Screening Level Risk Assessment
Richmond Landing, P.A. No. 96189
Ottawa, Ontario

Revision: 0 (Final)

Prepared for:
National Capital Commission

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Document ID: 13-215 Richmond Landing SLRA_R0

September 27, 2013

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Revision Number:	0	Date: September 27, 2013
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EXECUTIVE SUMMARY

Geofirma Engineering Ltd. (Geofirma) was retained by the National Capital Commission (NCC) to complete supplemental groundwater sampling and a Screening Level Risk Assessment (SLRA) Richmond Landing in Ottawa, Ontario (NCC Property Asset No. 96189). Richmond Landing is located on the Ottawa River, south of Victoria Island, east of the Portage Bridge and includes landscaped green space, recreational pathways, and is the location of the recently constructed Royal Canadian Navy Monument.

Former land uses of concern on the site included a bulk fuel storage facility, rail sidings and fill placement, resulting in contamination of soil and groundwater with metals, petroleum hydrocarbons (PHC), polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC). The site has been subject to investigation of soil and groundwater, and a partial site remediation. Remediation efforts included oxidant injection and subsequent well decommissioning in pre-existing site wells for the chemical destruction of PHC and PAH contamination in the groundwater, off-site disposal of any contaminated soil excavated during site redevelopment, placement of a clean soil cap over any disturbed areas of contaminated soil, and re-installation of new wells. As a result of these remediation efforts, PHC and PAH concentrations in groundwater appear to have decreased, and surficial soils at the site are in compliance with federal guidelines and provincial standards.

The objectives of the work conducted were to evaluate the effectiveness of the partial groundwater remediation program, and to evaluate, at a screening level, the potential risk to human health and the environment posed by contaminants of concern (COCs) remaining in subsurface soil and groundwater at the site.

Following completion of a screening-level human health and ecological risk assessment for Richmond Landing, the following generalized conclusions are provided:

- The oxidant injection program appears to have been effective in decreasing PHC “hot-spots” in groundwater at the site, proximate to the injection points. PHC contamination in groundwater is still present at the site.
- COCS identified on the site included a limited number of VOCs and metals, multiple PAH parameters, and all four PHC fractions.
- No potential risk was identified to site visitors, based on exposure to surficial soils.
- Potential risk to site workers digging in the soil, through exposure to lead and PAHs in subsurface soils is low, and can easily be managed through personal protective equipment.
- The potential risk to off-site human health based on VOCs in the subsurface is negligible.
- Potential risk to ecological receptors exposed to metals and PHCs in the subsurface soils at the site is low, and the likely impacted receptors are plants and soil invertebrates.
- Potential risk to ecological receptors exposed to PAHs in subsurface soils is low to moderate. Terrestrial plants, soil invertebrates, and avian/mammalian receptors may be impacted.
- Assessment of off-site risk posed by site soil becoming sediment in the Ottawa River indicates a low to negligible risk posed by metals and PAH in site soil.
- Assessment of off-site risk posed by site groundwater discharging to the surface water of the Ottawa River indicates negligible risk by way of metals, VOCs and PHCs, and low risk by way of PAH parameters.

Based on the conclusions provided above, the following recommendations and risk management measures are provided:

- As the clean surficial soil provides adequate protection to site visitors and helps minimize risk for ecological receptors, the only risk management measure for surficial soil is to inspect the surface landscaping yearly, to ensure the area remains vegetated with no significant erosion occurring. Maintaining a healthy vegetative cover at the site will also limit exposure of ecological receptors, both on the site and in the adjacent Ottawa River, to PAH contamination in the subsurface.
- Personal protective equipment including long sleeves, long pants, and gloves is recommended for any workers digging in the subsurface soils at Richmond Landing. Any excavated subsurface soil must be identified as contaminated, with appropriate handling (including not mixing with or placing contaminated soil on the clean surficial soil) and off-site disposal.
- Although a potential risk to ecological receptors, most notably terrestrial plants and soil invertebrates was identified, no risk management measures are recommended. The clean surficial soil, existing vegetation, and the depth of soil contamination greatly limits the ecological risks posed by PAHs in site soil. Therefore the identified low to moderate risks to plants and invertebrates do not warrant intervention.
- Annual groundwater monitoring for BTEX/PHC and PAH parameters is recommended, to be conducted in spring/summer for consistency with previous sampling events. Sampling and field readings for natural attenuation should be completed every second year. Annual surface water sampling for PAH is also recommended at 4-5 locations adjacent to the site.

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1 INTRODUCTION

Geofirma Engineering Ltd. (Geofirma) was retained by the National Capital Commission (NCC) to complete supplemental groundwater sampling and a Screening Level Risk Assessment (SLRA) at the Canadian Navy Monument (CNM) located at Richmond Landing in Ottawa, Ontario (NCC Property Asset No. 96189) hereafter referred to as the site. The SLRA is comprised of a semi-quantitative human health risk assessment (HHRA) and ecological risk assessment (ERA) for identified contamination in site soil and groundwater.

Richmond Landing is located on the Ottawa River, south of Victoria Island, east of the Portage Bridge in Ottawa, Ontario. The site includes landscaped green space, recreational pathways, and is the location of the Royal Canadian Navy Monument. The location of Richmond Landing is shown on Figure A.1 in Appendix A.

The supplemental groundwater sampling and SLRA were completed in accordance with Geofirma's proposal dated June 24, 2013, as approved by the NCC on June 27, 2013. Work was completed under Geofirma Standing Offer Agreement No. 586104 with the NCC.

1.1 Background and Previous Investigations

The site was chosen for erection of a monument by the Royal Canadian Navy, and investigations were required to assess the environmental conditions prior to monument construction. Former land uses of concern on the site include a bulk fuel storage facility, rail sidings and fill placement. A Phase II ESA was completed on the site by Trow Associates Inc., in 2009 (Trow, 2009a), which identified waste materials including brick, wood, glass, coal etc. in the subsurface of the property.. Soil and groundwater samples from the Phase II ESA were analyzed for metals, petroleum hydrocarbons (PHC), polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), and polychlorinated biphenyls (PCBs). Shallow surface soil samples (less than 0.1 metres below ground surface) generally met applicable federal guidelines and provincial standards, however subsurface soils had exceedences of standards and/or guidelines for metals, PAH, VOC and PHC parameters.

Groundwater quality generally met Ontario Ministry of the Environment (MOE) non-potable groundwater standards (Table 3) at the time of Phase II ESA sampling in 2009, however there were several exceedence for MOE Table 1 (background) and Canadian Council of Ministers of the Environment (CCME) community water guidelines for BTEX and PAH parameters, in addition to a few metals parameters. Additional surface water and groundwater investigations completed by Trow Associates Inc. in 2009 (Trow, 2009b), identified PAH contamination (above MOE Table 3 standards) in five monitoring wells, and visual and olfactory evidence of petroleum hydrocarbon impact in six monitoring wells. Surface water results indicated no detections of PHC, BTEX or metals parameters, however exceedences of Provincial Water Quality Objectives (PWQOs) were noted for PAH parameters. Following this work, semi-annual surface water and groundwater sampling was recommended (Trow, 2009b).

In 2010, Geofirma (as Intera Engineering Ltd.) conducted a groundwater sampling program, and an assessment of remedial options for the site (Intera, 2010), in preparation of monument construction. Field and/or laboratory evidence of PHC contamination was identified in at least 12 of the 23 accessible groundwater monitoring wells. Results did not indicate a distinct reproducible dissolved

plume, rather sporadic contamination at different locations throughout the site. An in-situ chemical oxidation remediation program for PHC contamination in groundwater and water-table-smear-zone was recommended, to partially remediate the site in preparation for monument construction (Intera, 2010).

In 2011 Geofirma retained VERTEX of Cambridge, Ontario to complete a limited groundwater and soil remediation project at Richmond Landing via an oxidant injection program. Using 19 pre-existing monitoring wells, approximately 9,375L of a sodium persulphate solution was injected in to the subsurface to improve the quality of the groundwater and soil through chemical oxidation/destruction of PHC and PAH contamination.

Following the oxidant injection program, Geofirma decommissioned 14 of the existing monitoring wells on site, in accordance with the Ontario Water Resources Act (Reg. 903). Well decommissioning was required to prepare the site for construction. It was recommended that following the monument construction and re-landscaping of the site, a limited number of well intervals be installed to intersect the shallow water table (whether completed in overburden or bedrock) to monitor the effectiveness of the remediation, and continued natural attenuation at the site. Additionally it was recommended that an annual groundwater monitoring program should continue on site for a minimum of 5 years to evaluate remediation efforts (Geofirma, 2011).

In conjunction with site redevelopment, the Geofirma was retained by the NCC to assist in the preparation of construction specifications, and ensure that all contaminated materials were handled properly during site redevelopment and monument construction. The Richmond Land Redevelopment Plan (RLRP) was largely completed between October and December, 2010 with landscape completion in 2012 (Geofirma, 2012). The redevelopment involved some excavation and off-site disposal of contaminated soils for monument construction, and placement of a clean soil cap over areas of the site where contaminated soil was disturbed during site redevelopment and landscaping.

Geofirma provided site surveillance and technical advice during redevelopment activities which involved handling of contaminated materials, and implemented a soil sampling program. Geofirma collected samples of imported fill and topsoil to ensure compliance with MOE Standards, collected two samples of subsurface soil to remain on site for analysis of dioxin/furans and phenolic compounds, to be in accordance with testing requirements of Health Canada for future site risk assessment, and implemented a clean cap verification program.

The site redevelopment report (Geofirma, 2012) concluded that no human health or environmental concerns were identified during site redevelopment; contaminated soil remains in the subsurface at the site with concentrations of dioxins/furans and phenolics not exceeding guidelines; and that cap verification sampling indicated that a clean soil cap of adequate thickness was now present in the areas of the site affected by the redevelopment and monument construction. Areas not subject to redevelopment did not receive capping. . Geofirma recommended to re-instate selected groundwater monitoring wells and continue an annual groundwater monitoring program and to conduct a screening-level human health and ecological risk assessment (SLRA) for the site, in addition to monitoring and maintenance of vegetation.

In December 2012, Geofirma completed the re-installation of site wells under snow-cover and frozen ground conditions (Geofirma, 2013). Eight groundwater monitoring wells were installed on the site,

four were completed in overburden material only and four were completed to straddle the overburden/bedrock interface in effort to screen the static water table. Soil quality encountered during the advancement of the eight re-installed wells generally consisted of topsoil and clean sand fill (in areas subjected to redevelopment) underlain by poor quality fill with debris including brick, coal and wood. Evidence of hydrocarbon contamination was observed in four wells, all located in the south-western portion of the site, away from the Navy Monument. Following the re-installation of site wells, Geofirma recommended that a screening-level human health and ecological risk assessment, including supplemental groundwater sampling take place (Geofirma, 2013).

1.2 Study Objectives and Scope of Work

The objectives of the proposed work were to evaluate the effectiveness of the partial groundwater remediation program, and to evaluate, at a screening level, the potential risk to human health and the environment posed by contaminants of concern (COCs) remaining in site soil and groundwater.

To meet these objectives, the scope of work included the following general tasks/activities as outlined in the Geofirma proposal dated June 24, 2013:

- Review of previous work and finalization of the work plan;
- Groundwater elevation survey and sampling, and analyses of groundwater for site COCs;
- Compile and evaluate analytical results and historical site data for comparison to current relevant criteria;
- Select soil and groundwater COCs based on comparison of quality data to current and appropriate federal guidelines and provincial standards for the site;
- Define appropriate human (e.g. park visitors, park maintenance workers, park construction workers) and ecological receptors for the site considering current land use;
- Assess potential risks to human and ecological receptors from exposure to surficial and sub-surface soils and groundwater following a semi-quantitative approach using CCME and Health Canada guidance for SLRA; and
- Prepare a report summarizing findings and recommending risk management options and costs for areas of concern at the site, as required.

1.3 Report Organization

This report is organized into nine sections and three appendices.

Section 1 is an introductory section that provides a background for the site, and describes previous work, study objectives, scope of work and report organization.

Section 2 describes the supplemental field investigations of the site undertaken to provide additional data on the nature and extent of groundwater contamination for use in the SLRA.

Section 3 provides an overview of the physical and environmental conditions of the site that are relevant to the SLRA, based on current and previous site investigations. Section 3 also identifies contaminants of concern for inclusion in the SLRA.

Sections 4 and 5 are the screening level human health and ecological risk assessments, respectively.

Section 6 summarizes the conclusions and the risk management recommendations for the site.

Sections 7 and 8 provide a listing of references cited in the report, and a closure outlining limitations on the use of this report, respectively.

Appendix A contains the report figures. Appendix B includes the summary data tables of soil and groundwater quality compared to federal and provincial guidelines and standards. Appendix C contains the laboratory analytical reports for soil and groundwater quality data collected in this study.

2 SUPPLEMENTAL FIELD INVESTIGATIONS

Additional field investigations were conducted by Geofirma personnel between July 10 and July 15, 2013. The additional work provided updated data on groundwater quality of the site following the partial groundwater remediation conducted in 2011, for use in the SLRA. The site layout and sampling locations of the supplemental groundwater program are provided in Figure A.2 in Appendix A, together with historical sampling locations. The additional work included the collection of groundwater elevation and field chemistry measurements, and groundwater sampling from accessible site wells for analysis of PAH, PHC and metals.

2.1 Water Level Monitoring and Sampling

Prior to groundwater sampling, water levels were recorded in all existing site wells on July 10, 2013, with the exception of MW09-15 which could not be located. Water levels were measured relative to the top of the PVC riser using an electronic water level tape that was decontaminated between wells.

Groundwater sampling was conducted on July 11 and July 15, 2013. Groundwater samples were collected from all existing site wells with the exception of MW09-5 and MW09-19 due to a lack of groundwater volume, and MW09-15 which could not be located. Groundwater samples were collected from the monitoring wells using dedicated polyethylene tubing and a peristaltic pump under low-flow conditions. Prior to sampling, monitoring wells were purged of three well volumes or dry three times and allowed to recover for sampling.

Eight groundwater samples were submitted for laboratory analysis, from the 2012 groundwater monitoring wells. All groundwater samples were analysed BTEX/PHC, and six samples were also analysed for PAH and metals parameters, selected based on historical groundwater data. Groundwater samples for laboratory analyses were collected in appropriate containers supplied by the analytical laboratory. Samples collected for metals analysis were field-filtered using dedicated 0.45 micron filters and acidified according to laboratory specifications.

All groundwater samples were analysed by Exova Laboratories Ltd. (Exova) of Ottawa, Ontario. All samples were stored and shipped in coolers with ice packs and hand-delivered to the laboratory by local courier under chain-of-custody procedures, in accordance with Geofirma QA/QC procedures.

During groundwater purging, field readings for temperature, pH, electrical conductivity and dissolved oxygen were recorded using a YSI 600QS handheld multimeter enclosed in a flow-through cell. Field readings for redox-sensitive elements (ferrous iron and sulphide) were collected in the field from filtered water and analysed via parameter specific colorimetric field kits. Field measurements are presented in Table B.11 with the BTEX/PHC analytical results.

3 SUMMARY OF SITE CONDTIONS

3.1 Land Use and Physical Setting

Richmond Landing, located in the City of Ottawa, is a parcel of land located on a peninsula bordered on the north, south and east by the Ottawa River and the Portage Bridge to the west. The property is parkland which is maintained by the National Capital Commission, and hosts the Canadian Navy Monument in addition to multi-use pathways and green space. The site location is provided on Figure A.1 in Appendix A.

3.2 Site Stratigraphy

The site is mapped as mainly limestone and dolomite with some isolated shale and sandstone deposits, generally bedrock is bare although some thinly veneered (< 2 m) unconsolidated sediments have been noted (Geological Survey of Canada, 1982).

Results from historical drilling programs carried out on site describe the overburden material as generally consisting of topsoil overlying silty sand or silty sand fill with occasional debris and evidence of petroleum hydrocarbon impact (Trow, 2009a). Surficial soil conditions encountered in 2012 following the partial groundwater and soil remediation were described as topsoil underlain by a clean sand cap ranging in thickness from 30 cm to 1.8 m, underlain by silty sand and/or silty clay with various types of debris, underlain by boulder and cobble fill that was, in turn, underlain by grey to dark grey limestone (Geofirma, 2013).

3.3 Regulatory Guidelines, Criteria and Standards

This SLRA was recommended following Geofirma's report on the remediation and redevelopment of the Richmond Landing site (Geofirma, 2012). As historical information indentified subsurface soil and groundwater contamination by PHC and PAH parameters, the redevelopment of the site for the CNM included the placement of clean soil fill over any areas of exposed soil contamination. Following redevelopment, human contact with contaminated soil remaining on the property was assumed to be unlikely and limited by the placement of the clean fill material. Based on this information, an SLRA was recommended to confirm this assumption, assess potential risk to ecological receptors, and provide risk management measures as required.

Soil and groundwater analytical results were compared to the following federal guidelines and provincial standards:

- Canadian Council of Ministers of the Environment (CCME, 1999 with updates to 2013): *Canadian Environmental Quality Guidelines,* (Residential/Parkland Land Use, Non-potable water, Coarse Textured Soil).
- Environment Canada Federal Interim Groundwater Quality Guidelines (EC, 2012): Table 2 Generic Guidelines for Residential/Parkland Land Use, Tier 1, coarse grained soil.
- Canadian Council of Ministers of the Environment (CCME, 2008b): *Canada-Wide Standards for Petroleum Hydrocarbons in Soil, Soil Criteria for Residential/Parkland Land Use.*
- Ontario Ministry of the Environment (MOE, 2011a), *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act,* Table 3: Full Depth Generic Site

Condition Standards in a Non-potable Ground Water Condition (Residential/Parkland/ Institutional Land Use, coarse grained soil).

