	
				Depth to Water (m)	Static Elevation (masl)	Depth to Water (m)	Static Elevation (masl)	Depth to Water (m)	Static Elevation (masl)	Depth to Water (m)	Static Elevation (masl)
MW15-60	Sand / clay	n/m	n/c	n/m	n/c	n/m	n/c	n/m	n/c	1.698	n/c
MW15-61	Sand / clay	n/m	n/c	n/m	n/c	n/m	n/c	n/m	n/c	2.980	n/c
MW15-62	Sand / clay	n/m	n/c	n/m	n/c	n/m	n/c	n/m	n/c	2.422	n/c
MW15-63	Sand / clay	n/m	n/c	n/m	n/c	n/m	n/c	n/m	n/c	2.325	n/c

Notes:

masl = Metres Above Sea Level.

n/m = Not Measured.

n/c = Not Calculated.

++ = This data point is not included in water level contour plan due to slow recharge rate of this well.

Table 3. Groundwater Field Parameter Data and Observations

Monitoring Well I.D.	Sampling Date (mm/dd/yy)	Water Level Data			Field Parameters					Laboratory Analyses	General Observations
		Initial Depth to Water (m)	Final Depth to Water (m)	Total Drawdown (m)	pH	Conductivity (mS/cm)	Dissolved Oxygen (DO) (mg/L)	Temperature (°C)	Oxidation Reduction Potential (ORP) (mV)		
MW08-1	03/11/15	2.376	2.385	0.009	6.46	0.280	0.85	5.32	15.7	VOC, PHC (F1-F4)	Low sediment, no odour
MW08-4	03/11/15	2.184	2.188	0.004	6.77	1.566	0.46	6.55	-18.0	VOC	Low sediment, no odour
MW08-5	03/11/15	2.607	2.607	0.000	6.42	0.347	0.52	4.15	98.1	VOC	Low sediment, no odour
MW10-11	03/11/15	2.221	2.221	0.000	6.83	0.318	1.87	3.95	7.0	VOC; DUP-4	Orange coloured semi-solids, no odour
MW10-15	03/12/15	2.764	2.780	0.016	6.82	0.245	0.32	4.07	-134.8	VOC	Low sediment, no odour
MW10-17	03/10/15	2.985	3.000	0.015	6.85	0.431	0.63	5.73	-110.1	VOC	Clear, no sheen/odour, little sediment
MW10-19	03/12/15	2.765	2.774	0.009	6.49	0.157	0.78	3.79	-153.4	VOC	Clear, no sheen/odour, little sediment
MW10-20	03/11/15	Dry	Dry	-	-	-	-	-	-	-	No water in well
MW10-24	03/10/15	3.332	3.349	0.017	6.90	1.223	1.06	6.29	-71.0	VOC	Clear, no sheen/odour, little sediment
MW10-24	05/29/15	3.266	n/m	n/m	7.44	0.977	1.98	6.89	-32.3	VOC	Clear, no sheen/odour
MW10-25	03/10/15	2.819	2.824	0.005	6.02	0.174	1.28	4.75	124.0	VOC	Clear, no sheen/odour, little sediment
MW10-25	05/29/15	2.520	n/m	n/m	6.94	0.184	3.50	8.19	-18.5	VOC	Brown, no sheen/odour
MW13-31	03/09/15	2.875	Dry	-	-	-	-	-	-	VOC	Clear, no sheen/odour, low sediment, purged dry at 4L
MW13-33	03/10/15	2.434	Dry	-	-	-	-	-	-	VOC	Clear, no sheen/odour, little sediment, purged dry at 4L
MW15-38C	03/09/15	3.263	Dry	-	-	-	-	-	-	VOC	Slightly grey, no sheen/odour, some sediment, purged dry at 3L
MW15-39	03/10/15	2.927	2.939	0.012	6.74	1.159	0.71	6.37	-86.1	VOC	Clear, no sheen/odour, little sediment
MW15-39	05/29/15	2.875	n/m	n/m	7.29	0.941	1.60	6.99	-38.9	VOC; DUP-1	Cloudy, no sheen/odour
MW15-40C	03/09/15	2.968	Dry	-	-	-	-	-	-	VOC	Slightly grey, no sheen/odour, low sediment, purged dry at 4.5L
MW15-41	03/10/15	2.559	2.567	0.008	6.56	0.551	0.64	6.22	8.2	VOC	Clear, no sheen/odour, little sediment
MW15-41	05/29/15	2.772	n/m	n/m	7.05	0.266	1.44	7.95	-23.0	VOC	Clear, no sheen/odour
MW15-42C	03/09/15	2.898	Dry	-	-	-	-	-	-	VOC	Slightly grey, no sheen/odour, low sediment, purged dry at 5L
MW15-43	03/10/15	2.126	2.139	0.013	6.20	0.198	0.76	4.61	91.0	VOC	Clear, no sheen/odour, little sediment
MW15-44C	03/09/15	3.208	Dry	-	-	-	-	-	-	VOC; DUP-3	Slightly brown, no sheen/odour, low sediment, purged dry at 4L
MW15-45	03/10/15	2.025	2.055	0.030	6.81	0.855	0.83	4.55	-96.5	VOC	Slightly grey, no odour/sheen, little sediment
MW15-46C	03/09/15	1.736	Dry	-	-	-	-	-	-	VOC	Slightly grey, no sheen/odour, low sediment, purged dry at 4L
MW15-47C	03/10/15	2.352	2.439	0.087	7.14	1.280	1.19	5.69	-66.5	VOC	Clear, no sheen/odour, little sediment
MW15-48C	03/10/15	3.257	Dry	-	-	-	-	-	-	VOC	Slightly grey, no sheen/odour, some sediment, purged dry at 4.5L
MW15-49C	03/10/15	2.436	2.612	0.176	7.040	0.31	1.100	5.14	-58.60	VOC	Clear, no sheen/odour, little sediment
MW15-50	03/10/15	1.964	1.990	0.026	6.66	1.168	1.46	4.40	-79.8	VOC; DUP-1	Clear, no sheen/odour, little sediment
MW15-51	03/12/15	2.021	2.022	0.001	7.07	0.585	0.48	3.38	-169.1	VOC	Low sediment, no odour
MW15-52	03/12/15	2.509	2.513	0.004	6.83	0.273	0.49	4.20	-157.9	VOC	Clear, no sheen/odour, little sediment
MW15-53	03/12/15	1.666	1.670	0.004	6.56	0.190	1.22	1.74	-27.6	VOC	Low sediment, no odour
MW15-54	03/11/15	1.304	1.346	0.042	6.75	0.309	0.54	2.94	-43.9	VOC, PHC (F1-F4); DUP-2 for PHC (F1-F4)	Clear, no sheen/odour, little sediment
MW15-55	03/12/15	2.580	Dry	-	-	-	-	-	-	VOC	Clear, no sheen/odour, little sediment, purged dry at <1L
MW15-56	03/12/15	2.784	2.791	0.007	6.54	0.225	0.67	3.07	-12.1	VOC	Low sediment, no odour
MW15-57	03/12/15	2.781	2.794	0.013	6.72	0.311	1.34	4.59	-170.0	VOC; DUP-5	Clear, no sheen/odour, little sediment
MW15-58	03/12/15	2.423	2.426	0.003	6.53	0.230	0.42	3.66	-102.6	VOC	Low sediment, no odour
MW15-59	03/12/15	2.198	Dry	-	-	-	-	-	-	VOC	Slightly brown, no sheen/odour, little sediment, purged dry at 2L
MW15-60	12/04/15	1.698	1.737	0.039	7.06	0.229	1.79	7.78	195.2	Pesticides/herbicides, metals, PAH; DUP-1 for PAH	Slightly brown, no sheen/odour, little sediment
MW15-61	12/04/15	2.980	3.013	0.033	7.07	0.304	1.50	8.79	209.6	Pesticides/herbicides, metals; DUP-2 for metals	Slightly brown, no sheen/odour, little sediment
MW15-62	12/04/15	2.422	2.423	0.001	6.95	0.257	1.25	8.42	79.2	VOC	Slightly brown, no sheen/odour, some orange semi-solids
MW15-63	12/04/15	2.325	2.352	0.027	6.94	0.332	1.72	8.53	-48.0	VOC; DUP-3 for VOC	Clear, no sheen/odour, little sediment

Notes:

Water Level Data as Recorded During Low-Flow Sampling Performed Using a Geotech Submersible Bladder Pump.

Field Parameters Measured Using a YSI 556 Multi-Parameter Water Quality Monitoring Instrument.

DUP - QA/QC Blind Duplicate Sample.

VOC = Volatile Organic Compounds.

PHC = Petroleum Hydrocarbons.

PAH = Polycyclic Aromatic Hydrocarbons.

n/m = Not Measured.

Notes on Soil Analytical Summary Tables

All Units in Micrograms per Gram ($\mu\text{g/g}$) Except Where Indicated Otherwise.

RL (Lab) = Laboratory Analytical Reporting Limit.

RL (MOE) = MOE 2011 Analytical Protocol Reporting Limit.

DUP = Quality Assurance/Quality Control Duplicate Sample.

RPD = Relative Percent Difference (Between Primary and Duplicate Samples); Only Calculated When Values $> 10 \times \text{MDL}$.

$<$ = Less Than Laboratory Analytical Reporting Limit.

- = Not Defined, Not Calculated or No Reported Value.

< 55 Parameter Concentration May Exceed Applicable Guideline and/or Standard Due to Elevated Reporting Limit.

183 Parameter Concentration Exceeds CCME Guideline for Residential/Parkland Property Use.

183 Parameter Concentration Exceeds EPA Standard for Residential/Parkland/Institutional Property Use (Table 2 - Potable Groundwater, Coarse Textured Soil).

CCME Guidelines = Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health, Canadian Council of Ministers of the Environment, Accessed October 30, 2015.

EPA Standards = Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, Ontario Ministry of the Environment, April 15, 2011.

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-38C MW15-38C-SS5 3.05-3.81 B15-04130-1 27-Feb-15	MW15-38C DUP-1 3.05-3.81 B15-04130-14 27-Feb-15	MW15-38C AVERAGE	MW15-38C RPD (%)	MW15-38C MW15-38C-SS6SS 4.19-4.20 B15-04130-2 27-Feb-15	MW15-40C MW15-40C-SS4 2.85 B15-04130-3 27-Feb-15
Acetone	0.3	0.5	-	16	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Bromoform	0.02	0.05	-	0.27	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Bromomethane	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Chloroform	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02	< 0.02	< 0.02	-	< 0.02	0.05
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Hexane	0.03	0.05	-	2.8	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Styrene	0.03	0.05	5	0.7	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03	< 0.03	< 0.03	-	< 0.03	0.85
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-40C MW15-40C-SS9 6.10-6.86 B15-04130-6 27-Feb-15	MW15-42C MW15-42C-SS3 1.52-2.29 B15-04130-7 27-Feb-15	MW15-44C MW15-44-SS5 3.1 B15-04130-9 27-Feb-15	MW15-44C MW15-44-SS6SS 4.52-4.53 B15-04130-8 27-Feb-15	MW15-44C MW15-44-SS8 5.33-6.10 B15-04130-10 27-Feb-15	MW15-46C MW15-46C-SS3 1.52-2.29 B15-04130-11 26-Feb-15
Acetone	0.3	0.5	-	16	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	0.02	0.05	-	0.27	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chloroform	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Hexane	0.03	0.05	-	2.8	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	0.03	0.05	5	0.7	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03	< 0.03	0.21	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-46C MW15-46C-SS3SS 2.29-2.34 B15-04130-12 26-Feb-15	MW15-47C MW15-47-SS3 1.52-2.29 B15-04389-1 02-Mar-15	MW15-47C DUP-2 2.74-2.97 B15-04389-8 02-Mar-15	MW15-47C AVERAGE	MW15-47C RPD (%)	MW15-47C MW15-47-SS4SS 2.74-2.97 B15-04389-2 02-Mar-15
Acetone	0.3	0.5	-	16	< 0.3	< 0.3	< 0.3	< 0.3	-	< 0.3
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Bromoform	0.02	0.05	-	0.27	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Bromomethane	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Chloroform	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Hexane	0.03	0.05	-	2.8	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Styrene	0.03	0.05	5	0.7	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03	< 0.03	< 0.03	< 0.03	-	< 0.03
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-48C MW15-48C-SS5 3.05-3.81 B15-04389-3 02-Mar-15	MW15-48C MW15-48C-SS8SS 5.61-5.64 B15-04389-4 02-Mar-15	MW15-49C MW15-49-SS4SS 1.73-1.78 B15-04389-5 02-Mar-15	MW15-50 MW15-50-SS3 1.52-2.29 B15-04508-2 05-Mar-15	MW15-50 DUP-4 1.52-2.29 B15-04508-4 05-Mar-15	MW15-50 AVERAGE
Acetone	0.3	0.5	-	16	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	0.02	0.05	-	0.27	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chloroform	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Hexane	0.03	0.05	-	2.8	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	0.03	0.05	5	0.7	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-50 RPD (%)	MW15-50 MW15-50-SS4SS 2.54-2.62 B15-04508-3 05-Mar-15	MW15-51 MW15-51C-SS5 3.3 B15-04389-6 02-Mar-15	MW15-52 MW15-52-SS4 2.29-3.05 B15-04389-7 02-Mar-15	MW15-53 MW15-53-SS3 1.8 B15-04389-10 03-Mar-15	MW15-54 MW15-54-SS3 1.52-2.29 B15-04130-13 26-Feb-15
Acetone	0.3	0.5	-	16	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzene	0.02	0.02	0.03	0.21	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	0.02	0.05	-	0.27	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	0.03	0.05	-	0.05	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chloroform	0.03	0.05	5	0.05	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Hexane	0.03	0.05	-	2.8	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	0.03	0.05	5	0.7	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	0.03	0.2	0.37	2.3	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	-	< 0.03	0.46	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	0.02	0.05	-	4	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-55 MW15-55-SS3 1.52-2.29 B15-04389-14 03-Mar-15	MW15-56 MW15-56-SS3 1.52-2.29 B15-04389-16 03-Mar-15	MW15-57 MW15-57-SS5 3.05-3.81 B15-04389-17 03-Mar-15	MW15-57 MW15-57-SS6SS 4.24-4.28 B15-04389-18 03-Mar-15	MW15-63 MW15-63-SS2 2.2 B15-29899-8 16-Nov-15	BH15-10 BH15-10-SS3 2.25 B15-04389-9 03-Mar-15
Acetone	0.3	0.5	-	16	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	0.02	0.05	-	0.27	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chloroform	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Hexane	0.03	0.05	-	2.8	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	0.03	0.05	5	0.7	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 2					
					MW15-58 MW15-58-SS3 1.52-2.29 B15-04389-19 03-Mar-15	MW15-58 DUP-3 1.52-2.29 B15-04389-21 03-Mar-15	MW15-58 AVERAGE	MW15-58 RPD (%)	MW15-59 MW15-59-SS3 1.52-2.29 B15-04389-20 03-Mar-15	MW15-62 MW15-62-SS2 2.2 B15-29899-5 16-Nov-15
Acetone	0.3	0.5	-	16	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Bromoform	0.02	0.05	-	0.27	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Bromomethane	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Chloroform	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Hexane	0.03	0.05	-	2.8	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Styrene	0.03	0.05	5	0.7	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03	< 0.03	< 0.03	-	< 0.03	< 0.03
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 2				APEC 3	
					MW15-62 DUP-1 2.2 B15-29899-11 16-Nov-15	MW15-62 AVERAGE	MW15-62 RPD (%)	BH15-1 BH15-1-SS4 2.29-3.05 B15-04607-1 06-Mar-15	BH15-6 BH15-6-SS3 1.52-2.29 B15-04607-8 06-Mar-15	MW15-61 MW15-61-SS2 1.9 B15-29899-4 16-Nov-15
Acetone	0.3	0.5	-	16	< 0.3	< 0.3	-	< 0.3	< 0.3	< 0.3
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Bromoform	0.02	0.05	-	0.27	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Bromomethane	0.03	0.05	-	0.05	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Chlorobenzene	0.03	0.05	1	2.4	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Chloroform	0.03	0.05	5	0.05	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Hexane	0.03	0.05	-	2.8	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Styrene	0.03	0.05	5	0.7	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03	< 0.03	-	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Xylenes (total)	0.05	0.05	11	3.1	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05

Table 4. Summary of Volatile Organic Compound Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6 MW15-60 MW15-60-SS2 1.7 B15-29899-1 16-Nov-15					
Acetone	0.3	0.5	-	16	< 0.3					
Benzene	0.02	0.02	0.03	0.21	< 0.02					
Bromodichloromethane	0.02	0.05	-	1.5	< 0.02					
Bromoform	0.02	0.05	-	0.27	< 0.02					
Bromomethane	0.03	0.05	-	0.05	< 0.03					
Carbon Tetrachloride	0.02	0.05	5	0.05	< 0.02					
Chlorobenzene	0.03	0.05	1	2.4	< 0.03					
Chloroform	0.03	0.05	5	0.05	< 0.03					
Dibromochloromethane	0.02	0.05	-	2.3	< 0.02					
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	0.05	-	0.05	< 0.02					
Dichlorobenzene, 1,2- (o-DCB)	0.02	0.05	1	1.2	< 0.02					
Dichlorobenzene, 1,3- (m-DCB)	0.02	0.05	1	4.8	< 0.02					
Dichlorobenzene, 1,4- (p-DCB)	0.02	0.05	1	0.083	< 0.02					
Dichlorodifluoromethane	0.02	0.05	-	16	< 0.02					
Dichloroethane, 1,1- (1,1-DCA)	0.03	0.05	5	0.47	< 0.03					
Dichloroethane, 1,2- (1,2-DCA)	0.03	0.05	5	0.05	< 0.03					
Dichloroethylene, 1,1- (1,1-DCE)	0.02	0.05	5	0.05	< 0.02					
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.02	0.05	5	1.9	< 0.02					
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.03	0.05	5	0.084	< 0.03					
Dichloromethane (Methylene Chloride)	0.04	0.05	5	0.1	< 0.04					
Dichloropropane, 1,2-	0.03	0.05	5	0.05	< 0.03					
Dichloropropene, 1,3-	0.03	0.05	-	0.05	< 0.03					
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03					
Hexane	0.03	0.05	-	2.8	< 0.03					
Methyl Ethyl Ketone (MEK)	0.1	0.50	-	16	< 0.1					
Methyl Isobutyl Ketone (MIBK)	0.02	0.50	-	1.7	< 0.02					
Methyl Tert Butyl Ether (MTBE)	0.02	0.05	-	0.75	< 0.02					
Styrene	0.03	0.05	5	0.7	< 0.03					
Tetrachloroethane, 1,1,1,2-	0.02	0.05	-	0.058	< 0.02					
Tetrachloroethane, 1,1,2,2-	0.02	0.05	5	0.05	< 0.02					
Tetrachloroethylene (PCE)	0.03	0.05	0.2	0.28	< 0.03					
Toluene	0.03	0.2	0.37	2.3	< 0.03					
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.02	0.05	5	0.38	< 0.02					
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.02	0.05	5	0.05	< 0.02					
Trichloroethylene (TCE)	0.03	0.05	0.01	0.061	< 0.03					
Trichlorofluoromethane	0.02	0.05	-	4	< 0.02					
Vinyl Chloride (VC)	0.02	0.02	-	0.02	< 0.02					
Xylenes (total)	0.05	0.05	11	3.1	< 0.05					

Table 5. Summary of Petroleum Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1			APEC 2			
					MW15-54	MW15-56	BH15-10	MW15-58	MW15-58	MW15-58	MW15-58
					MW15-54-SS3	MW15-56-SS3	BH15-10-SS3	MW15-58-SS3	DUP-3	AVERAGE	RPD (%)
					1.52-2.29	1.52-2.29	1.52	1.52-2.29	1.52-2.29		
					B15-04130-13	B15-04389-16	B15-04389-9	B15-04389-19	B15-04389-21		
					26-Feb-15	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15		
Benzene	0.02	0.02	0.03	0.21	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	-
Toluene	0.03	0.2	0.37	2.3	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-
Xylenes, m,p-	0.04	-	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	-
Xylenes, o-	0.03	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-
Total Xylenes	0.05	0.05	11	3.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
PHC F1 (C6 - C10)	10	10	30	55	< 10	< 10	< 10	< 10	< 10	< 10	-
PHC F2 (>C10 - C16)	5	10	150	98	< 5	< 5	< 5	< 5	6	< 5.5	-
PHC F3 (>C16 - C34)	10	50	300	300	< 10	< 10	30	< 10	120	< 65	-
PHC F4 (>C34)	10	50	2800	2800	< 10	< 10	< 10	< 10	30	< 20	-

Table 5. Summary of Petroleum Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 2						
					BH15-1 BH15-1-SS4 2.29-3.05 B15-04607-1 06-Mar-15	BH15-1 BH15-1-SS5 3.05-3.81 B15-04607-13 06-Mar-15	BH15-2 BH15-2-SS1 0.0-0.76 B15-04607-14 06-Mar-15	BH15-5 BH15-5-SS3 1.52-2.29 B15-04607-4 06-Mar-15	BH15-7 BH15-7-SS3 3.05-3.81 B15-04607-10 06-Mar-15	BH15-8 BH15-8-SS3 1.52-2.29 B15-04607-11 06-Mar-15	
Benzene	0.02	0.02	0.03	0.21	< 0.02	-	-	-	-	-	
Toluene	0.03	0.2	0.37	2.3	< 0.03	-	-	-	-	-	
Ethylbenzene	0.03	0.05	0.082	1.1	< 0.03	-	-	-	-	-	
Xylenes, m,p-	0.04	-	-	-	< 0.04	-	-	-	-	-	
Xylenes, o-	0.03	-	-	-	< 0.03	-	-	-	-	-	
Total Xylenes	0.05	0.05	11	3.1	< 0.05	-	-	-	-	-	
PHC F1 (C6 - C10)	10	10	30	55	< 10	< 10	< 10	< 10	< 10	< 10	
PHC F2 (>C10 - C16)	5	10	150	98	< 10	< 10	< 10	< 10	< 10	< 10	
PHC F3 (>C16 - C34)	10	50	300	300	< 10	< 10	< 10	< 10	< 10	< 10	
PHC F4 (>C34)	10	50	2800	2800	< 10	< 10	< 10	< 10	< 10	< 10	

Table 6. Summary of Polycyclic Aromatic Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1		APEC 2				
					MW15-55 MW15-55-SS1B 0.66-1.07 B15-04389-13 03-Mar-15	MW15-56 MW15-56-SS1B 0.46-0.76 B15-04389-15 03-Mar-15	BH15-7 BH15-7-SS1 0.0-1.52 B15-04607-9 06-Mar-15	BH15-9 BH15-9-SS1 0.0-0.76 B15-04607-12 06-Mar-15	BH15-9 DUP-5 0.0-0.76 B15-04607-15 06-Mar-15	AVERAGE	RPD (%)
Acenaphthene	0.005	0.05	(a)	7.9	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Acenaphthylene	0.005	0.05	(a)	0.15	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Anthracene	0.005	0.05	2.5 ^(b)	0.67	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Benzo(a)anthracene	0.005	0.05	1 ^(c)	0.5	< 0.005	< 0.005	< 0.02	0.026	< 0.02	< 0.023	-
Benzo(a)pyrene	0.005	0.05	20 ^(c)	0.3	< 0.005	< 0.005	0.020	0.026	< 0.02	< 0.023	-
Benzo(b)fluoranthene	0.005	0.05	1 ^(c)	0.78	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Benzo(b+k)fluoranthene	0.01	-	-	-	< 0.01	< 0.01	< 0.04	< 0.05	< 0.04	< 0.045	-
Benzo(g,h,i)perylene	0.005	0.1	(d)	6.6	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Benzo(k)fluoranthene	0.005	0.05	1 ^(c)	0.78	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Chrysene	0.005	0.05	(d)	7	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Dibenzo(a,h)anthracene	0.005	0.1	1 ^(c)	0.1	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Fluoranthene	0.005	0.05	50 ^(b)	0.69	< 0.005	< 0.005	0.036	0.051	< 0.02	< 0.036	-
Fluorene	0.005	0.05	(a)	62	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Indeno(1,2,3,c,d)pyrene	0.005	0.1	1 ^(c)	0.38	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Methylnaphthalene, 1-	0.005	0.05	-	0.99	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Methylnaphthalene, 2-	0.005	0.05	-		< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Naphthalene	0.005	0.05	0.013 ^(b)	0.6	< 0.005	< 0.005	< 0.02	< 0.03	< 0.02	< 0.025	-
Phenanthrene	0.005	0.05	0.046 ^(b)	6.2	< 0.005	< 0.005	0.028	0.031	< 0.02	< 0.026	-
Pyrene	0.005	0.05	10 ^(b)	78	< 0.005	< 0.005	0.028	0.041	< 0.02	< 0.031	-
B(a)P Total Potency Equivalents	-	-	5.3	-	< 0.012	< 0.012	< 0.048	< 0.068	< 0.048	< 0.058	-
Index of Additive Cancer Risk	-	-	1	-	< 0.12	< 0.12	< 0.47	< 0.68	< 0.47	< 0.58	-

(a) Consult Guidelines from Other Jurisdictions That are Protective of Human and Environmental Health.

(b) Protection of Environmental Health; Protection of Human Health from Non-Carcinogenic Effects Not Assessed - Consult Guidelines from Other Jurisdictions That are Protective of Human Health.

(c) Protection of Environmental Health; Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents.

(d) Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents; Consult Other Jurisdictions for Guidelines Protective of Environmental Health.

Table 6. Summary of Polycyclic Aromatic Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 3		APEC 4				
					TP15-1 TP1-1 0.05-0.2 B15-28568-1 30-Oct-15	TP15-2 TP2-1 0.2-0.4 B15-28568-2 30-Oct-15	TP15-3 TP3-1 0.2-0.4 B15-28568-3 30-Oct-15	TP15-4 TP4-1 0.1-0.3 B15-28568-4 30-Oct-15	TP15-5 TP5-1 0.1-0.2 B15-28568-5 30-Oct-15	TP15-6 TP6-1 0.1-0.2 B15-28568-6 30-Oct-15	TP15-6 DUP-2 0.1-0.2 B15-28568-10 30-Oct-15
Acenaphthene	0.005	0.05	(a)	7.9	-	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Acenaphthylene	0.005	0.05	(a)	0.15	-	-	< 0.005	< 0.005	< 0.005	0.009	< 0.005
Anthracene	0.005	0.05	2.5 ^(b)	0.67	-	-	< 0.005	< 0.005	< 0.005	0.005	< 0.005
Benzo(a)anthracene	0.005	0.05	1 ^(c)	0.5	-	-	< 0.005	< 0.005	< 0.005	0.042	0.021
Benzo(a)pyrene	0.005	0.05	20 ^(c)	0.3	< 0.05	< 0.05	< 0.005	< 0.005	< 0.005	0.035	0.016
Benzo(b)fluoranthene	0.005	0.05	1 ^(c)	0.78	-	-	< 0.005	< 0.005	< 0.005	0.086	0.042
Benzo(b+k)fluoranthene	0.01	-	-	-	-	-	< 0.01	< 0.01	< 0.01	0.11	0.05
Benzo(g,h,i)perylene	0.005	0.1	(d)	6.6	-	-	< 0.005	< 0.005	< 0.005	0.012	0.006
Benzo(k)fluoranthene	0.005	0.05	1 ^(c)	0.78	-	-	< 0.005	< 0.005	< 0.005	0.023	0.011
Chrysene	0.005	0.05	(d)	7	-	-	< 0.005	< 0.005	< 0.005	0.032	0.016
Dibenzo(a,h)anthracene	0.005	0.1	1 ^(c)	0.1	-	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Fluoranthene	0.005	0.05	50 ^(b)	0.69	-	-	< 0.005	< 0.005	< 0.005	0.036	0.017
Fluorene	0.005	0.05	(a)	62	-	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Indeno(1,2,3,c,d)pyrene	0.005	0.1	1 ^(c)	0.38	-	-	< 0.005	< 0.005	< 0.005	0.018	0.007
Methylnaphthalene, 1-	0.005	0.05	-	0.99	-	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Methylnaphthalene, 2-	0.005	0.05	-		-	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Naphthalene	0.005	0.05	0.013 ^(b)	0.6	-	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Phenanthrene	0.005	0.05	0.046 ^(b)	6.2	-	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Pyrene	0.005	0.05	10 ^(b)	78	-	-	< 0.005	< 0.005	< 0.005	0.041	0.019
B(a)P Total Potency Equivalents	-	-	5.3	-	-	-	< 0.01	< 0.01	< 0.01	< 0.06	< 0.03
Index of Additive Cancer Risk	-	-	1	-	-	-	< 0.12	< 0.12	< 0.12	< 0.95	< 0.47

(a) Consult Guidelines from Other Jurisdictions That are Protective of Human and Environmental Health.

(b) Protection of Environmental Health; Protection of Human Health from Non-Carcinogenic Effects Not Assessed - Consult Guidelines from Other Jurisdictions That are Protective of Human Health.

(c) Protection of Environmental Health; Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents.

(d) Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents; Consult Other Jurisdictions for Guidelines Protective of Environmental Health.

Table 6. Summary of Polycyclic Aromatic Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 4			APEC 5			
					TP15-6 AVERAGE	TP15-6 RPD (%)	TP15-7 TP7-1 0.1-0.2 B15-28568-7 30-Oct-15	5-S1 5-S1 0.0-0.15 B15-28371-1 28-Oct-15	5-S1 DUP-1 0.0-0.15 B15-28371-10 28-Oct-15	5-S1 AVERAGE	5-S1 RPD (%)
Acenaphthene	0.005	0.05	(a)	7.9	< 0.005	-	< 0.005	-	-	-	-
Acenaphthylene	0.005	0.05	(a)	0.15	< 0.007	-	< 0.005	-	-	-	-
Anthracene	0.005	0.05	2.5 ^(b)	0.67	< 0.005	-	< 0.005	-	-	-	-
Benzo(a)anthracene	0.005	0.05	1 ^(c)	0.5	0.0315	-	< 0.005	-	-	-	-
Benzo(a)pyrene	0.005	0.05	20 ^(c)	0.3	0.0255	-	< 0.005	0.05	0.06	0.055	-
Benzo(b)fluoranthene	0.005	0.05	1 ^(c)	0.78	0.064	-	< 0.005	-	-	-	-
Benzo(b+k)fluoranthene	0.01	-	-	-	0.08	-	< 0.01	-	-	-	-
Benzo(g,h,i)perylene	0.005	0.1	(d)	6.6	0.009	-	< 0.005	-	-	-	-
Benzo(k)fluoranthene	0.005	0.05	1 ^(c)	0.78	0.017	-	< 0.005	-	-	-	-
Chrysene	0.005	0.05	(d)	7	0.024	-	< 0.005	-	-	-	-
Dibenzo(a,h)anthracene	0.005	0.1	1 ^(c)	0.1	< 0.005	-	< 0.005	-	-	-	-
Fluoranthene	0.005	0.05	50 ^(b)	0.69	0.0265	-	< 0.005	-	-	-	-
Fluorene	0.005	0.05	(a)	62	< 0.005	-	< 0.005	-	-	-	-
Indeno(1,2,3,c,d)pyrene	0.005	0.1	1 ^(c)	0.38	0.0125	-	< 0.005	-	-	-	-
Methylnaphthalene, 1-	0.005	0.05	-	0.99	< 0.005	-	< 0.005	-	-	-	-
Methylnaphthalene, 2-	0.005	0.05	-		< 0.005	-	< 0.005	-	-	-	-
Naphthalene	0.005	0.05	0.013 ^(b)	0.6	< 0.005	-	< 0.005	-	-	-	-
Phenanthrene	0.005	0.05	0.046 ^(b)	6.2	< 0.005	-	< 0.005	-	-	-	-
Pyrene	0.005	0.05	10 ^(b)	78	0.03	-	< 0.005	-	-	-	-
B(a)P Total Potency Equivalents	-	-	5.3	-	< 0.04	-	< 0.01	-	-	-	-
Index of Additive Cancer Risk	-	-	1	-	< 0.71	-	< 0.12	-	-	-	-

(a) Consult Guidelines from Other Jurisdictions That are Protective of Human and Environmental Health.

(b) Protection of Environmental Health; Protection of Human Health from Non-Carcinogenic Effects Not Assessed - Consult Guidelines from Other Jurisdictions That are Protective of Human Health.

(c) Protection of Environmental Health; Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents.

(d) Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents; Consult Other Jurisdictions for Guidelines Protective of Environmental Health.

Table 6. Summary of Polycyclic Aromatic Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland/ Institutional	Residential/ Parkland/ Institutional	APEC 5				AEC 6		
					5-S2 5-S2 0.0-0.15 B15-28371-4 28-Oct-15	5-S3 5-S3 0.0-0.15 B15-28371-5 28-Oct-15	TP15-8 TP8-1 0.3-0.4 B15-28568-8 30-Oct-15	TP15-9 TP9-1 0.3-0.4 B15-28568-9 30-Oct-15	TP15-10 TP10-1 0.1-0.3 B15-28877-5 03-Nov-15	TP15-11 TP11-1 0.2-0.4 B15-28877-6 03-Nov-15	TP15-12 TP12-1 0.2-0.3 B15-28877-7 03-Nov-15
Acenaphthene	0.005	0.05	(a)	7.9	-	-	-	-	< 0.005	< 0.005	< 0.005
Acenaphthylene	0.005	0.05	(a)	0.15	-	-	-	-	< 0.005	< 0.005	< 0.005
Anthracene	0.005	0.05	2.5 ^(b)	0.67	-	-	-	-	< 0.005	< 0.005	< 0.005
Benzo(a)anthracene	0.005	0.05	1 ^(c)	0.5	-	-	-	-	< 0.005	< 0.005	< 0.005
Benzo(a)pyrene	0.005	0.05	20 ^(c)	0.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.005	< 0.005	< 0.005
Benzo(b)fluoranthene	0.005	0.05	1 ^(c)	0.78	-	-	-	-	< 0.005	< 0.005	< 0.005
Benzo(b+k)fluoranthene	0.01	-	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	0.005	0.1	(d)	6.6	-	-	-	-	< 0.005	< 0.005	< 0.005
Benzo(k)fluoranthene	0.005	0.05	1 ^(c)	0.78	-	-	-	-	< 0.005	< 0.005	< 0.005
Chrysene	0.005	0.05	(d)	7	-	-	-	-	< 0.005	< 0.005	< 0.005
Dibenzo(a,h)anthracene	0.005	0.1	1 ^(c)	0.1	-	-	-	-	< 0.005	< 0.005	< 0.005
Fluoranthene	0.005	0.05	50 ^(b)	0.69	-	-	-	-	< 0.005	< 0.005	< 0.005
Fluorene	0.005	0.05	(a)	62	-	-	-	-	< 0.005	< 0.005	< 0.005
Indeno(1,2,3,c,d)pyrene	0.005	0.1	1 ^(c)	0.38	-	-	-	-	< 0.005	< 0.005	< 0.005
Methylnaphthalene, 1-	0.005	0.05	-	0.99	-	-	-	-	< 0.005	< 0.005	< 0.005
Methylnaphthalene, 2-	0.005	0.05	-		-	-	-	-	< 0.005	< 0.005	< 0.005
Naphthalene	0.005	0.05	0.013 ^(b)	0.6	-	-	-	-	< 0.005	< 0.005	< 0.005
Phenanthrene	0.005	0.05	0.046 ^(b)	6.2	-	-	-	-	< 0.005	< 0.005	< 0.005
Pyrene	0.005	0.05	10 ^(b)	78	-	-	-	-	< 0.005	< 0.005	< 0.005
B(a)P Total Potency Equivalents	-	-	5.3	-	-	-	-	-	< 0.01	< 0.01	< 0.01
Index of Additive Cancer Risk	-	-	1	-	-	-	-	-	< 0.12	< 0.12	< 0.12

(a) Consult Guidelines from Other Jurisdictions That are Protective of Human and Environmental Health.

(b) Protection of Environmental Health; Protection of Human Health from Non-Carcinogenic Effects Not Assessed - Consult Guidelines from Other Jurisdictions That are Protective of Human Health.

(c) Protection of Environmental Health; Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents.

(d) Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents; Consult Other Jurisdictions for Guidelines Protective of Environmental Health.

Table 6. Summary of Polycyclic Aromatic Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6			AEC 8			
					TP15-12 DUP-4 0.2-0.3 B15-28877-9 03-Nov-15	TP15-12 AVERAGE	TP15-12 RPD (%)	TP15-13 8-S4 0.0-0.15 B15-28371-9 28-Oct-15	TP15-13 TP13-1 0.1-0.3 B15-28877-4 03-Nov-15	TP15-13 DUP-3 0.1-0.3 B15-28877-8 03-Nov-15	TP15-13 AVERAGE
Acenaphthene	0.005	0.05	(a)	7.9	< 0.005	< 0.005	-	< 0.005	< 0.005	< 0.005	< 0.005
Acenaphthylene	0.005	0.05	(a)	0.15	< 0.005	< 0.005	-	0.009	< 0.005	< 0.005	< 0.005
Anthracene	0.005	0.05	2.5 ^(b)	0.67	< 0.005	< 0.005	-	0.008	< 0.005	< 0.005	< 0.005
Benzo(a)anthracene	0.005	0.05	1 ^(c)	0.5	< 0.005	< 0.005	-	0.063	< 0.005	< 0.005	< 0.005
Benzo(a)pyrene	0.005	0.05	20 ^(c)	0.3	< 0.005	< 0.005	-	0.053	< 0.005	< 0.005	< 0.005
Benzo(b)fluoranthene	0.005	0.05	1 ^(c)	0.78	< 0.005	< 0.005	-	0.081	< 0.005	< 0.005	< 0.005
Benzo(b+k)fluoranthene	0.01	-	-	-	< 0.01	< 0.01	-	0.105	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	0.005	0.1	(d)	6.6	< 0.005	< 0.005	-	0.016	< 0.005	< 0.005	< 0.005
Benzo(k)fluoranthene	0.005	0.05	1 ^(c)	0.78	< 0.005	< 0.005	-	0.024	< 0.005	< 0.005	< 0.005
Chrysene	0.005	0.05	(d)	7	< 0.005	< 0.005	-	0.041	< 0.005	< 0.005	< 0.005
Dibenzo(a,h)anthracene	0.005	0.1	1 ^(c)	0.1	< 0.005	< 0.005	-	0.007	< 0.005	< 0.005	< 0.005
Fluoranthene	0.005	0.05	50 ^(b)	0.69	< 0.005	< 0.005	-	0.083	< 0.005	< 0.005	< 0.005
Fluorene	0.005	0.05	(a)	62	< 0.005	< 0.005	-	< 0.005	< 0.005	< 0.005	< 0.005
Indeno(1,2,3,c,d)pyrene	0.005	0.1	1 ^(c)	0.38	< 0.005	< 0.005	-	0.026	< 0.005	< 0.005	< 0.005
Methylnaphthalene, 1-	0.005	0.05	-	0.99	< 0.005	< 0.005	-	< 0.005	< 0.005	< 0.005	< 0.005
Methylnaphthalene, 2-	0.005	0.05	-		< 0.005	< 0.005	-	< 0.005	< 0.005	< 0.005	< 0.005
Naphthalene	0.005	0.05	0.013 ^(b)	0.6	< 0.005	< 0.005	-	< 0.005	< 0.005	< 0.005	< 0.005
Phenanthrene	0.005	0.05	0.046 ^(b)	6.2	< 0.005	< 0.005	-	0.037	< 0.005	< 0.005	< 0.005
Pyrene	0.005	0.05	10 ^(b)	78	< 0.005	< 0.005	-	0.063	< 0.005	< 0.005	< 0.005
B(a)P Total Potency Equivalents	-	-	5.3	-	< 0.01	< 0.01	-	0.08	< 0.01	< 0.01	< 0.01
Index of Additive Cancer Risk	-	-	1	-	< 0.12	< 0.12	-	1.05	< 0.12	< 0.12	< 0.12

(a) Consult Guidelines from Other Jurisdictions That are Protective of Human and Environmental Health.

(b) Protection of Environmental Health; Protection of Human Health from Non-Carcinogenic Effects Not Assessed - Consult Guidelines from Other Jurisdictions That are Protective of Human Health.

(c) Protection of Environmental Health; Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents.

(d) Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents; Consult Other Jurisdictions for Guidelines Protective of Environmental Health.

Table 6. Summary of Polycyclic Aromatic Hydrocarbon Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g						
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8						
					TP15-13 RPD (%)	TP15-14 8-S3 0.0-0.15 B15-28371-8 28-Oct-15	TP15-14 TP14-1 0.3-0.4 B15-28877-3 03-Nov-15	TP15-15 8-S1 0.0-0.15 B15-28371-6 28-Oct-15	TP15-15 TP15-1 0.4-0.6 B15-28877-1 03-Nov-15	TP15-16 8-S2 0.0-0.15 B15-28371-7 28-Oct-15	TP15-16 TP16-1 0.3-0.4 B15-28877-2 03-Nov-15
Acenaphthene	0.005	0.05	(a)	7.9	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Acenaphthylene	0.005	0.05	(a)	0.15	-	0.164	0.015	0.006	< 0.005	0.007	< 0.005
Anthracene	0.005	0.05	2.5 ^(b)	0.67	-	0.114	0.011	< 0.005	< 0.005	< 0.005	< 0.005
Benzo(a)anthracene	0.005	0.05	1 ^(c)	0.5	-	1.16	0.116	0.043	< 0.005	0.057	0.010
Benzo(a)pyrene	0.005	0.05	20 ^(c)	0.3	-	1.22	0.090	0.031	< 0.005	0.036	0.006
Benzo(b)fluoranthene	0.005	0.05	1 ^(c)	0.78	-	1.84	0.140	0.034	< 0.005	0.075	0.012
Benzo(b+k)fluoranthene	0.01	-	-	-	-	2.32	0.18	0.05	< 0.01	0.09	0.02
Benzo(g,h,i)perylene	0.005	0.1	(d)	6.6	-	0.299	0.023	0.009	< 0.005	0.013	< 0.005
Benzo(k)fluoranthene	0.005	0.05	1 ^(c)	0.78	-	0.483	0.039	0.011	< 0.005	0.018	< 0.005
Chrysene	0.005	0.05	(d)	7	-	0.950	0.069	0.030	< 0.005	0.034	0.005
Dibenzo(a,h)anthracene	0.005	0.1	1 ^(c)	0.1	-	0.162	0.011	0.006	< 0.005	0.005	< 0.005
Fluoranthene	0.005	0.05	50 ^(b)	0.69	-	1.41	0.120	0.056	< 0.005	0.063	0.01
Fluorene	0.005	0.05	(a)	62	-	0.013	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Indeno(1,2,3,c,d)pyrene	0.005	0.1	1 ^(c)	0.38	-	0.618	0.043	0.027	< 0.005	0.021	< 0.005
Methylnaphthalene, 1-	0.005	0.05	-	0.99	-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Methylnaphthalene, 2-	0.005	0.05	-		-	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Naphthalene	0.005	0.05	0.013 ^(b)	0.6	-	0.018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Phenanthrene	0.005	0.05	0.046 ^(b)	6.2	-	0.225	0.020	0.020	< 0.005	0.017	< 0.005
Pyrene	0.005	0.05	10 ^(b)	78	-	1.30	0.099	0.045	< 0.005	0.052	0.008
B(a)P Total Potency Equivalents	-	-	5.3	-	-	1.80	0.14	0.05	< 0.01	0.06	< 0.01
Index of Additive Cancer Risk	-	-	1	-	-	22.76	1.81	0.55	< 0.12	0.90	< 0.18

(a) Consult Guidelines from Other Jurisdictions That are Protective of Human and Environmental Health.

(b) Protection of Environmental Health; Protection of Human Health from Non-Carcinogenic Effects Not Assessed - Consult Guidelines from Other Jurisdictions That are Protective of Human Health.

(c) Protection of Environmental Health; Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents.

(d) Protection of Human Health from Carcinogenic Effects Assessed Through Benzo(a)Pyrene Total Potency Equivalents; Consult Other Jurisdictions for Guidelines Protective of Environmental Health.

Table 7. Summary of Heavy Metal Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1			APEC 2				
					MW15-55	MW15-56	MW15-57	BH15-3	BH15-4	BH15-6	BH15-6	BH15-6
					MW15-55-SS1B	MW15-56-SS1B	MW15-57-SS1A	BH15-3-SS1	BH15-4-SS2	BH15-6-SS2	DUP-6	AVERAGE
					0.66-1.07	0.46-0.76	0.0-0.46	0.0-0.76	0.76-1.52	0.76-1.52	0.76-1.52	
					B15-04389-13	B15-04389-15	B15-04508-1	B15-04607-2	B15-04607-3	B15-04607-7	B15-04607-16	
					03-Mar-15	03-Mar-15	03-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15	
Antimony	0.5	1	20	7.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	0.5	1	12	18	1.7	2.5	4.7	2.1	0.5	< 0.5	< 0.5	< 0.5
Barium	1	5	500	390	64	69	63	39	30	32	24	28
Beryllium	0.2	2	4	4	0.4	0.4	0.4	< 0.2	0.2	0.2	< 0.2	< 0.02
Boron (Total)	0.5	5	-	120	9.2	11.6	4.7	2.4	2.4	3.1	2.3	2.7
Boron (Available)*	0.02	0.5	-	1.5	0.05	0.03	0.06	0.04	0.03	0.03	0.03	0.03
Cadmium	0.5	1	10	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (Total)	1	5	64	160	17	18	18	11	14	16	11	13.5
Chromium (VI)	0.2	0.2	0.4	8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cobalt	1	2	50	22	4	5	8	3	3	4	2	3
Copper	1	5	63	140	7	7	22	6	4	5	2	3.5
Lead	5	10	140	120	12	14	23	11	6	< 5	6	< 5.5
Mercury	0.005	0.1	6.6	0.27	0.041	0.049	0.043	0.020	0.014	0.008	0.009	0.0085
Molybdenum	1	2	10	6.9	< 1	1	2	1	< 1	< 1	< 1	< 1
Nickel	1	5	45	100	9	11	15	8	8	13	6	9.5
Selenium	0.5	1	1	2.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Silver	0.2	0.5	20	20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	0.1	1	1	1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Tin	5	-	50	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Uranium	0.1	1	23	23	0.5	0.5	0.7	0.3	0.4	0.4	0.4	0.4
Vanadium	1	10	130	86	34	41	27	18	20	16	12	14
Zinc	3	30	200	340	37	49	78	42	53	59	27	43

* = Boron (Available) Soil Standard Based on Hot Water Extract.

Table 7. Summary of Heavy Metal Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 2				APEC 4			
					BH15-6 RPD (%)	BH15-7 BH15-7-SS1 0.0-1.52 B15-04607-9 06-Mar-15	TP15-3 TP3-1 0.2-0.4 B15-28568-3 30-Oct-15	TP15-4 TP4-1 0.1-0.3 B15-28568-4 30-Oct-15	TP15-5 TP5-1 0.1-0.2 B15-28568-5 30-Oct-15	TP15-6 TP6-1 0.1-0.2 B15-28568-6 30-Oct-15	TP15-6 DUP-2 0.1-0.2 B15-28568-10 30-Oct-15	TP15-6 AVERAGE
Antimony	0.5	1	20	7.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	0.5	1	12	18	-	1.9	2.2	1.8	2.0	2.2	2.1	2.15
Barium	1	5	500	390	28.6	79	65	58	67	79	77	78
Beryllium	0.2	2	4	4	-	0.3	0.9	0.8	0.8	0.7	0.7	0.7
Boron (Total)	0.5	5	-	120	-	19.6	4.4	3.2	2.9	2.9	3.1	3.0
Boron (Available)*	0.02	0.5	-	1.5	-	0.09	< 0.02	0.02	< 0.02	0.03	0.02	0.03
Cadmium	0.5	1	10	1.2	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (Total)	1	5	64	160	37.0	21	30	23	27	24	24	24
Chromium (VI)	0.2	0.2	0.4	8	-	< 0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	1	2	50	22	-	7	9	7	7	12	13	12.5
Copper	1	5	63	140	-	17	13	9	9	12	12	12
Lead	5	10	140	120	-	14	11	9	10	19	15	17
Mercury	0.005	0.1	6.6	0.27	-	0.030	0.038	0.026	0.036	0.051	0.048	0.050
Molybdenum	1	2	10	6.9	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Nickel	1	5	45	100	-	16	20	16	17	15	15	15
Selenium	0.5	1	1	2.4	-	< 0.5	0.5	< 0.5	< 0.5	0.7	0.8	0.8
Silver	0.2	0.5	20	20	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	0.1	1	1	1	-	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Tin	5	-	50	-	-	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Uranium	0.1	1	23	23	-	0.6	0.9	0.8	0.7	0.7	0.8	0.8
Vanadium	1	10	130	86	28.6	26	62	43	57	58	59	58.5
Zinc	3	30	200	340	-	65	49	51	60	65	55	60

* = Boron (Available) Soil Standard Based on Hot Water Extract.

Table 7. Summary of Heavy Metal Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 4				AEC 6			
					TP15-6 RPD (%)	TP15-7 TP7-1 0.1-0.2 B15-28568-7 30-Oct-15	TP15-10 TP10-1 0.1-0.3 B15-28877-5 03-Nov-15	TP15-11 TP11-1 0.2-0.4 B15-28877-6 03-Nov-15	TP15-12 TP12-1 0.2-0.3 B15-28877-7 03-Nov-15	TP15-12 DUP-4 0.2-0.3 B15-28877-9 03-Nov-15	TP15-12 AVERAGE	TP15-12 RPD (%)
Antimony	0.5	1	20	7.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Arsenic	0.5	1	12	18	-	4.2	0.6	2.0	0.8	0.7	0.75	-
Barium	1	5	500	390	2.6	79	27	39	40	36	38	10.5
Beryllium	0.2	2	4	4	-	1.2	0.4	0.6	0.4	0.4	0.4	-
Boron (Total)	0.5	5	-	120	-	3.3	1.4	2.00	1.6	1.5	1.55	-
Boron (Available)*	0.02	0.5	-	1.5	-	0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02	-
Cadmium	0.5	1	10	1.2	-	1.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Chromium (Total)	1	5	64	160	0.0	35	15	18	16	13	14.5	20.7
Chromium (VI)	0.2	0.2	0.4	8	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Cobalt	1	2	50	22	8.0	15	3	5	6	5	5.5	-
Copper	1	5	63	140	0.0	22	3	113	10	10	10	-
Lead	5	10	140	120	-	15	6	20	6	6	6	-
Mercury	0.005	0.1	6.6	0.27	-	0.040	0.049	0.052	0.022	0.030	0.026	-
Molybdenum	1	2	10	6.9	-	< 1	< 1	< 1	< 1	< 1	< 1	-
Nickel	1	5	45	100	0.0	19	6	11	11	9	10	-
Selenium	0.5	1	1	2.4	-	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Silver	0.2	0.5	20	20	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Thallium	0.1	1	1	1	-	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	-
Tin	5	-	50	-	-	< 5	< 5	< 5	< 5	< 5	< 5	-
Uranium	0.1	1	23	23	-	1.1	0.9	0.7	0.8	0.8	0.8	-
Vanadium	1	10	130	86	1.7	101	32	42	29	23	26	23.1
Zinc	3	30	200	340	16.7	43	33	75	31	31	31	0.0

* = Boron (Available) Soil Standard Based on Hot Water Extract.

Table 7. Summary of Heavy Metal Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8							
					TP15-13 8-S4 0.0-0.15 B15-28371-9 28-Oct-15	TP15-13 TP13-1 0.1-0.3 B15-28877-4 03-Nov-15	TP15-13 DUP-3 0.1-0.3 B15-28877-8 03-Nov-15	TP15-13 AVERAGE	TP15-13 RPD (%)	TP15-14 8-S3 0.0-0.15 B15-28371-8 28-Oct-15	TP15-14 TP14-1 0.3-0.4 B15-28877-3 03-Nov-15	TP15-15 8-S1 0.0-0.15 B15-28371-6 28-Oct-15
Antimony	0.5	1	20	7.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Arsenic	0.5	1	12	18	1.4	< 0.5	< 0.5	< 0.5	-	2.4	0.8	1.2
Barium	1	5	500	390	39	11	10	10.5	-	52	38	52
Beryllium	0.2	2	4	4	0.3	< 0.2	< 0.2	< 0.2	-	< 0.2	0.4	0.2
Boron (Total)	0.5	5	-	120	3.1	0.9	1.0	0.95	-	3.1	2.8	2.7
Boron (Available)*	0.02	0.5	-	1.5	0.32	0.03	0.04	0.035	-	0.58	0.14	0.21
Cadmium	0.5	1	10	1.2	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Chromium (Total)	1	5	64	160	11	7	7	7	-	9	13	12
Chromium (VI)	0.2	0.2	0.4	8	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Cobalt	1	2	50	22	3	2	2	2	-	2	5	3
Copper	1	5	63	140	7	3	3	3	-	9	5	8
Lead	5	10	140	120	27	< 5	< 5	< 5	-	34	7	35
Mercury	0.005	0.1	6.6	0.27	0.049	0.014	0.016	0.015	-	0.063	0.033	0.230
Molybdenum	1	2	10	6.9	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Nickel	1	5	45	100	6	4	4	4	-	5	7	7
Selenium	0.5	1	1	2.4	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Silver	0.2	0.5	20	20	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Thallium	0.1	1	1	1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Tin	5	-	50	-	< 5	< 5	< 5	< 5	-	< 5	< 5	< 5
Uranium	0.1	1	23	23	0.6	0.5	0.5	0.5	-	0.4	0.8	0.5
Vanadium	1	10	130	86	21	14	13	13.5	7.4	18	24	21
Zinc	3	30	200	340	46	12	12	12	-	100	43	202

* = Boron (Available) Soil Standard Based on Hot Water Extract.

Table 7. Summary of Heavy Metal Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8							
					TP15-15 TP15-1 0.4-0.6 B15-28877-1 03-Nov-15	TP15-16 8-S2 0.0-0.15 B15-28371-7 28-Oct-15	TP15-16 TP16-1 0.3-0.4 B15-28877-2 03-Nov-15					
Antimony	0.5	1	20	7.5	< 0.5	< 0.5	< 0.5					
Arsenic	0.5	1	12	18	< 0.5	0.8	< 0.5					
Barium	1	5	500	390	22	40	23					
Beryllium	0.2	2	4	4	0.3	< 0.2	< 0.2					
Boron (Total)	0.5	5	-	120	1.5	5.8	1.0					
Boron (Available)*	0.02	0.5	-	1.5	0.12	1.23	0.06					
Cadmium	0.5	1	10	1.2	< 0.5	< 0.5	< 0.5					
Chromium (Total)	1	5	64	160	8	11	9					
Chromium (VI)	0.2	0.2	0.4	8	< 0.2	< 0.2	< 0.2					
Cobalt	1	2	50	22	2	3	2					
Copper	1	5	63	140	3	9	4					
Lead	5	10	140	120	< 5	20	< 5					
Mercury	0.005	0.1	6.6	0.27	0.042	0.052	0.021					
Molybdenum	1	2	10	6.9	< 1	< 1	< 1					
Nickel	1	5	45	100	3	6	5					
Selenium	0.5	1	1	2.4	< 0.5	< 0.5	< 0.5					
Silver	0.2	0.5	20	20	< 0.2	< 0.2	< 0.2					
Thallium	0.1	1	1	1	< 0.1	< 0.1	< 0.1					
Tin	5	-	50	-	< 5	< 5	< 5					
Uranium	0.1	1	23	23	0.5	0.8	0.9					
Vanadium	1	10	130	86	19	18	16					
Zinc	3	30	200	340	21	310	43					

* = Boron (Available) Soil Standard Based on Hot Water Extract.

Table 8. Summary of Polychlorinated Biphenyl Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date	Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 2				APEC 3					
			BH15-9 BH15-9-SS1 0 - 0.76	BH15-9 DUP-5 0 - 0.76	BH15-9 AVERAGE	BH15-9 RPD (%)	2-S1 2-S1 0.0-0.15	2-S2 2-S2 0.0-0.15	TP15-1 TP1-1 0.05-0.2	TP15-2 TP2-1 0.2-0.4		
			B15-04607-12 06-Mar-15	B15-04607-15 06-Mar-15			B15-28371-1 28-Oct-15	B15-28371-2 28-Oct-15	B15-28568-1 30-Oct-15	B15-28568-2 30-Oct-15		
Polychlorinated Biphenyl	0.3	0.3	1.3	0.35	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3	< 0.3	< 0.3

Table 8. Summary of Polychlorinated Biphenyl Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 4					APEC 5		
					TP15-3 TP3-1 0.2-0.4 B15-28568-3 30-Oct-15	TP15-4 TP4-1 0.1-0.3 B15-28568-4 30-Oct-15	TP15-5 TP5-1 0.1-0.2 B15-28568-5 30-Oct-15	TP15-6 TP6-1 0.1-0.2 B15-28568-6 30-Oct-15	TP15-7 TP7-1 0.1-0.2 B15-28568-7 30-Oct-15	TP15-8 TP8-1 0.3-0.4 B15-28568-8 30-Oct-15	TP15-9 TP9-1 0.3-0.4 B15-28568-9 30-Oct-15	5-S1 5-S1 0.0-0.15 B15-28371-3 28-Oct-15
Polychlorinated Biphenyl	0.3	0.3	1.3	0.35	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Table 8. Summary of Polychlorinated Biphenyl Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 5					AEC 6		
					5-S1 DUP-1 0.0-0.15 B15-28371-10 28-Oct-15	5-S1 AVERAGE	5-S1 RPD (%)	5-S2 5-S2 0.0-0.15 B15-28371-4 28-Oct-15	5-S3 5-S3 0.0-0.15 B15-28371-5 28-Oct-15	TP15-10 TP10-1 0.1-0.3 B15-28877-5 03-Nov-15	TP15-11 TP11-1 0.2-0.4 B15-28877-6 03-Nov-15	TP15-12 TP12-1 0.2-0.3 B15-28877-7 03-Nov-15
Polychlorinated Biphenyl	0.3	0.3	1.3	0.35	< 0.3	< 0.3	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Table 8. Summary of Polychlorinated Biphenyl Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6			AEC 8				
					TP15-12 DUP-4 0.2-0.3	TP15-12 AVERAGE	TP15-12 RPD (%)	TP15-13 8-S4 0.0-0.15	TP15-13 TP13-1 0.1-0.3	TP15-13 DUP-3 0.1-0.3	TP15-13 AVERAGE	TP15-13 RPD (%)
					B15-28877-9 03-Nov-15			B15-28371-9 28-Oct-15	B15-28877-4 03-Nov-15	B15-28877-8 03-Nov-15		
Polychlorinated Biphenyl	0.3	0.3	1.3	0.35	< 0.3	< 0.3	-	< 0.3	< 0.3	< 0.3	< 0.3	-

Table 8. Summary of Polychlorinated Biphenyl Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8							
					TP15-14 8-S3 0.0-0.15	TP15-14 TP14-1 0.3-0.4	TP15-15 8-S1 0.0-0.15	TP15-15 TP15-1 0.4-0.6	TP15-16 8-S2 0.0-0.15	TP15-16 TP16-1 0.3-0.4		
					B15-28371-8 28-Oct-15	B15-28877-3 03-Nov-15	B15-28371-6 28-Oct-15	B15-28877-1 03-Nov-15	B15-28371-7 28-Oct-15	B15-28877-2 03-Nov-15		
Polychlorinated Biphenyl	0.3	0.3	1.3	0.35	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3		

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-40C MW15-40C-SS4 (1) 2.29 - 3.05 B15-04130-3 27-Feb-15	MW15-40C MW15-40C-SS4 (2) 2.29 - 3.05 B15-04130-4 27-Feb-15	MW15-40C MW15-40C-SS4 (3) 2.29 - 3.05 B15-04130-5 27-Feb-15	MW15-47C MW15-47-SS3 1.52 - 2.29 B15-04389-1 02-Mar-15	MW15-48C MW15-48C-SS5 3.05 - 3.81 B15-04389-3 02-Mar-15	MW15-52 MW15-52-SS4 2.29 - 3.05 B15-04389-7 02-Mar-15
pH (Unitless)	-	-	6 - 8	5 - 9	-	-	-	6.99	7.07	6.99
Fraction Organic Carbon (g/g)	0.005	-	-	-	0.005	0.005	0.006	-	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1					
					MW15-53 MW15-53-SS3 (1) 1.52 - 2.29 B15-04389-10 03-Mar-15	MW15-53 MW15-53-SS3 (2) 1.52 - 2.29 B15-04389-11 03-Mar-15	MW15-53 MW15-53-SS3 (3) 1.52 - 2.29 B15-04389-12 03-Mar-15	MW15-55 MW15-55-SS1B 0.66 - 1.07 B15-04389-13 03-Mar-15	MW15-56 MW15-56-SS1B 0.46 - 0.76 B15-04389-15 03-Mar-15	MW15-63 MW15-63-SS2 (1) 2.2 B15-29899-8 16-Nov-15
pH (Unitless)	-	-	6 - 8	5 - 9	-	-	-	7.06	6.51	-
Fraction Organic Carbon (g/g)	0.005	-	-	-	0.006	0.006	0.006	-	-	< 0.005

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 1			APEC 2		
					MW15-63	MW15-63	BH15-10	MW15-59	MW15-62	MW15-62
					MW15-63-SS2 (2)	MW15-63-SS2 (3)	BH15-10-SS3	MW15-59-SS3	MW15-62-SS2 (1)	MW15-62-SS2 (2)
					2.2	2.2	1.52 - 2.29	1.52 - 2.29	2.2	2.2
pH (Unitless)	-	-	6 - 8	5 - 9	-	-	7.04	6.57	-	-
Fraction Organic Carbon (g/g)	0.005	-	-	-	< 0.005	< 0.005	-	-	< 0.005	< 0.005

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 2					
					MW15-62	BH15-5	BH15-5	BH15-5	2-S1	2-S2
					MW15-62-SS2 (3)	BH15-5-SS3 (1)	BH15-5-SS3 (2)	BH15-5-SS3 (3)	2-S1	2-S2
					2.2	1.52 - 2.29	1.52 - 2.29	1.52 - 2.29	0.0-0.15	0.0-0.15
pH (Unitless)	-	-	6 - 8	5 - 9	-	-	-	-	6.89	6.39
Fraction Organic Carbon (g/g)	0.005	-	-	-	< 0.005	< 0.005	< 0.005	< 0.005	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 3		APEC 4			
					TP15-1 TP1-1 0.05-0.2	TP15-2 TP2-1 0.2-0.4	TP15-3 TP3-1 0.2-0.4	TP15-4 TP4-1 0.1-0.3	TP15-5 TP5-1 0.1-0.2	TP15-6 TP6-1 0.1-0.2
					B15-28568-1 30-Oct-15	B15-28568-2 30-Oct-15	B15-28568-3 30-Oct-15	B15-28568-4 30-Oct-15	B15-28568-5 30-Oct-15	B15-28568-6 30-Oct-15
pH (Unitless)	-	-	6 - 8	5 - 9	6.10	6.77	6.69	6.07	5.22	5.65
Fraction Organic Carbon (g/g)	0.005	-	-	-	-	-	-	-	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 4				APEC 5	
					TP15-6 DUP-2 0.1-0.2	TP15-6 AVERAGE	TP15-6 RPD (%)	TP15-7 TP7-1 0.1-0.2	TP15-8 TP8-1 0.3-0.4	TP15-9 TP9-1 0.3-0.4
					B15-28568-10 30-Oct-15			B15-28568-7 30-Oct-15	B15-28568-8 30-Oct-15	B15-28568-9 30-Oct-15
pH (Unitless)	-	-	6 - 8	5 - 9	5.42	5.55	4.1	5.62	5.10	5.42
Fraction Organic Carbon (g/g)	0.005	-	-	-	-	-	-	-	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 5					
					5-S1 5-S1 0.0-0.15 B15-28371-3 28-Oct-15	5-S1 DUP-1 0.0-0.15 B15-28371-10 28-Oct-15	5-S1 AVERAGE	5-S1 RPD (%)	5-S2 5-S2 0.0-0.15 B15-28371-4 28-Oct-15	5-S3 5-S3 0.0-0.15 B15-28371-5 28-Oct-15
pH (Unitless)	-	-	6 - 8	5 - 9	5.49	5.92	5.76	7.5	4.61	4.90
Fraction Organic Carbon (g/g)	0.005	-	-	-	-	-	-	-	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6					
					MW15-60 MW15-60-SS2 (1)	MW15-60 MW15-60-SS2 (2)	MW15-60 MW15-60-SS2 (3)	TP15-10 TP10-1	TP15-11 TP11-1	TP15-12 TP12-1
					1.7	1.7	1.7	0.1-0.3	0.2-0.4	0.2-0.3
					B15-29899-1 16-Nov-15	B15-29899-2 16-Nov-15	B15-29899-3 16-Nov-15	B15-28877-5 03-Nov-15	B15-28877-6 03-Nov-15	B15-28877-7 03-Nov-15
pH (Unitless)	-	-	6 - 8	5 - 9	-	-	-	5.10	4.97	5.04
Fraction Organic Carbon (g/g)	0.005	-	-	-	< 0.005	< 0.005	< 0.005	-	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6			AEC 8		
					TP15-12 DUP-4 0.2-0.3	TP15-12 AVERAGE	TP15-12 RPD (%)	TP15-13 8-S4 0.0-0.15	TP15-13 TP13-1 0.1-0.3	TP15-13 DUP-3 0.1-0.3
					B15-28877-9 03-Nov-15			B15-28371-9 28-Oct-15	B15-28877-4 03-Nov-15	B15-28877-8 03-Nov-15
pH (Unitless)	-	-	6 - 8	5 - 9	5.02	5.03	0.4	5.66	5.28	5.15
Fraction Organic Carbon (g/g)	0.005	-	-	-	-	-	-	-	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8					
					TP15-13 AVERAGE	TP15-13 RPD (%)	TP15-14 8-S3 0.0-0.15 B15-28371-8 28-Oct-15	TP15-14 TP14-1 0.3-0.4 B15-28877-3 03-Nov-15	TP15-15 8-S1 0.0-0.15 B15-28371-6 28-Oct-15	TP15-15 TP15-1 0.4-0.6 B15-28877-1 03-Nov-15
pH (Unitless)	-	-	6 - 8	5 - 9	5.22	2.5	6.10	6.40	5.69	5.99
Fraction Organic Carbon (g/g)	0.005	-	-	-	-	-	-	-	-	-

Table 9. Summary of General Chemistry Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results					
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8					
					TP15-16 8-S2 0.0-0.15 B15-28371-7 28-Oct-15	TP15-16 TP16-1 0.3-0.4 B15-28877-2 03-Nov-15				
pH (Unitless)	-	-	6 - 8	5 - 9	6.33	6.88				
Fraction Organic Carbon (g/g)	0.005	-	-	-	-	-				

Table 10. Summary of Organochlorine Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g								
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date	Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 3		APEC 4						APEC 5		
			TP15-1 TP1-1 0.05-0.2 B15-28568-1 30-Oct-15	TP15-2 TP2-1 0.2-0.4 B15-28568-2 30-Oct-15	TP15-3 TP3-1 0.2-0.4 B15-28568-3 30-Oct-15	TP15-4 TP4-1 0.1-0.3 B15-28568-4 30-Oct-15	TP15-5 TP5-1 0.1-0.2 B15-28568-5 30-Oct-15	TP15-6 TP6-1 0.1-0.2 B15-28568-6 30-Oct-15	TP15-7 TP7-1 0.1-0.2 B15-28568-7 30-Oct-15	TP15-8 TP8-1 0.3-0.4 B15-28568-8 30-Oct-15			
Aldrin	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane, α	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane, γ	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane (α + γ)	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDD, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDD, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDD (o,p' + p, p')	0.05	0.05	-	3.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDE, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDE, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDE (o,p' + p, p')	0.05	0.05	-	0.33	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT (o,p' + p, p')	0.05	0.05	-	1.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT + Metabolites	0.05	-	0.7	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.04	-	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan II	0.04	-	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan (I + II)	0.04	0.04	-	0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Endrin	0.04	0.04	-	0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Heptachlor	0.05	0.05	-	0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.01	0.01	2	0.52	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	0.01	0.01	-	0.014	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclohexane, γ (Lindane)	0.01	0.01	-	0.063	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	0.01	0.01	-	0.071	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.05	0.05	-	0.13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Table 10. Summary of Organochlorine Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 5							AEC 6
Sample Location	Sample No.	TP15-9 TP9-1			5-S1 5-S1	5-S1 DUP-1	5-S1	5-S1	5-S2 5-S2	5-S3 5-S3	TP15-10 TP10-1	
Sample Depth (m)	Sample Depth (m)	0.3-0.4			0.0-0.15	0.0-0.15	AVERAGE	RPD (%)	0.0-0.15	0.0-0.15	0.1-0.3	
Laboratory ID	Laboratory ID	B15-28568-9			B15-28371-3	B15-28371-10			B15-28371-4	B15-28371-5	B15-28877-5	
Sample Date	Sample Date	30-Oct-15			28-Oct-15	28-Oct-15			28-Oct-15	28-Oct-15	03-Nov-15	
Aldrin	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Chlordane, α	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Chlordane, γ	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Chlordane (α + γ)	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDD, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDD, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDD (o,p' + p, p')	0.05	0.05	-	3.3	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDE, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDE, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDE (o,p' + p, p')	0.05	0.05	-	0.33	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT (o,p' + p, p')	0.05	0.05	-	1.4	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT + Metabolites	0.05	-	0.7	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.04	-	-	-	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Endosulfan II	0.04	-	-	-	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Endosulfan (I + II)	0.04	0.04	-	0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Endrin	0.04	0.04	-	0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Heptachlor	0.05	0.05	-	0.15	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.01	0.01	2	0.52	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	0.01	0.01	-	0.014	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Hexachlorocyclohexane, γ (Lindane)	0.01	0.01	-	0.063	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Hexachloroethane	0.01	0.01	-	0.071	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Methoxychlor	0.05	0.05	-	0.13	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05

Table 10. Summary of Organochlorine Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6					AEC 8		
					TP15-11 TP11-1 0.2-0.4	TP15-12 TP12-1 0.2-0.3	TP15-12 DUP-4 0.2-0.3	TP15-12 AVERAGE	TP15-12 RPD (%)	TP15-13 8-S4 0.0-0.15	TP15-13 TP13-1 0.1-0.3	TP15-13 DUP-3 0.1-0.3
					B15-28877-6 03-Nov-15	B15-28877-7 03-Nov-15	B15-28877-9 03-Nov-15			B15-28371-9 28-Oct-15	B15-28877-4 03-Nov-15	B15-28877-8 03-Nov-15
Aldrin	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Chlordane, α	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Chlordane, γ	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Chlordane (α + γ)	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDD, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDD, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDD (o,p' + p, p')	0.05	0.05	-	3.3	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDE, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDE, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDE (o,p' + p, p')	0.05	0.05	-	0.33	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT, o,p' (2,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT, p,p' (4,4')	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT (o,p' + p, p')	0.05	0.05	-	1.4	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
DDT + Metabolites	0.05	-	0.7	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.04	-	-	-	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Endosulfan II	0.04	-	-	-	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Endosulfan (I + II)	0.04	0.04	-	0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Endrin	0.04	0.04	-	0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04
Heptachlor	0.05	0.05	-	0.15	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	0.05	0.05	-	0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.01	0.01	2	0.52	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	0.01	0.01	-	0.014	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Hexachlorocyclohexane, γ (Lindane)	0.01	0.01	-	0.063	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Hexachloroethane	0.01	0.01	-	0.071	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01
Methoxychlor	0.05	0.05	-	0.13	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05