- Ontario Ministry of the Environment (MOE, 2011a), *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act,* Table 9: Generic Site Condition Standards for use within 30m of a water body in a Non-potable Ground Water Condition (Residential/Parkland/ Institutional Land Use, coarse grained soil).

Application of residential/parkland land use guidelines and standards and non-potable water guidelines and standards to the site are based on the continued use of the site as a park and the fact that the site groundwater is not a source of drinking water.

3.4 Soil Quality

Soil quality data for the site are taken mainly from the Phase II ESA (Trow, 2009a), supplemented by sampling conducted by Geofirma as part of the site redevelopment and remediation report (Geofirma, 2012). Phase II ESA sampling included the collection of multiple samples at each of 25 borehole locations. Samples were collected from surficial soil (0-0.1 mBGS), shallow soils (0-0.6 mBGS) and subsurface soils at various depths below 0.6 metres. Soil samples were analysed for metals, polycyclic aromatic hydrocarbons (PAH), petroleum hydrocarbons (PHC), and volatile organic compounds (VOC). Complete analytical results for the Phase II ESA soil samples are compiled in Tables B.1 to B.5 of Appendix B, and compared to current federal guidelines and provincial standards. Locations for all collected soil samples are provided on Figure A.2, Appendix A.

Supplementing the analytical program from the Phase II ESA, Geofirma collected two grab samples of remnant soil during excavation and redevelopment on November 30, 2010. These samples (RL-ONSITE-1 and RL-ONSITE-2) were collected from the bottom of the excavation in the central area of the site, and analysed for dioxins and furans, and phenolics. Analytical results for these samples are provided in Tables B.2 and B.3, Appendix B, and indicate compliance with both federal guidelines and provincial standards for these parameters.

As site redevelopment required the excavation and exposure of contaminated soils at the site, specifications for site redevelopment included the placement of a minimum of 0.3 metres of clean soil over any exposed contaminated material. Following completion of final grading for the site, Geofirma tested the thickness and quality of the clean soil cap in July, 2011 (Geofirma, 2012). Six composite soil samples were collected and analysed for metals and PAH parameters, and are used in this SLRA to represent current surficial soil quality.

In order to assess potential risk to receptors at the site, soils must be divided into categories of surficial and subsurface soil. As the site has been subject to extensive excavation, soil movement and capping, determination of which soil from the Phase II investigations likely remains on site, and whether this soil would be considered surficial or sub-surface following the redevelopment was required. Based on Geofirma knowledge of the site redevelopment in conjunction with pre- and post-development elevation plans, data from the Phase II ESA were placed into one of three following categories: excavated; remnant surficial soil; remnant subsurface soil.

The following approach was used to categorize the Phase II ESA (Trow, 2009a) soil samples:

- In any areas affected by redevelopment, it was assumed that the surficial (0-0.1 mBGS) soil samples are no longer present, due to removal of surface vegetation;
- In any areas not touched during redevelopment, all soil samples, including the surficial 0.1 mBGS, remain on the site (i.e.,. MW09-15);
- Any soil sample collected by drilling through a concrete or asphalt surface is considered a sub-surface sample (i.e.,. MW09-5, MW09-19 etc.);
- The centre area of the site, in front of the monument, was subject to extensive excavation, often with greater than one metre of soil removed (i.e., MW09-11);
- At the planted berms around the centre area, even shallow soil (0-0.6 mBGS) would now be sub-surface under the berms
- The steep upwards slope from the centre of the site, south-west of the pathways, was largely subject to placement of clean fill and topsoil for plantings, with little or no soil removal (i.e.,. MW09-4)

Using these general guidelines, soil samples collected during the Phase II ESA were categorized for use in the SLRA, as identified in Table 3.1.

Table 3.1 Classification of Soil Samples

Sample ID	*Approx. Depth*	*Elevation*	*Excavated*	*Remnant Surficial*	*Remnant Subsurface*	*Notes*
MW09-1 SS1	0 - 0.6	46.61-46.01		x		
MW09-1 SS2	0.8 - 1.4	45.81-45.21			x	
SS1	0 - 0.1	46.61-46.51		x		
MW09-2 SS1	0 - 0.6	46.36-45.76		x		
MW09-2 SS3	1.5 - 2.1	44.86-44.26			x	
SS2	0 - 0.1	46.36-43.26		x		
MW09-3 SS1	0 - 0.6	51.65-51.05			x	Under pavement
MW09-3 SS8	5.3 - 5.9	46.35-45.75			x	Under pavement
SS3	0 - 0.1	51.65-51.55		x		
MW09-4 SS1	0 - 0.6	49.56-48.96			x	Capped
MW09-4 SS10	7.6 - 8.2	41.96-41.36			x	Capped
SS4	0 - 0.1	49.56-49.46			x	Capped
MW09-5 SS1	0 - 0.6	47.1-46.5			x	Under pavement
MW09-5 SS5	3.0-3.6	44.1-43.5			x	
SS5	0 - 0.1	47.1-47.0		x		
MW09-6 SS1	0 - 0.6	47.09-46.49	x			
MW09-6 SS2	0.8 - 1.4	46.29-45.69			x	
SS6	0 - 0.1	47.09-46.99	x			
MW09-7 SS1	0 - 0.6	46.57-45.97	x			
MW09-7 SS4	2.3 - 2.9	44.27-43.67			x	
SS7	0 - 0.1	46.57-46.47	x			

Sample ID	Approx. Depth	Elevation	Excavated	Remnant Surficial	Remnant Subsurface	Notes
MW09-8 SS1	0 - 0.6	46.87-46.27	x			
MW09-8 SS6	3.8 - 4.4	43.07-42.47			x	
SS8	0 - 0.1	46.87-46.77	x			
MW09-9 SS1	0 - 0.6	46.5-45.9	x			
MW09-9 SS3	1.5 - 2.1	45.0-44.4			x	Capped
SS9	0 - 0.1	46.5-46.4	x			
MW09-10 SS1	0 - 0.6	46.46-45.86	x			
MW09-10 SS2	0.8 - 1.4	45.66-45.06			x	Capped
SS10	0 - 0.1	46.46-46.36	x			
MW09-11 SS1	0 - 0.6	46.16-45.56	x			
MW09-11 SS2	0.8 - 1.4	45.36-44.76	x			
SS11	0 - 0.1	46.16-46.06	x			
MW09-12 SS1	0 - 0.6	47.19-46.59	x			
MW09-12 SS6	3.8 - 4.4	44.11-42.79			x	
SS12	0 - 0.1	47.19-47.09	x			
MW09-13 SS1	0 - 0.6	45.33-44.73	x			
MW09-13 SS5	1.5-2.1	43.83-43.23			x	Under monument base
SS13	0 - 0.1	45.33-45.23	x			
MW09-14 SS1	0 - 0.6	45.64-45.04			x	Capped
MW09-14 SS3	1.5 - 2.1	44.14-43.54			x	Capped
SS14	0 - 0.1	45.64-45.54	x			
MW09-15 SS1	0 - 0.6	44.4-43.8		x		
MW09-15 SS4	2.3-2.9	42.1-41.5			x	
SS15	0 - 0.1	44.4-44.3		x		
BH09-16 SS1	0 - 0.6	54.54-53.94			x	Under pavement
BH09-16 SS3	1.2-1.8	53.34-52.74			x	Under pavement
SS16	0 - 0.1	54.54-54.44		x		
BH09-17 SS1	0 - 0.6	52.57-51.97			x	Under pavement
BH09-17 SS2	0.6-1.2	51.97-51.37			x	Under pavement
SS17	0 - 0.1	52.57-52.47		x		
MW09-18 SS1	0 - 0.6	65.51-64.91			x	Under pavement
MW09-18 SS10	6.9-7.5	58.61-58.01			x	Under pavement
SS18	0 - 0.1	51.51-65.41		x		
MW09-19 SS1	0 - 0.6	52.86-52.26			x	Under pavement
MW09-19 SS9	6.1-6.7	46.75-46.15			x	Under pavement
SS19	0 - 0.1	52.86-52.76		x		
MW09-20 SS1	0 - 0.6	47.23-46.63			x	Capped
MW09-20 SS7	4.6-5.18	42.63-42.05			x	Capped
SS20	0 - 0.1	47.23-47.13			x	Capped
MW09-21 SS1	0 - 0.6	46.59-45.99	x			

Sample ID	*Approx. Depth*	*Elevation*	*Excavated*	*Remnant Surficial*	*Remnant Subsurface*	*Notes*
MW09-21 SS7	4.6-4.88	41.99-41.71			x	
SS21	0 - 0.1	46.59-46.49	x			
MW09-22 SS1	0 - 0.6	46.05-45.45			x	Capped
MW09-22 SS6	3.8-4.4	42.25-41.65			x	
SS22	0 - 0.1	46.05-45.95	x			
MW09-23 SS1	0 - 0.6	46.34-45.74	x			
MW09-23 SS6	3.8-4.4	42.54-41.94			x	
SS23	0 - 0.1	46.34-46.24	x			
MW09-24 SS1	0 - 0.6	46.04-45.44	x			
MW09-24 SS3	1.6-2.2	44.44-43.84				Capped
SS24	0 - 0.1	46.04-45.94	x			
MW09-25 SS1	0 - 0.6	45.67-45.07	x			
MW09-25 SS6	3.7-4.3	41.97-41.37			x	
SS25	0 - 0.1	45.67-45.57	x			

3.4.1 Surficial Soil Quality Results

In addition to the Phase II ESA samples identified above as remnant surficial soil, the verification soil samples collected by Geofirma in 2011 (Geofirma, 2012) are also included in the assessment of surficial soil quality at Richmond Landing. Review of data for surficial soils (generally less than 0.3 mBGS) remaining on site indicates the following:

- There were no concentrations of VOCs above laboratory detection limits in the surficial soil remaining on site.
- One composite verification sample, VER-2, exceeded the MOE Table 9 standard for silver, but met the MOE Table 3 and CCME values. There were no other exceedences of applicable criteria for metals in surficial soils remaining on site.
- One surficial soil sample, SS19, exceeded MOE Table 9 values for acenaphthene, anthracene, and benzo(b)fluoranthene, but was in compliance with MOE Table 3 and CCME values. There were no other exceedences of applicable criteria for PAH parameters.
- Although there were some low-level detections of PHCs in surficial soils, all samples met applicable MOE standards and CCME guidelines.

3.4.2 Subsurface Soil Quality Results

Subsurface soil at Richmond Landing includes data collected during the Phase II ESAs, as well as the two samples collected by Geofirma during site remediation. Review of the data for subsurface soils remaining on the site indicates the following:

- VOCs were detected in sample MW09-18 at a depth of 5.3-5.9 mBGS, above federal guidelines and provincial standards. Benzene exceeded the CCME guideline and both MOE Table 3 and Table 9. Total xylenes exceeded MOE Table 3 and 9. Ethylbenzene exceeded CCME SQG and MOE Table 9. Chlorobenzene exceeded MOE Table 9. There were no other exceedences of MOE standards or CCME guidelines for VOC parameters in the samples submitted.

- Dioxins and furans concentrations met CCME guidelines and MOE standards in the two samples submitted.
- Phenolics met CCME guidelines and MOE standards, although a few parameter method detection limits were higher than the MOE Table 9 standards.
- Exceedences of MOE Table 9 standards were noted for the following metals parameters: antimony, copper, barium, lead, mercury, molybdenum, and silver
- Exceedences of MOE Table 3 standards were noted for the following metals parameters: copper, lead, and mercury.
- Exceedences of CCME guidelines were noted for the following metals parameters: copper, lead, and zinc.
- One or more exceedences of MOE Table 9 standards were noted for every listed PAH parameter.
- Exceedences of MOE Table 3 standards were noted for the following the following PAH parameters: acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, fluoranthene, 1- and 2- methylnaphthalene, and naphthalene.
- CCME guidelines for PAH parameters are based on the benzo[a]pyrene total potency equivalents (B[a]P TPE) method for the protection of human health, as well as identified guidelines for ecological protection for anthracene, benzo(a)pyrene and fluoranthene. Exceedences of CCME guidelines for PAH parameters were noted at only one location: MW09-6, at a depth of 0.8-1.4 mBGS. This sample exceeded both the environmental protection value for anthracene, and the B[a]P TPE for human health.
- Exceedences of MOE Table 9 standards were noted for all four PHC fractions
- Exceedences of MOE Table 3 standards and CCME guidelines were noted for PHC F1, F2 and F3. There were no exceedences of these values for PHC F4.

3.4.3 Soil Quality Summary

Based on review of the surficial and sub-surface soil quality described in the previous sections, the following are identified as potential COCs in soil at Richmond Landing:

- VOCs: benzene, chlorobenzene, ethylbenzene and total xylenes
- Metals: antimony, barium, copper, lead, mercury, molybdenum, silver and zinc
- PAH: acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, fluoranthene, 1- and 2- methylnaphthalene, naphthalene and B[a]P TPE
- PHC: PHC F1, F2, F3 and F4

A semi-quantitative screening level assessment of risk based on this list of potential COCs in soil is provided in each of the Human Health and Ecological SLRA sections of this report.

3.5 Groundwater Flow

Water level measurements were taken in all accessible wells during a site visit on July 10, 2013, as described in Section 2.1. Figure A.3, Appendix A and Table B.6, Appendix B show that the shallow

groundwater table is strongly influenced by the elevation of the Ottawa River, which flows parallel to the site on both the south-east and north-west sides and fluctuates in level. Groundwater elevations recorded in MW12-01 through MW12-06 vary within 4 cm of the measured Ottawa River elevation, while groundwater elevations recorded in MW12-07 and MW12-08 were 0.17 m and 4.99 m higher, respectively.

The higher groundwater elevations measured in MW12-07 and MW12-08 are likely in response to the higher ground surface and bedrock elevations also observed at these locations.

Water elevations collected from MW09-05 was not considered to be accurate and therefore was not used in the evaluation of groundwater elevations or flow direction. Additionally MW09-19 was dry at the time of measurement, which is consistent with past monitoring events.

Groundwater flow and direction appear to be generally consistent with that of the Ottawa River. Groundwater flow is directed to the northeast from the top of the embankment at MW12-08 to the toe of the slope at MW12-06, from this location to MW12-01 groundwater elevations are relatively flat and essentially equal to the surface elevation of the Ottawa River.

3.6 Groundwater Quality

Groundwater quality at the site has been subject to several investigations and sampling programs since 2009. Trow completed an initial groundwater assessment in January 2009 in support of the Phase II ESA (Trow, 2009a), which included the installation and sampling of 15 groundwater monitoring wells. Installation and sampling of eight additional wells was completed in February/March, 2009 with a subsequent full monitoring round (sampling of all 23 wells) conducted in June, 2009 (Trow, 2009b). Results from these sampling events indicated that groundwater quality generally met MOE Table 3 non-potable groundwater standards at the time of sampling however, exceedences of MOE background values and CCME community water guidelines were noted for BTEX, PAH and metals parameters.

Following the recommendations of the Phase II ESA for completion of a semi-annual sampling program, Geofirma (as Intera Engineering Ltd.) conducted a groundwater sampling program in April, 2010. This groundwater sampling program included an assessment of remedial options for the site (Intera, 2010). Results of this program did not indicate a distinct reproducible dissolved plume, rather sporadic contamination at different locations throughout the site (at least 12 of 23 wells). In 2011, Geofirma supervised the completion of a limited groundwater and soil remediation project at the site (Geofirma, 2011)

In December, 2012, eight groundwater monitoring wells were installed at the site; four wells were set in overburden material only and four wells were set to straddle the overburden/bedrock interface to screen the static water table. Table 3.2 below provides a summary of historical wells installed in 2009 (and subsequently decommissioned following oxidant injection in 2011) and those installed in 2012 to replace them. The wells are identified as screened either in overburden (OB), bedrock (BR) or to screen the overburden/bedrock interface (OB/BR) in instances where the static groundwater level is close to bedrock surface.

Table 3.2 Monitoring Well Summary

2012 Monitoring Well ID	*Historical Monitoring Well ID*
MW12-01 (OB)	MW09-13 (OB) & MW09-14 (OB)
MW12-02 (OB)	MW09-11 (OB) & MW09-25 (OB)
MW12-03 (OB/BR)	MW09-12 (OB) & MW09-22 (OB)
MW12-04 (OB/BR)	MW09-10 (OB) & MW09-21 (OB)
MW12-05 (OB)	MW09-6 (OB) & MW09-8 (OB)
MW12-06 (OB)	MW09-4 (OB) & MW09-20 (OB)
MW12-07 (OB/BR)	MW09-3 (BR) & MW09-19 (BR)
MW12-08 (OB/BR)	MW09-18 (BR)

3.6.1 2013 Groundwater Quality Results

Groundwater quality results for the 2013 groundwater sampling program for metals, PAH and PHC analysis are presented with historical data in Tables B.8 to B.11 respectively in Appendix B. Complete laboratory analytical results for the 2013 data are included in Appendix C.

Review of the 2013 groundwater analytical results for the site indicates the following:

- Samples could not be collected from the three historic wells remaining on site: MW09-05 and MW09-19 had insufficient groundwater, and MW09-15 could not be located.
- Zinc exceeded FIGQG in MW12-05, this was the only exceedence of metals guidelines or standards for site groundwater.
- Copper in groundwater which historically had exceeded FIGQG across the site was below guidelines in 2013.
- Generally, concentrations of metals across the site are well below applicable guidelines and standards.
- One or more PAH parameters exceeded FIGQGs in five of the six monitoring wells sampled. MW12-02 did not exceed either FIGQG or MOE Table 3 or Table 9 standards for PAH parameters.
- Samples from MW12-03 and MW12-05 exceeded both MOE Table 3 and Table 9 for some PAH parameters, which is consistent with historical results for that area of the site.
- BTEX and PHC F1 and F4 parameters did not exceed any guidelines or standards in any of the eight monitoring wells in 2013.
- PHC F2 exceeded MOE Table 3 and Table 9 standards in five of eight wells, and exceedences of MOE standards for PHC F3 were measured in six wells.
- PHC F2 exceeded FIGQG in samples from MW12-01, MW12-04 and MW12-06. FIGQG do not exist for PHC F3 and F4.
- Groundwater pH was consistent across the site, indicating relatively neutral pH conditions.

- Dissolved oxygen in site groundwater was generally low, indicating oxygen depletion by way of aerobic degradation is likely occurring. Due to minimal groundwater recovery and resulting introduction of air in the system, dissolved oxygen values collected from MW12-08 and MW12-07 were considered to be erroneous and therefore are not presented.
- Oxidation-Reduction Potential (ORP) values are relatively consistent across the site, however, these values do not indicate that current ORP values are reliable for determining reducing conditions.
- Ferrous iron was detected in all site wells with highest concentrations (>10mg/L) recorded in MW12-03, MW12-04 and MW12-06, the lowest Fe+ value was recorded in MW12-01.
- Sulphide was not detected in any site wells.
- Ferrous iron, sulphide and dissolved oxygen data from all eight monitoring wells suggest that moderately reducing conditions are currently present in site groundwater.

3.6.2 Temporal Trends in Groundwater Quality

Groundwater elevations across most of the site, specifically the area northeast of MW12-05, are relatively flat and more or less equal to the elevation of the Ottawa River, a trend that appears to be consistent from year-to-year. Water level fluctuations can result in significant changes in contaminant concentrations by changing the depth locations where water can recharge a well. For example lower water tables may result in flow into wells below a historical product smear zone that will occur across the water table resulting in lower PHC and PAH concentrations. Similarly higher water tables may result in preferential recharge of wells with clean water situated above historical dissolved and sorbed contaminate horizons. This should be taken into consideration when reviewing temporal trends in groundwater quality at the site.

In 2011 Geofirma supervised the completion of a limited groundwater and soil remediation project at the site (Geofirma, 2011), as described in previous sections. The delivery of the persulphate solution was limited to a single injection event through the screens of the monitoring wells installed by Trow (2009a). Time and delivery method restrictions limited the potential effectiveness of the injection/remediation program. The sections below provide a more detailed summary of the temporal trends in PHC and PAH contamination prior to and after the partial remediation efforts, as well as a temporal evaluation of metals in groundwater.

3.6.2.1 Petroleum Hydrocarbons

In January, 2009, Trow (2009a) reported five of 15 samples collected had at least one PHC exceedence of MOE Table 3 standards in effect at the time of sampling. In March of the same year Trow completed further sampling of seven wells, of which four had PHC concentrations above MOE Table 3 standards in effect at the time of sampling. Further groundwater characterization efforts by Trow in June of 2009 (Trow, 2009b) reported 10 of 18 samples collected for PHC analysis had at least one parameter above MOE Table 3 standards in effect at the time of sampling while no exceedences were recorded for BETX. Three of 15 samples submitted for PHC analysis by Geofirma (as Intera Engineering) in 2010 (Intera, 2010) contained an exceedence of MOE Table 3 standards in effect at the time of sampling, however all samples satisfied MOE Table 3 standards for BETX parameters. Generally the 2010 data collected by Geofirma appeared to show a reduction in PHC parameters in site groundwater, though results were somewhat variable, as field observations of purge water

indicated evidence of PHC contamination (sheen, odour) in 12 of 23 wells identified on site, which was not supported by analytical data.

Table 3.3, attempts to correlate 2009 to 2013 PHC concentrations using comparison of maximum detected PHC values from 2009 sampling to maximum detected PHC values in the replacement wells, to assess the effectiveness of the remediation program.

Table 3.3 Evaluation of PHC Concentrations

2012 Well ID	***Historic Monitoring & Injection Well ID***	***Max PHC (ug/L) 2009/ 2013***	***Max PHC (ug/L) 2009/2013***
MW12-01	MW09-13 & MW09-14* (*no injection at MW09-14)	MW09-13/MW12-01 F2: 270/1,500 F3: 3,370/1,300	MW09-14/MW12-01 F2: ND/1,500 F3: ND/1,300
MW12-02	MW09-11 & MW09-25	MW09-11/MW12-02 F2: 172,000/ND F3: 27,000/ND	MW09-25/MW12-02 F2: 980/ND F3: 221/ND
MW12-03	MW09-12 & MW09-22	MW09-12/MW12-03 F2: ND/800 F3: ND/600	MW09-22/MW12-03 F2: 83,000/800 F3: 11,400/600
MW12-04	MW09-10 & MW09-21	MW09-10/MW12-04 F2: 1,590/2,000 F3: 320/1,600	MW09-21/MW12-04 F2: 424/2,000 F3: ND/1,600
MW12-05	MW09-6 & MW09-8	MW09-6/MW12-05 F2: 1,290/300 F3: 920/ND	MW09-8/MW12-05 F2: 195/300 F3: 108/ND
MW12-06	MW09-4 & MW09-20	MW09-4/MW12-06 F2: 863/2,600 F3: 340/700	MW09-20/MW12-06 F2: 1,740/2,600 F3: 421/700
MW12-07	MW09-3 & MW09-19	MW09-3/MW12-07 F2: ND/ND F3: 580/1,100	MW09-19 dry at every sampling round
MW12-08	MW09-18	MW09-18/MW12-08 F1: 1,400/ND F2: ND/ND F3:ND/660	

The following key points are evident through reviewing Table 3.3 in conjunction with the site layout Figure A.2:

- MW12-01, proximate to former well MW09-13, indicates similar concentrations to those detected in 2009.
- MW12-02 indicates a significant reduction in PHC concentrations, over former wells MW09-11 and MW09-25, although due to landscaping constraints, this well is not located immediately proximate to the former wells.
- MW12-03 indicates a significant reduction in PHC concentrations from nearby former well MW09-22.
- MW12-04 appears to show PHC concentrations similar or increased in comparison to nearby former wells.

- MW12-05 shows a reduction in PHC concentrations compared to proximate former well MW09-6.
- Wells MW12-06 and MW12-07 show PHC concentrations similar to or greater than those in nearby former wells.
- The data for MW12-08 does not correlate well with 2009 data from well MW09-18, as historic data showed elevated PHC F1, and 2013 data shows elevated PHC F3.

These results highlight the variable nature of PHC contamination at the site, especially given the variation in groundwater elevations observed since monitoring began in 2009. Although difficult to evaluate directly due to limitations for locating the replacement wells, the PHC remediation program appears to have been effective in the reduction of PHC contaminant concentrations, within the area surrounding each injection point.

3.6.2.2 Polycyclic Aromatic Hydrocarbons

As part of the same Trow (2009a) sampling program described above, Trow submitted 15 groundwater samples from the site for analysis of PAH parameters, eight of 15 samples had an exceedence of MOE Table 3 standards in effect at the time of sampling. An additional six samples were collected in March of 2009 and submitted for further analysis of PAHs in site groundwater, three of the six samples exceeded Table 3 standards in effect at the time of sampling. In June, 2009, Trow submitted a further 18 samples for PAHs in groundwater, five of the 18 samples contained at least one PAH parameter exceeding MOE Table 3 standards in effect at the time of sampling. In April 2010, 14 samples were submitted for PAH analysis by Geofirma, of these samples only one sampled exceeded Table 3 standards in effect at the time of sampling for three PAH parameters. These results highlighted an apparent reduction in groundwater PAHs in comparison to previous years. The MOE Table 9 and Table 3 values for PAHs in groundwater are very similar, although Table 9 values are generally lower. A noted exceedence of Table 3 standards implies an exceedence of Table 9 standards as well. There were a few instances where parameter values measured in groundwater at the site fell between Table 9 and Table 3 standards. These instances were noted for anthracene, benzo(a)anthracene, chysene and pyrene, at sampling locations where Table 3 exceedences were also measured for other parameters.

Results from the 2013 supplemental groundwater sampling are comparable to the PAH data collected in 2010, with the exception of MW12-05 which exceeded current MOE Table 9 and Table 3 PAH standards for seven parameters, with the benzo(a)anthracene value falling between the Table 9 and Table 3 standard. Although this is not representative of original groundwater quality data for the location, the decommissioned well MW09-6, which was replaced by MW12-05, had the highest PAH values in soil. Only one other monitoring well had any exceedences of MOE Table 9 and Table 3 standards for PAH parameters, MW12-03. PAH parameters in groundwater at the site appear to be comparable if not slightly improved following remediation efforts. Furthermore, PAH parameters appear to be more consistent from year-to-year than PHC parameters, this may be attributable to their heavier molecular weight and reduced mobility in groundwater environments. PAH concentrations in groundwater are highly dependent on the sediment content of the sample, as heavy molecular-weight PAHs sorb strongly to sediment.

3.6.2.3 Metals

During both the January and March sampling events conducted by Trow in 2009, a combined total of 21 samples were submitted for metals analysis. Of the 21 samples analysed only one sample analysed exceeded MOE Table 3 standards in effect at the time of sampling. In June of 2009, 18 samples were submitted for metals analyses and none exceeded MOE Table 3 standards, similarly in 2010 no metals parameters were identified as exceeding MOE Table 3 parameters in effect at the time of sampling. Results from the analysis of eight monitoring wells in 2013 for metals parameters support the conclusion made in the 2010 sampling event (Intera, 2010), that metals are not a significant concern for the site. No metals parameters exceeded MOE Table 3 standards in 2013 and most concentrations were well below relevant guidelines, including Federal Interim Groundwater Quality Guidelines.

3.6.3 Groundwater Quality Summary

Based on the 2013 groundwater quality exceedences of FIGQG and MOE standards, potential contaminants of concern for groundwater at the site include: PHC F2 and F3 fractions, PAH parameters; anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[k]fluoranthene, benzo[b]fluoranthene, benzo[ghi]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene.

3.7 Identification of Potential Contaminants of Concern

Contaminants of Concern (COCs) are those priority chemicals which are most likely to influence the results of risk assessments. In this simple screening, identification of COCs for inclusion in the SLRA, non-potable groundwater conditions, coarse textured surface soil and parkland land use are assumed for the site.

3.7.1 Potential COCs in Soil

For initial screening as a potential site COC, the maximum concentration of each parameter detected in soil is compared to both the MOE and CCME criteria. The list provided below identifies any chemical analysed at the site in either surficial or sub-surface soil, from 2009 through to present, for which an exceedence of the applicable CCME guidelines and/or MOE standards was measured. Chemicals which did not exceed either are not listed below:

- VOCs: benzene, chlorobenzene, ethylbenzene and total xylenes;
- Metals: antimony, barium, copper, lead, mercury, molybdenum, silver and zinc;
- PAH: acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, fluoranthene, 1- and 2- methylnaphthalene, naphthalene and B[a]P TPE; and
- PHC: PHC F1, F2, F3 and F4.

Secondary screening of site COCs in soil based on relevant exposure pathways and receptors is conducted in the human health and ecological risk assessments, presented as Sections 4 and 5, respectively, in this report.

3.7.2 Potential COCs in Groundwater

For initial screening as a potential site COC, the maximum concentration of each parameter detected in groundwater is compared to both the MOE standards for non-potable water and FIGQG generic/Tier 1 criteria. The list provided below identifies any chemical analysed at the site in groundwater for which an exceedence of the applicable FIGQG and/or MOE standards was measured. Chemicals which did not exceed either are not listed below. Groundwater chemistry at the site has been variable, with metals historically, but not recently identified as COCs. For screening of site COCs in groundwater, all groundwater data from 2009 through to 2013 is used for initial screening, although focus is given to the most recent (2013) data set. The following are identified as potential COCs in groundwater at Richmond Landing:

- VOCs: 1,2- dichloroethane, (historical);
- Metals: cadmium, copper, lead, molybdenum, selenium, zinc (historical);
- PAH: acenaphthene, acenaphthylene, fluorene, naphthalene (historical); anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[k]fluoranthene, benzo[b]fluoranthene, benzo[ghi]perylene, chrysene, dibenzo[a,h]anthracene, flouranthene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene (historical and 2013); and
- PHC: PHC F1 and F4 (historical), PHC F2 and PHC F3 (historical and 2013).

Secondary screening of site COCs in groundwater based on relevant exposure pathways and receptors is conducted in the human health and ecological risk assessments, presented as Sections 4 and 5, respectively, in this report.

4 SCREENING LEVEL HUMAN HEALTH RISK ASSESSMENT

This section provides a screening level human health risk assessment of the site. This section addresses potential human health risks posed by metals, VOC, PAH, and PHC contamination that exists in the soil and groundwater of the site. SLRA is a form of environmental impact assessment in which contaminant movement through the environment is estimated, starting at sources and ending at points of contact with human receptors. This human health SLRA has been performed in accordance with existing federal and provincial guidance documents and the general framework established by the United States Environmental Protection Agency.

The assessment herein considers human health risks posed by the current land use scenario as parkland. Human receptors including site visitors, maintenance workers and sub-surface workers are considered.

4.1 Guidance Documents and Approach

Guidance in risk assessment has been developed in Canada at both federal and provincial levels to support consistent approaches for assessment and clean-up of contaminated sites. The Canadian Council of Ministers of the Environment (CCME, 1996, 1999), Health Canada (HC, 2003, 2012) and the Ontario Ministry of Environment (MOE, 1996, 2005) are all engaged in development of guidance documents or protocols for performance of human health risk assessments at contaminated sites.

Current versions of available documents from CCME and Health Canada provided the available guidance on Canadian approaches for human health risk assessment at federal contaminated sites. Additional guidance from MOE is used as a secondary information source.

The SLRA for human health was completed using the following approach:

- Screen maximum soil and groundwater concentrations of COCs identified in Section 3.7 against CCME and EC Tier 2 and MOE standard/guideline components protective of human health to identify COCs retained for inclusion in the human health SLRA.
- For any COCs retained for inclusion in the human health SLRA, the contaminant characteristics, pathways and receptors will be evaluated to assess risk.

This approach generally follows available provincial (MOE, 2005) and federal (Health Canada, 2012) guidance on completion of human health SLRA.

4.2 Contaminant Characteristics

The potential COCs in soil and groundwater identified in Section 3.7 include VOCs, metals, PAH, and PHC parameters. Table 4.1 provides a summary of the characteristics of potential contaminants of concern for the site. Table 4.1 identifies that metals, heavy molecular weight PAH, and PHC F3/F4 have low solubility, are highly sorbed to soils, and thus are effectively immobile in groundwater and unlikey to migrate to surface water. These parameters are also unlikely to create air quality concerns as they are non volatile. VOCs and PHC F1, and to a lesser extent PHC F2 are volatile and soluble, and may create concerns to indoor air, and have mobility in groundwater, although are likely to volatilize if/when reaching surface water.

Table 4.1 Contaminant Characteristics

Parameter	*Solubility*	*Volatility*	*Soil Sorption*	*Persistence*
VOCs	High	High	Moderate	Biodegradable
Metals	Low	Non-volatile	High	Persistent
PAH	Low to moderate	Semi-volatile to Non-volatile	Moderate to High	Persistent to Biodegradable
PHC F1	High to Moderate	Volatile	Low	Biodegradable
PHC F2	Moderate	Semi-volatile	Moderate	Biodegradable
PHC F3	Low	Non-volatile	Moderate to High	Biodegradable
PHC F4	Low	Non-volatile	High	Biodegradable

4.3 Potential Human Receptors, Exposure Scenarios and Pathways

The potential human receptors identified for Richmond Landing include a park visitor, a park maintenance worker, and a construction worker. Park visitor use is generally limited to the pathways or recreational use on the maintained grass, and will be exposed only to surficial soils. Maintenance workers are generally considered persons who cut the grass, pick up litter, maintain the pathways, and may tend to ornamental plantings at the site. The majority of the time, maintenance worker will be exposed to the surficial soil, although they may occasionally encounters subsurface soils while maintaining ornamental plantings. Construction workers may be digging in the subsurface to attend to utility or monument structures.

For soil, the human exposure pathways used in derivation of components protective of human health are those of direct soil contact (ingestion, dermal and particulate inhalation). Although there are technically no structures on the property, there is a nearby underground parking facility. Volatilization to indoor air is discussed as a potential off-site risk, as is the possibility of groundwater discharging to surface water, or site soil becoming sediment.

Human health components based on residential/parkland land use, coarse-grained soil in a non-potable groundwater condition are used, as provided in the CCME, FIGCG and MOE documents. Additionally, the S3 soil component from MOE, which is indicative of a worker digging in the soil, is considered in the human health SLRA.

4.4 Screening of COCs for Human Health SLRA

The maximum concentration for each parameter identified as a potential site COC in soil or groundwater (as described in Section 3.7) is compared to the relevant human health risk-based component of the CCME (CCME, 2008a; 2008b; 1999), MOE (2011b) and FIGQG (EC, 2012) guidelines. The relevant MOE standard component values are provided for comparison, and are used to identify COCs in lieu of relevant federal component values. Surficial soil maximums are compared to the CCME component, or the MOE S1 (soil contact in a residential/parkland/institutional setting) component, whereas sub-surface soil maximums are compared to the CCME component or the MOE S3 component. The MOE S3 component is defined in the MOE rationale document (MOE, 2011b) as ".a low-frequency, high-intensity, human health exposure scenario without children present that is protective of a worker digging in the soil." Although this value is generally used at commercial/industrial sites, the exposure characteristics and duration are those for a construction

worker, and therefore applicable for the potential construction or maintenance workers at Richmond Landing.

4.4.1 Soil COCs

Table 4.2 summarizes the screening of maximum COC soil concentrations for COCs identified in Section 3.7 and identifies whether the COC is retained for further consideration.