Table 10. Summary of Organochlorine Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8							
					TP15-13 AVERAGE	TP15-13 RPD (%)	TP15-14 8-S3 0.0-0.15 B15-28371-8 28-Oct-15	TP15-14 TP14-1 0.3-0.4 B15-28877-3 03-Nov-15	TP15-15 8-S1 0.0-0.15 B15-28371-6 28-Oct-15	TP15-15 TP15-1 0.4-0.6 B15-28877-1 03-Nov-15	TP15-16 8-S2 0.0-0.15 B15-28371-7 28-Oct-15	TP15-16 TP16-1 0.3-0.4 B15-28877-2 03-Nov-15
Aldrin	0.05	0.05	-	0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane, α	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane, γ	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane (α + γ)	0.05	0.05	-	0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDD, o,p' (2,4')	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDD, p,p' (4,4')	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDD (o,p' + p, p')	0.05	0.05	-	3.3	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDE, o,p' (2,4')	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDE, p,p' (4,4')	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDE (o,p' + p, p')	0.05	0.05	-	0.33	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT, o,p' (2,4')	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT, p,p' (4,4')	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT (o,p' + p, p')	0.05	0.05	-	1.4	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDT + Metabolites	0.05	-	0.7	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	0.05	-	0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.04	-	-	-	< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan II	0.04	-	-	-	< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan (I + II)	0.04	0.04	-	0.04	< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Endrin	0.04	0.04	-	0.04	< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Heptachlor	0.05	0.05	-	0.15	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	0.05	0.05	-	0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.01	0.01	2	0.52	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	0.01	0.01	-	0.014	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclohexane, γ (Lindane)	0.01	0.01	-	0.063	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	0.01	0.01	-	0.071	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.05	0.05	-	0.13	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Table 11. Summary of Other Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g								
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 3		APEC 4						APEC 5
					TP15-1	TP15-2	TP15-3	TP15-4	TP15-5	TP15-6	TP15-7	TP15-8	
					TP1-1	TP2-1	TP3-1	TP4-1	TP5-1	TP6-1	TP7-1	TP8-1	
					0.05-0.2	0.2-0.4	0.2-0.4	0.1-0.3	0.1-0.2	0.1-0.2	0.1-0.2	0.3-0.4	
					B15-28568-1 30-Oct-15	B15-28568-2 30-Oct-15	B15-28568-3 30-Oct-15	B15-28568-4 30-Oct-15	B15-28568-5 30-Oct-15	B15-28568-6 30-Oct-15	B15-28568-7 30-Oct-15	B15-28568-8 30-Oct-15	
Aldicarb	0.6	-	-	-	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	
Azinphos-Methyl	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
Bendiocarb	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Carbaryl	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Carbofuran	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
Chlorpyrifos	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Diazinon	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
Dimethoate	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
Malathion	1	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Parathion	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Pentachlorophenol	0.02	-	7.6	0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
Phorate	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Temephos	3	-	-	-	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	
Terbufos	0.07	-	-	-	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	

Table 11. Summary of Other Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 5							AEC 6
					TP15-9 TP9-1 0.3-0.4 B15-28568-9 30-Oct-15	5-S1 5-S1 0.0-0.15 B15-28371-3 28-Oct-15	5-S1 DUP-1 0.0-0.15 B15-28371-10 28-Oct-15	5-S1 AVERAGE	5-S1 RPD (%)	5-S2 5-S2 0.0-0.15 B15-28371-4 28-Oct-15	5-S3 5-S3 0.0-0.15 B15-28371-5 28-Oct-15	TP15-10 TP10-1 0.1-0.3 B15-28877-5 03-Nov-15
Aldicarb	0.6	-	-	-	< 0.6	< 0.6	< 0.6	< 0.6	-	< 0.6	< 0.6	< 0.6
Azinphos-Methyl	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Bendiocarb	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Carbaryl	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Carbofuran	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Diazinon	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Malathion	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Parathion	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Pentachlorophenol	0.02	-	7.6	0.1	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Phorate	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Temephos	3	-	-	-	< 3	< 3	< 3	< 3	-	< 3	< 3	< 3
Terbufos	0.07	-	-	-	< 0.07	< 0.07	< 0.07	< 0.07	-	< 0.07	< 0.07	< 0.07

Table 11. Summary of Other Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6					AEC 8		
					TP15-11 TP11-1 0.2-0.4 B15-28877-6 03-Nov-15	TP15-12 TP12-1 0.2-0.3 B15-28877-7 03-Nov-15	TP15-12 DUP-4 0.2-0.3 B15-28877-9 03-Nov-15	TP15-12 AVERAGE	TP15-12 RPD (%)	TP15-13 8-S4 0.0-0.15 B15-28371-9 28-Oct-15	TP15-13 TP13-1 0.1-0.3 B15-28877-4 03-Nov-15	TP15-13 DUP-3 0.1-0.3 B15-28877-8 03-Nov-15
Aldicarb	0.6	-	-	-	< 0.6	< 0.6	< 0.6	< 0.6	-	< 0.6	< 0.6	< 0.6
Azinphos-Methyl	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Bendiocarb	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Carbaryl	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Carbofuran	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Diazinon	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Malathion	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Parathion	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Pentachlorophenol	0.02	-	7.6	0.1	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Phorate	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Temephos	3	-	-	-	< 3	< 3	< 3	< 3	-	< 3	< 3	< 3
Terbufos	0.07	-	-	-	< 0.07	< 0.07	< 0.07	< 0.07	-	< 0.07	< 0.07	< 0.07

Table 11. Summary of Other Pesticide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8							
					TP15-13 AVERAGE	TP15-13 RPD (%)	TP15-14 8-S3 0.0-0.15 B15-28371-8 28-Oct-15	TP15-14 TP14-1 0.3-0.4 B15-28877-3 03-Nov-15	TP15-15 8-S1 0.0-0.15 B15-28371-6 28-Oct-15	TP15-15 TP15-1 0.4-0.6 B15-28877-1 03-Nov-15	TP15-16 8-S2 0.0-0.15 B15-28371-7 28-Oct-15	TP15-16 TP16-1 0.3-0.4 B15-28877-2 03-Nov-15
Aldicarb	0.6	-	-	-	< 0.6	-	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Azinphos-Methyl	0.2	-	-	-	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bendiocarb	0.5	-	-	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbaryl	0.5	-	-	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbofuran	0.2	-	-	-	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diazinon	0.2	-	-	-	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	-	-	-	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	1	-	-	-	< 1	-	< 1	< 1	< 1	< 1	< 1	< 1
Parathion	0.5	-	-	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	0.02	-	7.6	0.1	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Temephos	3	-	-	-	< 3	-	< 3	< 3	< 3	< 3	< 3	< 3
Terbufos	0.07	-	-	-	< 0.07	-	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07

Table 12. Summary of Herbicide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 3			APEC 4				APEC 5
					TP15-1 TP1-1 0.05-0.2	TP15-2 TP2-1 0.2-0.4	TP15-3 TP3-1 0.2-0.4	TP15-4 TP4-1 0.1-0.3	TP15-5 TP5-1 0.1-0.2	TP15-6 TP6-1 0.1-0.2	TP15-7 TP7-1 0.1-0.2	TP15-8 TP8-1 0.3-0.4
					B15-28568-1 30-Oct-15	B15-28568-2 30-Oct-15	B15-28568-3 30-Oct-15	B15-28568-4 30-Oct-15	B15-28568-5 30-Oct-15	B15-28568-6 30-Oct-15	B15-28568-7 30-Oct-15	B15-28568-8 30-Oct-15
Alachlor	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Atrazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine-Desethyl	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoxynil	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cyanazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dicamba	1	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Dichlorophenol, 2,4-	0.02	-	0.5	0.27	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorophenoxyacetic Acid, 2,4- (2,4-D)	1	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Diclofop-Methyl	0.09	-	-	-	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Dinoseb	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diuron	1	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Metolachlor	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Metribuzin	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Picloram	1	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Prometryne	0.02	-	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Simazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachlorophenol, 2,3,4,6-	0.02	-	0.5	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Triallate	2	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichlorophenol, 2,4,6-	0.02	-	0.5	2.9	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichlorophenoxyacetic Acid, 2,4,5- (2,4,5-T)	2	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trifluralin	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Table 12. Summary of Herbicide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	APEC 5							AEC 6
					TP15-9 TP9-1 0.3-0.4 B15-28568-9 30-Oct-15	5-S1 5-S1 0.0-0.15 B15-28371-3 28-Oct-15	5-S1 DUP-1 0.0-0.15 B15-28371-10 28-Oct-15	5-S1 AVERAGE	5-S1 RPD (%)	5-S2 5-S2 0.0-0.15 B15-28371-4 28-Oct-15	5-S3 5-S3 0.0-0.15 B15-28371-5 28-Oct-15	TP15-10 TP10-1 0.1-0.3 B15-28877-5 03-Nov-15
Alachlor	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Atrazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Atrazine-Desethyl	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Bromoxynil	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Cyanazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dicamba	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Dichlorophenol, 2,4-	0.02	-	0.5	0.27	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichlorophenoxyacetic Acid, 2,4- (2,4-D)	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Diclofop-Methyl	0.09	-	-	-	< 0.09	< 0.09	< 0.09	< 0.09	-	< 0.09	< 0.09	< 0.09
Dinoseb	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Diuron	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Metolachlor	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Metribuzin	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Picloram	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Prometryne	0.02	-	-	-	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Simazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Tetrachlorophenol, 2,3,4,6-	0.02	-	0.5	-	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Triallate	2	-	-	-	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2
Trichlorophenol, 2,4,6-	0.02	-	0.5	2.9	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Trichlorophenoxyacetic Acid, 2,4,5- (2,4,5-T)	2	-	-	-	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2
Trifluralin	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1

Table 12. Summary of Herbicide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 6					AEC 8		
					TP15-11 TP11-1 0.2-0.4 B15-28877-6 03-Nov-15	TP15-12 TP12-1 0.2-0.3 B15-28877-7 03-Nov-15	TP15-12 DUP-4 0.2-0.3 B15-28877-9 03-Nov-15	TP15-12 AVERAGE	TP15-12 RPD (%)	TP15-13 8-S4 0.0-0.15 B15-28371-9 28-Oct-15	TP15-13 TP13-1 0.1-0.3 B15-28877-4 03-Nov-15	TP15-13 DUP-3 0.1-0.3 B15-28877-8 03-Nov-15
Alachlor	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Atrazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Atrazine-Desethyl	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Bromoxynil	0.05	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05
Cyanazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dicamba	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Dichlorophenol, 2,4-	0.02	-	0.5	0.27	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Dichlorophenoxyacetic Acid, 2,4- (2,4-D)	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Diclofop-Methyl	0.09	-	-	-	< 0.09	< 0.09	< 0.09	< 0.09	-	< 0.09	< 0.09	< 0.09
Dinoseb	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Diuron	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Metolachlor	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Metribuzin	0.5	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Picloram	1	-	-	-	< 1	< 1	< 1	< 1	-	< 1	< 1	< 1
Prometryne	0.02	-	-	-	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Simazine	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Tetrachlorophenol, 2,3,4,6-	0.02	-	0.5	-	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Triallate	2	-	-	-	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2
Trichlorophenol, 2,4,6-	0.02	-	0.5	2.9	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	< 0.02	< 0.02
Trichlorophenoxyacetic Acid, 2,4,5- (2,4,5-T)	2	-	-	-	< 2	< 2	< 2	< 2	-	< 2	< 2	< 2
Trifluralin	0.1	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1

Table 12. Summary of Herbicide Soil Analyses

Parameters	RL (Lab)	RL (MOE)	CCME Guidelines	EPA Standards	Analytical Results - µg/g							
Area of Investigation Sample Location Sample No. Sample Depth (m) Laboratory ID Sample Date			Residential/ Parkland	Residential/ Parkland/ Institutional	AEC 8							
					TP15-13 AVERAGE	TP15-13 RPD (%)	TP15-14 8-S3 0.0-0.15 B15-28371-8 28-Oct-15	TP15-14 TP14-1 0.3-0.4 B15-28877-3 03-Nov-15	TP15-15 8-S1 0.0-0.15 B15-28371-6 28-Oct-15	TP15-15 TP15-1 0.4-0.6 B15-28877-1 03-Nov-15	TP15-16 8-S2 0.0-0.15 B15-28371-7 28-Oct-15	TP15-16 TP16-1 0.3-0.4 B15-28877-2 03-Nov-15
Alachlor	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Atrazine	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine-Desethyl	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoxynil	0.05	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cyanazine	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dicamba	1	-	-	-	< 1	-	< 1	< 1	< 1	< 1	< 1	< 1
Dichlorophenol, 2,4-	0.02	-	0.5	0.27	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorophenoxyacetic Acid, 2,4- (2,4-D)	1	-	-	-	< 1	-	< 1	< 1	< 1	< 1	< 1	< 1
Diclofop-Methyl	0.09	-	-	-	< 0.09	-	< 0.09	< 0.09	< 0.09	< 0.09	< 0.10	< 0.09
Dinoseb	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diuron	1	-	-	-	< 1	-	< 1	< 1	< 1	< 1	< 1	< 1
Metolachlor	0.5	-	-	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Metribuzin	0.5	-	-	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Picloram	1	-	-	-	< 1	-	< 1	< 1	< 1	< 1	< 1	< 1
Prometryne	0.02	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Simazine	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachlorophenol, 2,3,4,6-	0.02	-	0.5	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Triallate	2	-	-	-	< 2	-	< 2	< 2	< 2	< 2	< 2	< 2
Trichlorophenol, 2,4,6-	0.02	-	0.5	2.9	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichlorophenoxyacetic Acid, 2,4,5- (2,4,5-T)	2	-	-	-	< 2	-	< 2	< 2	< 2	< 2	< 2	< 2
Trifluralin	0.1	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes on Groundwater Analytical Summary Tables

All Units in Micrograms per Litre (µg/L) Except Where Indicated Otherwise.

RL (Lab) = Laboratory Analytical Reporting Limit.

RL (MOE) = MOE 2011 Analytical Protocol Reporting Limit.

DUP = Quality Assurance/Quality Control Duplicate Sample.

RPD = Relative Percent Difference (Between Primary and Duplicate Samples); Only Calculated When Values > 10 X MDL.

MAC = Maximum acceptable Concentration.

AO/OG = Aesthetic Objective / Operational Guideline.

< = Less Than Laboratory Analytical Reporting Limit.

- = Not Defined, Not Calculated or No Reported Value.

* = GCDWQ for Total Trihalomethanes.

< 55	Parameter Concentration May Exceed Applicable Guideline and/or Standard Due to Elevated Reporting Limit.
183	Parameter Concentration Exceeds FIGQG Guideline for Residential/Parkland Property Use (Coarse Textured Soil).
183	Parameter Concentration Exceeds GCDWQ Guideline (AO/OG and/or MAC, Where Applicable).
183	Parameter Concentration Exceeds EPA Standard for All Types of Property Use (Table 2 - Potable Groundwater Scenario; Coarse Textured Soil).

FIGQG = Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Environment Canada (EC), Revised November 2015.

GCDWQ = Guidelines for Canadian Drinking Water Quality, Health Canada, October 2014.

EPA Standards = Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, Ontario Ministry of the Environment, April 15, 2011.

Groundwater Samples Collected for Metals Analysis Were Field Filtered; Dissolved Metals Results Reported by Laboratory.

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW08-1 MW08-1 Sand B15-05028-1 11-Mar-15	MW08-4 MW08-4 Sand B15-05028-2 11-Mar-15	MW08-5 MW08-5 Sand B15-05028-3 11-Mar-15	MW10-11 MW10-11 Sand B15-05028-4 11-Mar-15	MW10-11 DUP-4 Sand B15-05028-16 11-Mar-15	MW10-11 AVERAGE
Acetone	2	30	13000	-	-	2700	< 2	< 2	< 2	< 2	< 2	< 2
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	< 1	< 1	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	0.8	< 0.1	< 0.1	3.6	3.5	3.55
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	0.1	< 0.1	< 0.1	1	< 0.1	< 0.55
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	< 1	< 1	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	< 1	< 1	< 1	< 1	< 1
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	< 1	< 1	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	6.6	< 0.1	1.2	7.2	7.0	7.1
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW10-11 RPD (%)	MW10-15 MW10-15 Sand B15-05089-1 12-Mar-15	MW10-17 MW10-17 Sand B15-04879-1 12-Mar-15	MW10-19 MW10-19 Sand B15-05089-2 12-Mar-15	MW10-24 MW10-24 Sand B15-04879-2 10-Mar-15	MW10-24 MW10-24 Sand B15-12409-1 29-May-15
Acetone	2	30	13000	-	-	2700	-	< 2	< 2	< 2	< 2	< 2
Benzene	0.5	0.5	140	5	-	5	-	< 0.5	0.9	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.1	2	8500	100*	-	16	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	0.1	5	380	100*	-	25	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	-	< 1	< 1	< 1	< 1	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	-	< 0.1	0.2	< 0.1	0.3	0.2
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	-	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	-	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	2.8	1.0	4.7	< 0.1	0.2	0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	-	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	1	5	-	-	-	51	-	< 1	< 1	< 1	< 1	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	-	< 1	< 1	< 1	< 1	< 1
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	-	< 1	< 1	< 1	< 1	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	-	< 1	< 1	< 1	< 1	< 1
Styrene	0.5	2	72	-	-	5.4	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	-	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	0.5	83	60	24	24	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	2.8	5.9	20	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	0.1	5	-	-	-	150	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	-	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW10-25 MW10-25 Sand B15-04879-3 10-Mar-15	MW10-25 MW10-25 Sand B15-12409-2 29-May-15	MW13-31 MW13-31 Clay B15-05028-5 11-Mar-15	MW13-33 MW13-33 Clay B15-05028-6 11-Mar-15	MW15-38C MW15-38C Clay B15-05028-7 11-Mar-15	MW15-39 MW15-39 Sand B15-04879-4 10-Mar-15
Acetone	2	30	13000	-	-	2700	< 2	< 2	< 2	< 2	10	< 2
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	< 1	< 1	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	0.9	0.4	0.2	< 0.1	< 0.1	0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	< 1	< 1	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	< 1	< 1	< 1	4	< 1
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	< 1	< 1	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	< 0.1	< 0.1	1.9	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW15-39 MW15-39 Sand B15-12409-3 29-May-15	MW15-39 DUP-1 Sand B15-12409-5 29-May-15	MW15-39 AVERAGE	MW15-39 RPD (%)	MW15-40C MW15-40C Clay B15-05028-8 11-Mar-15	MW15-41 MW15-41 Sand B15-04879-5 10-Mar-15
Acetone	2	30	13000	-	-	2700	< 2	< 2	< 2	-	18	< 2
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	-	< 0.5	0.7
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	-	1.6	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	-	< 1	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	0.3	0.3	0.3	-	< 0.1	0.2
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	< 0.1	< 0.1	< 0.1	-	< 0.1	0.4
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	-	< 0.1	0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	0.2	0.2	0.2	-	< 0.1	3.4
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	-	< 0.1	0.8
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	-	< 1	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	< 1	< 1	-	11	< 1
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	-	< 1	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	-	< 1	< 1
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	-	< 0.4	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	< 0.1	< 0.1	< 0.1	-	< 0.1	15.7
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	-	< 0.4	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW15-41 MW15-41 Sand B15-12409-4 29-May-15	MW15-42C MW15-42C Clay B15-05028-9 11-Mar-15	MW15-43 MW15-43 Sand B15-04879-6 10-Mar-15	MW15-44C MW15-44C Clay B15-05028-10 11-Mar-15	MW15-44C DUP-3 Clay B15-05028-15 11-Mar-15	MW15-44C AVERAGE
Acetone	2	30	13000	-	-	2700	< 2	8	< 2	16	16	16
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	< 1	< 1	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	2.4	< 0.1	0.2	< 0.1	0.1	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	< 1	< 1	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	2	< 1	2	3	2.5
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	< 1	< 1	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	10.5	< 0.1	< 0.1	< 0.1	0.6	< 0.35
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW15-44C RPD (%)	MW15-45 MW15-45 Sand B15-04879-7 10-Mar-15	MW15-46C MW15-46C Clay B15-05028-11 11-Mar-15	MW15-47C MW15-47C Clay B15-04879-8 10-Mar-15	MW15-48C MW15-48C Clay B15-05028-12 11-Mar-15	MW15-49C MW15-49C Clay B15-04879-9 10-Mar-15
Acetone	2	30	13000	-	-	2700	-	< 2	11	< 2	10	< 2
Benzene	0.5	0.5	140	5	-	5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.1	2	8500	100*	-	16	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	0.1	5	380	100*	-	25	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	-	< 1	< 1	< 1	< 1	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	-	< 0.1	< 0.1	0.3	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	-	< 0.1	< 0.1	< 0.1	0.3	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	1	5	-	-	-	51	-	< 1	< 1	< 1	< 1	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	-	< 1	1	< 1	5	< 1
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	-	< 1	< 1	< 1	< 1	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	-	< 1	< 1	< 1	< 1	< 1
Styrene	0.5	2	72	-	-	5.4	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	-	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	0.5	83	60	24	24	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	-	< 0.1	< 0.1	< 0.1	2.1	< 0.1
Trichlorofluoromethane	0.1	5	-	-	-	150	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	-	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW15-50 MW15-50 Sand B15-04879-10 10-Mar-15	MW15-50 DUP-1 Sand B15-04879-11 10-Mar-15	MW15-50 AVERAGE	MW15-50 RPD (%)	MW15-51 MW15-51 Sand B15-05089-3 12-Mar-15	MW15-52 MW15-52 Sand B15-05089-4 12-Mar-15
Acetone	2	30	13000	-	-	2700	< 2	< 2	< 2	-	< 2	< 2
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	< 0.1	< 0.1	< 0.1	-	0.1	0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	-	< 1	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	-	2.6	0.2
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	-	0.9	< 0.1
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	-	< 0.3	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	-	< 1	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	< 1	< 1	-	< 1	< 1
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	-	< 1	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	-	< 1	< 1
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	-	< 0.4	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	< 0.1	< 0.1	< 0.1	-	26.5	0.7
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	-	< 0.2	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	-	< 0.4	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW15-53 MW15-53 Sand B15-05089-5 12-Mar-15	MW15-54 MW15-54 Sand B15-05028-13 11-Mar-15	MW15-54 DUP-2 Sand B15-05028-14 11-Mar-15	AVERAGE	RPD (%)	MW15-55 MW15-55 Sand B15-05151-1 13-Mar-15
Acetone	2	30	13000	-	-	2700	< 2	< 2	< 2	< 2	-	15
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	< 0.3	-	< 0.3
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	< 0.3	-	< 0.3
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	0.2	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	< 1	-	< 1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	< 0.3	-	< 0.3
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	< 1	-	< 1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	< 1	< 1	< 1	-	< 1
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	< 1	-	< 1
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	< 1	-	< 1
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	< 0.4	-	< 0.4
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	6.8	< 0.1	< 0.1	< 0.1	-	< 0.1
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	-	< 0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	< 0.4	-	< 0.4

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1					
							MW15-56 MW15-56 Sand B15-05089-6 12-Mar-15	MW15-57 MW15-57 Sand B15-05089-7 12-Mar-15	MW15-57 DUP-5 Sand B15-05089-9 12-Mar-15	MW15-57 AVERAGE	MW15-57 RPD (%)	MW15-63 MW15-63 Sand/Clay BLX710 04-Dec-15
Acetone	2	30	13000	-	-	2700	< 2	< 2	< 2	< 2	-	<10
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	< 0.5	-	<0.2
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	-	<1
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	< 0.3	-	<0.5
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	< 0.2	-	<0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	< 0.2	-	<0.2
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	< 0.3	-	<0.2
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.2
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	1.3	< 0.1	< 0.1	< 0.1	-	<0.5
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	< 0.2	-	<0.5
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	< 1	-	<1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.2
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.2
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	< 0.3	-	<2
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.2
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	< 0.5	-	<0.2
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	< 1	-	<1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	< 1	< 1	< 1	-	<10
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	< 1	-	<5.0
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	< 1	-	<0.5
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	< 0.5	-	<0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	< 0.4	-	<0.5
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	< 0.2	-	<0.2
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	< 0.5	-	<0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.2
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	1.2	< 0.1	< 0.1	< 0.1	-	<0.2
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.5
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	-	<0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	< 0.4	-	<0.2

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1			APEC 2		
							MW15-63 DUP-3 Sand/Clay BLX713 04-Dec-15	MW15-63 AVERAGE	MW15-63 RPD (%)	MW15-58 MW15-58 Sand B15-05089-8 12-Mar-15	MW15-59 MW15-59 Sand B15-05151-2 13-Mar-15	MW15-62 MW15-62 Sand/Clay BLX709 4-Dec-15
Acetone	2	30	13000	-	-	2700	<10	<10	-	< 2	6	<10
Benzene	0.5	0.5	140	5	-	5	<0.2	<0.2	-	< 0.5	< 0.5	<0.2
Bromodichloromethane	0.1	2	8500	100*	-	16	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Bromoform	0.1	5	380	100*	-	25	<1	<1	-	< 0.1	< 0.1	<1
Bromomethane	0.3	0.5	5.6	-	-	0.89	<0.5	<0.5	-	< 0.3	< 0.3	<0.5
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	<0.2	<0.2	-	< 0.2	< 0.2	<0.2
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	<0.2	<0.2	-	< 0.2	< 0.2	<0.2
Chloroform	0.3	1	1.8	100*	-	2.4	<0.2	<0.2	-	< 0.3	< 0.3	<0.2
Dibromochloromethane	0.1	2	1100	100*	-	25	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	<0.2	<0.2	-	< 0.1	< 0.1	<0.2
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	<0.5	<0.5	-	0.2	< 0.1	<0.5
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	<0.5	<0.5	-	< 0.2	< 0.2	<0.5
Dichlorodifluoromethane	1	2	-	-	-	590	<1	<1	-	< 1	< 1	<1
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	<0.2	<0.2	-	< 0.1	< 0.1	<0.2
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	<0.2	<0.2	-	< 0.1	< 0.1	<0.2
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	<2	<2	-	< 0.3	< 0.3	<2
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	<0.2	<0.2	-	< 0.1	< 0.1	<0.2
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	<0.2	<0.2	-	< 0.5	< 0.5	<0.2
Hexane	1	5	-	-	-	51	<1	<1	-	< 1	< 1	<1
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	<10	<10	-	< 1	1	<10
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	<5.0	<5.0	-	< 1	< 1	<5.0
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	<0.5	<0.5	-	< 1	< 1	<0.5
Styrene	0.5	2	72	-	-	5.4	<0.5	<0.5	-	< 0.5	< 0.5	<0.5
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	<0.5	<0.5	-	< 0.4	< 0.4	<0.5
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	<0.2	<0.2	-	< 0.2	< 0.2	<0.2
Toluene	0.5	0.5	83	60	24	24	<0.2	<0.2	-	< 0.5	< 0.5	<0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	<0.2	<0.2	-	< 0.1	< 0.1	<0.2
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	<0.2	<0.2	-	< 0.1	< 0.1	<0.2
Trichlorofluoromethane	0.1	5	-	-	-	150	<0.5	<0.5	-	< 0.1	< 0.1	<0.5
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	<0.2	<0.2	-	< 0.2	< 0.2	<0.2
Xylenes (total)	0.4	0.5	3900	90	20	300	<0.2	<0.2	-	< 0.4	< 0.4	<0.2

Table 13. Summary of Volatile Organic Compound Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	TRIP BLANK TRIP BLANK - B15-04879-12 10-Mar-15	TRIP BLANK TRIP BLANK - B15-05028-17 11-Mar-15	TRIP BLANK TRIP BLANK - B15-05089-10 12-Mar-15	TRIP BLANK TRIP BLANK - B15-05151-3 13-Mar-15	TRIP BLANK TRIP BLANK - BLX714 04-Dec-15	
Acetone	2	30	13000	-	-	2700	< 2	< 2	< 2	< 2	<10	
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	< 0.5	<0.2	
Bromodichloromethane	0.1	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Bromoform	0.1	5	380	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	<1	
Bromomethane	0.3	0.5	5.6	-	-	0.89	< 0.3	< 0.3	< 0.3	< 0.3	<0.5	
Carbon Tetrachloride	0.2	0.2	0.56	2	-	0.79	< 0.2	< 0.2	< 0.2	< 0.2	<0.2	
Chlorobenzene	0.2	0.5	1.3	80	≤ 30	30	< 0.2	< 0.2	< 0.2	< 0.2	<0.2	
Chloroform	0.3	1	1.8	100*	-	2.4	< 0.3	< 0.3	< 0.3	< 0.3	<0.2	
Dibromochloromethane	0.1	2	1100	100*	-	25	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	0.2	0.25	-	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	<0.2	
Dichlorobenzene, 1,2- (o-DCB)	0.1	0.5	0.7	200	≤ 3	3	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Dichlorobenzene, 1,3- (m-DCB)	0.1	0.5	42	-	-	59	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Dichlorobenzene, 1,4- (p-DCB)	0.2	0.5	26	5	≤ 1	1	< 0.2	< 0.2	< 0.2	< 0.2	<0.5	
Dichlorodifluoromethane	1	2	-	-	-	590	< 1	< 1	< 1	< 1	<1	
Dichloroethane, 1,1- (1,1-DCA)	0.1	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	<0.2	
Dichloroethane, 1,2- (1,2-DCA)	0.1	0.5	10	5	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Dichloroethylene, 1,1- (1,1-DCE)	0.1	0.5	39	14	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	<0.2	
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.1	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Dichloromethane (Methylene Chloride)	0.3	5	98	50	-	50	< 0.3	< 0.3	< 0.3	< 0.3	<2	
Dichloropropane, 1,2-	0.1	0.5	16	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	<0.2	
Dichloropropene, 1,3-	0.1	0.5	5.2	-	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	< 0.5	<0.2	
Hexane	1	5	-	-	-	51	< 1	< 1	< 1	< 1	<1	
Methyl Ethyl Ketone (MEK)	1	0.01	150000	-	-	1800	< 1	< 1	< 1	< 1	<10	
Methyl Isobutyl Ketone (MIBK)	1	20	58000	-	-	640	< 1	< 1	< 1	< 1	<5.0	
Methyl Tert Butyl Ether (MTBE)	1	20	340	-	15	15	< 1	< 1	< 1	< 1	<0.5	
Styrene	0.5	2	72	-	-	5.4	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	
Tetrachloroethane, 1,1,1,2-	0.1	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Tetrachloroethane, 1,1,1,2,2-	0.4	0.5	3.2	-	-	1	< 0.4	< 0.4	< 0.4	< 0.4	<0.5	
Tetrachloroethylene (PCE)	0.2	0.5	110	30	-	1.6	< 0.2	< 0.2	< 0.2	< 0.2	<0.2	
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	< 0.5	<0.2	
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.1	0.5	640	-	-	200	< 0.1	< 0.1	< 0.1	< 0.1	<0.2	
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.1	0.5	4.7	-	-	4.7	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Trichloroethylene (TCE)	0.1	0.5	20	5	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	<0.2	
Trichlorofluoromethane	0.1	5	-	-	-	150	< 0.1	< 0.1	< 0.1	< 0.1	<0.5	
Vinyl Chloride	0.2	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	<0.2	
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	< 0.4	<0.2	

Table 14. Summary of Petroleum Hydrocarbon Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L				
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 1				
							MW08-1 MW08-1 Sand B15-05028-1 11-Mar-15	MW15-54 MW15-54 Sand B15-05028-13 11-Mar-15	MW15-54 DUP-2 Sand B15-05028-14 11-Mar-15	MW15-54 AVERAGE	MW15-54 RPD (%)
Benzene	0.5	0.5	140	5	-	5	< 0.5	< 0.5	< 0.5	< 0.5	-
Toluene	0.5	0.5	83	60	24	24	< 0.5	< 0.5	< 0.5	< 0.5	-
Ethylbenzene	0.5	0.5	11000	140	1.6	2.4	< 0.5	< 0.5	< 0.5	< 0.5	-
Xylenes, m,p-	0.4	-	-	-	-	-	< 0.4	< 0.4	< 0.4	< 0.4	-
Xylenes, o-	0.1	-	-	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	-
Xylenes (total)	0.4	0.5	3900	90	20	300	< 0.4	< 0.4	< 0.4	< 0.4	-
PHC F1 (C6 - C10)	20	25	810	-	-	750	< 20	< 20	< 20	< 20	-
PHC F2 (>C10 - C16)	50	100	1300	-	-	150	< 50	< 50	< 50	< 50	-
PHC F3 (>C16 - C34)	400	500	-	-	-	500	< 400	< 400	< 400	< 400	-
PHC F4 (>C34)	400	500	-	-	-	500	< 400	< 400	< 400	< 400	-

Table 15. Summary of Polycyclic Aromatic Hydrocarbon Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L			
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	AEC 6			
							MW15-60 MW15-60 Sand/Clay BLX707 04-Dec-15	MW15-60 DUP-1 Sand/Clay BLX711 04-Dec-15	MW15-60 AVERAGE	MW15-60 RPD (%)
Acenaphthene	0.01	1	5.8	-	-	4.1	< 0.01	< 0.01	< 0.01	-
Acenaphthylene	0.01	1	46	-	-	1	< 0.01	< 0.01	< 0.01	-
Anthracene	0.01	0.1	0.012	-	-	2.4	< 0.01	< 0.01	< 0.01	-
Benzo(a)anthracene	0.01	0.2	0.018	-	-	1	< 0.01	< 0.01	< 0.01	-
Benzo(a)pyrene	0.01	0.01	0.01	0.01	-	0.01	< 0.01	< 0.01	< 0.01	-
Benzo(b+j)fluoranthene	0.01	-	0.48	-	-	-	< 0.01	< 0.01	< 0.01	-
Benzo(g,h,i)perylene	0.01	0.2	0.17	-	-	0.2	< 0.01	< 0.01	< 0.01	-
Benzo(k)fluoranthene	0.01	0.1	0.48	-	-	0.1	< 0.01	< 0.01	< 0.01	-
Biphenyl, 1,1'-	0.01	0.5	-	-	-	0.5	< 0.01	< 0.01	< 0.01	-
Chrysene	0.01	0.1	0.1	-	-	0.1	< 0.01	< 0.01	< 0.01	-
Dibenzo(a,h)anthracene	0.01	0.2	0.26	-	-	0.2	< 0.01	< 0.01	< 0.01	-
Fluoranthene	0.01	0.4	0.04	-	-	0.41	< 0.01	< 0.01	< 0.01	-
Fluorene	0.01	0.5	3	-	-	120	< 0.01	< 0.01	< 0.01	-
Indeno(1,2,3,c,d)pyrene	0.01	0.2	0.21	-	-	0.2	< 0.01	< 0.01	< 0.01	-
Methylnaphthalene, 1-	0.01	2	180	-	-	-	< 0.01	< 0.01	< 0.01	-
Methylnaphthalene, 2-	0.01	2	180	-	-	-	< 0.01	< 0.01	< 0.01	-
Methylnaphthalene, 1- + 2-	0.014	2	-	-	-	3.2	<0.014	<0.014	<0.014	-
Naphthalene	0.01	2	1.1	-	-	11	< 0.01	< 0.01	< 0.01	-
Phenanthrene	0.01	0.1	0.4	-	-	1	< 0.01	< 0.01	< 0.01	-
Pyrene	0.01	0.2	0.025	-	-	4.1	< 0.01	< 0.01	< 0.01	-

Table 16. Summary of Heavy Metal Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L				
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	APEC 3				AEC 6
							MW15-61 MW15-61 Sand/Clay BLX708 04-Dec-15	MW15-61 DUP-2 Sand/Clay BLX712 04-Dec-15	AVERAGE	RPD (%)	MW15-60 MW15-60 Sand/Clay BLX707 04-Dec-15
pH (Unitless)	-	-	6.5 - 9	-	6.5 - 8.5	-	7.18	7.36	7.28	2.5	7.17
Hardness (CaCO ₃ ; mg/L)	0.5	-	-	-	-	-	215	189	202	12.9	146
Aluminum	0.5	-	100 ¹	-	100	-	31.4	27.6	29.5	12.9	46.4
Antimony	0.02	0.5	2000	6	-	6	0.031	0.044	0.0375	-	< 0.02
Arsenic	0.02	1	5	10	-	25	0.926	0.708	0.817	26.7	0.171
Barium	0.02	2	500	1000	-	1000	23.8	20.9	22.35	13.0	17.9
Beryllium	0.01	0.5	5.3	-	-	4	< 0.01	< 0.01	< 0.01	-	0.014
Bismuth	0.005	-	-	-	-	-	0.006	< 0.005	0.006	-	0.005
Boron	10	10	5000	5000	-	5000	15	14	14.5	-	20
Cadmium	0.005	0.5	0.017	5	-	2.7	0.008	< 0.005	0.008	-	< 0.005
Chromium (Total)	0.1	10	8.9	50	-	50	< 0.1	< 0.1	< 0.1	-	0.55
Chromium (VI)	0.5	10	-	-	-	25	< 0.5	< 0.5	< 0.5	-	< 0.5
Cobalt	0.005	1	-	-	-	3.8	0.922	0.829	0.8755	10.6	0.18
Copper	0.05	5	3.27 - 4 ²	-	≤ 1000	87	0.51	0.387	0.4485	27.4	0.27
Iron	1	-	300	-	≤ 300	-	1500	1250	1375	18.2	1750
Lead	0.005	1	5.15 - 7 ³	10	-	10	0.02	< 0.005	0.02	-	0.02
Lithium	0.5	-	-	-	-	-	< 0.5	1.04	1.04	-	< 0.5
Manganese	0.05	-	-	-	≤ 50	-	2170	1760	1965	20.9	148
Mercury	0.01	0.1	0.026	1	-	0.29	< 0.01	< 0.01	< 0.01	-	< 0.01
Molybdenum	0.05	0.5	73	-	-	70	2.77	2.63	2.7	5.2	0.773
Nickel	0.02	1	127.43 - 150 ⁴	-	-	100	1.43	1.26	1.345	12.6	0.367
Selenium	0.04	5	1	50	-	10	0.087	0.073	0.080	-	< 0.04
Silicon	50	-	-	-	-	-	3760	3410	3585	9.8	6500
Silver	0.005	0.3	0.1	-	-	1.5	< 0.005	< 0.005	< 0.005	-	< 0.005
Strontium	0.05	-	-	-	-	-	225	202	213.5	10.8	110
Thallium	0.002	0.5	0.8	-	-	2	0.004	0.002	0.003	-	0.004
Tin	0.2	-	-	-	-	-	< 0.2	< 0.2	< 0.2	-	< 0.2
Titanium	0.5	-	100	-	-	-	< 0.5	< 0.5	< 0.5	-	1.02
Uranium	0.002	2	15	20	-	20	0.337	0.325	0.331	3.6	0.037
Vanadium	0.2	0.5	-	-	-	6.2	< 0.2	< 0.2	< 0.2	-	< 0.2
Zinc	0.1	5	10	-	≤ 5000	1100	3.79	2.67	3.23	34.7	4.26
Zirconium	0.1	-	-	-	-	-	0.1	< 0.1	< 0.1	-	0.18

Notes:

1. Aluminum FIGQG = 100 µg/L when pH ≥ 6.5.
2. Copper FIGQG = 3.27 µg/L for hardness (as CaCO₃) value of 146 mg/L. Copper FIGQG = 4 µg/L for all other hardness (as CaCO₃) values reported.
3. Lead FIGQG = 5.15 µg/L for hardness (as CaCO₃) value of 146 mg/L. Lead FIGQG = 7 µg/L for all other hardness (as CaCO₃) values reported.
4. Nickel FIGQG = 127.43 µg/L for hardness (as CaCO₃) value of 146 mg/L. Nickel FIGQG = 150 µg/L for all other hardness (as CaCO₃) values reported.

Table 17. Summary of General Chemistry Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L				
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	APEC 3				AEC 6
							MW15-61 MW15-61 Sand/Clay BLX708 04-Dec-15	MW15-61 DUP-2 Sand/Clay BLX712 04-Dec-15	AVERAGE	RPD (%)	MW15-60 MW15-60 Sand/Clay BLX707 04-Dec-15
pH (Unitless)	-	-	6.5 - 9	-	6.5 - 8.5	-	7.18	7.36	7.28	2.5	7.17
Hardness (CaCO ₃ ; mg/L)	0.5	-	-	-	-	-	215	189	202	12.9	146
Calcium	50	-	-	-	-	-	68900	60500	64700	13.0	42200
Chloride	1000	1000	120000	-	250000	790000	-	1000	-	-	3000
Magnesium	50	-	-	-	-	-	10500	9160	9830	13.6	9820
Potassium	50	-	-	-	-	-	1470	1280	1375	13.8	885
Sodium	50	5000	-	-	≤200000	490000	4310	3880	4095	10.5	4870
Sulphur	3000	-	-	-	-	-	3700	3300	3500	-	10700

Table 18. Summary of Organochlorine Pesticide Groundwater Analyses

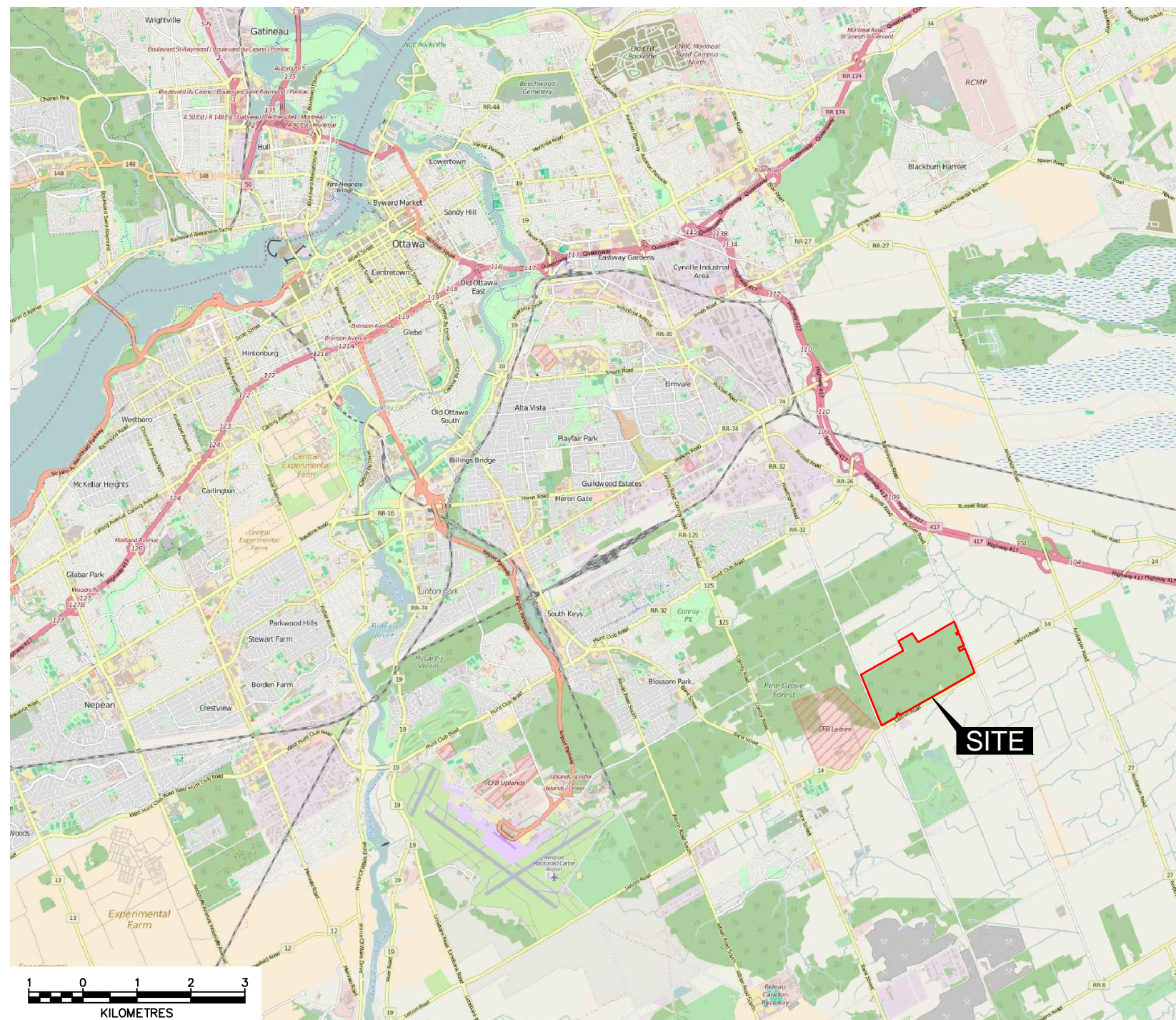
Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L	
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	APEC 3	AEC 6
							MW15-61 MW15-61 Sand/Clay BLX708 04-Dec-15	MW15-60 MW15-60 Sand/Clay BLX707 04-Dec-15
Aldrin	0.003	0.01	3	-	-	0.35	<0.003	<0.003
Aldrin + Dieldrin	0.003	-	-	-	-	-	<0.003	<0.003
Chlordane, α	0.003	-	-	-	-	-	<0.003	<0.003
Chlordane, γ	0.003	-	-	-	-	-	<0.003	<0.003
Chlordane (α + γ)	0.003	0.06	15	-	-	7	<0.003	<0.003
Chlorothalonil	0.003	-	0.18	-	-	-	<0.003	<0.003
DDD, o,p' (2,4')	0.001	-	-	-	-	-	<0.001	<0.001
DDD, p,p' (4,4')	0.001	-	-	-	-	-	<0.001	<0.001
DDD (o,p' + p, p')	0.001	0.05	-	-	-	10	<0.001	<0.001
DDE, o,p' (2,4')	0.001	-	-	-	-	-	<0.001	<0.001
DDE, p,p' (4,4')	0.001	-	-	-	-	-	<0.001	<0.001
DDE (o,p' + p, p')	0.001	0.01	-	-	-	10	<0.001	<0.001
DDT, o,p' (2,4')	0.001	-	-	-	-	-	<0.001	<0.001
DDT, p,p' (4,4')	0.001	-	-	-	-	-	<0.001	<0.001
DDT (o,p' + p, p')	0.001	0.05	-	-	-	2.8	<0.001	<0.001
DDT + Metabolites	0.001	-	0.001	-	-	-	<0.001	<0.001
Dieldrin	0.003	0.05	0.056	-	-	0.35	<0.003	<0.003
Endosulfan I	0.003	-	-	-	-	-	<0.003	<0.003
Endosulfan II	0.003	-	-	-	-	-	<0.003	<0.003
Endosulfan (I + II)	0.003	0.05	0.02	-	-	1.5	<0.003	<0.003
Endosulfan Sulfate	0.003	-	-	-	-	-	<0.003	<0.003
Endrin	0.005	0.05	0.036	-	-	0.48	<0.005	<0.005
Endrin Aldehyde	0.003	-	-	-	-	-	<0.003	<0.003
Endrin Ketone	0.003	-	-	-	-	-	<0.003	<0.003
Heptachlor	0.003	0.01	-	-	-	1.5	<0.003	<0.003
Heptachlor Epoxide	0.003	0.01	0.0038	-	-	0.048	<0.003	<0.003
Hexachlorobenzene	0.003	0.01	1.2	-	-	1	<0.003	<0.003
Hexachlorobutadiene	0.004	0.01	1.3	-	-	0.44	<0.004	<0.004
Hexachlorocyclohexane, α	0.003	-	-	-	-	-	<0.003	<0.003
Hexachlorocyclohexane, β	0.003	-	-	-	-	-	<0.003	<0.003
Hexachlorocyclohexane, δ	0.003	-	-	-	-	-	<0.003	<0.003
Hexachlorocyclohexane, γ (Lindane)	0.003	0.01	0.01	-	-	1.2	<0.003	<0.003
Hexachlorocyclopentadiene	0.01	-	-	-	-	-	<0.01	<0.01
Hexachloroethane	0.007	0.01	-	-	-	2.1	<0.007	<0.007
Methoxychlor	0.003	0.05	0.03	-	-	6.5	<0.003	<0.003
Mirex	0.003	-	-	-	-	-	<0.003	<0.003
Octachlorostyrene	0.003	-	-	-	-	-	<0.003	<0.003
Oxychlordane	0.003	-	-	-	-	-	<0.003	<0.003

Table 19. Summary of Other Pesticide Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L	
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	APEC 3	AEC 6
							MW15-61 MW15-61 Sand/Clay BLX708 04-Dec-15	MW15-60 MW15-60 Sand/Clay BLX707 04-Dec-15
Aldicarb	0.1	-	0.15	-	-	-	< 0.1	< 0.1
Azinphos-Methyl	0.001	-	0.01	20	-	-	< 0.001	< 0.001
Bendiocarb	0.1	-	-	-	-	-	< 0.1	< 0.1
Captan	0.003	-	1.3	-	-	-	< 0.003	< 0.003
Carbaryl	0.1	-	0.2	90	-	-	< 0.1	< 0.1
Carbofuran	0.1	-	1.8	90	-	-	< 0.1	< 0.1
Chlorpyrifos	0.0008	-	0.002	90	-	-	< 0.0008	< 0.0008
Deltamethrin	0.0004	-	0.0004	-	-	-	< 0.0004	0.0031
Diazinon	0.002	-	0.003	20	-	-	< 0.002	< 0.002
Dimethoate	0.003	-	6.2	20	-	-	< 0.003	< 0.003
Imidacloprid	0.1	-	0.23	-	-	-	< 0.1	< 0.1
IPBC	0.1	-	1.9	-	-	-	< 0.1	< 0.1
Malathion	0.002	-	0.1	190	-	-	< 0.002	< 0.002
Methoprene	0.003	-	0.09	-	-	-	< 0.003	< 0.003
Parathion	0.0004	-	0.013	-	-	-	< 0.0004	< 0.0004
Parathion-Methyl	0.1	-	-	-	-	-	< 0.1	< 0.1
Pentachlorophenol	0.08	-	0.5	60	30	30	< 0.08	< 0.08
Permethrin	0.0005	-	0.001	-	-	-	< 0.0005	0.0042
Phorate	0.004	-	-	2	-	-	< 0.007	< 0.004
Terbufos	0.0002	-	-	1	-	-	< 0.0002	< 0.0002

Table 20. Summary of Herbicide Groundwater Analyses

Parameters	RL (Lab)	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L	
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date			Residential/ Parkland	MAC	AO/OG	Residential/ Parkland/ Institutional	APEC 3	AEC 6
							MW15-61 MW15-61 Sand/Clay BLX708 04-Dec-15	MW15-60 MW15-60 Sand/Clay BLX707 04-Dec-15
Atrazine	0.1	-	-	-	-	-	< 0.1	< 0.1
Atrazine-Desethyl	0.1	-	-	-	-	-	< 0.1	< 0.1
Atrazine-Desisopropyl	0.1	-	-	-	-	-	< 0.1	< 0.1
Atrazine + Metabolites	0.3	-	1.8	5	-	-	< 0.3	< 0.3
Bentazon	0.08	-	-	-	-	-	< 0.08	< 0.08
Bromacil	0.1	-	5	-	-	-	< 0.1	< 0.1
Bromoxynil	0.02	-	5	5	-	-	< 0.02	< 0.02
Butanoic Acid, 4-(2,4-Dichlorophenoxy), (2,4-DB)	0.08	-	-	-	-	-	< 0.08	< 0.08
Chloramben	0.08	-	-	-	-	-	< 0.08	< 0.08
Cyanazine	0.1	-	2	-	-	-	< 0.1	< 0.1
Dicamba	0.005	-	10	120	-	-	< 0.005	< 0.005
Dichlorobenzoic Acid, 3,5-	0.08	-	-	-	-	-	< 0.08	< 0.08
Dichlorophenoxyacetic Acid, 2,4- (2,4-D)	0.05	-	4	100	-	-	< 0.05	< 0.05
Dichloroprop (2,4-DP)	0.08	-	-	-	-	-	< 0.08	< 0.08
Diclofop-Methyl	0.0007	-	6.1	9	-	-	< 0.0007	< 0.0007
Dinoseb	0.02	-	0.05	-	-	-	< 0.020	< 0.020
Glyphosate	10	-	65	280	-	-	< 10	< 10
Imazapyr	0.1	-	-	-	-	-	< 0.1	< 0.1
Linuron	0.07	-	7	-	-	-	< 0.07	< 0.07
MCPA	0.02	-	2.6	100	-	-	< 0.02	< 0.02
MCPP	0.08	-	-	-	-	-	< 0.08	< 0.08
Metolachlor	0.1	-	7.8	50	-	-	< 0.1	< 0.1
Metribuzin	0.0004	-	1	80	-	-	< 0.0004	< 0.0004
Picloram	0.2	-	29	190	-	-	< 0.2	< 0.2
Silvex (2,4,5-TP)	0.08	-	-	-	-	-	< 0.08	< 0.08
Simazine	0.1	-	10	10	-	-	< 0.1	< 0.1
Tebuthiuron	0.1	-	1.6	-	-	-	< 0.1	< 0.1
Triallate	0.0003	-	0.24	-	-	-	< 0.0003	< 0.0003
Trichlorophenoxyacetic Acid, 2,4,5- (2,4,5-T)	0.08	-	-	-	-	-	< 0.08	< 0.08
Trifluralin	0.0003	-	0.2	45	-	-	< 0.0003	< 0.0003



LEGEND



SOURCE: WWW.OPENSTREETMAP.ORG

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

KEY PLAN

**PHASE II ESA 2015
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO**

CLIENT

NATIONAL CAPITAL COMMISSION

DRAWN BY:

SMP

CHECKED BY:

KDH

DATE:

MARCH 2016

PROJECT NO:

TZ14024

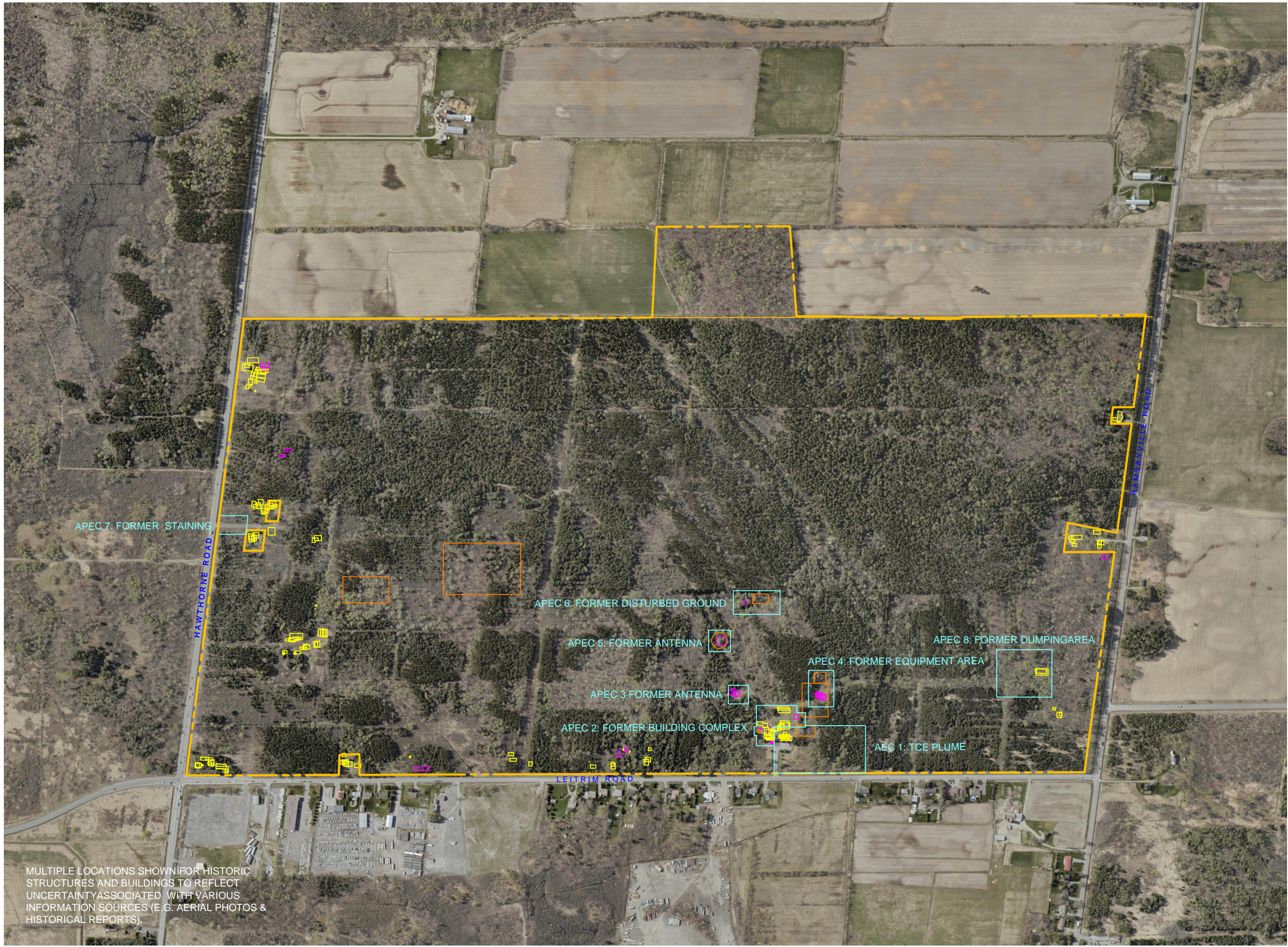
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FIGURE NO:

1

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II MARCH 2016 - FIGURE 2.DWG



MULTIPLE LOCATIONS SHOWN FOR HISTORIC STRUCTURES AND BUILDINGS TO REFLECT UNCERTAINTY ASSOCIATED WITH VARIOUS INFORMATION SOURCES (E.G. AERIAL PHOTOS & HISTORICAL REPORTS).

LEGEND

- SITE BOUNDARY
- HISTORIC STRUCTURES
- HISTORIC BUILDINGS
- HISTORIC DISTURBED AREAS
- AEC/APEC FOR INVESTIGATION, 2015 PH II ESA

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

SITE WIDE AEC & APEC FROM 2015 PHASE I ESA FINDINGS

PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

SCALE: 1 : 8,000

PROJECT NO: TZ14024

FIGURE NO:

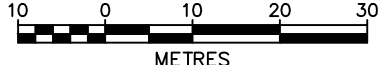

2

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



LEGEND

- SITE BOUNDARY
- HISTORIC STRUCTURES
- HISTORIC BUILDINGS
- AEC/APEC PROPOSED FOR INVESTIGATION, 2015 PH II ESA
- BOREHOLE
- MONITORING WELL (SHALLOW SAND)
- MONITORING WELL (INTERMEDIATE CLAY)
- MONITORING WELL (DEEP CLAY)
- TEST PIT (2015)
- SURFICIAL SOIL SAMPLE (2015)



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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

PHASE II ESA SAMPLING LOCATIONS
AEC 1, APEC 2, 3, & 4
SOUTH PORTION OF SITE

PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
NATIONAL PROTECTIVE COMMISSION
LEITRIM ROAD - P19
OTTAWA, ONTARIO

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

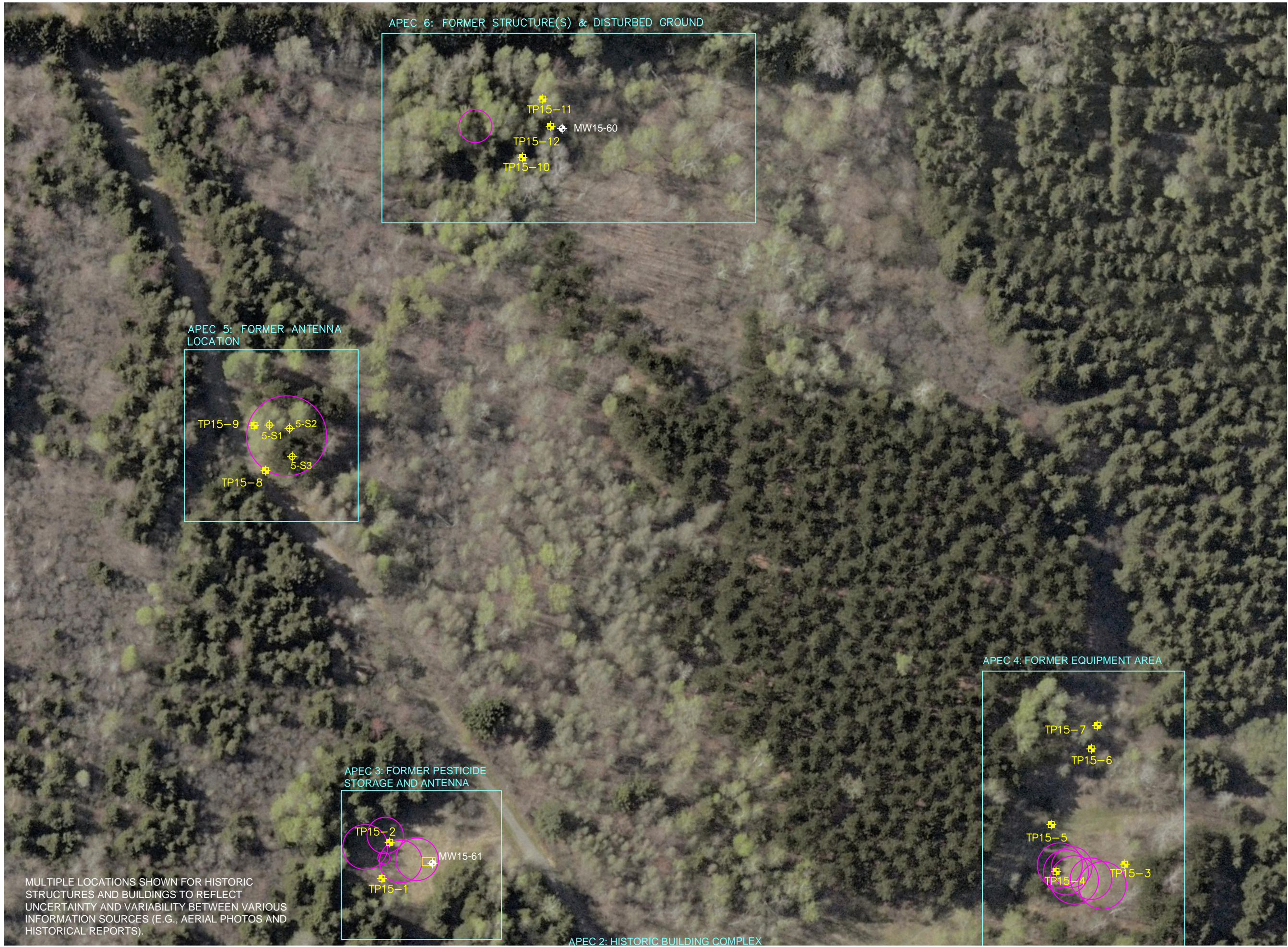
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PROJECT NO: TZ14024

FIGURE NO:

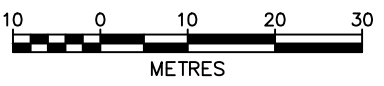

3A

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



LEGEND

- SITE BOUNDARY
- HISTORIC STRUCTURES
- HISTORIC BUILDINGS
- AEC/APEC PROPOSED FOR INVESTIGATION, 2015 PH II ESA
- ⊕ BOREHOLE
- ⊕ MONITORING WELL (SHALLOW SAND)
- ⊕ MONITORING WELL (INTERMEDIATE CLAY)
- ⊕ MONITORING WELL (DEEP CLAY)
- ⊕ TEST PIT (2015)
- ⊕ SURFICIAL SOIL SAMPLE (2015)



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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

PHASE II ESA SAMPLING LOCATIONS
APECS 3, 4, 5, & 6
NORTH PORTION OF SITE

PROJECT:

PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

SCALE: 1 : 850

PROJECT NO: TZ14024

FIGURE NO:

3B

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_CW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



MULTIPLE LOCATIONS SHOWN FOR HISTORIC STRUCTURES AND BUILDINGS TO REFLECT UNCERTAINTY AND VARIABILITY BETWEEN VARIOUS INFORMATION SOURCES (E.G., AERIAL PHOTOS AND HISTORICAL REPORTS).

LEGEND

- SITE BOUNDARY
- HISTORIC STRUCTURES
- HISTORIC BUILDINGS
- AEC/APEC PROPOSED FOR INVESTIGATION, 2015 PH II ESA
- TEST PIT (2015)

10 0 10 20 30
METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

PHASE II ESA SAMPLING LOCATIONS
APEC 8
EAST PORTION OF SITE

PROJECT:

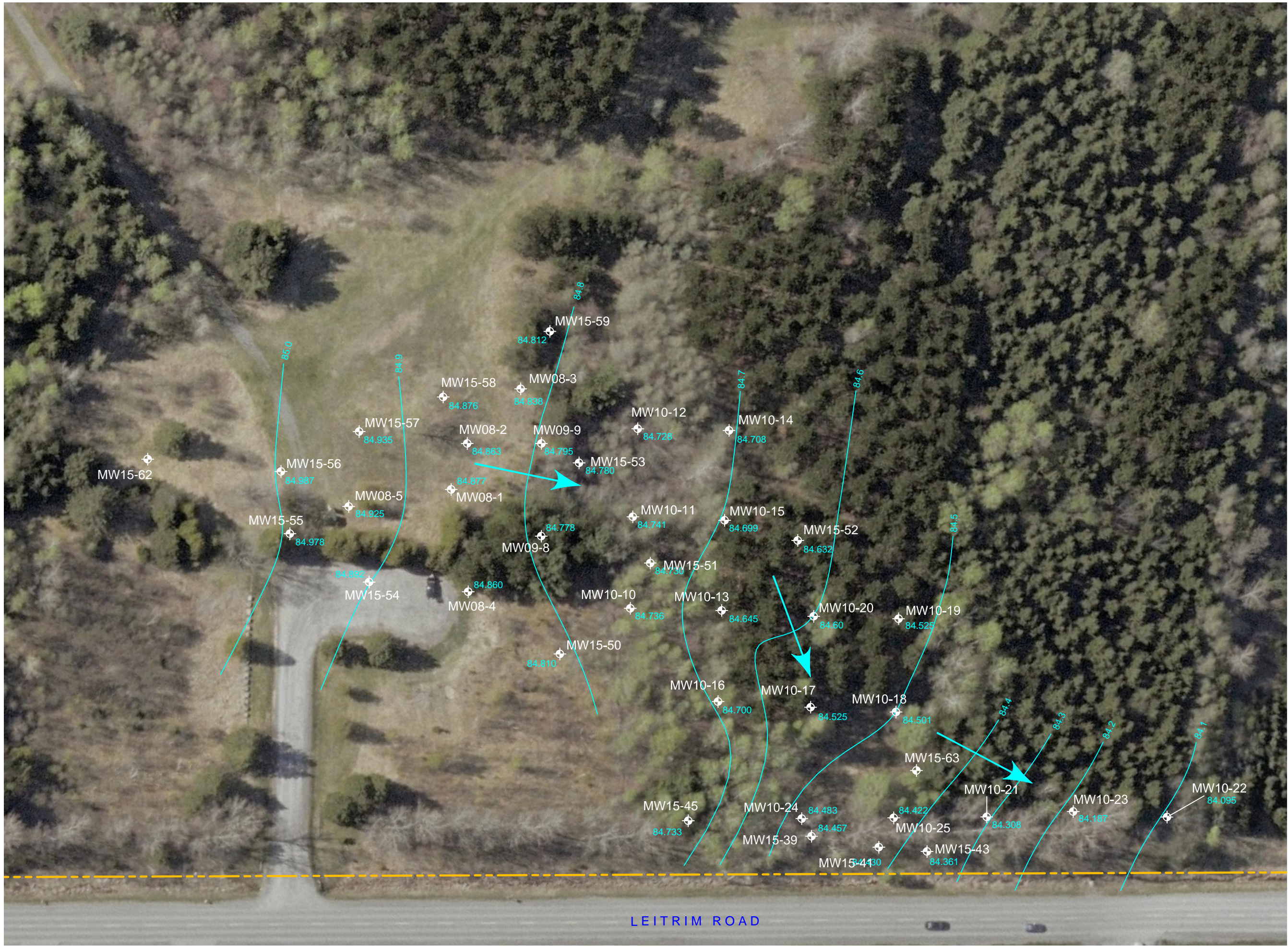
PHASE II ENVIRONMENTAL SITE ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY:	SMP
DRAWN BY:	JFT
CHECKED BY:	KDH
DATE:	MARCH 2016
SCALE:	1 : 850
PROJECT NO:	TZ14024
FIGURE NO:	3C

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



LEGEND

- SITE BOUNDARY
- MONITORING WELL (SHALLOW SAND)
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW DIRECTION

10 0 10 20 30
METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

GROUNDWATER ELEVATION
CONTOUR PLAN
SHALLOW SAND AQUIFER

PROJECT:

PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY:	SMP
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CHECKED BY:	KDH
DATE:	MARCH 2016
SCALE:	1 : 800
PROJECT NO:	TZ14024
FIGURE NO:	4A

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



LEGEND

SITE BOUNDARY

MONITORING WELL
(INTERMEDIATE CLAY)

GROUNDWATER ELEVATION
CONTOUR

INFERRED GROUNDWATER
FLOW DIRECTION

10 0 10 20 30
METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

GROUNDWATER ELEVATION
CONTOUR PLAN
INTERMEDIATE CLAY AQUIFER

PROJECT:
PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

SCALE: 1 : 800

PROJECT NO: TZ14024

FIGURE NO:

4B

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



LEGEND

- SITE BOUNDARY
- MONITORING WELL (DEEP CLAY)
- GROUNDWATER ELEVATION CONTOUR
- INFERRED GROUNDWATER FLOW DIRECTION

10 0 10 20 30
METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

GROUNDWATER ELEVATION
CONTOUR PLAN
DEEP CLAY AQUIFER

PROJECT:

PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

SCALE: 1 : 800

PROJECT NO: TZ14024

FIGURE NO:

4C



P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG

TP15-5	Conc (µg/g)
TP5-1 (0.1 - 0.2 mbgs)	
Parameter	Oct-15
pH	5.22

BH15-10	Conc (µg/g)
SS3 (2.25 mbgs)	
Parameter	Feb-15
Trichloroethylene	0.04










MW15-51	Conc (µg/g)
SS5 (3.3 mbgs)	
Parameter	Feb-15
Trichloroethylene	0.46

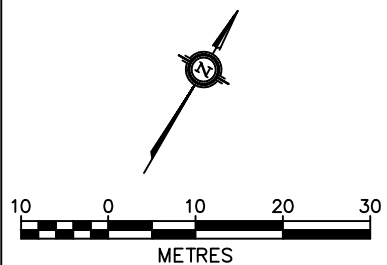
MW15-44C	Conc (µg/g)
SS5 (3.1 mbgs)	
Parameter	Feb-15
Trichloroethylene	0.21

MW15-40C	Conc (µg/g)
SS4 (2.85 mbgs)	
Parameter	Feb-15
Trichloroethylene	0.85

Sample Name	Conc.
Sample Depth (mbgs)	(µg/g)*
Parameter (units of ug/g)	##
Parameter (units other than ug/g)*	##

PARAMETERS DISPLAYED HERE ARE AT CONCENTRATIONS IN EXCESS OF 1 OR MORE FEDERAL GUIDELINES OR PROVINCIAL STANDARDS APPLICABLE AT THE SITE. HIGHLIGHTING DENOTING EXCEEDANCES AS PER DATA TABLES, I.E. BOLD HIGHLIGHTING OF EXCEEDANCES OF FEDERAL CRITERIA, UNDERLINING OF EXCEEDANCES OF PROVINCIAL CRITERIA, AND BOTH HIGHLIGHTS FOR RESULTS EXCEEDING BOTH SETS OF CRITERIA

- LEGEND
- | | |
|---|-------------------------------------|
|  | SITE BOUNDARY |
|  | AEC/APEC 2015 PH II ESA |
|  | TCE CONTOUR |
|  | BOREHOLE |
|  | MONITORING WELL (SHALLOW SAND) |
|  | MONITORING WELL (INTERMEDIATE CLAY) |
|  | MONITORING WELL (DEEP CLAY) |
|  | TEST PIT (2015) |
|  | SURFICIAL SOIL SAMPLE (2015) |



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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

SOIL EXCEEDANCES
SOUTH PORTION OF SITE

PROJECT:
PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

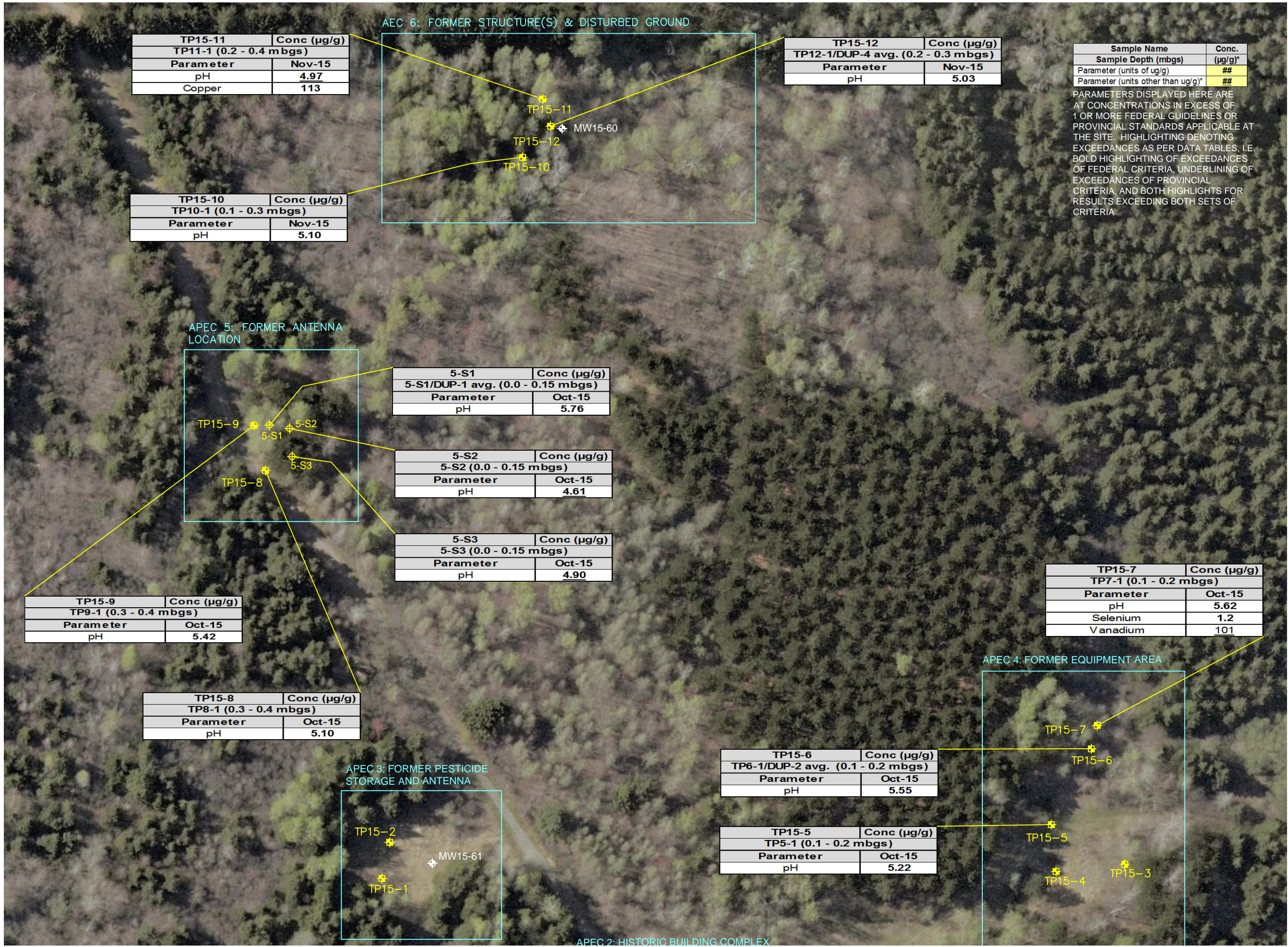
DATE: MARCH 2016

SCALE: 1 : 800

PROJECT NO: TZ14024

FIGURE NO:

5A



LEGEND

--- SITE BOUNDARY

AEC/APEC 2015 PH II ESA

BOREHOLE

MONITORING WELL (SHALLOW SAND)

MONITORING WELL (INTERMEDIATE CLAY)

MONITORING WELL (DEEP CLAY)

TEST PIT (2015)

SURFICIAL SOIL SAMPLE (2015)

10 0 10 20 30
METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

SOIL EXCEEDANCES
NORTH PORTION OF SITE

PROJECT:

PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

SCALE: 1 : 850

PROJECT NO: TZ14024

FIGURE NO:

5B

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CADITZ14024 PHASE II LOCATIONS - MARCH 2015.DWG

Sample Name	Conc.
Sample Depth (mbgs)	(µg/g)*
Parameter (units of ug/g)	##
Parameter (units other than ug/g)*	##

PARAMETERS DISPLAYED HERE ARE AT CONCENTRATIONS IN EXCESS OF 1 OR MORE FEDERAL GUIDELINES OR PROVINCIAL STANDARDS APPLICABLE AT THE SITE. HIGHLIGHTING DENOTING EXCEEDANCES AS PER DATA TABLES, I.E. BOLD HIGHLIGHTING OF EXCEEDANCES OF FEDERAL CRITERIA, UNDERLINING OF EXCEEDANCES OF PROVINCIAL CRITERIA, AND BOTH HIGHLIGHTS FOR RESULTS EXCEEDING BOTH SETS OF CRITERIA

TP15-14	Conc (µg/g)
8-S3 (0.0 - 0.15 mbgs)	
Parameter	Oct-15
Acenaphthylene	0.164
Benzo(a)anthracene	1.16
Benzo(a)pyrene	<u>1.22</u>
Benzo(b)fluoranthene	1.84
Dibenzo(a,h)anthracene	0.162
Fluoranthene	<u>1.41</u>
Indeno(1,2,3,c,d)pyrene	<u>0.618</u>
Naphthalene	0.018
Phenanthrene	0.225
IACR	22.76
TP14-1 (0.3 - 0.4 mbgs)	
Parameter	Oct-15
IACR	1.81

TP15-13	Conc (µg/g)
8-S4 (0.0 - 0.15 mbgs)	
Parameter	Oct-15
pH	5.66
IACR	1.05
TP13-1/DUP-3 avg. (0.1 - 0.3 mbgs)	
Parameter	Nov-15
pH	5.22

TP15-16	Conc (µg/g)
8-S2 (0.0 - 0.15 mbgs)	
Parameter	Oct-15
Zinc	310

TP15-15	Conc (µg/g)
8-S1 (0.0 - 0.15 mbgs)	
Parameter	Oct-15
pH	5.69
Zinc	202
TP15-1 (0.4 - 0.6 mbgs)	
Parameter	Nov-15
pH	5.99

AEC 8: FORMER DUMPING AREA

LEGEND

SITE BOUNDARY

AEC/APEC 2015 PH II ESA

TEST PIT (2015)

100

10

20

30

METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

SOIL EXCEEDANCES
APEC 8
EAST PORTION OF SITE

PROJECT:

PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY:

SMP

DRAWN BY:

JFT

CHECKED BY:

KDH

DATE:

MARCH 2016

SCALE:

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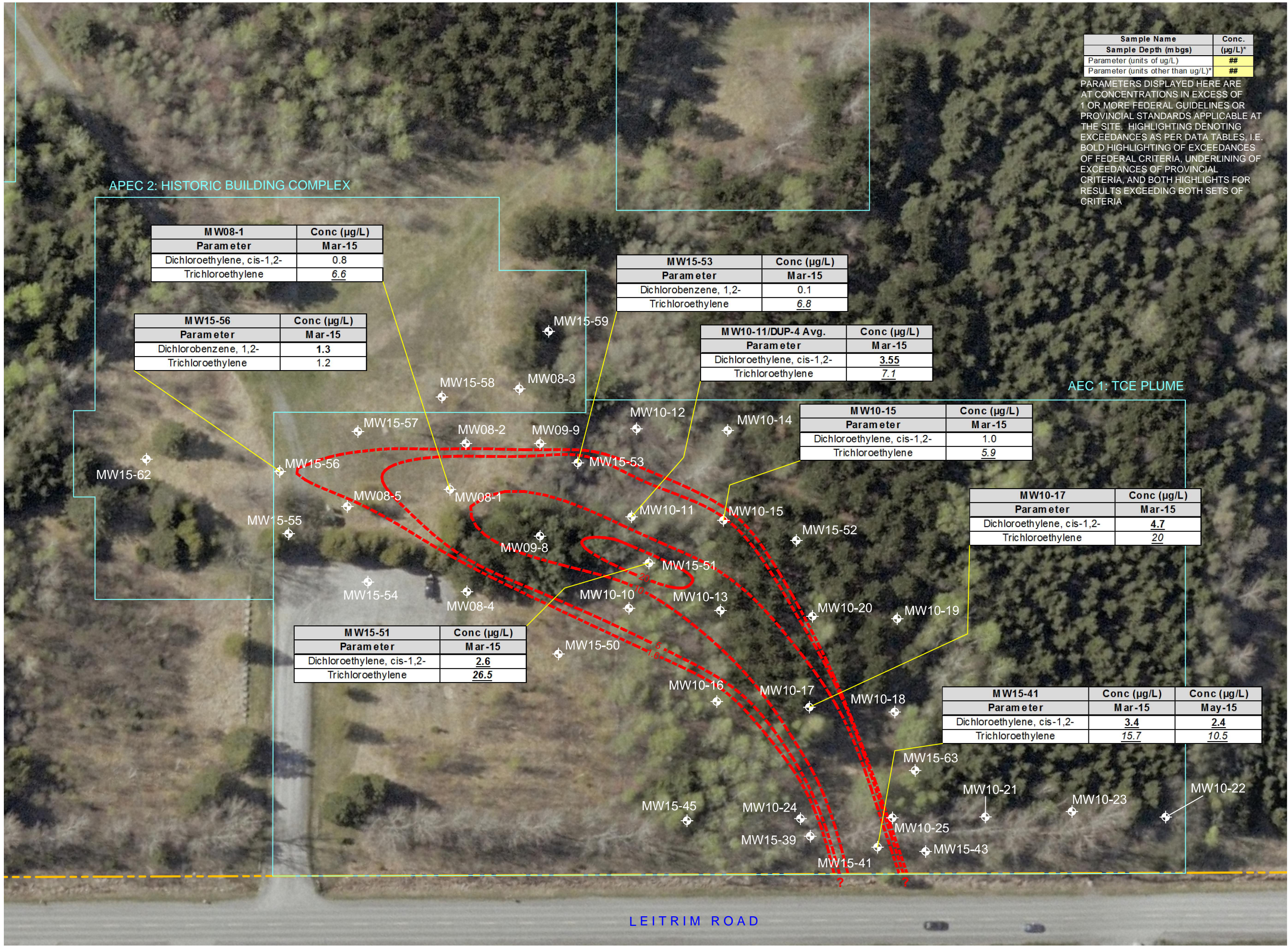
PROJECT NO:

TZ14024

FIGURE NO:

5C

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



Sample Name	Conc.
Sample Depth (mbgs)	(µg/L)*
Parameter (units of ug/L)	##
Parameter (units other than ug/L)*	##

PARAMETERS DISPLAYED HERE ARE AT CONCENTRATIONS IN EXCESS OF 1 OR MORE FEDERAL GUIDELINES OR PROVINCIAL STANDARDS APPLICABLE AT THE SITE. HIGHLIGHTING DENOTING EXCEEDANCES AS PER DATA TABLES, I.E. BOLD HIGHLIGHTING OF EXCEEDANCES OF FEDERAL CRITERIA, UNDERLINING OF EXCEEDANCES OF PROVINCIAL CRITERIA, AND BOTH HIGHLIGHTS FOR RESULTS EXCEEDING BOTH SETS OF CRITERIA

MW08-1	Conc (µg/L)
Parameter	Mar-15
Dichloroethylene, cis-1,2-	0.8
Trichloroethylene	<u>6.6</u>

MW15-56	Conc (µg/L)
Parameter	Mar-15
Dichlorobenzene, 1,2-	1.3
Trichloroethylene	1.2

MW15-53	Conc (µg/L)
Parameter	Mar-15
Dichlorobenzene, 1,2-	0.1
Trichloroethylene	<u>6.8</u>

MW10-11/DUP-4 Avg.	Conc (µg/L)
Parameter	Mar-15
Dichloroethylene, cis-1,2-	<u>3.55</u>
Trichloroethylene	<u>7.1</u>

MW10-15	Conc (µg/L)
Parameter	Mar-15
Dichloroethylene, cis-1,2-	1.0
Trichloroethylene	<u>5.9</u>

MW10-17	Conc (µg/L)
Parameter	Mar-15
Dichloroethylene, cis-1,2-	<u>4.7</u>
Trichloroethylene	<u>20</u>

MW15-41	Conc (µg/L)	Conc (µg/L)
Parameter	Mar-15	May-15
Dichloroethylene, cis-1,2-	<u>3.4</u>	<u>2.4</u>
Trichloroethylene	<u>15.7</u>	<u>10.5</u>

MW15-51	Conc (µg/L)
Parameter	Mar-15
Dichloroethylene, cis-1,2-	<u>2.6</u>
Trichloroethylene	<u>26.5</u>

LEGEND

- SITE BOUNDARY
- AEC/APEC 2015 PH II ESA
- TCE ISOCONCENTRATION CONTOUR
- MONITORING WELL (SHALLOW SAND)

NOTE THAT TCE CONTOURS ARE BASED ON THE 2014 MONITORING PROGRAM DATA IN CONJUNCTION WITH SAMPLING DATA FOR ALL 2015 PHASE II ESA SAND AQUIFER WELLS AND A PARTIAL RESAMPLING OF THE EXISTING MONITORING NETWORK.

10 0 10 20 30
METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:
GROUNDWATER EXCEEDANCES AND TCE ISOCONCENTRATION CONTOUR PLAN
SAND AQUIFER
SOUTH PORTION OF SITE

PROJECT:
PHASE II ENVIRONMENTAL SITE ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

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CHECKED BY: KDH

DATE: MARCH 2016

SCALE: 1 : 800

PROJECT NO: TZ14024

FIGURE NO:

6A

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



LEGEND

--- SITE BOUNDARY

AEC/APEC 2015 PH II ESA

MONITORING WELL (INTERMEDIATE CLAY)

NOTE: AMEC FOSTER WHEELER 2015 MONITORING WELLS (INTERMEDIATE CLAY) SHOWN ONLY; EXCEEDANCE ALSO NOTED IN MW13-31 GROUNDWATER SAMPLE FOR TCE

10 0 10 20 30
METRES

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ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

GROUNDWATER EXCEEDANCES
INTERMEDIATE CLAY AQUIFER
SOUTH PORTION OF SITE

PROJECT:

PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

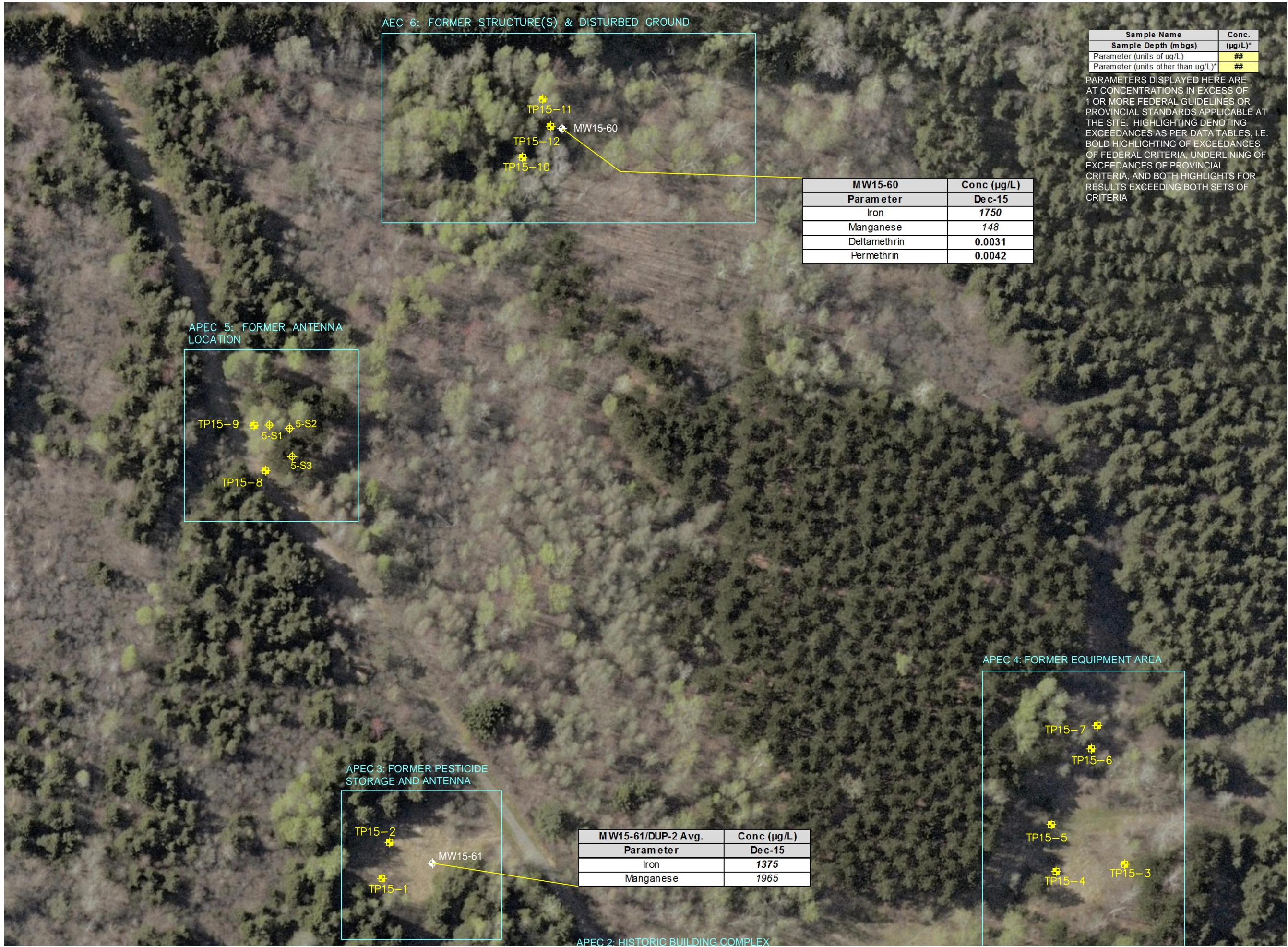
SCALE: 1 : 800

PROJECT NO: TZ14024

FIGURE NO:

6B

P:\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 PHASE II LOCATIONS - MARCH 2015.DWG



LEGEND


--- SITE BOUNDARY

□ AEC/APEC 2015 PH II ESA


⊕ MONITORING WELL (SHALLOW SAND)

⊕ TEST PIT (2015)

⊕ SURFICIAL SOIL SAMPLE (2015)



10 0 10 20 30
METRES

amec foster wheeler 

ENVIRONMENT & INFRASTRUCTURE
300-210 COLONNADE ROAD
OTTAWA, ONTARIO CANADA

TITLE:

GROUNDWATER EXCEEDANCES
SAND AQUIFER
NORTH PORTION OF SITE

PROJECT:

PHASE II ENVIRONMENTAL SITE
ASSESSMENT
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP

DRAWN BY: JFT

CHECKED BY: KDH

DATE: MARCH 2016

SCALE: 1 : 850

PROJECT NO: TZ14024

FIGURE NO:

6C

APPENDIX A

TREE REMOVAL INVENTORY, OTTAWA VALLEY TREE EXPERTS



Phone: (613)831-2493
Fax: (613)831-4171
BOX 369 Carp, ON, K0A 1L0

October 28, 2015

Amec Foster Wheeler

Attn: Susan Pfister

Re: P19, Leitrim Rd Environmental test pitting and drilling

Tree removal inventory for trees greater than 10cm DBH

No Butternut trees were present at the time of inspection in any work areas outlined. The data in this report is as of October 27, 2015 at 10:30 am. Weather conditions at the site during the inspection were variably cloudy and no significant wind.

APEC 4

Tree removal inventory for access to TP15-6 and TP15-7

Poplar	Populus sp.	11.1 cm DBH
White Birch	Betula sp.	10.2 cm DBH
Poplar	Populus sp.	10.8 cm DBH

No tree removal is required for access to TP15-3, 4 & 5.

APEC 3

No tree removal required over 10 cm DBH.

APEC 5

No tree removal required over 10 cm DBH.

APEC 6

Tree removal inventory for APEC 6 test pits and drill points

Spruce	Picea sp.	18.5 cm DBH
Sugar Maple	Acer saccharum	21 cm DBH
Spruce	Picea sp.	13.7 cm DBH
Spruce	Picea sp.	19.4 cm DBH
Spruce	Picea sp.	15.3 cm DBH



Phone: (613)831-2493
Fax: (613)831-4171
BOX 369 Carp, ON, K0A 1L0

Spruce	Picea sp.	13.7 cm DBH
Spruce	Picea sp.	15.3 cm DBH

APEC 8

Tree removal inventory for APEC 6 test pits and drill points

American Elm	Ulmus americana	11.5 cm DBH
American Elm	Ulmus americana	12.1 cm DBH

Overview

All APECS will require small scrub brush clearing on top of the trees listed in inventory. APEC 4 requires 3 trees greater than 10 cm DBH to be removed. APEC 1, 2, 3, & 5 require no trees to be removed greater than 10 cm DBH. APEC 6 requires removing 7 trees greater than 10 cm DBH. APEC 8 requires removing 2 trees greater than 10 cm DBH. In total there are 12 trees greater than 10 cm DBH that need to be removed for the work to be performed. None of the trees requiring to be removed are greater than 21 cm DBH.

Matt McGregor

Certified Arborist (ON-1298A)

APPENDIX B

SURFACE SOIL SAMPLING RECORDS

Surface Soil Sampling Record

APEC: 2 Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Hand (Oakfield/trowel) Easting: See photos Northing: See photos	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/28/15 Entered by: Susan Pfister Vapour Instrument: n/a Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.15	Topsoil - brown loam	2-S1	composite	n/a	pH, PCB
0.0	0.15	Topsoil - brown loam	2-S2	composite	n/a	

Additional Remarks



Photo 1: Sample 2-S1, from area of historic transformer location. Easting: 378131 m, Northing: 5023432 m.



Photo 2: Location of sample 2-S2, from area of historic transformer location. Easting: 378131 m, Northing: 5023432 m.

Photo 3:

Photo 4:

Surface Soil Sampling Record

APEC: 5 Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Hand (trowel) Easting: See photos Northing: See photos	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/28/15 Entered by: Susan Pfister Vapour Instrument: n/a Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.15	Topsoil - brown loam	5-S1/DUP-1	composite	n/a	pH, OC pesticides, pesticides and herbicides, PCB
0.0	0.15	Topsoil - brown loam	5-S2	composite	n/a	
0.0	0.15	Topsoil - brown loam	5-S3	composite	n/a	

Additional Remarks

Samples were gathered within approximately 10 metre radius of stakes for test pits planned for APEC 5. Location of test pits based on historical antenna locations on air photos. Field observations included location of former antenna base immediately east of trail between TP15-8 and TP15-9. For more general photos of these locations, see corresponding test pit logs.



Photo 1: Sample 5-S1, from base of antenna footing located approx. 4-5 metres E of TP15-9. Easting: 377912 m, Northing: 5023571 m.



Photo 2: Sample 5-S1 soil conditions.



Photo 3: Sample 5-S2 soil conditions; collected ~10 m ESE of TP15-9 and ~13 m NE of TP15-8.



Photo 4: Sample 5-S3 soil conditions; collected ~8 m ENE of TP15-8.

Surface Soil Sampling Record

AEC: 8 Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Hand (Oakfield sampler) Easting: See photos Northing: See photos	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/28/15 Entered by: Susan Pfister Vapour Instrument: n/a Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.15	Topsoil - brown loam	8-S1	composite	n/a	OC pesticides, pesticides and herbicides, metals, PAH, pH, PCB
0.0	0.15	Topsoil - brown loam	8-S2	composite	n/a	
0.0	0.15	Topsoil - brown loam	8-S3	composite	n/a	
0.0	0.15	Topsoil - brown loam	8-S4	composite	n/a	

Additional Remarks

Samples were gathered within 2 metre radius of stakes for test pits located in AEC 8. Location of test pits based on observed conditions in the field, including location of various anthropogenic structures and debris, such as old foundation wall(s) and farm equipment. For more general photos of these locations, see corresponding test pit logs.



Photo 1: Sample 8-S1, from 2 metre radius centred around TP15-15. Easting: 378562 m, Northing: 5023862 m



Photo 2: Sample 8-S2, from 2 metre radius centred around TP15-16. Easting: 378551 m, Northing: 5023874 m



Photo 3: Sample 8-S3, from 2 metre radius centred around TP15-14. Easting: 378547 m, Northing: 5023859 m



Photo 4: Sample 8-S4, from 2 metre radius centred around TP15-13. Easting: 378559 m, Northing: 5023851 m

APPENDIX C

TEST PIT RECORDS

Test Pit Record

Test Pit ID: TP15-1 (APEC 3)
Project Number: TZ14024.2000

Client: NCC

Supervised by: Susan Pfister

Excavated by: Ottawa Valley Tree Experts

Easting: 378004

Northing: 5023480

Site Location: P19 (NCC Property Asset 97390)

Project Name: NCC Leitrim

Date (mm/dd/yy): 10/30/15

Entered by: Susan Pfister

Vapour Instrument: RKI Eagle II (S/N: E29107)

Datum: GPS (WGS84) converted to
NAD 1983 (CSRS) MTM Zone 9

Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.00	0.05	Topsoil	n/a	n/a	n/a	
0.05	1.5	Fine brown sand fill	TP1-1 TP1-2	0.05-0.2 0.9-1.0	0/0 0/0	TP1-1: pH, metals, OC pesticides, pesticides & herbicides, PCB
1.5	1.6	Coarse grey sand with some gravel	n/a	n/a	n/a	
1.6	2.0	Clay, grey and plastic	TP1-3	1.6-1.7	0/0	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 1.0 metres below ground surface (mbgs).
 End of test pit at ~2.0 mbgs.



Photo 1: General view of the test pit stratigraphy.



Photo 2: View of transition from fine brown sand fill to coarse grey sand; cave in due to flowing sands.



Photo 3: Fine brown sand overlying thin veneer of coarse grey sand, underlain by clay.



Photo 4: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-2 (APEC 3) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378002 Northing: 5023490	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/30/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.2	Topsoil – brown loam	n/a	n/a	0/1	
0.2	2.1	Fine to medium sand, brown to grey with some iron staining and clay lenses	TP2-1 TP2-2	0.2-0.4 1.8-2.1	0/1 0/0	TP2-1: pH, OC pesticides, pesticides & herbicides, PCB
2.1	2.6	Clay, grey and plastic	TP2-3	2.1-2.4	0/0	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 1.0 mbgs.
 End of test pit at ~2.5 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy.



Photo 3: General view of the test pit location (looking north).



Photo 4: General view of the test pit location (looking east).

Test Pit Record

Test Pit ID: TP15-3 (APEC 4) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378180 Northing: 5023586	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/30/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.2	Topsoil – brown loam with some angular gravel fill	n/a	n/a	n/a	
0.2	0.7	Medium sand, reddish brown with trace gravel	TP3-1	0.2-0.4	0/0	TP3-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
0.7	1.6	Fine to medium brown sand	TP3-2	0.9-1.0	0/0	
1.6	3.0	Medium to coarse grey sand	n/a	n/a	n/a	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 1.6 mbgs.
 End of test pit at ~3.0 mbgs.



Photo 1: General view of shallow soils within the test pit, including gravel layer below topsoil.



Photo 2: General view of the test pit stratigraphy to the depth of the groundwater table.



Photo 3: General view of the test pit stratigraphy to depth.



Photo 4: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-4 (APEC 4) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378165 Northing: 5023576	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/30/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.1	Topsoil – brown loam	n/a	n/a	n/a	
0.1	1.0	Medium sand, reddish brown	TP4-1	0.1-0.3	0/0	TP4-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
1.0	3.0	Medium to coarse grey sand	TP4-2	1.0-1.2	0/0	

Additional Remarks

Groundwater was observed flowing into the test pit at approx. 1.9 mbgs; flowing sands at 3.0 m; end of test pit at ~3.0 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy to the depth of the groundwater table.

Test Pit Record

Test Pit ID: TP15-5 (APEC 4) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378157 Northing: 5023586	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/30/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.1	Topsoil – brown loam with some organics and roots	n/a	n/a	n/a	
0.1	0.8	Medium sand, reddish brown, with some gravel. Medium to coarse grey sand	TP5-1	0.1-0.2	0/0	TP5-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
0.8	3.0		TP5-2	0.9-1.1	0/0	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 2.0 mbgs; end of test pit at ~3.0 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy to the depth of the groundwater table.



Photo 3: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-6 (APEC 4) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378156 Northing: 5023609	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/30/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.1	Topsoil – brown loam with some organics and roots	n/a	n/a	n/a	Railroad ties and old tire piled at surface
0.1	0.6	Medium sand, reddish brown	TP6-1/DUP-2	0.1-0.2	0/0	TP6-1/DUP-2: pH, metals, PAH; TP6-1: OC pesticides, pesticides & herbicides, PCB
0.6	2.0	Medium to coarse grey sand	TP6-2	0.9-1.1	0/0	
2.0	2.4	Clay, grey and plastic	TP6-3	2.0-2.2	0/0	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 1.1 mbgs. End of test pit at ~2.4 mbgs.



Photo 1: Debris at surface, TP15-6, including old railway ties.



Photo 2: General view of shallow soils within the test pit.



Photo 3: General view of the test pit stratigraphy to the depth of the groundwater table.



Photo 4: General view of the test pit location (TP15-6, foreground; TP15-7, background).

Test Pit Record

Test Pit ID: TP15-7 (APEC 4)
Project Number: TZ14024.2000
Client: NCC

Supervised by: Susan Pfister
Excavated by: Ottawa Valley Tree Experts
Easting: 378154 **Northing:** 5023616

Site Location: P19 (NCC Property Asset 97390)
Project Name: NCC Leitrim
Date (mm/dd/yy): 10/30/15

Entered by: Susan Pfister
Vapour Instrument: RKI Eagle II (S/N: E29107)
Datum: GPS (WGS84) converted to
 NAD 1983 (CSRS) MTM Zone 9

Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.1	Organic matter – leaves, twigs, etc.	n/a	n/a	n/a	
0.1	0.6	Medium sand, reddish brown, uniformly graded.	TP7-1	0.1-0.2	0/1	TP7-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
0.6	2.5	Medium to coarse grey sand	TP7-2	0.8-1.0	0/1	
2.5	2.9	Clay, grey and plastic	TP7-3	2.6-2.7	0/1	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 1.1 mbgs. End of test pit at ~2.9 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy to the depth of the groundwater table.



Photo 3: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-8 (APEC 5) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 377921 Northing: 5023561	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 10/30/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.3	Topsoil – brown loam with organics and roots	n/a	n/a	n/a	
0.3	0.5	Fine red sand, uniformly graded	TP8-1	0.3-0.4	0/0	TP8-1: pH, OC pesticides, pesticides & herbicides, PCB
0.5	1.8	Fine yellowish brown sand	TP8-2	1.0-1.2	0/0	
1.8	1.9	Clay – grey, stiff, dry	TP8-3	1.8-1.9	0/0	

Additional Remarks

No groundwater was observed in this test pit. End of test pit at ~1.9 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy.



Photo 3: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-9 (APEC 5)
Project Number: TZ14024.2000
Client: NCC

Supervised by: Susan Pfister
Excavated by: Ottawa Valley Tree Experts
Easting: 377912 **Northing:** 5023571

Site Location: P19 (NCC Property Asset 97390)
Project Name: NCC Leitrim
Date (mm/dd/yy): 10/30/15

Entered by: Susan Pfister
Vapour Instrument: RKI Eagle II (S/N: E29107)
Datum: GPS (WGS84) converted to
 NAD 1983 (CSRS) MTM Zone 9

Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.3	Topsoil – brown loam with organics and roots	n/a	n/a	n/a	
0.3	0.8	Fine red sand, uniformly graded	TP9-1	0.3-0.4	0/0	TP9-1: pH, OC pesticides, pesticides & herbicides, PCB
0.8	1.8	Fine yellowish brown sand	TP9-2	0.9-1.1	0/0	
1.8	1.9	Clay – grey to black, stiff, dry	TP9-3	1.8-1.9	0/0	

Additional Remarks

No groundwater was observed in this test pit. End of test pit at ~2.1 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy.

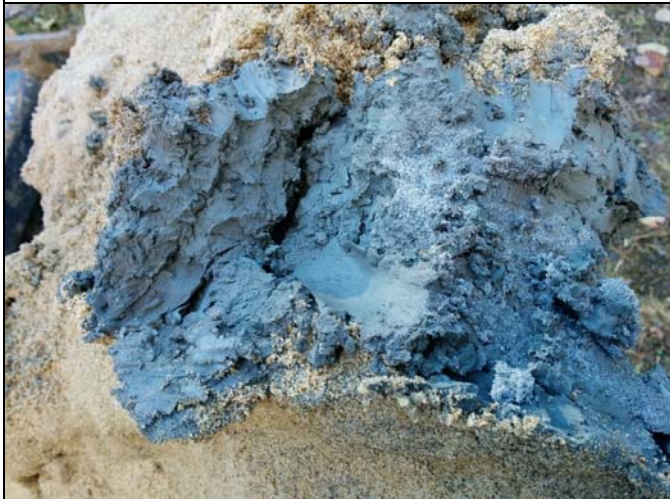


Photo 3: Sample recovered from bottom of test pit showing sand-clay interface.



Photo 4: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-10 (AEC 6) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 377939 Northing: 5023672	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 11/03/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.1	Topsoil – brown loam with leaves, organics and roots	n/a	n/a	n/a	
0.1	3.0	Fine to medium red sand Medium to coarse grey sand	TP10-1 TP10-2	0.1-0.3 1.7-1.9	0/1 0/0	TP10-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
3.0	3.2	Clay, grey and plastic	n/a	n/a	n/a	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 1.8 mbgs. End of test pit at ~3.2 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy.



Photo 3: Sample recovered from bottom of test pit showing sand-clay interface.



Photo 4: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-11 (AEC 6) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 377936 Northing: 5023688	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 11/03/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.4	Topsoil – dark brown loam, with roots and organics. Bale of rusted barbed wire and pieces of ceramic	TP11-1	0.2-0.4	0/1	TP11-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
0.2	1.4	Medium to coarse sand, reddish to grey with some gravel in bottom 0.3 m	TP11-2	0.7-0.8	0/0	
1.4	1.6	Clay, grey and plastic	TP11-3	1.3-1.5	0/0	

Additional Remarks

Groundwater was observed flowing into the test pit at approximately 0.9 mbgs.
 End of test pit at ~1.6 mbgs.



Photo 1: Ceramic fragment in shallow soil of test pit.



Photo 2: Rusted barbed wire in shallow soil of test pit.



Photo 3: General view of shallow soils within the test pit.



Photo 4: General view of the test pit stratigraphy.

Test Pit Record

Test Pit ID: TP15-12 (AEC 6) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 377941 Northing: 5023683	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 11/03/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.2	Topsoil – dark brown loam.				
0.2	0.8	Fine to medium sand, reddish brown	TP12-1/DUP-4	0.2-0.3	0/0	TP12-1/DUP-4: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
0.8	1.8	Medium to coarse grey sand	TP12-2	0.9-1.0	0/0	
1.8	2.0	Clay, grey and plastic	TP12-3	1.8-2.0	0/0	

Additional Remarks

Large piece of concrete observed at surface; also, large ceramic object. Additional ceramic pieces observed in shallow soil (to up to 0.5 mbgs). Groundwater was observed flowing into the test pit at approximately 1.0 mbgs. End of test pit at ~2.0 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: Ceramic object recovered from shallow subsurface.



Photo 3: General view of the test pit stratigraphy.

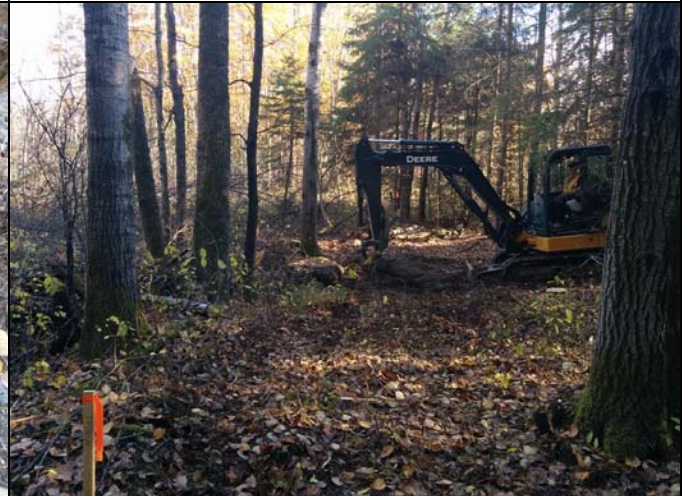


Photo 4: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-13 (AEC 8) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378559 Northing: 5023851	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 11/03/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.1	Topsoil – brown loam, with roots and moss	n/a	n/a		
0.1	0.6	Fine sand, red to yellowish brown	TP13-1	0.1-0.3	0/0	TP13-1/ DUP-3: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
0.6	0.8	Clay – grey, stiff, dry	TP13-2	0.6-0.8	0/0	

Additional Remarks

No groundwater was observed in this test pit. End of test pit at ~0.8 mbgs.



Photo 1: General view of shallow soils within the test pit.



Photo 2: General view of the test pit stratigraphy.

Test Pit Record

Test Pit ID: TP15-14 (AEC 8) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378547 Northing: 5023859	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 11/03/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.3	Topsoil – brown loam, variable thickness of up to 0.6 m along test pit.	n/a	n/a		Steel pieces and sheet metal at surface.
0.3	0.9	Fine sand, red to yellowish brown	TP14-1	0.3-0.4	0/0	TP14-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
1.0	1.1	Clay – grey, stiff, dry	TP14-2	1.0-1.1	0/0	

Additional Remarks

No groundwater was observed in this test pit. End of test pit at ~1.1 mbgs.



Photo 1: General view of the test pit stratigraphy.



Photo 2: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-15 (AEC 8) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378562 Northing: 5023862	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 11/03/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.4	Topsoil – brown loam with moss, roots, etc.	n/a	n/a	n/a	
0.4	1.2	Fine sand, reddish to yellowish brown	TP15-1	0.4-0.6	0/0	TP15-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
1.2	1.3	Silty clay – grey, stiff, dry	TP15-2	1.2-1.3	0/0	Mottled iron staining

Additional Remarks

Near rubble pile/old foundation – moved test pit ~3 m south of stake. No groundwater was observed in this test pit. End of test pit at ~1.1 mbgs.



Photo 1: Rubble pile near initial test pit location (moved 3 m south).



Photo 2: General view of the test pit stratigraphy.



Photo 3: Mottled iron staining in stiff clay.



Photo 4: General view of the test pit location.

Test Pit Record

Test Pit ID: TP15-16 (AEC 8) Project Number: TZ14024.2000 Client: NCC Supervised by: Susan Pfister Excavated by: Ottawa Valley Tree Experts Easting: 378551 Northing: 5023874	Site Location: P19 (NCC Property Asset 97390) Project Name: NCC Leitrim Date (mm/dd/yy): 11/03/15 Entered by: Susan Pfister Vapour Instrument: RKI Eagle II (S/N: E29107) Datum: GPS (WGS84) converted to NAD 1983 (CSRS) MTM Zone 9
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Depth (m)		Stratigraphy	Sample Information			
Top	Bottom		Sample ID	Depth (m)	Vapour	Remarks / Analyses
0.0	0.3	Topsoil – brown loam with organics and roots	n/a	n/a	n/a	
0.3	0.7	Fine sand, reddish to yellowish brown	TP16-1	0.3-0.4	0/0	TP16-1: pH, OC pesticides, pesticides & herbicides, metals, PAH, PCB
0.7	1.0	Silty clay – grey, stiff, dry	TP16-2	0.9-1.0	0/0	

Additional Remarks

No groundwater was observed in this test pit. End of test pit at ~1.0 mbgs.



Photo 1: General view of the test pit location.



Photo 2: General view of the test pit stratigraphy.



Photo 3: Sand/clay interface at depth.

APPENDIX D

STRATIGRAPHIC AND INSTRUMENTATION LOGS

Stratigraphic and Instrumentation Log: BH15-1



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) ○ 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)					
									ft	m	ft		
-3													
-2													
-1													
0		Ground Surface	86.67										
0		TOPSOIL	0.00										
1		SAND		SS	1			68					
2		Fine to medium grained sand, trace silt, brown, damp											
3	1			SS	2								
4		Brown/grey											
5		Fine to coarse grained sand, trace silt, grey, wet		SS	3			62					
6	2												
7		Black coloring between 2.34 m and 2.39 m, trace gravel		SS	4								
8													
9				SS	5			100					
10	3		83.01										
11			3.66										
12		CLAY	82.71										
13	4	Grey	3.96										
14		25 mm very fine grained sand seam @ approximately 3.68 m											
15		END OF BOREHOLE											
16													
17	5												
18													
19													
20	6												
21													
22													
23	7												
24													

BH15-1-SS4 was submitted for VOC and PHC F1-F4 analyses. Sample was taken from stained zone.

BH15-1-SS5 was submitted for PHC F1-F4 analyses.

Elevation: 86.67
Easting: 378129.93
Northing: 5023518.37

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-2



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm)			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm)				
									250	750	1250		
ft m									20	60	100	140	180
-3													
-2													
-1													
0		Ground Surface	86.59										
0		TOPSOIL	0.00										
1		SAND		SS	1			68					
2		Fine to medium grained sand, trace silt, brown, damp											
3		Dark reddish brown											
4	1			SS	2								
5		Brown/grey											
6													
7	2	Fine to coarse grained sand, trace silt, grey, wet		SS	3			62					
8													
9													
10	3			SS	4								
11			83.24										
12		CLAY	3.35	SS	5			100					
13		Grey											
14	4	25 mm very fine grained sand seam @ approximately 3.91 m	82.63										
15		END OF BOREHOLE	3.96										
16													
17													
18	5												
19													
20													
21	6												
22													
23													
24	7												

Elevation: 86.59
Easting: 378129.42
Northing: 5023491.74

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-3



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) ○ 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)					
ft m													
-3													
-2													
-1													
0		Ground Surface	86.70										
0		TOPSOIL	0.00										
1		FILL		SS	1			55	○				BH15-3-SS1 was submitted for Metals analyses.
2		Fine to medium grained silty sand, brown, damp											
3	1	Fine to medium grained sand, trace silt, trace gravel, dark reddish brown											
4			85.48	SS	2				○				
5		SAND	1.22										
6		Grey											
7	2	Becomes wet		SS	3			100	○				
8													
9		CLAY	84.11	SS	4				○				
10	3	Grey	2.59										
11		50 mm very fine grained sand seam @ approximately 2.95 m	83.65										
12		END OF BOREHOLE	3.05										
13	4												
14													
15													
16	5												
17													
18													
19													
20	6												
21													
22													
23	7												
24													

Elevation: 86.7
Easting: 378125.3
Northing: 5023475.5

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-4



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm)			Monitoring Well Details	Remarks	
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm)					
									250	750	1250			
ft m									20	60	100	140	180	
-3														
-2														
-1														
0		Ground Surface	86.92											
0		TOPSOIL	0.00											
1		FILL		SS	1			63						
2		Fine to medium grained silty sand, brown, damp												
3		Dark reddish brown												
4	1		85.70	SS	2									
5		SAND	1.22											
6		Fine to medium grained sand, trace silt, brown, moist/wet												
7				SS	3			65						
8	2	Trace gravel, grey												
9				SS	4									
10	3		83.87											
11		CLAY	3.05											
12		Grey		SS	5			100						
13		25 mm very fine grained sand seam @ approximately 3.76 m												
14	4	END OF BOREHOLE	82.96											
15			3.96											
16														
17	5													
18														
19														
20	6													
21														
22														
23	7													
24														

BH15-4-SS2 was submitted for Metals analyses.

BH15-4-SS2 was submitted for Metals analyses.

Elevation: 86.92
Easting: 378114.34
Northing: 5023462.92

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-5



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm) 20 60 100 140 180				
ft m													
-3													
-2													
-1													
0		Ground Surface	86.73										
0		TOPSOIL	0.00										
1		SAND		SS	1			73					
2		Fine to medium grained silty sand, trace gravel, brown											
3	1	Fine to medium grained sand, trace silt, brown/grey, moist		SS	2								
4													
5		Becomes wet, trace gravel											
6	2			SS	3			100					
7													
8			84.22										
9		CLAY	2.51	SS	4								
9		Grey											
10	3	50 mm very fine grained sand seam @ approximately 2.92 m	83.68										
10		END OF BOREHOLE	3.05										
11													
12													
13	4												
14													
15													
16	5												
17													
18													
19													
20	6												
21													
22													
23	7												
24													

BH15-5-SS3 was submitted for PHC F1-F4 and FOC analyses.

Elevation: 86.73
Easting: 378096.92
Northing: 5023456.13

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-6



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks	
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)			Combustible Vapour (ppm)
											250
										Total Organic Vapour (ppm)	
										20 60 100 140 180	
-3											
-2											
-1											
0		Ground Surface	86.72								
0		TOPSOIL	0.00								
1		SAND		SS	1			58			
2		Fine to medium grained sand, trace silt, brown, damp									
3	1	Becomes moist, grey		SS	2						
4		Becomes wet									
5											
6			84.74	SS	3			100			
7	2	CLAY	1.98								
8		Grey									
9		76 mm very fine grained sand seam @ approximately 2.90 m		SS	4						
10	3	END OF BOREHOLE	83.67								
11			3.05								
12											
13	4										
14											
15											
16	5										
17											
18											
19											
20	6										
21											
22											
23	7										
24											

BH15-6-SS2 was submitted for Metals analyses (Dup-6).

BH15-6-SS3 was submitted for VOC analyses. Sample was taken from sand/clay interface.

Elevation: 86.72
Easting: 378091.36
Northing: 5023444.03

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-7



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Monitoring Well Details	Remarks		
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm)				
									250			750	1250
									Total Organic Vapour (ppm)				
									20	60	100	140	180
-3 ft 0 m													
-2													
-1													
0		Ground Surface	86.91										
0		TOPSOIL	0.00										
1		FILL											
2		Fine grained sandy silt, trace gravel, brown, damp		SS	1			55					
3		Waste: concrete, insulation, white foam											
4		Fine to medium grained silty sand, brown/grey, damp/moist											
5			85.39										
5		SAND	1.52										
6		Fine to medium grained sand, trace silt, brown/grey, moist/wet											
7				SS	2			52					
8		Trace gravel, grey											
9													
10													
10				SS	3			100					
11			83.56										
11		CLAY	3.35										
12		Grey		SS	4								
12		50 mm very fine grained sand seam @ approximately 3.56 m	82.95										
13		END OF BOREHOLE	3.96										
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													

Elevation: 86.91
Easting: 378107.6
Northing: 5023452.47

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-8



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) ○ 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)					
ft m													
-3													
-2													
-1													
0		Ground Surface	86.51										
0		TOPSOIL	0.00										
1		FILL Fine grained sandy silt, brown, damp		SS	1			75	○				
2													
3	1	SAND Fine to medium grained sand, trace silt, brown, moist	85.60 0.91	SS	2				○				
4		Becomes wet, grey											
5													
6	2	CLAY Grey 5 mm very fine grained sand seam @ approximately 2.21 m and 2.31 m	84.53 1.98	SS	3			100	○				
7													
8				SS	4				○				
9													
10	3	END OF BOREHOLE	83.46 3.05										
11													
12													
13	4												
14													
15													
16	5												
17													
18													
19													
20	6												
21													
22													
23	7												
24													

BH15-8-SS3 was submitted for PHC F1-F4 analyses.

Elevation: 86.51
Easting: 378121.66
Northing: 5023434.89

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-9



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 6, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)		
									Combustible Vapour (ppm) ○ 250 750 1250 Total Organic Vapour (ppm) ● 20 60 100 140 180	
-3 ft 0 m		Ground Surface	86.50							
0		TOPSOIL	0.00							
1		FILL Fine grained silty sand, brown, damp		SS	1			68		BH15-9-SS1 was submitted for PCB and PAH analyses (Dup-5).
2										
3			85.59							
4		SAND Fine to medium grained sand, trace silt, brown, damp/moist	0.91	SS	2					
5		Becomes wet, trace gravel, grey								
6				SS	3			93		
7		CLAY Grey	84.37							
8		178 mm very fine grained sand seam @ approximately 2.64 m	2.13							
9				SS	4					
10		END OF BOREHOLE	83.45							
11			3.05							
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										

Elevation: 86.5
Easting: 378124.53
Northing: 5023438.63

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: BH15-10



amec
foster
wheeler

300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 3, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Monitoring Well Details	Remarks				
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm)						
									250			750	1250		
									Total Organic Vapour (ppm)						
									20	60	100	140	180		
-3															
-2															
-1															
0		Ground Surface	86.55												
0		TOPSOIL	0.00												
1		SAND		SS	1A			65							
2		Fine to medium grained sand, trace silt, orange/brown, damp		SS	1B										
3	1														
4		Brownish grey		SS	2										
5															
6		Fine to coarse grained sand, trace silt, trace gravel, grey, wet		SS	3			98							
7	2														
8			84.19												
8		CLAY	2.36												
9		Grey		SS	4										
9		5 mm very fine grained sand seam @ approximately 2.84 m													
10	3														
11				SS	5			100							
12															
13	4														
14				SS	6										
15			81.98												
15		END OF BOREHOLE	4.57												
16	5														
17															
18															
19															
20	6														
21															
22															
23	7														
24															

BH15-10-SS3 was submitted for pH, VOC and PHC F1-F4 analyses. VOC sample was taken from the sand/clay interface and PHC sample was taken from the moist/wet interface

BH15-10-SS3 was submitted for pH, VOC and PHC F1-F4 analyses. VOC sample was taken from the sand/clay interface and PHC sample was taken from the moist/wet interface

Elevation: 86.55
Easting: 378155.21
Northing: 5023471.39

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-38C



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 27, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Combustible Vapour (ppm) 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm) 20 60 100 140 180					
-3 ft m														
-2														
-1														
0		Ground Surface	86.57											
1		TOPSOIL	0.00											
2		SAND Fine to medium grained sand, trace silt, orange/brown, damp		SS	1			50						
3		Brown/grey, moist												
4	1			SS	2									
5		Becomes wet												
6				SS	3			62						
7	2	Trace gravel												
8														
9				SS	4									
10	3		83.45											
11		CLAY Grey	3.12	SS	5			100						MW15-38C-SS5 was submitted for VOC analyses (Dup-1). Sample was taken from sand/clay interface.
12														
13	4													
14		10 mm very fine grained sand seam		SS	6									MW15-38C-SS6SS was submitted for VOC analyses. Sample was taken from sand seam.
15														
16	5			SS	7			100						
17														
18														
19				SS	8									
20	6													
21														
22			79.87	SS	9			100						
23	7	END OF BOREHOLE	6.71											
24														

Elevation: 86.573
Easting: 378266.05
Northing: 5023444.21

Casing Elevation: 87.36
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-39



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 27, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)		
									Combustible Vapour (ppm) ○ 250 750 1250 Total Organic Vapour (ppm) ● 20 60 100 140 180	
-3 ft 0 m		Ground Surface	86.55							
0		TOPSOIL	0.00							
1		SAND Fine to medium grained sand, trace silt, orange/brown, damp		SS	1			50		
2		Brown/grey, moist								
3	1			SS	2					
4		Becomes wet								
5				SS	3			62		
6	2	Trace gravel								
7				SS	4					
8										
9										
10	3		83.42							
11		CLAY Grey	3.12							
12		END OF BOREHOLE								
13	4									
14										
15										
16	5									
17										
18										
19										
20	6									
21										
22										
23	7									
24										

Elevation: 86.545
Easting: 378265.67
Northing: 5023445.17

Casing Elevation: 87.39
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-40C



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 27, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details		Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm)	Total Organic Vapour (ppm)	
									250 750 1250	20 60 100 140 180	
-3 ft 0 m		Ground Surface	86.14								
0		TOPSOIL	0.00								
1		SAND Fine to medium grained sand, trace silt, brown, damp		SS	1			55			
2											
3	1			SS	2						
4											
5		Becomes wet									
6				SS	3			80			
7	2										
8		Fine to coarse grained sand, trace gravel, grey									
9			83.40	SS	4						
10	3	CLAY Grey	2.74								
11				SS	5			100			
12											
13	4			SS	6						
14											
15											
16	5			SS	7			100			
17											
18											
19				SS	8						
20	6										
21											
22			79.44	SS	9			100			
23	7	END OF BOREHOLE	6.71								
24											

MW15-40C-SS4 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

MW15-40C-SS9 was submitted for VOC analyses.

Elevation: 86.141
Easting: 378280.12
Northing: 5023449.61

Casing Elevation: 86.89
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-41



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 27, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Monitoring Well Details	Remarks		
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm)				
									250			750	1250
									Total Organic Vapour (ppm)				
									20	60	100	140	180
-3 ft m													
-2													
-1													
0		Ground Surface	86.16										
0		TOPSOIL	0.00										
1		SAND		SS	1			55					
2		Fine to medium grained sand, trace silt, brown, damp											
3	1			SS	2								
4													
5		Becomes wet											
6				SS	3			80					
7	2												
8		Fine to coarse grained sand, trace gravel, grey											
9			83.41	SS	4								
9		CLAY	2.74										
10	3	Grey											
11		END OF BOREHOLE											
12													
13	4												
14													
15													
16	5												
17													
18													
19													
20	6												
21													
22													
23	7												
24													

Elevation: 86.156
Easting: 378279.74
Northing: 5023450.37

Casing Elevation: 86.97
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-42C



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 27, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks	
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)			Combustible Vapour (ppm)
											250
									Total Organic Vapour (ppm)		
									20 60 100 140 180		
-3											
-2											
-1											
0		Ground Surface	85.85								
0		TOPSOIL	0.00								
1		SAND		SS	1			58			
2		Fine to medium grained sand, trace silt, brown, damp									
3											
4	1	Trace gravel, brown/grey, moist		SS	2						
5											
6		Fine to coarse grained sand, trace gravel, grey, wet									
7	2		83.83	SS	3			100			
8		CLAY	2.01								
9		Grey									
10		5 mm very fine grained sand seam @ approximately 2.64 m and 2.79 m		SS	4						
11											
12		3 mm very fine grained sand seam @ approximately 3.25 m and 3.56 m		SS	5			100			
13											
14	4			SS	6						
15											
16											
17	5			SS	7			100			
18		5 mm very fine grained sand seam @ approximately 5.21 m									
19				SS	8						
20	6		79.75								
21		END OF BOREHOLE	6.10								
22											
23	7										
24											

MW15-42C-SS3 was submitted for VOC analysis. Sample was taken from sand/clay interface.

MW15-42C-SS3 was submitted for VOC analysis. Sample was taken from sand/clay interface.

Elevation: 85.846
Easting: 378288.33
Northing: 5023454.62

Casing Elevation: 86.71
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-43



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 27, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)		
									Combustible Vapour (ppm) 250 750 1250 Total Organic Vapour (ppm) 20 60 100 140 180	
-3 ft 0 m		Ground Surface	85.79							
0		TOPSOIL	0.00							
1		SAND Fine to medium grained sand, trace silt, brown, damp		SS	1			58		
2										
3		Trace gravel, brown/grey, moist		SS	2					
4										
5		Fine to coarse grained sand, trace gravel, grey, wet		SS	3			100		
6			83.78							
7		CLAY Grey	2.01							
8		END OF BOREHOLE								
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										

Elevation: 85.791
Easting: 378289.41
Northing: 5023454.9

Casing Elevation: 86.49
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-44C



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 27, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Monitoring Well Details			Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm) ○ 250 750 1250 ○				
-3 ft m													
-2													
-1													
0		Ground Surface	86.41										
1		TOPSOIL	0.00										
2		SAND Fine to medium grained sand, trace silt, brown, damp		SS	1			58	○				
3													
4	1	Trace gravel, brown/grey, moist		SS	2				○				
5													
6		Fine to coarse grained sand, trace gravel, grey, wet		SS	3			100	○				
7	2												
8													
9				SS	4				○				
10	3												
11		CLAY Grey	83.21 3.20	SS	5			100	○				MW15-44-SS5 was submitted for VOC analyses. Sample was taken from sand/clay interface.
12													
13	4			SS	6				○				
14													
15													
16	5			SS	7			100	○				MW15-44-SS6SS was submitted for VOC analyses. Sample was taken from sand seam.
17													
18													
19		13 mm very fine grained sand seam @ approximately 4.5 m		SS	8				○				MW15-44-SS8 was submitted for VOC analyses.
20	6												
21				SS	9			100	○				
22			79.71 6.71										
23	7	END OF BOREHOLE											
24													

Elevation: 86.411
Easting: 378272.9
Northing: 5023453.73

Casing Elevation: 87.3
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-45



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 26, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) ○ 250 750 1250 Total Organic Vapour (ppm) ● 20 60 100 140 180			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)					
ft m													
-3													
-2													
-1													
0		Ground Surface	85.92										
1		TOPSOIL	0.00										
2		SAND Fine to medium grained sand, trace silt, brown, damp/moist		SS	1			55					
3		Fine to coarse grained sand, trace silt, grey											
4		Becomes wet		SS	2								
5													
6		CLAY Grey	84.17	SS	3			100					
7		13 mm very fine grained sand seam @ approximately 1.98 m	1.75										
8		END OF BOREHOLE	83.48	SS	4								
9			2.44										
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													

Elevation: 85.922
Easting: 378240.46
Northing: 5023434.45

Casing Elevation: 86.76
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-46C



amec
foster
wheeler

300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 26, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Combustible Vapour (ppm) ○ 250 750 1250 Total Organic Vapour (ppm) ● 20 60 100 140 180			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)						
ft m														
-3														
-2														
-1														
0		Ground Surface	85.72											
0		TOPSOIL	0.00											
1		SAND		SS	1			55						
2		Fine to medium grained sand, trace silt, brown, damp/moist												
3		Fine to coarse grained sand, trace silt, grey		SS	2									
4		Becomes wet												
5														
6		CLAY	83.96	SS	3			100						
7		Grey	1.75											
8		50 mm very fine grained sand seam @ approximately 2.29 m												
9		38 mm very fine grained sand seam @ approximately 2.44 m		SS	4									
10														
11				SS	5			100						
12														
13				SS	6									
14		5 mm very fine grained sand seam @ approximately 4.21 m												
15				SS	7			100						
16														
17				SS	8									
18														
19														
20		END OF BOREHOLE	79.62											
21			6.10											
22														
23														
24														

MW15-46C-SS3 was submitted for VOC analyses. Sample was taken from sand/clay interface.

MW15-46C-SS3SS was submitted for VOC analyses. Sample was taken from sand seam.

Elevation: 85.716
Easting: 378238.78
Northing: 5023433.13

Casing Elevation: 86.63
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-47C



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 2, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well		Remarks			
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm)			Monitoring Well Details		
									250	750			1250	
									Total Organic Vapour (ppm)					
									20	60	100	140	180	
-3														
-2														
-1														
0		Ground Surface	86.05											
0		TOPSOIL	0.00											
1		SAND		SS	1			65						
2		Fine to medium grained sand, trace silt, brown, damp/moist												
3	1			SS	2									
4														
5		Becomes wet												
6		Fine to coarse grained sand, trace silt, some gravel, grey												
7	2		83.92	SS	3			100						
8		CLAY	2.13											
9		Grey												
10		Minor very fine grained sand seams @ approximately 2.74 m, 2.82 m, 2.90 m and 2.97 m		SS	4									
11	3													
12				SS	5			100						
13														
14	4		81.79	SS	6									
15		END OF BOREHOLE	4.27											
16														
17	5													
18														
19														
20	6													
21														
22														
23	7													
24														

MW15-47-SS3 was submitted for VOC and pH analyses (Dup-2). Sample was taken from sand/clay interface.

MW15-47-SS4SS was submitted for VOC analyses. Sample was taken from sand seam.

MW15-47-SS3 was submitted for VOC and pH analyses (Dup-2). Sample was taken from sand/clay interface.

MW15-47-SS4SS was submitted for VOC analyses. Sample was taken from sand seam.

Elevation: 86.054
Easting: 378237.52
Northing: 5023456.21

Casing Elevation: 86.93
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-48C



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 2, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm)			Monitoring Well Details	Remarks	
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm)					
									250	750	1250			
									20	60	100	140	180	
-3 ft 0 m														
-2														
-1														
0		Ground Surface	86.41											
0		TOPSOIL	0.00											
1		SAND		SS	1			63						
2		Fine to medium grained sand, trace silt, orange/brown, damp/moist												
3		Brown/grey												
4	1			SS	2									
5		Becomes wet												
6														
7	2			SS	3			70						
8		Trace gravel, grey												
9														
10	3			SS	4									
11			83.13											
12		CLAY	3.28	SS	5			100						MW15-48C-SS5 was submitted for VOC and pH analyses. Sample was taken from sand/clay interface.
13		Grey												
14	4			SS	6									
15														
16														
17	5			SS	7			100						
18														
19		25 mm very fine grained sand seam @ approximately 5.61 m												MW15-48C-SS8SS was submitted for VOC analyses. Sample was taken from sand seam.
20	6		80.31											
21		END OF BOREHOLE	6.10											
22														
23	7													
24														

Elevation: 86.41
Easting: 378254.46
Northing: 5023468.94

Casing Elevation: 87.28
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-49C



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 2, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks			
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)			Combustible Vapour (ppm)		
											250	750	1250
									Total Organic Vapour (ppm)				
									20	60	100	140	180
-3 ft m													
-2													
-1													
0		Ground Surface	86.14										
0		TOPSOIL	0.00										
1		SAND		SS	1			63					
2		Fine to medium grained sand, trace silt, orange/brown, damp/moist											
3		Grey											
4	1			SS	2								
5		Trace gravel, wet											
6													
7	2		84.08	SS	3			70					
8		CLAY	2.06										
9		Grey											
10		50 mm very fine grained sand seam @ approximately 2.44 m		SS	4								
11													
12	3												
13				SS	5			100					
14	4	END OF BOREHOLE	82.17										
15			3.96										
16													
17	5												
18													
19													
20	6												
21													
22													
23	7												
24													

MW15-49-SS4SS was submitted for VOC analyses. Sample was taken from sand seam.

MW15-49-SS4SS was submitted for VOC analyses. Sample was taken from sand seam.

Elevation: 86.137
Easting: 378270.52
Northing: 5023484.69

Casing Elevation: 86.95
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-50



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 5, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm)			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	250	750	1250		
									Total Organic Vapour (ppm)				
									•	•	•		
									20	60	100	140	180
ft m													
-3													
-2													
-1													
0		Ground Surface	85.89										
		TOPSOIL	0.00										
1		SAND		SS	1			62					
2		Fine to medium grained sand, trace silt, brown, damp/moist											
3		Brown/grey											
4	1	Becomes wet		SS	2								
5													
6		CLAY	84.14	SS	3			100					
7	2	Grey	1.75										
8		76 mm very fine grained sand seam @ approximately 2.54 m		SS	4								
9													
10	3	END OF BOREHOLE	82.84										
			3.05										
11													
12													
13	4												
14													
15													
16													
17	5												
18													
19													
20	6												
21													
22													
23	7												
24													

MW15-50-SS3 was submitted for VOC analyses (Dup-4). Sample was taken from sand/clay interface.

MW15-50-SS4SS was submitted for VOC analyses. Sample was taken from sand seam.

MW15-50-SS3 was submitted for VOC analyses (Dup-4). Sample was taken from sand/clay interface.

MW15-50-SS4SS was submitted for VOC analyses. Sample was taken from sand seam.

Elevation: 85.888
Easting: 378197.53
Northing: 5023452.14

Casing Elevation: 86.78
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-51



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 2, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks			
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)			Combustible Vapour (ppm)		
											250	750	1250
									Total Organic Vapour (ppm)				
									20	60	100	140	180
-3 ft m													
-2													
-1													
0		Ground Surface	85.93										
0		TOPSOIL	0.00										
1		SAND		SS	1			63					
2		Fine to medium grained sand, trace silt, brown, damp/moist											
3		Brown/grey											
4	1	Grey, wet		SS	2								
5		Fine to coarse grained sand, trace silt, trace gravel, grey											
6				SS	3			63					
7	2												
8													
9				SS	4								
10	3												
11				SS	5			100					
12			82.28										
13		CLAY	3.66										
13	4	Grey											
14		5 mm very fine grained sand seam @ approximately 4.06 m		SS	6								
15		25 mm very fine grained sand seam @ approximately 4.24 m											
16		5 mm very fine grained sand seam @ approximately 4.45 m		SS	7			100					
17	5												
18													
19				SS	8								
20	6		79.84										
20		END OF BOREHOLE	6.10										
21													
22													
23	7												
24													

MW15-51C-SS5 was submitted for VOC analyses. Sample was taken from sand/clay interface.

Elevation: 85.933
Easting: 378204.77
Northing: 5023479.54

Casing Elevation: 86.75
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-52



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 2, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm)			Monitoring Well Details	Remarks	
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm)					
									250	750	1250			
									20	60	100	140	180	
-3 ft 0 m														
-2														
-1														
0		Ground Surface	86.35											
0		TOPSOIL	0.00											
1		SAND		SS	1			53						
2		Fine to medium grained sand, trace silt, trace gravel, orange/brown, damp/moist												
3	1	Brown/grey												
4				SS	2									
5		Grey, wet												
6														
7	2			SS	3			67						
8														
9														
10	3		83.30	SS	4									
11		CLAY	3.05											
12		Grey		SS	5			100						
13		5 mm very fine grained sand seam @ approximately 3.76 m and 3.89 m												
14	4			SS	6									
15			81.78											
16		END OF BOREHOLE	4.57											
17	5													
18														
19														
20	6													
21														
22														
23	7													
24														

MW15-52-SS4 was submitted for VOC and pH analyses. Sample was taken from sand/clay interface.

MW15-52-SS4 was submitted for VOC and pH analyses. Sample was taken from sand/clay interface.

Elevation: 86.353
Easting: 378230.43
Northing: 5023500.05

Casing Elevation: 87.14
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-53



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 3, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) ○ 250 750 1250 Total Organic Vapour (ppm) ● 20 60 100 140 180			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)					
ft m													
-3													
-2													
-1													
0		Ground Surface	85.66										
1		TOPSOIL	0.00										
2		SAND Fine to medium grained sand, trace silt, brown, damp/moist		SS	1A								
3		Brown/grey		SS	1B			35					
4	1			SS	2								
5		Fine to coarse grained sand, trace silt, trace gravel, grey, wet	83.83										
6		CLAY Grey 5 mm very fine grained sand seams @ approximately 1.93 m and 2.39 m	1.83	SS	3			100					
7	2												
8				SS	4								
9													
10	3	END OF BOREHOLE	82.61										
11			3.05										
12													
13	4												
14													
15													
16	5												
17													
18													
19													
20	6												
21													
22													
23	7												
24													

MW15-53-SS3 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

MW15-53-SS3 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

Elevation: 85.66
Easting: 378180.09
Northing: 5023490.84

Casing Elevation: 86.44
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-54



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: February 26, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)		
									Combustible Vapour (ppm) 250 750 1250 Total Organic Vapour (ppm) 20 60 100 140 180	
-3										
-2										
-1										
0		Ground Surface	86.23							
0		TOPSOIL	0.00							
1		SAND Fine to medium grained sand, trace silt, grey/brown, damp/moist		SS	1			53		
2										
3		Fine to coarse grained sand, trace gravel, grey/brown, moist/wet		SS	2					
4										
5		Grey								
6				SS	3			67		
7			83.94							
8		CLAY Grey	2.29							
9				SS	4					
10		Minor very fine grained sand seams observed								
11				SS	5			100		
12										
13				SS	6					
14										
15		END OF BOREHOLE	81.66							
16			4.57							
17										
18										
19										
20										
21										
22										
23										
24										

MW15-54-SS3 was submitted for VOC and PHC F1-F4 analyses. VOC sample was taken from sand/clay interface while the PHC sample was taken from the moist/wet interface.

Elevation: 86.23
Easting: 378153.21
Northing: 5023444.86

Casing Elevation: 86.23
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-55



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 3, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks	
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)			Combustible Vapour (ppm)
											250
									Total Organic Vapour (ppm)		
									20 60 100 140 180		
-3											
-2											
-1											
0		Ground Surface	86.66								
0		TOPSOIL	0.00								
1		FILL		SS	1A						
2		Fine to medium grained sandy silt, some gravel	86.05	SS	1B			35			MW15-55-SS1B was submitted for Metals, PAH and pH analyses.
2		SAND	0.61								
3		Fine to medium grained sand, trace silt, brown/grey, damp/moist		SS	2						
4											
5											
6		Fine to medium grained sand, trace silt, grey, wet		SS	3			100			MW15-55-SS3 was submitted for VOC analyses. Sample was taken from sand/clay interface.
7		CLAY	84.53								
8		Grey	2.13								
9		5 mm very fine grained sand seams @ approximately 2.64 m and 2.69 m		SS	4						
10		END OF BOREHOLE	83.61								
10			3.05								
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											

Elevation: 86.661
Easting: 378132.89
Northing: 5023445.36

Casing Elevation: 87.56
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-56



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 3, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) ○ 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)					
ft m													
-3													
-2													
-1													
0		Ground Surface	86.94										
0		TOPSOIL	0.00										
1		FILL		SS	1A								
2		Fine grained sandy silt, some gravel, brown/grey, damp		SS	1B			35					
3			86.03										
3	1	SAND	0.91	SS	2								
4		Fine to medium grained sand, trace silt, brown, damp/moist											
5		Trace gravel, wet											
6													
7	2			SS	3			100					
8													
9		CLAY	84.23										
9		Grey	2.71	SS	4								
10	3	END OF BOREHOLE	83.90										
11			3.05										
12													
13	4												
14													
15													
16													
17	5												
18													
19													
20	6												
21													
22													
23	7												
24													

MW15-56-SS1B was submitted for Metals, PAH and pH analyses.

MW15-56-SS3 was submitted for VOC and PHC F1-F4 analyses. VOC sample was taken from sand/clay interface and the PHC sample was collected from the moist/wet interface.

Elevation: 86.944
Easting: 378124.17
Northing: 5023456.23

Casing Elevation: 87.77
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-57



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 3, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Monitoring Well Details	Remarks		
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm)				
									250			750	1250
									Total Organic Vapour (ppm)				
									20	60	100	140	180
-3 ft m													
-2													
-1													
0		Ground Surface	86.82										
0		TOPSOIL	0.00										
1		FILL		SS	1A								
2		Fine grained silty sand, trace gravel, brown, damp		SS	1B			58					
3	1		85.76										
4		SAND	1.07	SS	2								
5		Fine to medium grained sand, trace silt, brown, damp/moist											
6													
7	2	Becomes wet Grey		SS	3			70					
8													
9				SS	4								
10	3												
11		Very fine fine grained silty sand, grey	83.23	SS	5			100					
12		CLAY	3.60										
13	4	Grey											
14		25 mm very fine grained sand seam @ approximately 4.24 m		SS	6								
15			82.25										
16		END OF BOREHOLE	4.57										
17	5												
18													
19													
20	6												
21													
22													
23	7												
24													

Elevation: 86.823
Easting: 378134.7
Northing: 5023472.48

Casing Elevation: 87.7
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-58



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 3, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA						Monitoring Well Details	Remarks		
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Combustible Vapour (ppm)				
									250			750	1250
									Total Organic Vapour (ppm)				
									20	60	100	140	180
-3 ft m													
-2													
-1													
0		Ground Surface	86.62										
0		TOPSOIL	0.00										
1		FILL		SS	1A								
1		Fine to medium grained silty sand, trace gravel, brown, damp											
2			86.01	SS	1B			60					
2		SAND	0.61										
3		Fine to medium grained sand, trace silt, orange/brown to grey/brown, damp/moist											
4	1			SS	2								
5		Becomes wet											
6		Fine to coarse grained sand, trace silt, trace gravel, grey		SS	3			100					
7	2												
8			84.18										
8		CLAY	2.44										
9		Grey		SS	4								
10	3		83.58										
10		END OF BOREHOLE	3.05										
11													
12													
13	4												
14													
15													
16	5												
17													
18													
19	6												
20													
21													
22													
23	7												
24													

MW15-58-SS3 was submitted for VOC and PHC F1-F4 analyses (Dup-3). VOC sample was taken from sand/clay interface and PHC sample was taken from the moist/wet interface.

MW15-58-SS3 was submitted for VOC and PHC F1-F4 analyses (Dup-3). VOC sample was taken from sand/clay interface and PHC sample was taken from the moist/wet interface.

Elevation: 86.623
Easting: 378146.95
Northing: 5023488.35

Casing Elevation: 87.29
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-59



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: JFT
Drill Date: March 3, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm)			Monitoring Well Details	Remarks	
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm)					
									250	750	1250			
									20	60	100	140	180	
-3														
-2														
-1														
0		Ground Surface	86.26											
0		TOPSOIL	0.00											
1		FILL		SS	1A									
1		Fine to medium grained silty sand, trace gravel, brown, damp	85.80											
2			0.46	SS	1B			43						
2		SAND												
2		Fine to medium grained sand, trace silt, orange/brown to brown/grey, damp/moist												
3	1			SS	2									
4														
5														
6		Fine to coarse grained sand, trace silt, trace gravel, grey, wet		SS	3			100						
7	2													
8			83.97											
8		CLAY	2.29											
8		Grey												
9		5 mm very fine grained sand seam @ approximately 2.62 m		SS	4									
10	3		83.21											
10		END OF BOREHOLE	3.05											
11														
12														
13	4													
14														
15														
16														
17	5													
18														
19														
20	6													
21														
22														
23	7													
24														

MW15-59-SS3 was submitted for VOC and pH analyses. Sample was taken from sand/clay interface.

MW15-59-SS3 was submitted for VOC and pH analyses. Sample was taken from sand/clay interface.