Table 4.2 Screening Soil COCs for Human Health Risk Assessment

All units in ug/g	Maximum Surficial Soil	Maximum Sub-surface Soil	CCME Ingestion/ Contact	MOE Soil Contact S1	MOE Soil Contact S3	Retained As Human Health COC?
VOCs						
Benzene	ND	0.3	110/250	9.3	480	No
Chlorobenzene	ND	1.6	NV	1300	42000	No
Ethylbenzene	0.002	0.2	10000/58000	2100	22000	No
Total Xylenes	ND	3.2	150000/NV	4200	88000	No
Metals						
Antimony	1	7	NV	7.5	63	No
Barium	96	233	6800	3800	8600	No
Copper	27	166	1100	600	5600	No
Lead	51	225	140	200	1000	Yes
Mercury	ND	0.4	6.6	9.8	670	No
Molybdenum	2	4	NV	110	1200	No
Silver	1.4	1.5	NV	77	490	No
Zinc	89	206	NV	5600	47000	No
PAHs						
Acenaphthylene	0.02	2.84	NV	7.8	360	No
Acenaphthene	0.13	2.69	NV	78	3600	No
Anthracene	0.31	9.58	NV	5400	420000	No
Benzo[a]anthracene	*0.17*	*12.2*	*NV*	*0.78*	*36*	
Benzo[a]pyrene	*0.24*	*7.72*	*NV*	*0.078*	*3.6*	
Benzo[b]fluoranthene	*0.61*	*10.5*	*NV*	*0.78*	*36*	
Benzo[g,h,i]perylene	*0.25*	*2.99*	*NV*	*7.8*	*360*	
Benzo[k]fluoranthene	*0.23*	*3.95*	*NV*	*0.78*	*36*	
Chrysene	*0.39*	*13.5*	*NV*	*7.8*	*360*	
Dibenzo[a,h]anthracene	*0.05*	*0.56*	*NV*	*0.078*	*3.6*	
Indeno[1,2,3-cd]pyrene	*0.21*	*2.31*	*NV*	*0.78*	*36*	
B[a]p TPE	***0.417***	***11.34***	***5.3***	***NV***	***NV***	***Yes***
Biphenyl	0	0.15	NV	710	6000	No
Fluoranthene	0.35	24.3	NV	7.8	360	No
Fluorene	0.02	4	NV	720	56000	No
Methylnaphthalene, 2-(1-)	0.04	16.1	NV	72	560	No
Naphthalene	0.3	4.47	NV	360	28000	No
Phenanthrene	0.25	25.5	NV	NV	NV	No
Pyrene	0.31	22.3	NV	78	3600	No
PHCs						
F1 PHCs (C6-C10)	ND	289	12000	6900	100000	No
F2 PHCs (C10-C16)	ND	1350	6800	3100	48000	No
F3 PHCs (C16-C34)	143	1080	15000	5800	260000	No
F4 PHCs (C34-C50)	76	739	21000	NV	400000	No

PAH parameters shaded and in italics are those carcinogenic PAHs used to calculate the CCME benzo(a)pyrene Total Potency Equivalents

COCs are retained if the maximum soil concentration exceeds the relevant CCME component, or, in the absence of CCME criteria, MOE human health component values. In selecting COCs,

precedence is given to the federal guidelines. CCME values for benzene and B[a]P TPE are based on an incremental life cancer risk of 10^{-5}.

Review of Table 4.2 confirms that the surficial soil at Richmond Landing, including the placement of a clean soil cap over excavated areas, conforms to the human health components of both the CCME guidelines and MOE standards, and does not pose a risk to human receptors at the site.

CCME components indicate a potential risk to human receptors exposed to lead and benzo[a]pyrene total potency equivalents in the subsurface soil. These human receptors would include a site maintenance worker or a construction worker. The component values for VOCs in Table 4.2 do not include inhalation to indoor air as there are no buildings on site. The low generic guidelines for benzene and ethylbenzene are based on indoor air, which is not a concern at the site, however is a relevant consideration for off-site concerns at the adjacent underground parking garage.

Lead and benzo[a]pyrene total potency equivalents COCs in soil are retained in the human health SLRA for further discussion on site, whereas benzene and ethylbenzene are retained for discussion as potential off-site concerns.

4.4.2 Groundwater COCs

Table 4.3 summarizes the screening of maximum groundwater concentrations for COCs identified in Section 3.7 and identifies whether the COC is retained for further consideration. Table 4.3 also presents historical data maximums (values from 2009-2010) separately from the recent groundwater data maximums (2013 sampling event). The groundwater environment is dynamic, the use of older data (greater than 2 years) may not be appropriate to assess risk at the site. Inconsistencies and fluctuations in COC concentrations are evident in the groundwater data set for Richmond Landing. Although the complete data set is used for identifying potential COCs in groundwater, priority is given to the recent data when evaluating risk.

For groundwater, the human exposure pathways used in derivation of components are those of drinking water (not a pathway at Richmond Landing) and volatilization of substances from groundwater to accumulation in indoor air. In accordance with Section 5.2, Pathways Elimination, of the FIGQG guidance document (EC, 2012), the vapour pathway can be excluded if there are no occupied buildings present on the site, and no potential for future occupied buildings within 30 metres of the groundwater contamination. Based on the current land use, although there are no indoor structures on site, there is an underground parking garage adjacent to the property, therefore this pathway is included in Table 4.3 for the FIGQG. The MOE human health component for groundwater in this non-potable situation is the GW2 value where models are used "..to back-calculate a groundwater value from the water table based on acceptable indoor air concentrations for health and odour.." Although there are no structures on site, and therefore technically no "indoor air" concerns, these are the only available groundwater components, and thus are presented for consideration of off-site risks at the adjacent underground parking garage.

Table 4.3 Screening Groundwater COCs for Human Health Risk Assessment

All units in ug/L	*Historical Maximum in Groundwater*	*2013 Maximum in Groundwater*	*FIGQG Inhalation*	*MOE Residential GW2*	*Retained As Human Health COC?*
Metals					
Cadmium	1	ND	NV	NV	No
Copper	41.6	ND	NV	NV	No
Lead	4	ND	NV	NV	No
Molybdenum	140	ND	NV	NV	No
Selenium	5	ND	NV	NV	No
Zinc	47	20	NV	NV	No
PHCs					
F1 PHCs (C6-C10)	1400	ND	810	1400	No
F2 PHCs (C10-C16)	172000	2600	1500	2300	Yes
F3 PHCs (C16-C34)	27000	1600	NV	NV	No
F4 PHCs (C34-C50)	1650	ND	NV	NV	No
VOCs					
Toluene	420	4.2	74000	82000	No
1,2-Dichloroethane	8	NV	10	1.6	Yes
PAHs					
Acenaphthene	7.13	0.3	NV	600	No
Acenaphthylene	11.5	ND	NV	36	No
Anthracene	5.1	1	NV	NV	No
Benzo[a]anthracene	8.6	3.8	NV	70	No
Benzo[a]pyrene	8.04	3.83	NV	130	No
Benzo[k]fluoranthene	5.96	2.92	NV	1300	No
Benzo[b]fluoranthene	10.6	3.12	NV	1100	No
Benzo[ghi]perylene	4.2	2.3	NV	NV	No
Chrysene	9.3	3.55	NV	2400	No
Dibenzo[a,h] anthracene	1	1	NV	1300	No
Fluoranthene	19	5.8	NV	1100	No
Fluorene	11.6	0.5	NV	NV	No
Indeno[1,2,3-cd]pyrene	4.06	2.1	NV	2200	No
Naphthalene	63.8	0.6	600	1400	No
Phenanthrene	19.9	3.1	NV	NV	No
Pyrene	20.4	5.6	NV	9300	No

Table 4.3 indicates that the majority of site COCs in groundwater are not a concern to human health, as site groundwater is not a drinking water source, contact with site groundwater is generally not expected, and the majority of COCs have relatively low solubility and volatility in groundwater.

The exception to this are site COCs PHC F2, and 1,2-dichloroethane, which are retained in the human health SLRA. Although there are no buildings on the site, therefore no risk to indoor occupants from these volatile COCs, these COCs are retained for further discussion as they pertain to indoor air concerns in the off-site adjacent underground parking structure.

4.5 Assessment of Human Health Risk

Lead and benzo[a]pyrene total potency equivalents COCs in soil pose a potential concern to human health in the subsurface soil at the site.

COCs identified in soil and groundwater as potential off-site concerns include benzene and ethylbenzene in soil, and PHC F2 and 1,2-dichloroethane in groundwater.

4.5.1 Lead

There has been significant research conducted recently on the toxicity of lead to human health. Toxic reference values are currently under review by the US EPA and the MOE. Health Canada recently released a document (Health Canada, 2013), which re-evaluates how assessment of risk regarding lead exposure is conducted. Blood lead levels as low as 1-2 ug/dL have been reported to show effects including neurodevelopmental, neurodegenerative, cardiovascular, renal and reproductive, with the strong evidence linking lower range exposure and neurodevelopmental effects in children. The current CCME lead guideline of 140 ug/g in residential/parkland soil is under review.

Lead was not detected above the CCME guideline in surficial soils at the site, and was detected at a maximum concentration of 225 ug/g in subsurface soil. Although this value exceeds the CCME guideline, it is well below the MOE S3 component value of 1,000 ug/g, considered protective of a worker digging in the soil. Therefore, no risk was identified to site visitors exposed to surficial soil, and the potential risk to human receptors based on lead in sub-surface soils at Richmond Landing is considered low to negligible.

4.5.2 PAHs

CCME conducted an extensive investigation of PAHs in the environment, and their effects on human and ecological health, and developed the resulting guideline of 5.3 ug/g of benzo[a]pyrene total potency equivalents (TPE) based on this evidence (CCME, 2008a). The B[a]P TPE value is derived through grouping of nine PAHs which are known or strongly suspected to act as carcinogens in humans and other mammals. Assessment of the relative toxicity of each parameter to benzo(a)pyrene was evaluated, and is used in conjunction with the detected concentration of each parameter, to determine a B[a]P TPE. The CCME guideline of 5.3 ug/g of B[a]P TPE equates to an incremental life cancer risk of $1x10^{-5}$. This value is deemed acceptable for use at federal contaminated sites risk assessments.

At Richmond Landing, B[a]P TPE values in surface soil were well below the guideline, and no risk was identified to site visitors. In sub-surface soil, only one sample submitted was found to exceed the CCME value of 5.3 ug/g. Multiple exceedences of the MOE generic standards for various PAH parameters were identified in the subsurface soil, however only one benzo(a)pyrene detection was found to exceed the MOE component value S3, protective of a worker digging in the soil. Based on this information, the potential risk to workers digging in the soil is low.

4.5.3 VOCs and PHCs to Off-Site Receptors

Benzene and ethylbenzene were identified above the generic CCME guidelines and MOE standards in one soil sample collected from MW09-18, at a depth greater than 5 metres below ground surface. This collected sample is proximate to the underground parking garage on the west-adjacent property. Benzene and ethylbenzene in soil at Richmond Landing are likely associated with historic fuel storage.

Both CCME guidelines and MOE standards in soil provide separate component values for exposure by direct contact vs. exposure through indoor air. Component values for indoor air were not used in determining site COCs, as there are no structures present on site, however, the MOE and CCME values for soil to indoor air and the MOE and FIGQG values for groundwater to indoor air can be used in a semi-quantitative evaluation of potential risk.

- Benzene max in soil = 0.3 ug/g: MOE components of 0.21 ug/g for a residential scenario (24 hour/day exposure), and 0.32 ug/g for a commercial/industrial exposure (8 hrs/day). CCME components of 0.15 ug/g (basement) for residential exposure, and 0.3 ug/g (slab on grade) for commercial/industrial exposure.
- Ethylbenzene max in soil = 0.2 ug/g: MOE components of 2 ug/g for a residential scenario (24 hour/day exposure), and 9.5 ug/g for a commercial/industrial exposure (8 hrs/day). CCME components of 88 ug/g (basement) for residential exposure, and 630 ug/g (slab on grade) for commercial/industrial exposure.
- PHC F2 max in groundwater = 172,000 ug/L (historical) or 2,600 ug/L (2013): MOE components of 2,300 ug/L for a residential scenario (24 hour/day exposure), and 47,000 for a commercial/industrial exposure (8 hrs/day). FIGQG components of 1,500 ug/L for residential exposure and 17,000 ug/L for commercial/industrial exposure.
- 1,2-Dichloroethane max in groundwater = 8 ug/L: MOE components of 1.6 ug/L for a residential scenario (24 hour/day exposure), and 30 ug/L for a commercial/industrial exposure (8 hrs/day). FIGQG components of 10 ug/L for residential exposure and 130 ug/L for commercial/industrial exposure.

These component values indicate that the maximum site concentrations of benzene and ethylbenzene in soil and 1,2-dichloroethane in groundwater are below the provincial and federal components for commercial/industrial exposures. The PHC F2 maximum concentration historically detected was above the component values, however, the post-remediation 2013 value was well below commercial/industrial exposure component. As the adjacent property is a parking garage with increased air circulation over that for a commercial/industrial buildings, with exposure expected to be very minimal (less than one hour per day), the potential risk to human health based on these volatile COCs in site soil is negligible.

4.6 Summary of Human Health Risks

Based on preliminary screening of site soil against generic guidelines and standards, multiple metals, PHCs and PAH parameters and a few VOCs were identified as COCs. Completion of the human health SLRA, based on relevant component values and exposure scenarios indicates the following:

- No potential risk was identified to site visitors, based on exposure to surficial soils.
- Potential risk to site workers digging in the soil, through exposure to lead in subsurface soils is low to negligible, and can easily be managed through personal protective equipment.

- Potential risk to site workers digging in the soil, through exposure to PAHs in sub-surface soils is low, and can easily be managed through personal protective equipment.
- The potential risk to off-site human health based on VOCs and PHC F2 in subsurface soil and groundwater is negligible.

5 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT

This section provides a screening level ecological risk assessment of the site. This section addresses potential ecological risks posed by metals, PAH, VOC and PHC contamination that exist in the soil and groundwater of the site. SLRA is a form of environmental impact assessment in which contaminant movement through the environment is estimated, starting at sources and ending at points of contact with receptors. The ecological SLRA has been performed in accordance with existing federal and provincial guidance documents and the general framework established by the United States Environmental Protection Agency.

5.1 Guidance Documents and Approach

Guidelines for performance of ecological risk assessment (ERA) have been prepared by MOE, CCME, Environment Canada, PWGSC and U.S. EPA. MOE (2005) have released basic frameworks for conducting site-specific ecological risk assessments. CCME have also released a general guidance document and supporting work (CCME, 1996, 1994) on frameworks for ecological risk assessment. A guidance document for ecological risk assessment at federal contaminated sites is also currently being developed by Environment Canada. Public Works and Government Services Canada (PWGSC, 2003) has released guidance on completion of ecological screening level risk assessments at federal properties. These documents were used in preparation of this ERA.

The SLRA for ecological health was completed using the following approach:

- Screen maximum soil and groundwater concentrations of COCs identified in Section 3.7 against CCME and Environment Canada Tier 2 and MOE standard/guideline components protective of ecological health to identify COCs retained in the ecological SLRA.
- For any COCs retained for inclusion in the ecological SLRA, the contaminant characteristics, pathways and receptors will be evaluated to assess potential risk.

This approach generally follows available provincial and federal guidance on completion of SLRA.

5.2 Contaminant Characteristics

The potential COCs in soil and groundwater identified in Section 3.7 include metals, PAH, PHC and a few VOC parameters. The contaminant characteristics of these COCs are provided in the Screening Level Human Health Risk Assessment, Section 4.2.

5.3 Potential Ecological Receptors, Exposure Scenarios and Pathways

The potential ecological receptors identified for the site include soil invertebrates, microbes, terrestrial plants, and the various terrestrial mammals and avian species typical for an urban park. These terrestrial receptors include ground hogs, mice, rabbits, and urban birds such as robins and sea gulls.

The significant pathway for receptor exposure to site contaminants is through ingestion of soil and ingestion of food impacted by contaminated soil or groundwater. Mammalian and avian receptors at the site will directly ingest soil through feeding and preening. COCs will also be ingested as part of the food diet through terrestrial plants and invertebrates. Inhalation and dermal exposures are not significant pathways for ecological receptors. Feathers and fur significantly reduce dermal exposure, and inhalation exposures are negligible when compared to the ingestion exposures.

Ecological receptor exposure to site groundwater is limited based on the general depth of groundwater at the site generally preventing direct contact with the groundwater, however uptake of chemicals by plants through contact with shallow groundwater, is considered in the component values presented.

All generic ecological receptors and exposure pathways are considered for screening of site COCs for inclusion in the ERA. Components based on residential/parkland land use, coarse-grained soil in a non-potable groundwater condition are used, as provided in the CCME documents (CCME, 2008a; 2008b; 1999) and FIGQG (EC, 2012). Where these federal numbers are not available, or to support the federal numbers, the components of the MOE standards are used (MOE, 2011b). In particular for groundwater, the presentation of MOE component values is relevant, as the FIGQG are very conservative, and tend to apply surface water numbers directly to groundwater.

5.4 Screening of COC's for Inclusion in Ecological SLRA

The maximum concentration for each parameter identified as a potential site COC in soil or groundwater (as described in Section 3.7) is compared to the relevant ecological risk-based component of the CCME (CCME, 2008a; 2008b; 1999) and FIGQG (EC, 2012) guidelines. Where a federal guideline is not available, or has not been developed for a specific parameter, the relevant MOE standards (MOE, 2011b) is provided for comparison.

As the groundwater data set for the site is quite variable, with historical identification of metals above guidelines not supported by recent (2013) data, the maximum values for historical data are presented separately from the maximum values measured in 2013.

5.4.1 Soil COCs

Table 5.1 summarizes the screening of maximum soil concentrations for COCs identified in Section 3.7, and identifies whether the COC is retained for further consideration in the ecological SLRA. COCs are retained if the maximum COC soil concentration exceeds CCME or, in the absence of CCME criteria, MOE ecological health component values. For ecological receptors, a distinction between shallow surficial soil and subsurface soils cannot be made. The depth of contact for soil microbes, invertebrates, some terrestrial plants, and burrowing mammals may be as deep as 1.5 metres, therefore the full soil profile is considered in screening of COCs for the ecological risk assessment.