Elevation: 86.261
Easting: 378160.07
Northing: 5023512.66

Casing Elevation: 87.01
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SP
Sheet: 1 of 1



Stratigraphic and Instrumentation Log: MW15-60



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: SMP
Drill Date: November 16, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm) 20 60 100 140 180				
-3 ft m													
-2													
-1													
0		Ground Surface	0.00										
0		TOPSOIL	0.00										
1		SAND	-0.25										
2		Medium to coarse grained sand, brown	0.25										
3		Becomes moist to wet		SS	1				100				
4	1												
5													
6		CLAY	-1.70	SS	2				100				
7	2	Grey, wet	1.70										
8				SS	3				100				
9													
10	3	END OF BOREHOLE	-3.05										
11			3.05										
12													
13	4												
14													
15													
16	5												
17													
18													
19	6												
20													
21													
22													
23	7												
24													

MW15-60-SS2 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

MW15-60-SS2 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

Elevation: N/A
Easting: 544379.881
Northing: 5021909.378

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SMP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-61



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: SMP
Drill Date: November 16, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details			Remarks			
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)					Combustible Vapour (ppm)		
									250	750	1250				
										Total Organic Vapour (ppm)					
										20	60	100	140	180	
-3															
-2															
-1															
0		Ground Surface	0.00												
0		TOPSOIL	0.00												
1		FILL													
2		Fine grained sand, brown, orange coloring, moist													
3				SS	1			50							
4															
5			-1.52												
6		SAND	1.52	SS	2			100							
7		Medium to coarse grained sand, grey, wet	-1.90												
8		CLAY	1.90												
9		Grey, wet		SS	3			100							
10			-3.05												
11		END OF BOREHOLE	3.05												
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															

MW15-61-SS2 was submitted for VOC analyses. Sample was taken from sand/clay interface.

MW15-61-SS2 was submitted for VOC analyses. Sample was taken from sand/clay interface.

Elevation: N/A
Easting: 544316.996
Northing: 5021716.734

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SMP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-62



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: SMP
Drill Date: November 16, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)		
									Combustible Vapour (ppm) 250 750 1250 Total Organic Vapour (ppm) 20 60 100 140 180	
-3 ft 0 m		Ground Surface	0.00							
0		TOPSOIL	0.00							
1		FILL Fine grained sand, some gravel, brown								
2		Medium grained sand, brown to red, moist		SS	1			50		
3										
4		Silt layers	-1.52							
5		SAND Medium to coarse grained sand, some gravel, grey, wet	1.52							
6				SS	2			100		
7			-2.20							
8		CLAY Some silt, grey, wet	2.20							
9				SS	3			100		
10			-3.05							
11		END OF BOREHOLE	3.05							
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										

MW15-62-SS2 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

Elevation: N/A
Easting: 544231.967
Northing: 5021665.031

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SMP
Sheet: 1 of 1

Stratigraphic and Instrumentation Log: MW15-63



300-210 Colonnade Road
Ottawa, Ontario K2E 7L5

Project No: TZ14024
Location: Leitrim Road
Logged By: SMP
Drill Date: November 16, 2015
Hole Size: 82.55 mm

Project Name: NCC Leitrim Road - Phase II ESA
Client: National Capital Commission
Entered By: JFT
Drill Method: Direct Push
Drilled By: Strata Drilling Group

SUBSURFACE PROFILE				SAMPLE DATA					Combustible Vapour (ppm) ○ 250 750 1250			Monitoring Well Details	Remarks
Depth	Symbol	Description	Elevation (m)	Type	Number	Sample	N or RQD	Recovery (%)	Total Organic Vapour (ppm) ● 20 60 100 140 180				
-3 ft m													
-2													
-1													
0		Ground Surface	0.00										
0		TOPSOIL	0.00										
1		SAND											
2		Medium to coarse grained sand, red to brown, dry to moist											
3	1			SS	1				50				
4													
5		Becomes brown, wet											
6				SS	2				100				
7	2												
8		CLAY	-2.25										
		Some silt, grey, wet	2.25										
9				SS	3				100				
10	3		-3.05										
		END OF BOREHOLE	3.05										
11													
12													
13	4												
14													
15													
16	5												
17													
18													
19													
20	6												
21													
22													
23	7												
24													

MW15-63-SS2 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

MW15-63-SS2 was submitted for VOC and FOC analyses. Sample was taken from sand/clay interface.

Elevation: N/A
Easting: 544050.052
Northing: 5021688.200

Casing Elevation: N/A
Well Casing Size / Slot Size: 38.1 mm
Vapour Unit: RKI Eagle II

Datum: Geodetic
Checked by: SMP
Sheet: 1 of 1

APPENDIX E

GRAIN SIZE DISTRIBUTION CURVES

Amec Foster Wheeler
 Environment & Infrastructure
 210 Colonnade Road South, Unit 300
 Ottawa, Ontario
 Canada K2E 7L5
 Tel +1 (613) 727 0658
 Fax +1 (613) 727 9465
 www.amecfw.com

GRAIN SIZE DISTRIBUTION ASTM C 136



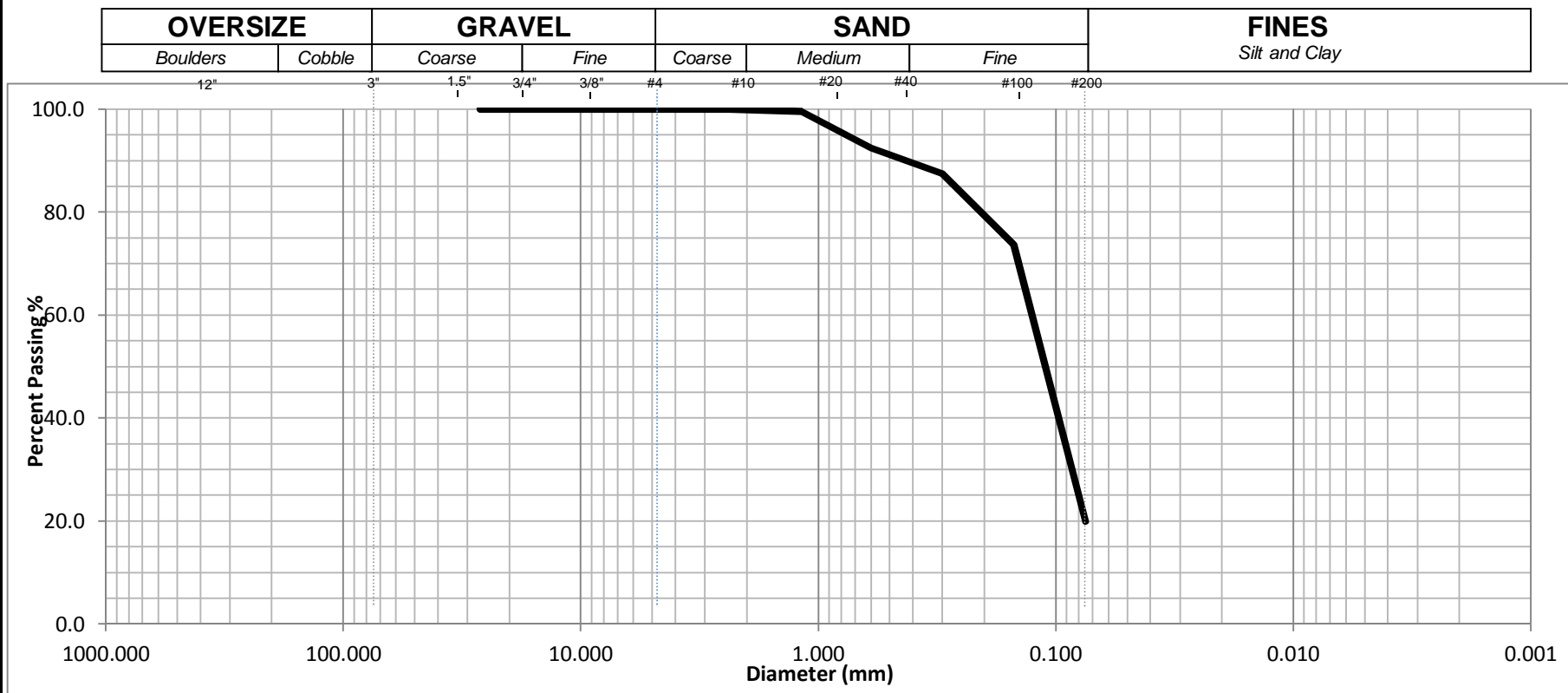
Project Number: TZ14024
 Project Client:
 Project Name:
 Project Location:

Sampled on: 4-Mar-2015
 Received on: 4-Mar-2015
 Tested on: 9-Mar-2015

Sampled by: BC
 Received by: WF
 Tested by: BC

Test Results

Sample Location: MW15-39
 Sample Identification: SS4



Laboratory No.: Ottawa

SAND, some silt

Signed by: Wissam Farah

Amec Foster Wheeler
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 210 Colonnade Road South, Unit 300
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 Tel +1 (613) 727 0658
 Fax +1 (613) 727 9465
 www.amecfw.com

GRAIN SIZE DISTRIBUTION ASTM C 136



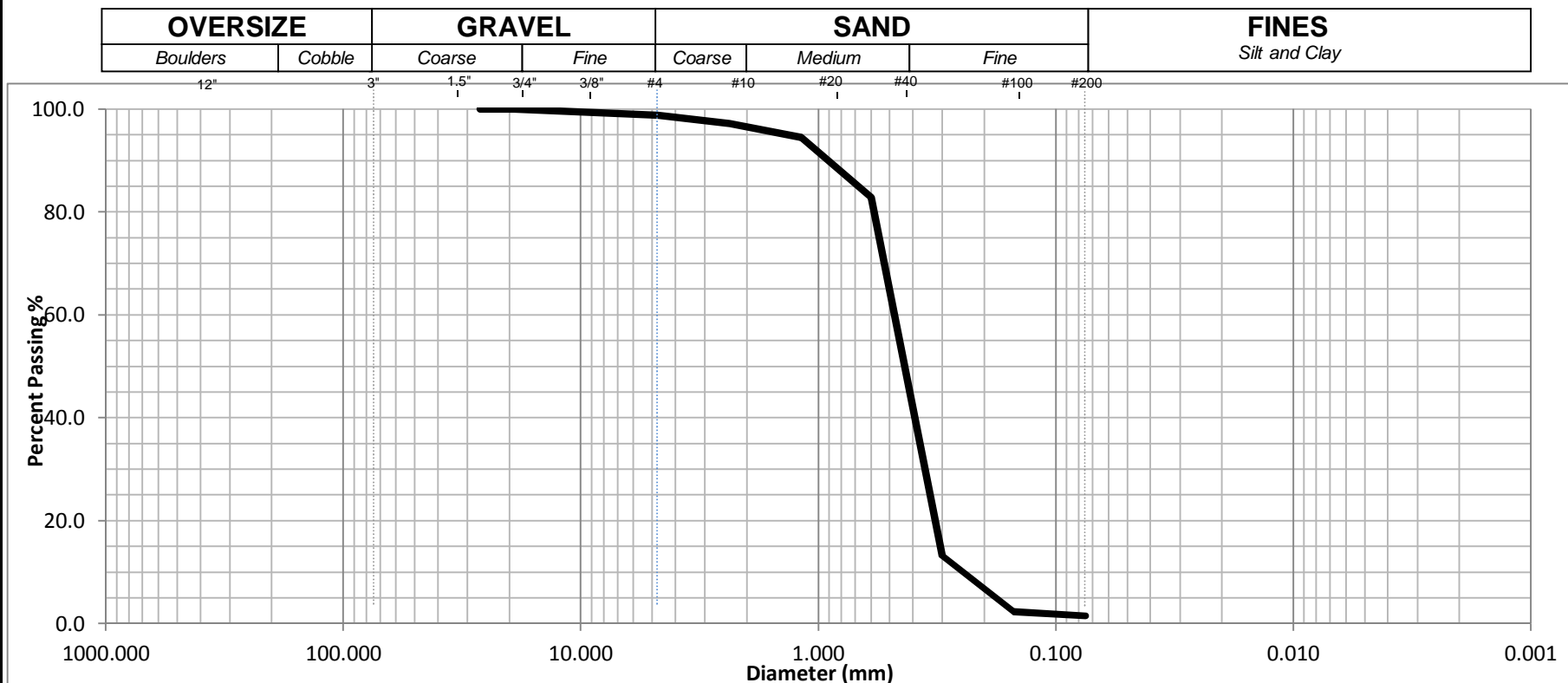
Project Number: TZ14024
 Project Client:
 Project Name:
 Project Location:

Sampled on: 4-Mar-2015
 Received on: 4-Mar-2015
 Tested on: 9-Mar-2015

Sampled by: BC
 Received by: WF
 Tested by: BC

Test Results

Sample Location: MW15-40C
 Sample Identification: SS3



Laboratory No.: Ottawa

SAND, trace silt and gravel

Signed by: Wissam Farah

Amec Foster Wheeler
 Environment & Infrastructure
 210 Colonnade Road South, Unit 300
 Ottawa, Ontario
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GRAIN SIZE DISTRIBUTION ASTM C 136



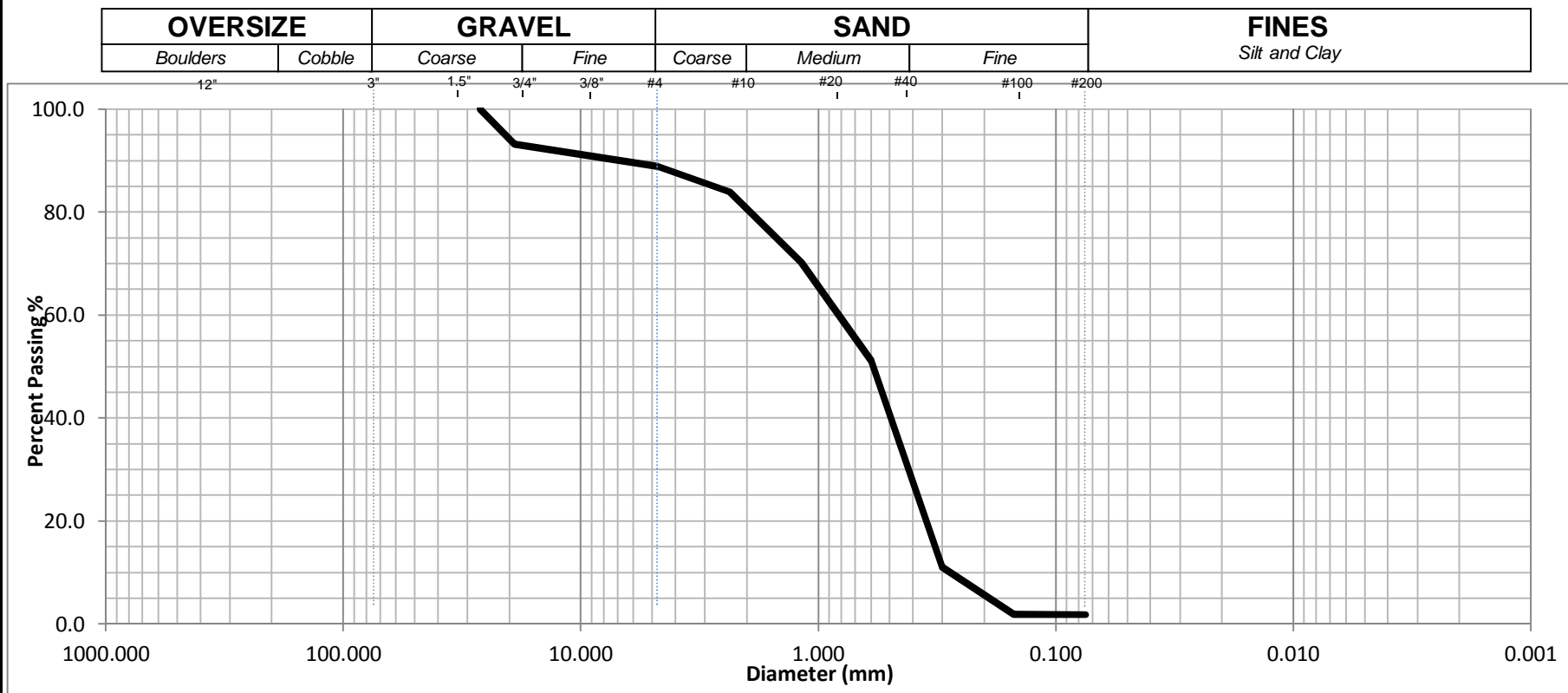
Project Number: TZ14024
 Project Client:
 Project Name:
 Project Location:

Sampled on: 4-Mar-2015
 Received on: 4-Mar-2015
 Tested on: 9-Mar-2015

Sampled by: BC
 Received by: WF
 Tested by: BC

Test Results

Sample Location: MW15-51C
 Sample Identification: SS5



Laboratory No.: Ottawa

SAND, trace silt and gravel

Signed by: Wissam Farah

APPENDIX F

HYDRAULIC CONDUCTIVITY TEST DATA

Project Number: TZ14024
Monitoring Well ID: MW15-38C (Trial 1)
Test Date: 16-Mar-15

Gravel	1 to 10^{-3}	m/sec
Clean Sand	10^{-2} to 10^{-5}	m/sec
Silty Sand	10^{-3} to 10^{-7}	m/sec
Silt	10^{-5} to 10^{-9}	m/sec
Clay	10^{-9} to 10^{-12}	m/sec

from: Freeze and Cherry, 1979

L/r_w	36.826	
A	2.6953	
B	0.4154	A,B,C are dimensionless coefficients that are functions of L/r_w
C	2.1916	

Partially Penetrating Well			Fully Penetrating Well		
Part 1	0.2445	$Part\ 1 = 1.1/\ln(b/r_w)$	Part 1	0.2445	$Part\ 1 = 1.1/\ln(b/r_w)$
Part 2	0.1299	$Part\ 2 = A + B \ln[(D-b)/r_w] / (L/r_w)$	Part 2	0.0595	$Part\ 2 = C / (L/r_w)$
$\ln(R_e/r_w)$	2.671	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$	$\ln(R_e/r_w)$	3.2892	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$
$K = 1.3E-08\ m/sec$ $1E-05\ m/day$ $T = 1.3E-07\ m^2/sec$ $0.0045\ m^2/day$	$K = \frac{r_c^2 \ln(R_e/r_w)}{2d} \cdot \frac{1}{t} \cdot \ln \frac{h_o}{h_t}$		$K = 1.6E-08\ m/s$ $1E-05\ m/day$ $T = 1.6E-07\ m^2/sec$ $0.0056\ m^2/day$	$K = \frac{r_c^2 \ln(R_e/r_w)}{2d} \cdot \frac{1}{t} \cdot \ln \frac{h_o}{h_t}$	

¹ - Porosity determined from a series of bench scale experiments performed by Conor Pacific, March 1997

The plot shows a constant drawdown of approximately 1.8 m over a period of 4800 seconds. The data points are as follows:

Time (sec)	Drawdown (m)
0	1.8
1200	1.8
2400	1.8
3600	1.8
4800	1.8

[illegible]

Checked by: _____

Page 2 of 10

Project Number: TZ14024
Monitoring Well ID: MW15-46C (Trial 2)
Test Date: 18-Mar-15

Gravel	1 to 10^{-3}	m/sec
Clean Sand	10^{-2} to 10^{-5}	m/sec
Silty Sand	10^{-3} to 10^{-7}	m/sec
Silt	10^{-5} to 10^{-9}	m/sec
Clay	10^{-9} to 10^{-12}	m/sec

r_a	0.019 m	inside radius of well screen
r_w	0.0413 m	radius from well centre to undisturbed aquifer (Borehole diameter)
r_c	0.0288 m	corrected inside radius of well screen {using $r_c = [r_a^2 + n(r_w^2 - r_a^2)]^{0.5}$ }
n	0.35	porosity of sand filter pack (40% for most well sands) ¹
L	1.52 m	length of screen through which water enters
H	4.445 m	depth of monitor well - from static water table to well bottom
D	10 m	saturated thickness of aquifer
t_t	6000 sec	time > $t=0$ (take from line of best fit on graph below)
h_0	0.804 m	head in well at $t = 0$
h_t	0.6654 m	head in well at $t = t_t$ (take from line of best fit on graph below)

A,B,C are dimensionless coefficients that are functions of L/r_w

Partially Penetrating Well			Fully Penetrating Well		
Part 1	0.2351	$Part\ 1 = 1.1/\ln(b/r_w)$	Part 1	0.2351	$Part\ 1 = 1.1/\ln(b/r_w)$
Part 2	0.1285	$Part\ 2 = A + B \ln[(D-b)/r_w] / (L/r_w)$	Part 2	0.0595	$Part\ 2 = C/(L/r_w)$
$\ln(R_e/r_w)$	2.7505	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$	$\ln(R_e/r_w)$	3.3945	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$
$K = 2.4E-08\ m/sec$ $2E-05\ m/day$ $T = 2.4E-07\ m^2/sec$ $0.0082\ m^2/day$	$K = \frac{r_c^2 \ln(R_e/r_w)}{2d} \cdot \frac{1}{t} \cdot \ln \frac{h_o}{h_t}$		$K = 2.9E-08\ m/s$ $3E-05\ m/day$ $T = 2.9E-07\ m^2/sec$ $0.0101\ m^2/day$	$K = \frac{r_c^2 \ln(R_e/r_w)}{2d} \cdot \frac{1}{t} \cdot \ln \frac{h_o}{h_t}$	

¹ - Porosity determined from a series of bench scale experiments performed by Conor Pacific, March 1997

The figure shows a semi-logarithmic plot of Drawdown (m) versus Time (sec). The y-axis is logarithmic, with major ticks at 0.010, 0.100, and 1.000. The x-axis is linear, with major ticks every 2000 units from 0 to 16000. There are seven data points represented by blue diamonds. The drawdown starts near 0.7 m at time 0 and decreases slowly to approximately 0.5 m at 14500 seconds.

Time (sec)	Drawdown (m)
0	0.70
1200	0.68
2400	0.65
3600	0.63
7200	0.58
10800	0.53
14500	0.50

[illegible]

Checked by: _____

Page 6 of 10

**Hydraulic Conductivity of Unconfined Aquifer
For Completely or Partially Penetrating Wells**

Project Number: TZ14024
Monitoring Well ID: MW15-50 (Trial 1)
Test Date: 16-Mar-15

Typical Hydraulic Conductivity Values

Gravel	1 to 10 ⁻³	m/sec
Clean Sand	10 ⁻² to 10 ⁻⁵	m/sec
Silty Sand	10 ⁻³ to 10 ⁻⁷	m/sec
Silt	10 ⁻⁵ to 10 ⁻⁹	m/sec
Clay	10 ⁻⁹ to 10 ⁻¹²	m/sec

from: Freeze and Cherry, 1979

r_a	0.019 m	inside radius of well screen
r_w	0.0413 m	radius from well centre to undisturbed aquifer (Borehole diameter)
r_c	0.0288 m	corrected inside radius of well screen {using $r_c = [r_a^2 + n(r_w^2 - r_a^2)]^{0.5}$ }
n	0.35	porosity of sand filter pack (40% for most well sands) ¹
L	0.91 m	length of screen through which water enters
H	0.857 m	depth of monitor well - from static water table to well bottom
D	0.857 m	saturated thickness of aquifer
t_i	10 sec	time > t=0 (take from line of best fit on graph below)
h_0	0.7528 m	head in well at t = 0
h_t	0.4364 m	head in well at t = t_i (take from line of best fit on graph below)

L/r_w	22.047
A	2.2499
B	0.3392
C	1.6358

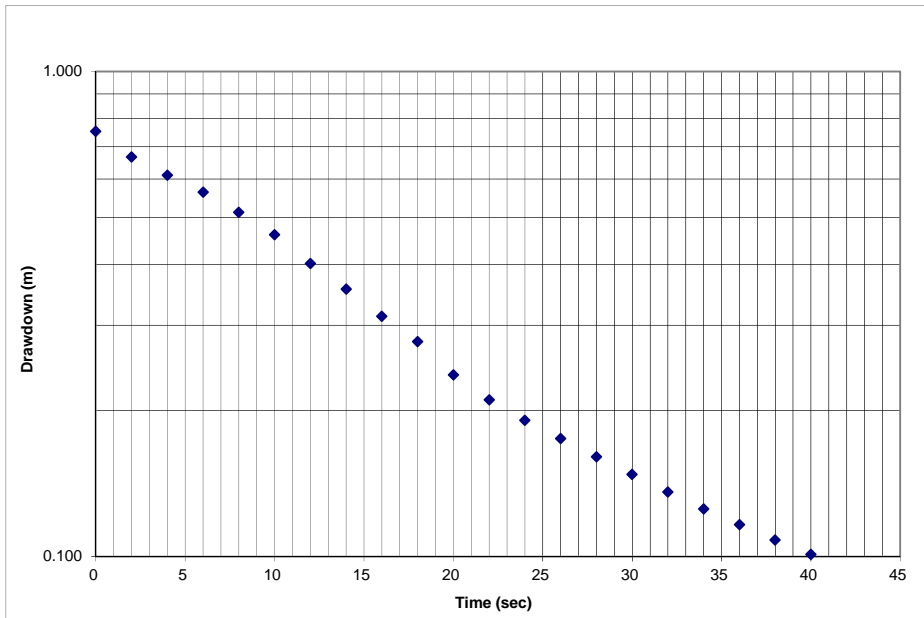
A,B,C are dimensionless coefficients that are functions of L/r_w

Partially Penetrating Well			Fully Penetrating Well		
Part 1	0.3627	$Part\ 1 = 1.1/\ln(b/r_w)$	Part 1	0.3627	$Part\ 1 = 1.1/\ln(b/r_w)$
Part 2	#NUM!	$Part\ 2 = A + B\ln[(D-b)/r_w]/(L/r_w)$	Part 2	0.0742	$Part\ 2 = C/(L/r_w)$
$\ln(R_e/r_w)$	#NUM!	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$	$\ln(R_e/r_w)$	2.2891	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$
K = #NUM! m/sec			K = 5.7E-05 m/s		
#NUM! m/day			0.0492 m/day		
T = #NUM! m ² /sec			T = 4.9E-05 m ² /sec		
#NUM! m ² /day			1.6879 m ² /day		

* Do not use this value if an estimation of the aquifer's saturated thickness was used in the input

¹ - Porosity determined from a series of bench scale experiments performed by Conor Pacific, March 1997

From: A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers With Completely or Partially Penetrating Wells. Bouwer and Rice. Water Resources Research. 12(3), 423-428



Time (sec)	Water Level (m)	Drawdown (m)
Static	1.905	
0	2.658	0.753
2	2.572	0.667
4	2.517	0.612
6	2.469	0.564
8	2.418	0.513
10	2.366	0.461
12	2.307	0.402
14	2.261	0.356
16	2.218	0.313
18	2.183	0.278
20	2.142	0.237
22	2.115	0.210
24	2.096	0.191
26	2.080	0.175
28	2.066	0.161
30	2.053	0.148
32	2.041	0.136
34	2.030	0.125
36	2.021	0.116
38	2.013	0.108
40	2.006	0.101
		0.000
		0.000
		0.000

Prepared by: _____

Checked by: _____

Hydraulic Conductivity of Unconfined Aquifer For Completely or Partially Penetrating Wells

Project Number: TZ14024
Monitoring Well ID: MW15-50 (Trial 2)
Test Date: 16-Mar-15

Typical Hydraulic Conductivity Values

Gravel	1 to 10 ⁻³	m/sec
Clean Sand	10 ⁻² to 10 ⁻⁵	m/sec
Silty Sand	10 ⁻³ to 10 ⁻⁷	m/sec
Silt	10 ⁻⁵ to 10 ⁻⁹	m/sec
Clay	10 ⁻⁹ to 10 ⁻¹²	m/sec

from: Freeze and Cherry, 1979

r _a	0.019 m	inside radius of well screen
r _w	0.0413 m	radius from well centre to undisturbed aquifer (Borehole diameter)
r _c	0.0288 m	corrected inside radius of well screen {using $r_c = [r_a^2 + n(r_w^2 - r_a^2)]^{0.5}$ }
n	0.35	porosity of sand filter pack (40% for most well sands) ¹
L	0.91 m	length of screen through which water enters
H	0.857 m	depth of monitor well - from static water table to well bottom
D	0.857 m	saturated thickness of aquifer
t _i	15 sec	time > t=0 (take from line of best fit on graph below)
h ₀	0.112 m	head in well at t = 0
h _t	0.0639 m	head in well at t = t _i (take from line of best fit on graph below)

L/r _w	22.047
A	2.2499
B	0.3392
C	1.6358

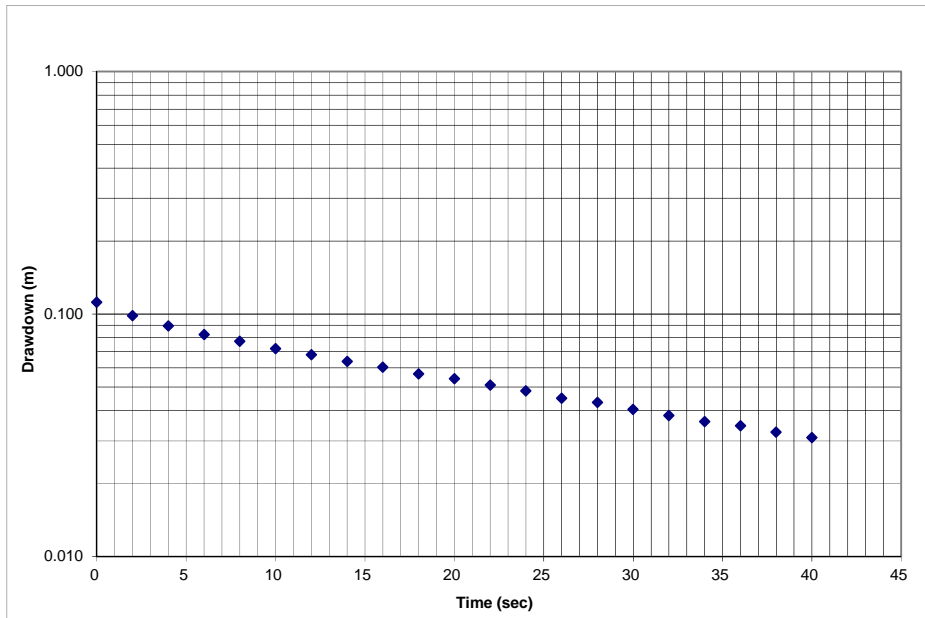
A,B,C are dimensionless coefficients that are functions of L/r_w

Partially Penetrating Well			Fully Penetrating Well		
Part 1	0.3627	Part 1 = 1.1/ln(b/r _w)	Part 1	0.3627	Part 1 = 1.1/ln(b/r _w)
Part 2	#NUM!	Part 2 = A + Bln[(D-b)/r _w]/(L/r _w)	Part 2	0.0742	Part 2 = C/(L/r _w)
ln(R _e /r _w)	#NUM!	ln(R _e /r _w) = (Part 1 + Part 2) ⁻¹	ln(R _e /r _w)	2.2891	ln(R _e /r _w) = (Part 1 + Part 2) ⁻¹
K = #NUM! m/sec	$K = \frac{r_c^2 \ln(R_e/r_w)}{2d} \cdot \frac{1}{t} \cdot \ln \frac{h_o}{h_t}$		K = 3.9E-05 m/s	$K = \frac{r_c^2 \ln(R_e/r_w)}{2d} \cdot \frac{1}{t} \cdot \ln \frac{h_o}{h_t}$	
#NUM! m/day			0.0338 m/day		
T = #NUM! m ² /sec			T = 3.4E-05 m ² /sec		
#NUM! m ² /day			1.1586 m ² /day		

* Do not use this value if an estimation of the aquifer's saturated thickness was used in the input

¹ - Porosity determined from a series of bench scale experiments performed by Conor Pacific, March 1997

From: A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers With Completely or Partially Penetrating Wells. Bouwer and Rice. Water Resources Research. 12(3), 423-428



Time (sec)	Water Level (m)	Drawdown (m)
Static	1.905	
0	2.017	0.112
2	2.004	0.099
4	1.995	0.090
6	1.987	0.082
8	1.982	0.077
10	1.977	0.072
12	1.973	0.068
14	1.969	0.064
16	1.965	0.060
18	1.962	0.057
20	1.959	0.054
22	1.956	0.051
24	1.953	0.048
26	1.950	0.045
28	1.948	0.043
30	1.945	0.040
32	1.943	0.038
34	1.941	0.036
36	1.940	0.035
38	1.938	0.033
40	1.936	0.031
		0.000
		0.000
		0.000
		0.000

Prepared by: _____

Checked by: _____

Project Number: TZ14024
Monitoring Well ID: MW15-51
Test Date: 16-Mar-15

Gravel	1 to 10^{-3}	m/sec
Clean Sand	10^{-2} to 10^{-5}	m/sec
Silty Sand	10^{-3} to 10^{-7}	m/sec
Silt	10^{-5} to 10^{-9}	m/sec
Clay	10^{-9} to 10^{-12}	m/sec

r_a	0.019 m	inside radius of well screen
r_w	0.0413 m	radius from well centre to undisturbed aquifer (Borehole diameter)
r_c	0.0288 m	corrected inside radius of well screen {using $r_c = [r_a^2 + n(r_w^2 - r_a^2)]^{0.5}$ }
n	0.35	porosity of sand filter pack (40% for most well sands) ¹
L	1.52 m	length of screen through which water enters
H	2.503 m	depth of monitor well - from static water table to well bottom
D	2.503 m	saturated thickness of aquifer
t_t	6 sec	time > $t=0$ (take from line of best fit on graph below)
h_0	0.121 m	head in well at $t = 0$
h_t	0.1107 m	head in well at $t = t_t$ (take from line of best fit on graph below)

A,B,C are dimensionless coefficients that are functions of L/r_w

* Do not use this value if an estimation of the aquifer's saturated thickness was used in the input

¹ - Porosity determined from a series of bench scale experiments performed by Conor Pacific, March 1997

Figure 1 is a semi-logarithmic plot showing Drawdown (m) on the y-axis versus Time (sec) on the x-axis. The y-axis is logarithmic, ranging from 0.010 to 1.000. The x-axis is linear, ranging from 0 to 25 seconds. The data points, represented by blue diamonds, show a constant drawdown of approximately 0.10 m over time, indicating a steady-state condition.

Time (sec)	Drawdown (m)
0	0.12
2	0.12
4	0.11
6	0.11
8	0.105
10	0.105
12	0.102
14	0.102
16	0.100
18	0.100
20	0.100

Prepared by: _____

Checked by: _____

**Hydraulic Conductivity of Unconfined Aquifer
For Completely or Partially Penetrating Wells**

Project Number: TZ14024
Monitoring Well ID: MW15-57
Test Date: 16-Mar-15

Typical Hydraulic Conductivity Values

Gravel	1 to 10 ⁻³	m/sec
Clean Sand	10 ⁻² to 10 ⁻⁵	m/sec
Silty Sand	10 ⁻³ to 10 ⁻⁷	m/sec
Silt	10 ⁻⁵ to 10 ⁻⁹	m/sec
Clay	10 ⁻⁹ to 10 ⁻¹²	m/sec

from: Freeze and Cherry, 1979

r_a	0.019 m	inside radius of well screen
r_w	0.0413 m	radius from well centre to undisturbed aquifer (Borehole diameter)
r_c	0.0288 m	corrected inside radius of well screen {using $r_c = [r_a^2 + n(r_w^2 - r_a^2)]^{0.5}$ }
n	0.35	porosity of sand filter pack (40% for most well sands) ¹
L	1.52 m	length of screen through which water enters
H	1.889 m	depth of monitor well - from static water table to well bottom
D	1.8891 m	saturated thickness of aquifer
t_i	10 sec	time > t=0 (take from line of best fit on graph below)
h_0	0.4434 m	head in well at t = 0
h_t	0.142 m	head in well at t = t_i (take from line of best fit on graph below)

L/r_w	36.826
A	2.6953
B	0.4154
C	2.1916

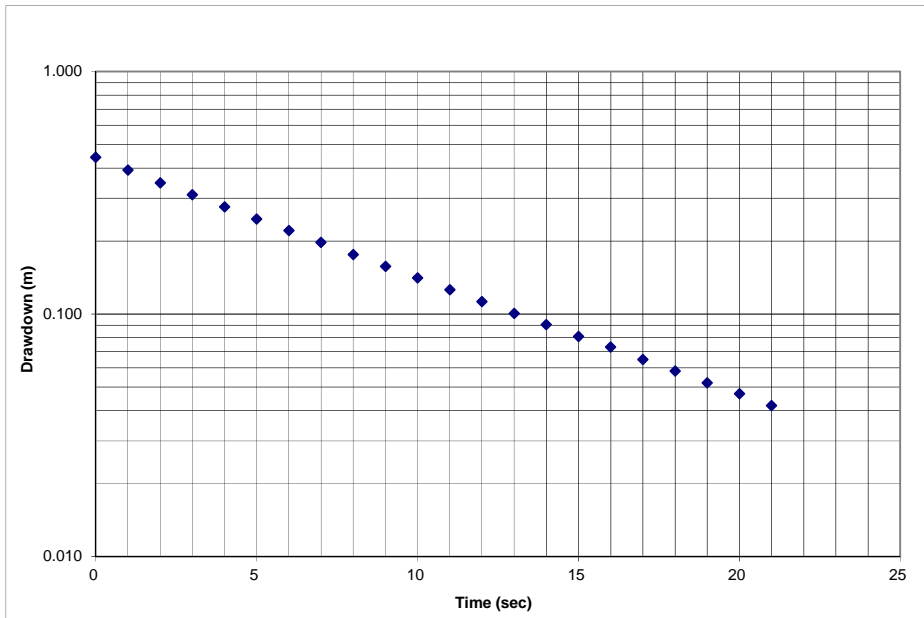
A,B,C are dimensionless coefficients that are functions of L/r_w

Partially Penetrating Well			Fully Penetrating Well		
Part 1	0.2877	$Part\ 1 = 1.1/\ln(b/r_w)$	Part 1	0.2877	$Part\ 1 = 1.1/\ln(b/r_w)$
Part 2	0.0052	$Part\ 2 = A + B\ln[(D-b)/r_w]/(L/r_w)$	Part 2	0.0595	$Part\ 2 = C/(L/r_w)$
$\ln(R_e/r_w)$	3.4137	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$	$\ln(R_e/r_w)$	2.8802	$\ln(R_e/r_w) = (Part\ 1 + Part\ 2)^{-1}$
$K = 1.1E-04$ m/sec			$K = 9.0E-05$ m/s		
0.0918 m/day			0.0775 m/day		
$T = 2.0E-04$ m ² /sec			$T = 1.7E-04$ m ² /sec		
6.9383 m ² /day			5.8539 m ² /day		

* Do not use this value if an estimation of the aquifer's saturated thickness was used in the input

¹ - Porosity determined from a series of bench scale experiments performed by Conor Pacific, March 1997

From: A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers With Completely or Partially Penetrating Wells. Bouwer and Rice. Water Resources Research. 12(3), 423-428



Time (sec)	Water Level (m)	Drawdown (m)
Static	2.745	
0	3.188	0.443
1	3.137	0.392
2	3.093	0.348
3	3.056	0.311
4	3.022	0.277
5	2.992	0.247
6	2.966	0.221
7	2.943	0.198
8	2.921	0.176
9	2.902	0.157
10	2.886	0.141
11	2.871	0.126
12	2.858	0.113
13	2.846	0.101
14	2.836	0.091
15	2.826	0.081
16	2.818	0.073
17	2.810	0.065
18	2.803	0.058
19	2.797	0.052
20	2.792	0.047
21	2.787	0.042
		0.000
		0.000
		0.000

Prepared by: _____

Checked by: _____

APPENDIX G

LABORATORY REPORTS OF ANALYSIS

C.O.C.: G51619

REPORT No. B15-04130

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

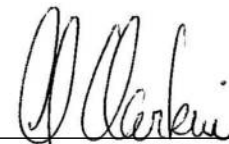
SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-38C-SS-5	MW15-38C-SS-6SS	MW15-40C-SS4-Rep.1	MW15-40C-SS4-Rep.2
			Sample I.D.	B15-04130-1	B15-04130-2	B15-04130-3	B15-04130-4
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	09-Mar-15		0.005 ¹	0.005 ¹
% moisture	%			06-Mar-15/K			
Acetone	µg/g	0.3	EPA 8260	02-Mar-15/O	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51619

REPORT No. B15-04130

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-38C-SS-5	MW15-38C-SS-6SS	MW15-40C-SS4-Rep.1	MW15-40C-SS4-Rep.2
			Sample I.D.	B15-04130-1	B15-04130-2	B15-04130-3	B15-04130-4
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichlorobenzene,1,4-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethane,1,1-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethane,1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	0.05
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropane,1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Ethylbenzene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04	< 0.04
Hexane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	02-Mar-15/O	< 0.1	< 0.1	< 0.1

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Fax: 613-526-1244

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-38C-SS-5	MW15-38C-SS-6SS	MW15-40C-SS4-Rep.1	MW15-40C-SS4-Rep.2
			Sample I.D.	B15-04130-1	B15-04130-2	B15-04130-3	B15-04130-4
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	0.85
Trichlorofluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Xylene, m,p,o-	µg/g	0.05	EPA 8260	02-Mar-15/O	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	02-Mar-15/O	107	108	107
Toluene-d8 (SS)	%	10	EPA 8260	02-Mar-15/O	98	99.0	97

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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Lab Manager - Ottawa District

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Fax: 613-526-1244

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-38C-SS-5	MW15-38C-SS-6SS	MW15-40C-SS4-Rep.1	MW15-40C-SS4-Rep.2
			Sample I.D.	B15-04130-1	B15-04130-2	B15-04130-3	B15-04130-4
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Bromofluorobenzene,4(SS)	%	10	EPA 8260	02-Mar-15/O	92	89.0	97
PHC F1 (C6-C10)	µg/g	10	MOE E3398	02-Mar-15/O			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K			

1 subcontracted to Testmark Labs.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-40C-SS4-Rep.3	MW15-40C-SS9	MW15-42C-SS3	MW15-44-SS6SS
			Sample I.D.	B15-04130-5	B15-04130-6	B15-04130-7	B15-04130-8
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	09-Mar-15	0.006 ¹		
% moisture	%			06-Mar-15/K			
Acetone	µg/g	0.3	EPA 8260	02-Mar-15/O	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-40C-SS4-Rep.3	MW15-40C-SS9	MW15-42C-SS3	MW15-44-SS6SS
			Sample I.D.	B15-04130-5	B15-04130-6	B15-04130-7	B15-04130-8
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichlorobenzene,1,4-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethane,1,1-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethane,1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropane,1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Ethylbenzene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04	< 0.04
Hexane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	02-Mar-15/O	< 0.1	< 0.1	< 0.1

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin , BSc., C. Chem

Lab Manager - Ottawa District

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-40C-SS4-Rep.3	MW15-40C-SS9	MW15-42C-SS3	MW15-44-SS6SS
			Sample I.D.	B15-04130-5	B15-04130-6	B15-04130-7	B15-04130-8
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03
Xylene, m,p,o-	µg/g	0.05	EPA 8260	02-Mar-15/O	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	02-Mar-15/O	111	112	112
Toluene-d8 (SS)	%	10	EPA 8260	02-Mar-15/O	99.0	100	99

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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Lab Manager - Ottawa District

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DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-40C-SS4-Rep.3	MW15-40C-SS9	MW15-42C-SS3	MW15-44-SS6SS
			Sample I.D.	B15-04130-5	B15-04130-6	B15-04130-7	B15-04130-8
			Date Collected	27-Feb-15	27-Feb-15	27-Feb-15	27-Feb-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Bromofluorobenzene,4(SS)	%	10	EPA 8260	02-Mar-15/O	90.0	94	92
PHC F1 (C6-C10)	µg/g	10	MOE E3398	02-Mar-15/O			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K			

1 subcontracted to Testmark Labs.



Greg Clarkin , BSc., C. Chem

Lab Manager - Ottawa District

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SAMPLE MATRIX: Soil

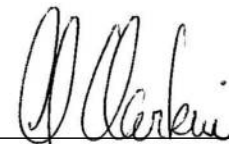
WATERWORKS NO.

Client I.D.	MW15-44-SS5	MW15-44-SS8	MW15-46C-SS3	MW15-46C-SS3SS
Sample I.D.	B15-04130-9	B15-04130-10	B15-04130-11	B15-04130-12
Date Collected	27-Feb-15	27-Feb-15	26-Feb-15	26-Feb-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	09-Mar-15				
% moisture	%			06-Mar-15/K				
Acetone	µg/g	0.3	EPA 8260	02-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51619

REPORT No. B15-04130

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-44-SS5	MW15-44-SS8	MW15-46C-SS3	MW15-46C-SS3SS
Sample I.D.	B15-04130-9	B15-04130-10	B15-04130-11	B15-04130-12
Date Collected	27-Feb-15	27-Feb-15	26-Feb-15	26-Feb-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Ethylbenzene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04	< 0.04	< 0.04

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Fax: 613-526-1244

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-44-SS5	MW15-44-SS8	MW15-46C-SS3	MW15-46C-SS3SS
Sample I.D.	B15-04130-9	B15-04130-10	B15-04130-11	B15-04130-12
Date Collected	27-Feb-15	27-Feb-15	26-Feb-15	26-Feb-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Hexane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	02-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	0.21	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Attention: Susan Pfister

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Tel: 613-526-0123

Fax: 613-526-1244

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-44-SS5	MW15-44-SS8	MW15-46C-SS3	MW15-46C-SS3SS
Sample I.D.	B15-04130-9	B15-04130-10	B15-04130-11	B15-04130-12
Date Collected	27-Feb-15	27-Feb-15	26-Feb-15	26-Feb-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Xylene, m,p,o-	µg/g	0.05	EPA 8260	02-Mar-15/O	< 0.05	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	02-Mar-15/O	113	114	114	114
Toluene-d8 (SS)	%	10	EPA 8260	02-Mar-15/O	99	99	99	98.0
Bromofluorobenzene,4(SS)	%	10	EPA 8260	02-Mar-15/O	91	90	93	91.0
PHC F1 (C6-C10)	µg/g	10	MOE E3398	02-Mar-15/O				
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K				
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K				
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K				

1 subcontracted to Testmark Labs.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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Attention: Susan Pfister

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

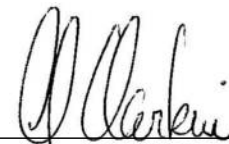
WATERWORKS NO.

Client I.D.	MW15-54-SS3	DUP-1		
Sample I.D.	B15-04130-13	B15-04130-14		
Date Collected	26-Feb-15	26-Feb-15		

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	09-Mar-15				
% moisture	%			06-Mar-15/K	9.7			
Acetone	µg/g	0.3	EPA 8260	02-Mar-15/O	< 0.3	< 0.3		
Benzene	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Bromoform	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Bromodichloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Bromomethane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Carbon Tetrachloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Chloroform	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Dibromochloromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

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2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

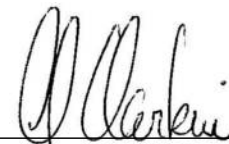
WATERWORKS NO.

Client I.D.	MW15-54-SS3	DUP-1		
Sample I.D.	B15-04130-13	B15-04130-14		
Date Collected	26-Feb-15	26-Feb-15		

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Ethylbenzene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

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Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

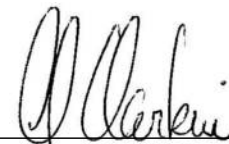
WATERWORKS NO.

Client I.D.	MW15-54-SS3	DUP-1		
Sample I.D.	B15-04130-13	B15-04130-14		
Date Collected	26-Feb-15	26-Feb-15		

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Hexane	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	02-Mar-15/O	< 0.1	< 0.1		
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Styrene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Tetrachloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Toluene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Trichloroethylene	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		
Trichlorofluoromethane	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Vinyl Chloride	µg/g	0.02	EPA 8260	02-Mar-15/O	< 0.02	< 0.02		
Xylene, m,p-	µg/g	0.04	EPA 8260	02-Mar-15/O	< 0.04	< 0.04		
Xylene, o-	µg/g	0.03	EPA 8260	02-Mar-15/O	< 0.03	< 0.03		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Fax: 613-526-1244

DATE RECEIVED: 27-Feb-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 09-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-54-SS3	DUP-1		
Sample I.D.	B15-04130-13	B15-04130-14		
Date Collected	26-Feb-15	26-Feb-15		

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Xylene, m,p,o-	µg/g	0.05	EPA 8260	02-Mar-15/O	< 0.05	< 0.05		
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	02-Mar-15/O	114	115		
Toluene-d8 (SS)	%	10	EPA 8260	02-Mar-15/O	99	99		
Bromofluorobenzene,4(SS)	%	10	EPA 8260	02-Mar-15/O	90	90		
PHC F1 (C6-C10)	µg/g	10	MOE E3398	02-Mar-15/O	< 10			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K	< 5			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K	< 10			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K	< 10			

1 subcontracted to Testmark Labs.

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg

F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)

F2 C10-C16 hydrocarbons in µg/g, (F2-naph if requested)

F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)

F4 C34-C50 hydrocarbons in µg/g

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

Any deviations from the method are noted and reported for any particular sample.

nC6 and nC10 response factor is within 30% of response factor for toluene:

nC10,nC16 and nC34 response factors within 10% of each other:

C50 response factors within 70% of nC10+nC16+nC34 average:

Linearity is within 15%:

All results expressed on a dry weight basis.

Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.

If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC

QC will be made available upon request.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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2378 Holly Lane
 Ottawa Ontario K1V 7P1
 Tel: 613-526-0123
 Fax: 613-526-1244

DATE SUBMITTED: 27-Feb-15

DATE REPORTED: 9-Mar-15

SAMPLE MATRIX: Soil

JOB/PROJECT NO.: NOC Leitrim Road

P.O. NUMBER: TZ14024

WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
VOC's	12	Ottawa	ST	2-Mar-15	2-Mar-15	6-Mar-15	C-VOC-02 (o)	EPA 8260
PHC(F1)	1	Ottawa	ST	2-Mar-15	2-Mar-15	6-Mar-15	C-GRO-02 (o)	CWS Tier 1
PHC(F2-F4)	1	Kingston	SCG	6-Mar-15	9-Mar-15	9-Mar-15	C-PHC-S-001(k)	CWS Tier 1

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem, B.Sc., C.Chem
 Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	0.3	96	60-130	< MDL	< MDL	NC	30	< MDL	130	50-140
Benzene	0.02	89	60-130	< MDL	< MDL	NC	30	< MDL	115	50-140
Bromodichloromethane	0.02	95	60-130	< MDL	< MDL	NC	30	< MDL	119	50-140
Bromoform	0.02	107	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Bromomethane	0.03	51	50-140	< MDL	< MDL	NC	30	< MDL	78	50-140
Carbon Tetrachloride	0.02	89	60-130	< MDL	< MDL	NC	30	< MDL	120	50-140
Chloroform	0.03	93	60-130	< MDL	< MDL	NC	30	< MDL	118	50-140
Dibromochloromethane	0.02	102	60-130	< MDL	< MDL	NC	30	< MDL	130	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	103	50-140	< MDL	< MDL	NC	30	< MDL	129	50-140
Dichlorobenzene, 1,2-	0.02	109	60-130	< MDL	< MDL	NC	30	< MDL	131	50-140
Dichlorobenzene, 1,3-	0.02	109	60-130	< MDL	< MDL	NC	30	< MDL	131	50-140
Dichlorobenzene, 1,4-	0.02	109	60-130	< MDL	< MDL	NC	30	< MDL	130	50-140
Dichlorodifluoromethane	0.02	58	50-140	< MDL	< MDL	NC	30	< MDL	88	50-140
Dichloroethane, 1,1-	0.03	77	60-130	< MDL	< MDL	NC	30	< MDL	107	50-140
Dichloroethane, 1,2-	0.03	86	60-130	< MDL	< MDL	NC	30	< MDL	122	50-140
Dichloroethene, cis-1,2-	0.02	81	60-130	< MDL	< MDL	NC	30	< MDL	116	50-140
Dichloroethene, trans-1,2-	0.02	75	60-130	< MDL	< MDL	NC	30	< MDL	113	50-140
Dichloroethylene, 1,1-	0.03	70	60-130	< MDL	< MDL	NC	30	< MDL	114	50-140
Dichloromethane (Methylene Chloride)	0.03	75	60-130	< MDL	< MDL	NC	30	< MDL	107	50-140
Dichloropropane, 1,2-	0.04	82	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Dichloropropene, cis-1,3-	0.02	82	60-130	< MDL	< MDL	NC	30	< MDL	90	50-140
Dichloropropene, trans-1,3-	0.02	89	60-130	< MDL	< MDL	NC	30	< MDL	96	50-140
Ethylbenzene	0.03	91	60-130	< MDL	< MDL	NC	30	< MDL	123	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	0.03	86	60-130	< MDL	< MDL	NC	30	< MDL	93	50-140
Methyl Ethyl Ketone	0.1	90	60-130	< MDL	< MDL	NC	30	< MDL	112	50-140
Methyl Isobutyl Ketone	0.02	89	60-130	< MDL	< MDL	NC	30	< MDL	118	50-140
Methyl-t-butyl Ether	0.02	96	60-130	< MDL	< MDL	NC	30	< MDL	118	50-140
Monochlorobenzene (Chlorobenzene)	0.03	103	60-130	< MDL	< MDL	NC	30	< MDL	126	50-140
Styrene	0.03	95	60-130	< MDL	< MDL	NC	30	< MDL	116	50-140
Tetrachloroethane, 1,1,1,2-	0.02	106	60-130	< MDL	< MDL	NC	30	< MDL	127	50-140
Tetrachloroethane, 1,1,2,2-	0.02	102	60-130	< MDL	< MDL	NC	30	< MDL	121	50-140
Tetrachloroethylene	0.03	100	60-130	< MDL	< MDL	NC	30	< MDL	129	50-140
Toluene	0.03	96	60-130	< MDL	< MDL	NC	30	< MDL	122	50-140
Trichloroethane, 1,1,1-	0.02	89	60-130	< MDL	< MDL	NC	30	< MDL	117	50-140
Trichloroethane, 1,1,2-	0.02	104	60-130	< MDL	< MDL	NC	30	< MDL	128	50-140
Trichloroethylene	0.03	94	60-130	< MDL	< MDL	NC	30	< MDL	121	50-140
Trichlorofluoromethane	0.02	72	60-130	< MDL	< MDL	NC	30	< MDL	107	50-140
Vinyl Chloride	0.02	53	50-140	< MDL	< MDL	NC	30	< MDL	75	50-140
Xylene, m,p-	0.04	101	60-130	< MDL	< MDL	NC	30	< MDL	122	50-140
Xylene, o-	0.03	100	60-130	< MDL	< MDL	NC	30	< MDL	122	50-140
PHC F1 (C6-C10)	10	90	60-140	< MDL	< MDL	NC	30	< MDL	85	60-140
PHC F2 (>C10-C16)	5	79	60-140	157	141	11	30	< MDL	66	60-140
PHC F3 (>C16-C34)	10	96	60-140	250	220	13	30	< MDL	97	60-140
PHC F4 (>C34-C50)	10	81	60-140	50	60	NC	30	< MDL	114	60-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

☒ O.Reg 153 Table 2
☐ Surface Soil ☒ Sub Surface Soil (O.Reg 153)
☐ Yes ☐ No Record of Site Condition (O.Reg 153)
☐ Provincial Water Quality Objectives
☐ Sewer Use By-Law:

☐ MISA Guidelines
☐ O.Reg 558 Leachate Analysis
 Disposal Site: _____
☐ Landfill Monitoring
☐ Other: _____

Indicate Laboratory Samples are submitted to:

☐ Kingston☒ Ottawa☐ Richmond Hill☐ Windsor

TURNAROUND SERVICE
REQUESTED (see back page)

TURNAROUND SERVICE
REQUESTED (see back page)

<input type="checkbox"/>	Platinum	200% Surcharge**
<input type="checkbox"/>	Gold	100% Surcharge
<input type="checkbox"/>	Silver	50% Surcharge
<input type="checkbox"/>	Bronze	25% Surcharge
<input checked="" type="checkbox"/>	Standard	5-7 days

☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations?

☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

[illegible]

SAMPLE SUBMISSION INFORMATION			SHIPPING INFORMATION		REPORTING / INVOICING	SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)	
	Sampled by:	Submitted by:	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): <i>Grnd</i>	Signature: <i>[Signature]</i>
Print:	<i>Jason Blar</i>	<i>Jason Blar</i>	Caduceon's Courier <input type="checkbox"/>	<input type="checkbox"/>	Report by Email <input type="checkbox"/>	Date Received (yy-mm-dd): <i>Feb 27/15</i>	Time Received: <i>17:23</i>
Sign:	<i>[Signature]</i>	<i>[Signature]</i>	Drop Off <input checked="" type="checkbox"/>	# of Pieces	Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input type="checkbox"/> Yes <input type="checkbox"/> No	
	<i>15-02-27</i>	<i>15-02-27</i>	Caduceon (Pick-up) <input type="checkbox"/>	<i>1</i>	Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: <i>8</i>	Labeled by:
	Date (yy-mm-dd)/Time:	Date (yy-mm-dd)/Time:				Comments:	

Laboratory Locations/Shipping Addresses

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com

Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1. Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com

Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com

Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

Comments: 1150IL
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Page 1 of 1
G 51619

C.O.C.: G51622, 51623

REPORT No. B15-04389 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		MW15-47-SS3	MW15-48C-SS5	MW15-52-SS4	BH15-10-SS3
			Sample I.D.		B15-04389-1	B15-04389-3	B15-04389-7	B15-04389-9
			Date Collected		02-Mar-15	02-Mar-15	02-Mar-15	03-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
pH @25°C	pH Units		SM 4500H	04-Mar-15/O	6.99	7.07	6.99	7.04
Antimony	µg/g	0.5	EPA 6020	05-Mar-15/O				
Arsenic	µg/g	0.5	EPA 6020	05-Mar-15/O				
Barium	µg/g	1	EPA 6010	05-Mar-15/O				
Beryllium	µg/g	0.2	EPA 6010	05-Mar-15/O				
Boron	µg/g	0.5	EPA 6010	05-Mar-15/O				
Boron (HWS)	µg/g	0.02	MOE3470	05-Mar-15/O				
Cadmium	µg/g	0.5	EPA 6010	05-Mar-15/O				
Chromium	µg/g	1	EPA 6010	05-Mar-15/O				
Chromium (VI)	µg/g	0.5	EPA7196A	05-Mar-15/O				
Cobalt	µg/g	1	EPA 6010	05-Mar-15/O				
Copper	µg/g	1	EPA 6010	05-Mar-15/O				
Lead	µg/g	5	EPA 6010	05-Mar-15/O				
Mercury	µg/g	0.005	EPA 7471A	04-Mar-15/O				
Molybdenum	µg/g	1	EPA 6010	05-Mar-15/O				
Nickel	µg/g	1	EPA 6010	05-Mar-15/O				
Selenium	µg/g	0.5	EPA 6020	05-Mar-15/O				
Silver	µg/g	0.2	EPA 6010	05-Mar-15/O				
Thallium	µg/g	0.1	EPA 6020	05-Mar-15/O				
Tin	µg/g	5	EPA 6010	05-Mar-15/O				
Uranium	µg/g	0.1	EPA 6020	05-Mar-15/O				
Vanadium	µg/g	1	EPA 6010	05-Mar-15/O				
Zinc	µg/g	3	EPA 6010	05-Mar-15/O				

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51622, 51623

REPORT No. B15-04389 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-55-SSIB	MW15-56-SSIB	MW15-59-SS3	
			Sample I.D.	B15-04389-13	B15-04389-15	B15-04389-20	
			Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
pH @25°C	pH Units		SM 4500H	04-Mar-15/O	7.06	6.51	6.57
Antimony	µg/g	0.5	EPA 6020	05-Mar-15/O	< 0.5	< 0.5	
Arsenic	µg/g	0.5	EPA 6020	05-Mar-15/O	1.7	2.5	
Barium	µg/g	1	EPA 6010	05-Mar-15/O	64	69	
Beryllium	µg/g	0.2	EPA 6010	05-Mar-15/O	0.4	0.4	
Boron	µg/g	0.5	EPA 6010	05-Mar-15/O	9.2	11.6	
Boron (HWS)	µg/g	0.02	MOE3470	05-Mar-15/O	0.05	0.03	
Cadmium	µg/g	0.5	EPA 6010	05-Mar-15/O	< 0.5	< 0.5	
Chromium	µg/g	1	EPA 6010	05-Mar-15/O	17	18	
Chromium (VI)	µg/g	0.5	EPA7196A	05-Mar-15/O	< 0.5	< 0.5	
Cobalt	µg/g	1	EPA 6010	05-Mar-15/O	4	5	
Copper	µg/g	1	EPA 6010	05-Mar-15/O	7	7	
Lead	µg/g	5	EPA 6010	05-Mar-15/O	12	14	
Mercury	µg/g	0.005	EPA 7471A	04-Mar-15/O	0.041	0.049	
Molybdenum	µg/g	1	EPA 6010	05-Mar-15/O	< 1	1	
Nickel	µg/g	1	EPA 6010	05-Mar-15/O	9	11	
Selenium	µg/g	0.5	EPA 6020	05-Mar-15/O	< 0.5	< 0.5	
Silver	µg/g	0.2	EPA 6010	05-Mar-15/O	< 0.2	< 0.2	
Thallium	µg/g	0.1	EPA 6020	05-Mar-15/O	0.2	0.2	
Tin	µg/g	5	EPA 6010	05-Mar-15/O	< 5	< 5	
Uranium	µg/g	0.1	EPA 6020	05-Mar-15/O	0.5	0.5	
Vanadium	µg/g	1	EPA 6010	05-Mar-15/O	34	41	
Zinc	µg/g	3	EPA 6010	05-Mar-15/O	37	49	

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51622, 51623

REPORT No. B15-04389 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leirim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		MW15-55-SSIB	MW15-56-SSIB		
			Sample I.D.		B15-04389-13	B15-04389-15		
			Date Collected		03-Mar-15	03-Mar-15		
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Acenaphthene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Acenaphthylene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Anthracene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Benzo(a)anthracene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Benzo(a)pyrene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	09-Mar-15/K	< 0.01	< 0.01		
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Chrysene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Fluoranthene	µg/g	0.005	EPA 8270	09-Mar-15/K	0.006	< 0.005		
Fluorene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Methylnaphthalene,1-	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Methylnaphthalene,2-	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Naphthalene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Phenanthrene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
Pyrene	µg/g	0.005	EPA 8270	09-Mar-15/K	< 0.005	< 0.005		
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	09-Mar-15/K	82	86		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	09-Mar-15/K	93	92		

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51622, 51623

REPORT No. B15-04389 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

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Attention: Susan Pfister

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-47-SS3	MW15-47-SS4SS	MW15-48C-SS5	MW15-48C-SS8SS
			Sample I.D.	B15-04389-1	B15-04389-2	B15-04389-3	B15-04389-4
			Date Collected	02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	10-Mar-15			
% moisture	%	0.1		10-Mar-15/O	27.0	34.7	23.0
Acetone	µg/g	0.3	EPA 8260	05-Mar-15/O	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G51622, 51623

REPORT No. B15-04389 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-47-SS3	MW15-47-SS4SS	MW15-48C-SS5	MW15-48C-SS8SS
			Sample I.D.	B15-04389-1	B15-04389-2	B15-04389-3	B15-04389-4
			Date Collected	02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichlorobenzene,1,4-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethane,1,1-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethane,1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropane,1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Ethylbenzene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04
Hexane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	05-Mar-15/O	< 0.1	< 0.1	< 0.1

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51622, 51623

REPORT No. B15-04389 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-47-SS3	MW15-47-SS4SS	MW15-48C-SS5	MW15-48C-SS8SS
			Sample I.D.	B15-04389-1	B15-04389-2	B15-04389-3	B15-04389-4
			Date Collected	02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Xylene, m,p,o-	µg/g	0.05	EPA 8260	05-Mar-15/O	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	05-Mar-15/O	105	108	109
Toluene-d8 (SS)	%	10	EPA 8260	05-Mar-15/O	98	98	98

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-47-SS3	MW15-47-SS4SS	MW15-48C-SS5	MW15-48C-SS8SS
			Sample I.D.	B15-04389-1	B15-04389-2	B15-04389-3	B15-04389-4
			Date Collected	02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Bromofluorobenzene,4(SS)	%	10	EPA 8260	05-Mar-15/O	90	90	90
PHC F1 (C6-C10)	µg/g	10	MOE E3398	05-Mar-15/O			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K			

1 subcontracted to Testmark Labs.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-49-SS4SS	MW15-51C-SS5	MW15-52-SS4	DUP-2
			Sample I.D.	B15-04389-5	B15-04389-6	B15-04389-7	B15-04389-8
			Date Collected	02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	10-Mar-15			
% moisture	%	0.1		10-Mar-15/O	29.6	14.7	15.9
Acetone	µg/g	0.3	EPA 8260	05-Mar-15/O	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Caduceon Environmental Laboratories

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Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-49-SS4SS	MW15-51C-SS5	MW15-52-SS4	DUP-2
			Sample I.D.	B15-04389-5	B15-04389-6	B15-04389-7	B15-04389-8
			Date Collected	02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichlorobenzene,1,4-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethane,1,1-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethane,1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropane,1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Ethylbenzene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04
Hexane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	05-Mar-15/O	< 0.1	< 0.1	< 0.1

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		MW15-49-SS4SS	MW15-51C-SS5	MW15-52-SS4	DUP-2
			Sample I.D.		B15-04389-5	B15-04389-6	B15-04389-7	B15-04389-8
			Date Collected		02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	0.46	< 0.03	< 0.03
Trichlorofluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Xylene, m,p,o-	µg/g	0.05	EPA 8260	05-Mar-15/O	< 0.05	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	05-Mar-15/O	111	110	112	112
Toluene-d8 (SS)	%	10	EPA 8260	05-Mar-15/O	98.0	98	98.0	98

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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JOB/PROJECT NO.: NCC Leitrim Road

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SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-49-SS4SS	MW15-51C-SS5	MW15-52-SS4	DUP-2
			Sample I.D.	B15-04389-5	B15-04389-6	B15-04389-7	B15-04389-8
			Date Collected	02-Mar-15	02-Mar-15	02-Mar-15	02-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Bromofluorobenzene,4(SS)	%	10	EPA 8260	05-Mar-15/O	92.0	94	91.0 92
PHC F1 (C6-C10)	µg/g	10	MOE E3398	05-Mar-15/O			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K			

1 subcontracted to Testmark Labs.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-10-SS3	MW15-53-SS3-Rep1	MW15-53-SS3-Rep2	MW15-53-SS3-Rep3
Sample I.D.	B15-04389-9	B15-04389-10	B15-04389-11	B15-04389-12
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	10-Mar-15		0.006 ¹	0.006 ¹	0.006 ¹
% moisture	%	0.1		10-Mar-15/O	18.0	23.0		
Acetone	µg/g	0.3	EPA 8260	05-Mar-15/O	< 0.3	< 0.3		
Benzene	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Bromoform	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Bromodichloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Bromomethane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Carbon Tetrachloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Chloroform	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Dibromochloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-10-SS3	MW15-53-SS3-Rep1	MW15-53-SS3-Rep2	MW15-53-SS3-Rep3
Sample I.D.	B15-04389-9	B15-04389-10	B15-04389-11	B15-04389-12
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Ethylbenzene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51622, 51623

REPORT No. B15-04389 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

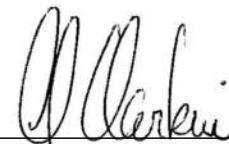
WATERWORKS NO.

Client I.D.	BH15-10-SS3	MW15-53-SS3-Rep1	MW15-53-SS3-Rep2	MW15-53-SS3-Rep3
Sample I.D.	B15-04389-9	B15-04389-10	B15-04389-11	B15-04389-12
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Hexane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	05-Mar-15/O	< 0.1	< 0.1		
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Styrene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Tetrachloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Toluene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Trichloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	0.04	< 0.03		
Trichlorofluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Vinyl Chloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02		
Xylene, m,p-	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04		
Xylene, o-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-10-SS3	MW15-53-SS3-Rep1	MW15-53-SS3-Rep2	MW15-53-SS3-Rep3
Sample I.D.	B15-04389-9	B15-04389-10	B15-04389-11	B15-04389-12
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Xylene, m,p,o-	µg/g	0.05	EPA 8260	05-Mar-15/O	< 0.05	< 0.05		
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	05-Mar-15/O	113	116		
Toluene-d8 (SS)	%	10	EPA 8260	05-Mar-15/O	98	98		
Bromofluorobenzene,4(SS)	%	10	EPA 8260	05-Mar-15/O	91	95		
PHC F1 (C6-C10)	µg/g	10	MOE E3398	05-Mar-15/O	< 10			
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K	< 5			
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K	30			
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K	< 10			

1 subcontracted to Testmark Labs.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-55-SS3	MW15-56-SS3	MW15-57-SS5	MW15-57-SS6SS
Sample I.D.	B15-04389-14	B15-04389-16	B15-04389-17	B15-04389-18
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	10-Mar-15				
% moisture	%	0.1		10-Mar-15/O	15.3	18.7	19.6	32.5
Acetone	µg/g	0.3	EPA 8260	05-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District



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REPORT No. B15-04389 (iii)

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300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-55-SS3	MW15-56-SS3	MW15-57-SS5	MW15-57-SS6SS
Sample I.D.	B15-04389-14	B15-04389-16	B15-04389-17	B15-04389-18
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Ethylbenzene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04	< 0.04



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

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DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-55-SS3	MW15-56-SS3	MW15-57-SS5	MW15-57-SS6SS
Sample I.D.	B15-04389-14	B15-04389-16	B15-04389-17	B15-04389-18
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Hexane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	05-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	< 0.03

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-55-SS3	MW15-56-SS3	MW15-57-SS5	MW15-57-SS6SS
			Sample I.D.	B15-04389-14	B15-04389-16	B15-04389-17	B15-04389-18
			Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	03-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Xylene, m,p,o-	µg/g	0.05	EPA 8260	05-Mar-15/O	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	05-Mar-15/O	117	116	117
Toluene-d8 (SS)	%	10	EPA 8260	05-Mar-15/O	98	98	98.0
Bromofluorobenzene,4(SS)	%	10	EPA 8260	05-Mar-15/O	93	94	93.0
PHC F1 (C6-C10)	µg/g	10	MOE E3398	05-Mar-15/O		< 10	
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K		< 5	
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K		< 10	
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K		< 10	

1 subcontracted to Testmark Labs.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-58-SS3	MW15-59-SS3	DUP-3	
Sample I.D.	B15-04389-19	B15-04389-20	B15-04389-21	
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	10-Mar-15				
% moisture	%	0.1		10-Mar-15/O	17.2	17.7	23.8	
Acetone	µg/g	0.3	EPA 8260	05-Mar-15/O	< 0.3	< 0.3	< 0.3	
Benzene	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Bromoform	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Bromodichloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Bromomethane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Carbon Tetrachloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Chloroform	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Dibromochloromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District



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JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-58-SS3	MW15-59-SS3	DUP-3	
Sample I.D.	B15-04389-19	B15-04389-20	B15-04389-21	
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Ethylbenzene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04	

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51622, 51623

REPORT No. B15-04389 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	MW15-58-SS3	MW15-59-SS3	DUP-3	
Sample I.D.	B15-04389-19	B15-04389-20	B15-04389-21	
Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Hexane	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	05-Mar-15/O	< 0.1	< 0.1	< 0.1	
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Styrene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Tetrachloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Toluene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Trichloroethylene	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	
Trichlorofluoromethane	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Vinyl Chloride	µg/g	0.02	EPA 8260	05-Mar-15/O	< 0.02	< 0.02	< 0.02	
Xylene, m,p-	µg/g	0.04	EPA 8260	05-Mar-15/O	< 0.04	< 0.04	< 0.04	
Xylene, o-	µg/g	0.03	EPA 8260	05-Mar-15/O	< 0.03	< 0.03	< 0.03	

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51622, 51623

REPORT No. B15-04389 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,

Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-58-SS3	MW15-59-SS3	DUP-3	
			Sample I.D.	B15-04389-19	B15-04389-20	B15-04389-21	
			Date Collected	03-Mar-15	03-Mar-15	03-Mar-15	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Xylene, m,p,o-	µg/g	0.05	EPA 8260	05-Mar-15/O	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	05-Mar-15/O	118	117	116
Toluene-d8 (SS)	%	10	EPA 8260	05-Mar-15/O	98	98	98.0
Bromofluorobenzene,4(SS)	%	10	EPA 8260	05-Mar-15/O	94	94	95.0
PHC F1 (C6-C10)	µg/g	10	MOE E3398	05-Mar-15/O	< 10		< 10
PHC F2 (>C10-C16)	µg/g	5	CWS Tier 1	09-Mar-15/K	< 5		6
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	09-Mar-15/K	< 10		120
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	09-Mar-15/K	< 10		30

1 subcontracted to Testmark Labs.

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg

F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)

F2 C10-C16 hydrocarbons in µg/g, (F2-naph if requested)

F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)

F4 C34-C50 hydrocarbons in µg/g

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

Any deviations from the method are noted and reported for any particular sample.

nC6 and nC10 response factor is within 30% of response factor for toluene:

nC10,nC16 and nC34 response factors within 10% of each other:

C50 response factors within 70% of nC10+nC16+nC34 average:

Linearity is within 15%:

All results expressed on a dry weight basis.

Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.

If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC

QC will be made available upon request.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE SUBMITTED: 3-Mar-15
DATE REPORTED: 10-Mar-15
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: NOC Leirrim Road
P.O. NUMBER: TZ14024
WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
pH	7	Ottawa	VK	4-Mar-15	4-Mar-15	4-Mar-15	A-pH-01 (o)	SM 4500H
Boron - HWS	2	Ottawa	AJS	5-Mar-15	5-Mar-15	5-Mar-15	D-HWE s	EPA 200.7
Chromium (VI)	2	Ottawa	VK	5-Mar-15	5-Mar-15	5-Mar-15	D-CRVI-02 (o)	EPA7196A
Mercury	2	Ottawa	TPR	4-Mar-15	4-Mar-15	4-Mar-15	D-HG-01 (o)	EPA 7471A
Metals - ICP-AES	2	Ottawa	AJS	5-Mar-15	5-Mar-15	5-Mar-15	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	2	Ottawa	AJS	5-Mar-15	5-Mar-15	5-Mar-15	D-ICPMS-01 (o)	EPA 6020
VOC's	17	Ottawa	ST	4-Mar-15	5-Mar-15	6-Mar-15	C-VOC-02 (o)	EPA 8260
PHC(F1)	4	Ottawa	ST	4-Mar-15	5-Mar-15	6-Mar-15	C-GRO-02 (o)	CWS Tier 1
PHC(F2-F4)	4	Kingston	SCG	5-Mar-15	9-Mar-15	9-Mar-15	C-PHCS-01 (o)	CWS Tier 1
SVOC	2	Kingston	FL	5-Mar-15	9-Mar-15	10-Mar-15	C-NAB-S-001 (k)	EPA 8270

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem1, B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
pH @25°C		0.00	0.2 pH Units	6.99	7.02	0.03	0.3 pH Units	NA	NA	-
Antimony	0.5	100	80-120	1.9	1.9	NC	30	< MDL	125	70-130
Arsenic	0.5	115	80-120	9.3	10.2	9	30	< MDL	115	70-130
Barium	1	104	80-120	126	128	2	30	< MDL	97	70-130
Beryllium	0.2	102	80-120	0.4	0.4	NC	30	< MDL	112	70-130
Boron	0.5	102	80-120	37.2	37.3	0.3	30	< MDL	107	70-130
Boron (HWS)	0.02	103	70-130	0.21	0.20	NC	40	< MDL	105	60-140
Cadmium	0.5	102	80-120	< MDL	< MDL	NC	30	< MDL	91	70-130
Chromium	1	103	80-120	131	132	1	30	< MDL	108	70-130
Chromium (VI)	0.5	100	80-120	< MDL	< MDL	NC	35	< MDL	75	36-141
Cobalt	1	105	80-120	9	9	NC	30	< MDL	110	70-130
Copper	1	104	80-120	112	97	14	30	< MDL	104	70-130
Lead	5	103	80-120	311	308	1.0	30	< MDL	101	70-130
Mercury	0.005	100	80-120	0.377	0.367	3	30	< MDL	100	70-130
Molybdenum	1	101	80-120	3	3	NC	30	< MDL	86	70-130
Nickel	1	104	80-120	25	25	0	30	< MDL	96	70-130
Selenium	0.5	100	80-120	2.3	2.3	NC	30	< MDL	119	70-130
Silver	0.2	95	80-120	< MDL	< MDL	NC	30	< MDL	93	70-130
Thallium	0.1	118	80-120	0.6	0.5	NC	30	< MDL	112	70-130
Tin	5	99	80-120	< MDL	< MDL	NC	30	< MDL	100	70-130
Uranium	0.1	116	80-120	0.8	0.8	NC	30	< MDL	112	70-130
Vanadium	1	106	80-120	28	29	4	30	< MDL	95	70-130
Zinc	3	102	80-120	2660	2620	2	30	< MDL	104	70-130

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem.
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acenaphthene	0.005	61	50-140	< MDL	< MDL	NC	50	< MDL	68	50-140
Acenaphthylene	0.005	64	50-140	< MDL	< MDL	NC	50	< MDL	74	50-140
Anthracene	0.005	61	50-140	< MDL	< MDL	NC	50	< MDL	72	50-140
Benzo(a)anthracene	0.005	82	50-140	< MDL	< MDL	NC	50	< MDL	94	50-140
Benzo(a)pyrene	0.005	86	50-140	< MDL	< MDL	NC	50	< MDL	102	50-140
Benzo(b)fluoranthene	0.005	66	50-140	< MDL	< MDL	NC	50	< MDL	74	50-140
Benzo(k)fluoranthene	0.005	61	50-140	< MDL	< MDL	NC	50	< MDL	69	50-140
Benzo(g,h,i)perylene	0.005	63	50-140	< MDL	< MDL	NC	50	< MDL	70	50-140
Chrysene	0.005	74	50-140	< MDL	< MDL	NC	50	< MDL	92	50-140
Dibenzo(a,h)anthracene	0.005	70	50-140	< MDL	< MDL	NC	50	< MDL	72	50-140
Fluoranthene	0.005	63	50-140	< MDL	< MDL	NC	50	< MDL	68	50-140
Fluorene	0.005	60	50-140	< MDL	< MDL	NC	50	< MDL	63	50-140
Indeno(1,2,3,-cd)pyrene	0.005	70	50-140	< MDL	< MDL	NC	50	< MDL	72	50-140
Methylnaphthalene,2-	0.005	53	50-140	< MDL	< MDL	NC	50	< MDL	65	50-140
Naphthalene	0.005	54	50-140	< MDL	< MDL	NC	50	< MDL	64	50-140
Phenanthrene	0.005	61	50-140	< MDL	< MDL	NC	50	< MDL	70	50-140
Pyrene	0.005	68	50-140	0.007	< MDL	NC	50	< MDL	77	50-140

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Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	0.3	69	60-130	< MDL	< MDL	NC	30	< MDL	69	50-140
Benzene	0.02	90	60-130	< MDL	< MDL	NC	30	< MDL	75	50-140
Bromodichloromethane	0.02	85	60-130	< MDL	< MDL	NC	30	< MDL	80	50-140
Bromoform	0.02	93	60-130	< MDL	< MDL	NC	30	< MDL	94	50-140
Bromomethane	0.03	62	50-140	< MDL	< MDL	NC	30	< MDL	59	50-140
Carbon Tetrachloride	0.02	80	60-130	< MDL	< MDL	NC	30	< MDL	78	50-140
Chloroform	0.03	88	60-130	< MDL	< MDL	NC	30	< MDL	81	50-140
Dibromochloromethane	0.02	91	60-130	< MDL	< MDL	NC	30	< MDL	85	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	91	50-140	< MDL	< MDL	NC	30	< MDL	82	50-140
Dichlorobenzene, 1,2-	0.02	98	60-130	< MDL	< MDL	NC	30	< MDL	99	50-140
Dichlorobenzene, 1,3-	0.02	100	60-130	< MDL	< MDL	NC	30	< MDL	100	50-140
Dichlorobenzene, 1,4-	0.02	100	60-130	< MDL	< MDL	NC	30	< MDL	99	50-140
Dichlorodifluoromethane	0.02	52	50-140	< MDL	< MDL	NC	30	< MDL	56	50-140
Dichloroethane, 1,1-	0.03	85	60-130	< MDL	< MDL	NC	30	< MDL	72	50-140
Dichloroethane, 1,2-	0.03	86	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Dichloroethene, cis-1,2-	0.02	91	60-130	< MDL	< MDL	NC	30	< MDL	75	50-140
Dichloroethene, trans-1,2-	0.02	91	60-130	< MDL	< MDL	NC	30	< MDL	75	50-140
Dichloroethylene, 1,1-	0.03	85	60-130	< MDL	< MDL	NC	30	< MDL	80	50-140
Dichloromethane (Methylene Chloride)	0.03	83	60-130	< MDL	< MDL	NC	30	< MDL	69	50-140
Dichloropropane, 1,2-	0.04	83	60-130	< MDL	< MDL	NC	30	< MDL	69	50-140
Dichloropropene, cis-1,3-	0.02	76	60-130	< MDL	< MDL	NC	30	< MDL	57	50-140
Dichloropropene, trans-1,3-	0.02	80	60-130	< MDL	< MDL	NC	30	< MDL	65	50-140
Ethylbenzene	0.03	92	60-130	< MDL	< MDL	NC	30	< MDL	83	50-140

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Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	0.03	62	60-130	< MDL	< MDL	NC	30	< MDL	57	50-140
Methyl Ethyl Ketone	0.1	69	60-130	< MDL	< MDL	NC	30	< MDL	61	50-140
Methyl Isobutyl Ketone	0.02	72	60-130	< MDL	< MDL	NC	30	< MDL	60	50-140
Methyl-t-butyl Ether	0.02	71	60-130	< MDL	< MDL	NC	30	< MDL	74	50-140
Monochlorobenzene (Chlorobenzene)	0.03	97	60-130	< MDL	< MDL	NC	30	< MDL	85	50-140
Styrene	0.03	88	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Tetrachloroethane, 1,1,1,2-	0.02	94	60-130	< MDL	< MDL	NC	30	< MDL	90	50-140
Tetrachloroethane, 1,1,2,2-	0.02	88	60-130	< MDL	< MDL	NC	30	< MDL	83	50-140
Tetrachloroethylene	0.03	97	60-130	< MDL	< MDL	NC	30	< MDL	85	50-140
Toluene	0.03	92	60-130	< MDL	< MDL	NC	30	< MDL	79	50-140
Trichloroethane, 1,1,1-	0.02	85	60-130	< MDL	< MDL	NC	30	< MDL	80	50-140
Trichloroethane, 1,1,2-	0.02	94	60-130	< MDL	< MDL	NC	30	< MDL	84	50-140
Trichloroethylene	0.03	91	60-130	< MDL	< MDL	NC	30	< MDL	79	50-140
Trichlorofluoromethane	0.02	81	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Vinyl Chloride	0.02	71	50-140	< MDL	< MDL	NC	30	< MDL	53	50-140
Xylene, m,p-	0.04	90	60-130	< MDL	< MDL	NC	30	< MDL	85	50-140
Xylene, o-	0.03	88	60-130	< MDL	< MDL	NC	30	< MDL	79	50-140
PHC F1 (C6-C10)	10	92	60-140	< MDL	< MDL	NC	30	< MDL	105	60-140
PHC F2 (>C10-C16)	5	87	60-140	< MDL	< MDL	NC	30	< MDL	78	60-140
PHC F3 (>C16-C34)	10	100	60-140	< MDL	< MDL	NC	30	< MDL	97	60-140
PHC F4 (>C34-C50)	10	88	60-140	< MDL	< MDL	NC	30	< MDL	84	60-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

TESTING REQUIREMENTS

☒ O.Reg 153 ☐ Surface Soil ☐ Yes ☐ Provincial Water Quality Objectives ☐ Sewer Use By-Law:

Table 2 ☐ Sub Surface Soil (O.Reg 153) ☐ Record of Site Condition (O.Reg 153)

☐ MISA Guidelines ☐ O.Reg 558 Leachate Analysis ☐ Disposal Site: ☐ Landfill Monitoring ☐ Other:

REPORT NUMBER (Lab Use)
Mar. 3.15
B15-04389

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: **AMEL** Address and Invoicing Address (if different): **300-210 Colonel By Rd South, Ottawa, ON**

Contact: **Susan Plister** Tel: **613-727-0658** Fax: **613-727-0658**

Quote No.: **NA L-111111** Project Name: **NA L-111111**

Email: **Susan.Plister@caduceon.com** P.O. No.: **7214024** Additional Info: **7214024**

ANALYSES REQUESTED (Print Test in Boxes)

VOC	PHLF-14	Metals	PAH	FOL	PH
-----	---------	--------	-----	-----	----

TURNAROUND SERVICE REQUESTED (see back page)

☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days
☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

Lab No:	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided												Field		# Bottles/ Sample	Field Filtered(Y/N)
																		pH	Temp.		
1	MWIS-47-SS3		Soil	15-03-02		X						X	1							3	1
2	MWIS-47-SS4SS					X							2							3	1
3	MWIS-48C-SS5					X						X	3							3	1
4	MWIS-48C-SS5					X							4							3	1
5	MWIS-49-SS4SS					X							5							3	1
6	MWIS-SIC-SS5					X							6							3	1
7	MWIS-52-SS4					X						X	7							3	1
8	DUP-2					X							8							3	1
9	BHIS-10-SS3			15-03-03		X	X					X	9							4	2
10, 11, 12	MWIS-53-SS3					X						X	10, 11, 12							3	2
13	MWIS-55-SS1B					X		X	X			X	13							1	2
14	MWIS-55-SS3					X						X	14							3	1

SAMPLE SUBMISSION INFORMATION		SHIPPING INFORMATION		REPORTING / INVOICING		SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)	
Print: Jason Taylor	Submitted by: Jason Taylor	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): Japina	Signature: Sn	
Sign: 15-03-03	Date (yy-mm-dd)/Time: 15-03-03	Caduceon's Courier <input type="checkbox"/>	# of Pieces 1	Report by Email <input type="checkbox"/>	Date Received (yy-mm-dd): Mar. 3.15	Time Received: 3:50	
		Drop Off <input checked="" type="checkbox"/>		Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
		Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: 18°C	Labeled by:	
Comments:							

Laboratory Locations/Shipping Addresses

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com

Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com

Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com

Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

TESTING REQUIREMENTS				REPORT NUMBER (Lab Use)
<input checked="" type="checkbox"/> O.Reg 153	Table <u>3</u>	<input type="checkbox"/> MISA Guidelines	B15-04389	
<input type="checkbox"/> Surface Soil	<input type="checkbox"/> Sub Surface Soil (O.Reg 153)	<input type="checkbox"/> O.Reg 558 Leachate Analysis		
<input type="checkbox"/> Yes <input type="checkbox"/> No	Record of Site Condition (O.Reg 153)	Disposal Site: <u> </u>		
<input type="checkbox"/> Provincial Water Quality Objectives	<input type="checkbox"/> Landfill Monitoring	<input type="checkbox"/> Other: <u> </u>		
<input type="checkbox"/> Sewer Use By-Law:				

Indicate Laboratory Samples are submitted to:				ANALYSES REQUESTED (Print Test in Boxes)		TURNAROUND SERVICE REQUESTED (see back page)
<input type="checkbox"/> Kingston <input checked="" type="checkbox"/> Ottawa <input type="checkbox"/> Richmond Hill <input type="checkbox"/> Windsor				Suspected Highly Contaminated Vol PHUF-14 M-14 PAH PH		<input type="checkbox"/> Platinum 200% Surcharge** <input type="checkbox"/> Gold 100% Surcharge <input type="checkbox"/> Silver 50% Surcharge <input type="checkbox"/> Bronze 25% Surcharge <input checked="" type="checkbox"/> Standard 5-7 days <input type="checkbox"/> Specific Date: <u> </u>
Organization: <u>AMEL</u>	Address and Invoicing Address (if different): <u>300-210 Colonnade Rd South</u>					
Contact: <u>Susan Plister</u>						
Tel: <u>613-7270658</u>						
Fax: <u> </u>						
Quote No.: <u> </u>	Project Name: <u>Mc Carlin</u>	Additional Info: <u>T214024</u>				
Email: <u>Susan.Plister@amel.com</u>	P.O. No.: <u> </u>					

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil																								
Lab No:	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided														✓	Field		# Bottles/ Sample	Field Filtered(Y/N)
																					pH	Temp.		
15	MW15-56-551B		Sed	15-03-03				X	X	X	15								15	1	2			
16	MW15-56-553					X	X				16								16	4	2			
17	MW15-57-555					X					17								17	3	1			
18	MW15-57-556SS					X					18								18	0	1			
19	MW15-58-553					X	X				19								19	4	2			
20	MW15-59-553					X				X	20								20	3	1			
21	DUP-3		Vol	Vol		X	X				21								21	4	2			

SAMPLE SUBMISSION INFORMATION		SHIPPING INFORMATION		REPORTING / INVOICING		SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)	
Print: <u>Jason T...</u>	Submitted by: <u>Jason T...</u>	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): <u>Vabina</u>	Signature: <u> </u>	
Sign: <u> </u>	<u> </u>	Caduceon's Courier <input type="checkbox"/>	<input type="checkbox"/>	Report by Email <input type="checkbox"/>	Date Received (yy-mm-dd): <u>Mar 3.15</u>	Time Received: <u>3:50</u>	
Date (yy-mm-dd)/Time: <u>15-03-03</u>	Date (yy-mm-dd)/Time: <u>15-03-03</u>	Drop Off <input checked="" type="checkbox"/>	# of Pieces <u>1</u>	Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input type="checkbox"/> Yes <input type="checkbox"/> No		
		Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: <u> </u>	Labeled by: <u> </u>	
Laboratory Locations/Shipping Addresses				Comments: <u> </u>			
Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com							

C.O.C.: G51624

REPORT No. B15-04508 (i)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 05-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 26-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-57-SS1A			
			Sample I.D.	B15-04508-1			
			Date Collected	03-Mar-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Antimony	µg/g	0.5	EPA 6020	09-Mar-15/O	< 0.5		
Arsenic	µg/g	0.5	EPA 6020	09-Mar-15/O	4.7		
Barium	µg/g	1	EPA 6010	06-Mar-15/O	63		
Beryllium	µg/g	0.2	EPA 6010	06-Mar-15/O	0.4		
Boron	µg/g	0.5	EPA 6010	06-Mar-15/O	4.7		
Boron (HWS)	µg/g	0.02	MOE3470	06-Mar-15/O	0.06		
Cadmium	µg/g	0.5	EPA 6010	06-Mar-15/O	< 0.5		
Chromium	µg/g	1	EPA 6010	06-Mar-15/O	18		
Chromium (VI)	µg/g	0.5	EPA7196A	10-Mar-15/O	< 0.5		
Cobalt	µg/g	1	EPA 6010	06-Mar-15/O	8		
Copper	µg/g	1	EPA 6010	06-Mar-15/O	22		
Lead	µg/g	5	EPA 6010	06-Mar-15/O	23		
Mercury	µg/g	0.005	EPA 7471A	06-Mar-15/O	0.043		
Molybdenum	µg/g	1	EPA 6010	06-Mar-15/O	2		
Nickel	µg/g	1	EPA 6010	06-Mar-15/O	15		
Selenium	µg/g	0.5	EPA 6020	09-Mar-15/O	< 0.5		
Silver	µg/g	0.2	EPA 6010	06-Mar-15/O	< 0.2		
Thallium	µg/g	0.1	EPA 6020	09-Mar-15/O	0.2		
Tin	µg/g	5	EPA 6010	06-Mar-15/O	< 5		
Uranium	µg/g	0.1	EPA 6020	09-Mar-15/O	0.7		
Vanadium	µg/g	1	EPA 6010	06-Mar-15/O	27		
Zinc	µg/g	3	EPA 6010	06-Mar-15/O	78		

NOTE: Revision created to add B(HWS) onto Report as per request from client.



M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

C.O.C.: G51624

REPORT No. B15-04508 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 05-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-50-SS3	MW15-50-SS4SS	Dup-4	
			Sample I.D.	B15-04508-2	B15-04508-3	B15-04508-4	
			Date Collected	05-Mar-15	05-Mar-15	05-Mar-15	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
% moisture	%	0.1		09-Mar-15/O	17.2	29.4	25.6
Acetone	µg/g	0.3	EPA 8260	06-Mar-15/O	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51624

REPORT No. B15-04508 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 05-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 10-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	MW15-50-SS3	MW15-50-SS4SS	Dup-4	
			Sample I.D.	B15-04508-2	B15-04508-3	B15-04508-4	
			Date Collected	05-Mar-15	05-Mar-15	05-Mar-15	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Ethylbenzene	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	06-Mar-15/O	< 0.04	< 0.04	< 0.04
Hexane	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	06-Mar-15/O	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	06-Mar-15/O	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	06-Mar-15/O	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	06-Mar-15/O	< 0.03	< 0.03	< 0.03
Xylene, m,p,o-	µg/g	0.05	EPA 8260	06-Mar-15/O	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	06-Mar-15/O	112	114	114
Toluene-d8 (SS)	%	10	EPA 8260	06-Mar-15/O	99	99	99
Bromofluorobenzene,4(SS)	%	10	EPA 8260	06-Mar-15/O	94	90	90

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
 Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
 Ottawa Ontario K1V 7P1
 Tel: 613-526-0123
 Fax: 613-526-1244

DATE SUBMITTED: 5-Mar-15
 DATE REPORTED: 10-Mar-15
 SAMPLE MATRIX: Soil

JOB/PROJECT NO.: NOC Leitrim Road
 P.O. NUMBER: TZ14024
 WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
Chromium (VI)	1	Ottawa	VK	10-Mar-15	10-Mar-15	10-Mar-15	D-CRVI-02 (o)	EPA7196A
Mercury	1	Ottawa	TPR	6-Mar-15	6-Mar-15	6-Mar-15	D-HG-01 (o)	EPA 7471A
Metals - ICP-AES	1	Ottawa	AJS	6-Mar-15	6-Mar-15	6-Mar-15	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	1	Ottawa	AJS	6-Mar-15	9-Mar-15	9-Mar-15	D-ICPMS-01 (o)	EPA 6020
VOC's	3	Ottawa	ST	6-Mar-15	6-Mar-15	9-Mar-15	C-VOC-02 (o)	EPA 8260

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem1, B.Sc., C.Chem
 Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Antimony	0.5	100	80-120	0.6	0.6	NC	30	< MDL	114	70-130
Arsenic	0.5	100	80-120	3.7	3.5	NC	30	< MDL	118	70-130
Barium	1	97	80-120	54	56	4	30	2	91	70-130
Beryllium	0.2	100	80-120	0.3	0.3	NC	30	< MDL	87	70-130
Boron	0.5	98	80-120	4.6	4.5	NC	30	< MDL	102	70-130
Cadmium	0.5	99	80-120	< MDL	< MDL	NC	30	< MDL	91	70-130
Chromium	1	100	80-120	21	21	0	30	< MDL	107	70-130
Chromium (VI)	0.5	90	80-120	< MDL	< MDL	NC	35	< MDL	82	36-141
Cobalt	1	98	80-120	7	7	NC	30	< MDL	105	70-130
Copper	1	98	80-120	66	74	11	30	1	102	70-130
Lead	5	100	80-120	17	17	NC	30	< MDL	100	70-130
Mercury	0.005	103	80-120	0.033	0.033	NC	30	< MDL	100	70-130
Molybdenum	1	100	80-120	4	3	NC	30	< MDL	102	70-130
Nickel	1	100	80-120	15	15	0	30	< MDL	96	70-130
Selenium	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	121	70-130
Silver	0.2	92	80-120	< MDL	< MDL	NC	30	< MDL	95	70-130
Thallium	0.1	112	80-120	0.1	0.1	NC	30	< MDL	95	70-130
Tin	5	102	80-120	< MDL	< MDL	NC	30	< MDL	107	70-130
Uranium	0.1	110	80-120	0.6	0.6	NC	30	< MDL	109	70-130
Vanadium	1	99	80-120	23	24	4	30	< MDL	90	70-130
Zinc	3	100	80-120	73	78	7	30	< MDL	105	70-130

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem.
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	0.3	74	60-130	< MDL	< MDL	NC	30	< MDL	69	50-140
Benzene	0.02	90	60-130	< MDL	< MDL	NC	30	< MDL	76	50-140
Bromodichloromethane	0.02	89	60-130	< MDL	< MDL	NC	30	< MDL	81	50-140
Bromoform	0.02	104	60-130	< MDL	< MDL	NC	30	< MDL	77	50-140
Bromomethane	0.03	72	50-140	< MDL	< MDL	NC	30	< MDL	61	50-140
Carbon Tetrachloride	0.02	92	60-130	< MDL	< MDL	NC	30	< MDL	96	50-140
Chloroform	0.03	92	60-130	< MDL	< MDL	NC	30	< MDL	86	50-140
Dibromochloromethane	0.02	96	60-130	< MDL	< MDL	NC	30	< MDL	83	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	96	50-140	< MDL	< MDL	NC	30	< MDL	79	50-140
Dichlorobenzene, 1,2-	0.02	108	60-130	< MDL	< MDL	NC	30	< MDL	88	50-140
Dichlorobenzene, 1,3-	0.02	111	60-130	< MDL	< MDL	NC	30	< MDL	86	50-140
Dichlorobenzene, 1,4-	0.02	110	60-130	< MDL	< MDL	NC	30	< MDL	71	50-140
Dichlorodifluoromethane	0.02	53	50-140	< MDL	< MDL	NC	30	< MDL	50	50-140
Dichloroethane, 1,1-	0.03	85	60-130	< MDL	< MDL	NC	30	< MDL	73	50-140
Dichloroethane, 1,2-	0.03	91	60-130	< MDL	< MDL	NC	30	< MDL	91	50-140
Dichloroethene, cis-1,2-	0.02	91	60-130	< MDL	< MDL	NC	30	< MDL	57	50-140
Dichloroethene, trans-1,2-	0.02	94	60-130	< MDL	< MDL	NC	30	< MDL	64	50-140
Dichloroethylene, 1,1-	0.03	97	60-130	< MDL	< MDL	NC	30	< MDL	72	50-140
Dichloromethane (Methylene Chloride)	0.03	81	60-130	< MDL	< MDL	NC	30	< MDL	72	50-140
Dichloropropane, 1,2-	0.04	80	60-130	< MDL	< MDL	NC	30	< MDL	71	50-140
Dichloropropene, cis-1,3-	0.02	72	60-130	< MDL	< MDL	NC	30	< MDL	52	50-140
Dichloropropene, trans-1,3-	0.02	82	60-130	< MDL	< MDL	NC	30	< MDL	67	50-140
Ethylbenzene	0.03	98	60-130	< MDL	< MDL	NC	30	< MDL	72	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	0.03	65	60-130	< MDL	< MDL	NC	30	< MDL	52	50-140
Methyl Ethyl Ketone	0.1	69	60-130	< MDL	< MDL	NC	30	< MDL	65	50-140
Methyl Isobutyl Ketone	0.02	73	60-130	< MDL	< MDL	NC	30	< MDL	62	50-140
Methyl-t-butyl Ether	0.02	70	60-130	< MDL	< MDL	NC	30	< MDL	63	50-140
Monochlorobenzene (Chlorobenzene)	0.03	101	60-130	< MDL	< MDL	NC	30	< MDL	85	50-140
Styrene	0.03	93	60-130	< MDL	< MDL	NC	30	< MDL	72	50-140
Tetrachloroethane, 1,1,1,2-	0.02	100	60-130	< MDL	< MDL	NC	30	< MDL	74	50-140
Tetrachloroethane, 1,1,2,2-	0.02	93	60-130	< MDL	< MDL	NC	30	< MDL	67	50-140
Tetrachloroethylene	0.03	108	60-130	< MDL	< MDL	NC	30	< MDL	88	50-140
Toluene	0.03	97	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Trichloroethane, 1,1,1-	0.02	95	60-130	< MDL	< MDL	NC	30	< MDL	81	50-140
Trichloroethane, 1,1,2-	0.02	98	60-130	< MDL	< MDL	NC	30	< MDL	85	50-140
Trichloroethylene	0.03	97	60-130	< MDL	< MDL	NC	30	< MDL	69	50-140
Trichlorofluoromethane	0.02	99	60-130	< MDL	< MDL	NC	30	< MDL	92	50-140
Vinyl Chloride	0.02	69	50-140	< MDL	< MDL	NC	30	< MDL	64	50-140
Xylene, m,p-	0.04	97	60-130	< MDL	< MDL	NC	30	< MDL	76	50-140
Xylene, o-	0.03	94	60-130	< MDL	< MDL	NC	30	< MDL	74	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

REPORT NUMBER (Lab Use)
May. 5. 15
B15-04508

Organization: AMEL
Contact: Susan Ristien
Tel: 613-727-0658
Fax:

Address and Invoicing Address (if different):
300-210 Colorado Rd South
Ottawa, On

ANALYSES REQUESTED (Print Test in Boxes)

TURNAROUND SERVICE
REQUESTED (see back page)

<input type="checkbox"/>	Platinum	200% Surcharge**
<input type="checkbox"/>	Gold	100% Surcharge
<input type="checkbox"/>	Silver	50% Surcharge
<input type="checkbox"/>	Bronze	25% Surcharge
<input checked="" type="checkbox"/>	Standard	5-7 days
<input type="checkbox"/>	Specific Date:	

Email:	P.O. No.:
6440.A.3PERAMECFW.COM	

P.O. No.:

Project Name:	McC LeTring
Additional Info:	T314034

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

[illegible]

SAMPLE SUBMISSION INFORMATION

SHIPPING INFORMATION

REPORTING / INVOICING

SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)

Sampled by:

Submitted by:

Client's Courier ☐

Invoice

Report by Fax

1

Received By (print): Vibine Signature: h

Print: Daison La Cruz

52307/28/07

Caduceon's Courier

☐

Report by Email

☒

Date Received (yy-mm-dd): Mar. 5. 15 Time Received: 10:42

Sign: 

Asst

Drop Off

of Pieces

Invoice by Email

11

Laboratory Prepared Bottles: ☒ Yes ☐ No

Date (yy-mm-dd)/Time: _____ Date (yy-mm-dd)/Time: _____

[illegible]

100

Comments:

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

Comments: 4 JAK.
6 METHANOL

Page 1 of 1
G 51624

C.O.C.: G51625, 51626

REPORT No. B15-04607 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-3-SS1	BH15-4-SS2	BH15-6-SS2	BH15-7-SS1
			Sample I.D.	B15-04607-2	B15-04607-3	B15-04607-7	B15-04607-9
			Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Antimony	µg/g	0.5	EPA 6020	11-Mar-15/O	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	11-Mar-15/O	2.1	0.5	< 0.5
Barium	µg/g	1	EPA 6010	10-Mar-15/O	39	30	32
Beryllium	µg/g	0.2	EPA 6010	10-Mar-15/O	< 0.2	0.2	0.2
Boron	µg/g	0.5	EPA 6010	10-Mar-15/O	2.4	2.4	3.1
Boron (HWS)	µg/g	0.02	MOE3470	10-Mar-15/O	0.04	0.03	0.03
Cadmium	µg/g	0.5	EPA 6010	10-Mar-15/O	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	10-Mar-15/O	11	14	16
Chromium (VI)	µg/g	0.5	EPA7196A	10-Mar-15/O	< 0.5	< 0.5	< 0.5
Cobalt	µg/g	1	EPA 6010	10-Mar-15/O	3	3	4
Copper	µg/g	1	EPA 6010	10-Mar-15/O	6	4	5
Lead	µg/g	5	EPA 6010	10-Mar-15/O	11	6	< 5
Mercury	µg/g	0.005	EPA 7471A	11-Mar-15/O	0.020	0.014	0.008
Molybdenum	µg/g	1	EPA 6010	10-Mar-15/O	1	< 1	< 1
Nickel	µg/g	1	EPA 6010	10-Mar-15/O	8	8	13
Selenium	µg/g	0.5	EPA 6020	11-Mar-15/O	< 0.5	< 0.5	< 0.5
Silver	µg/g	0.2	EPA 6010	10-Mar-15/O	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	11-Mar-15/O	0.2	0.1	0.1
Tin	µg/g	5	EPA 6010	10-Mar-15/O	< 5	< 5	< 5
Uranium	µg/g	0.1	EPA 6020	11-Mar-15/O	0.3	0.4	0.4
Vanadium	µg/g	1	EPA 6010	10-Mar-15/O	18	20	16
Zinc	µg/g	3	EPA 6010	10-Mar-15/O	42	53	59

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem

Lab Manager - Ottawa District

C.O.C.: G51625, 51626

REPORT No. B15-04607 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leirim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	DUP-6			
			Sample I.D.	B15-04607-16			
			Date Collected	06-Mar-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Antimony	µg/g	0.5	EPA 6020	11-Mar-15/O	< 0.5		
Arsenic	µg/g	0.5	EPA 6020	11-Mar-15/O	< 0.5		
Barium	µg/g	1	EPA 6010	10-Mar-15/O	24		
Beryllium	µg/g	0.2	EPA 6010	10-Mar-15/O	< 0.2		
Boron	µg/g	0.5	EPA 6010	10-Mar-15/O	2.3		
Boron (HWS)	µg/g	0.02	MOE3470	10-Mar-15/O	0.03		
Cadmium	µg/g	0.5	EPA 6010	10-Mar-15/O	< 0.5		
Chromium	µg/g	1	EPA 6010	10-Mar-15/O	11		
Chromium (VI)	µg/g	0.5	EPA7196A	10-Mar-15/O	< 0.5		
Cobalt	µg/g	1	EPA 6010	10-Mar-15/O	2		
Copper	µg/g	1	EPA 6010	10-Mar-15/O	2		
Lead	µg/g	5	EPA 6010	10-Mar-15/O	6		
Mercury	µg/g	0.005	EPA 7471A	11-Mar-15/O	0.009		
Molybdenum	µg/g	1	EPA 6010	10-Mar-15/O	< 1		
Nickel	µg/g	1	EPA 6010	10-Mar-15/O	6		
Selenium	µg/g	0.5	EPA 6020	11-Mar-15/O	< 0.5		
Silver	µg/g	0.2	EPA 6010	10-Mar-15/O	< 0.2		
Thallium	µg/g	0.1	EPA 6020	11-Mar-15/O	0.1		
Tin	µg/g	5	EPA 6010	10-Mar-15/O	< 5		
Uranium	µg/g	0.1	EPA 6020	11-Mar-15/O	0.4		
Vanadium	µg/g	1	EPA 6010	10-Mar-15/O	12		
Zinc	µg/g	3	EPA 6010	10-Mar-15/O	27		

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51625, 51626

REPORT No. B15-04607 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-7-SS1	BH15-9-SS1	DUP-5	
			Sample I.D.	B15-04607-9	B15-04607-12	B15-04607-15	
			Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Acenaphthylene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Anthracene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Benzo(a)anthracene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	0.026	< 0.02
Benzo(a)pyrene	µg/g	0.005	EPA 8270	11-Mar-15/K	0.020	0.026	< 0.02
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	11-Mar-15/K	< 0.04	< 0.05	< 0.04
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Chrysene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Fluoranthene	µg/g	0.005	EPA 8270	11-Mar-15/K	0.036	0.051	< 0.02
Fluorene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Methylnaphthalene, 1-	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Methylnaphthalene, 2-	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Naphthalene	µg/g	0.005	EPA 8270	11-Mar-15/K	< 0.02	< 0.03	< 0.02
Phenanthrene	µg/g	0.005	EPA 8270	11-Mar-15/K	0.028	0.031	< 0.02
Pyrene	µg/g	0.005	EPA 8270	11-Mar-15/K	0.028	0.041	< 0.02
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	11-Mar-15/K	98	95.0	88
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	11-Mar-15/K	114	105	102
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	10-Mar-15/K		< 0.3	< 0.3

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51625, 51626

REPORT No. B15-04607 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-1-SS4	BH15-5-SS3-Rep.1	BH15-5-SS3-Rep.2	BH15-5-SS3-Rep.3
			Sample I.D.	B15-04607-1	B15-04607-4	B15-04607-5	B15-04607-6
			Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	13-Mar-15	< 0.005 ¹	< 0.005 ¹	< 0.005 ¹
% moisture	%			17-Mar-15/R	18.7	20.4	
Acetone	µg/g	0.3	EPA 8260	10-Mar-15/O	< 0.3		
Benzene	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Bromoform	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Bromodichloromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Bromomethane	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Carbon Tetrachloride	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Chloroform	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Dibromochloromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G51625, 51626

REPORT No. B15-04607 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-1-SS4	BH15-5-SS3-Rep.1	BH15-5-SS3-Rep.2	BH15-5-SS3-Rep.3
Sample I.D.	B15-04607-1	B15-04607-4	B15-04607-5	B15-04607-6
Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Ethylbenzene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	10-Mar-15/O	< 0.04			
Hexane	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	10-Mar-15/O	< 0.1			
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51625, 51626

REPORT No. B15-04607 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-1-SS4	BH15-5-SS3-Rep.1	BH15-5-SS3-Rep.2	BH15-5-SS3-Rep.3
			Sample I.D.	B15-04607-1	B15-04607-4	B15-04607-5	B15-04607-6
			Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Styrene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Tetrachloroethylene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Toluene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Trichloroethylene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Trichlorofluoromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Vinyl Chloride	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02		
Xylene, m,p-	µg/g	0.04	EPA 8260	10-Mar-15/O	< 0.04		
Xylene, o-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03		
Xylene, m,p,o-	µg/g	0.05	EPA 8260	10-Mar-15/O	< 0.05		
Dichloroethane-d4, 1,2-(SS)	%	10	EPA 8260	10-Mar-15/O	103		
Toluene-d8 (SS)	%	10	EPA 8260	10-Mar-15/O	97		
Bromofluorobenzene, 4(SS)	%	10	EPA 8260	10-Mar-15/O	90		

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District



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C.O.C.: G51625, 51626

REPORT No. B15-04607 (iii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-1-SS4	BH15-5-SS3-Rep.1	BH15-5-SS3-Rep.2	BH15-5-SS3-Rep.3
			Sample I.D.	B15-04607-1	B15-04607-4	B15-04607-5	B15-04607-6
			Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
PHC F1 (C6-C10)	µg/g	10	MOE E3398	10-Mar-15/O	< 10	< 10	
PHC F2 (>C10-C16)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10	< 10	
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10	< 10	
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10	< 10	

1 subcontracted to Testmark Labs.



M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-6-SS3	BH15-7-SS3	BH15-8-SS3	BH15-1-SS5
Sample I.D.	B15-04607-8	B15-04607-10	B15-04607-11	B15-04607-13
Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	13-Mar-15				
% moisture	%			17-Mar-15/R	9.4	28.2	23.3	20.5
Acetone	µg/g	0.3	EPA 8260	10-Mar-15/O	< 0.3			
Benzene	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Bromoform	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Bromodichloromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Bromomethane	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Carbon Tetrachloride	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Chloroform	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dibromochloromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-6-SS3	BH15-7-SS3	BH15-8-SS3	BH15-1-SS5
Sample I.D.	B15-04607-8	B15-04607-10	B15-04607-11	B15-04607-13
Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Ethylbenzene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	10-Mar-15/O	< 0.04			
Hexane	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	10-Mar-15/O	< 0.1			
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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C.O.C.: G51625, 51626

REPORT No. B15-04607 (iii)

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Attention: Susan Pfister

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Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leirim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-6-SS3	BH15-7-SS3	BH15-8-SS3	BH15-1-SS5
Sample I.D.	B15-04607-8	B15-04607-10	B15-04607-11	B15-04607-13
Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Styrene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Tetrachloroethylene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Toluene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Trichloroethylene	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Trichlorofluoromethane	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Vinyl Chloride	µg/g	0.02	EPA 8260	10-Mar-15/O	< 0.02			
Xylene, m,p-	µg/g	0.04	EPA 8260	10-Mar-15/O	< 0.04			
Xylene, o-	µg/g	0.03	EPA 8260	10-Mar-15/O	< 0.03			
Xylene, m,p,o-	µg/g	0.05	EPA 8260	10-Mar-15/O	< 0.05			
Dichloroethane-d4, 1,2-(SS)	%	10	EPA 8260	10-Mar-15/O	105			
Toluene-d8 (SS)	%	10	EPA 8260	10-Mar-15/O	97			
Bromofluorobenzene, 4(SS)	%	10	EPA 8260	10-Mar-15/O	91			

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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REPORT No. B15-04607 (iii)

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-6-SS3	BH15-7-SS3	BH15-8-SS3	BH15-1-SS5
			Sample I.D.	B15-04607-8	B15-04607-10	B15-04607-11	B15-04607-13
			Date Collected	06-Mar-15	06-Mar-15	06-Mar-15	06-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
PHC F1 (C6-C10)	µg/g	10	MOE E3398	10-Mar-15/O	< 10	< 10	< 10
PHC F2 (>C10-C16)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10	< 10	< 10
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10	< 10	< 10
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10	< 10	< 10

1 subcontracted to Testmark Labs.



M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

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DATE RECEIVED: 06-Mar-15

JOB/PROJECT NO.: NCC Leitrim Road

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-2-SS1			
			Sample I.D.	B15-04607-14			
			Date Collected	06-Mar-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Fraction Organic Carbon	g/g	0.005	ASTM E1915-07	13-Mar-15			
% moisture	%			17-Mar-15/R	13.8		
Acetone	µg/g	0.3	EPA 8260	10-Mar-15/O			
Benzene	µg/g	0.02	EPA 8260	10-Mar-15/O			
Bromoform	µg/g	0.02	EPA 8260	10-Mar-15/O			
Bromodichloromethane	µg/g	0.02	EPA 8260	10-Mar-15/O			
Bromomethane	µg/g	0.03	EPA 8260	10-Mar-15/O			
Carbon Tetrachloride	µg/g	0.02	EPA 8260	10-Mar-15/O			
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	10-Mar-15/O			
Chloroform	µg/g	0.03	EPA 8260	10-Mar-15/O			
Dibromochloromethane	µg/g	0.02	EPA 8260	10-Mar-15/O			
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	10-Mar-15/O			
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O			
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O			
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	10-Mar-15/O			

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



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SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D.	BH15-2-SS1			
Sample I.D.	B15-04607-14			
Date Collected	06-Mar-15			

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	10-Mar-15/O				
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	10-Mar-15/O				
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O				
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O				
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	10-Mar-15/O				
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	10-Mar-15/O				
Ethylbenzene	µg/g	0.03	EPA 8260	10-Mar-15/O				
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	10-Mar-15/O				
Hexane	µg/g	0.03	EPA 8260	10-Mar-15/O				
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	10-Mar-15/O				
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	10-Mar-15/O				

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill



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WATERWORKS NO.

Client I.D.	BH15-2-SS1			
Sample I.D.	B15-04607-14			
Date Collected	06-Mar-15			

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	10-Mar-15/O				
Styrene	µg/g	0.03	EPA 8260	10-Mar-15/O				
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Tetrachloroethylene	µg/g	0.03	EPA 8260	10-Mar-15/O				
Toluene	µg/g	0.03	EPA 8260	10-Mar-15/O				
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	10-Mar-15/O				
Trichloroethylene	µg/g	0.03	EPA 8260	10-Mar-15/O				
Trichlorofluoromethane	µg/g	0.02	EPA 8260	10-Mar-15/O				
Vinyl Chloride	µg/g	0.02	EPA 8260	10-Mar-15/O				
Xylene, m,p-	µg/g	0.04	EPA 8260	10-Mar-15/O				
Xylene, o-	µg/g	0.03	EPA 8260	10-Mar-15/O				
Xylene, m,p,o-	µg/g	0.05	EPA 8260	10-Mar-15/O				
Dichloroethane-d4, 1,2-(SS)	%	10	EPA 8260	10-Mar-15/O				
Toluene-d8 (SS)	%	10	EPA 8260	10-Mar-15/O				
Bromofluorobenzene, 4(SS)	%	10	EPA 8260	10-Mar-15/O				



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	BH15-2-SS1			
			Sample I.D.	B15-04607-14			
			Date Collected	06-Mar-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
PHC F1 (C6-C10)	µg/g	10	MOE E3398	10-Mar-15/O	< 10		
PHC F2 (>C10-C16)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10		
PHC F3 (>C16-C34)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10		
PHC F4 (>C34-C50)	µg/g	10	CWS Tier 1	13-Mar-15/R	< 10		

1 subcontracted to Testmark Labs.

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg

F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)

F2 C10-C16 hydrocarbons in µg/g, (F2-naph if requested)

F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)

F4 C34-C50 hydrocarbons in µg/g

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

Any deviations from the method are noted and reported for any particular sample.

nC6 and nC10 response factor is within 30% of response factor for toluene:

nC10, nC16 and nC34 response factors within 10% of each other:

C50 response factors within 70% of nC10+nC16+nC34 average:

Linearity is within 15%:

All results expressed on a dry weight basis.

Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.

If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC

QC will be made available upon request.



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

M.D.L. = Method Detection Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: **Susan Pfister**

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE SUBMITTED: 6-Mar-15
DATE REPORTED: 17-Mar-15
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: NCC Leitrim Road
P.O. NUMBER: TZ14024
WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
Boron - HWS	5	Ottawa	AJS	10-Mar-15	10-Mar-15	10-Mar-15	D-HWE s	EPA 200.7
Chromium (VI)	5	Ottawa	VK	10-Mar-15	10-Mar-15	10-Mar-15	D-CRVI-02 (o)	EPA7196A
Mercury	5	Ottawa	TPR	11-Mar-15	11-Mar-15	11-Mar-15	D-HG-01 (o)	EPA 7471A
Metals - ICP-AES	5	Ottawa	AJS	10-Mar-15	10-Mar-15	10-Mar-15	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	5	Ottawa	AJS	11-Mar-15	11-Mar-15	11-Mar-15	D-ICPMS-01 (o)	EPA 6020
VOC's	2	Ottawa	ST	10-Mar-15	11-Mar-15	11-Mar-15	C-VOC-02 (o)	EPA 8260
PHC(F1)	6	Ottawa	ST	10-Mar-15	11-Mar-15	11-Mar-15	C-GRO-02 (o)	CWS Tier 1
PHC(F2-F4)	6	Richmond Hill	JE	12-Mar-15	13-Mar-15	16-Mar-15	C-EPHS-01 (o)	CWS Tier 1
PCB	2	Kingston	SH	9-Mar-15	10-Mar-15	11-Mar-15	C-PESTCL-01 (k)	EPA 8080
SVOC	3	Kingston	FL	10-Mar-15	11-Mar-15	17-Mar-15	C-NAB-S-001 (k)	EPA 8270

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Antimony	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	107	70-130
Arsenic	0.5	100	80-120	2.1	1.6	NC	30	< MDL	107	70-130
Barium	1	107	80-120	39	37	5	30	< MDL	100	70-130
Beryllium	0.2	111	80-120	< MDL	< MDL	NC	30	< MDL	107	70-130
Boron	0.5	107	80-120	6.3	6.3	0	30	< MDL	98	70-130
Boron (HWS)	0.02	105	70-130	0.04	0.03	NC	40	< MDL	118	60-140
Cadmium	0.5	105	80-120	< MDL	< MDL	NC	30	< MDL	90	70-130
Chromium	1	110	80-120	11	11	0	30	< MDL	100	70-130
Chromium (VI)	0.5	90	80-120	< MDL	< MDL	NC	35	< MDL	82	36-141
Cobalt	1	107	80-120	3	2	NC	30	< MDL	102	70-130
Copper	1	111	80-120	6	6	NC	30	< MDL	103	70-130
Lead	5	106	80-120	11	10	NC	30	< MDL	100	70-130
Mercury	0.005	103	80-120	0.020	0.020	NC	30	< MDL	95	70-130
Molybdenum	1	105	80-120	1	1	NC	30	< MDL	104	70-130
Nickel	1	110	80-120	8	8	0	30	< MDL	95	70-130
Selenium	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	121	70-130
Silver	0.2	102	80-120	< MDL	< MDL	NC	30	< MDL	92	70-130
Thallium	0.1	108	80-120	0.2	< MDL	NC	30	< MDL	73	70-130
Tin	5	100	80-120	< MDL	< MDL	NC	30	< MDL	99	70-130
Uranium	0.1	100	80-120	0.3	0.3	NC	30	< MDL	95	70-130
Vanadium	1	109	80-120	18	18	0	30	< MDL	99	70-130
Zinc	3	107	80-120	42	40	5	30	< MDL	99	70-130

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

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Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acenaphthene	0.005	66	50-140	< MDL	< MDL	NC	50	< MDL	88	50-140
Acenaphthylene	0.005	71	50-140	< MDL	< MDL	NC	50	< MDL	94	50-140
Anthracene	0.005	79	50-140	< MDL	< MDL	NC	50	< MDL	89	50-140
Benzo(a)anthracene	0.005	81	50-140	< MDL	< MDL	NC	50	< MDL	87	50-140
Benzo(a)pyrene	0.005	88	50-140	0.02	< MDL	NC	50	< MDL	101	50-140
Benzo(b)fluoranthene	0.005	73	50-140	< MDL	< MDL	NC	50	< MDL	78	50-140
Benzo(k)fluoranthene	0.005	72	50-140	< MDL	< MDL	NC	50	< MDL	80	50-140
Benzo(g,h,i)perylene	0.005	73	50-140	< MDL	< MDL	NC	50	< MDL	89	50-140
Chrysene	0.005	78	50-140	< MDL	< MDL	NC	50	< MDL	91	50-140
Dibenzo(a,h)anthracene	0.005	72	50-140	< MDL	< MDL	NC	50	< MDL	85	50-140
Fluoranthene	0.005	77	50-140	0.036	0.035	NC	50	< MDL	93	50-140
Fluorene	0.005	75	50-140	< MDL	< MDL	NC	50	< MDL	93	50-140
Indeno(1,2,3,-cd)pyrene	0.005	71	50-140	< MDL	< MDL	NC	50	< MDL	93	50-140
Methylnaphthalene,2-	0.005	70	50-140	< MDL	< MDL	NC	50	< MDL	86	50-140
Naphthalene	0.005	72	50-140	< MDL	< MDL	NC	50	< MDL	87	50-140
Phenanthrene	0.005	90	50-140	0.028	0.026	NC	50	< MDL	103	50-140
Pyrene	0.005	84	50-140	0.028	0.026	NC	50	< MDL	99	50-140
Poly-Chlorinated Biphenyls (PCB's)	0.3	99	50-140	< MDL	< MDL	NC	50	< MDL	93	50-140

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Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	0.3	67	60-130	< MDL	< MDL	NC	30	< MDL	76	50-140
Benzene	0.02	89	60-130	< MDL	< MDL	NC	30	< MDL	95	50-140
Bromodichloromethane	0.02	88	60-130	< MDL	< MDL	NC	30	< MDL	96	50-140
Bromoform	0.02	106	60-130	< MDL	< MDL	NC	30	< MDL	119	50-140
Bromomethane	0.03	68	50-140	< MDL	< MDL	NC	30	< MDL	86	50-140
Carbon Tetrachloride	0.02	94	60-130	< MDL	< MDL	NC	30	< MDL	105	50-140
Chloroform	0.03	92	60-130	< MDL	< MDL	NC	30	< MDL	100	50-140
Dibromochloromethane	0.02	98	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	97	50-140	< MDL	< MDL	NC	30	< MDL	105	50-140
Dichlorobenzene, 1,2-	0.02	112	60-130	< MDL	< MDL	NC	30	< MDL	125	50-140
Dichlorobenzene, 1,3-	0.02	117	60-130	< MDL	< MDL	NC	30	< MDL	130	50-140
Dichlorobenzene, 1,4-	0.02	115	60-130	< MDL	< MDL	NC	30	< MDL	128	50-140
Dichlorodifluoromethane	0.02	56	50-140	< MDL	< MDL	NC	30	< MDL	56	50-140
Dichloroethane, 1,1-	0.03	81	60-130	< MDL	< MDL	NC	30	< MDL	85	50-140
Dichloroethane, 1,2-	0.03	88	60-130	< MDL	< MDL	NC	30	< MDL	96	50-140
Dichloroethene, cis-1,2-	0.02	93	60-130	< MDL	< MDL	NC	30	< MDL	98	50-140
Dichloroethene, trans-1,2-	0.02	97	60-130	< MDL	< MDL	NC	30	< MDL	104	50-140
Dichloroethylene, 1,1-	0.03	91	60-130	< MDL	< MDL	NC	30	< MDL	100	50-140
Dichloromethane (Methylene Chloride)	0.03	74	60-130	< MDL	< MDL	NC	30	< MDL	78	50-140
Dichloropropane, 1,2-	0.04	76	60-130	< MDL	< MDL	NC	30	< MDL	79	50-140
Dichloropropene, cis-1,3-	0.02	78	60-130	< MDL	< MDL	NC	30	< MDL	78	50-140
Dichloropropene, trans-1,3-	0.02	87	60-130	< MDL	< MDL	NC	30	< MDL	90	50-140
Ethylbenzene	0.03	97	60-130	< MDL	< MDL	NC	30	< MDL	106	50-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	0.03	68	60-130	< MDL	< MDL	NC	30	< MDL	72	50-140
Methyl Ethyl Ketone	0.1	67	60-130	< MDL	< MDL	NC	30	< MDL	69	50-140
Methyl Isobutyl Ketone	0.02	67	60-130	< MDL	< MDL	NC	30	< MDL	68	50-140
Methyl-t-butyl Ether	0.02	76	60-130	< MDL	< MDL	NC	30	< MDL	86	50-140
Monochlorobenzene (Chlorobenzene)	0.03	100	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Styrene	0.03	93	60-130	< MDL	< MDL	NC	30	< MDL	103	50-140
Tetrachloroethane, 1,1,1,2-	0.02	103	60-130	< MDL	< MDL	NC	30	< MDL	115	50-140
Tetrachloroethane, 1,1,2,2-	0.02	90	60-130	< MDL	< MDL	NC	30	< MDL	98	50-140
Tetrachloroethylene	0.03	115	60-130	< MDL	< MDL	NC	30	< MDL	127	50-140
Toluene	0.03	96	60-130	< MDL	< MDL	NC	30	< MDL	105	50-140
Trichloroethane, 1,1,1-	0.02	96	60-130	< MDL	< MDL	NC	30	< MDL	106	50-140
Trichloroethane, 1,1,2-	0.02	97	60-130	< MDL	< MDL	NC	30	< MDL	105	50-140
Trichloroethylene	0.03	101	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Trichlorofluoromethane	0.02	97	60-130	< MDL	< MDL	NC	30	< MDL	123	50-140
Vinyl Chloride	0.02	61	50-140	< MDL	< MDL	NC	30	< MDL	62	50-140
Xylene, m,p-	0.04	97	60-130	< MDL	< MDL	NC	30	< MDL	107	50-140
Xylene, o-	0.03	93	60-130	< MDL	< MDL	NC	30	< MDL	103	50-140
PHC F1 (C6-C10)	10	94	60-140	< MDL	< MDL	NC	30	< MDL	105	60-140
PHC F2 (>C10-C16)	5	96	60-140	< MDL	< MDL	NC	30	< MDL	85	60-140
PHC F3 (>C16-C34)	10	87	60-140	< MDL	< MDL	NC	30	< MDL	78	60-140
PHC F4 (>C34-C50)	10	113	60-140	< MDL	< MDL	NC	30	< MDL	98	60-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

TESTING REQUIREMENTS

☒ O.Reg 153 Table B2
☐ Surface Soil ☒ Sub Surface Soil (O.Reg 153)
☐ Yes ☐ No Record of Site Condition (O.Reg 153)
☐ Provincial Water Quality Objectives
☐ Sewer Use By-Law:
☐ MISA Guidelines
☐ O.Reg 558 Leachate Analysis
 Disposal Site:
☐ Landfill Monitoring
☐ Other:

REPORT NUMBER (Lab Use)
May. 8.15
B15-04607

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: AMEL
 Contact: Susan Pfeiffer
 Tel: 613-222-0658

Address and Invoicing Address (if different)
300-210 Colomade Rd South
Ottawa ON

Fax:
 Email: Susan Pfeiffer@AMELFW.com

Quote No.:
 Project Name: TZ14024
 P.O. No.:
 Additional Info: NCL Certification

ANALYSES REQUESTED (Print Test in Boxes)

VOC	PHC F ₁ -F ₄	PAH	METALS	PCB	FOL
-----	------------------------------------	-----	--------	-----	-----

TURNAROUND SERVICE REQUESTED (see back page)

☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days
☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil=Oil

Lab No:	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided														✓	Field		# Bottles/ Sample	Field Filtered(Y/N)
																					pH	Temp.		
1	BH15-1-SS4		S	15-03-06	1	X	X							1					4					
2	BH15-3-SS1		S	↓	2				X					2					1					
3	BH15-4-SS1 BH15-4-SS2		S		3				X						3				1					
4.36	BH15-5-SS3		S		4		X				X				4,5,6				1					
5	BH15-6-SS2		S		5				X						5				1					
6	BH15-6-SS3		S		6	X									6				2					
7	BH15-7-SS1		S	↓	7			X	X					7				2						
8	BH15-7-SS3		S		8		X								8				3					
9	BH15-8-SS3		S		9	X									9				3					
10	BH15-9-SS1		S	10			X		X					10				2						
11	BH15-1-SS5		S	↓	11	X								11				3						
12	BH15-2-SS1		S		12		X								12				3					
13	BH15-1-SS5		S	13	X									13				3						
14	BH15-2-SS1		S	14	X									14				3						

SAMPLE SUBMISSION INFORMATION

SHIPPING INFORMATION

REPORTING / INVOICING

SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)

Print:	Sampled by: <u>[Signature]</u>	Submitted by: <u>[Signature]</u>	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): <u>Rebecca</u>	Signature: <u>[Signature]</u>
Sign:	<u>[Signature]</u>	<u>[Signature]</u>	Caduceon's Courier <input type="checkbox"/>	<input type="checkbox"/>	Report by Email <input type="checkbox"/>	Date Received (yy-mm-dd): <u>150306</u>	Time Received: <u>16:50</u>
	<u>15-03-06</u>	<u>15-03-06</u>	Drop Off <input checked="" type="checkbox"/>	# of Pieces <u>1</u>	Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	Date (yy-mm-dd)/Time:	Date (yy-mm-dd)/Time:	Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: <u>10</u>	Labeled by: <u>[Signature]</u>

Laboratory Locations/Shipping Addresses

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
 Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
 Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
 Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

B15-04607

Organization: AMEL	Address and Invoicing Address (if different) 300-210 160 nade ALST		ANALYSES REQUESTED (Print Test in Boxes)										TURNAROUND SERVICE REQUESTED (see back page)			
Contact: Susan Rister	Other, ON		VOC	PWC F ₁ -F ₄	PAH	METALS	PCB							Suspected Highly Contaminated	<input type="checkbox"/> Platinum	200% Surcharge**
Tel: 613-727-0658															<input type="checkbox"/> Gold	100% Surcharge
Fax:	Quote No.:	Project Name: T214024													<input type="checkbox"/> Silver	50% Surcharge
Email: Susan.Rister@AMEL.on.ca	P.O. No.:	Additional Info:													<input type="checkbox"/> Bronze	25% Surcharge
															<input checked="" type="checkbox"/> Standard	5-7 days
															<input type="checkbox"/> Specific Date:	

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

[illegible]

SAMPLE SUBMISSION INFORMATION		SHIPPING INFORMATION		REPORTING / INVOICING	SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)	
Print:	Sampled by: <i>Jason Taylor</i>	Submitted by: <i>Jason Taylor</i>	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): <i>Rebecca</i> Signature: <i>[Signature]</i>
Sign:	<i>AT</i>	<i>AT</i>	Caduceon's Courier <input type="checkbox"/>	<input type="checkbox"/>	Report by Email <input type="checkbox"/>	Date Received (yy-mm-dd): <i>150806</i> Time Received: <i>16:50</i>
	<i>15-03-06</i>	<i>15-03-06</i>	Drop Off <input checked="" type="checkbox"/>	# of Pieces <i>1</i>	Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Date (vv-mm-dd)/Time:	Date (vv-mm-dd)/Time:	Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: <i>10</i> Labeled by:
						Comments:

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Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
Windsor Lab - #5-3221 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

Comments:

C.O.C.: G53171

REPORT No. B15-28371 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 06-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	8-S1	8-S2	8-S3	8-S4
			Sample I.D.	B15-28371-6	B15-28371-7	B15-28371-8	B15-28371-9
			Date Collected	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Antimony	µg/g	0.5	EPA 6020	29-Oct-15/O	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	29-Oct-15/O	1.2	0.8	1.4
Barium	µg/g	1	EPA 6010	29-Oct-15/O	52	40	39
Beryllium	µg/g	0.2	EPA 6010	29-Oct-15/O	0.2	< 0.2	0.3
Boron	µg/g	0.5	EPA 6010	29-Oct-15/O	2.7	5.8	3.1
Boron (HWS)	µg/g	0.02	MOE3470	29-Oct-15/O	0.21	1.23	0.32
Cadmium	µg/g	0.5	EPA 6010	29-Oct-15/O	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	29-Oct-15/O	12	11	9
Chromium (VI)	µg/g	0.2	EPA7196A	02-Nov-15/O	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	29-Oct-15/O	3	3	2
Copper	µg/g	1	EPA 6010	29-Oct-15/O	8	9	9
Lead	µg/g	5	EPA 6010	29-Oct-15/O	35	20	34
Mercury	µg/g	0.005	EPA 7471A	30-Oct-15/O	0.230	0.052	0.063
Molybdenum	µg/g	1	EPA 6010	29-Oct-15/O	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	29-Oct-15/O	7	6	5
Selenium	µg/g	0.5	EPA 6020	29-Oct-15/O	< 0.5	< 0.5	< 0.5
Silver	µg/g	0.2	EPA 6010	29-Oct-15/O	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	29-Oct-15/O	< 0.1	< 0.1	< 0.1
Tin	µg/g	5	EPA 6010	29-Oct-15/O	< 5	< 5	< 5
Uranium	µg/g	0.1	EPA 6020	29-Oct-15/O	0.5	0.8	0.4
Vanadium	µg/g	1	EPA 6010	29-Oct-15/O	21	18	18
Zinc	µg/g	3	EPA 6010	29-Oct-15/O	202	310	100

R.L. = Reporting Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Uncertainty Values available upon request



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G53171

REPORT No. B15-28371 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 06-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	8-S1	8-S2	8-S3	8-S4
			Sample I.D.	B15-28371-6	B15-28371-7	B15-28371-8	B15-28371-9
			Date Collected	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/g	0.005	EPA 8270	03-Nov-15/K	< 0.005	< 0.005	< 0.005
Acenaphthylene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.006	0.007	0.164
Anthracene	µg/g	0.005	EPA 8270	03-Nov-15/K	< 0.005	< 0.005	0.114
Benzo(a)anthracene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.043	0.057	1.16
Benzo(a)pyrene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.031	0.036	1.22
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.034	0.075	1.84
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.011	0.018	0.483
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	03-Nov-15/K	0.05	0.09	2.32
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.009	0.013	0.299
Chrysene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.030	0.034	0.950
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.006	0.005	0.162
Fluoranthene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.056	0.063	1.41
Fluorene	µg/g	0.005	EPA 8270	03-Nov-15/K	< 0.005	< 0.005	0.013
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.027	0.021	0.618
Methylnaphthalene,1-	µg/g	0.005	EPA 8270	03-Nov-15/K	< 0.005	< 0.005	< 0.005
Methylnaphthalene,2-	µg/g	0.005	EPA 8270	03-Nov-15/K	< 0.005	< 0.005	< 0.005
Naphthalene	µg/g	0.005	EPA 8270	03-Nov-15/K	< 0.005	< 0.005	0.018
Phenanthrene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.020	0.017	0.225
Pyrene	µg/g	0.005	EPA 8270	03-Nov-15/K	0.045	0.052	1.30
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	03-Nov-15/K	105	105	113

R.L. = Reporting Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Uncertainty Values available upon request



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Lab Manager - Ottawa District

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C.O.C.: G53171

REPORT No. B15-28371 (iii)

Rev. 1

Report To:

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		2-S1	2-S2	5-S1	5-S2
			Sample I.D.		B15-28371-1	B15-28371-2	B15-28371-3	B15-28371-4
			Date Collected		28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
pH @25°C	pH Units		SM 4500H	02-Nov-15/O	6.89	6.39	5.49	4.61
Aldrin	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
Chlordane (alpha)	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
Chlordane (Gamma)	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDD, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDD, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDD Total	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDE, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDE, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDE Total	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDT, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDT, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDT Total	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
DDT + Metabolites	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
Dieldrin	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
Endosulfan I	µg/g	0.04	EPA 8080	05-Nov-15/K			< 0.04	< 0.04
Endosulfan II	µg/g	0.04	EPA 8080	05-Nov-15/K			< 0.04	< 0.04
Endosulfan I/II	µg/g	0.04	EPA 8080	05-Nov-15/K			< 0.04	< 0.04
Endrin	µg/g	0.04	EPA 8080	05-Nov-15/K			< 0.04	< 0.04
Heptachlor	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
Heptachlor Epoxide	µg/g	0.05	EPA 8080	05-Nov-15/K			< 0.05	< 0.05
Hexachlorobenzene	µg/g	0.01	EPA 8080	05-Nov-15/K			< 0.01	< 0.01
Hexachlorobutadiene	µg/g	0.01	EPA 8080	05-Nov-15/K			< 0.01	< 0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	05-Nov-15/K			< 0.01	< 0.01

NOTE: Revision created to add Total Isomer Sums to Final Report.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G53171

REPORT No. B15-28371 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	2-S1	2-S2	5-S1	5-S2
			Sample I.D.	B15-28371-1	B15-28371-2	B15-28371-3	B15-28371-4
			Date Collected	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hexachloroethane	µg/g	0.01	EPA 8080	05-Nov-15/K		< 0.01	< 0.01
Methoxychlor	µg/g	0.05	EPA 8080	05-Nov-15/K		< 0.05	< 0.05
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	05-Nov-15/K		< 0.3	< 0.3
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8082A	05-Nov-15/R	< 0.3	< 0.3	
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	05-Nov-15/K		50	70
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	05-Nov-15/K		30	50
Alachlor	µg/g	0.05	EPA 8270	03-Nov-15/K		< 0.05	< 0.05
Aldicarb	µg/g	0.6	EPA 8270	03-Nov-15/K		< 0.6	< 0.6
Atrazine	µg/g	0.1	EPA 8270	03-Nov-15/K		< 0.1	< 0.1
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	03-Nov-15/K		< 0.1	< 0.1
Atrazine + Metabolites	µg/g	0.1	Calc.	03-Nov-15/K		< 0.1	< 0.1
Azinphos-methyl	µg/g	0.2	EPA 8270	03-Nov-15/K		< 0.2	< 0.2
Bendiocarb	µg/g	0.5	EPA 8270	03-Nov-15/K		< 0.5	< 0.5
Benzo(a)pyrene	µg/g	0.05	EPA 8270	03-Nov-15/K		0.05	< 0.05
Bromoxynil	µg/g	0.05	EPA 8270	03-Nov-15/K		< 0.05	< 0.05
Carbaryl	µg/g	0.5	EPA 8270	03-Nov-15/K		< 0.5	< 0.5
Carbofuran	µg/g	0.2	EPA 8270	03-Nov-15/K		< 0.2	< 0.2
Chlorpyrifos	µg/g	0.1	EPA 8270	03-Nov-15/K		< 0.1	< 0.1
Cyanazine	µg/g	0.1	EPA 8270	03-Nov-15/K		< 0.1	< 0.1
Diazinon	µg/g	0.2	EPA 8270	03-Nov-15/K		< 0.2	< 0.2
Dicamba	µg/g	1	EPA 8270	03-Nov-15/K		< 1	< 1
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	03-Nov-15/K		< 0.02	< 0.02
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	03-Nov-15/K		< 1	< 1
Diclofop-methyl	µg/g	0.09	EPA 8270	03-Nov-15/K		< 0.09	< 0.09
Dimethoate	µg/g	0.2	EPA 8270	03-Nov-15/K		< 0.2	< 0.2

NOTE: Revision created to add Total Isomer Sums to Final Report.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G53171

REPORT No. B15-28371 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	2-S1	2-S2	5-S1	5-S2
			Sample I.D.	B15-28371-1	B15-28371-2	B15-28371-3	B15-28371-4
			Date Collected	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Dinoseb	µg/g	0.1	EPA 8270	03-Nov-15/K		< 0.1	< 0.1
Diuron	µg/g	1	EPA 8270	03-Nov-15/K		< 1	< 1
Malathion	µg/g	1	EPA 8270	03-Nov-15/K		< 1	< 1
Metolachlor	µg/g	0.5	EPA 8270	03-Nov-15/K		< 0.5	< 0.5
Metribuzin	µg/g	0.5	EPA 8270	03-Nov-15/K		< 0.5	< 0.5
Parathion	µg/g	0.5	EPA 8270	03-Nov-15/K		< 0.5	< 0.5
Pentachlorophenol	µg/g	0.02	EPA 8270	03-Nov-15/K		< 0.02	< 0.02
Phorate	µg/g	0.05	EPA 8270	03-Nov-15/K		< 0.05	< 0.05
Picloram	µg/g	1	EPA 8270	03-Nov-15/K		< 1	< 1
Prometryne	µg/g	0.02	EPA 8270	03-Nov-15/K		< 0.02	< 0.02
Simazine	µg/g	0.1	EPA 8270	03-Nov-15/K		< 0.1	< 0.1
Temephos	µg/g	3	EPA 8270	03-Nov-15/K		< 3	< 3
Terbufos	µg/g	0.07	EPA 8270	03-Nov-15/K		< 0.07	< 0.07
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	03-Nov-15/K		< 0.02	< 0.02
Triallate	µg/g	2	EPA 8270	03-Nov-15/K		< 2	< 2
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	03-Nov-15/K		< 0.02	< 0.02
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	03-Nov-15/K		< 2	< 2
Trifluralin	µg/g	0.1	EPA 8270	03-Nov-15/K		< 0.1	< 0.1
Phenol-d5 (SS)	% rec.	10	EPA 8270	03-Nov-15/K		78.0	68
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	03-Nov-15/K		78.0	71
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	03-Nov-15/K		82.0	80
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	03-Nov-15/K		95.0	93
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	03-Nov-15/K		92.0	96

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Lab Manager - Ottawa District

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Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	5-S3	8-S1	8-S2	8-S3
			Sample I.D.	B15-28371-5	B15-28371-6	B15-28371-7	B15-28371-8
			Date Collected	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
pH @25°C	pH Units		SM 4500H	02-Nov-15/O	4.90	5.69	6.33
Aldrin	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane (alpha)	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane (Gamma)	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD Total	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE Total	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT Total	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT + Metabolites	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
Dieldrin	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
Endosulfan I	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	< 0.04
Endosulfan II	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	< 0.04
Endosulfan I/II	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	< 0.04
Endrin	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	< 0.04
Heptachlor	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	< 0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	< 0.01

NOTE: Revision created to add Total Isomer Sums to Final Report.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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REPORT No. B15-28371 (iii)

Rev. 1

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		5-S3	8-S1	8-S2	8-S3
			Sample I.D.		B15-28371-5	B15-28371-6	B15-28371-7	B15-28371-8
			Date Collected		28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Hexachloroethane	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	05-Nov-15/K	< 0.3	< 0.3	< 0.3	< 0.3
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8082A	05-Nov-15/R				
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	05-Nov-15/K	70	60	60	60
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	05-Nov-15/K	60	50	50	80
Alachlor	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Aldicarb	µg/g	0.6	EPA 8270	03-Nov-15/K	< 0.6	< 0.6	< 0.6	< 0.6
Atrazine	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	µg/g	0.1	Calc.	03-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Azinphos-methyl	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Bendiocarb	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	< 0.05	< 0.05	1.12
Bromoxynil	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Carbaryl	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Carbofuran	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Cyanazine	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Diazinon	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Dicamba	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	< 1	< 1
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	< 1	< 1
Diclofop-methyl	µg/g	0.09	EPA 8270	03-Nov-15/K	< 0.09	< 0.09	< 0.10	< 0.09
Dimethoate	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2

NOTE: Revision created to add Total Isomer Sums to Final Report.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G53171

REPORT No. B15-28371 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	5-S3	8-S1	8-S2	8-S3
			Sample I.D.	B15-28371-5	B15-28371-6	B15-28371-7	B15-28371-8
			Date Collected	28-Oct-15	28-Oct-15	28-Oct-15	28-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Dinoseb	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	< 0.1
Diuron	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	< 1
Malathion	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	< 1
Metolachlor	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	< 0.5
Metribuzin	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	< 0.5
Parathion	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	< 0.5
Pentachlorophenol	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	< 0.02
Phorate	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	< 0.05	< 0.05
Picloram	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	< 1
Prometryne	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	< 0.02
Simazine	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	< 0.1
Temephos	µg/g	3	EPA 8270	03-Nov-15/K	< 3	< 3	< 3
Terbufos	µg/g	0.07	EPA 8270	03-Nov-15/K	< 0.07	< 0.07	< 0.07
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	< 0.02
Triallate	µg/g	2	EPA 8270	03-Nov-15/K	< 2	< 2	< 2
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	< 0.02
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	03-Nov-15/K	< 2	< 2	< 2
Trifluralin	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	< 0.1
Phenol-d5 (SS)	% rec.	10	EPA 8270	03-Nov-15/K	75.0	97	84
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	03-Nov-15/K	77.0	84	77
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	03-Nov-15/K	80.0	89	105
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	03-Nov-15/K	108	124	112
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	03-Nov-15/K	108	105	118

NOTE: Revision created to add Total Isomer Sums to Final Report.