Table 5.1 indicates that VOCs in soil are not a risk to ecological health. Concentrations of heavy metals and PAH parameters in soil may pose a risk to plants and soil organisms, as well as mammals and birds. PHCs are generally metabolized by mammals and birds, but may affect plants and soil organisms. Additionally, the MOE Table 9 component values are based on the potential of site soil to become sediment in the adjacent water body. These parameters are discussed in reference to potential off-site impact to the Ottawa River.

Table 5.1 Screening Soil COCs for Ecological Risk Assessment

All units in ug/g	*Maximum All Soil*	*CCME Ecological*	*MOE Plants & Soil Org*	*MOE Mammals & Birds*	*MOE Sediment Table 9 (Off-site)*	*Retained As Ecological COC*
VOCs						
Benzene	0.3	31	25	370	NV	No
Chlorobenzene	1.6	NV	6	NV	NV	No
Ethylbenzene	0.2	55	55	90	NV	No
Total Xylenes	3.2	95	95	96	NV	No
Metals						
Antimony	7	NV	20	25	NV	No
Barium	233	NV	750	390	NV	No
Copper	166	63	140	770	16	Yes
Lead	225	300	250	32	31	Yes
Mercury	0.4	12	10	20	0.2	Yes*
Molybdenum	4	NV	40	6.9	NV	No
Silver	1.5	NV	20	NV	0.5	Yes*
Zinc	206	200	400	340	340	Yes
PAHs						
Acenaphthylene	2.84	NV	NV	NV	NV	No
Acenaphthene	2.69	NV	NV	6600	NV	No
Anthracene	9.58	2.5	2.5	38000	0.22	Yes
Benzo[a]anthracene	12.2	NV	0.5	NV	0.32	Yes
Benzo[a]pyrene	7.72	20	20	1600	0.37	Yes*
Benzo[b]fluoranthene	10.5	1	NV	NV	NV	Yes
Benzo[g,h,i]perylene	2.99	NV	6.6	NV	0.17	Yes*
Benzo[k]fluoranthene	3.95	1	7.6	NV	0.24	Yes*
Chrysene	13.5	NV	7	NV	0.34	Yes
Dibenzo[a,h]anthracene	0.56	1	NV	NV	0.06	No
Indeno[1,2,3-cd]pyrene	2.31	1	0.38	NV	0.2	Yes
Biphenyl	0.15	NV	NV	NV	NV	No
Fluoranthene	24.3	50	50	0.69	0.75	Yes
Fluorene	4	NV	NV	NV	0.19	Yes*
Methylnaphthalene, 2-(1-)	16.1	NV	NV	NV	NV	No
Naphthalene	4.47	0.013	0.6	380	NV	Yes
Phenanthrene	25.5	0.046	6.2	2700	0.56	Yes
Pyrene	22.3	10	NV	4700	0.49	Yes
PHCs						
F1 PHCs (C6-C10)	289	210	210	NV	NV	Yes
F2 PHCs (C10-C16)	1350	150	150	NV	NV	Yes
F3 PHCs (C16-C34)	1080	1300	300	NV	NV	Yes
F4 PHCs (C34-C50)	739	5600	2800	NV	NV	No

* indicates retained as a COC for off-site sediment

5.4.2 Groundwater COCs

Table 5.2 summarizes the screening of maximum groundwater concentrations for COCs identified in Section 3.7 and identifies whether the COC is retained for further consideration. Table 5.2 also presents historical data maximums (values from 2009-2010) separately from the recent groundwater data maximums (2013 sampling event). As the groundwater environment is dynamic, the use of older data (greater than 2 years) may not be appropriate to assess risk at the site. Inconsistencies and fluctuations in COC concentrations are evident in the groundwater data set for Richmond Landing. .

Table 5.2 Screening Groundwater COCs for Ecological Risk Assessment

All units in ug/L	Historical Maximum in Groundwater	2013 Maximum in Groundwater	FIGQG Aquatic Life	FIGQG Direct Contact	MOE Aquatic Biota Table 3	MOE Aquatic Biota Table 9	Retained As Ecological Ecological COC
Metals							
Cadmium	1	ND	0.017	NV	2.7	2.1	Yes/No**
Copper	41.6	ND	2000	NV	87	69	No
Lead	4	ND	1000	NV	25	20	No
Molybdenum	140	ND	73	NV	9200	7300	Yes/No**
Selenium	5	ND	1	NV	63	50	Yes/No**
Zinc	47	20	30	NV	1100	890	Yes/No**
PHCs							
F1 PHCs (C6-C10)	1400	ND	9800	7100	750	420	Yes/No**
F2 PHCs (C10-C16)	172000	2600	1300	1800	970	170	Yes
F3 PHCs (C16-C34)	27000	1600	NV	NV	NV	NV	No
F4 PHCs (C34-C50)	1650	ND	NV	NV	NV	NV	No
VOCs							
Toluene	420	4.2	83	59000	18000	14000	Yes/No**
Dichloroethane, 1,2-	8	NV	100	NV	250000	200000	No
PAHs							
Acenaphthene	7.13	0.3	5.8	NV	6600	5200	Yes/No**
Acenaphthylene	11.5	ND	46	NV	1.8	1.4	Yes/No**
Anthracene	5.1	1	0.012	25	2.4	1	Yes
Benzo[a]anthracene	8.6	3.8	0.018	NV	1.60E+11	1.8	Yes
Benzo[a]pyrene	8.04	3.83	0.015	1.8	3.40E+12	2.1	Yes
Benzo[k]fluoranthene	5.96	2.92	0.48	NV	2.30E+12	4.2	Yes
Benzo[b]fluoranthene	10.6	3.12	0.48	NV	6.90E+12	1.4	Yes
Benzo[ghi]perylene	4.2	2.3	0.17	NV	3.30E+11	0.2	Yes
Chrysene	9.3	3.55	1.4	NV	1.10E+11	0.7	Yes
Dibenzo[a,h] anthracene	1	1	0.26	NV	6.60E+11	0.4	Yes
Fluoranthene	19	5.8	0.04	240	41000	73	Yes
Fluorene	11.6	0.5	3	NV	400	290	Yes/No**
Indeno[1,2,3-cd]pyrene	4.06	2.1	0.21	NV	2.30E+12	1.4	Yes
Naphthalene	63.8	0.6	1.1	NV	230000	6200	Yes/No**
Phenanthrene	19.9	3.1	0.4	NV	920	380	Yes
Pyrene	20.4	5.6	0.025	NV	2700	5.7	Yes

**Based on 2013 data only

Although the complete data set is used for identifying potential COCs in groundwater, priority is given to the recent data when evaluating risk.

For groundwater, the ecological exposure pathways used in derivation of components include direct contact with soil organisms, but are mainly based on the protection of aquatic life. As Richmond Landing is adjacent to the Ottawa River, protection of aquatic life dominates the concerns for the site. Table 5.2 provides both the soil organisms and aquatic life protection values from the FIGQG, as well as the MOE Table 3 component which is based on a back-calculation from an aquatic protection value, and assumes a distance of 30 metres from a water body. Also, the MOE Table 9 component is presented, which is to be used at sites within 30 metres of a water body. The Table 9 value is the MOE-accepted aquatic protection value (taken from CCME or USEPA), with a very conservative multiplier of 10 to account for dilution in the surface water body.

Review of Table 5.2 indicates the following key points:

- No metals in groundwater were identified as COCs through the 2013 sampling program.
- PHC F1 and toluene values were greatly decreased in 2013 sampling compared to previous sampling rounds, and did not identify as COCs in 2013 sampling.
- Multiple PAH parameters are identified as groundwater COCs in both historic and 2013 groundwater sampling events.

Of note is the difference in magnitude of several of the PAH component values: FIGQG use a direct surface water protection value, with a 10 or 100 –fold factor of safety, to be applied to groundwater, resulting in an overly conservative number. MOE Table 3 components illustrate the low solubility of the majority of PAH parameters, and their relative lack of mobility in groundwater. The MOE Table 9 components take an aquatic protection value, and assume a dilution of 10 in the receiving surface water body. This is further discussed in the assessment of risk to off-site ecological receptors.

5.5 Assessment of Ecological Health Risks

COCs are identified in site soil and groundwater, mainly due to their potential effect on the adjacent Ottawa River. PAHs are generally discussed as a group in this ecological SLRA. Identified COCs include:

- On-site soil: lead, copper, zinc, PAHs, PHC F1, PHC F2, PHC F3.
- Off-site soil: copper, lead, mercury, silver, PAHs.
- On-site groundwater: benzo(a)pyrene.
- Off-site groundwater: cadmium, molybdenum, selenium, zinc, toluene, PHC F2, PAHs

5.5.1 Lead in Site Soil

The ecological contact value for lead of 300 ug/g developed by CCME is based on protection of plants and invertebrates (CCME 1999). USEPA have established similar concentrations for effects on plants, invertebrates, mammals and avian receptors. The MOE Table 3 component value for lead effects on mammals and birds of 32 ug/g is below the typical Ontario background soil concentration. The potential risk to ecological receptors based on site soil is posed by accumulation of lead in invertebrates such as earthworms, who are, in turn consumed by mammals and birds.

As the surficial soil at the site is of better quality than the subsurface and the maximum lead concentration in soil is below the CCME guideline, the risk posed to ecological receptors through exposure to lead in the soil of Richmond Landing is considered low.

5.5.2 Copper in Site Soil

The ecological component value derived by CCME for copper in soil is based on protection of plants and soil organisms, with concentrations as low as 50 ug/g showing effects reduced growth for terrestrial plant, and reproduction endpoints for earthworms. The MOE ecotoxicity criterion of 225 µg/g is developed based on protection of plant health and grazing animals. The maximum value detected in site soil exceeds both the MOE and CCME components, however the typical background

concentration of copper in non-agricultural soil has been estimated by MOE as 85 µg/g, which is above the CCME ecotoxicity criteria.

Soil-copper concentrations greater than the CCME value of 63 ug/g were observed in 4 of 58 samples collected on site, all from greater than 1.5 m below grade. Surficial soil samples showed copper concentrations in compliance with the CCME guideline and MOE standard. Based on this information, the risk posed to ecological receptors at the site is considered low.

5.5.3 Zinc in Site Soil

The CCME ecotoxicity criteria of 200 µg/g is developed based on protection of plants and invertebrates, while MOE presents a value of 400 ug/g for these receptors, and a value of 340 ug/g for mammals and birds. The zinc soil concentrations as low as 50 ug/g produced toxic effects to terrestrial plants, and values as low as 80 ug/g showed effects on earthworm population. These values are both well below the Ontario background concentration of 160 ug/g.

The maximum detected soil zinc concentration at the site was marginally above the CCME component, with a concentration of 206 ug/g in one sample. All other samples were well below the CCME and MOE ecological protection values. Risk to ecological receptors posed by zinc in site soil is considered negligible.

5.5.4 PAHs in Site Soil and Groundwater

PAHs are generally found in complex mixtures, including low molecular weight compounds (LMW) and high molecular weight compounds HMW), with LMW generally being more soluble, and HMW more persistent. Aging of PAH mixtures reduces the bioavailability of PAHs in soil, as the remaining fractions bind more tightly to soil. In general, the more soluble a PAH, the higher the uptake by plants, while the reverse is true for uptake by earthworms and uptake in the gastrointestinal tract of animals.

The emphasis of CCME (2008a) in developing PAH benchmarks for wildlife is on oral exposures, and toxicity endpoints other than cancer, with several of the most sensitive endpoints based on changes in the liver. Of all the PAH parameters, data was sufficient only or the development of CCME guidelines for anthracene (2.5 ug/g), benzo(a)pyrene (20 ug/g) and fluoranthene (50 ug/g), all of which are based on soil invertebrate health. Ecological toxicity standards from MOE are generally similar to those of CCME for plants and soil organisms, but considerably higher for mammals and birds, with the exception of fluoranthene, with an MOE value of 0.69 ug/g, protective of mammals and birds. MOE Table 9 components, protective of sediment, are discussed as off-site concerns.

Multiple exceedences of PAH component values protective of ecological health are measured in the subsurface soils at Richmond Landing, although surficial soils are in compliance with generic standards and guidelines. This clean surficial soil does provide some degree of protection to plants and soil organisms, and the birds and mammals who may consume them. However, the wide-spread contamination of subsurface soil by PAHs indicates a low to moderate risk to plants and soil invertebrates at Richmond Landing.

Benzo(a)pyrene was detected in site groundwater above the FIGQG for direct contact of soil organisms. The derivation of this FIGQG was not identified in the guidance document (EC, 2012) or supporting scientific report (Meridian, 2009).

5.5.5 PHCs in Site Soil

The CCME document, Canada-Wide Standards for PHCs in Soil (CCME, 2008b), comments on the scarcity of information on toxicity of PHCs to terrestrial organisms. The relative lack of emphasis on wildlife is considered acceptable by CCME as most PHCs are readily metabolized and modified to an excretable form by most vertebrates, and do not tend to accumulate in tissue. Direct ingestion of PHCs by wildlife can lead to acute toxic effects, including death, however this scenario is based on the presence of free phase PHCs in the environment. Free product is not known to be present at the site.

CCME provides combined plant/invertebrate toxicity benchmarks, based on reduced plant growth and endpoints of mortality, weight and reproduction for soil invertebrates. The data for invertebrates indicates toxicity at lower concentrations than that for plants, resulting in combined values of 210 ug/g for PHC F1, 150 ug/g for PHC F2 and 300 ug/g for PHC F3. These values were adopted by MOE.

PHC F2 and F3 concentrations above ecological protection values are found sporadically throughout the sites, although generally at depths greater than 1 metre below grade, and the highest concentrations greater than 5 mBGS, generally below the water table. PHC F1 exceedences are infrequent, with only one detection above the ecological component values. Surficial soil meets the generic MOE standards and CCME guidelines, which provides some degree of protection to terrestrial plants and invertebrates. Based on the depth of PHC contamination at the site, the risk to ecological receptors posed by PHCs in the soil at Richmond Landing is considered low.

5.5.6 Metals and PAH in Soil to Sediment

The MOE Table 9 values for soil, which are applied to sites within 30 metres of a water body, are derived based on the potential for site soil to become sediment in the adjacent water body. Consideration herein is provided for the potential effect of metals and PAH parameters in soil to become sediment of the Ottawa River. Copper, lead, mercury, silver and 12 PAH parameters were all identified in site soil, at concentrations above the MOE sediment guidelines.

The sediment standards represent lowest effect level (LEL), which is defined as a level of contamination that can be tolerated by the majority of sediment-dwelling organisms (MOE, 2011b). LELs are not effects based guidelines, as they are determined based on the relationship between sediment concentrations and presence of benthic invertebrates. For many of the site COCs, the sediment value presented is lower than the Ontario background soil value (MOE, 2011b). This indicates that typical background soil in Ontario, which may become sediment, has the potential to pose a risk to aquatic receptors should it become sediment.

Based on this information, should soils at Richmond Landing become sediment, the possibility exists for potential risk to aquatic receptors in the adjacent Ottawa River. The clean surficial soil, and the vegetated cover present over the majority of the site, greatly limits the potential for site soils to become sediment. The Ottawa River has a history of industrial use along the shoreline, particularly in the vicinity of the site, which would make correlation of sediment quality in the river to the actual Richmond Landing property impossible. The likelihood of impact and associated risk to sediment-dwelling organisms of the Ottawa River based on metals and PAHs in the soil of Richmond Landing is considered low to negligible.

5.5.7 Metals, PAH, PHC and Toluene in Groundwater to Surface Water

All metals identified as COCs in groundwater were identified as such based on the very conservative FIGQGs, with no exceedences of MOE standards. Comparison of groundwater data collected prior to site redevelopment to that collected in 2013, indicates metals were not detected above relevant standards or guidelines in the 2013 sampling event.

Historical concentrations of metals and PHCs were elevated, and could pose a potential risk to the aquatic environment, if they were to reach the Ottawa River at those concentrations. However, detections of these parameters were sporadic in site groundwater, and were not indicative of an overall plume or area-wide level of contamination in groundwater. It is very unlikely that metals and PHCs would have discharged to the Ottawa River at the concentrations identified in historic sampling events. Additionally, the site remediation appears to have reduced the very high PHC concentrations at certain "hot spots" to levels more tolerable to the aquatic environment.

The VOCs detected at the site were measured in only one well, and do not represent a plume likely to discharge to surface water. In the unlikely event that VOCs would reach the Ottawa River, they would volatilize rapidly due to the current and high flow volume of the Ottawa River.

PAHs in groundwater were detected historically, and were generally detected at similar levels in 2013, with the exception of some very high historical concentrations of naphthalene, phenanthrene and pyrene which were not measured in 2013. The majority of PAHs identified in site groundwater have low solubility, and are highly sorbed to sediment. This is well illustrated by comparison of the component values from MOE Table 3, which show protection of aquatic life values for non-potable groundwater range from four to 15 orders of magnitude greater than the surface water values.

Surface water sampling was conducted by Trow in June, 2009 (Trow, 2009b), which included the collection of 9 surface water samples adjacent to and upstream of Richmond Landing. Analytical results for the surface water sampling program confirmed no exceedences guidelines for metals, VOCs or PHCs in surface water, however identified fluoranthene and pyrene above CCME and MOE guidelines in three of nine samples, located at the east end of the site. The highest readings of PAHs in groundwater, were measured in the central portion of the site. PAH parameters were not detected in the upstream surface water location, therefore the conclusion was made that Richmond Landing may be contributing PAHs to the surface water of the Ottawa River.

Based on the on-going detections of PAHs in groundwater, and the PAH exceedences noted by Trow (2009b) in the surface water adjacent to the site, the possibility exists that Richmond Landing may be contributing low concentrations of PAHs to the Ottawa River. The risk to off-site aquatic receptors posed by PAHs in the groundwater is considered low.