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Lab Manager - Ottawa District

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REPORT No. B15-28371 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	8-S4	DUP-1		
			Sample I.D.	B15-28371-9	B15-28371-10		
			Date Collected	28-Oct-15	28-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
pH @25°C	pH Units		SM 4500H	02-Nov-15/O	5.66	5.92	
Aldrin	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Chlordane (alpha)	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Chlordane (Gamma)	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDD, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDD, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDD Total	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDE, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDE, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDE Total	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDT, 2,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDT, 4,4-	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDT Total	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
DDT + Metabolites	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Dieldrin	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Endosulfan I	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	
Endosulfan II	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	
Endosulfan I/II	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	
Endrin	µg/g	0.04	EPA 8080	05-Nov-15/K	< 0.04	< 0.04	
Heptachlor	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Heptachlor Epoxide	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Hexachlorobenzene	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	
Hexachlorobutadiene	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	

NOTE: Revision created to add Total Isomer Sums to Final Report.



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Lab Manager - Ottawa District

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REPORT No. B15-28371 (iii)

Rev. 1

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	8-S4	DUP-1		
			Sample I.D.	B15-28371-9	B15-28371-10		
			Date Collected	28-Oct-15	28-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hexachloroethane	µg/g	0.01	EPA 8080	05-Nov-15/K	< 0.01	< 0.01	
Methoxychlor	µg/g	0.05	EPA 8080	05-Nov-15/K	< 0.05	< 0.05	
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	05-Nov-15/K	< 0.3	< 0.3	
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8082A	05-Nov-15/R			
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	05-Nov-15/K	60	60	
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	05-Nov-15/K	60	50	
Alachlor	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	< 0.05	
Aldicarb	µg/g	0.6	EPA 8270	03-Nov-15/K	< 0.6	< 0.6	
Atrazine	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	
Atrazine + Metabolites	µg/g	0.1	Calc.	03-Nov-15/K	< 0.1	< 0.1	
Azinphos-methyl	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	
Bendiocarb	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	
Benzo(a)pyrene	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	0.06	
Bromoxynil	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	< 0.05	
Carbaryl	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	
Carbofuran	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	
Chlorpyrifos	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	
Cyanazine	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	
Diazinon	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	
Dicamba	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	
Diclofop-methyl	µg/g	0.09	EPA 8270	03-Nov-15/K	< 0.09	< 0.09	
Dimethoate	µg/g	0.2	EPA 8270	03-Nov-15/K	< 0.2	< 0.2	

NOTE: Revision created to add Total Isomer Sums to Final Report.



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Lab Manager - Ottawa District

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C.O.C.: G53171

REPORT No. B15-28371 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 28-Oct-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	8-S4	DUP-1		
			Sample I.D.	B15-28371-9	B15-28371-10		
			Date Collected	28-Oct-15	28-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Dinoseb	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	
Diuron	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	
Malathion	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	
Metolachlor	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	
Metribuzin	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	
Parathion	µg/g	0.5	EPA 8270	03-Nov-15/K	< 0.5	< 0.5	
Pentachlorophenol	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	
Phorate	µg/g	0.05	EPA 8270	03-Nov-15/K	< 0.05	< 0.05	
Picloram	µg/g	1	EPA 8270	03-Nov-15/K	< 1	< 1	
Prometryne	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	
Simazine	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	
Temephos	µg/g	3	EPA 8270	03-Nov-15/K	< 3	< 3	
Terbufos	µg/g	0.07	EPA 8270	03-Nov-15/K	< 0.07	< 0.07	
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	
Triallate	µg/g	2	EPA 8270	03-Nov-15/K	< 2	< 2	
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	03-Nov-15/K	< 0.02	< 0.02	
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	03-Nov-15/K	< 2	< 2	
Trifluralin	µg/g	0.1	EPA 8270	03-Nov-15/K	< 0.1	< 0.1	
Phenol-d5 (SS)	% rec.	10	EPA 8270	03-Nov-15/K	80.0	78	
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	03-Nov-15/K	78.0	75	
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	03-Nov-15/K	85.0	82	
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	03-Nov-15/K	103	91	
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	03-Nov-15/K	103	105	

NOTE: Revision created to add Total Isomer Sums to Final Report.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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Attention: **Susan Pfister**

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2378 Holly Lane
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Tel: 613-526-0123
Fax: 613-526-1244

DATE SUBMITTED: 28-Oct-15

DATE REPORTED: 6-Nov-15

SAMPLE MATRIX: Soil

JOB/PROJECT NO.: NCC Leirim (P19)

P.O. NUMBER: TZ14024.2000

WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
pH	10	Ottawa	VK	NA	2-Nov-15	2-Nov-15	A-PH-03 (o)	SM4500H
Boron - HWS	4	Ottawa	AJS	29-Oct-15	29-Oct-15	29-Oct-15	D-HWE s	EPA 200.7
Chromium (VI)	4	Ottawa	VK	2-Nov-15	2-Nov-15	2-Nov-15	D-CRVI-02 (o)	EPA7196A
Mercury	4	Ottawa	VSc	30-Oct-15	30-Oct-15	30-Oct-15	D-HG-01 (o)	EPA 7471A
Metals - ICP-AES	4	Ottawa	AJS	29-Oct-15	29-Oct-15	29-Oct-15	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	4	Ottawa	AJS	29-Oct-15	29-Oct-15	30-Oct-15	D-ICPMS-01 (o)	EPA 6020
SVOC	4	Kingston	FL	2-Nov-15	3-Nov-15	6-Nov-15	C-NAB-S-001 (k)	EPA 8270D
OC Pesticides	8	Kingston	BM	30-Oct-15	5-Nov-15	6-Nov-15	C-PESTCL-01 (k)	EPA 8082A
PCB's	2	Richmond Hill	JE	3-Nov-15	3-Nov-15	5-Nov-15	C-PCB-01 (rh)	EPA 8082A
Pest/Herb MS	8	Kingston	FL	2-Nov-15	3-Nov-15	6-Nov-15	C-NAB-S-001 (k)	EPA 8270D

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
pH @ 25°C		0.00	0.2 pH Units	6.89	6.82	0.07	0.3 pH Units	NA	NA	-
Antimony	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	95	70-130
Arsenic	0.5	89	80-120	1.2	1.0	NC	30	< MDL	97	70-130
Barium	1	107	80-120	52	48	8	30	< MDL	104	70-130
Beryllium	0.2	111	80-120	0.2	0.2	NC	30	< MDL	96	70-130
Boron	0.5	106	80-120	2.7	2.4	5	30	< MDL	109	70-130
Boron (HWS)	0.02	110	70-130	0.21	0.31	38	40	< MDL	68	60-140
Cadmium	0.5	109	80-120	< MDL	< MDL	NC	30	< MDL	92	70-130
Chromium	1	114	80-120	12	11	9	30	< MDL	88	70-130
Chromium (VI)	0.5	110	80-120	< MDL	< MDL	NC	35	< MDL	67	36-141
Cobalt	1	111	80-120	3	3	NC	30	< MDL	120	70-130
Copper	1	116	80-120	8	7	NC	30	< MDL	117	70-130
Lead	5	115	80-120	35	30	NC	30	< MDL	116	70-130
Mercury	0.005	95	80-120	0.230	0.173	28	30	< MDL	99	70-130
Molybdenum	1	110	80-120	< MDL	< MDL	NC	30	< MDL	95	70-130
Nickel	1	112	80-120	7	6	NC	30	< MDL	106	70-130
Selenium	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	113	70-130
Silver	0.2	109	80-120	< MDL	< MDL	NC	30	< MDL	100	70-130
Thallium	0.1	108	80-120	< MDL	< MDL	NC	30	< MDL	80	70-130
Tin	5	102	80-120	< MDL	< MDL	NC	30	< MDL	108	70-130
Uranium	0.1	110	80-120	0.5	0.5	NC	30	< MDL	109	70-130
Vanadium	1	112	80-120	21	20	5	30	< MDL	101	70-130
Zinc	3	112	80-120	202	181	11	30	< MDL	115	70-130

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

R.L. = Reporting Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acenaphthene	0.005	88	50-140	< MDL	< MDL	NC	40	< MDL	85	50-140
Acenaphthylene	0.005	81	50-140	0.006	0.006	NC	40	< MDL	82	50-140
Anthracene	0.005	98	50-140	< MDL	< MDL	NC	40	< MDL	99	50-140
Benzo(a)anthracene	0.005	113	50-140	0.043	0.045	NC	40	< MDL	111	50-140
Benzo(a)pyrene	0.005	113	50-140	0.031	0.033	NC	40	< MDL	122	50-140
Benzo(b)fluoranthene	0.005	90	50-140	0.034	0.032	NC	40	< MDL	89	50-140
Benzo(k)fluoranthene	0.005	78	50-140	0.011	0.013	NC	40	< MDL	73	50-140
Benzo(g,h,i)perylene	0.005	66	50-140	0.009	0.011	NC	40	< MDL	63	50-140
Chrysene	0.005	86	50-140	0.030	0.028	NC	40	< MDL	93	50-140
Dibenzo(a,h)anthracene	0.005	81	50-140	0.006	0.007	NC	40	< MDL	89	50-140
Fluoranthene	0.005	95	50-140	0.056	0.056	0	40	< MDL	100	50-140
Fluorene	0.005	90	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Indeno(1,2,3,-cd)pyrene	0.005	77	50-140	0.027	0.028	NC	40	< MDL	80	50-140
Methylnaphthalene,2-	0.005	79	50-140	< MDL	< MDL	NC	40	< MDL	82	50-140
Naphthalene	0.005	86	50-140	< MDL	< MDL	NC	40	< MDL	89	50-140
Phenanthrene	0.005	96	50-140	0.020	0.021	NC	40	< MDL	96	50-140
Pyrene	0.005	102	50-140	0.045	0.044	NC	40	< MDL	105	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

R.L. = Reporting Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem.
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Aldrin	0.05	84	50-140	< MDL	< MDL	NC	40	< MDL	83	50-140
Chlordane (Alpha)	0.05	85	50-140	< MDL	< MDL	NC	40	< MDL	67	50-140
Chlordane (Gamma)	0.05	85	50-140	< MDL	< MDL	NC	40	< MDL	103	50-140
DDD, 4,4-	0.05	96	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
DDE, 4,4-	0.05	85	50-140	< MDL	< MDL	NC	40	< MDL	67	50-140
DDT, 2,4-	0.05	90	50-140	< MDL	< MDL	NC	40	< MDL	91	50-140
DDT, 4,4-	0.05	105	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Dieldrin	0.05	85	50-140	< MDL	< MDL	NC	40	< MDL	63	50-140
Endosulfan I	0.04	85	50-140	< MDL	< MDL	NC	40	< MDL	72	50-140
Endosulfan II	0.04	87	50-140	< MDL	< MDL	NC	40	< MDL	118	50-140
Endrin	0.04	88	50-140	< MDL	< MDL	NC	40	< MDL	131	50-140
Heptachlor	0.05	94	50-140	< MDL	< MDL	NC	40	< MDL	87	50-140
Heptachlor Epoxide	0.05	84	50-140	< MDL	< MDL	NC	40	< MDL	71	50-140
Hexachlorobenzene	0.01	81	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Hexachlorobutadiene	0.01	82	50-140	< MDL	< MDL	NC	40	< MDL	61	50-140
Lindane (Hexachlorocyclohexane, Gamma)	0.01	86	50-140	< MDL	< MDL	NC	40	< MDL	76	50-140
Hexachloroethane	0.01	79	50-140	< MDL	< MDL	NC	40	< MDL	63	50-140
Methoxychlor	0.05	110	50-140	< MDL	< MDL	NC	40	< MDL	91	50-140
Poly-Chlorinated Biphenyls (PCB's)	0.3	75	60-140	< MDL	< MDL	NC	40	< MDL	63	60-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Alachlor	0.05	114	50-140	< MDL	< MDL	NC	40	< MDL	117	50-140
Aldicarb	0.6	90	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Atrazine	0.1	93	50-140	< MDL	< MDL	NC	40	< MDL	95	50-140
Atrazine (Desethyl)	0.1	84	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Azinphos-methyl	0.2	50	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Bendiocarb	0.5	100	50-140	< MDL	< MDL	NC	40	< MDL	110	50-140
Benzo(a)pyrene	0.05	83	50-140	< MDL	< MDL	NC	40	< MDL	113	50-140
Bromoxynil	0.05	42	30-140	< MDL	< MDL	NC	40	< MDL	76	30-140
Carbaryl	0.5	70	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Carbofuran	0.2	120	50-140	< MDL	< MDL	NC	40	< MDL	120	50-140
Chlorpyrifos	0.1	104	50-140	< MDL	< MDL	NC	40	< MDL	89	50-140
Cyanazine	0.1	130	50-140	< MDL	< MDL	NC	40	< MDL	118	50-140
Diazinon	0.2	70	50-140	< MDL	< MDL	NC	40	< MDL	70	50-140
Dicamba	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Dichlorophenol, 2,4-	0.02	103	50-140	< MDL	< MDL	NC	40	< MDL	94	50-140
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Diclofop-methyl	0.09	136	50-140	< MDL	< MDL	NC	40	< MDL	120	60-140
Dimethoate	0.2	90	50-140	< MDL	< MDL	NC	40	< MDL	100	60-140
Dinoseb	0.1	48	30-140	< MDL	< MDL	NC	40	< MDL	82	30-140
Diuron	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	60-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Malathion	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Metolachlor	0.5	90	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Metribuzin	0.5	90	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Parathion	0.5	100	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Pentachlorophenol	0.02	67	50-140	< MDL	< MDL	NC	40	< MDL	86	50-140
Phorate	0.05	103	50-140	< MDL	< MDL	NC	40	< MDL	94	50-140
Picloram	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Prometryne	0.02	43	30-140	< MDL	< MDL	NC	40	< MDL	34	30-140
Simazine	0.1	85	50-140	< MDL	< MDL	NC	40	< MDL	133	50-140
Temephos	3	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Terbufos	0.07	112	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Tetrachlorophenol, 2,3,4,6-	0.02	99	50-140	< MDL	< MDL	NC	40	< MDL	99	50-140
Triallate	2	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Trichlorophenol 2,4,6-	0.02	102	50-140	< MDL	< MDL	NC	40	< MDL	103	50-140
Trichlorophenoxy acetic acid, 2,4,5-	2	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Trifluralin	0.1	95	50-140	< MDL	< MDL	NC	40	< MDL	83	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

R.L. = Reporting Limit

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NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

TESTING REQUIREMENTS

REPORT NUMBER (Lab Use)

- ☐ O.Reg 153 Table ☐ MISA Guidelines
☐ Surface Soil ☐ Sub Surface Soil (O.Reg 153) ☐ O.Reg 558 Leachate Analysis
☐ Yes ☐ No Record of Site Condition (O.Reg 153) Disposal Site:
☐ Provincial Water Quality Objectives ☐ Landfill Monitoring
☐ Sewer Use By-Law: ☒ Other: CCME Res/Park

Oct. 28.15
B15-28371

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: Amec Foster Wheeler
 Contact: Susan Pfister
 Tel: 613-727-0658
 Fax: —
 Email: Susan.pfister@amec.com
 Address and Invoicing Address (if different): 210 Colonnade Rd S Unit 300
 Ottawa ON K2E 7L5
 Quote No.: P151007-PP
 Project Name: NCC Leithim (P19)
 P.O. No.: T214024.2000
 Additional Info:

ANALYSES REQUESTED (Print Test in Boxes)

pH
 VOC
 PCB (total)
 OC Pesticides
 Pesticides + Herbicides (per quote)
 Metals Suite 2 (per quote)
 PAH (CCME)

TURNAROUND SERVICE REQUESTED (see back page)

- ☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days
☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

Lab No.	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided										Field pH	Field Temp.	# Bottles/ Sample	Field Filtered(Y/N)
						X	X												
1	2-S1		S	15-10-28	13:00	X	X											2	↑
2	2-S2		S		13:15	X	X											2	↑
3	5-S1		S		12:10	X		X	X									3	↑
4	5-S2		S		12:30	X		X	X									3	
5	5-S3		S		12:45	X		X	X									3	
6	8-S1		S		10:30	X		X	X		X	X						6	N/A
7	8-S2		S		10:45	X		X	X		X	X						6	N/A
8	8-S3		S		11:10	X		X	X		X	X						6	
9	8-S4		S		11:40	X		X	X		X	X						6	
10	DUP-1		S			X		X	X									3	↓

* please include QA/QC reports to all results
 * all detection limits must be at or below CCME res/park guidelines

SAMPLE SUBMISSION INFORMATION

SHIPPING INFORMATION

REPORTING / INVOICING

SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)

Print: SUSAN PFISTER
 Sign: S. Pfister
 Date (yy-mm-dd)/Time: _____
 Submitted by: SUSAN PFISTER
 Date (yy-mm-dd)/Time: _____
 Client's Courier ☐ Invoice ☐
 Caduceon's Courier ☐ # of Pieces _____
 Drop Off ☒ Caduceon (Pick-up) ☐
 Report by Fax ☐ Report by Email ☒
 Invoice by Email ☒ Invoice by Mail ☐
 Received By (print): Sabina Signature: S
 Date Received (yy-mm-dd): Oct. 28.15 Time Received: 3:42
 Laboratory Prepared Bottles: ☒ Yes ☐ No
 Sample Temperature °C: _____ Labeled by: _____
 Comments: 40.50°C

Laboratory Locations/Shipping Addresses
 Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
 Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
 Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
 Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

C.O.C.: G26462

REPORT No. B15-28568 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 10-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP3-1	TP4-1	TP5-1	TP6-1
			Sample I.D.		B15-28568-3	B15-28568-4	B15-28568-5	B15-28568-6
			Date Collected		30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Antimony	µg/g	0.5	EPA 6020	03-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	03-Nov-15/O	2.2	1.8	2.0	2.2
Barium	µg/g	1	EPA 6010	03-Nov-15/O	65	58	67	79
Beryllium	µg/g	0.2	EPA 6010	03-Nov-15/O	0.9	0.8	0.8	0.7
Boron	µg/g	0.5	EPA 6010	03-Nov-15/O	4.4	3.2	2.9	2.9
Boron (HWS)	µg/g	0.02	MOE3470	03-Nov-15/O	< 0.02	0.02	< 0.02	0.03
Cadmium	µg/g	0.5	EPA 6010	03-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	03-Nov-15/O	30	23	27	24
Chromium (VI)	µg/g	0.2	EPA7196A	05-Nov-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	03-Nov-15/O	9	7	7	12
Copper	µg/g	1	EPA 6010	03-Nov-15/O	13	9	9	12
Lead	µg/g	5	EPA 6010	03-Nov-15/O	11	9	10	19
Mercury	µg/g	0.005	EPA 7471A	04-Nov-15/O	0.038	0.026	0.036	0.051
Molybdenum	µg/g	1	EPA 6010	03-Nov-15/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	03-Nov-15/O	20	16	17	15
Selenium	µg/g	0.5	EPA 6020	03-Nov-15/O	0.5	< 0.5	< 0.5	0.7
Silver	µg/g	0.2	EPA 6010	03-Nov-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	03-Nov-15/O	0.1	0.1	0.1	0.1
Tin	µg/g	5	EPA 6010	03-Nov-15/O	< 5	< 5	< 5	< 5
Uranium	µg/g	0.1	EPA 6020	03-Nov-15/O	0.9	0.8	0.7	0.7
Vanadium	µg/g	1	EPA 6010	03-Nov-15/O	62	43	57	58
Zinc	µg/g	3	EPA 6010	03-Nov-15/O	49	51	60	65

R.L. = Reporting Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Uncertainty Values available upon request



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G26462

REPORT No. B15-28568 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 10-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP7-1	Dup-2		
			Sample I.D.	B15-28568-7	B15-28568-10		
			Date Collected	30-Oct-15	30-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Antimony	µg/g	0.5	EPA 6020	03-Nov-15/O	< 0.5	< 0.5	
Arsenic	µg/g	0.5	EPA 6020	03-Nov-15/O	4.2	2.1	
Barium	µg/g	1	EPA 6010	03-Nov-15/O	79	77	
Beryllium	µg/g	0.2	EPA 6010	03-Nov-15/O	1.2	0.7	
Boron	µg/g	0.5	EPA 6010	03-Nov-15/O	3.3	3.1	
Boron (HWS)	µg/g	0.02	MOE3470	03-Nov-15/O	0.02	0.02	
Cadmium	µg/g	0.5	EPA 6010	03-Nov-15/O	1.1	< 0.5	
Chromium	µg/g	1	EPA 6010	03-Nov-15/O	35	24	
Chromium (VI)	µg/g	0.2	EPA7196A	05-Nov-15/O	< 0.2	< 0.2	
Cobalt	µg/g	1	EPA 6010	03-Nov-15/O	15	13	
Copper	µg/g	1	EPA 6010	03-Nov-15/O	22	12	
Lead	µg/g	5	EPA 6010	03-Nov-15/O	15	15	
Mercury	µg/g	0.005	EPA 7471A	04-Nov-15/O	0.040	0.048	
Molybdenum	µg/g	1	EPA 6010	03-Nov-15/O	< 1	< 1	
Nickel	µg/g	1	EPA 6010	03-Nov-15/O	19	15	
Selenium	µg/g	0.5	EPA 6020	03-Nov-15/O	1.2	0.8	
Silver	µg/g	0.2	EPA 6010	03-Nov-15/O	< 0.2	< 0.2	
Thallium	µg/g	0.1	EPA 6020	03-Nov-15/O	0.1	0.1	
Tin	µg/g	5	EPA 6010	03-Nov-15/O	< 5	< 5	
Uranium	µg/g	0.1	EPA 6020	03-Nov-15/O	1.1	0.8	
Vanadium	µg/g	1	EPA 6010	03-Nov-15/O	101	59	
Zinc	µg/g	3	EPA 6010	03-Nov-15/O	43	55	

R.L. = Reporting Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Uncertainty Values available upon request



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G26462

REPORT No. B15-28568 (ii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 25-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP3-1	TP4-1	TP5-1	TP6-1
			Sample I.D.	B15-28568-3	B15-28568-4	B15-28568-5	B15-28568-6
			Date Collected	30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Acenaphthylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.009
Anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.005
Benzo(a)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.042
Benzo(a)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.035
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.086
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.023
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	06-Nov-15/K	< 0.01	< 0.01	0.11
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.012
Chrysene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.032
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.036
Fluorene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.018
Methylnaphthalene,1-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Methylnaphthalene,2-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Naphthalene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Phenanthrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.041
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	109	112	106

NOTE: Revision created to lower RL's to meet CCME criteria.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

R.L. = Reporting Limit

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C.O.C.: G26462

REPORT No. B15-28568 (ii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 25-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP7-1	Dup-2		
			Sample I.D.	B15-28568-7	B15-28568-10		
			Date Collected	30-Oct-15	30-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Acenaphthylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Benzo(a)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.021	
Benzo(a)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.016	
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.042	
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.011	
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	06-Nov-15/K	< 0.01	0.05	
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.006	
Chrysene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.016	
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.017	
Fluorene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.007	
Methylnaphthalene,1-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Methylnaphthalene,2-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Naphthalene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Phenanthrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	
Pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.019	
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	111	107	

NOTE: Revision created to lower RL's to meet CCME criteria.



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Lab Manager - Ottawa District

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C.O.C.: G26462

REPORT No. B15-28568 (iii)

Rev. 1

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP1-1	TP2-1	TP3-1	TP4-1
			Sample I.D.		B15-28568-1	B15-28568-2	B15-28568-3	B15-28568-4
			Date Collected		30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
pH @25°C	pH Units		SM 4500H	04-Nov-15/O	6.10	6.77	6.69	6.07
Aldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane (alpha)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane (Gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDD, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDD, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDD Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDE, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDE, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDE Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT + Metabolites	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan I/II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Endrin	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Heptachlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01

NOTE: Revision created to add Total Isomer Sums to Final Report



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

R.L. = Reporting Limit

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C.O.C.: G26462

REPORT No. B15-28568 (iii)

Rev. 1

Report To:

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300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP1-1	TP2-1	TP3-1	TP4-1
			Sample I.D.		B15-28568-1	B15-28568-2	B15-28568-3	B15-28568-4
			Date Collected		30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Hexachloroethane	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	09-Nov-15/K	< 0.3	< 0.3	< 0.3	< 0.3
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	09-Nov-15/K	70	80	100	90
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	09-Nov-15/K	50	70	100	80
Alachlor	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Aldicarb	µg/g	0.6	EPA 8270	06-Nov-15/K	< 0.6	< 0.6	< 0.6	< 0.6
Atrazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	µg/g	0.1	Calc.	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Azinphos-methyl	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Bendiocarb	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Bromoxynil	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Carbaryl	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Carbofuran	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Cyanazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Diazinon	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Dicamba	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Diclofop-methyl	µg/g	0.09	EPA 8270	06-Nov-15/K	< 0.09	< 0.09	< 0.09	< 0.09
Dimethoate	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Dinoseb	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Diuron	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1

NOTE: Revision created to add Total Isomer Sums to Final Report



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

R.L. = Reporting Limit

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C.O.C.: G26462

REPORT No. B15-28568 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP1-1	TP2-1	TP3-1	TP4-1
			Sample I.D.		B15-28568-1	B15-28568-2	B15-28568-3	B15-28568-4
			Date Collected		30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Malathion	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Metolachlor	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Metribuzin	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Parathion	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Picloram	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Prometryne	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Simazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Temephos	µg/g	3	EPA 8270	06-Nov-15/K	< 3	< 3	< 3	< 3
Terbufos	µg/g	0.07	EPA 8270	06-Nov-15/K	< 0.07	< 0.07	< 0.07	< 0.07
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Triallate	µg/g	2	EPA 8270	06-Nov-15/K	< 2	< 2	< 2	< 2
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	06-Nov-15/K	< 2	< 2	< 2	< 2
Trifluralin	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d5 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	92	85	87	85
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	94	80	79	77
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	06-Nov-15/K	94	85	90	85
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	06-Nov-15/K	86	85	84	86
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	113	105	106	108

NOTE: Revision created to add Total Isomer Sums to Final Report



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Lab Manager - Ottawa District

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Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP5-1	TP6-1	TP7-1	TP8-1
			Sample I.D.		B15-28568-5	B15-28568-6	B15-28568-7	B15-28568-8
			Date Collected		30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
pH @25°C	pH Units		SM 4500H	04-Nov-15/O	5.22	5.65	5.62	5.10
Aldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane (alpha)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane (Gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDD, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDD, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDD Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDE, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDE, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDE Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
DDT + Metabolites	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Endosulfan I/II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Endrin	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04	< 0.04
Heptachlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01

NOTE: Revision created to add Total Isomer Sums to Final Report



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Lab Manager - Ottawa District

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REPORT No. B15-28568 (iii)

Rev. 1

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP5-1	TP6-1	TP7-1	TP8-1
			Sample I.D.		B15-28568-5	B15-28568-6	B15-28568-7	B15-28568-8
			Date Collected		30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Hexachloroethane	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	09-Nov-15/K	< 0.3	< 0.3	< 0.3	< 0.3
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	09-Nov-15/K	80	80	60	80
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	09-Nov-15/K	80	90	40	70
Alachlor	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Aldicarb	µg/g	0.6	EPA 8270	06-Nov-15/K	< 0.6	< 0.6	< 0.6	< 0.6
Atrazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	µg/g	0.1	Calc.	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Azinphos-methyl	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Bendiocarb	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Bromoxynil	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Carbaryl	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Carbofuran	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Cyanazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Diazinon	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Dicamba	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Diclofop-methyl	µg/g	0.09	EPA 8270	06-Nov-15/K	< 0.09	< 0.09	< 0.09	< 0.09
Dimethoate	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Dinoseb	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Diuron	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1

NOTE: Revision created to add Total Isomer Sums to Final Report



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G26462

REPORT No. B15-28568 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP5-1	TP6-1	TP7-1	TP8-1
			Sample I.D.		B15-28568-5	B15-28568-6	B15-28568-7	B15-28568-8
			Date Collected		30-Oct-15	30-Oct-15	30-Oct-15	30-Oct-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Malathion	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Metolachlor	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Metribuzin	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Parathion	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Picloram	µg/g	1	EPA 8270	06-Nov-15/K	< 1	< 1	< 1	< 1
Prometryne	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Simazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Temephos	µg/g	3	EPA 8270	06-Nov-15/K	< 3	< 3	< 3	< 3
Terbufos	µg/g	0.07	EPA 8270	06-Nov-15/K	< 0.07	< 0.07	< 0.07	< 0.07
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Triallate	µg/g	2	EPA 8270	06-Nov-15/K	< 2	< 2	< 2	< 2
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	06-Nov-15/K	< 2	< 2	< 2	< 2
Trifluralin	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d5 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	84	92.0	88	84
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	77	87.0	83	76
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	06-Nov-15/K	82	87.0	89	81
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	06-Nov-15/K	82	90.0	91	92
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	102	108	110	106

NOTE: Revision created to add Total Isomer Sums to Final Report



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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REPORT No. B15-28568 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP9-1	Dup-2		
			Sample I.D.	B15-28568-9	B15-28568-10		
			Date Collected	30-Oct-15	30-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
pH @25°C	pH Units		SM 4500H	04-Nov-15/O	5.42	5.42	
Aldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Chlordane (alpha)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Chlordane (Gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDD, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDD, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDD Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDE, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDE, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDE Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT + Metabolites	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Dieldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Endosulfan I	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Endosulfan II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Endosulfan I/II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Endrin	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Heptachlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Heptachlor Epoxide	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Hexachlorobenzene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		
Hexachlorobutadiene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		

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Lab Manager - Ottawa District

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REPORT No. B15-28568 (iii)

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP9-1	Dup-2		
			Sample I.D.	B15-28568-9	B15-28568-10		
			Date Collected	30-Oct-15	30-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hexachloroethane	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		
Methoxychlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	09-Nov-15/K	< 0.3		
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	09-Nov-15/K	100		
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	09-Nov-15/K	90		
Alachlor	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05		
Aldicarb	µg/g	0.6	EPA 8270	06-Nov-15/K	< 0.6		
Atrazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1		
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1		
Atrazine + Metabolites	µg/g	0.1	Calc.	06-Nov-15/K	< 0.1		
Azinphos-methyl	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2		
Bendiocarb	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5		
Benzo(a)pyrene	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05		
Bromoxynil	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05		
Carbaryl	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5		
Carbofuran	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2		
Chlorpyrifos	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1		
Cyanazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1		
Diazinon	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2		
Dicamba	µg/g	1	EPA 8270	06-Nov-15/K	< 1		
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02		
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	06-Nov-15/K	< 1		
Diclofop-methyl	µg/g	0.09	EPA 8270	06-Nov-15/K	< 0.09		
Dimethoate	µg/g	0.2	EPA 8270	06-Nov-15/K	< 0.2		
Dinoseb	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1		
Diuron	µg/g	1	EPA 8270	06-Nov-15/K	< 1		

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Lab Manager - Ottawa District

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REPORT No. B15-28568 (iii)

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 02-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP9-1	Dup-2		
			Sample I.D.	B15-28568-9	B15-28568-10		
			Date Collected	30-Oct-15	30-Oct-15		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Malathion	µg/g	1	EPA 8270	06-Nov-15/K	< 1		
Metolachlor	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5		
Metribuzin	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5		
Parathion	µg/g	0.5	EPA 8270	06-Nov-15/K	< 0.5		
Pentachlorophenol	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02		
Phorate	µg/g	0.05	EPA 8270	06-Nov-15/K	< 0.05		
Picloram	µg/g	1	EPA 8270	06-Nov-15/K	< 1		
Prometryne	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02		
Simazine	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1		
Temephos	µg/g	3	EPA 8270	06-Nov-15/K	< 3		
Terbufos	µg/g	0.07	EPA 8270	06-Nov-15/K	< 0.07		
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02		
Triallate	µg/g	2	EPA 8270	06-Nov-15/K	< 2		
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	06-Nov-15/K	< 0.02		
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	06-Nov-15/K	< 2		
Trifluralin	µg/g	0.1	EPA 8270	06-Nov-15/K	< 0.1		
Phenol-d5 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	81		
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	74		
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	06-Nov-15/K	83		
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	06-Nov-15/K	86		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	106		

NOTE: Revision created to add Total Isomer Sums to Final Report



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: **Susan Pfister**

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE SUBMITTED: 2-Nov-15

DATE REPORTED: 10-Nov-15

SAMPLE MATRIX: Soil

JOB/PROJECT NO.: NCC Leirim (P19)

P.O. NUMBER: TZ14024.2000

WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
pH	10	Ottawa	VK	NA	4-Nov-15	4-Nov-15	A-PH-03 (o)	SM4500H
Boron - HWS	6	Ottawa	AJS	3-Nov-15	3-Nov-15	4-Nov-15	D-HWE s	EPA 200.7
Chromium (VI)	6	Ottawa	VK	5-Nov-15	5-Nov-15	5-Nov-15	D-CRVI-02 (o)	EPA7196A
Mercury	6	Ottawa	VSc	4-Nov-15	4-Nov-15	4-Nov-15	D-HG-01 (o)	EPA 7471A
Metals - ICP-AES	6	Ottawa	AJS	3-Nov-15	3-Nov-15	4-Nov-15	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	6	Ottawa	AJS	3-Nov-15	3-Nov-15	4-Nov-15	D-ICPMS-01 (o)	EPA 6020
SVOC	6	Kingston	FL	4-Nov-15	6-Nov-15	9-Nov-15	C-NAB-S-001 (k)	EPA 8270D
OC Pesticides/PCB's	9	Kingston	BM	4-Nov-15	6-Nov-15	10-Nov-15	C-PESTCL-01 (k)	EPA 8082A
Pest/Herb MS	9	Kingston	FL	4-Nov-15	9-Nov-15	9-Nov-15	C-NAB-S-001 (k)	EPA 8270D

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
pH @ 25°C		0.01	0.2 pH Units	7.3	7.26	0.04	0.3 pH Units	NA	NA	-
Antimony	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	81	70-130
Arsenic	0.5	88	80-120	39.2	35.6	10	30	< MDL	89	70-130
Barium	1	106	80-120	30	28	7	30	< MDL	105	70-130
Beryllium	0.2	106	80-120	0.3	0.3	NC	30	< MDL	90	70-130
Boron	0.5	105	80-120	2.6	2.5	NC	30	< MDL	107	70-130
Boron (HWS)	0.02	112	70-130	0.14	0.13	NC	40	< MDL	73	60-140
Cadmium	0.5	101	80-120	< MDL	< MDL	NC	30	< MDL	88	70-130
Chromium	1	106	80-120	10	10	NC	30	< MDL	84	70-130
Chromium (VI)	0.5	100	80-120	< MDL	< MDL	NC	35	< MDL	49	36-141
Cobalt	1	104	80-120	3	2	NC	30	< MDL	113	70-130
Copper	1	107	80-120	15	14	7	30	< MDL	113	70-130
Lead	5	102	80-120	113	106	6	30	< MDL	104	70-130
Mercury	0.005	95	80-120	0.109	0.118	8	30	< MDL	99	70-130
Molybdenum	1	104	80-120	< MDL	< MDL	NC	30	< MDL	96	70-130
Nickel	1	105	80-120	5	5	NC	30	< MDL	102	70-130
Selenium	0.5	88	80-120	< MDL	< MDL	NC	30	< MDL	113	70-130
Silver	0.2	103	80-120	< MDL	< MDL	NC	30	< MDL	109	70-130
Thallium	0.1	108	80-120	< MDL	< MDL	NC	30	< MDL	79	70-130
Tin	5	102	80-120	< MDL	< MDL	NC	30	< MDL	110	70-130
Uranium	0.1	114	80-120	0.5	0.5	NC	30	< MDL	114	70-130
Vanadium	1	106	80-120	23	21	9	30	< MDL	97	70-130
Zinc	3	101	80-120	52	50	4	30	< MDL	109	70-130

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

R.L. = Reporting Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acenaphthene	0.005	85	50-140	< MDL	< MDL	NC	40	< MDL	84	50-140
Acenaphthylene	0.005	82	50-140	< MDL	< MDL	NC	40	< MDL	82	50-140
Anthracene	0.005	92	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Benzo(a)anthracene	0.005	111	50-140	< MDL	< MDL	NC	40	< MDL	108	50-140
Benzo(a)pyrene	0.005	116	50-140	< MDL	< MDL	NC	40	< MDL	117	50-140
Benzo(b)fluoranthene	0.005	96	50-140	< MDL	< MDL	NC	40	< MDL	98	50-140
Benzo(k)fluoranthene	0.005	99	50-140	< MDL	< MDL	NC	40	< MDL	101	50-140
Benzo(g,h,i)perylene	0.005	70	50-140	< MDL	< MDL	NC	40	< MDL	69	50-140
Chrysene	0.005	93	50-140	< MDL	< MDL	NC	40	< MDL	93	50-140
Dibenzo(a,h)anthracene	0.005	117	50-140	< MDL	< MDL	NC	40	< MDL	117	50-140
Fluoranthene	0.005	95	50-140	< MDL	< MDL	NC	40	< MDL	92	50-140
Fluorene	0.005	90	50-140	< MDL	< MDL	NC	40	< MDL	89	50-140
Indeno(1,2,3,-cd)pyrene	0.005	104	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Methylnaphthalene,2-	0.005	83	50-140	< MDL	< MDL	NC	40	< MDL	80	50-140
Naphthalene	0.005	88	50-140	< MDL	< MDL	NC	40	< MDL	86	50-140
Phenanthrene	0.005	93	50-140	< MDL	< MDL	NC	40	< MDL	91	50-140
Pyrene	0.005	101	50-140	< MDL	< MDL	NC	40	< MDL	97	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

R.L. = Reporting Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem.
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Aldrin	0.05	111	50-140	< MDL	< MDL	NC	40	< MDL	69	50-140
Chlordane (Alpha)	0.05	90	50-140	< MDL	< MDL	NC	40	< MDL	60	50-140
Chlordane (Gamma)	0.05	91	50-140	< MDL	< MDL	NC	40	< MDL	60	50-140
DDD, 4,4-	0.05	89	50-140	< MDL	< MDL	NC	40	< MDL	69	50-140
DDE, 4,4-	0.05	98	50-140	< MDL	< MDL	NC	40	< MDL	65	50-140
DDT, 2,4-	0.05	96	50-140	< MDL	< MDL	NC	40	< MDL	76	50-140
DDT, 4,4-	0.05	95	50-140	< MDL	< MDL	NC	40	< MDL	61	50-140
Dieldrin	0.05	96	50-140	< MDL	< MDL	NC	40	< MDL	62	50-140
Endosulfan I	0.04	92	50-140	< MDL	< MDL	NC	40	< MDL	59	50-140
Endosulfan II	0.04	94	50-140	< MDL	< MDL	NC	40	< MDL	72	50-140
Endrin	0.04	97	50-140	< MDL	< MDL	NC	40	< MDL	61	50-140
Heptachlor	0.05	96	50-140	< MDL	< MDL	NC	40	< MDL	63	50-140
Heptachlor Epoxide	0.05	94	50-140	< MDL	< MDL	NC	40	< MDL	59	50-140
Hexachlorobenzene	0.01	98	50-140	< MDL	< MDL	NC	40	< MDL	58	50-140
Hexachlorobutadiene	0.01	83	50-140	< MDL	< MDL	NC	40	< MDL	65	50-140
Lindane (Hexachlorocyclohexane, Gamma)	0.01	96	50-140	< MDL	< MDL	NC	40	< MDL	66	50-140
Hexachloroethane	0.01	82	50-140	< MDL	< MDL	NC	40	< MDL	67	50-140
Methoxychlor	0.05	97	50-140	< MDL	< MDL	NC	40	< MDL	56	50-140
Poly-Chlorinated Biphenyls (PCB's)	0.3	NA	60-140	< MDL	< MDL	NC	40	< MDL	NA	60-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Alachlor	0.05	114	50-140	< MDL	< MDL	NC	40	< MDL	117	50-140
Aldicarb	0.6	90	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Atrazine	0.1	93	50-140	< MDL	< MDL	NC	40	< MDL	95	50-140
Atrazine (Desethyl)	0.1	84	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Azinphos-methyl	0.2	50	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Bendiocarb	0.5	100	50-140	< MDL	< MDL	NC	40	< MDL	110	50-140
Benzo(a)pyrene	0.05	83	50-140	< MDL	< MDL	NC	40	< MDL	113	50-140
Bromoxynil	0.05	42	30-140	< MDL	< MDL	NC	40	< MDL	76	30-140
Carbaryl	0.5	70	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Carbofuran	0.2	120	50-140	< MDL	< MDL	NC	40	< MDL	120	50-140
Chlorpyrifos	0.1	104	50-140	< MDL	< MDL	NC	40	< MDL	89	50-140
Cyanazine	0.1	130	50-140	< MDL	< MDL	NC	40	< MDL	118	50-140
Diazinon	0.2	70	50-140	< MDL	< MDL	NC	40	< MDL	70	50-140
Dicamba	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Dichlorophenol, 2,4-	0.02	103	50-140	< MDL	< MDL	NC	40	< MDL	94	50-140
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Diclofop-methyl	0.09	136	50-140	< MDL	< MDL	NC	40	< MDL	120	60-140
Dimethoate	0.2	90	50-140	< MDL	< MDL	NC	40	< MDL	100	60-140
Dinoseb	0.1	48	30-140	< MDL	< MDL	NC	40	< MDL	82	30-140
Diuron	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	60-140

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Laboratory Manager - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Malathion	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Metolachlor	0.5	90	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Metribuzin	0.5	90	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Parathion	0.5	100	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Pentachlorophenol	0.02	67	50-140	< MDL	< MDL	NC	40	< MDL	86	50-140
Phorate	0.05	103	50-140	< MDL	< MDL	NC	40	< MDL	94	50-140
Picloram	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Prometryne	0.02	43	30-140	< MDL	< MDL	NC	40	< MDL	34	30-140
Simazine	0.1	85	50-140	< MDL	< MDL	NC	40	< MDL	133	50-140
Temephos	3	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Terbufos	0.07	112	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Tetrachlorophenol, 2,3,4,6-	0.02	99	50-140	< MDL	< MDL	NC	40	< MDL	99	50-140
Triallate	2	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Trichlorophenol 2,4,6-	0.02	102	50-140	< MDL	< MDL	NC	40	< MDL	103	50-140
Trichlorophenoxy acetic acid, 2,4,5-	2	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Trifluralin	0.1	95	50-140	< MDL	< MDL	NC	40	< MDL	83	50-140

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Laboratory Manager - Ottawa District

TESTING REQUIREMENTS

- ☐ O.Reg 153/09 ☐ O.Reg 153/04 Table ☐ MISA Guidelines
☐ Surface Soil ☐ Sub Surface Soil (O.Reg 153/09) ☐ O.Reg 558 Leachate Analysis
☐ Yes ☐ No Record of Site Condition (O.Reg 153/09) Disposal Site: _____
☐ Provincial Water Quality Objectives ☐ Landfill Monitoring
☐ Sewer Use By-Law: ☒ Other: **CCME Res/Park**

REPORT NUMBER (Lab Use)

NOV. 2.15

B15-28568

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: **Amee Foster Wheeler**
 Contact: **Susan Pfister**
 Tel: **613-727-0658x2275**

Address and Invoicing Address (if different)
210 Colonnade Rd. S. Unit 300
Ottawa ON K2E 7L5

Fax: _____
 Email: **susan.pfister@ameefw.com**

Quote No.: **P151007-PF**
 Project Name: **NCC Leithim (P19)**
 P.O. No.: **T214024.2000**
 Additional Info: _____

ANALYSES REQUESTED (Print Test in Boxes)

PH
OC Pesticides (per quote)
Pesticides Herbicides (per quote)
Metals (suite 2) (per quote)
PAH (CCME)

Suspected Highly Contaminated

TURNAROUND SERVICE REQUESTED (see back page)

- ☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days
☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

Lab No:	Sample Identification	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided										✓	Field pH	Field Temp.	# Bottles Sample	Field Filtered (Y/N)
1	TP1-1	S	15-10-30	0945	X	X	X											3	
2	TP2-1	S	15-10-30	0900	X	X	X											3	
3	TP3-1	S	15-10-30	1315	X	X	X	X	X									5	
4	TP4-1	S	15-10-30	1345	X	X	X	X	X									5	
5	TP5-1	S	15-10-30	1240	X	X	X	X	X									5	
6	TP6-1	S	15-10-30	1145	X	X	X	X	X									5	N/A
7	TP7-1	S	15-10-30	1100	X	X	X	X	X									5	
8	TP8-1	S	15-10-30	1500	X	X	X											3	
9	TP9-1	S	15-10-30	1430	X	X	X											3	
10	DUP-2	S	15-10-30		X			X	X									25	
										* please include QA/QC reports w/ all results									
										* all detection limits must be at or below CCME res/park									

SAMPLE SUBMISSION INFORMATION		SHIPPING INFORMATION		REPORTING / INVOICING		SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)	
Sampled By (print): S. PFISTER	Courier (Client account) <input type="checkbox"/>	# of Pieces	Report by Fax <input type="checkbox"/>	Received By (print): DANIEL	Signature: [Signature]		
Submitted By (print): S. PFISTER	Courier (Caduceon account) <input type="checkbox"/>	Shipped	Report by Email <input checked="" type="checkbox"/>	Date Received (yy-mm-dd): 15-10-31	Time Received: 1035		
Signature: S. Pfister	Drop Off <input checked="" type="checkbox"/>		Invoice by Email <input checked="" type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Date(yy-mm-dd): 15-10-31 Time: 1235	Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: _____	Labeled by: _____		
Laboratory Locations/Shipping Addresses Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com				Comments: 42 SOLN			

C.O.C.: G26463

REPORT No. B15-28877 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 12-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP-15-1	TP-16-1	TP-14-1	TP-13-1
			Sample I.D.		B15-28877-1	B15-28877-2	B15-28877-3	B15-28877-4
			Date Collected		03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
pH @25°C	pH Units		SM 4500H	09-Nov-15/O	5.99	6.88	6.40	5.28
Antimony	µg/g	0.5	EPA 6020	05-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	05-Nov-15/O	< 0.5	< 0.5	0.8	< 0.5
Barium	µg/g	1	EPA 6010	05-Nov-15/O	22	23	38	11
Beryllium	µg/g	0.2	EPA 6010	05-Nov-15/O	0.3	< 0.2	0.4	< 0.2
Boron	µg/g	0.5	EPA 6010	05-Nov-15/O	1.5	1.0	2.8	0.9
Boron (HWS)	µg/g	0.02	MOE3470	05-Nov-15/O	0.12	0.06	0.14	0.03
Cadmium	µg/g	0.5	EPA 6010	05-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	05-Nov-15/O	8	9	13	7
Chromium (VI)	µg/g	0.2	EPA7196A	10-Nov-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	05-Nov-15/O	2	2	5	2
Copper	µg/g	1	EPA 6010	05-Nov-15/O	3	4	5	3
Lead	µg/g	5	EPA 6010	05-Nov-15/O	< 5	< 5	7	< 5
Mercury	µg/g	0.005	EPA 7471A	06-Nov-15/O	0.042	0.021	0.033	0.014
Molybdenum	µg/g	1	EPA 6010	05-Nov-15/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	05-Nov-15/O	3	5	7	4
Selenium	µg/g	0.5	EPA 6020	05-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Silver	µg/g	0.2	EPA 6010	05-Nov-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	05-Nov-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Tin	µg/g	5	EPA 6010	05-Nov-15/O	< 5	< 5	< 5	< 5
Uranium	µg/g	0.1	EPA 6020	05-Nov-15/O	0.5	0.9	0.8	0.5
Vanadium	µg/g	1	EPA 6010	05-Nov-15/O	19	16	24	14
Zinc	µg/g	3	EPA 6010	05-Nov-15/O	21	43	43	12

R.L. = Reporting Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Uncertainty Values available upon request



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G26463

REPORT No. B15-28877 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 12-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP-10-1	TP-11-1	TP-12-1	DUP-3
			Sample I.D.		B15-28877-5	B15-28877-6	B15-28877-7	B15-28877-8
			Date Collected		03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
pH @25°C	pH Units		SM 4500H	09-Nov-15/O	5.10	4.97	5.04	5.15
Antimony	µg/g	0.5	EPA 6020	05-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	µg/g	0.5	EPA 6020	05-Nov-15/O	0.6	2.0	0.8	< 0.5
Barium	µg/g	1	EPA 6010	05-Nov-15/O	27	39	40	10
Beryllium	µg/g	0.2	EPA 6010	05-Nov-15/O	0.4	0.6	0.4	< 0.2
Boron	µg/g	0.5	EPA 6010	05-Nov-15/O	1.4	2.0	1.6	1.0
Boron (HWS)	µg/g	0.02	MOE3470	05-Nov-15/O	< 0.02	0.02	< 0.02	0.04
Cadmium	µg/g	0.5	EPA 6010	05-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	µg/g	1	EPA 6010	05-Nov-15/O	15	18	16	7
Chromium (VI)	µg/g	0.2	EPA7196A	10-Nov-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt	µg/g	1	EPA 6010	05-Nov-15/O	3	5	6	2
Copper	µg/g	1	EPA 6010	05-Nov-15/O	3	113	10	3
Lead	µg/g	5	EPA 6010	05-Nov-15/O	6	20	6	< 5
Mercury	µg/g	0.005	EPA 7471A	06-Nov-15/O	0.049	0.052	0.022	0.016
Molybdenum	µg/g	1	EPA 6010	05-Nov-15/O	< 1	< 1	< 1	< 1
Nickel	µg/g	1	EPA 6010	05-Nov-15/O	6	11	11	4
Selenium	µg/g	0.5	EPA 6020	05-Nov-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Silver	µg/g	0.2	EPA 6010	05-Nov-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Thallium	µg/g	0.1	EPA 6020	05-Nov-15/O	< 0.1	0.1	< 0.1	< 0.1
Tin	µg/g	5	EPA 6010	05-Nov-15/O	< 5	< 5	< 5	< 5
Uranium	µg/g	0.1	EPA 6020	05-Nov-15/O	0.9	0.7	0.8	0.5
Vanadium	µg/g	1	EPA 6010	05-Nov-15/O	32	42	29	13
Zinc	µg/g	3	EPA 6010	05-Nov-15/O	33	75	31	12

R.L. = Reporting Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

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Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G26463

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 12-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	DUP-4			
			Sample I.D.	B15-28877-9			
			Date Collected	03-Nov-15			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
pH @25°C	pH Units		SM 4500H	09-Nov-15/O	5.02		
Antimony	µg/g	0.5	EPA 6020	05-Nov-15/O	< 0.5		
Arsenic	µg/g	0.5	EPA 6020	05-Nov-15/O	0.7		
Barium	µg/g	1	EPA 6010	05-Nov-15/O	36		
Beryllium	µg/g	0.2	EPA 6010	05-Nov-15/O	0.4		
Boron	µg/g	0.5	EPA 6010	05-Nov-15/O	1.5		
Boron (HWS)	µg/g	0.02	MOE3470	05-Nov-15/O	< 0.02		
Cadmium	µg/g	0.5	EPA 6010	05-Nov-15/O	< 0.5		
Chromium	µg/g	1	EPA 6010	05-Nov-15/O	13		
Chromium (VI)	µg/g	0.2	EPA7196A	10-Nov-15/O	< 0.2		
Cobalt	µg/g	1	EPA 6010	05-Nov-15/O	5		
Copper	µg/g	1	EPA 6010	05-Nov-15/O	10		
Lead	µg/g	5	EPA 6010	05-Nov-15/O	6		
Mercury	µg/g	0.005	EPA 7471A	06-Nov-15/O	0.030		
Molybdenum	µg/g	1	EPA 6010	05-Nov-15/O	< 1		
Nickel	µg/g	1	EPA 6010	05-Nov-15/O	9		
Selenium	µg/g	0.5	EPA 6020	05-Nov-15/O	< 0.5		
Silver	µg/g	0.2	EPA 6010	05-Nov-15/O	< 0.2		
Thallium	µg/g	0.1	EPA 6020	05-Nov-15/O	< 0.1		
Tin	µg/g	5	EPA 6010	05-Nov-15/O	< 5		
Uranium	µg/g	0.1	EPA 6020	05-Nov-15/O	0.8		
Vanadium	µg/g	1	EPA 6010	05-Nov-15/O	23		
Zinc	µg/g	3	EPA 6010	05-Nov-15/O	31		

R.L. = Reporting Limit

Site Analyzed: K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Uncertainty Values available upon request



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G26463

REPORT No. B15-28877 (ii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 25-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP-15-1	TP-16-1	TP-14-1	TP-13-1
			Sample I.D.	B15-28877-1	B15-28877-2	B15-28877-3	B15-28877-4
			Date Collected	03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Acenaphthylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.015
Anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.011
Benzo(a)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.010	0.116
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.012	0.140
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.039
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	06-Nov-15/K	< 0.01	0.02	0.18
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.023
Chrysene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.005	0.069
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.011
Fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.010	0.120
Fluorene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.043
Methylnaphthalene,1-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Methylnaphthalene,2-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Naphthalene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Phenanthrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	0.020
Pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.008	0.099
Benzo(a)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	0.006	0.090
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	114	115	102

NOTE: Revision created to lower RL's to meet CCME criteria.



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Lab Manager - Ottawa District

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REPORT No. B15-28877 (ii)

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Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 25-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP-10-1	TP-11-1	TP-12-1	DUP-3
			Sample I.D.	B15-28877-5	B15-28877-6	B15-28877-7	B15-28877-8
			Date Collected	03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Acenaphthylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Benzo(a)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	06-Nov-15/K	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Chrysene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Fluorene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Methylnaphthalene,1-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Methylnaphthalene,2-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Naphthalene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Phenanthrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Benzo(a)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005	< 0.005	< 0.005
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	121	103	109

NOTE: Revision created to lower RL's to meet CCME criteria.



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REPORT No. B15-28877 (ii)

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Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 25-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	DUP-4			
			Sample I.D.	B15-28877-9			
			Date Collected	03-Nov-15			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Acenaphthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Acenaphthylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Benzo(a)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Benzo(b)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Benzo(k)fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Benzo(b+k)fluoranthene	µg/g	0.01	EPA 8270	06-Nov-15/K	< 0.01		
Benzo(g,h,i)perylene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Chrysene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Dibenzo(a,h)anthracene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Fluoranthene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Fluorene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Indeno(1,2,3,-cd)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Methylnaphthalene,1-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Methylnaphthalene,2-	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Naphthalene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Phenanthrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Benzo(a)pyrene	µg/g	0.005	EPA 8270	06-Nov-15/K	< 0.005		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Nov-15/K	98		

NOTE: Revision created to lower RL's to meet CCME criteria.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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REPORT No. B15-28877 (iii)

Rev. 1

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Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP-15-1	TP-16-1	TP-14-1	TP-13-1
			Sample I.D.	B15-28877-1	B15-28877-2	B15-28877-3	B15-28877-4
			Date Collected	03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Aldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane (alpha)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane (Gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT + Metabolites	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Dieldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Endosulfan I	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Endosulfan II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Endosulfan I/II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Endrin	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Heptachlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01
Hexachloroethane	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01

NOTE: Revision created to add Total Isomer Sums to Final Report.



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Lab Manager - Ottawa District

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REPORT No. B15-28877 (iii)

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP-15-1	TP-16-1	TP-14-1	TP-13-1
			Sample I.D.	B15-28877-1	B15-28877-2	B15-28877-3	B15-28877-4
			Date Collected	03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Methoxychlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	09-Nov-15/K	< 0.3	< 0.3	< 0.3
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	09-Nov-15/K	80	90	90
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	09-Nov-15/K	70	90	80
Alachlor	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Aldicarb	µg/g	0.6	EPA 8270	09-Nov-15/K	< 0.6	< 0.6	< 0.6
Atrazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	µg/g	0.1	Calc.	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Azinphos-methyl	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2
Bendiocarb	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	0.06
Bromoxynil	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Carbaryl	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Carbofuran	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2
Chlorpyrifos	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Cyanazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Diazinon	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2
Dicamba	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1
Diclofop-methyl	µg/g	0.09	EPA 8270	09-Nov-15/K	< 0.09	< 0.09	< 0.09
Dimethoate	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2
Dinoseb	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Diuron	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1
Malathion	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1

NOTE: Revision created to add Total Isomer Sums to Final Report.



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JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP-15-1	TP-16-1	TP-14-1	TP-13-1
			Sample I.D.	B15-28877-1	B15-28877-2	B15-28877-3	B15-28877-4
			Date Collected	03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Metolachlor	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Metribuzin	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Parathion	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Pentachlorophenol	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Phorate	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Picloram	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1
Prometryne	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Simazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Temephos	µg/g	3	EPA 8270	09-Nov-15/K	< 3	< 3	< 3
Terbufos	µg/g	0.07	EPA 8270	09-Nov-15/K	< 0.07	< 0.07	< 0.07
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Triallate	µg/g	2	EPA 8270	09-Nov-15/K	< 2	< 2	< 2
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	09-Nov-15/K	< 2	< 2	< 2
Trifluralin	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Phenol-d5 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	86.0	93	89
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	81.0	84	80
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	09-Nov-15/K	81.0	91	83
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	09-Nov-15/K	73.0	96	95
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	111	113	108
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8082A	09-Nov-15/R			
Aroclor	-		-	09-Nov-15			

NOTE: Revision created to add Total Isomer Sums to Final Report.



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DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP-10-1	TP-11-1	TP-12-1	DUP-3
			Sample I.D.	B15-28877-5	B15-28877-6	B15-28877-7	B15-28877-8
			Date Collected	03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Aldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane (alpha)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane (Gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDD Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDE Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
DDT + Metabolites	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Dieldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Endosulfan I	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Endosulfan II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Endosulfan I/II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Endrin	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04	< 0.04	< 0.04
Heptachlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Heptachlor Epoxide	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01
Hexachloroethane	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01	< 0.01	< 0.01

NOTE: Revision created to add Total Isomer Sums to Final Report.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G26463

REPORT No. B15-28877 (iii)

Rev. 1

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		TP-10-1	TP-11-1	TP-12-1	DUP-3
			Sample I.D.		B15-28877-5	B15-28877-6	B15-28877-7	B15-28877-8
			Date Collected		03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Methoxychlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	09-Nov-15/K	< 0.3	< 0.3	< 0.3	< 0.3
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	09-Nov-15/K	90	80	80	90
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	09-Nov-15/K	80	60	80	80
Alachlor	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Aldicarb	µg/g	0.6	EPA 8270	09-Nov-15/K	< 0.6	< 0.6	< 0.6	< 0.6
Atrazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Atrazine + Metabolites	µg/g	0.1	Calc.	09-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Azinphos-methyl	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Bendiocarb	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Bromoxynil	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	< 0.05	< 0.05
Carbaryl	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5	< 0.5
Carbofuran	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Cyanazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Diazinon	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Dicamba	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1	< 1
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1	< 1
Diclofop-methyl	µg/g	0.09	EPA 8270	09-Nov-15/K	< 0.09	< 0.09	< 0.09	< 0.09
Dimethoate	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2	< 0.2	< 0.2	< 0.2
Dinoseb	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1	< 0.1
Diuron	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1	< 1
Malathion	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1	< 1

NOTE: Revision created to add Total Isomer Sums to Final Report.



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Lab Manager - Ottawa District

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C.O.C.: G26463

REPORT No. B15-28877 (iii)

Rev. 1

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300 - 210 Colonnade Road South,
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Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	TP-10-1	TP-11-1	TP-12-1	DUP-3
			Sample I.D.	B15-28877-5	B15-28877-6	B15-28877-7	B15-28877-8
			Date Collected	03-Nov-15	03-Nov-15	03-Nov-15	03-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Metolachlor	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Metribuzin	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Parathion	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5	< 0.5	< 0.5
Pentachlorophenol	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Phorate	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05	< 0.05	< 0.05
Picloram	µg/g	1	EPA 8270	09-Nov-15/K	< 1	< 1	< 1
Prometryne	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Simazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Temephos	µg/g	3	EPA 8270	09-Nov-15/K	< 3	< 3	< 3
Terbufos	µg/g	0.07	EPA 8270	09-Nov-15/K	< 0.07	< 0.07	< 0.07
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Triallate	µg/g	2	EPA 8270	09-Nov-15/K	< 2	< 2	< 2
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02	< 0.02	< 0.02
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	09-Nov-15/K	< 2	< 2	< 2
Trifluralin	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1	< 0.1	< 0.1
Phenol-d5 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	88	85	97
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	78	78	88
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	09-Nov-15/K	86	81	89
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	09-Nov-15/K	102	99	100
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	118	107	110
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8082A	09-Nov-15/R		< 0.3	< 0.3
Aroclor	-		-	09-Nov-15		-	-

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

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Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	DUP-4			
			Sample I.D.	B15-28877-9			
			Date Collected	03-Nov-15			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Aldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Chlordane (alpha)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Chlordane (Gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Chlordane Total (alpha+gamma)	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDD, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDD, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDD Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDE, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDE, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDE Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT, 2,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT, 4,4-	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT Total	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
DDT + Metabolites	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Dieldrin	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Endosulfan I	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Endosulfan II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Endosulfan I/II	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Endrin	µg/g	0.04	EPA 8080	09-Nov-15/K	< 0.04		
Heptachlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Heptachlor Epoxide	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Hexachlorobenzene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		
Hexachlorobutadiene	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		
Lindane (Hexachlorocyclohexane, Gamma)	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		
Hexachloroethane	µg/g	0.01	EPA 8080	09-Nov-15/K	< 0.01		

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Attention: Susan Pfister

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Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	DUP-4			
			Sample I.D.	B15-28877-9			
			Date Collected	03-Nov-15			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Methoxychlor	µg/g	0.05	EPA 8080	09-Nov-15/K	< 0.05		
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8080	09-Nov-15/K	< 0.3		
Tetrachloro-m-xylene (SS)	% rec.	10	EPA 8080	09-Nov-15/K	90		
Decachlorobiphenyl (SS)	% rec.	10	EPA 8080	09-Nov-15/K	80		
Alachlor	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05		
Aldicarb	µg/g	0.6	EPA 8270	09-Nov-15/K	< 0.6		
Atrazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1		
Atrazine (Desethyl)	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1		
Atrazine + Metabolites	µg/g	0.1	Calc.	09-Nov-15/K	< 0.1		
Azinphos-methyl	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2		
Bendiocarb	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5		
Benzo(a)pyrene	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05		
Bromoxynil	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05		
Carbaryl	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5		
Carbofuran	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2		
Chlorpyrifos	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1		
Cyanazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1		
Diazinon	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2		
Dicamba	µg/g	1	EPA 8270	09-Nov-15/K	< 1		
Dichlorophenol, 2,4-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02		
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	µg/g	1	EPA 8270	09-Nov-15/K	< 1		
Diclofop-methyl	µg/g	0.09	EPA 8270	09-Nov-15/K	< 0.09		
Dimethoate	µg/g	0.2	EPA 8270	09-Nov-15/K	< 0.2		
Dinoseb	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1		
Diuron	µg/g	1	EPA 8270	09-Nov-15/K	< 1		
Malathion	µg/g	1	EPA 8270	09-Nov-15/K	< 1		

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Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 03-Nov-15

JOB/PROJECT NO.: NCC Leitrim (P19)

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	DUP-4			
			Sample I.D.	B15-28877-9			
			Date Collected	03-Nov-15			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Metolachlor	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5		
Metribuzin	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5		
Parathion	µg/g	0.5	EPA 8270	09-Nov-15/K	< 0.5		
Pentachlorophenol	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02		
Phorate	µg/g	0.05	EPA 8270	09-Nov-15/K	< 0.05		
Picloram	µg/g	1	EPA 8270	09-Nov-15/K	< 1		
Prometryne	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02		
Simazine	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1		
Temephos	µg/g	3	EPA 8270	09-Nov-15/K	< 3		
Terbufos	µg/g	0.07	EPA 8270	09-Nov-15/K	< 0.07		
Tetrachlorophenol, 2,3,4,6-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02		
Triallate	µg/g	2	EPA 8270	09-Nov-15/K	< 2		
Trichlorophenol 2,4,6-	µg/g	0.02	EPA 8270	09-Nov-15/K	< 0.02		
Trichlorophenoxy acetic acid, 2,4,5-	µg/g	2	EPA 8270	09-Nov-15/K	< 2		
Trifluralin	µg/g	0.1	EPA 8270	09-Nov-15/K	< 0.1		
Phenol-d5 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	90		
Nitrobenzene-d5 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	81		
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	09-Nov-15/K	86		
Tribromophenol, 2,4,6- (SS)	% rec.	10	EPA 8270	09-Nov-15/K	98		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	09-Nov-15/K	105		
Poly-Chlorinated Biphenyls (PCB's)	µg/g	0.3	EPA 8082A	09-Nov-15/R	< 0.3		
Aroclor	-		-	09-Nov-15	-		

NOTE: Revision created to add Total Isomer Sums to Final Report.