5.6 Summary of Ecological Health Risks

Based on preliminary screening of site soil against generic guidelines and standards, multiple metals, PHCs and PAH parameters and a few VOCs were identified as COCs. Completion of the ecological health SLRA, based on relevant component values and exposure scenarios indicates the following:

- Potential risk to ecological receptors exposed to copper, lead and PHCs in the subsurface soils at the site is low, and the likely impacted receptors are plants and soil invertebrates.

- Potential risk to ecological receptors exposed to zinc in subsurface soils is low to negligible.
- Potential risk to ecological receptors exposed to PAHs in subsurface soils is low to moderate. Terrestrial plants, soil invertebrates, and avian/mammalian receptors may be impacted.
- Assessment of off-site risk posed by site soil becoming sediment in the Ottawa River indicates a low to negligible risk posed by metals and PAH in site soil.
- Assessment of off-site risk posed by site groundwater discharging to the surface water of the Ottawa River indicates negligible risk by way of metals, VOCs and PHCs, and low risk by way of PAH parameters.

6 CONCLUSIONS AND RISK MANAGMENT RECOMMENDATIONS

Following completion of a screening-level human health and ecological risk assessment for Richmond Landing, the following conclusions are provided:

- Contaminants exceeding applicable federal guidelines and provincial standards for residential/parkland land use, coarse-grained soil, in a non-potable groundwater condition were identified in the soil and groundwater at the site. Potential contaminants of concern included a limited number of VOCs, several metals parameters, PAHs, and all fractions of PHC.
- Surficial soil quality at the site was found to be in compliance with guidelines and standards.
- The oxidant injection program appears to have been effective in decreasing PHC “hot-spots” in groundwater at the site, proximate to the injection points. PHC contamination in groundwater is still present at the site.
- COCs identified in subsurface soil for the site included: lead and carcinogenic PAHs (on-site human health); and copper, lead, zinc, PAHs, PHC F1, F2 and F3 (on-site ecological health).
- COCs identified in groundwater included: benzo(a)pyrene (on-site) and cadmium, molybdenum, selenium, zinc, toluene, PHC F2 and PAHs (off-site groundwater to surface water)
- COCs identified in subsurface soil for off-site concerns included: copper, lead, mercury, silver and PAHs (soil to sediment).
- No potential risk was identified to site visitors, based on exposure to surficial soils.
- Potential risk to site workers digging in the soil, through exposure to lead and PAHs in subsurface soils is low, and can easily be managed through personal protective equipment.
- The potential risk to off-site human health based on VOCs in the subsurface is negligible.
- Potential risk to ecological receptors exposed to metals and PHCs in the subsurface soils at the site is low, and the likely impacted receptors are plants and soil invertebrates.
- Potential risk to ecological receptors exposed to PAHs in subsurface soils is low to moderate. Terrestrial plants, soil invertebrates, and avian/mammalian receptors may be impacted.
- Assessment of off-site risk posed by site soil becoming sediment in the Ottawa River indicates a low to negligible risk posed by metals and PAH in site soil.
- Assessment of off-site risk posed by site groundwater discharging to the surface water of the Ottawa River indicates negligible risk by way of metals, VOCs and PHCs, and low risk by way of PAH parameters.

Based on the conclusions provided above, the following recommendations and risk management measures are provided:

- As the clean surficial soil provides adequate protection to site visitors and helps minimize risk for ecological receptors, the only risk management measure for surficial soil is to inspect the surface landscaping yearly, to ensure the area remains vegetated with no significant erosion occurring. Maintaining a healthy vegetative cover at the site will also limit exposure of ecological receptors, both on the site and in the adjacent Ottawa River, to PAH contamination in the subsurface.
- Personal protective equipment including long sleeves, long pants, and gloves is recommended for any workers digging in the subsurface soils at Richmond Landing. Any excavated subsurface soil must be identified as contaminated, with appropriate handling (including not mixing with or placing contaminated soil on the clean surficial soil) and off-site disposal.

- Although a potential risk to ecological receptors, most notably terrestrial plants and soil invertebrates was identified, no risk management measures are recommended. The clean surficial soil, existing vegetation, and the depth of soil contamination greatly limits the ecological risks posed by PAHs in site soil. Therefore the identified low to moderate risks to plants and invertebrates do not warrant intervention.
- Annual groundwater monitoring for BTEX/PHC and PAH parameters is recommended, to be conducted in spring/summer for consistency with previous sampling events. Sampling and field readings for natural attenuation should be completed every second year. Annual surface water sampling for PAH is also recommended at 4-5 locations adjacent to the site.

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8 CLOSURE

This report has been prepared for the exclusive use of the National Capital Commission (NCC) using a methodology for conducting environmental site assessment and Screening Level Risk Assessment (SLRA) that is acceptable within the profession. Data obtained from sampling investigations represent the conditions about a limited area surrounding the sampling location at the time of sampling and as such can be expected to be variable with respect to location and time.

Geofirma Engineering Ltd. has exercised professional judgment in collecting and analyzing the information and in formulating recommendations based on the results of the study. The mandate at Geofirma is to perform the given tasks within guidelines prescribed by the client and with the quality and due diligence expected within the profession. No other warranty or representation expressed or implied, as to the accuracy of the information or recommendations is included or intended in this report.

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Respectfully submitted,

Geofirma Engineering Ltd.

Drew Paulusse, B.Sc
Environmental Scientist

Krista B. Trounce, P. Eng.
Senior Project Manager

APPENDIX A

Site Figures

LEGEND

- Site Location
- Roads
- Highways
- Railways
- River

Province

- Ontario
- Quebec

Figure A.1
Site Location

Scale 1:30,000

Metres

0 125 250 500 750 1,000

Projection: NAD 83 MTM Zone 9
Source: NCC, Geogaphy Network Canada

PROJECT No. 13-215-1

PROJECT

Richmond Landing SLRA
Canadian Navy Monument

DESIGN: KBT
CAD/GIS: ADG/NMP
CHECK: KBT
REV: 0

DATE: 9/5/2013

Geofirma Engineering Ltd

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N

MW09-15
MW09-14A
T11
MW09-14
MW12-01
MW09-13
T10
T9
MW12-03
MW09-12
MW09-22
RL-ONSITE-1
RL-ONSITE-2
T8
MW09-25
MW09-10
MW09-11
MW12-04
MW12-02
MW09-23
T7
MW09-21
T12
T6
T4
MW09-9
MW09-8
MW09-24
T5
MW09-6
T1
T14
MW12-05
T2
T3
T13
MW09-20
MW09-7
T17
MW12-06
MW09-1
MW09-2
RL-2
T15
MW09-4
T16
MW09-5
MW09-19
MW09-3
MW12-07
MW12-08
MW09-18
BH09-16
BH09-17

LEGEND

- Property Boundary
- Road
- Pathway
- River
- Borehole
- Monitoring Well
- Monitoring Well Decommissioned
- Soil Sampling Location
- Approximate Limits of Clean Cap Placement

Figure A.2
Sampling Locations

Scale 1:1,100

0 10 20 40 60 80
Meters

Projection: NAD 83 MTM Zone 9
Source: NCC, MNR

PROJECT No. 13-215-1

PROJECT
Richmond Landing SLRA
Canadian Navy Monument

DESIGN: NMP
CAD/GIS: NMP/ADG
CHECK: KBT
REV: 0

DATE: 9/5/2013

Geofirma Engineering Ltd

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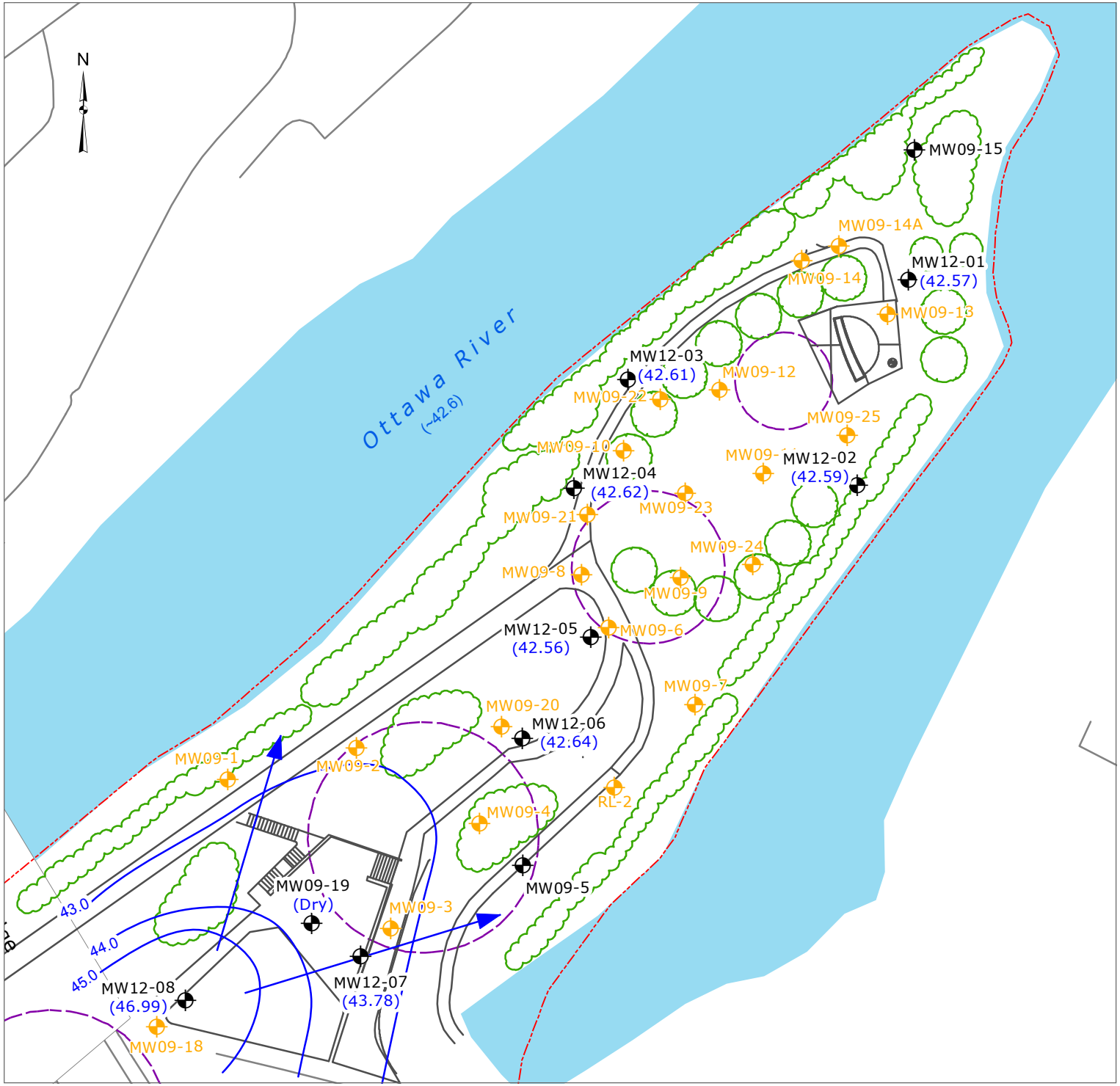

LEGEND

- Property Boundary
- Road
- Pathway
- Shrub/Tree
- River
- Former Gas Holder Location
- Monitoring Well
- Monitoring Well Decommissioned
- Interpreted Groundwater Contour (mASL)
- Groundwater Flow Direction
- (47.77) Groundwater Elevation* (mASL)

* Groundwater Elevation based on June 6, 2013

Figure A.3
Groundwater Elevations and Flow

Scale 1:918

Metres 0 10 20 40

Projection: NAD 83 MTM Zone 9
Source: NCC, Geogaphy Network Canada

PROJECT No. 13-215-1

PROJECT

Richmond Landing SLRA
Canadian Navy Monument

DESIGN: KBT
CAD/GIS: KHB/ADG/NMP
CHECK: KBT
REV: 0

DATE: 9/5/2013

Geofirma Engineering Ltd

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APPENDIX B

Summary Data Tables

Notes for Soil Analytical Results, Table B.1 to B.6

Notes:
All units are µg/g unless otherwise noted
MDL = Method Detection Limit
ND = Not Detected Above MDL
NV = No Value
***F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result.
**The methylnaphthalene standards are applicable to both 1-methylnaphthalene and 2-methylnaphthalene, with the provision that if both are detected the sum of the two must not exceed the standard
mBGS = Meters below ground surface
-- = Parameter not analysed
CCME = Canadian Council of Ministers of the Environment.
Canadian Environment Quality Guidelines, 1999 (updates to 2012), Soil remediation criteria for Residential/Parkland land use, coarse textured soil
CCME PHC = Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil, 2001 (updates to January 2008) for residential/parkland land use, coarse textured soil
CCME SQG = Soil Quality Guidelines for Carcinogenic and Other PAHs
CCME PEF = Potency Equivalence Factor
MOE = Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011
Table 3 = Full depth generic site condition standards in a non-potable ground water condition for residential/parkland land use, coarse textured soil
Table 9 = Generic site condition standards for use within 30m of a water body in a non-potable groundwater condition for residential/parkland land use, coarse textured soil

bold = indicates concentration which do not meet CCME guidelines
= indicates concentrations which exceed MOE 2011 Table 3 standards
= indicates concentrations which exceed MOE 2011 Table 9 standards

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

				MW09-1			MW09-2			MW09-3		
Sample ID	**CCME**	**MOE**	**MOE**	MW09-1 SS1	MW09-01 SS2	SS1	MW09-2 SS1	MW09-2 SS3	SS2	MW09-3 SS1	MW09-3 SS8	SS3
Sample Date	**SQG**	**Table 3**	**Table 9**	12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	0.8 - 1.4	0 - 0.1	0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6	5.3 - 5.9	0 - 0.1
Elevation (Ground Surface)				46.61-46.01	45.81-45.21	46.61-46.51	46.36-45.76	44.86-44.26	46.36-46.26	51.65-51.05	46.35-45.75	51.65-51.55
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

				MW09-4			MW09-5			MW09-6		
Sample ID	**CCME**	**MOE**	**MOE**	MW09-4 SS1	MW09-4 SS10	SS4	MW09-5 SS1	MW09-5 SS5	SS5	MW09-6 SS1	MW09-6 SS2	SS6
Sample Date	**SQG**	**Table 3**	**Table 9**	9-Jan-09	9-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	7.6 - 8.2	0 - 0.1	0 - 0.6	3.0-3.6	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (Ground Surface)				49.56-48.96	41.96-41.36	49.56-49.46	47.1-46.5	44.1-43.5	47.1-47.0	47.09-46.49	46.29-45.69	47.09-46.99
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	0.039	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	0.011	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

				MW09-7				MW09-8			
Sample ID	**CCME**	**MOE**	**MOE**	MW09-7 SS1	MW09-7 SS4	SS7		MW09-8 SS1	MW09-8 SS6	SS8	
Sample Date	**SQG**	**Table 3**	**Table 9**	06-Jan-09	06-Jan-09	19-May-09		9-Jan-09	9-Jan-09	19-May-09	
Sample Depth (m)				0 - 0.6	2.3 - 2.9	0 - 0.1		0 - 0.6	3.8 - 4.4	0 - 0.1	
Elevation (Ground Surface)				46.57-45.97	44.27-43.67	46.57-46.47	Duplicate	46.87-46.27	43.07-42.47	46.87-46.77	Duplicate
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.003	<0.003	<0.010	<0.010	<0.003	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

				MW09-9			MW09-10				MW09-11		
Sample ID	**CCME**	**MOE**	**MOE**	MW09-9 SS1	MW09-9 SS3	SS9	MW09-10 SS1		MW09-10 SS2	SS10	MW09-11 SS1	MW09-11 SS2	SS11
Sample Date	**SQG**	**Table 3**	**Table 9**	7-Jan-09	7-Jan-09	19-May-09	9-Jan-09		9-Jan-09	19-May-09	7-Jan-09	7-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6		0.8 - 1.4	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (Ground Surface)				46.5-45.9	45.0-44.4	46.5-46.4	46.46-45.86	Duplicate	45.66-45.06	46.46-46.36	46.16-45.56	45.36-44.76	46.16-46.06
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	0.02	<0.002	<0.002	<0.002	<0.002	0.02	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.003	<0.010	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.021	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.098	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.125	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.223	<0.004	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

				MW09-12			MW09-13			MW09-14			
Sample ID	**CCME**	**MOE**	**MOE**	MW09-12 SS1	MW09-12 SS6	SS12	MW09-13 SS1	MW09-13 SS5	SS13	MW09-14 SS1		MW09-14 SS3	SS14
Sample Date	**SQG**	**Table 3**	**Table 9**	8-Jan-09	8-Jan-09	19-May-09	8-Jan-09	8-Jan-09	19-May-09	8-Jan-09		8-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	3.8 - 4.4	0 - 0.1	0 - 0.6	1.5-2.1	0 - 0.1	0 - 0.6		1.5 - 2.1	0 - 0.1
Elevation (Ground Surface)				47.19-46.59	44.11-42.79	47.19-47.09	45.33-44.73	43.83-43.23	45.33-45.23	45.64-45.04	Duplicate	44.14-43.54	45.64-45.54
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003	<0.010	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	0.003	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

Sample ID	CCME	MOE	MOE	MW09-15				MW09-16		
				MW09-15 SS1		MW09-15 SS4	SS15	BH09-16 SS1	BH09-16 SS3	SS16
Sample Date	**SQG**	**Table 3**	**Table 9**	8-Jan-09		8-Jan-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6		2.3-2.9	0 - 0.1	0 - 0.6	1.2-1.8	0 - 0.1
Elevation (Ground Surface)				44.4-43.8	Duplicate	42.1-41.5	44.4-44.3	54.54-53.94	53.34-52.74	54.54-54.44
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