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Lab Manager - Ottawa District

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Attention: Susan Pfister

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Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE SUBMITTED: 3-Nov-15
DATE REPORTED: 12-Nov-15
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: NCC Leirim (P19)
P.O. NUMBER: TZ14024.2000
WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
pH	9	Ottawa	VK	NA	9-Nov-15	9-Nov-15	A-PH-03 (o)	SM4500H
Boron - HWS	9	Ottawa	AJS	5-Nov-15	5-Nov-15	6-Nov-15	D-HWE s	EPA 200.7
Chromium (VI)	9	Ottawa	VK	10-Nov-15	10-Nov-15	10-Nov-15	D-CRVI-02 (o)	EPA7196A
Mercury	9	Ottawa	TPR	6-Nov-15	6-Nov-15	6-Nov-15	D-HG-01 (o)	EPA 7471A
Metals - ICP-AES	9	Ottawa	AJS	5-Nov-15	5-Nov-15	6-Nov-15	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	9	Ottawa	AJS	5-Nov-15	5-Nov-15	5-Nov-15	D-ICPMS-01 (o)	EPA 6020
SVOC	9	Kingston	FL	5-Nov-15	6-Nov-15	9-Nov-15	C-NAB-S-001 (k)	EPA 8270D
OC Pesticides	9	Kingston	BM	5-Nov-15	9-Nov-15	9-Nov-15	C-PESTCL-01 (k)	EPA 8082A
PCB's	9	Richmond Hill	JE	5-Nov-15	9-Nov-15	9-Nov-15	C-PCB-01 (rh)	EPA 8082A
Pest/Herb MS	9	Kingston	FL	5-Nov-15	9-Nov-15	11-Nov-15	C-NAB-S-001 (k)	EPA 8270D

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
pH @ 25°C		0.01	0.2 pH Units	6.68	6.64	0.04	0.3 pH Units	NA	NA	-
Antimony	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	82	70-130
Arsenic	0.5	80	80-120	< MDL	< MDL	NC	30	< MDL	79	70-130
Barium	1	105	80-120	22	21	5	30	< MDL	101	70-130
Beryllium	0.2	103	80-120	0.3	0.3	NC	30	< MDL	90	70-130
Boron	0.5	103	80-120	1.5	1.3	NC	30	< MDL	87	70-130
Boron (HWS)	0.02	99	70-130	0.12	0.11	NC	40	< MDL	111	60-140
Cadmium	0.5	100	80-120	< MDL	< MDL	NC	30	< MDL	89	70-130
Chromium	1	102	80-120	8	7	NC	30	< MDL	80	70-130
Chromium (VI)	0.5	110	80-120	< MDL	< MDL	NC	35	< MDL	58	36-141
Cobalt	1	101	80-120	2	2	NC	30	< MDL	111	70-130
Copper	1	105	80-120	3	3	NC	30	< MDL	108	70-130
Lead	5	98	80-120	< MDL	< MDL	NC	30	< MDL	99	70-130
Mercury	0.005	95	80-120	0.042	0.040	NC	30	< MDL	95	70-130
Molybdenum	1	102	80-120	< MDL	< MDL	NC	30	< MDL	85	70-130
Nickel	1	103	80-120	3	3	NC	30	< MDL	102	70-130
Selenium	0.5	80	80-120	< MDL	< MDL	NC	30	< MDL	74	70-130
Silver	0.2	104	80-120	< MDL	< MDL	NC	30	< MDL	109	70-130
Thallium	0.1	104	80-120	< MDL	< MDL	NC	30	< MDL	79	70-130
Tin	5	97	80-120	< MDL	< MDL	NC	30	< MDL	98	70-130
Uranium	0.1	106	80-120	0.5	0.4	NC	30	< MDL	113	70-130
Vanadium	1	104	80-120	19	17	11	30	< MDL	93	70-130
Zinc	3	100	80-120	21	20	NC	30	< MDL	107	70-130

All values expressed as µg/g unless stated otherwise

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Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acenaphthene	0.005	83	50-140	< MDL	< MDL	NC	40	< MDL	79	50-140
Acenaphthylene	0.005	79	50-140	< MDL	< MDL	NC	40	< MDL	75	50-140
Anthracene	0.005	89	50-140	< MDL	< MDL	NC	40	< MDL	83	50-140
Benzo(a)anthracene	0.005	107	50-140	< MDL	< MDL	NC	40	< MDL	92	50-140
Benzo(a)pyrene	0.005	117	50-140	< MDL	< MDL	NC	40	< MDL	111	50-140
Benzo(b)fluoranthene	0.005	104	50-140	< MDL	< MDL	NC	40	< MDL	109	50-140
Benzo(k)fluoranthene	0.005	101	50-140	< MDL	< MDL	NC	40	< MDL	93	50-140
Benzo(g,h,i)perylene	0.005	61	50-140	< MDL	< MDL	NC	40	< MDL	66	50-140
Chrysene	0.005	86	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Dibenzo(a,h)anthracene	0.005	109	50-140	< MDL	< MDL	NC	40	< MDL	105	50-140
Fluoranthene	0.005	92	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Fluorene	0.005	86	50-140	< MDL	< MDL	NC	40	< MDL	82	50-140
Indeno(1,2,3,-cd)pyrene	0.005	94	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Methylnaphthalene,2-	0.005	79	50-140	< MDL	< MDL	NC	40	< MDL	79	50-140
Naphthalene	0.005	86	50-140	< MDL	< MDL	NC	40	< MDL	78	50-140
Phenanthrene	0.005	93	50-140	< MDL	< MDL	NC	40	< MDL	91	50-140
Pyrene	0.005	98	50-140	< MDL	< MDL	NC	40	< MDL	97	50-140

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Greg Clarkin, B.Sc., C.Chem., B.Sc., C.Chem.
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Aldrin	0.05	111	50-140	< MDL	< MDL	NC	40	< MDL	69	50-140
Chlordane (Alpha)	0.05	90	50-140	< MDL	< MDL	NC	40	< MDL	60	50-140
Chlordane (Gamma)	0.05	91	50-140	< MDL	< MDL	NC	40	< MDL	60	50-140
DDD, 4,4-	0.05	89	50-140	< MDL	< MDL	NC	40	< MDL	69	50-140
DDE, 4,4-	0.05	98	50-140	< MDL	< MDL	NC	40	< MDL	65	50-140
DDT, 2,4-	0.05	96	50-140	< MDL	< MDL	NC	40	< MDL	76	50-140
DDT, 4,4-	0.05	95	50-140	< MDL	< MDL	NC	40	< MDL	61	50-140
Dieldrin	0.05	96	50-140	< MDL	< MDL	NC	40	< MDL	62	50-140
Endosulfan I	0.04	92	50-140	< MDL	< MDL	NC	40	< MDL	59	50-140
Endosulfan II	0.04	94	50-140	< MDL	< MDL	NC	40	< MDL	72	50-140
Endrin	0.04	97	50-140	< MDL	< MDL	NC	40	< MDL	61	50-140
Heptachlor	0.05	96	50-140	< MDL	< MDL	NC	40	< MDL	63	50-140
Heptachlor Epoxide	0.05	94	50-140	< MDL	< MDL	NC	40	< MDL	59	50-140
Hexachlorobenzene	0.01	98	50-140	< MDL	< MDL	NC	40	< MDL	58	50-140
Hexachlorobutadiene	0.01	83	50-140	< MDL	< MDL	NC	40	< MDL	65	50-140
Lindane (Hexachlorocyclohexane, Gamma)	0.01	96	50-140	< MDL	< MDL	NC	40	< MDL	66	50-140
Hexachloroethane	0.01	82	50-140	< MDL	< MDL	NC	40	< MDL	67	50-140
Methoxychlor	0.05	97	50-140	< MDL	< MDL	NC	40	< MDL	56	50-140
Poly-Chlorinated Biphenyls (PCB's)	0.3	74	60-140	< MDL	< MDL	NC	40	< MDL	84	60-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Alachlor	0.05	117	50-140	< MDL	< MDL	NC	40	< MDL	107	50-140
Aldicarb	0.6	90	50-140	< MDL	< MDL	NC	40	< MDL	80	50-140
Atrazine	0.1	95	50-140	< MDL	< MDL	NC	40	< MDL	88	50-140
Atrazine (Desethyl)	0.1	90	50-140	< MDL	< MDL	NC	40	< MDL	81	50-140
Azinphos-methyl	0.2	100	50-140	< MDL	< MDL	NC	40	< MDL	50	50-140
Bendiocarb	0.5	110	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Benzo(a)pyrene	0.05	113	50-140	< MDL	< MDL	NC	40	< MDL	71	50-140
Bromoxynil	0.05	76	30-140	< MDL	< MDL	NC	40	< MDL	54	30-140
Carbaryl	0.5	100	50-140	< MDL	< MDL	NC	40	< MDL	70	50-140
Carbofuran	0.2	120	50-140	< MDL	< MDL	NC	40	< MDL	90	50-140
Chlorpyrifos	0.1	89	50-140	< MDL	< MDL	NC	40	< MDL	108	50-140
Cyanazine	0.1	118	50-140	< MDL	< MDL	NC	40	< MDL	104	50-140
Diazinon	0.2	70	50-140	< MDL	< MDL	NC	40	< MDL	70	50-140
Dicamba	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Dichlorophenol, 2,4-	0.02	94	50-140	< MDL	< MDL	NC	40	< MDL	91	50-140
Dichlorophenoxy acetic acid, 2,4- (2,4-D)	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Diclofop-methyl	0.09	120	50-140	< MDL	< MDL	NC	40	< MDL	131	60-140
Dimethoate	0.2	100	50-140	< MDL	< MDL	NC	40	< MDL	90	60-140
Dinoseb	0.1	82	30-140	< MDL	< MDL	NC	40	< MDL	50	30-140
Diuron	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	60-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	R.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Malathion	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Metolachlor	0.5	10	50-140	< MDL	< MDL	NC	40	< MDL	110	50-140
Metribuzin	0.5	90	50-140	< MDL	< MDL	NC	40	< MDL	80	50-140
Parathion	0.5	90	50-140	< MDL	< MDL	NC	40	< MDL	100	50-140
Pentachlorophenol	0.02	86	50-140	< MDL	< MDL	NC	40	< MDL	74	50-140
Phorate	0.05	94	50-140	< MDL	< MDL	NC	40	< MDL	95	50-140
Picloram	1	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Prometryne	0.02	34	30-140	< MDL	< MDL	NC	40	< MDL	34	30-140
Simazine	0.1	133	50-140	< MDL	< MDL	NC	40	< MDL	104	50-140
Temephos	3	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Terbufos	0.07	100	50-140	< MDL	< MDL	NC	40	< MDL	102	50-140
Tetrachlorophenol, 2,3,4,6-	0.02	99	50-140	< MDL	< MDL	NC	40	< MDL	102	50-140
Triallate	2	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Trichlorophenol 2,4,6-	0.02	103	50-140	< MDL	< MDL	NC	40	< MDL	92	50-140
Trichlorophenoxy acetic acid, 2,4,5-	2	NA	50-140	< MDL	< MDL	NC	40	< MDL	NA	50-140
Trifluralin	0.1	83	50-140	< MDL	< MDL	NC	40	< MDL	93	50-140

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Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

TESTING REQUIREMENTS

REPORT NUMBER (Lab Use)

- ☐ O.Reg 153/09 ☐ O.Reg 153/04 Table ☐ MISA Guidelines
☐ Surface Soil ☐ Sub Surface Soil (O.Reg 153/09) ☐ O.Reg 558 Leachate Analysis
☐ Yes ☐ No Record of Site Condition (O.Reg 153/09) Disposal Site: _____
☐ Provincial Water Quality Objectives ☐ Landfill Monitoring
☐ Sewer Use By-Law: _____ ☒ Other: **CCME Res/Park**

NOV. 3.15

B15-28877

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: **Amed Foster Wheeler**
 Contact: **Susan Pfister**
 Tel: **613-727-0658 x2275**

Fax: _____
 Quote No.: **P151007-PF^{SP}** Project Name: **NCC Leithrim (P19)**
 Email: **susan.pfister@amedfw.com** P.O. No.: **T214024.2000** Additional Info: _____

ANALYSES REQUESTED (Print Test in Boxes)

OC Pesticides (per quote)
Pesticidest. Herbicides (per quote)
Metals Suite 2 (per quote)
PAH (CCME)
Total PCBs

TURNAROUND SERVICE

REQUESTED (see back page)

- ☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days
☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

Lab No:	Sample Identification	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided														✓	Field		# Bottles/ Sample	Field Filtered(Y/N)
					pH	Temp.																	
1	TP15-1	S	15/11/03	09:50	X	X	X	X	X										5				
2	TP16-1	S	15/11/03	09:15	X	X	X	X	X										5				
3	TP14-1	S	15/11/03	10:15	X	X	X	X	X										5				
4	TP13-1	S	15/11/03	10:45	X	X	X	X	X										5				
5	TP10-1	S	15/11/03	11:45	X	X	X	X	X										5				
6	TP10-1	S	15/11/03	14:30	X	X	X	X	X	X									5				
7	TP12-1	S	15/11/03	13:45	X	X	X	X	X	X									5				
8	DUP-3	S	15/11/03		X	X	X	X	X										5				
9	DUP-4	S	15/11/03		X	X	X	X	X	X													
* please include QA/QC reports to all results																							
* all detection limits must meet or be below CCME res/park guidelines																							

* please include QA/QC reports in all results

* all detection limits must meet or be below CCME res/park guidelines

SAMPLE SUBMISSION INFORMATION		SHIPPING INFORMATION		REPORTING / INVOICING	SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)	
Sampled By (print): S. PFISTER	Courier (Client account) <input type="checkbox"/>	# of Pieces	Report by Fax <input type="checkbox"/>	Received By (print): REBECCA	Signature: [Signature]	
Submitted By (print): S. PFISTER	Courier (Caduceon account) <input type="checkbox"/>	Shipped	Report by Email <input checked="" type="checkbox"/>	Date Received (yy-mm-dd): 15/11/03	Time Received: 16:25	
Signature: [Signature]	Drop Off <input checked="" type="checkbox"/>		Invoice by Email <input checked="" type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Date(yy-mm-dd): 15/11/03 Time: 1630	Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C:	Labeled by:	

Laboratory Locations/Shipping Addresses

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
 Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
 Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
 Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

Comments:

45 soil

C.O.C.: G53190

REPORT No. B15-29899 (i)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-Nov-15

JOB/PROJECT NO.: P19

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Fraction Organic Carbon				
Units	g/g				
R.L.	0.005				
Reference Method	ASTM E1915-07				
Date Analyzed/Site	24-Nov-15				

Client I.D.	Sample I.D.	Date Collected				
MW15-60-SS2-Rep.1	B15-29899-1	16-Nov-15	< 0.005 ¹			
MW15-60-SS2-Rep.2	B15-29899-2	16-Nov-15	< 0.005 ¹			
MW15-60-SS2-Rep.3	B15-29899-3	16-Nov-15	< 0.005 ¹			
MW15-62-SS2-Rep.1	B15-29899-5	16-Nov-15	< 0.005 ¹			
MW15-62-SS2-Rep.2	B15-29899-6	16-Nov-15	< 0.005 ¹			
MW15-62-SS2-Rep.3	B15-29899-7	16-Nov-15	< 0.005 ¹			
MW15-63-SS2-Rep.1	B15-29899-8	16-Nov-15	< 0.005 ¹			
MW15-63-SS2-Rep.2	B15-29899-9	16-Nov-15	< 0.005 ¹			
MW15-63-SS2-Rep.3	B15-29899-10	16-Nov-15	< 0.005 ¹			

¹ subcontracted to Testmark Labs.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

R.L. = Reporting Limit

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G53190

REPORT No. B15-29899 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-Nov-15

JOB/PROJECT NO.: P19

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		MW15-60-SS2-Rep.1	MW15-61-SS2	MW15-62-SS2-Rep.1	MW15-63-SS2-Rep.1
			Sample I.D.		B15-29899-1	B15-29899-4	B15-29899-5	B15-29899-8
			Date Collected		16-Nov-15	16-Nov-15	16-Nov-15	16-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
% moisture	%	0.1		18-Nov-15/O	12.7	13.8	18.3	14.9
Acetone	µg/g	0.3	EPA 8260	18-Nov-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Benzene	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Bromomethane	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Carbon Tetrachloride	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Chloroform	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dibromochloromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Ethylbenzene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G53190

REPORT No. B15-29899 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-Nov-15

JOB/PROJECT NO.: P19

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.		MW15-60-SS2-Rep.1	MW15-61-SS2	MW15-62-SS2-Rep.1	MW15-63-SS2-Rep.1
			Sample I.D.		B15-29899-1	B15-29899-4	B15-29899-5	B15-29899-8
			Date Collected		16-Nov-15	16-Nov-15	16-Nov-15	16-Nov-15
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	18-Nov-15/O	< 0.04	< 0.04	< 0.04	< 0.04
Hexane	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	18-Nov-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Tetrachloroethane,1,1,1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethane,1,1,2,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Toluene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Trichloroethane,1,1,1-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethane,1,1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Trichlorofluoromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Vinyl Chloride	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02	< 0.02	< 0.02	< 0.02
Xylene, m,p-	µg/g	0.04	EPA 8260	18-Nov-15/O	< 0.04	< 0.04	< 0.04	< 0.04
Xylene, o-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03	< 0.03	< 0.03	< 0.03
Xylene, m,p,o-	µg/g	0.05	EPA 8260	18-Nov-15/O	< 0.05	< 0.05	< 0.05	< 0.05
Dichloroethane-d4,1,2-(SS)	%	10	EPA 8260	18-Nov-15/O	115	115	116	115
Toluene-d8 (SS)	%	10	EPA 8260	18-Nov-15/O	93	93	92	93
Bromofluorobenzene,4(SS)	%	10	EPA 8260	18-Nov-15/O	118	118	119	118



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: G53190

REPORT No. B15-29899 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-Nov-15

JOB/PROJECT NO.: P19

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	Dup-1			
			Sample I.D.	B15-29899-11			
			Date Collected	16-Nov-15			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
% moisture	%	0.1		18-Nov-15/O	13.8		
Acetone	µg/g	0.3	EPA 8260	18-Nov-15/O	< 0.3		
Benzene	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Bromoform	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Bromodichloromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Bromomethane	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Carbon Tetrachloride	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Monochlorobenzene (Chlorobenzene)	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Chloroform	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Dibromochloromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichlorobenzene, 1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichlorobenzene, 1,3-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichlorobenzene, 1,4-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichlorodifluoromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichloroethane, 1,1-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Dichloroethane, 1,2-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Dichloroethene, cis-1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichloroethene, 1,1-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichloroethene, trans-1,2-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Dichloropropane, 1,2-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Dichloropropene, trans-1,3-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichloropropene, cis-1,3-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Dichloropropene 1,3-cis+trans	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Ethylbenzene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		



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Lab Manager - Ottawa District

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REPORT No. B15-29899 (ii)

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
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Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 16-Nov-15

JOB/PROJECT NO.: P19

DATE REPORTED: 24-Nov-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Soil

WATERWORKS NO.

			Client I.D.	Dup-1			
			Sample I.D.	B15-29899-11			
			Date Collected	16-Nov-15			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/g	0.04	EPA 8260	18-Nov-15/O	< 0.04		
Hexane	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Methyl Ethyl Ketone	µg/g	0.1	EPA 8260	18-Nov-15/O	< 0.1		
Methyl Isobutyl Ketone	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Methyl-t-butyl Ether	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Styrene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Tetrachloroethane, 1,1,1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Tetrachloroethane, 1,1,2,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Tetrachloroethylene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Toluene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Trichloroethane, 1,1,1-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Trichloroethane, 1,1,2-	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Trichloroethylene	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Trichlorofluoromethane	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Vinyl Chloride	µg/g	0.02	EPA 8260	18-Nov-15/O	< 0.02		
Xylene, m,p-	µg/g	0.04	EPA 8260	18-Nov-15/O	< 0.04		
Xylene, o-	µg/g	0.03	EPA 8260	18-Nov-15/O	< 0.03		
Xylene, m,p,o-	µg/g	0.05	EPA 8260	18-Nov-15/O	< 0.05		
Dichloroethane-d4, 1,2-(SS)	%	10	EPA 8260	18-Nov-15/O	116		
Toluene-d8 (SS)	%	10	EPA 8260	18-Nov-15/O	92		
Bromofluorobenzene, 4(SS)	%	10	EPA 8260	18-Nov-15/O	119		



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: **Susan Pfister**

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE SUBMITTED: 19-Oct-15

DATE REPORTED: 26-Oct-15

SAMPLE MATRIX: Soil

JOB/PROJECT NO.: P19

P.O. NUMBER: TZ14024.2000

WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
FOC	3	Subcontract	-	NA	23-Nov-15	24-Nov-15	FOC-Soil	ASTME1915-07
VOC's	5	Ottawa	ST	19-Oct-15	21-Oct-15	23-Oct-15	C-VOC-02 (o)	EPA 8260

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem, B.Sc., C.Chem
Laboratory Manager - Ottawa District - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
FOC	0.005	100	70-130	< MDL	< MDL	NC	35	NA	NA	-
Acetone	0.3	68	60-130	< MDL	< MDL	NC	50	< MDL	90	50-140
Benzene	0.02	70	60-130	< MDL	< MDL	NC	50	< MDL	71	50-140
Bromodichloromethane	0.02	94	60-130	< MDL	< MDL	NC	50	< MDL	101	50-140
Bromoform	0.02	126	60-130	< MDL	< MDL	NC	50	< MDL	136	50-140
Bromomethane	0.03	95	50-140	< MDL	< MDL	NC	50	< MDL	116	50-140
Carbon Tetrachloride	0.02	111	60-130	< MDL	< MDL	NC	50	< MDL	114	50-140
Chloroform	0.03	88	60-130	< MDL	< MDL	NC	50	< MDL	95	50-140
Dibromochloromethane	0.02	104	60-130	< MDL	< MDL	NC	50	< MDL	106	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.02	92	50-140	< MDL	< MDL	NC	50	< MDL	97	50-140
Dichlorobenzene, 1,2-	0.02	98	60-130	< MDL	< MDL	NC	50	< MDL	101	50-140
Dichlorobenzene, 1,3-	0.02	104	60-130	< MDL	< MDL	NC	50	< MDL	105	50-140
Dichlorobenzene, 1,4-	0.02	108	60-130	< MDL	< MDL	NC	50	< MDL	110	50-140
Dichlorodifluoromethane	0.02	50	50-140	< MDL	< MDL	NC	50	< MDL	53	50-140
Dichloroethane, 1,1-	0.03	67	60-130	< MDL	< MDL	NC	50	< MDL	70	50-140
Dichloroethane, 1,2-	0.03	95	60-130	< MDL	< MDL	NC	50	< MDL	107	50-140
Dichloroethene, cis-1,2-	0.02	81	60-130	< MDL	< MDL	NC	50	< MDL	83	50-140
Dichloroethene, trans-1,2-	0.02	77	60-130	< MDL	< MDL	NC	50	< MDL	81	50-140
Dichloroethylene, 1,1-	0.03	94	60-130	< MDL	< MDL	NC	50	< MDL	107	50-140
Dichloromethane (Methylene Chloride)	0.03	61	60-130	< MDL	< MDL	NC	50	< MDL	65	50-140
Dichloropropane, 1,2-	0.04	60	60-130	< MDL	< MDL	NC	50	< MDL	59	50-140
Dichloropropene, cis-1,3-	0.02	78	60-130	< MDL	< MDL	NC	50	< MDL	71	50-140
Dichloropropene, trans-1,3-	0.02	92	60-130	< MDL	< MDL	NC	50	< MDL	86	50-140
Ethylbenzene	0.03	89	60-130	< MDL	< MDL	NC	50	< MDL	94	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	0.03	73	60-130	< MDL	< MDL	NC	50	< MDL	81	50-140
Methyl Ethyl Ketone	0.1	63	60-130	< MDL	< MDL	NC	50	< MDL	76	50-140
Methyl Isobutyl Ketone	0.02	70	60-130	< MDL	< MDL	NC	50	< MDL	84	50-140
Methyl-t-butyl Ether	0.02	94	60-130	< MDL	< MDL	NC	50	< MDL	102	50-140
Monochlorobenzene (Chlorobenzene)	0.03	88	60-130	< MDL	< MDL	NC	50	< MDL	91	50-140
Styrene	0.03	67	60-130	< MDL	< MDL	NC	50	< MDL	61	50-140
Tetrachloroethane, 1,1,1,2-	0.02	113	60-130	< MDL	< MDL	NC	50	< MDL	114	50-140
Tetrachloroethane, 1,1,2,2-	0.02	76	60-130	< MDL	< MDL	NC	50	< MDL	89	50-140
Tetrachloroethylene	0.03	114	60-130	< MDL	< MDL	NC	50	< MDL	118	50-140
Toluene	0.03	80	60-130	< MDL	< MDL	NC	50	< MDL	81	50-140
Trichloroethane, 1,1,1-	0.02	103	60-130	< MDL	< MDL	NC	50	< MDL	104	50-140
Trichloroethane, 1,1,2-	0.02	82	60-130	< MDL	< MDL	NC	50	< MDL	84	50-140
Trichloroethylene	0.03	95	60-130	< MDL	< MDL	NC	50	< MDL	100	50-140
Trichlorofluoromethane	0.02	97	60-130	< MDL	< MDL	NC	50	< MDL	92	50-140
Vinyl Chloride	0.02	54	50-140	< MDL	< MDL	NC	50	< MDL	56	50-140
Xylene, m,p-	0.04	92	60-130	< MDL	< MDL	NC	50	< MDL	97	50-140
Xylene, o-	0.03	87	60-130	< MDL	< MDL	NC	50	< MDL	92	50-140

All values expressed as µg/g unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

☒ O.Reg 153 Table 2
☐ Surface Soil ☐ Sub Surface Soil (O.Reg 153)
☐ Yes ☐ No Record of Site Condition (O.Reg 153)
☐ Provincial Water Quality Objectives
☐ Sewer Use By-Law:

☐ MISA Guidelines
☐ O.Reg 558 Leachate Analysis
Disposal Site:
☐ Landfill Monitoring
☒ Other: CCME Res/Park

NOV. 16.15

B15-289899

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: Anne Foster Wheeler
Contact: Susan Pfister
Tel: 613.727.0658 x2275
Fax: —
Email: susan.pfister@amufw.com

Address and Invoicing Address (if different)
210 Colonnade Rd. S. Unit 300
Ottawa ON K2E 7L5
Quote No.: P151007-PF
Project Name: P19
P.O. No.: T214024.2000
Additional Info:

ANALYSES REQUESTED (Print Test in Boxes)

VOCs
Fraction Organic
Carbon

Suspected Highly Contaminated

TURNAROUND SERVICE
REQUESTED (see back page)

☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days
☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☐ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

Lab No:	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided														✓	Field		# Bottles/ Sample	Field Filtered(Y/N)
						pH	Temp.																	
23	MWIS-60-SS2		Soil	15-11-16	1000	X	X												3	↑				
4	MWIS-60-SS2		Soil	15-11-16	1040	X													2	↑				
6,7	MWIS-62-SS2		Soil	15-11-16	1130	X	X												3	W/A				
8,9,10	MWIS-63-SS2		Soil	15-11-16	1240	X	X												3	W/A				
11	DUP-1		Soil	15-11-16		X	X												2	↓				

* please include QA/QC reports to all results
* all detection limits must meet both O.Reg. 153/04 + CCME res/park guidelines

SAMPLE SUBMISSION INFORMATION			SHIPPING INFORMATION		REPORTING / INVOICING		SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)		
Print: <u>SUSAN PFISTER</u>	Submitted by: <u>S. Pfister</u>	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): <u>G. CLARKIN</u>	Signature: <u>[Signature]</u>	Date Received (yy-mm-dd): <u>15-11-16</u>	Time Received: <u>139pm</u>	
Sign: <u>KATLIN HUNT</u>	Date (yy-mm-dd)/Time: <u>15-11-16 1:39</u>	Caduceon's Courier <input type="checkbox"/>	# of Pieces <input checked="" type="checkbox"/>	Report by Email <input checked="" type="checkbox"/>	Report by Email <input checked="" type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sample Temperature °C: _____	Labeled by: _____	
		Drop Off <input checked="" type="checkbox"/>	Caduceon (Pick-up) <input type="checkbox"/>	Invoice by Email <input checked="" type="checkbox"/>	Invoice by Mail <input type="checkbox"/>	Comments: <u>soil jar 10 vac vial.</u>			

Laboratory Locations/Shipping Addresses
Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

C.O.C.: G51642

REPORT No. B15-04879

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 10-Mar-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 13-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW10-17	MW10-24	MW10-25	MW15-39
			Sample I.D.	B15-04879-1	B15-04879-2	B15-04879-3	B15-04879-4
			Date Collected	10-Mar-15	10-Mar-15	10-Mar-15	10-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	11-Mar-15/O	< 2	< 2	< 2
Benzene	µg/L	0.5	EPA 8260	11-Mar-15/O	0.9	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	0.2	0.3	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	0.3	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	4.7	0.2	0.9
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	1.4	< 0.1	0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51642

REPORT No. B15-04879

Report To:

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300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 10-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 13-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW10-17	MW10-24	MW10-25	MW15-39
			Sample I.D.		B15-04879-1	B15-04879-2	B15-04879-3	B15-04879-4
			Date Collected		10-Mar-15	10-Mar-15	10-Mar-15	10-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	11-Mar-15/O	20.0	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	11-Mar-15/O	97.0	119	116	120
Toluene-d8 (SS)	%		EPA 8260	11-Mar-15/O	82.0	99.0	99.0	98.0
Bromofluorobenzene,4(SS)	%		EPA 8260	11-Mar-15/O	98.0	98.0	97.0	98.0

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51642

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 10-Mar-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 13-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW15-41	MW15-43	MW15-45	MW15-47
			Sample I.D.		B15-04879-5	B15-04879-6	B15-04879-7	B15-04879-8
			Date Collected		10-Mar-15	10-Mar-15	10-Mar-15	10-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Acetone	µg/L	2	EPA 8260	11-Mar-15/O	< 2	< 2	< 2	< 2
Benzene	µg/L	0.5	EPA 8260	11-Mar-15/O	0.7	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	0.2	< 0.1	< 0.1	0.3
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	0.4	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	3.4	0.2	< 0.1	< 0.1
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	0.8	< 0.1	< 0.1	< 0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51642

REPORT No. B15-04879

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 10-Mar-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 13-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW15-41	MW15-43	MW15-45	MW15-47
			Sample I.D.		B15-04879-5	B15-04879-6	B15-04879-7	B15-04879-8
			Date Collected		10-Mar-15	10-Mar-15	10-Mar-15	10-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	11-Mar-15/O	15.7	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	11-Mar-15/O	99.0	119	122	121
Toluene-d8 (SS)	%		EPA 8260	11-Mar-15/O	84.0	98.0	99.0	99.0
Bromofluorobenzene,4(SS)	%		EPA 8260	11-Mar-15/O	97.0	97.0	98.0	99.0

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

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DATE RECEIVED: 10-Mar-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 13-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW15-49	MW15-50	Dup-1	Trip Blank
			Sample I.D.		B15-04879-9	B15-04879-10	B15-04879-11	B15-04879-12
			Date Collected		10-Mar-15	10-Mar-15	10-Mar-15	10-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Acetone	µg/L	2	EPA 8260	11-Mar-15/O	< 2	< 2	< 2	< 2
Benzene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3-cis+trans	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

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DATE REPORTED: 13-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW15-49	MW15-50	Dup-1	Trip Blank
			Sample I.D.	B15-04879-9	B15-04879-10	B15-04879-11	B15-04879-12
			Date Collected	10-Mar-15	10-Mar-15	10-Mar-15	10-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	11-Mar-15/O	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	11-Mar-15/O	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	11-Mar-15/O	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	11-Mar-15/O	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	11-Mar-15/O	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	11-Mar-15/O	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	11-Mar-15/O	123	121	122
Toluene-d8 (SS)	%		EPA 8260	11-Mar-15/O	99.0	99.0	99.0
Bromofluorobenzene,4(SS)	%		EPA 8260	11-Mar-15/O	98.0	100	98.0

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

Report To:

AMEC

300 - 210 Colonnade Road South
 Nepean, Ontario K2E 7L5

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
 Ottawa Ontario K1V 7P1
 Tel: 613-526-0123
 Fax: 613-526-1244

DATE SUBMITTED: 10-Mar-15
 DATE REPORTED: 13-Mar-15
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: NCC Leirim
 P.O. NUMBER: TZ14024.2000
 WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
VOC's	12	Ottawa	ST	11-Mar-15	11-Mar-15	13-Mar-15	C-VOC-02 (o)	EPA 8260

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
 Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	2	70	60-130	< MDL	< MDL	NC	30	< MDL	58	50-140
Benzene	0.5	101	60-130	< MDL	< MDL	NC	30	< MDL	98	50-140
Bromodichloromethane	0.1	102	60-130	< MDL	< MDL	NC	30	< MDL	102	50-140
Bromoform	0.1	120	60-130	< MDL	< MDL	NC	30	< MDL	124	50-140
Bromomethane	0.3	119	50-140	< MDL	< MDL	NC	30	< MDL	112	50-140
Carbon Tetrachloride	0.2	111	60-130	< MDL	< MDL	NC	30	< MDL	103	50-140
Chloroform	0.3	109	60-130	< MDL	< MDL	NC	30	< MDL	104	50-140
Dibromochloromethane	0.1	108	60-130	< MDL	< MDL	NC	30	< MDL	112	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	105	50-140	< MDL	< MDL	NC	30	< MDL	107	50-140
Dichlorobenzene, 1,2-	0.1	109	60-130	< MDL	< MDL	NC	30	< MDL	118	50-140
Dichlorobenzene, 1,3-	0.1	110	60-130	< MDL	< MDL	NC	30	< MDL	119	50-140
Dichlorobenzene, 1,4-	0.2	110	60-130	< MDL	< MDL	NC	30	< MDL	118	50-140
Dichlorodifluoromethane	1	120	50-140	< MDL	< MDL	NC	30	< MDL	108	50-140
Dichloroethane, 1,1-	0.1	98	60-130	< MDL	< MDL	NC	30	< MDL	88	50-140
Dichloroethane, 1,2-	0.1	106	60-130	< MDL	< MDL	NC	30	< MDL	101	50-140
Dichloroethene, cis-1,2-	0.1	101	60-130	< MDL	< MDL	NC	30	< MDL	104	50-140
Dichloroethene, trans-1,2-	0.1	113	60-130	< MDL	< MDL	NC	30	< MDL	107	50-140
Dichloroethylene, 1,1-	0.1	106	60-130	< MDL	< MDL	NC	30	< MDL	123	50-140
Dichloromethane (Methylene Chloride)	0.3	94	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Dichloropropane, 1,2-	0.1	86	60-130	< MDL	< MDL	NC	30	< MDL	83	50-140
Dichloropropene, cis-1,3-	0.1	76	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Dichloropropene, trans-1,3-	0.1	87	60-130	< MDL	< MDL	NC	30	< MDL	92	50-140
Ethylbenzene	0.5	101	60-130	< MDL	< MDL	NC	30	< MDL	102	50-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	1	60	60-130	< MDL	< MDL	NC	30	< MDL	62	50-140
Methyl Ethyl Ketone	2	60	60-130	< MDL	< MDL	NC	30	< MDL	54	50-140
Methyl Isobutyl Ketone	1	64	60-130	< MDL	< MDL	NC	30	< MDL	54	50-140
Methyl-t-butyl Ether	1	70	60-130	< MDL	< MDL	NC	30	< MDL	76	50-140
Monochlorobenzene (Chlorobenzene)	0.2	109	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Styrene	0.5	102	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Tetrachloroethane, 1,1,1,2-	0.1	116	60-130	< MDL	< MDL	NC	30	< MDL	116	50-140
Tetrachloroethane, 1,1,2,2-	0.4	108	60-130	< MDL	< MDL	NC	30	< MDL	104	50-140
Tetrachloroethylene	0.2	101	60-130	< MDL	< MDL	NC	30	< MDL	118	50-140
Toluene	0.5	107	60-130	< MDL	< MDL	NC	30	< MDL	103	50-140
Trichloroethane, 1,1,1-	0.1	113	60-130	< MDL	< MDL	NC	30	< MDL	104	50-140
Trichloroethane, 1,1,2-	0.1	114	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Trichloroethylene	0.1	113	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Trichlorofluoromethane	0.1	111	50-140	< MDL	< MDL	NC	30	< MDL	132	50-140
Vinyl Chloride	0.2	94	50-140	< MDL	< MDL	NC	30	< MDL	81	50-140
Xylene, m,p-	0.4	106	60-130	< MDL	< MDL	NC	30	< MDL	105	50-140
Xylene, o-	0.1	91	60-130	< MDL	< MDL	NC	30	< MDL	105	50-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

TESTING REQUIREMENTS

- ☒ O.Reg 153 Table 2 ☐ MISA Guidelines
☐ Surface Soil ☐ Sub Surface Soil (O.Reg 153) ☐ O.Reg 558 Leachate Analysis
☐ Yes ☐ No Record of Site Condition (O.Reg 153) Disposal Site:
☐ Provincial Water Quality Objectives ☐ Landfill Monitoring
☐ Sewer Use By-Law: ☐ Other:

REPORT NUMBER (Lab Use)
Mar 10 15

B15-04879

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: **AMEC FOSTER WHEELER**
 Contact: **SUSAN PFISTER**
 Tel: **613-727-0658**

Address and Invoicing Address (if different)
360-210 Colonnade Rd South
OTTAWA, ON
K2E 7L5

Fax: **613-727-9465**

Quote No.:

Project Name:
NEC LEITKIM

Email: **SUSAN.PFISTER@AMEC.COM**

P.O. No.:
T214024.2000

Additional Info:

ANALYSES REQUESTED (Print Test in Boxes)

Suspected Highly Contaminated

TURNAROUND SERVICE
REQUESTED (see back page)

- ☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days

☐ Specific Date: _____

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☒ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil=Oil

Lab No.	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided												Field		# Bottles/ Sample	Field Filtered(Y/N)
																		pH	Temp.		
1	MW10-17		GW	15-03-10		X														2	N
2	MW10-24		GW	15-03-10		X														2	N
3	MW10-25		GW	15-03-10		X														2	N
4	MW15-39		GW	15-03-10		X														2	N
5	MW15-41		GW	15-03-10		X														2	N
6	MW15-43		GW	15-03-10		X														2	N
7	MW15-45		GW	15-03-10		X														2	N
8	MW15-47		GW	15-03-10		X														2	N
9	MW15-49		GW	15-03-10		X														2	N
10	MW15-50		GW	15-03-10		X														2	N
11	DUP-1		GW	15-03-10		X														2	N
12	TRIP BLANK		GW	15-03-10		X														2	N

SAMPLE SUBMISSION INFORMATION

SHIPPING INFORMATION

REPORTING / INVOICING

SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)

Print: BRYANT JELLY	Submitted by: BRYANT JELLY	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): Jabina Signature: h
Sign: Bryant	Date (yy-mm-dd)/Time: 15-03-10 4:11pm	Caduceon's Courier <input type="checkbox"/>	# of Pieces 1	Report by Email <input checked="" type="checkbox"/>	Date Received (yy-mm-dd) Mar 10 15 Time Received: 3:11
		Drop Off <input checked="" type="checkbox"/>		Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: _____ Labeled by: _____
Laboratory Locations/Shipping Addresses				Comments: 24VOC	

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
 Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
 Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
 Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

C.O.C.: G51643, 51644

REPORT No. B15-05028

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000


SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW08-1	MW08-4	MW08-5	MW10-11
			Sample I.D.	B15-05028-1	B15-05028-2	B15-05028-3	B15-05028-4
			Date Collected	11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	< 2	< 2	< 2
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	0.8	< 0.1	3.6
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	0.1	< 0.1	1.0
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill


Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

REPORT No. B15-05028

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW08-1	MW08-4	MW08-5	MW10-11
			Sample I.D.	B15-05028-1	B15-05028-2	B15-05028-3	B15-05028-4
			Date Collected	11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	6.6	< 0.1	1.2
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	115	127	126
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	91.0	98.0	96.0
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	99.0	100	101
PHC F1 (C6-C10)	µg/L	20	MOE E3421	13-Mar-15/O	< 20		
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	19-Mar-15/K	< 50		
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	19-Mar-15/K	< 400		
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	19-Mar-15/K	< 400		

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

REPORT No. B15-05028

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

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2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW13-31	MW13-33	MW15-38C	MW15-40C
			Sample I.D.	B15-05028-5	B15-05028-6	B15-05028-7	B15-05028-8
			Date Collected	11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	< 2	< 2	10
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	0.2	< 0.1	< 0.1
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

REPORT No. B15-05028

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW13-31	MW13-33	MW15-38C	MW15-40C
			Sample I.D.		B15-05028-5	B15-05028-6	B15-05028-7	B15-05028-8
			Date Collected		11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	4	11
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	1.9	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	123	125	127	125
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	96.0	99.0	98.0	101
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	100	98.0	99.0	92.0
PHC F1 (C6-C10)	µg/L	20	MOE E3421	13-Mar-15/O				
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	19-Mar-15/K				
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	19-Mar-15/K				
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	19-Mar-15/K				

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

REPORT No. B15-05028

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW15-42C	MW15-44	MW15-46C	MW15-48C
			Sample I.D.		B15-05028-9	B15-05028-10	B15-05028-11	B15-05028-12
			Date Collected		11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	8	16	11	10
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	0.3
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3-cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

REPORT No. B15-05028

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW15-42C	MW15-44	MW15-46C	MW15-48C
			Sample I.D.	B15-05028-9	B15-05028-10	B15-05028-11	B15-05028-12
			Date Collected	11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	2	2	1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	126	126	127
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	99.0	100	99.0
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	99.0	98.0	99.0
PHC F1 (C6-C10)	µg/L	20	MOE E3421	13-Mar-15/O			
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	19-Mar-15/K			
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	19-Mar-15/K			
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	19-Mar-15/K			

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

REPORT No. B15-05028

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW15-54	DUP-2	DUP-3	DUP-4
			Sample I.D.	B15-05028-13	B15-05028-14	B15-05028-15	B15-05028-16
			Date Collected	11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	< 2	< 2	16
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	0.1
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3-cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

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DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW15-54	DUP-2	DUP-3	DUP-4
			Sample I.D.	B15-05028-13	B15-05028-14	B15-05028-15	B15-05028-16
			Date Collected	11-Mar-15	11-Mar-15	11-Mar-15	11-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Tetrachloroethane, 1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Trichloroethane, 1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	0.6
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Dichloroethane-d4, 1,2-(SS)	%		EPA 8260	13-Mar-15/O	130	126	124
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	99.0	99.0	100
Bromofluorobenzene, 4(SS)	%		EPA 8260	13-Mar-15/O	99.0	99.0	96.0
PHC F1 (C6-C10)	µg/L	20	MOE E3421	13-Mar-15/O	< 20	< 20	
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	19-Mar-15/K	< 50	< 50	
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	19-Mar-15/K	< 400	< 400	
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	19-Mar-15/K	< 400	< 400	

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin, BSc., C. Chem

Lab Manager - Ottawa District

C.O.C.: G51643, 51644

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Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	Trip Blank			
			Sample I.D.	B15-05028-17			
			Date Collected				
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	< 2		
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5		
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3		
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2		
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2		
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3		
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2		
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1		
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Dichloropropene 1,3-cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5		
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1		



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51643, 51644

REPORT No. B15-05028

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 11-Mar-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 19-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	Trip Blank			
			Sample I.D.	B15-05028-17			
			Date Collected				
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3		
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1		
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1		
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1		
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5		
Tetrachloroethane, 1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Tetrachloroethane, 1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4		
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2		
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5		
Trichloroethane, 1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Trichloroethane, 1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2		
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4		
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1		
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4		
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	130		
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	99.0		
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	100		
PHC F1 (C6-C10)	µg/L	20	MOE E3421	13-Mar-15/O			
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	19-Mar-15/K			
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	19-Mar-15/K			
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	19-Mar-15/K			

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
 Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

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 Tel: 613-526-0123
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DATE SUBMITTED: 11-Mar-15
 DATE REPORTED: 19-Mar-15
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: NCC Leitrim
 P.O. NUMBER: TZ14024.2000
 WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
VOC's	17	Ottawa	ST	13-Mar-15	13-Mar-15	16-Mar-15	C-VOC-02 (o)	EPA 8260
PHC(F1)	3	Ottawa	ST	13-Mar-15	13-Mar-15	16-Mar-15	C-GRO-02 (o)	MOEE3421
PHC(F2-F4)	3	Kingston	SCG	17-Mar-15	19-Mar-15	19-Mar-15	C-PHC-W-001 (k)	MOEE3421

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
 Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	2	70	60-130	< MDL	< MDL	NC	30	< MDL	68	50-140
Benzene	0.5	103	60-130	< MDL	< MDL	NC	30	< MDL	100	50-140
Bromodichloromethane	0.1	113	60-130	< MDL	< MDL	NC	30	< MDL	111	50-140
Bromoform	0.1	109	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Bromomethane	0.3	121	50-140	< MDL	< MDL	NC	30	< MDL	101	50-140
Carbon Tetrachloride	0.2	121	60-130	< MDL	< MDL	NC	30	< MDL	112	50-140
Chloroform	0.3	120	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Dibromochloromethane	0.1	122	60-130	< MDL	< MDL	NC	30	< MDL	126	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	113	50-140	< MDL	< MDL	NC	30	< MDL	117	50-140
Dichlorobenzene, 1,2-	0.1	117	60-130	< MDL	< MDL	NC	30	< MDL	138	50-140
Dichlorobenzene, 1,3-	0.1	117	60-130	< MDL	< MDL	NC	30	< MDL	137	50-140
Dichlorobenzene, 1,4-	0.2	117	60-130	< MDL	< MDL	NC	30	< MDL	136	50-140
Dichlorodifluoromethane	1	120	50-140	< MDL	< MDL	NC	30	< MDL	104	50-140
Dichloroethane, 1,1-	0.1	99	60-130	< MDL	< MDL	NC	30	< MDL	88	50-140
Dichloroethane, 1,2-	0.1	120	60-130	< MDL	< MDL	NC	30	< MDL	112	50-140
Dichloroethene, cis-1,2-	0.1	103	60-130	< MDL	< MDL	NC	30	< MDL	107	50-140
Dichloroethene, trans-1,2-	0.1	119	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Dichloroethylene, 1,1-	0.1	103	60-130	< MDL	< MDL	NC	30	< MDL	125	50-140
Dichloromethane (Methylene Chloride)	0.3	98	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Dichloropropane, 1,2-	0.1	84	60-130	< MDL	< MDL	NC	30	< MDL	83	50-140
Dichloropropene, cis-1,3-	0.1	69	60-130	< MDL	< MDL	NC	30	< MDL	76	50-140
Dichloropropene, trans-1,3-	0.1	86	60-130	< MDL	< MDL	NC	30	< MDL	89	50-140
Ethylbenzene	0.5	99	60-130	< MDL	< MDL	NC	30	< MDL	107	50-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	1	60	60-130	< MDL	< MDL	NC	30	< MDL	60	50-140
Methyl Ethyl Ketone	2	60	60-130	< MDL	< MDL	NC	30	< MDL	60	50-140
Methyl Isobutyl Ketone	1	60	60-130	< MDL	< MDL	NC	30	< MDL	66	50-140
Methyl-t-butyl Ether	1	80	60-130	< MDL	< MDL	NC	30	< MDL	82	50-140
Monochlorobenzene (Chlorobenzene)	0.2	109	60-130	< MDL	< MDL	NC	30	< MDL	113	50-140
Styrene	0.5	99	60-130	< MDL	< MDL	NC	30	< MDL	115	50-140
Tetrachloroethane, 1,1,1,2-	0.1	127	60-130	< MDL	< MDL	NC	30	< MDL	128	50-140
Tetrachloroethane, 1,1,2,2-	0.4	111	60-130	< MDL	< MDL	NC	30	< MDL	112	50-140
Tetrachloroethylene	0.2	117	60-130	< MDL	< MDL	NC	30	< MDL	115	50-140
Toluene	0.5	111	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Trichloroethane, 1,1,1-	0.1	127	60-130	< MDL	< MDL	NC	30	< MDL	113	50-140
Trichloroethane, 1,1,2-	0.1	124	60-130	< MDL	< MDL	NC	30	< MDL	119	50-140
Trichloroethylene	0.1	117	60-130	< MDL	< MDL	NC	30	< MDL	115	50-140
Trichlorofluoromethane	0.1	117	50-140	< MDL	< MDL	NC	30	< MDL	105	50-140
Vinyl Chloride	0.2	92	50-140	< MDL	< MDL	NC	30	< MDL	77	50-140
Xylene, m,p-	0.4	107	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Xylene, o-	0.1	90	60-130	< MDL	< MDL	NC	30	< MDL	111	50-140
PHC F1 (C6-C10)	20	96	60-140	< MDL	< MDL	NC	30	< MDL	106	60-140
PHC F2 (>C10-C16)	50	76	60-140	1340	1280	5	30	< MDL	75	60-140
PHC F3 (>C16-C34)	400	91	60-140	2800	2700	NC	30	< MDL	89	60-140
PHC F4 (>C34-C50)	400	82	60-140	< MDL	< MDL	NC	30	< MDL	78	60-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

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NC = Not Calculated

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NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

TESTING REQUIREMENTS

- ☒ O.Reg 153 Table 2 ☐ MISA Guidelines
☐ Surface Soil ☐ Sub Surface Soil (O.Reg 153) ☐ O.Reg 558 Leachate Analysis
☐ Yes ☐ No Record of Site Condition (O.Reg 153) Disposal Site: _____
☐ Provincial Water Quality Objectives ☐ Landfill Monitoring
☐ Sewer Use By-Law: _____ ☐ Other: _____

Mar
B15-05028
REPORT NUMBER (Lab Use)

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: AMEC	Address and Invoicing Address (if different) 300-210 Colonnade Rd South OTTAWA, ON K2E 7L5		ANALYSES REQUESTED (Print Test in Boxes)										TURNAROUND SERVICE REQUESTED (see back page)	
Contact: SUSAN PFISTER			<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Suspected Highly Contaminated</div> <div style="margin-left: 10px;"> <input type="checkbox"/> Platinum 200% Surcharge** <input type="checkbox"/> Gold 100% Surcharge <input type="checkbox"/> Silver 50% Surcharge <input type="checkbox"/> Bronze 25% Surcharge <input checked="" type="checkbox"/> Standard 5-7 days <input type="checkbox"/> Specific Date: _____ </div> </div>											
Tel: 613-727-0658														
Fax: 613-727-9465	Quote No.:	Project Name: NCC CENTRIM												
Email: SUSAN.PFISTER@AMEC.FW.COM	P.O. No.: T214024.2000	Additional Info:												

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☒ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil=Oil

Lab No:	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided																✓	Field		# Bottles/ Sample	Field Filtered(Y/N)
						pH	Temp.																			
1	MW 08-1		GW	15-03-11		X	X														5	N				
2	MW 08-4		GW	15-03-11		X															2	N				
3	MW 08-5		GW	15-03-11		X															2	N				
4	MW 10-11		GW	15-03-11		X															2	N				
5	MW 13-31		GW	15-03-11		X															2	N				
6	MW 13-33		GW	15-03-11		X															2	N				
7	MW 15-38C		GW	15-03-11		X															2	N				
8	MW 15-40C		GW	15-03-11		X															2	N				
9	MW 15-42C		GW	15-03-11		X															2	N				
10	MW 15-44		GW	15-03-11		X															2	N				
11	MW 15-46C		GW	15-03-11		X															2	N				
12	MW 15-48C		GW	15-03-11		X															2	N				

SAMPLE SUBMISSION INFORMATION			SHIPPING INFORMATION		REPORTING / INVOICING		SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)	
Print: BRYANT JELLY	Submitted by: BRYANT JELLY	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): Valina Signature: h			
Sign: Bryant	Date (yy-mm-dd)/Time: 15-03-11 4:46p	Caduceon's Courier <input type="checkbox"/>	# of Pieces: 1	Report by Email <input checked="" type="checkbox"/>	Date Received (yy-mm-dd): Mar 11 15 Time Received: 4:43			
		Drop Off <input checked="" type="checkbox"/>		Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
		Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: 3 Labeled by: _____			
Laboratory Locations/Shipping Addresses					Comments: 3-1L glass 38 VOC			
Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com					Page <u>1</u> of <u>2</u> G 51643			

C.O.C.: G51645

REPORT No. B15-05089

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 12-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000


SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW10-15	MW10-19	MW15-51C	MW15-52
			Sample I.D.	B15-05089-1	B15-05089-2	B15-05089-3	B15-05089-4
			Date Collected	12-Mar-15	12-Mar-15	12-Mar-15	12-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	< 2	< 2	< 2
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	1.0	< 0.1	2.6
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	0.9
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill


Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51645

REPORT No. B15-05089

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
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Attention: Susan Pfister

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JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW10-15	MW10-19	MW15-51C	MW15-52
			Sample I.D.		B15-05089-1	B15-05089-2	B15-05089-3	B15-05089-4
			Date Collected		12-Mar-15	12-Mar-15	12-Mar-15	12-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	5.9	< 0.1	26.5	0.7
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	116	129	100	130
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	92.0	99.0	79.0	98.0
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	98.0	99.0	99.0	98.0

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51645

REPORT No. B15-05089

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 12-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW15-53	MW15-56	MW15-57	MW15-58
			Sample I.D.	B15-05089-5	B15-05089-6	B15-05089-7	B15-05089-8
			Date Collected	12-Mar-15	12-Mar-15	12-Mar-15	12-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	< 2	< 2	< 2
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	1.3	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	0.2	0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	0.1	< 0.1	< 0.1
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51645

REPORT No. B15-05089

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 12-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.		MW15-53	MW15-56	MW15-57	MW15-58
			Sample I.D.		B15-05089-5	B15-05089-6	B15-05089-7	B15-05089-8
			Date Collected		12-Mar-15	12-Mar-15	12-Mar-15	12-Mar-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	6.8	1.2	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	120	131	131	135
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	92.9	99.0	100	101
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	98.9	100	100	100

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51645

REPORT No. B15-05089

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Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 12-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	DUP-5	Trip Blank		
			Sample I.D.	B15-05089-9	B15-05089-10		
			Date Collected	12-Mar-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	< 2	< 2	
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Dichloropropene 1,3-cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G51645

REPORT No. B15-05089

Report To:

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Attention: Susan Pfister

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Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 12-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	DUP-5	Trip Blank		
			Sample I.D.	B15-05089-9	B15-05089-10		
			Date Collected	12-Mar-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	
Tetrachloroethane, 1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Tetrachloroethane, 1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	
Trichloroethane, 1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Trichloroethane, 1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	134	131	
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	100	100	
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	100	99.0	

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem

Lab Manager - Ottawa District

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
 Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
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 Tel: 613-526-0123
 Fax: 613-526-1244

DATE SUBMITTED: 12-Mar-15
 DATE REPORTED: 17-Mar-15
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: NCC Leirim
 P.O. NUMBER: TZ14024.2000
 WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
VOC's	10	Ottawa	ST	13-Mar-15	13-Mar-15	17-Mar-15	C-VOC-02 (o)	EPA 8260

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
 Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	2	60	60-130	< MDL	< MDL	NC	30	< MDL	62	50-140
Benzene	0.5	107	60-130	< MDL	< MDL	NC	30	< MDL	100	50-140
Bromodichloromethane	0.1	121	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Bromoform	0.1	121	60-130	< MDL	< MDL	NC	30	< MDL	137	50-140
Bromomethane	0.3	96	50-140	< MDL	< MDL	NC	30	< MDL	105	50-140
Carbon Tetrachloride	0.2	103	60-130	< MDL	< MDL	NC	30	< MDL	114	50-140
Chloroform	0.3	99	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Dibromochloromethane	0.1	108	60-130	< MDL	< MDL	NC	30	< MDL	121	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	101	50-140	< MDL	< MDL	NC	30	< MDL	114	50-140
Dichlorobenzene, 1,2-	0.1	124	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Dichlorobenzene, 1,3-	0.1	126	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Dichlorobenzene, 1,4-	0.2	125	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Dichlorodifluoromethane	1	96	50-140	< MDL	< MDL	NC	30	< MDL	102	50-140
Dichloroethane, 1,1-	0.1	102	60-130	< MDL	< MDL	NC	30	< MDL	86	50-140
Dichloroethane, 1,2-	0.1	97	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Dichloroethene, cis-1,2-	0.1	106	60-130	< MDL	< MDL	NC	30	< MDL	105	50-140
Dichloroethene, trans-1,2-	0.1	99	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Dichloroethylene, 1,1-	0.1	106	60-130	< MDL	< MDL	NC	30	< MDL	124	50-140
Dichloromethane (Methylene Chloride)	0.3	98	60-130	< MDL	< MDL	NC	30	< MDL	79	50-140
Dichloropropane, 1,2-	0.1	86	60-130	< MDL	< MDL	NC	30	< MDL	80	50-140
Dichloropropene, cis-1,3-	0.1	77	60-130	< MDL	< MDL	NC	30	< MDL	75	50-140
Dichloropropene, trans-1,3-	0.1	94	60-130	< MDL	< MDL	NC	30	< MDL	88	50-140
Ethylbenzene	0.5	103	60-130	< MDL	< MDL	NC	30	< MDL	106	50-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	1	60	60-130	< MDL	< MDL	NC	30	< MDL	58	50-140
Methyl Ethyl Ketone	2	70	60-130	< MDL	< MDL	NC	30	< MDL	54	50-140
Methyl Isobutyl Ketone	1	64	60-130	< MDL	< MDL	NC	30	< MDL	54	50-140
Methyl-t-butyl Ether	1	80	60-130	< MDL	< MDL	NC	30	< MDL	78	50-140
Monochlorobenzene (Chlorobenzene)	0.2	101	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Styrene	0.5	103	60-130	< MDL	< MDL	NC	30	< MDL	112	50-140
Tetrachloroethane, 1,1,1,2-	0.1	113	60-130	< MDL	< MDL	NC	30	< MDL	125	50-140
Tetrachloroethane, 1,1,2,2-	0.4	93	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Tetrachloroethylene	0.2	116	60-130	< MDL	< MDL	NC	30	< MDL	127	50-140
Toluene	0.5	97	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Trichloroethane, 1,1,1-	0.1	103	60-130	< MDL	< MDL	NC	30	< MDL	114	50-140
Trichloroethane, 1,1,2-	0.1	104	60-130	< MDL	< MDL	NC	30	< MDL	114	50-140
Trichloroethylene	0.1	107	60-130	< MDL	< MDL	NC	30	< MDL	116	50-140
Trichlorofluoromethane	0.1	113	50-140	< MDL	< MDL	NC	30	< MDL	131	50-140
Vinyl Chloride	0.2	92	50-140	< MDL	< MDL	NC	30	< MDL	77	50-140
Xylene, m,p-	0.4	102	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Xylene, o-	0.1	101	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

Organization: AMEC FOSTER WHEELER	Address and Invoicing Address (if different) 300-210 Colonnade Rd South	
Contact: SUSAN PFISTER	OTTAWA, ON K2E 7L5	
Tel: 613-727-0658		
Fax: 613-727-9465	Quote No.:	Project Name: NCC LEITRIM
Email: SUSAN.PFISTER@amecfw.com	P.O. No.: T214024.2000	Additional Info:

TURNAROUND SERVICE
REQUESTED (see back page)

<input type="checkbox"/>	Platinum	200% Surcharge**
<input type="checkbox"/>	Gold	100% Surcharge
<input type="checkbox"/>	Silver	50% Surcharge
<input type="checkbox"/>	Bronze	25% Surcharge
<input checked="" type="checkbox"/>	Standard	5-7 days
<input type="checkbox"/>	Specific Date:	

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☒ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil = Oil

Lab No:	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided																✓	Field		# Bottles Sample	Field Filtered(Y/N)
						pH	Temp.																			
	MW10-15		GW	15-03-12		X															2	N				
	MW10-19		GW	15-03-12		X															2	N				
	MW15-51C		GW	15-03-12		X															2	N				
	MW15-52		GW	15-03-12		X															2	N				
	MW15-53		GW	15-03-12		X															2	N				
	MW15-56		GW	15-03-12		X															2	N				
	MW15-57		GW	15-03-12		X															2	N				
	MW15-58		GW	15-03-12		X															2	N				
	DUP-5		GW	15-03-12		X															2	N				
	TRIP BLANK		GW			X															2	N				

SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)

	Sampled by:	Submitted by:	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): <u>Jabina</u>	Signature: <u>u</u>
Print:	<u>BRYANT JELLY</u>	<u>BRYANT JELLY</u>	Caduceon's Courier <input type="checkbox"/>	<input type="checkbox"/>	Report by Email <input checked="" type="checkbox"/>	Date Received (yy-mm-dd): <u>Mar. 12.15</u>	Time Received: <u>1:36</u>
Sign:	<u>Bryant J</u>	<u>Bryant J</u>	Drop Off <input checked="" type="checkbox"/>	# of Pieces	Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<u>15-03-12</u>	<u>15-03-12 2:36pm</u>	Caduceon (Pick-up) <input type="checkbox"/>	<u>1</u>	Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: <u>11°C</u>	Labeled by:
	Date (yy-mm-dd)/Time:	Date (yy-mm-dd)/Time:				Comments:	

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 476-5542 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

20 VDC

C.O.C.: G26466

REPORT No. B15-05151

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 13-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW15-55	MW15-59	Trip Blank	
			Sample I.D.	B15-05151-1	B15-05151-2	B15-05151-3	
			Date Collected	13-Mar-15	13-Mar-15		
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	13-Mar-15/O	15	6	< 2
Benzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Ethylbenzene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: G26466

REPORT No. B15-05151

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

DATE RECEIVED: 13-Mar-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 17-Mar-15

P.O. NUMBER: TZ14024.2000

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	MW15-55	MW15-59	Trip Blank	
			Sample I.D.	B15-05151-1	B15-05151-2	B15-05151-3	
			Date Collected	13-Mar-15	13-Mar-15		
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	13-Mar-15/O	< 0.3	< 0.3	< 0.3
Methyl Ethyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	13-Mar-15/O	< 1	< 1	< 1
Styrene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	13-Mar-15/O	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	13-Mar-15/O	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	13-Mar-15/O	< 0.1	< 0.1	< 0.1
Xylene, m,p,o-	µg/L	0.4	EPA 8260	13-Mar-15/O	< 0.4	< 0.4	< 0.4
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	13-Mar-15/O	132	131	132
Toluene-d8 (SS)	%		EPA 8260	13-Mar-15/O	101	101	100
Bromofluorobenzene,4(SS)	%		EPA 8260	13-Mar-15/O	99.0	100	100

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill



Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
 Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
 Ottawa Ontario K1V 7P1
 Tel: 613-526-0123
 Fax: 613-526-1244

DATE SUBMITTED: 13-Mar-15
 DATE REPORTED: 17-Mar-15
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: NCC Leirim
 P.O. NUMBER: TZ14024.2000
 WATERWORKS NO.:

Analyses	Qty.	Site Analyzed	Analyst Initials	Date Extracted	Date Analyzed	Date Approved	Lab Method	Method Reference
VOC's	3	Ottawa	ST	13-Mar-15	13-Mar-15	17-Mar-15	C-VOC-02 (o)	EPA 8260

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
 Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Acetone	2	60	60-130	< MDL	< MDL	NC	30	< MDL	62	50-140
Benzene	0.5	107	60-130	< MDL	< MDL	NC	30	< MDL	100	50-140
Bromodichloromethane	0.1	121	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Bromoform	0.1	121	60-130	< MDL	< MDL	NC	30	< MDL	137	50-140
Bromomethane	0.3	96	50-140	< MDL	< MDL	NC	30	< MDL	105	50-140
Carbon Tetrachloride	0.2	103	60-130	< MDL	< MDL	NC	30	< MDL	114	50-140
Chloroform	0.3	99	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Dibromochloromethane	0.1	108	60-130	< MDL	< MDL	NC	30	< MDL	121	50-140
Dibromoethane, 1,2- (Ethylene Dibromide)	0.1	101	50-140	< MDL	< MDL	NC	30	< MDL	114	50-140
Dichlorobenzene, 1,2-	0.1	124	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Dichlorobenzene, 1,3-	0.1	126	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Dichlorobenzene, 1,4-	0.2	125	60-130	< MDL	< MDL	NC	30	< MDL	134	50-140
Dichlorodifluoromethane	1	96	50-140	< MDL	< MDL	NC	30	< MDL	102	50-140
Dichloroethane, 1,1-	0.1	102	60-130	< MDL	< MDL	NC	30	< MDL	86	50-140
Dichloroethane, 1,2-	0.1	97	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Dichloroethene, cis-1,2-	0.1	106	60-130	< MDL	< MDL	NC	30	< MDL	105	50-140
Dichloroethene, trans-1,2-	0.1	99	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Dichloroethylene, 1,1-	0.1	106	60-130	< MDL	< MDL	NC	30	< MDL	124	50-140
Dichloromethane (Methylene Chloride)	0.3	98	60-130	< MDL	< MDL	NC	30	< MDL	79	50-140
Dichloropropane, 1,2-	0.1	86	60-130	< MDL	< MDL	NC	30	< MDL	80	50-140
Dichloropropene, cis-1,3-	0.1	77	60-130	< MDL	< MDL	NC	30	< MDL	75	50-140
Dichloropropene, trans-1,3-	0.1	94	60-130	< MDL	< MDL	NC	30	< MDL	88	50-140
Ethylbenzene	0.5	103	60-130	< MDL	< MDL	NC	30	< MDL	106	50-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

PARAMETERS	M.D.L.	QC DATA								
		LCS Sample (% Rec.)		Duplicate				Lab Blank	Matrix Spike (% Recovery)	
		Found	Limits	Result 1	Result 2	R.P.D.	Limits (%)		Found	Limits
Hexane	1	60	60-130	< MDL	< MDL	NC	30	< MDL	58	50-140
Methyl Ethyl Ketone	2	70	60-130	< MDL	< MDL	NC	30	< MDL	54	50-140
Methyl Isobutyl Ketone	1	64	60-130	< MDL	< MDL	NC	30	< MDL	54	50-140
Methyl-t-butyl Ether	1	80	60-130	< MDL	< MDL	NC	30	< MDL	78	50-140
Monochlorobenzene (Chlorobenzene)	0.2	101	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Styrene	0.5	103	60-130	< MDL	< MDL	NC	30	< MDL	112	50-140
Tetrachloroethane, 1,1,1,2-	0.1	113	60-130	< MDL	< MDL	NC	30	< MDL	125	50-140
Tetrachloroethane, 1,1,2,2-	0.4	93	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140
Tetrachloroethylene	0.2	116	60-130	< MDL	< MDL	NC	30	< MDL	127	50-140
Toluene	0.5	97	60-130	< MDL	< MDL	NC	30	< MDL	108	50-140
Trichloroethane, 1,1,1-	0.1	103	60-130	< MDL	< MDL	NC	30	< MDL	114	50-140
Trichloroethane, 1,1,2-	0.1	104	60-130	< MDL	< MDL	NC	30	< MDL	114	50-140
Trichloroethylene	0.1	107	60-130	< MDL	< MDL	NC	30	< MDL	116	50-140
Trichlorofluoromethane	0.1	113	50-140	< MDL	< MDL	NC	30	< MDL	131	50-140
Vinyl Chloride	0.2	92	50-140	< MDL	< MDL	NC	30	< MDL	77	50-140
Xylene, m,p-	0.4	102	60-130	< MDL	< MDL	NC	30	< MDL	110	50-140
Xylene, o-	0.1	101	60-130	< MDL	< MDL	NC	30	< MDL	109	50-140

All values expressed as µg/L unless stated otherwise

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10 x's M.D.L.

M.D.L. = Method Detection Limit

NC = Not Calculated

- = Not Requested/Analyzed

NA = Not Applicable



Greg Clarkin, B.Sc., C.Chem
Laboratory Manager - Ottawa District

C.O.C.: G51204

REPORT No. B15-12409

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 29-May-15

DATE REPORTED: 02-Jun-15


SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: NCC Leitrim

P.O. NUMBER: TZ14024

WATERWORKS NO.

			Client I.D.	MW10-24	MW10-25	MW15-39	MW15-41
			Sample I.D.	B15-12409-1	B15-12409-2	B15-12409-3	B15-12409-4
			Date Collected	29-May-15	29-May-15	29-May-15	29-May-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	29-May-15/O	< 2	< 2	< 2
Benzene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Bromoform	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Bromomethane	µg/L	0.3	EPA 8260	29-May-15/O	< 0.3	< 0.3	< 0.3
Carbon Tetrachloride	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2	< 0.2	< 0.2
Chloroform	µg/L	0.3	EPA 8260	29-May-15/O	< 0.3	< 0.3	< 0.3
Dibromochloromethane	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	µg/L	1	EPA 8260	29-May-15/O	< 1	< 1	< 1
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	29-May-15/O	0.2	< 0.1	0.3
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	29-May-15/O	0.1	0.4	0.2
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	29-May-15/O	< 0.3	< 0.3	< 0.3
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1



M.D.L. = Method Detection Limit
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Gord Murphy
Lab Supervisor

C.O.C.: G51204

REPORT No. B15-12409

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 29-May-15

DATE REPORTED: 02-Jun-15

SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: NCC Leirim

P.O. NUMBER: TZ14024

WATERWORKS NO.

			Client I.D.	MW10-24	MW10-25	MW15-39	MW15-41
			Sample I.D.	B15-12409-1	B15-12409-2	B15-12409-3	B15-12409-4
			Date Collected	29-May-15	29-May-15	29-May-15	29-May-15
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Ethylbenzene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5	< 0.5	< 0.5
Hexane	µg/L	1	EPA 8260	29-May-15/O	< 1	< 1	< 1
Methyl Ethyl Ketone	µg/L	1	EPA 8260	29-May-15/O	< 1	< 1	< 1
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	29-May-15/O	< 1	< 1	< 1
Methyl-t-butyl Ether	µg/L	1	EPA 8260	29-May-15/O	< 1	< 1	< 1
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2	< 0.2	< 0.2
Styrene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5	< 0.5	< 0.5
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	29-May-15/O	< 0.4	< 0.4	< 0.4
Tetrachloroethylene	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5	< 0.5	< 0.5
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	10.5
Trichlorofluoromethane	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Vinyl Chloride	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2	< 0.2	< 0.2
Xylene, m,p-	µg/L	0.4	EPA 8260	29-May-15/O	< 0.4	< 0.4	< 0.4
Xylene, m,p,o-	µg/L	0.4	EPA 8260	29-May-15/O	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1	< 0.1	< 0.1
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	29-May-15/O	128	124	124
Toluene-d8 (SS)	%		EPA 8260	29-May-15/O	106	106	104
Bromofluorobenzene,4(SS)	%		EPA 8260	29-May-15/O	93.0	91.0	89.0



Gord Murphy
Lab Supervisor

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G51204

REPORT No. B15-12409

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 29-May-15

JOB/PROJECT NO.: NCC Leitrim

DATE REPORTED: 02-Jun-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	Dup-1			
			Sample I.D.	B15-12409-5			
			Date Collected	29-May-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Acetone	µg/L	2	EPA 8260	29-May-15/O	< 2		
Benzene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5		
Bromodichloromethane	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Bromoform	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Bromomethane	µg/L	0.3	EPA 8260	29-May-15/O	< 0.3		
Carbon Tetrachloride	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2		
Chloroform	µg/L	0.3	EPA 8260	29-May-15/O	< 0.3		
Dibromochloromethane	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dibromoethane, 1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichlorobenzene, 1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichlorobenzene, 1,3-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichlorobenzene, 1,4-	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2		
Dichlorodifluoromethane	µg/L	1	EPA 8260	29-May-15/O	< 1		
Dichloroethane, 1,1-	µg/L	0.1	EPA 8260	29-May-15/O	0.3		
Dichloroethane, 1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	29-May-15/O	0.2		
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	29-May-15/O	< 0.3		
Dichloropropane, 1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichloropropene 1,3- cis+trans	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		



M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Gord Murphy
Lab Supervisor

C.O.C.: G51204

REPORT No. B15-12409

Report To:

AMEC Foster Wheeler Environment & Infrastructure

300 - 210 Colonnade Road South,
Nepean Ontario K2E 7L5 Canada

Attention: Susan Pfister

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 29-May-15

JOB/PROJECT NO.: NCC Leirim

DATE REPORTED: 02-Jun-15

P.O. NUMBER: TZ14024

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

			Client I.D.	Dup-1			
			Sample I.D.	B15-12409-5			
			Date Collected	29-May-15			
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed			
Ethylbenzene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5		
Hexane	µg/L	1	EPA 8260	29-May-15/O	< 1		
Methyl Ethyl Ketone	µg/L	1	EPA 8260	29-May-15/O	< 1		
Methyl Isobutyl Ketone	µg/L	1	EPA 8260	29-May-15/O	< 1		
Methyl-t-butyl Ether	µg/L	1	EPA 8260	29-May-15/O	< 1		
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2		
Styrene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5		
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	29-May-15/O	< 0.4		
Tetrachloroethylene	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2		
Toluene	µg/L	0.5	EPA 8260	29-May-15/O	< 0.5		
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Trichloroethylene	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Trichlorofluoromethane	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Vinyl Chloride	µg/L	0.2	EPA 8260	29-May-15/O	< 0.2		
Xylene, m,p-	µg/L	0.4	EPA 8260	29-May-15/O	< 0.4		
Xylene, m,p,o-	µg/L	0.4	EPA 8260	29-May-15/O	< 0.4		
Xylene, o-	µg/L	0.1	EPA 8260	29-May-15/O	< 0.1		
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	29-May-15/O	128		
Toluene-d8 (SS)	%		EPA 8260	29-May-15/O	107		
Bromofluorobenzene,4(SS)	%		EPA 8260	29-May-15/O	92.0		



Gord Murphy
Lab Supervisor

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill

Report To:

AMEC Foster Wheeler Environment & Infrastructure
300 - 210 Colonnade Road South
Nepean, Ontario K2E 7L5

Attention:

Date Submitted: Susan Pfister
2015/05/29
Samples Submitted By: Brian Clark

Samples Received By: Sabina Islam
Date Reported: 2015/06/02
Sample Matrix: Groundwater
Temperature Upon Receipt (°C):

Report No. B15-12409**Caduceon Environmental Laboratories**

2378 Holly Lane
Ottawa, Ontario K1V 7P1
Tel: (613) 526-0123
Fax: (613) 526-1244

Job/Project No.: NCC Leirim
COC No.: G51204

P.O. Number: TZ14024
Waterworks No.: -
Quote No.: -
Invoice To: Susan Pfister

Parameters	MDL	LCS Sample (%) Found	Limits	Result 1	QC Data			Lab Blank	Matrix Spike (%) Found	Rec.) Limits
					Duplicate Result 2	R.P.D.	Limits (%)			
Acetone	2	86	50-140	5	4	NC	50	< MDL	98	50-140
Benzene	0.5	99	50-140	< MDL	< MDL	NC	50	< MDL	95	50-140
Bromobenzene	0.1	96	50-140	< MDL	< MDL	NC	50	< MDL	90	50-140
Bromodichloromethane	0.1	116	50-140	< MDL	< MDL	NC	50	< MDL	112	50-140
Bromoform	0.1	83	50-140	1.2	1.2	0	50	< MDL	81	50-140
Bromomethane	0.3	87	50-140	< MDL	< MDL	NC	50	< MDL	74	50-140
Carbon Tetrachloride	0.2	117	50-140	< MDL	< MDL	NC	50	< MDL	109	50-140
Chloroethane	0.1	125	50-140	< MDL	< MDL	NC	50	< MDL	90	50-140
Chloroform	0.3	101	50-140	0.4	0.5	NC	50	< MDL	98	50-140
Chloromethane	0.3	123	50-140	< MDL	< MDL	NC	50	< MDL	100	50-140
Dibromochloromethane	0.1	107	50-140	< MDL	< MDL	NC	50	< MDL	113	50-140
Dibromoethane, 1,2-	0.1	92	50-140	< MDL	< MDL	NC	50	< MDL	98	50-140
Dibromomethane	1	102	50-140	< MDL	< MDL	NC	50	< MDL	105	50-140
Dichlorobenzene, 1,2-	0.1	111	50-140	< MDL	< MDL	NC	50	< MDL	109	50-140
Dichlorobenzene, 1,3-	0.1	116	50-140	< MDL	< MDL	NC	50	< MDL	112	50-140
Dichlorobenzene, 1,4-	0.2	118	50-140	< MDL	< MDL	NC	50	< MDL	114	50-140
Dichlorodifluoromethane	1	140	50-140	< MDL	< MDL	NC	50	< MDL	122	50-140
Dichloroethane, 1,1-	0.1	110	50-140	< MDL	< MDL	NC	50	< MDL	105	50-140
Dichloroethane, 1,2-	0.1	107	50-140	< MDL	< MDL	NC	50	< MDL	108	50-140
Dichloroethene, 1,1-	0.1	111	50-140	< MDL	< MDL	NC	50	< MDL	111	50-140
Dichloroethene, cis-1,2-	0.1	91	50-140	< MDL	< MDL	NC	50	< MDL	90	50-140
Dichloroethene, trans-1,2-	0.1	99	50-140	< MDL	< MDL	NC	50	< MDL	93	50-140
Dichloromethane	0.3	117	50-140	< MDL	< MDL	NC	50	< MDL	102	50-140
Dichloropropane, 1,2-	0.1	104	50-140	< MDL	< MDL	NC	50	< MDL	101	50-140
Dichloropropane, 1,3-	0.2	101	50-140	< MDL	< MDL	NC	50	< MDL	99	50-140
Dichloropropene, cis-1,3-	0.1	105	50-140	< MDL	< MDL	NC	50	< MDL	98	50-140
Dichloropropene, trans-1,3-	0.1	110	50-140	< MDL	< MDL	NC	50	< MDL	86	50-140
Dichloropropene, 1,1-	0.2	93	50-140	< MDL	< MDL	NC	50	< MDL	97	50-140
Ethylbenzene	0.5	109	50-140	< MDL	< MDL	NC	50	< MDL	111	50-140
Hexane	1	113	50-140	< MDL	< MDL	NC	50	< MDL	104	50-140
Methyl Butyl Ketone	10	118	50-140	< MDL	< MDL	NC	50	< MDL	115	50-140
Methyl Ethyl Ketone	1	123	50-140	2	2	NC	50	< MDL	110	50-140
Methyl Isobutyl Ketone	1	131	50-140	< MDL	< MDL	NC	50	< MDL	114	50-140
Methyl-t-butyl Ether	1	99	50-140	< MDL	< MDL	NC	50	< MDL	102	50-140
Monochlorobenzene	0.2	95	50-140	< MDL	< MDL	NC	50	< MDL	93	50-140
Styrene	0.5	120	50-140	< MDL	< MDL	NC	50	< MDL	129	50-140
Tetrachloroethane, 1,1,1,2-	0.1	107	50-140	< MDL	< MDL	NC	50	< MDL	103	50-140
Tetrachloroethane, 1,1,2,2-	0.4	97	50-140	< MDL	< MDL	NC	50	< MDL	103	50-140
Tetrachloroethylene	0.2	102	50-140	< MDL	< MDL	NC	50	< MDL	69	50-140
Toluene	0.5	107	50-140	< MDL	< MDL	NC	50	< MDL	106	50-140
Trichloroethane, 1,1,1-	0.1	115	50-140	< MDL	< MDL	NC	50	< MDL	106	50-140
Trichloroethane, 1,1,2-	0.1	99	50-140	< MDL	< MDL	NC	50	< MDL	101	50-140
Trichloroethylene	0.1	92	50-140	< MDL	< MDL	NC	50	< MDL	87	50-140
Trichlorofluoromethane	0.1	101	50-140	< MDL	< MDL	NC	50	< MDL	91	50-140
Vinyl Chloride	0.2	131	50-140	< MDL	< MDL	NC	50	< MDL	124	50-140
Xylene, m,p-	0.4	110	50-140	< MDL	< MDL	NC	50	< MDL	114	50-140
Xylene, o-	0.1	94	50-140	< MDL	< MDL	NC	50	< MDL	104	50-140

TESTING REQUIREMENTS

- ☒ O.Reg 153 Table 2 ☐ MISA Guidelines
☐ Surface Soil ☐ Sub Surface Soil (O.Reg 153) ☐ O.Reg 558 Leachate Analysis
☐ Yes ☐ No Record of Site Condition (O.Reg 153) Disposal Site:
☐ Provincial Water Quality Objectives ☐ Landfill Monitoring
☐ Sewer Use By-Law: ☐ Other:

REPORT NUMBER (Lab Use)

May 29.15
B15-12409

Indicate Laboratory Samples are submitted to: ☐ Kingston ☒ Ottawa ☐ Richmond Hill ☐ Windsor

Organization: Amecc
 Contact: Susan Pfeister
 Tel: 613-727-0658
 Fax: 613-727-9465
 Email: susan.pfeister@amecc.com

Address and Invoicing Address (if different)
300-210 Colonnade Rd. South
Ottawa, ON
K2E 7L5
 Quote No.:
 Project Name: NCC Leachate
 P.O. No.: T214024
 Additional Info:

ANALYSES REQUESTED (Print Test in Boxes)

VOC

TURNAROUND SERVICE
REQUESTED (see back page)

- ☐ Platinum 200% Surcharge**
☐ Gold 100% Surcharge
☐ Silver 50% Surcharge
☐ Bronze 25% Surcharge
☒ Standard 5-7 days
☒ Specific Date: June 8, 2015

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations? ☐ Yes ☒ No (If yes, submit all drinking water samples on a drinking water Chain of Custody)

* Sample Matrix Legend: WW=Waste Water SW=Surface Water GW=Groundwater LS=Liquid Sludge SS=Solid Sludge S=Soil Sed=Sediment PC=Paint Chips F=Filter Oil=Oil

Lab No.	Sample Identification	S.P.L.	Sample Matrix *	Date Collected (yy-mm-dd)	Time Collected	Indicate Test For Each Sample By Using A Check Mark In The Box Provided										Field pH	Field Temp.	# Bottles/ Sample	Field Filtered(Y/N)
	MW10-24		GW	15/5/29		X													
	MW10-25		GW			X													
	MW15-39		GW			X													
	MW15-41		GW			X													
	Dup-1		GW			X													

SAMPLE SUBMISSION INFORMATION

SHIPPING INFORMATION

REPORTING / INVOICING

SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)

Print: <u>Brian Clark</u>	Submitted by: <u>Brian Clark</u>	Client's Courier <input type="checkbox"/>	Invoice <input type="checkbox"/>	Report by Fax <input type="checkbox"/>	Received By (print): <u>G. CLARKIN</u> Signature: <u>[Signature]</u>
Sign: <u>[Signature]</u>	Date (yy-mm-dd)/Time: <u>15/5/29</u>	Caduceon's Courier <input type="checkbox"/>	# of Pieces <u>1</u>	Report by Email <input checked="" type="checkbox"/>	Date Received (yy-mm-dd): <u>15-05-29</u> Time Received: <u>8:45</u>
		Drop Off <input checked="" type="checkbox"/>		Invoice by Email <input type="checkbox"/>	Laboratory Prepared Bottles: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Caduceon (Pick-up) <input type="checkbox"/>		Invoice by Mail <input type="checkbox"/>	Sample Temperature °C: _____ Labeled by: _____

Laboratory Locations/Shipping Addresses

Kingston Lab - 285 Dalton Ave., Kingston, ON K7K 6Z1, Tel: (613) 544-2001 Fax: (613) 544-2770 Email: contactkingston@caduceonlabs.com
 Ottawa Lab - 2378 Holly Lane, Ottawa, ON K1V 7P1, Tel: (613) 526-0123 Fax: (613) 526-1244 Email: contactottawa@caduceonlabs.com
 Richmond Hill Lab - #14-110 West Beaver Creek Rd., ON L4B 1J9, Tel: (289) 475-5442 Fax: (866) 562-1963 Email: contactrichmondhill@caduceonlabs.com
 Windsor Lab - #5-3201 Marentette Ave., Windsor, ON N8X 4G3, Tel: (519) 966-9541 Fax: (519) 966-9567 Email: contactwindsor@caduceonlabs.com

10VOC

Your C.O.C. #: 541411-01-01

Attention: Susan Pfister

AMEC Foster Wheeler Environment & Infrastructure
Ottawa - Standing Offer
210 Colonnade Rd S
Suite 300
Ottawa, ON
K2E 7L5

Report Date: 2016/01/07
Report #: R3842881
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B5P0147

Received: 2015/12/04, 15:20

Sample Matrix: Water
Samples Received: 8

Analyses	Date		Date Analyzed	Laboratory Method	Reference
	Quantity	Extracted			
Methylnaphthalene Sum	2	N/A	2015/12/11	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	4	N/A	2015/12/11		EPA 8260C m
Chloride by Automated Colourimetry	2	N/A	2015/12/08	CAM SOP-00463	EPA 325.2 m
Chromium (VI) in Water	3	N/A	2015/12/09	CAM SOP-00436	EPA 7199 m
Glyphosate	1	2015/12/10	2015/12/10	CAM SOP-00305	HPLC in-house method
Glyphosate	1	2015/12/10	2015/12/11	CAM SOP-00305	HPLC in-house method
PAH Compounds in Water by GC/MS (SIM)	2	2015/12/08	2015/12/09	CAM SOP-00318	EPA 8270 m
pH	3	N/A	2015/12/07	CAM SOP-00413	SM 4500H+ B m
Dissolved ICPMS Metals (Low Level) (1)	3	N/A	2015/12/18		
Additional Subcontracted Analysis	2	N/A	2015/12/18		
Volatile Organic Compounds in Water	4	N/A	2015/12/10	CAM SOP000228	EPA 8260C m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Campo to Burnaby Subcontract

Your C.O.C. #: 541411-01-01

Attention: Susan Pfister

AMEC Foster Wheeler Environment & Infrastructure
Ottawa - Standing Offer
210 Colonnade Rd S
Suite 300
Ottawa, ON
K2E 7L5

Report Date: 2016/01/07
Report #: R3842881
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B5P0147

Received: 2015/12/04, 15:20

Encryption Key



Madison Bingley
08 Jan 2016 10:04:16 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Madison Bingley, Project Manager Assistant

Email: MBingley@maxxam.ca

Phone# (613)274-0573

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

Maxxam ID		BLX707		BLX708	BLX712		
Sampling Date		2015/12/04 10:00		2015/12/04 11:45	2015/12/04		
COC Number		541411-01-01		541411-01-01	541411-01-01		
	UNITS	MW15-60	RDL	MW15-61	DUP-2	RDL	QC Batch
Inorganics							
pH	pH	7.17	N/A	7.18	7.36	N/A	4302319
Dissolved Chloride (Cl)	mg/L	3.0	1.0		1.0	1.0	4302602
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable							

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		BLX707	BLX708	BLX712		
Sampling Date		2015/12/04 10:00	2015/12/04 11:45	2015/12/04		
COC Number		541411-01-01	541411-01-01	541411-01-01		
	UNITS	MW15-60	MW15-61	DUP-2	RDL	QC Batch
Metals						
Chromium (VI)	ug/L	<0.50	<0.50	<0.50	0.50	4301751
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		BLX707	BLX711		
Sampling Date		2015/12/04 10:00	2015/12/04		
COC Number		541411-01-01	541411-01-01		
	UNITS	MW15-60	DUP-1	RDL	QC Batch
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/L	<0.014	<0.014	0.014	4299777
Polyaromatic Hydrocarbons					
Biphenyl	ug/L	<0.010	<0.010	0.010	4304525
Acenaphthene	ug/L	<0.010	<0.010	0.010	4304525
Acenaphthylene	ug/L	<0.010	<0.010	0.010	4304525
Anthracene	ug/L	<0.010	<0.010	0.010	4304525
Benzo(a)anthracene	ug/L	<0.010	<0.010	0.010	4304525
Benzo(a)pyrene	ug/L	<0.010	<0.010	0.010	4304525
Benzo(b/j)fluoranthene	ug/L	<0.010	<0.010	0.010	4304525
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	0.010	4304525
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	0.010	4304525
Chrysene	ug/L	<0.010	<0.010	0.010	4304525
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	0.010	4304525
Fluoranthene	ug/L	<0.010	<0.010	0.010	4304525
Fluorene	ug/L	<0.010	<0.010	0.010	4304525
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	0.010	4304525
1-Methylnaphthalene	ug/L	<0.010	<0.010	0.010	4304525
2-Methylnaphthalene	ug/L	<0.010	<0.010	0.010	4304525
Naphthalene	ug/L	<0.010	<0.010	0.010	4304525
Phenanthrene	ug/L	<0.010	<0.010	0.010	4304525
Pyrene	ug/L	<0.010	<0.010	0.010	4304525
Surrogate Recovery (%)					
D10-Anthracene	%	93	94		4304525
D14-Terphenyl (FS)	%	90	91		4304525
D8-Acenaphthylene	%	92	93		4304525
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		BLX709		BLX710	BLX713	BLX714		
Sampling Date		2015/12/04 12:57		2015/12/04 13:28	2015/12/04	2015/12/04		
COC Number		541411-01-01		541411-01-01	541411-01-01	541411-01-01		
	UNITS	MW15-62	QC Batch	MW15-63	DUP-3	TRIP BLANK	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	4299554	<0.50	<0.50	<0.50	0.50	4300161
Volatile Organics								
Acetone (2-Propanone)	ug/L	<10	4297333	<10	<10	<10	10	4297333
Benzene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Bromodichloromethane	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
Bromoform	ug/L	<1.0	4297333	<1.0	<1.0	<1.0	1.0	4297333
Bromomethane	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
Carbon Tetrachloride	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Chlorobenzene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Chloroform	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Dibromochloromethane	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
1,2-Dichlorobenzene	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
1,3-Dichlorobenzene	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
1,4-Dichlorobenzene	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	4297333	<1.0	<1.0	<1.0	1.0	4297333
1,1-Dichloroethane	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
1,2-Dichloroethane	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
1,1-Dichloroethylene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
cis-1,2-Dichloroethylene	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
trans-1,2-Dichloroethylene	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
1,2-Dichloropropane	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
cis-1,3-Dichloropropene	ug/L	<0.30	4297333	<0.30	<0.30	<0.30	0.30	4297333
trans-1,3-Dichloropropene	ug/L	<0.40	4297333	<0.40	<0.40	<0.40	0.40	4297333
Ethylbenzene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Ethylene Dibromide	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Hexane	ug/L	<1.0	4297333	<1.0	<1.0	<1.0	1.0	4297333
Methylene Chloride(Dichloromethane)	ug/L	<2.0	4297333	<2.0	<2.0	<2.0	2.0	4297333
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	4297333	<10	<10	<10	10	4297333
Methyl Isobutyl Ketone	ug/L	<5.0	4297333	<5.0	<5.0	<5.0	5.0	4297333
Methyl t-butyl ether (MTBE)	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
Styrene	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
1,1,1,2-Tetrachloroethane	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
1,1,1,2,2-Tetrachloroethane	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
Tetrachloroethylene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Toluene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		BLX709		BLX710	BLX713	BLX714		
Sampling Date		2015/12/04 12:57		2015/12/04 13:28	2015/12/04	2015/12/04		
COC Number		541411-01-01		541411-01-01	541411-01-01	541411-01-01		
	UNITS	MW15-62	QC Batch	MW15-63	DUP-3	TRIP BLANK	RDL	QC Batch
1,1,1-Trichloroethane	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
1,1,2-Trichloroethane	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
Trichloroethylene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	4297333	<0.50	<0.50	<0.50	0.50	4297333
Vinyl Chloride	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
p+m-Xylene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
o-Xylene	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Total Xylenes	ug/L	<0.20	4297333	<0.20	<0.20	<0.20	0.20	4297333
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	99	4297333	99	99	99		4297333
D4-1,2-Dichloroethane	%	99	4297333	103	104	102		4297333
D8-Toluene	%	96	4297333	94	94	95		4297333
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

PESTICIDES & HERBICIDES BY HPLC (WATER)

Maxxam ID		BLX707	BLX708		
Sampling Date		2015/12/04 10:00	2015/12/04 11:45		
COC Number		541411-01-01	541411-01-01		
	UNITS	MW15-60	MW15-61	RDL	QC Batch
Pesticides & Herbicides					
Glyphosate	ug/L	<10	<10	10	4307854
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					

TEST SUMMARY

Maxxam ID: BLX707
Sample ID: MW15-60
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4299777	N/A	2015/12/11	Automated Statchk
Chloride by Automated Colourimetry	KONE	4302602	N/A	2015/12/08	Deonarine Ramnarine
Chromium (VI) in Water	IC	4301751	N/A	2015/12/09	Lang Le
Glyphosate	LC/FLU	4307854	2015/12/10	2015/12/10	Hanna Kloc
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4304525	2015/12/08	2015/12/09	Lingyun Feng
pH	AT	4302319	N/A	2015/12/07	Neil Dassanayake
Dissolved ICPMS Metals (Low Level)		4319731	N/A	2015/12/18	Madison Bingley
Additional Subcontracted Analysis		4318191	N/A	2015/12/18	Lims Auto Schedule Runner

Maxxam ID: BLX707 Dup
Sample ID: MW15-60
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	4302602	N/A	2015/12/08	Deonarine Ramnarine

Maxxam ID: BLX708
Sample ID: MW15-61
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	4301751	N/A	2015/12/09	Lang Le
Glyphosate	LC/FLU	4307854	2015/12/10	2015/12/11	Hanna Kloc
pH	AT	4302319	N/A	2015/12/07	Neil Dassanayake
Dissolved ICPMS Metals (Low Level)		4319731	N/A	2015/12/18	Madison Bingley
Additional Subcontracted Analysis		4318191	N/A	2015/12/18	Lims Auto Schedule Runner

Maxxam ID: BLX709
Sample ID: MW15-62
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4299554	N/A	2015/12/11	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4297333	N/A	2015/12/10	Xueming Jiang

Maxxam ID: BLX710
Sample ID: MW15-63
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4300161	N/A	2015/12/11	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4297333	N/A	2015/12/10	Xueming Jiang

TEST SUMMARY

Maxxam ID: BLX711
Sample ID: DUP-1
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	4299777	N/A	2015/12/11	Automated Statchk
PAH Compounds in Water by GC/MS (SIM)	GC/MS	4304525	2015/12/08	2015/12/09	Lingyun Feng

Maxxam ID: BLX712
Sample ID: DUP-2
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	4302602	N/A	2015/12/08	Deonarine Ramnarine
Chromium (VI) in Water	IC	4301751	N/A	2015/12/09	Lang Le
pH	AT	4302319	N/A	2015/12/07	Neil Dassanayake
Dissolved ICPMS Metals (Low Level)		4319731	N/A	2015/12/18	Madison Bingley

Maxxam ID: BLX712 Dup
Sample ID: DUP-2
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH	AT	4302319	N/A	2015/12/07	Neil Dassanayake

Maxxam ID: BLX713
Sample ID: DUP-3
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4300161	N/A	2015/12/11	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4297333	N/A	2015/12/10	Xueming Jiang

Maxxam ID: BLX714
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/04

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4300161	N/A	2015/12/11	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4297333	N/A	2015/12/10	Xueming Jiang

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.0°C
Package 2	4.7°C
Package 3	5.3°C

Custody seal was not present on the cooler.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4297333	4-Bromofluorobenzene	2015/12/10	103	70 - 130	104	70 - 130	101	%		
4297333	D4-1,2-Dichloroethane	2015/12/10	101	70 - 130	101	70 - 130	104	%		
4297333	D8-Toluene	2015/12/10	98	70 - 130	99	70 - 130	94	%		
4304525	D10-Anthracene	2015/12/09	88	50 - 130	92	50 - 130	95	%		
4304525	D14-Terphenyl (FS)	2015/12/09	91	50 - 130	91	50 - 130	91	%		
4304525	D8-Acenaphthylene	2015/12/09	89	50 - 130	92	50 - 130	94	%		
4297333	1,1,1,2-Tetrachloroethane	2015/12/11	94	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
4297333	1,1,1-Trichloroethane	2015/12/11	91	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4297333	1,1,2,2-Tetrachloroethane	2015/12/11	96	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
4297333	1,1,2-Trichloroethane	2015/12/11	90	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
4297333	1,1-Dichloroethane	2015/12/11	90	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
4297333	1,1-Dichloroethylene	2015/12/11	94	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4297333	1,2-Dichlorobenzene	2015/12/11	93	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
4297333	1,2-Dichloroethane	2015/12/11	94	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
4297333	1,2-Dichloropropane	2015/12/11	91	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
4297333	1,3-Dichlorobenzene	2015/12/11	92	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
4297333	1,4-Dichlorobenzene	2015/12/11	94	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
4297333	Acetone (2-Propanone)	2015/12/11	99	60 - 140	102	60 - 140	<10	ug/L	NC	30
4297333	Benzene	2015/12/11	92	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4297333	Bromodichloromethane	2015/12/11	93	70 - 130	100	70 - 130	<0.50	ug/L	NC	30
4297333	Bromoform	2015/12/11	96	70 - 130	104	70 - 130	<1.0	ug/L	NC	30
4297333	Bromomethane	2015/12/11	84	60 - 140	89	60 - 140	<0.50	ug/L	NC	30
4297333	Carbon Tetrachloride	2015/12/11	95	70 - 130	102	70 - 130	<0.20	ug/L	NC	30
4297333	Chlorobenzene	2015/12/11	94	70 - 130	101	70 - 130	<0.20	ug/L	6.6	30
4297333	Chloroform	2015/12/11	92	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4297333	cis-1,2-Dichloroethylene	2015/12/11	92	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
4297333	cis-1,3-Dichloropropene	2015/12/11	96	70 - 130	101	70 - 130	<0.30	ug/L	NC	30
4297333	Dibromochloromethane	2015/12/11	95	70 - 130	103	70 - 130	<0.50	ug/L	NC	30
4297333	Dichlorodifluoromethane (FREON 12)	2015/12/11	95	60 - 140	102	60 - 140	<1.0	ug/L	NC	30
4297333	Ethylbenzene	2015/12/11	95	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4297333	Ethylene Dibromide	2015/12/11	94	70 - 130	102	70 - 130	<0.20	ug/L	NC	30
4297333	Hexane	2015/12/11	98	70 - 130	104	70 - 130	<1.0	ug/L	NC	30

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4297333	Methyl Ethyl Ketone (2-Butanone)	2015/12/11	103	60 - 140	107	60 - 140	<10	ug/L	NC	30
4297333	Methyl Isobutyl Ketone	2015/12/11	102	70 - 130	107	70 - 130	<5.0	ug/L	NC	30
4297333	Methyl t-butyl ether (MTBE)	2015/12/11	92	70 - 130	99	70 - 130	<0.50	ug/L	NC	30
4297333	Methylene Chloride(Dichloromethane)	2015/12/11	94	70 - 130	101	70 - 130	<2.0	ug/L	NC	30
4297333	o-Xylene	2015/12/11	92	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4297333	p+m-Xylene	2015/12/11	93	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
4297333	Styrene	2015/12/11	94	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
4297333	Tetrachloroethylene	2015/12/11	92	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
4297333	Toluene	2015/12/11	90	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
4297333	Total Xylenes	2015/12/11					<0.20	ug/L	NC	30
4297333	trans-1,2-Dichloroethylene	2015/12/11	91	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
4297333	trans-1,3-Dichloropropene	2015/12/11	94	70 - 130	98	70 - 130	<0.40	ug/L	NC	30
4297333	Trichloroethylene	2015/12/11	92	70 - 130	99	70 - 130	<0.20	ug/L	NC	30
4297333	Trichlorofluoromethane (FREON 11)	2015/12/11	94	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
4297333	Vinyl Chloride	2015/12/11	92	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4301751	Chromium (VI)	2015/12/09	102	80 - 120	105	80 - 120	<0.50	ug/L	NC	20
4302319	pH	2015/12/07			101	98 - 103			0.34	N/A
4302602	Dissolved Chloride (Cl)	2015/12/08	111	80 - 120	101	80 - 120	<1.0	mg/L	NC	20
4304525	1-Methylnaphthalene	2015/12/09	75	50 - 130	82	50 - 130	<0.010	ug/L	NC	30
4304525	2-Methylnaphthalene	2015/12/09	72	50 - 130	77	50 - 130	<0.010	ug/L	NC	30
4304525	Acenaphthene	2015/12/09	81	50 - 130	85	50 - 130	<0.010	ug/L	NC	30
4304525	Acenaphthylene	2015/12/09	82	50 - 130	87	50 - 130	<0.010	ug/L	NC	30
4304525	Anthracene	2015/12/09	84	50 - 130	89	50 - 130	<0.010	ug/L	NC	30
4304525	Benzo(a)anthracene	2015/12/09	97	50 - 130	94	50 - 130	<0.010	ug/L	NC	30
4304525	Benzo(a)pyrene	2015/12/09	92	50 - 130	92	50 - 130	<0.010	ug/L	NC	30
4304525	Benzo(b,j)fluoranthene	2015/12/09	96	50 - 130	104	50 - 130	<0.010	ug/L	NC	30
4304525	Benzo(g,h,i)perylene	2015/12/09	85	50 - 130	78	50 - 130	<0.010	ug/L	NC	30
4304525	Benzo(k)fluoranthene	2015/12/09	94	50 - 130	92	50 - 130	<0.010	ug/L	NC	30
4304525	Biphenyl	2015/12/09	76	50 - 130	82	50 - 130	<0.010	ug/L		
4304525	Chrysene	2015/12/09	96	50 - 130	97	50 - 130	<0.010	ug/L	NC	30
4304525	Dibenz(a,h)anthracene	2015/12/09	78	50 - 130	68	50 - 130	<0.010	ug/L	NC	30
4304525	Fluoranthene	2015/12/09	94	50 - 130	96	50 - 130	<0.010	ug/L	NC	30

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4304525	Fluorene	2015/12/09	84	50 - 130	87	50 - 130	<0.010	ug/L	NC	30
4304525	Indeno(1,2,3-cd)pyrene	2015/12/09	92	50 - 130	84	50 - 130	<0.010	ug/L	NC	30
4304525	Naphthalene	2015/12/09	70	50 - 130	77	50 - 130	<0.010	ug/L	NC	30
4304525	Phenanthrene	2015/12/09	87	50 - 130	90	50 - 130	<0.010	ug/L	NC	30
4304525	Pyrene	2015/12/09	90	50 - 130	93	50 - 130	<0.010	ug/L	NC	30
4307854	Glyphosate	2015/12/11	57	50 - 130	106	50 - 130	<10	ug/L	NC	40

N/A = Not Applicable

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

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

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

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

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

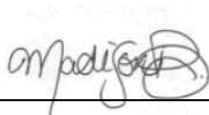
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Cristina Carriere, Scientific Services



Madison Bingley, Project Manager Assistant

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

CHAIN OF CUSTODY RECORD

Page 1 of 1

Invoice Information		Report Information (if differs from invoice)		Project Information (where applicable)		Turnaround Time (TAT) Required			
Company Name: AMEC		Company Name:		Quotation #: 857903		<input checked="" type="checkbox"/> Regular TAT (5-7 days) Most analyses			
Contact Name: Susan Pfister		Contact Name:		P.O. #/ AFE#:		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS			
Address: 210 Colonnade Rd. S. Ottawa		Address:		Project #:		Rush TAT (Surcharges will be applied)			
Phone: Fax:		Phone: Fax:		Site Location:		<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3-4 Days			
Email: susan.pfister@amecfw.com		Email:		Site #:		Date Required:			
Sampled By:		Sampled By:		Sampled By:		Rush Confirmation #:			
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY									
Regulation 153 <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Med/ Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/ Other <input type="checkbox"/> Table _____ FOR RSC (PLEASE CIRCLE) Y / N		Other Regulations <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> PWQO <input type="checkbox"/> Region _____ <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> REG 558 (MIN. 3 DAY TAT REQUIRED)		Analysis Requested REFERENCE TO BACK OF COC PAH Compounds in water by GC/MS (SIM) Organochlorinated Pesticides Pesticides - Large Volume Injection Pesticides by LC/MS/MS (Positive Method) Phenoxy Acid Herbicides in Water Dissolved ICP/MS Metals (Low Level) Hardness (calculated as CaCO3) Cr (VI) in Water Chloride by Automated Colourimetry pH VOCs in water (FIGG) HOLD - DO NOT ANALYZE				LABORATORY USE ONLY CUSTODY SEAL Y / N Present Intact 3,6,3 5,4,5 6,5,5 COOLING MEDIA PRESENT: <input checked="" type="checkbox"/> Y / N BOTTLES IF COMMENTS	
Include Criteria on Certificate of Analysis: Y / N									
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM									
SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) (Metal/He/GVI)	QUOTE 857903-SITE 1	QUOTE 857903-SITE 2		
1 MW15-60	04/12/2015	10:00	GW	20	✓				
2 MW15-61	04/12/2015	11:45	GW	14	✓				
3 MW15-62	04/12/2015	12:57	GW	3					
4 MW15-63	04/12/2015	13:28	GW	3					
5 DUP-1	04/12/2015		GW	2			X		
6 DUP-2	04/12/2015		GW	2					
7 DUP-3	04/12/2015		GW	3					
8 TRIP BLANK	04/12/2015		W	3					
9									
10									
RELINQUISHED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)		DATE: (YYYY/MM/DD)	TIME: (HH:MM)		
BRYAN JELLY / Bryan		2015/12/04	3:20pm	H.A. Fetermeh		2015/12/04	15:20		
MAXXAM JOB #							RECEIVED IN OTTAWA		

Your Project #: MB5P0147
Your C.O.C. #: 08414237

Attention: SUB CONTRACTOR

MAXXAM ANALYTICS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2016/01/07
Report #: R2111677
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B5A8374

Received: 2015/12/05, 12:15

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO ₃)	3	N/A	2015/12/09	BBY7SOP-00002	EPA 6020a R1 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2015/12/09	BBY7SOP-00002	EPA 6020A R1 m
Elements by ICPMS Low Level (dissolved)	3	N/A	2015/12/08	BBY7SOP-00002	EPA 6020A R1 m
Filter and HNO ₃ Preserve for Metals	2	N/A	2015/12/08	BBY7 WI-00004	BCMOE Reqs 08/14
Filter and HNO ₃ Preserve for Metals	1	N/A	2015/12/09	BBY7 WI-00004	BCMOE Reqs 08/14

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key



Shanaz Akbar
Project Manager
07 Jan 2016 17:20:48 -08:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Shanaz Akbar, Project Manager

Email: SAKbar@maxxam.ca

Phone# (604)639-2618

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B5A8374
Report Date: 2016/01/07

MAXXAM ANALYTICS
Client Project #: MB5P0147

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		NU1128	NU1129	NU1130	
Sampling Date		2015/12/04 10:00	2015/12/04 11:45	2015/12/04	
COC Number		08414237	08414237	08414237	
	UNITS	MW15-60 (BLX707)	MW15-61 (BLX708)	DUP-2 (BLX712)	QC Batch
Calculated Parameters					
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	ONSITE

Maxxam Job #: B5A8374
Report Date: 2016/01/07

MAXXAM ANALYTICS
Client Project #: MB5P0147

LOW LEVEL DISSOLVED METALS IN WATER (WATER)

Maxxam ID		NU1128	NU1129	NU1130		
Sampling Date		2015/12/04 10:00	2015/12/04 11:45	2015/12/04		
COC Number		08414237	08414237	08414237		
	UNITS	MW15-60 (BLX707)	MW15-61 (BLX708)	DUP-2 (BLX712)	RDL	QC Batch
Misc. Inorganics						
Dissolved Hardness (CaCO ₃)	mg/L	146	215	189	0.50	8136075
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	46.4	31.4	27.6	0.50	8134827
Dissolved Antimony (Sb)	ug/L	<0.020	0.031	0.044	0.020	8134827
Dissolved Arsenic (As)	ug/L	0.171	0.926	0.708	0.020	8134827
Dissolved Barium (Ba)	ug/L	17.9	23.8	20.9	0.020	8134827
Dissolved Beryllium (Be)	ug/L	0.014	<0.010	<0.010	0.010	8134827
Dissolved Bismuth (Bi)	ug/L	0.0050	0.0060	<0.0050	0.0050	8134827
Dissolved Boron (B)	ug/L	20	15	14	10	8134827
Dissolved Cadmium (Cd)	ug/L	<0.0050	0.0080	<0.0050	0.0050	8134827
Dissolved Chromium (Cr)	ug/L	0.55	<0.10	<0.10	0.10	8134827
Dissolved Cobalt (Co)	ug/L	0.108	0.922	0.829	0.0050	8134827
Dissolved Copper (Cu)	ug/L	0.207	0.510	0.387	0.050	8134827
Dissolved Iron (Fe)	ug/L	1750	1500	1250	1.0	8134827
Dissolved Lead (Pb)	ug/L	0.0220	0.0200	<0.0050	0.0050	8134827
Dissolved Lithium (Li)	ug/L	<0.50	<0.50	1.04	0.50	8134827
Dissolved Manganese (Mn)	ug/L	148	2170	1760	0.050	8134827
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	0.010	8134827
Dissolved Molybdenum (Mo)	ug/L	0.773	2.77	2.63	0.050	8134827
Dissolved Nickel (Ni)	ug/L	0.367	1.43	1.26	0.020	8134827
Dissolved Selenium (Se)	ug/L	<0.040	0.087	0.073	0.040	8134827
Dissolved Silicon (Si)	ug/L	6500	3760	3410	50	8134827
Dissolved Silver (Ag)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	8134827
Dissolved Strontium (Sr)	ug/L	110	225	202	0.050	8134827
Dissolved Thallium (Tl)	ug/L	0.0040	0.0040	0.0020	0.0020	8134827
Dissolved Tin (Sn)	ug/L	<0.20	<0.20	<0.20	0.20	8134827
Dissolved Titanium (Ti)	ug/L	1.02	<0.50	<0.50	0.50	8134827
Dissolved Uranium (U)	ug/L	0.0370	0.337	0.325	0.0020	8134827
Dissolved Vanadium (V)	ug/L	<0.20	<0.20	<0.20	0.20	8134827
Dissolved Zinc (Zn)	ug/L	4.26	3.79	2.67	0.10	8134827
Dissolved Zirconium (Zr)	ug/L	0.18	0.10	<0.10	0.10	8134827
Dissolved Calcium (Ca)	mg/L	42.2	68.9	60.5	0.050	8136078
Dissolved Magnesium (Mg)	mg/L	9.82	10.5	9.16	0.050	8136078
Dissolved Potassium (K)	mg/L	0.885	1.47	1.28	0.050	8136078
Dissolved Sodium (Na)	mg/L	4.87	4.31	3.88	0.050	8136078
Dissolved Sulphur (S)	mg/L	10.7	3.7	3.3	3.0	8136078
RDL = Reportable Detection Limit						

Maxxam Job #: B5A8374
Report Date: 2016/01/07

MAXXAM ANALYTICS
Client Project #: MB5P0147

TEST SUMMARY

Maxxam ID: NU1128
Sample ID: MW15-60 (BLX707)
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hardness (calculated as CaCO ₃)	CALC	8136075	N/A	2015/12/09	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP/CRCM	8136078	N/A	2015/12/09	Automated Statchk
Elements by ICPMS Low Level (dissolved)	ICP/CRCM	8134827	N/A	2015/12/08	Andrew An
Filter and HNO ₃ Preserve for Metals	ICP	ONSITE	N/A	2015/12/07	Rochelle Pacheco

Maxxam ID: NU1129
Sample ID: MW15-61 (BLX708)
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hardness (calculated as CaCO ₃)	CALC	8136075	N/A	2015/12/09	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP/CRCM	8136078	N/A	2015/12/09	Automated Statchk
Elements by ICPMS Low Level (dissolved)	ICP/CRCM	8134827	N/A	2015/12/08	Andrew An
Filter and HNO ₃ Preserve for Metals	ICP	ONSITE	N/A	2015/12/07	Rochelle Pacheco

Maxxam ID: NU1130
Sample ID: DUP-2 (BLX712)
Matrix: Water

Collected: 2015/12/04
Shipped:
Received: 2015/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hardness (calculated as CaCO ₃)	CALC	8136075	N/A	2015/12/09	Automated Statchk
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	ICP/CRCM	8136078	N/A	2015/12/09	Automated Statchk
Elements by ICPMS Low Level (dissolved)	ICP/CRCM	8134827	N/A	2015/12/08	Andrew An
Filter and HNO ₃ Preserve for Metals	ICP	ONSITE	N/A	2015/12/07	Rochelle Pacheco

Maxxam Job #: B5A8374
Report Date: 2016/01/07

MAXXAM ANALYTICS
Client Project #: MB5P0147

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.7°C
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[Revision V2R 2016/01/07 SAK]

Mercury reported on this job as per the client's request

Results relate only to the items tested.

Maxxam Job #: B5A8374
Report Date: 2016/01/07

QUALITY ASSURANCE REPORT

MAXXAM ANALYTICS
Client Project #: MB5P0147

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8134827	Dissolved Aluminum (Al)	2015/12/08	118	80 - 120	97	80 - 120	<0.50	ug/L	0.014	20
8134827	Dissolved Antimony (Sb)	2015/12/08	103	80 - 120	101	80 - 120	<0.020	ug/L	NC	20
8134827	Dissolved Arsenic (As)	2015/12/08	102	80 - 120	98	80 - 120	<0.020	ug/L	2.7	20
8134827	Dissolved Barium (Ba)	2015/12/08	105	80 - 120	101	80 - 120	<0.020	ug/L	0.89	20
8134827	Dissolved Beryllium (Be)	2015/12/08	96	80 - 120	91	80 - 120	<0.010	ug/L	NC	20
8134827	Dissolved Bismuth (Bi)	2015/12/08	107	80 - 120	97	80 - 120	<0.0050	ug/L	NC	20
8134827	Dissolved Boron (B)	2015/12/08	104	80 - 120	97	80 - 120	<10	ug/L	NC	20
8134827	Dissolved Cadmium (Cd)	2015/12/08	99	80 - 120	99	80 - 120	<0.0050	ug/L	NC	20
8134827	Dissolved Chromium (Cr)	2015/12/08	102	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
8134827	Dissolved Cobalt (Co)	2015/12/08	102	80 - 120	98	80 - 120	<0.0050	ug/L	NC	20
8134827	Dissolved Copper (Cu)	2015/12/08	95	80 - 120	94	80 - 120	<0.050	ug/L	0.56 (1)	20
8134827	Dissolved Iron (Fe)	2015/12/08	113	80 - 120	112	80 - 120	<1.0	ug/L	2.3	20
8134827	Dissolved Lead (Pb)	2015/12/08	112	80 - 120	101	80 - 120	<0.0050	ug/L	1.2	20
8134827	Dissolved Lithium (Li)	2015/12/08	99	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
8134827	Dissolved Manganese (Mn)	2015/12/08	99	80 - 120	95	80 - 120	<0.050	ug/L	1.9	20
8134827	Dissolved Mercury (Hg)	2015/12/08	109	80 - 120	100	80 - 120	<0.010	ug/L		
8134827	Dissolved Molybdenum (Mo)	2015/12/08	102	80 - 120	95	80 - 120	<0.050	ug/L	NC	20
8134827	Dissolved Nickel (Ni)	2015/12/08	97	80 - 120	94	80 - 120	<0.020	ug/L	NC	20
8134827	Dissolved Selenium (Se)	2015/12/08	95	80 - 120	91	80 - 120	<0.040	ug/L	NC	20
8134827	Dissolved Silicon (Si)	2015/12/08					<50	ug/L	2.3	20
8134827	Dissolved Silver (Ag)	2015/12/08	105	80 - 120	84	80 - 120	<0.0050	ug/L	NC	20
8134827	Dissolved Strontium (Sr)	2015/12/08	NC	80 - 120	99	80 - 120	<0.050	ug/L	2.6	20
8134827	Dissolved Thallium (Tl)	2015/12/08	103	80 - 120	100	80 - 120	<0.0020	ug/L	NC	20
8134827	Dissolved Tin (Sn)	2015/12/08	103	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
8134827	Dissolved Titanium (Ti)	2015/12/08	95	80 - 120	93	80 - 120	<0.50	ug/L	NC	20
8134827	Dissolved Uranium (U)	2015/12/08	115	80 - 120	103	80 - 120	<0.0020	ug/L	NC	20
8134827	Dissolved Vanadium (V)	2015/12/08	120	80 - 120	106	80 - 120	<0.20	ug/L	NC	20
8134827	Dissolved Zinc (Zn)	2015/12/08	NC	80 - 120	93	80 - 120	<0.10	ug/L	0.36	20

Maxxam Job #: B5A8374
Report Date: 2016/01/07

QUALITY ASSURANCE REPORT(CONT'D)

MAXXAM ANALYTICS
Client Project #: MB5P0147

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8134827	Dissolved Zirconium (Zr)	2015/12/08					<0.10	ug/L	NC	20

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Dissolved greater than total. Reanalysis yields similar results.

Maxxam Job #: B5A8374
Report Date: 2016/01/07

MAXXAM ANALYTICS
Client Project #: MB5P0147

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reinert, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Your Project #: B5P0147
Your C.O.C. #: na

Attention:Madison Bingley

MAXXAM ANALYTICS INC.
MISSISSAUGA CAMPO
6740 Campobello Rd
MISSISSAUGA, ON
Canada L5N 2L8

Report Date: 2016/01/07
Report #: R2093497
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B576428

Received: 2015/12/05, 08:50

Sample Matrix: WATER
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Primary Reference
Organochlorinated Pesticides*	2	2015/12/08	2015/12/11	STL SOP-00254	EPA 8081B R2 m
Pesticides- Large Volume Injection (LVI)***	2	2015/12/07	2015/12/08	STL SOP-00242	EPA 8270D R4 m
Pesticides-Positive Method***	2	2015/12/07	2015/12/10	STL SOP-00241	EPA 8270D R4 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

* Maxxam is accredited as per the MDDELCC program.

*** This analysis is not subject to MDDELCC accreditation.

Encryption Key



Lauriane Bernard
Project Manager
07 Jan 2016 12:59:52 -05:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Lauriane Bernard, Project Manager
Email: LBernard@maxxam.ca
Phone# (514)448-9001

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

PESTICIDES (WATER)

Maxxam ID		BU3052	BU3053	BU3054		
Sampling Date		2015/12/04 10:00	2015/12/04 10:00	2015/12/04 10:00		
COC Number		na	na	na		
	Units	BLX707-05R/MW15-60	BLX707-06R/MW15-60	BLX707-07R/MW15-60	RDL	QC Batch
OC PESTICIDES						
a-Chlordane	ug/L	<0.003			0.003	1547917
Aldrin + Dieldrin	ug/L	<0.003			0.003	1547917
Chlordane (total)	ug/L	<0.003			0.003	1547917
Chlorothalonil	ug/L	<0.003			0.003	1547917
d-BHC	ug/L	<0.003			0.003	1547917
DDT+ Metabolites	ug/L	<0.001			0.001	1547917
Endosulfan I	ug/L	<0.003			0.003	1547917
Endosulfan II	ug/L	<0.003			0.003	1547917
Endosulfan Total	ug/L	<0.003			0.003	1547917
Endrin aldehyde	ug/L	<0.003			0.003	1547917
Endrin Ketone	ug/L	<0.003			0.003	1547917
g-Chlordane	ug/L	<0.003			0.003	1547917
Hexachlorobenzene	ug/L	<0.003			0.003	1547917
Hexachlorobutadiene	ug/L	<0.004			0.004	1547917
Hexachlorocyclopentadiene	ug/L	<0.01			0.01	1547917
Hexachloroethane	ug/L	<0.007 (1)			0.007	1547917
o,p'-DDD	ug/L	<0.001			0.001	1547917
o,p'-DDD+p,p'-DDD	ug/L	<0.001			0.001	1547917
o,p'-DDE	ug/L	<0.001			0.001	1547917
o,p'-DDE+p,p'-DDE	ug/L	<0.001			0.001	1547917
o,p'-DDT	ug/L	<0.001			0.001	1547917
o,p'-DDT+p,p'-DDT	ug/L	<0.001			0.001	1547917
Octachlorostyrene	ug/L	<0.003			0.003	1547917
Oxychlordane	ug/L	<0.003			0.003	1547917
a-BHC	ug/L	<0.003			0.003	1547917
b-BHC	ug/L	<0.003			0.003	1547917
Lindane	ug/L	<0.003			0.003	1547917
Aldrin	ug/L	<0.003			0.003	1547917
Endrin	ug/L	<0.005			0.005	1547917
Dieldrin	ug/L	<0.003			0.003	1547917
Heptachlor	ug/L	<0.003			0.003	1547917
Heptachlor epoxide	ug/L	<0.003			0.003	1547917
p,p'-DDD	ug/L	<0.001			0.001	1547917
p,p'-DDE	ug/L	<0.001			0.001	1547917
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
(1) Detection limit raised due to matrix interference.						

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

PESTICIDES (WATER)

Maxxam ID		BU3052	BU3053	BU3054		
Sampling Date		2015/12/04 10:00	2015/12/04 10:00	2015/12/04 10:00		
COC Number		na	na	na		
	Units	BLX707-05R/MW15-60	BLX707-06R/MW15-60	BLX707-07R/MW15-60	RDL	QC Batch
p,p'-DDT	ug/L	<0.001			0.001	1547917
Endosulfan sulfate	ug/L	<0.003			0.003	1547917
Methoxychlor	ug/L	<0.003			0.003	1547917
Mirex	ug/L	<0.003			0.003	1547917
PEST						
Aldicarb	ug/L			<0.1	0.1	1547103
Atrazine	ug/L			<0.1	0.1	1547103
Bendiocarb	ug/L			<0.1	0.1	1547103
Bromacil	ug/L			<0.1	0.1	1547103
Carbaryl	ug/L			<0.1	0.1	1547103
Carbofuran	ug/L			<0.1	0.1	1547103
Cyanazine (Bladex)	ug/L			<0.1	0.1	1547103
Desethyl-Atrazine	ug/L			<0.1	0.1	1547103
Desisopropylatrazine	ug/L			<0.1	0.1	1547103
Imazapyr	ug/L			<0.1	0.1	1547103
Imidacloprid	ug/L			<0.1	0.1	1547103
IPBC	ug/L			<0.1	0.1	1547103
Linuron	ug/L			<0.07	0.07	1547103
Methyl parathion	ug/L			<0.1	0.1	1547103
Metolachlor (Dual)	ug/L			<0.1	0.1	1547103
Picloram	ug/L			<0.2	0.2	1547103
Simazine	ug/L			<0.1	0.1	1547103
Tebuthiuron	ug/L			<0.1	0.1	1547103
Azinphos-methyl	ug/L		<0.001		0.001	1547161
Captan	ug/L		<0.003		0.003	1547161
Chlorpyrifos	ug/L		<0.0008		0.0008	1547161
Diazinon	ug/L		<0.002		0.002	1547161
Deltamethrin	ug/L		0.0031		0.0004	1547161
Diclofop-methyl	ug/L		<0.0007		0.0007	1547161
Dimethoate	ug/L		<0.003		0.003	1547161
Malathion	ug/L		<0.002		0.002	1547161
Methoprene	ug/L		<0.003		0.003	1547161
Metribuzin (Sencor)	ug/L		<0.0004		0.0004	1547161
Parathion	ug/L		<0.0004		0.0004	1547161
Permethrin (Cis/Trans)	ug/L		0.0042		0.0005	1547161
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

PESTICIDES (WATER)

Maxxam ID		BU3052	BU3053	BU3054		
Sampling Date		2015/12/04 10:00	2015/12/04 10:00	2015/12/04 10:00		
COC Number		na	na	na		
	Units	BLX707-05R/MW15-60	BLX707-06R/MW15-60	BLX707-07R/MW15-60	RDL	QC Batch
Phorate (Thimet)	ug/L		<0.004 (1)		0.004	1547161
Terbufos	ug/L		<0.0002		0.0002	1547161
Triallate	ug/L		<0.0003		0.0003	1547161
Trifluralin	ug/L		<0.0003		0.0003	1547161
Surrogate Recovery (%)						
2-Chloronaphthalene	%	83				1547917
Decachlorobiphenyl	%	119				1547917
D10-Diazinon	%		90			1547161
D10-Phorate	%		65			1547161
D6-Metolaclo	%		99			1547161
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
(1) Detection limit raised due to matrix interference.						

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

PESTICIDES (WATER)

Maxxam ID		BU3055		BU3056	BU3057		
Sampling Date		2015/12/04 11:45		2015/12/04 11:45	2015/12/04 11:45		
COC Number		na		na	na		
	Units	BLX708-05R/MW15-61	RDL	BLX708-06R/MW15-61	BLX708-07R/MW15-61	RDL	QC Batch

OC PESTICIDES							
a-Chlordane	ug/L	<0.003	0.003			0.003	1547917
Aldrin + Dieldrin	ug/L	<0.003	0.003			0.003	1547917
Chlordane (total)	ug/L	<0.003	0.003			0.003	1547917
Chlorothalonil	ug/L	<0.003	0.003			0.003	1547917
d-BHC	ug/L	<0.003	0.003			0.003	1547917
DDT+ Metabolites	ug/L	<0.001	0.001			0.001	1547917
Endosulfan I	ug/L	<0.003	0.003			0.003	1547917
Endosulfan II	ug/L	<0.003	0.003			0.003	1547917
Endosulfan Total	ug/L	<0.003	0.003			0.003	1547917
Endrin aldehyde	ug/L	<0.003	0.003			0.003	1547917
Endrin Ketone	ug/L	<0.003	0.003			0.003	1547917
g-Chlordane	ug/L	<0.003	0.003			0.003	1547917
Hexachlorobenzene	ug/L	<0.003	0.003			0.003	1547917
Hexachlorobutadiene	ug/L	<0.004	0.004			0.004	1547917
Hexachlorocyclopentadiene	ug/L	<0.01	0.01			0.01	1547917
Hexachloroethane	ug/L	<0.007 (1)	0.007			0.007	1547917
o,p'-DDD	ug/L	<0.001	0.001			0.001	1547917
o,p'-DDD+p,p'-DDD	ug/L	<0.001	0.001			0.001	1547917
o,p'-DDE	ug/L	<0.001	0.001			0.001	1547917
o,p'-DDE+p,p'-DDE	ug/L	<0.001	0.001			0.001	1547917
o,p'-DDT	ug/L	<0.001	0.001			0.001	1547917
o,p'-DDT+p,p'-DDT	ug/L	<0.001	0.001			0.001	1547917
Octachlorostyrene	ug/L	<0.003	0.003			0.003	1547917
Oxychlordane	ug/L	<0.003	0.003			0.003	1547917
a-BHC	ug/L	<0.003	0.003			0.003	1547917
b-BHC	ug/L	<0.003	0.003			0.003	1547917
Lindane	ug/L	<0.003	0.003			0.003	1547917
Aldrin	ug/L	<0.003	0.003			0.003	1547917
Endrin	ug/L	<0.005	0.005			0.005	1547917
Dieldrin	ug/L	<0.003	0.003			0.003	1547917
Heptachlor	ug/L	<0.003	0.003			0.003	1547917
Heptachlor epoxide	ug/L	<0.003	0.003			0.003	1547917
p,p'-DDD	ug/L	<0.001	0.001			0.001	1547917
p,p'-DDE	ug/L	<0.001	0.001			0.001	1547917

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) Detection limit raised due to matrix interference.

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

PESTICIDES (WATER)

Maxxam ID		BU3055		BU3056	BU3057		
Sampling Date		2015/12/04 11:45		2015/12/04 11:45	2015/12/04 11:45		
COC Number		na		na	na		
	Units	BLX708-05R/MW15-61	RDL	BLX708-06R/MW15-61	BLX708-07R/MW15-61	RDL	QC Batch
p,p'-DDT	ug/L	<0.001	0.001			0.001	1547917
Endosulfan sulfate	ug/L	<0.003	0.003			0.003	1547917
Methoxychlor	ug/L	<0.003	0.003			0.003	1547917
Mirex	ug/L	<0.003	0.003			0.003	1547917
PEST							
Aldicarb	ug/L		0.1		<0.1	0.1	1547103
Atrazine	ug/L		0.1		<0.1	0.1	1547103
Bendiocarb	ug/L		0.1		<0.1	0.1	1547103
Bromacil	ug/L		0.1		<0.1	0.1	1547103
Carbaryl	ug/L		0.1		<0.1	0.1	1547103
Carbofuran	ug/L		0.1		<0.1	0.1	1547103
Cyanazine (Bladex)	ug/L		0.1		<0.1	0.1	1547103
Desethyl-Atrazine	ug/L		0.1		<0.1	0.1	1547103
Desisopropylatrazine	ug/L		0.1		<0.1	0.1	1547103
Imazapyr	ug/L		0.1		<0.1	0.1	1547103
Imidacloprid	ug/L		0.1		<0.1	0.1	1547103
IPBC	ug/L		0.1		<0.1	0.1	1547103
Linuron	ug/L		0.07		<0.07	0.07	1547103
Methyl parathion	ug/L		0.1		<0.1	0.1	1547103
Metolachlor (Dual)	ug/L		0.1		<0.1	0.1	1547103
Picloram	ug/L		0.2		<0.2	0.2	1547103
Simazine	ug/L		0.1		<0.1	0.1	1547103
Tebuthiuron	ug/L		0.1		<0.1	0.1	1547103
Azinphos-methyl	ug/L		0.001	<0.001		0.001	1547161
Captan	ug/L		0.003	<0.003		0.003	1547161
Chlorpyrifos	ug/L		0.0008	<0.0008		0.0008	1547161
Diazinon	ug/L		0.002	<0.002		0.002	1547161
Deltamethrin	ug/L		0.0004	<0.0004		0.0004	1547161
Diclofop-methyl	ug/L		0.0007	<0.0007		0.0007	1547161
Dimethoate	ug/L		0.003	<0.003		0.003	1547161
Malathion	ug/L		0.002	<0.002		0.002	1547161
Methoprene	ug/L		0.003	<0.003		0.003	1547161
Metribuzin (Sencor)	ug/L		0.0004	<0.0004		0.0004	1547161
Parathion	ug/L		0.0004	<0.0004		0.0004	1547161
Permethrin (Cis/Trans)	ug/L		0.0005	<0.0005		0.0005	1547161
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

PESTICIDES (WATER)

Maxxam ID		BU3055		BU3056	BU3057		
Sampling Date		2015/12/04 11:45		2015/12/04 11:45	2015/12/04 11:45		
COC Number		na		na	na		
	Units	BLX708-05R/MW15-61	RDL	BLX708-06R/MW15-61	BLX708-07R/MW15-61	RDL	QC Batch
Phorate (Thimet)	ug/L		0.004	<0.007 (1)		0.007	1547161
Terbufos	ug/L		0.0002	<0.0002		0.0002	1547161
Triallate	ug/L		0.0003	<0.0003		0.0003	1547161
Trifluralin	ug/L		0.0003	<0.0003		0.0003	1547161
Surrogate Recovery (%)							
2-Chloronaphthalene	%	82					1547917
Decachlorobiphenyl	%	113					1547917
D10-Diazinon	%			99			1547161
D10-Phorate	%			77			1547161
D6-Metolaclo	%			100			1547161
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
(1) Detection limit raised due to matrix interference.							

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

GENERAL COMMENTS

Condition of sample(s) upon receipt: GOOD

As per client request received by e-mail on January 7th, 2016, the list of parameters for OC PESTICIDES has been modified: add Total Endosulfan, DDT+Metabolites, Aldrin+Dieldrin, Total Chlordane, o,p-DDD+p,p-DDD, o,p-DDE+p,p-DDE, o,p-DDT+p,p-DDT.
(LBD 07-01-2016)

PESTICIDES (WATER)

Please note that the results have not been corrected for QC recoveries nor for the method blank results.

Pesticides Positive Method(Pesticides by LCMSMS): Due to the presence of sediments, sample BU3054 and BU3057 were decanted before analysis.

Results relate only to the items tested.

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

QUALITY ASSURANCE REPORT

QA/QC			Date		Value	Recovery	Units	QC Limits
Batch	Init	QC Type	Parameter	Analyzed				
1547103	AR6	Spiked Blank	Aldicarb	2015/12/10		158 (1)	%	50 - 130
			Atrazine	2015/12/10		126	%	50 - 130
			Bendiocarb	2015/12/10		129	%	50 - 130
			Bromacil	2015/12/10		99	%	50 - 130
			Carbaryl	2015/12/10		108	%	50 - 130
			Carbofuran	2015/12/10		120	%	50 - 130
			Cyanazine (Bladex)	2015/12/10		93	%	50 - 130
			Desethyl-Atrazine	2015/12/10		104	%	50 - 130
			Desisopropylatrazine	2015/12/10		125	%	50 - 130
			Imazapyr	2015/12/10		127	%	50 - 130
			Imidacloprid	2015/12/10		97	%	50 - 130
			IPBC	2015/12/10		127	%	50 - 130
			Linuron	2015/12/10		105	%	50 - 130
			Methyl parathion	2015/12/10		129	%	50 - 130
			Metolachlor (Dual)	2015/12/10		109	%	50 - 130
			Picloram	2015/12/10		210 (1)	%	50 - 130
			Simazine	2015/12/10		95	%	50 - 130
			Tebuthiuron	2015/12/10		111	%	50 - 130
1547103	AR6	Spiked Blank DUP	Aldicarb	2015/12/10		145 (1)	%	50 - 130
			Atrazine	2015/12/10		117	%	50 - 130
			Bendiocarb	2015/12/10		111	%	50 - 130
			Bromacil	2015/12/10		114	%	50 - 130
			Carbaryl	2015/12/10		106	%	50 - 130
			Carbofuran	2015/12/10		110	%	50 - 130
			Cyanazine (Bladex)	2015/12/10		99	%	50 - 130
			Desethyl-Atrazine	2015/12/10		100	%	50 - 130
			Desisopropylatrazine	2015/12/10		125	%	50 - 130
			Imazapyr	2015/12/10		91	%	50 - 130
			Imidacloprid	2015/12/10		105	%	50 - 130
			IPBC	2015/12/10		112	%	50 - 130
			Linuron	2015/12/10		103	%	50 - 130
			Methyl parathion	2015/12/10		108	%	50 - 130
			Metolachlor (Dual)	2015/12/10		99	%	50 - 130
			Picloram	2015/12/10		52	%	50 - 130
			Simazine	2015/12/10		91	%	50 - 130
			Tebuthiuron	2015/12/10		106	%	50 - 130
1547103	AR6	Method Blank	Aldicarb	2015/12/10	<0.1		ug/L	
			Atrazine	2015/12/10	<0.1		ug/L	
			Bendiocarb	2015/12/10	<0.1		ug/L	
			Bromacil	2015/12/10	<0.1		ug/L	
			Carbaryl	2015/12/10	<0.1		ug/L	
			Carbofuran	2015/12/10	<0.1		ug/L	
			Cyanazine (Bladex)	2015/12/10	<0.1		ug/L	
			Desethyl-Atrazine	2015/12/10	<0.1		ug/L	
			Desisopropylatrazine	2015/12/10	<0.1		ug/L	
			Imazapyr	2015/12/10	<0.1		ug/L	
			Imidacloprid	2015/12/10	<0.1		ug/L	
			IPBC	2015/12/10	<0.1		ug/L	
			Linuron	2015/12/10	<0.07		ug/L	
			Methyl parathion	2015/12/10	<0.1		ug/L	
			Metolachlor (Dual)	2015/12/10	<0.1		ug/L	
			Picloram	2015/12/10	<0.2		ug/L	
			Simazine	2015/12/10	<0.1		ug/L	

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
1547161	SC1	Spiked Blank	Tebuthiuron	2015/12/10	<0.1			ug/L	
			D10-Diazinon	2015/12/08		96	%	50 - 130	
			D10-Phorate	2015/12/08		79	%	50 - 130	
			D6-Metolacolor	2015/12/08		104	%	50 - 130	
			Azinphos-methyl	2015/12/08		112	%	50 - 130	
			Captan	2015/12/08		164 (1)	%	50 - 130	
			Chlorpyrifos	2015/12/08		95	%	50 - 130	
			Diazinon	2015/12/08		95	%	50 - 130	
			Deltamethrin	2015/12/08		103	%	50 - 130	
			Diclofop-methyl	2015/12/08		96	%	50 - 130	
			Dimethoate	2015/12/08		85	%	50 - 130	
			Malathion	2015/12/08		112	%	50 - 130	
			Methoprene	2015/12/08		114	%	50 - 130	
			Metribuzin (Sencor)	2015/12/08		101	%	50 - 130	
			Parathion	2015/12/08		99	%	50 - 130	
			Permethrin (Cis/Trans)	2015/12/08		106	%	50 - 130	
			Phorate (Thimet)	2015/12/08		76	%	50 - 130	
			Terbufos	2015/12/08		80	%	50 - 130	
			Triallate	2015/12/08		98	%	50 - 130	
			Trifluralin	2015/12/08		116	%	50 - 130	
1547161	SC1	Method Blank	D10-Diazinon	2015/12/08		99	%	50 - 130	
			D10-Phorate	2015/12/08		81	%	50 - 130	
			D6-Metolacolor	2015/12/08		107	%	50 - 130	
			Azinphos-methyl	2015/12/08	<0.001			ug/L	
			Captan	2015/12/08	<0.003			ug/L	
			Chlorpyrifos	2015/12/08	<0.0008			ug/L	
			Diazinon	2015/12/08	<0.002			ug/L	
			Deltamethrin	2015/12/08	<0.0004			ug/L	
			Diclofop-methyl	2015/12/08	<0.0007			ug/L	
			Dimethoate	2015/12/08	<0.003			ug/L	
			Malathion	2015/12/08	<0.002			ug/L	
			Methoprene	2015/12/08	<0.003			ug/L	
			Metribuzin (Sencor)	2015/12/08	<0.0004			ug/L	
			Parathion	2015/12/08	<0.0004			ug/L	
			Permethrin (Cis/Trans)	2015/12/08	<0.0005			ug/L	
			Phorate (Thimet)	2015/12/08	<0.0003			ug/L	
			Terbufos	2015/12/08	<0.0002			ug/L	
			Triallate	2015/12/08	<0.0003			ug/L	
			Trifluralin	2015/12/08	<0.0003			ug/L	
1547917	AK2	Spiked Blank	2-Chloronaphthalene	2015/12/11		88	%	50 - 130	
			a-Chlordane	2015/12/11		87	%	50 - 130	
			Chlorothalonil	2015/12/11		78	%	50 - 130	
			d-BHC	2015/12/11		90	%	50 - 130	
			Decachlorobiphenyl	2015/12/11		115	%	50 - 130	
			Endosulfan I	2015/12/11		94	%	50 - 130	
			Endosulfan II	2015/12/11		97	%	50 - 130	
			Endrin aldehyde	2015/12/11		77	%	50 - 130	
			Endrin Ketone	2015/12/11		93	%	50 - 130	
			g-Chlordane	2015/12/11		87	%	50 - 130	
			Hexachlorobenzene	2015/12/11		101	%	50 - 130	
			Hexachlorobutadiene	2015/12/11		100	%	50 - 130	
			Hexachlorocyclopentadiene	2015/12/11		84	%	50 - 130	
			Hexachloroethane	2015/12/11		89	%	50 - 130	

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC			Date		Value	Recovery	Units	QC Limits
Batch	Init	QC Type	Parameter	Analyzed				
1547917	AK2	Method Blank	o,p'-DDD	2015/12/11		102	%	50 - 130
			o,p'-DDE	2015/12/11		101	%	50 - 130
			o,p'-DDT	2015/12/11		97	%	50 - 130
			Octachlorostyrene	2015/12/11		94	%	50 - 130
			Oxychlordane	2015/12/11		97	%	50 - 130
			a-BHC	2015/12/11		93	%	50 - 130
			b-BHC	2015/12/11		93	%	50 - 130
			Lindane	2015/12/11		94	%	50 - 130
			Aldrin	2015/12/11		94	%	50 - 130
			Endrin	2015/12/11		92	%	50 - 130
			Dieldrin	2015/12/11		108	%	50 - 130
			Heptachlor	2015/12/11		89	%	50 - 130
			Heptachlor epoxide	2015/12/11		101	%	50 - 130
			p,p'-DDD	2015/12/11		91	%	50 - 130
			p,p'-DDE	2015/12/11		89	%	50 - 130
			p,p'-DDT	2015/12/11		90	%	50 - 130
			Endosulfan sulfate	2015/12/11		91	%	50 - 130
			Methoxychlor	2015/12/11		85	%	50 - 130
			Mirex	2015/12/11		99	%	50 - 130
			2-Chloronaphthalene	2015/12/11		84	%	50 - 130
			a-Chlordane	2015/12/11	<0.003		ug/L	
			Aldrin + Dieldrin	2015/12/11	<0.003		ug/L	
			Chlordane (total)	2015/12/11	<0.003		ug/L	
			Chlorothalonil	2015/12/11	<0.003		ug/L	
			d-BHC	2015/12/11	<0.003		ug/L	
			DDT+ Metabolites	2015/12/11	<0.001		ug/L	
			Decachlorobiphenyl	2015/12/11		117	%	50 - 130
			Endosulfan I	2015/12/11	<0.003		ug/L	
			Endosulfan II	2015/12/11	<0.003		ug/L	
			Endosulfan Total	2015/12/11	<0.003		ug/L	
			Endrin aldehyde	2015/12/11	<0.003		ug/L	
			Endrin Ketone	2015/12/11	<0.003		ug/L	
			g-Chlordane	2015/12/11	<0.003		ug/L	
			Hexachlorobenzene	2015/12/11	<0.003		ug/L	
			Hexachlorobutadiene	2015/12/11	<0.004		ug/L	
			Hexachlorocyclopentadiene	2015/12/11	<0.01		ug/L	
			Hexachloroethane	2015/12/11	<0.006 (2)		ug/L	
			o,p'-DDD	2015/12/11	<0.001		ug/L	
			o,p'-DDD+p,p'-DDD	2015/12/11	<0.001		ug/L	
			o,p'-DDE	2015/12/11	<0.001		ug/L	
			o,p'-DDE+p,p'-DDE	2015/12/11	<0.001		ug/L	
			o,p'-DDT	2015/12/11	<0.001		ug/L	
			o,p'-DDT+p,p'-DDT	2015/12/11	<0.001		ug/L	
			Octachlorostyrene	2015/12/11	<0.003		ug/L	
			Oxychlordane	2015/12/11	<0.003		ug/L	
			a-BHC	2015/12/11	<0.003		ug/L	
			b-BHC	2015/12/11	<0.003		ug/L	
			Lindane	2015/12/11	<0.003		ug/L	
			Aldrin	2015/12/11	<0.003		ug/L	
			Endrin	2015/12/11	<0.005		ug/L	
			Dieldrin	2015/12/11	<0.003		ug/L	
			Heptachlor	2015/12/11	<0.003		ug/L	
			Heptachlor epoxide	2015/12/11	<0.003		ug/L	

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

QUALITY ASSURANCE REPORT(CONT'D)



QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
				p,p'-DDD	2015/12/11	<0.001		ug/L	
				p,p'-DDE	2015/12/11	<0.001		ug/L	
				p,p'-DDT	2015/12/11	<0.001		ug/L	
				Endosulfan sulfate	2015/12/11	<0.003		ug/L	
				Methoxychlor	2015/12/11	<0.003		ug/L	
				Mirex	2015/12/11	<0.003		ug/L	
<p>Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria</p> <p>(2) Detection limit raised due to matrix interference.</p>									

Maxxam Job #: B576428
Report Date: 2016/01/07

MAXXAM ANALYTICS INC.
Client Project #: B5P0147

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Aomar Kaidi, B.Sc., Chemist




Marcello Manocchio, B.Sc., Chemist




Sylvain Chevigny, B.Sc., Chemist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Your Project #: MB5P0147
Your C.O.C. #: pg 1

Attention: SUB CONTRACTOR

MAXXAM ANALYTICS
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2015/12/10
Report #: R2093243
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B5A8307

Received: 2015/12/05, 10:30

Sample Matrix: Water
Samples Received: 2

Analyses	Date		Laboratory Method	Analytical Method
	Quantity	Extracted		
Phenoxyalkyl acid Pesticides	2	2015/12/06	2015/12/08 CAL SOP-00094	EPA 8151 R1 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key



Curtis Templeton

11 Dec 2015 13:48:02 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Curtis Templeton, Project Manager Assistant

Email: CTempleton@maxxam.ca

Phone# (403)219-3662

=====

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Maxxam Job #: B5A8307
Report Date: 2015/12/10

MAXXAM ANALYTICS
Client Project #: MB5P0147

PHENOXYALKYL ACID PESTICIDES/HERBICIDES (WATER)

Maxxam ID		NU0568	NU0569	NU0569		
Sampling Date		2015/12/04 10:00	2015/12/04 11:45	2015/12/04 11:45		
COC Number		pg 1	pg 1	pg 1		
	UNITS	MW15-60 (BLX707-08R)	MW15-61 (BLX708-08R)	MW15-61 (BLX708-08R) Lab-Dup	RDL	QC Batch
Phenoxyalkyl acid Pest.						
3,5-dichlorobenzoic acid	ug/L	<0.080	<0.080	<0.080	0.080	8135812
Dicamba	ug/L	<0.0050	<0.0050	<0.0050	0.0050	8135812
MCPP	ug/L	<0.080	<0.080	<0.080	0.080	8135812
MCPA	ug/L	<0.020	<0.020	<0.020	0.020	8135812
Dichlorprop	ug/L	<0.080	<0.080	<0.080	0.080	8135812
Bromoxynil	ug/L	<0.020	<0.020	<0.020	0.020	8135812
2,4-D	ug/L	<0.050	<0.050	<0.050	0.050	8135812
Pentachlorophenol	ug/L	<0.080	<0.080	<0.080	0.080	8135812
2,4,5-TP	ug/L	<0.080	<0.080	<0.080	0.080	8135812
2,4,5-T	ug/L	<0.080	<0.080	<0.080	0.080	8135812
Chloramben	ug/L	<0.080	<0.080	<0.080	0.080	8135812
Dinoseb (DNBP)	ug/L	<0.020	<0.020	<0.020	0.020	8135812
Bentazon	ug/L	<0.080	<0.080	<0.080	0.080	8135812
2,4-DB	ug/L	<0.080	<0.080	<0.080	0.080	8135812
Picloram	ug/L	<0.080	<0.080	<0.080	0.080	8135812
Diclofop-methyl	ug/L	<0.080	<0.080	<0.080	0.080	8135812
Surrogate Recovery (%)						
2,4,6-TRIBROMOPHENOL (sur.)	%	93	101	100		8135812
RDL = Reportable Detection Limit						
Lab-Dup = Laboratory Initiated Duplicate						

Maxxam Job #: B5A8307
Report Date: 2015/12/10

MAXXAM ANALYTICS
Client Project #: MB5P0147

TEST SUMMARY

Maxxam ID: NU0568
Sample ID: MW15-60 (BLX707-08R)
Matrix: Water

Collected: 2015/12/04
Shipped: 2015/12/04
Received: 2015/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Phenoxyalkyl acid Pesticides	GC/MSD	8135812	2015/12/06	2015/12/08	Don Maxwell

Maxxam ID: NU0569
Sample ID: MW15-61 (BLX708-08R)
Matrix: Water

Collected: 2015/12/04
Shipped: 2015/12/04
Received: 2015/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Phenoxyalkyl acid Pesticides	GC/MSD	8135812	2015/12/06	2015/12/08	Don Maxwell

Maxxam ID: NU0569 Dup
Sample ID: MW15-61 (BLX708-08R)
Matrix: Water

Collected: 2015/12/04
Shipped: 2015/12/04
Received: 2015/12/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Phenoxyalkyl acid Pesticides	GC/MSD	8135812	2015/12/06	2015/12/08	Don Maxwell

Maxxam Job #: B5A8307
Report Date: 2015/12/10

MAXXAM ANALYTICS
Client Project #: MB5P0147

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.7°C
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Results relate only to the items tested.

Maxxam Job #: B5A8307
Report Date: 2015/12/10

QUALITY ASSURANCE REPORT

MAXXAM ANALYTICS
Client Project #: MB5P0147

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8135812	2,4,6-TRIBROMOPHENOL (sur.)	2015/12/08	93	30 - 130	85	30 - 130	86	%		
8135812	2,4,5-T	2015/12/08	103	10 - 130	97	10 - 130	<0.080	ug/L	NC	40
8135812	2,4,5-TP	2015/12/08	112	10 - 130	95	10 - 130	<0.080	ug/L	NC	40
8135812	2,4-D	2015/12/08	106	10 - 130	99	10 - 130	<0.050	ug/L	NC	40
8135812	2,4-DB	2015/12/08	103	10 - 130	99	10 - 130	<0.080	ug/L	NC	40
8135812	3,5-dichlorobenzoic acid	2015/12/08	102	10 - 130	97	10 - 130	<0.080	ug/L	NC	40
8135812	Bentazon	2015/12/08	113	10 - 130	107	10 - 130	<0.080	ug/L	NC	40
8135812	Bromoxynil	2015/12/08	122	10 - 130	114	10 - 130	<0.020	ug/L	NC	40
8135812	Chloramben	2015/12/08	55	10 - 130	46	10 - 130	<0.080	ug/L	NC	40
8135812	Dicamba	2015/12/08	101	10 - 130	93	10 - 130	<0.0050	ug/L	NC	40
8135812	Dichlorprop	2015/12/08	104	10 - 130	100	10 - 130	<0.080	ug/L	NC	40
8135812	Diclofop-methyl	2015/12/08	113	10 - 130	109	10 - 130	<0.080	ug/L	NC	40
8135812	Dinoseb (DNBP)	2015/12/08	60	10 - 130	30	10 - 130	<0.020	ug/L	NC	40
8135812	MCPA	2015/12/08	93	10 - 130	87	10 - 130	<0.020	ug/L	NC	40
8135812	MCPP	2015/12/08	103	10 - 130	97	10 - 130	<0.080	ug/L	NC	40
8135812	Pentachlorophenol	2015/12/08	101	10 - 130	97	10 - 130	<0.080	ug/L	NC	40
8135812	Picloram	2015/12/08	38	10 - 130	34	10 - 130	<0.080	ug/L	NC	40

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

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

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

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

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B5A8307
Report Date: 2015/12/10

MAXXAM ANALYTICS
Client Project #: MB5P0147

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Veronica Falk, Scientific Specialist

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MAXXAM ANALYTICS
32 Colonnade Unit 1000
Nepean, Ontario, K2E 7J6
Phone: (613) 274-0573
Fax: (613) 274-0574



Page #: 1

AMEC Foster Wheeler
Environment & Infrastructure -
Ottawa - Standing Offer
Maxxam PM Madison Bingley

To: Bedford to Calgary Subcontract

Job# B5P0147

☐ Yes ☐ No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)
☐ Yes ☐ No Special Protocol (if yes, Protocol _____)

Sample ID	Matrix	Test(s) Required	Container	Date Sampled	Date Required
BLX707-08R \ MW15-60	W	Phenoxy Acid Herbicides in Water	2(ORGW)	2015/12/04 10:00	2015/12/15
BLX708-08R \ MW15-61	W	Phenoxy Acid Herbicides in Water	2(ORGW)	2015/12/04 11:45	2015/12/15

	Temp. 1	Temp. 2	Temp. 3			
Cooler #1	8	8	7	Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #2				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO
Cooler #3				Custody Seal Present	YES	NO
				Custody Seal Intact	YES	NO
				Ice Present Upon Receipt	YES	NO

Receiving Maxxam Location: Bedford to Calgary Subcontract

JOB #

Relinquished by (Sign) [Signature] (Print) Fatemeh H.A. Date and Time 2015/12/04 16:50

Received by (Sign) [Signature] (Print) WILLIAMSON CW Date and Time 2015/12/05 10:30

Subcontract Comments

SUB-MISC IS FOR HARDNESS IN BURNABY.

NOTES:

- 1) Please call us if due date cannot be met. Please reference Sample ID on your report.
- 2) Include copy of this completed form, Client COC & signed final report to **scontractor@m**

Reporting Requirements:

National:

Regional:

SHIPPING INSTRUCTIONS

- ☐ Ship Immediately (highlight Yellow) ☐ Ship Cold
☐ Requires 9am ☐ Ship Room Temp
☐ Requires Sat. Delivery ☐ Ship Frozen
☐ Regular Ship next available day ☐ COC Must be Attached
Sender (Print) _____ Initial _____

SHIPPING DEPARTMENT CHECK

- ☐ Correct Shipping location
☐ Correct Sample Ids (Paperwork vs Bottles)
☐ Yes ☐ No Special-Cooler, Ice, Tape-custody seal, Date&Sign
Date Shipped _____ Number of coolers _____
Shipper (Print) _____ Initial _____

05-Dec-15 10:30
Curtis Templeton
B5A8307

DN7 INS-0104

APPENDIX H

LIMITATIONS

Limitations

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
 - (a) The terms of the Standing Offer Agreement (586101 dated June 13, 2013) between Amec Foster Wheeler (then Amec Environment & Infrastructure) and the National Capital Commission (NCC);
 - (b) The Scope of Services;
 - (c) Time and Budgetary limitations as described in our Contract; and,
 - (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures, which were not reasonably available, in Amec Foster Wheeler's opinion, for direct observation.
4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.
5. The site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.
6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on site and may be revealed by different or other testing not provided for in our contract.
7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Amec Foster Wheeler must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of Amec Foster Wheeler's services during the implementation of any remedial measures will allow Amec Foster Wheeler to observe compliance with the conclusions and recommendations contained in the report. Amec Foster Wheeler's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or the part, or any reliance thereon or decisions made based on any information or conclusions in the report, is the sole responsibility of such third party. Amec Foster Wheeler accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
10. Provided that the report is still reliable, and less than 12 months old, Amec Foster Wheeler will issue a third-party reliance letter to parties client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Amec Foster Wheeler's report, by such reliance agree to be bound by our proposal and Amec Foster Wheeler's standard reliance letter. Amec Foster Wheeler's standard reliance letter indicates that in no event shall Amec Foster Wheeler be liable for any damages, howsoever arising, relating to third-party reliance on Amec Foster Wheeler's report. No reliance by any party is permitted without such agreement.