				MW09-17			MW09-18			MW09-19		
Sample ID	**CCME**	**MOE**	**MOE**	BH09-17 SS1	BH09-17 SS2	SS17	MW09-18 SS1	MW09-18 SS10	SS18	MW09-19 SS1	MW09-19 SS9	SS19
Sample Date	**SQG**	**Table 3**	**Table 9**	25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6	0.6-1.2	0 - 0.1	0 - 0.6	6.9-7.5	0 - 0.1	0 - 0.6	6.1-6.7	0 - 0.1
Elevation (Ground Surface)				52.57-51.97	51.97-51.37	52.57-52.47	65.51-64.91	58.61-58.01	61.51-65.41	52.86-52.26	46.75-46.15	52.86-52.76
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	**0.3**	<0.002	<0.002	0.005	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.04	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.05	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.03	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	0.3	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.2	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.05	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.03	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.03	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.05	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.03	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	**1.6**	<0.002	<0.002	0.005	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.003	<0.010	<0.2	<0.003	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.0.2	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	0.2	<0.002	<0.002	0.007	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.03	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	0.2	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.03	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	2.9	<0.002	<0.002	0.017	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	0.3	<0.002	<0.002	0.006	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	3.2	<0.004	<0.004	0.023	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

Sample ID	CCME	MOE	MOE	MW09-20				MW09-21			MW09-22		
				MW09-20 SS1		MW09-20 SS7	SS20	MW09-21 SS1	MW09-21 SS7	SS21	MW09-22 SS1	MW09-22 SS6	SS22
Sample Date	**SQG**	**Table 3**	**Table 9**	25-Feb-09		25-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6		4.6-5.18	0 - 0.1	0 - 0.6	4.6-4.88	0 - 0.1	0 - 0.6	3.8-4.4	0 - 0.1
Elevation (Ground Surface)				47.23-46.63	Duplicate	42.63-42.05	47.23-47.13	46.59-45.99	41.99-41.71	46.59-46.49	46.05-45.45	42.25-41.65	46.05-45.95
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	0.02	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	0.01	<0.002	<0.002	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	0.015	<0.002	<0.002	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	0.016	<0.004	<0.004	<0.004	<0.004

Table B.1 - Soil Analytical Results -- Volatile Organic Compounds

				MW09-23			MW09-24			MW09-25		
Sample ID	**CCME**	**MOE**	**MOE**	MW09-23 SS1	MW09-23 SS6	SS23	MW09-24 SS1	Mw09-24 SS3	SS24	MW09-25 SS1	MW09-25 SS6	SS25
Sample Date	**SQG**	**Table 3**	**Table 9**	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6	3.8-4.4	0 - 0.1	0 - 0.6	1.6-2.2	0 - 0.1	0 - 0.6	3.7-4.3	0 - 0.1
Elevation (Ground Surface)				46.34-45.74	42.54-41.94	46.34-46.24	46.04-45.44	44.44-43.84	46.04-45.94	45.67-45.07	41.97-41.37	45.67-45.57
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.21	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromodichloromethane	NV	13	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromoform	NV	0.27	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bromomethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chlorobenzene	NV	2.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chloroethane	NV	NV	NV	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloroform	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Chloromethane	NV	NV	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibromochloromethane	NV	9.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dibromoethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichlorobenzene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,3-Dichlorobenzene	NV	4.8	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,4-Dichlorobenzene	NV	0.083	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	NV	3.5	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,2-Dichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethylene	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,2-Dichloroethylene	NV	3.4	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,2-Dichloroethylene	NV	0.084	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,2-Dichloropropane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
cis-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
trans-1,3-Dichloropropylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	NV	0.1	0.05	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003	<0.010	<0.010	<0.003
Styrene	NV	0.7	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1,2-Tetrachloroethane	NV	0.058	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
1,1,2,2-Tetrachloroethane	NV	0.05	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Tetrachloroethylene	0.2	0.28	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,1-Trichloroethane	NV	0.38	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	NV	0.05	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trichloroethylene	0.01	0.061	0.05	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trichlorofluoromethane	NV	4	0.25	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NV	NV	NV	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Vinyl chloride	NV	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
o-Xylene	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
m,p-Xylenes	NV	NV	NV	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Total Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004

Table B.2 - Soil Analytical Results - Dioxins and Furans

Parameter Date Sampled>	CCME Res/Park (pg/g)	WHO 1998 TEF[1] 	MOE Table 3 2011 (pg/g)	MOE Table 9 2011 (pg/g)	WHO 2005 TEF[2] 	RL-ONSITE-1 30-Nov-10	RL-ONSITE-2 30-Nov-10
2,3,7,8-TCDD	NV	1	NV	NV	1	0.16	0.117
1,2,3,7,8-PeCDD	NV	1	NV	NV	1	0.60	0.393
1,2,3,4,7,8-HxCDD	NV	0.1	NV	NV	0.1	0.67	0.393
1,2,3,6,7,8-HxCDD	NV	0.1	NV	NV	0.1	2.79	1.29
1,2,3,7,8,9-HxCDD	NV	0.1	NV	NV	0.1	2.12	1.00
1,2,3,4,6,7,8-HpCCD	NV	0.01	NV	NV	0.01	50.3	13.1
OCDD	NV	0.0001	NV	NV	0.0003	438	75.5
Total Tetra CDD	NV	--	NV	NV	--	2.49	2.16
Total Penta CDD	NV	--	NV	NV	--	4.98	3.04
Total Hexa CDD	NV	--	NV	NV	--	21.7	10.6
Total Hepta CDD	NV	--	NV	NV	--	93.4	23.6
2,3,7,8-TCDF	NV	0.1	NV	NV	0.1	0.9	0.8
1,2,3,7,8-PeCDF	NV	0.05	NV	NV	0.03	0.89	0.683
2,3,4,7,8-PeCDF	NV	0.5	NV	NV	0.3	1.86	1.85
1,2,3,4,7,8-HxCDF	NV	0.1	NV	NV	0.1	4.08	2.01
1,2,3,6,7,8-HxCDF	NV	0.1	NV	NV	0.1	2.50	2.43
2,3,4,6,7,8-HxCDF	NV	0.1	NV	NV	0.1	2.24	2.89
1,2,3,7,8,9-HxCDF	NV	0.1	NV	NV	0.1	<0.109	0.085
1,2,3,4,6,7,8-HpCDF	NV	0.01	NV	NV	0.01	16.9	6.62
1,2,3,4,7,8,9-HpCDF	NV	0.01	NV	NV	0.01	1.17	0.561
OCDF	NV	0.0001	NV	NV	0.0003	29.7	6.92
Total Tetra CDF	NV	--	NV	NV	--	31.4	35.1
Total Penta CDF	NV	--	NV	NV	--	82.6	117
Total Hexa CDF	NV	--	NV	NV	--	59.0	62.5
Total Hepta CDF	NV	--	NV	NV	--	38.0	13.1
Toxic Equivalent Concentration (TEC) (CCME)[3]	4[4]	NV	--	--	NV	4.00	2.77
Toxic Equivalent Concentration (TEC) (MOE)[3]	--	NV	13	7	NV	3.71	2.41

[1] : CCME guidelines calculate TEC using the WHO 1998 Toxic Equivalency Factor

[2] : MOE standards calculate TEC using the WHO 2005 Toxic Equivalency Factor

[3] : TEC is calculated using half MDL for results less than the Estimated Detection Limit

[4] : Data are sufficient and adequate to calculate only a provisional SQG_{HH}, as per the CCME SQG Factsheets

Table B.3 - Soil Analytical Results - Phenolics

Parameter Date Sampled>	CCME Res/Park (µg/g)	MOE Table 3 2011 (µg/g)	MOE Table 9 2011 (µg/g)	RL-ONSITE-1 30-Nov-10	RL-ONSITE-2 30-Nov-10
2-Chlorophenol	NV	1.6	0.1	<0.5	<0.3
2,3,4,6-Tetrachlorophenol	NV	NV	NV	<0.5	<0.3
2,3,5-Trichlorophenol	NV	NV	NV	<0.5	<0.3
2,4-Dichlorophenol	NV	1.7	0.1	<0.5	<0.3
2,4-Dimethylphenol	NV	390	0.2	<1	<0.5
2,4,6-Trichlorophenol	NV	NV	NV	<0.5	<0.3
2,6-Dichlorophenol	NV	NV	NV	<0.5	<0.3
4-Chloro-3-Methylphenol	NV	NV	NV	<1	<0.5
Pentachlorophenol	7.6	0.1	0.1	<0.5	<0.3
Phenol	3.8	9.4	0.5	<1	<0.5
2,3,4,5-Tetrachlorophenol	NV	NV	NV	<0.5	<0.3
2,3,5,6-Tetrachlorophenol	NV	NV	NV	<0.5	<0.3
2,3,4-Trichlorophenol	NV	NV	NV	<0.5	<0.3
2,4,5-Trichlorophenol	NV	4.4	0.1	<0.5	<0.3
2,4-Dinitrophenol	NV	38	2	<1	<0.5
4,6-Dinitro-2-methylphenol	NV	NV	NV	<1	<0.5
4-Chlorophenol	NV	NV	NV	<0.5	<0.3
2-Nitrophenol	NV	NV	NV	<1	<0.5

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			Verification Samples					
Sample ID	CCME	MOE	MOE	VER-1	VER-2	VER-3	VER-4	VER-5	VER-6
Sample Date	**SQG**	**Table 3**	**Table 9**	26-Jul-11	26-Jul-11	26-Jul-11	26-Jul-11	26-Jul-11	26-Jul-11
Sample Depth (mBGS)		**Table 3**	**Table 9**	0-0.3	0-0.3	0-0.3	0-0.27	0-0.23	0-0.3
Elevation (mASL)				44.77-44.40	46.50-45.45	45.25-44.95	45.50-45.23	44.95-44.72	46.0-45.7
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Geofirma	Geofirma	Geofirma	Geofirma	Geofirma	Geofirma
Antimony	NV	7.5	1.3	<1	<1	<1	<1	<1	<1
Arsenic	12	18	18	1	2	1	2	3	1
Barium	500	390	220	45	62	53	52	67	51
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	NV	120	36	0.7	0.8	0.7	0.5	0.9	0.7
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium Total	64	160	70	11	12	11	11	11	10
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	4	4	4	4	4	4
Copper	63	140	92	11	12	12	12	13	10
Lead	140	120	120	4	6	6	7	8	4
Mercury	6.6	0.27	0.27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	NV	6.9	2	<1	2	1	<1	1	<1
Nickel	50	100	82	12	10	12	10	12	10
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	1.4	0.5	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	19	19	19	20	19	17
Zinc	200	340	290	<20	24	23	21	28	21

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-1			MW09-2			MW09-3		
Sample ID	CCME	MOE	MOE	MW09-1 SS1	MW09-01 SS2	SS1	MW09-2 SS1	MW09-2 SS3	SS2	MW09-3 SS1	MW09-3 SS8	SS3
Sample Date	**SQG**	**Table 3**	**Table 9**	12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6	0.8 - 1.4	0 - 0.1	0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6	5.3 - 5.9	0 - 0.1
Elevation (mASL)				46.61-46.01	45.81-45.21	46.61-46.51	46.36-45.76	44.86-44.26	46.36-46.26	51.65-51.05	46.35-45.75	51.65-51.55
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	<1	<1	<1	<1	<1	1	<1	2	<1
Arsenic	12	18	18	<1	4	1	<1	<1	1	<1	2	1
Barium	500	390	220	78	131	96	57	35	70	27	233	32
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5
Boron (total)	NV	120	36	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	1	<0.5
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Chromium Total	64	160	70	15	20	18	14	8	16	9	28	9
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	<5	6	<5	<5	<5	<5	<5	7	<5
Copper	63	140	92	7	27	10	10	9	11	5	58	7
Lead	140	120	120	13	109	19	23	14	25	5	**203**	16
Mercury	6.6	0.27	0.27	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1
Molybdenum	NV	6.9	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	50	100	82	8	15	9	8	5	9	6	22	6
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	26	26	31	25	18	28	23	25	20
Zinc	200	340	290	35	95	48	36	<20	52	<20	**206**	26

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-4			MW09-5			MW09-6		
Sample ID	CCME	MOE	MOE	MW09-4 SS1	MW09-4 SS10	SS4	MW09-5 SS1	MW09-5 SS5	SS5	MW09-6 SS1	MW09-6 SS2	SS6
Sample Date	**SQG**	**Table 3**	**Table 9**	9-Jan-09	9-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6	7.6 - 8.2	0 - 0.1	0 - 0.6	3.0-3.6	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (mASL)				49.56-48.96	41.96-41.36	49.56-49.46	47.1-46.5	44.1-43.5	47.1-47.0	47.09-46.49	46.29-45.69	47.09-46.99
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	12	18	18	2	<1	<1	<1	<1	1	<1	<1	<1
Barium	500	390	220	28	68	35	93	186	77	92	104	102
Beryllium	NV	4	2.5	<0.5	0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5
Boron (total)	NV	120	36	<0.5	<0.5	1.4	0.6	0.8	1	<0.5	<0.5	0.5
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium Total	64	160	70	9	17	10	17	38	14	18	21	18
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	<5	<5	<5	5	11	<5	<5	5	<5
Copper	63	140	92	7	7	9	18	14	9	8	13	7
Lead	140	120	120	12	19	5	49	42	23	18	27	10
Mercury	6.6	0.27	0.27	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	NV	6.9	2	3	<1	<1	<1	<1	<1	1	<1	1
Nickel	50	100	82	11	15	6	13	25	7	8	11	7
Selenium	1	2.4	1.5	<1	<1	<1	<1	1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	18	<10	18	16	31	26	26	27	27
Zinc	200	340	290	<20	<20	<20	44	45	42	30	39	24

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-7				MW09-8			
Sample ID	CCME	MOE	MOE	MW09-7 SS1	MW09-7 SS4	SS7		MW09-8 SS1	MW09-8 SS6	SS8	
Sample Date	**SQG**	**Table 3**	**Table 9**	06-Jan-09	06-Jan-09	19-May-09		9-Jan-09	9-Jan-09	19-May-09	
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6	2.3 - 2.9	0 - 0.1		0 - 0.6	3.8 - 4.4	0 - 0.1	
Elevation (mASL)				46.57-45.97	44.27-43.67	46.57-46.47	Duplicate	46.87-46.27	43.07-42.47	46.87-46.77	Duplicate
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	<1	2	<1	<1	<1	<1	<1	<1
Arsenic	12	18	18	<1	2	1	1	<1	3	1	1
Barium	500	390	220	93	219	93	92	102	158	102	96
Beryllium	NV	4	2.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	NV	120	36	0.5	1.3	0.5	0.5	<0.5	0.5	0.7	0.7
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium Total	64	160	70	21	18	22	21	23	19	23	22
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	<5	8	<5	5	5	<5	<5	<5
Copper	63	140	92	14	40	14	13	18	19	14	13
Lead	140	120	120	19	82	19	18	14	54	8	8
Mercury	6.6	0.27	0.27	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	NV	6.9	2	1	1	1	<1	1	<1	1	<1
Nickel	50	100	82	11	18	11	10	12	17	11	11
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	28	10	29	29	30	15	30	29
Zinc	200	340	290	33	61	33	33	32	45	30	29

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-9			MW09-10				MW09-11		
Sample ID	CCME	MOE	MOE	MW09-9 SS1	MW09-9 SS3	SS9	MW09-10 SS1		MW09-10 SS2	SS10	MW09-11 SS1	MW09-11 SS2	SS11
Sample Date	**SQG**	**Table 3**	**Table 9**	7-Jan-09	7-Jan-09	19-May-09	9-Jan-09		9-Jan-09	19-May-09	7-Jan-09	7-Jan-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6		0.8 - 1.4	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (mASL)				46.5-45.9	45.0-44.4	46.5-46.4	46.46-45.86	Duplicate	45.66-45.06	46.46-46.36	46.16-45.56	45.36-44.76	46.16-46.06
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	1	7	<1	<1	<1	<1	<1	1	<1	<1
Arsenic	12	18	18	<1	<1	1	<1	<1	<1	1	<1	<1	<1
Barium	500	390	220	130	194	105	104	103	90	97	138	89	88
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	NV	120	36	0.5	0.6	0.6	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.6
Cadmium	10	1.2	1.2	0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium Total	64	160	70	22	21	22	24	23	18	21	21	15	21
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	5	6	5	<5	5	6	<5	5	5	<5
Copper	63	140	92	31	**166**	17	12	12	22	11	30	12	12
Lead	140	120	120	89	**220**	22	10	13	59	16	85	26	15
Mercury	6.6	0.27	0.27	0.1	0.4	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1
Molybdenum	NV	6.9	2	<1	<1	<1	<1	<1	<1	1	<1	<1	<1
Nickel	50	100	82	18	17	11	11	12	14	10	15	10	9
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	0.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	26	25	30	31	31	24	29	23	20	27
Zinc	200	340	290	72	187	39	30	33	49	30	77	32	31

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-12			MW09-13			MW09-14			
Sample ID	CCME	MOE	MOE	MW09-12 SS1	MW09-12 SS6	SS12	MW09-13 SS1	MW09-13 SS5	SS13	MW09-14 SS1		MW09-14 SS3	SS14
Sample Date	**SQG**	**Table 3**	**Table 9**	8-Jan-09	8-Jan-09	19-May-09	8-Jan-09	8-Jan-09	19-May-09	8-Jan-09		8-Jan-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6	3.8 - 4.4	0 - 0.1	0 - 0.6	1.5-2.1	0 - 0.1	0 - 0.6		1.5 - 2.1	0 - 0.1
Elevation (mASL)				47.19-46.59	44.11-42.79	47.19-47.09	45.33-44.73	43.83-43.23	45.33-45.23	45.64-45.04	Duplicate	44.14-43.54	45.64-45.54
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	2	3	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	12	18	18	<1	4	1	<1	1	<1	2	2	<1	<1
Barium	500	390	220	138	187	106	112	115	103	113	125	199	87
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	NV	120	36	<0.5	<0.5	0.7	<0.5	0.5	0.5	<0.5	<0.5	<0.5	0.5
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.6	0.5	<0.5	<0.5
Chromium Total	64	160	70	28	32	23	23	22	23	24	24	56	19
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	7	9	<5	5	7	<5	8	7	12	<5
Copper	63	140	92	19	29	13	18	11	11	25	26	30	9
Lead	140	120	120	39	58	14	85	79	13	86	102	22	12
Mercury	6.6	0.27	0.27	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	0.1	0.1	<0.1
Molybdenum	NV	6.9	2	1	1	<1	<1	<1	<1	2	2	<1	<1
Nickel	50	100	82	16	27	11	14	16	10	28	21	33	9
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	35	33	28	34	12	31	33	33	57	28
Zinc	200	340	290	46	56	34	50	40	30	51	66	64	29

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-15				MW09-16		
Sample ID	CCME	MOE	MOE	MW09-15 SS1		MW09-15 SS4	SS15	BH09-16 SS1	BH09-16 SS3	SS16
Sample Date	**SQG**	**Table 3**	**Table 9**	8-Jan-09		8-Jan-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6		2.3-2.9	0 - 0.1	0 - 0.6	1.2-1.8	0 - 0.1
Elevation (mASL)				44.4-43.8	Duplicate	42.1-41.5	44.4-44.3	54.54-53.94	53.34-52.74	54.54-54.44
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	<1	<1	<1	<1	<1	<1	<1
Arsenic	12	18	18	<1	<1	2	1	4	3	1
Barium	500	390	220	61	57	99	65	28	41	57
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	NV	120	36	<0.5	<0.5	<0.5	0.6	NA	NA	1.1
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium Total	64	160	70	12	12	31	12	9	10	12
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	NA	NA	<0.4
Cobalt	NV	22	22	<5	<5	6	<5	5	<5	<5
Copper	63	140	92	11	11	13	13	9	11	13
Lead	140	120	120	28	32	23	35	20	20	51
Mercury	6.6	0.27	0.27	<0.1	<0.1	<0.1	<0.1	NA	NA	<0.1
Molybdenum	NV	6.9	2	<1	<1	3	<1	4	2	<1
Nickel	50	100	82	11	10	20	11	13	10	7
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	17	18	16	18	15	17	23
Zinc	200	340	290	40	34	34	60	<20	21	61

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-17			MW09-18			MW09-19		
Sample ID	CCME	MOE	MOE	BH09-17 SS1	BH09-17 SS2	SS17	MW09-18 SS1	MW09-18 SS10	SS18	MW09-19 SS1	MW09-19 SS9	SS19
Sample Date	**SQG**	**Table 3**	**Table 9**	25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6	0.6-1.2	0 - 0.1	0 - 0.6	6.9-7.5	0 - 0.1	0 - 0.6	6.1-6.7	0 - 0.1
Elevation (mASL)				52.57-51.97	51.97-51.37	52.57-52.47	65.51-64.91	58.61-58.01	61.51-65.41	52.86-52.26	46.75-46.15	52.86-52.76
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	12	18	18	1	2	2	2	4	3	<1	2	2
Barium	500	390	220	33	103	71	24	196	58	35	99	43
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	NV	120	36	NA	NA	0.5	NA	NA	0.6	NA	NA	<0.5
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5
Chromium Total	64	160	70	12	16	18	10	23	14	9	44	12
Chromium, Hexavalent	0.4	8	0.66	NA	NA	<0.4	NA	NA	<0.4	NA	NA	<0.4
Cobalt	NV	22	22	<5	5	5	<5	6	5	<5	5	<5
Copper	63	140	92	7	24	27	6	**99**	23	6	36	10
Lead	140	120	120	5	32	27	7	**225**	10	5	69	44
Mercury	6.6	0.27	0.27	NA	NA	<0.1	NA	NA	<0.1	NA	NA	<0.1
Molybdenum	NV	6.9	2	<1	<1	1	2	<1	<1	<1	<1	<1
Nickel	50	100	82	8	13	10	8	21	9	6	13	8
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	23	24	27	19	25	23	19	19	24
Zinc	200	340	290	<20	34	89	<20	188	56	<20	54	38

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-20				MW09-21			MW09-22		
Sample ID	CCME	MOE	MOE	MW09-20 SS1		MW09-20 SS7	SS20	MW09-21 SS1	MW09-21 SS7	SS21	MW09-22 SS1	MW09-22 SS6	SS22
Sample Date	**SQG**	**Table 3**	**Table 9**	25-Feb-09		25-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6		4.6-5.18	0 - 0.1	0 - 0.6	4.6-4.88	0 - 0.1	0 - 0.6	3.8-4.4	0 - 0.1
Elevation (mASL)				47.23-46.63	Duplicate	42.63-42.05	47.23-47.13	46.59-45.99	41.99-41.71	46.59-46.49	46.05-45.45	42.25-41.65	46.05-45.95
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	<1	<1	<1	<1	3	<1	<1	<1	<1	<1
Arsenic	12	18	18	2	2	2	4	3	4	1	4	3	3
Barium	500	390	220	100	93	115	54	83	166	86	190	191	89
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Boron (total)	NV	120	36	NA	NA	NA	<0.5	<0.5	0.7	<0.5	<0.5	0.6	0.7
Cadmium	10	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
Chromium Total	64	160	70	19	20	31	12	16	25	20	20	26	21
Chromium, Hexavalent	0.4	8	0.66	NA	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	5	5	6	5	5	7	<5	6	8	6
Copper	63	140	92	24	20	57	14	25	50	12	57	19	15
Lead	140	120	120	100	89	97	43	66	**142**	18	**144**	48	26
Mercury	6.6	0.27	0.27	NA	NA	NA	<0.1	0.1	0.3	<0.1	0.3	0.1	<0.1
Molybdenum	NV	6.9	2	1	1	<1	1	2	<1	1	1	<1	2
Nickel	50	100	82	15	15	17	11	13	18	10	24	22	14
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	20	20	25	20	22	21	27	22	18	26
Zinc	200	340	290	76	61	69	45	46	87	35	121	43	36

Table B.4 - Soil Analytical Results - Metals

	Guidelines/Standards			MW09-23			MW09-24			MW09-25		
Sample ID	CCME	MOE	MOE	MW09-23 SS1	MW09-23 SS6	SS23	MW09-24 SS1	MW09-24 SS3	SS24	MW09-25 SS1	MW09-25 SS6	SS25
Sample Date	**SQG**	**Table 3**	**Table 9**	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (mBGS)		**Table 3**	**Table 9**	0 - 0.6	3.8-4.4	0 - 0.1	0 - 0.6	1.6-2.2	0 - 0.1	0 - 0.6	3.7-4.3	0 - 0.1
Elevation (mASL)				46.34-45.74	42.54-41.94	46.34-46.24	46.04-45.44	44.44-43.84	46.04-45.94	45.67-45.07	41.97-41.37	45.67-45.57
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Antimony	NV	7.5	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	12	18	18	3	4	<1	2	6	1	2	3	<1
Barium	500	390	220	149	145	101	99	161	94	116	197	105
Beryllium	NV	4	2.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.6	<0.5
Boron (total)	NV	120	36	0.6	0.7	0.6	<0.5	0.5	0.6	<0.5	0.7	0.6
Cadmium	10	1.2	1.2	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium Total	64	160	70	23	18	21	16	30	23	19	31	20
Chromium, Hexavalent	0.4	8	0.66	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	NV	22	22	6	5	<5	5	9	5	5	7	<5
Copper	63	140	92	44	**106**	14	17	44	15	26	**94**	9
Lead	140	120	120	112	47	18	43	89	26	55	118	10
Mercury	6.6	0.27	0.27	0.2	0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.3	<0.1
Molybdenum	NV	6.9	2	<1	<1	<1	<1	1	<1	<1	<1	<1
Nickel	50	100	82	18	15	10	14	23	11	15	20	9
Selenium	1	2.4	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	NV	20	0.5	<0.3	1.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	130	86	86	24	12	28	24	35	30	22	25	27
Zinc	200	340	290	88	51	35	35	83	43	53	114	30

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				Verification Samples					
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	VER-1	VER-2	VER-3	VER-4	VER-5	VER-6
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	26-Jul-11	26-Jul-11	26-Jul-11	26-Jul-11	26-Jul-11	26-Jul-11
Sample Depth (mBGS)					0-0.3	0-0.3	0-0.3	0-0.27	0-0.23	0-0.3
Elevation (mASL)					44.77-44.40	46.50-45.45	45.25-44.95	45.50-45.23	44.95-44.72	46.0-45.7
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Geofirma	Geofirma	Geofirma	Geofirma	Geofirma	Geofirma
Acenaphthylene	NV	NV	0.15	0.093	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acenaphthene	NV	NV	7.9	0.072	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Anthracene	2.5	NV	0.67	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	<0.02	0.04	0.04	<0.02	<0.02	0.03
Benzo[a]pyrene	*20*	*1*	0.3	0.3	<0.02	0.03	0.03	<0.02	<0.02	<0.02
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	<0.02	0.04	0.04	<0.02	<0.02	0.03
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	<0.02	<0.02	0.02	<0.02	<0.02	<0.02
Chrysene	*NV*	*0.01*	7	2.8	<0.02	0.04	0.04	<0.02	<0.02	0.03
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	ND	0.0505	0.0515	ND	ND	0.0284
Biphenyl	NV	NV	0.31	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	50	NV	0.69	0.69	<0.02	0.05	0.06	<0.02	<0.02	0.04
Fluorene	NV	NV	62	0.19	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Naphthalene	NV	NV	0.6	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	NV	NV	6.2	0.69	<0.02	0.02	0.03	<0.02	<0.02	0.02
Pyrene	NV	NV	78	1	<0.02	0.04	0.04	<0.02	<0.02	0.03

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-1			MW09-2			MW09-3		
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-1 SS1	MW09-1 SS2	SS1	MW09-2 SS1	MW09-2 SS3	SS2	MW09-3 SS1	MW09-3 SS8	SS3
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09
Sample Depth (mBGS)					0 - 0.6	0.8 - 1.4	0 - 0.1	0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6	5.3 - 5.9	0 - 0.1
Elevation (mASL)					46.61-46.01	45.81-45.21	46.61-46.51	46.36-45.76	44.86-44.26	46.36-43.26	51.65-51.05	46.35-45.75	51.65-51.55
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	0.12	<0.02
Acenaphthene	NV	NV	7.9	0.072	<0.02	0.15	<0.02	<0.02	0.03	0.03	<0.02	0.22	<0.02
Anthracene	2.5	NV	0.67	0.22	<0.02	0.25	<0.02	0.03	0.06	0.06	<0.02	0.6	0.03
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	<0.02	0.58	0.03	0.07	0.13	0.1	<0.02	1.03	0.03
Benzo[a]pyrene	*20*	*1*	0.3	0.3	<0.02	0.51	0.02	0.06	0.14	0.09	<0.02	0.82	0.03
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	0.02	0.78	0.04	0.08	0.17	0.2	<0.02	1.08	0.09
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	<0.02	0.32	0.02	0.03	0.08	0.07	<0.02	0.43	0.04
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	<0.02	0.27	0.02	0.03	0.08	0.09	<0.02	0.5	0.05
Chrysene	*NV*	*0.01*	7	2.8	<0.02	0.69	0.03	0.08	0.13	0.21	<0.02	1.07	0.07
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	<0.02	0.08	<0.02	<0.02	0.02	<0.02	<0.02	0.09	<0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	<0.02	0.26	<0.02	0.03	0.07	0.05	<0.02	0.39	0.03
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	0.002	0.03	0.03	0.082	0.207	0.137	ND	1.225	0.051
Biphenyl	NV	NV	0.31	0.05	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02
Fluoranthene	50	NV	0.69	0.69	0.02	0.91	0.06	0.12	0.2	0.26	<0.02	1.75	0.08
Fluorene	NV	NV	62	0.19	<0.02	0.09	<0.02	<0.02	0.02	<0.02	<0.02	0.28	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	<0.02	0.7	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	<0.02	0.82	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	<0.04	1.52	<0.04	<0.04	<0.04	<0.04	<0.04	0.13	<0.04
Naphthalene	NV	NV	0.6	0.09	<0.02	0.47	<0.02	<0.02	0.02	<0.02	<0.02	0.08	<0.02
Phenanthrene	NV	NV	6.2	0.69	<0.02	0.88	0.03	0.06	0.16	0.09	<0.02	1.74	0.03
Pyrene	NV	NV	78	1	0.02	0.86	0.05	0.11	0.19	0.23	<0.02	1.58	0.07

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-4			MW09-5			MW09-6		
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-4 SS1	MW09-4 SS10	SS4	MW09-5 SS1	MW09-5 SS5	SS5	MW09-6 SS1	MW09-6 SS2	SS6
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	9-Jan-09	9-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09
Sample Depth (mBGS)					0 - 0.6	7.6 - 8.2	0 - 0.1	0 - 0.6	3.0-3.6	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (mASL)					49.56-48.96	41.96-41.36	49.56-49.46	47.1-46.5	44.1-43.5	47.1-47.0	47.09-46.49	46.29-45.69	47.09-46.99
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	0.24	0.06	<0.02	0.09	<0.02	<0.02	0.06	2.84	<0.02
Acenaphthene	NV	NV	7.9	0.072	0.07	0.18	0.04	0.04	0.02	0.03	0.04	2.69	<0.02
Anthracene	2.5	NV	0.67	0.22	0.41	0.05	0.2	0.21	<0.02	0.06	0.17	**9.58**	0.05
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	0.87	0.16	0.1	0.47	<0.02	0.12	0.37	12.2	0.02
Benzo[a]pyrene	*20*	*1*	0.3	0.3	0.84	0.03	0.09	0.38	<0.02	0.11	0.31	7.72	0.03
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	1.15	0.03	0.24	0.51	<0.02	0.16	0.4	10.5	0.05
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	0.4	<0.02	0.09	0.23	<0.02	0.08	0.18	2.99	0.02
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	0.5	0.02	0.1	0.26	<0.02	0.09	0.19	3.95	0.02
Chrysene	*NV*	*0.01*	7	2.8	0.92	0.05	0.27	0.51	<0.02	0.13	0.38	13.5	0.04
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	0.12	<0.02	0.02	0.05	<0.02	0.02	0.04	0.56	<0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	0.38	<0.02	0.07	0.2	<0.02	0.07	0.16	2.31	0.02
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	1.263	0.052	0.165	0.581	ND	0.176	0.468	**11.34**	0.042
Biphenyl	NV	NV	0.31	0.05	0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.40	<0.02
Fluoranthene	50	NV	0.69	0.69	1.28	0.1	0.21	0.76	<0.02	0.25	0.61	24.3	0.07
Fluorene	NV	NV	62	0.19	0.1	0.3	<0.02	0.07	0.04	<0.02	0.06	4	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	0.06	1.54	<0.02	0.02	0.29	<0.02	0.02	0.8	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	0.1	0.12	<0.02	0.03	0.25	<0.02	0.03	0.96	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	0.16	1.66	<0.04	0.05	0.54	<0.04	0.05	1.76	<0.04
Naphthalene	NV	NV	0.6	0.09	0.08	0.13	<0.02	0.04	0.1	<0.02	0.03	1.03	<0.02
Phenanthrene	NV	NV	6.2	0.69	0.79	0.32	0.11	0.57	0.02	0.14	0.43	25.5	0.04
Pyrene	NV	NV	78	1	1.24	0.1	0.19	0.71	<0.02	0.22	0.55	22.3	0.07

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-7				MW09-8			
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-7 SS1	MW09-7 SS4	SS7		MW09-8 SS1	MW09-8 SS6	SS8	
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	06-Jan-09	06-Jan-09	19-May-09		9-Jan-09	9-Jan-09	19-May-09	
Sample Depth (mBGS)					0 - 0.6	2.3 - 2.9	0 - 0.1		0 - 0.6	3.8 - 4.4	0 - 0.1	
Elevation (mASL)					46.57-45.97	44.27-43.67	46.57-46.47	Duplicate	46.87-46.27	43.07-42.47	46.87-46.77	Duplicate
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	0.02	0.09	<0.02	0.03	0.37	<0.02	<0.02	<0.02
Acenaphthene	NV	NV	7.9	0.072	<0.02	0.05	0.02	0.03	0.12	0.02	<0.02	<0.02
Anthracene	2.5	NV	0.67	0.22	0.05	0.24	0.06	0.09	0.61	0.18	<0.02	<0.02
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	0.14	0.48	0.13	0.24	1.21	0.1	<0.02	<0.02
Benzo[a]pyrene	*20*	*1*	0.3	0.3	0.11	0.4	0.11	0.18	1.17	0.08	<0.02	<0.02
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	0.14	0.54	0.16	0.28	1.67	0.1	<0.02	0.02
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	0.06	0.26	0.07	0.1	0.58	0.04	<0.02	<0.02
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	0.08	0.24	0.08	0.13	0.77	0.04	<0.02	<0.02
Chrysene	*NV*	*0.01*	7	2.8	0.15	0.53	0.13	0.21	1.3	0.1	<0.02	<0.02
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	<0.02	0.05	0.02	0.04	0.18	<0.02	<0.02	<0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	0.05	0.22	0.06	0.09	0.59	0.03	<0.02	<0.02
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	0.153	0.606	0.175	0.297	1.793	0.108	ND	ND
Biphenyl	NV	NV	0.31	0.05	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
Fluoranthene	50	NV	0.69	0.69	0.24	0.86	0.26	0.42	1.8	0.19	0.02	0.02
Fluorene	NV	NV	62	0.19	0.02	0.08	<0.02	0.03	0.18	0.02	<0.02	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	<0.02	0.05	<0.02	0.04	0.12	0.04	<0.02	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	<0.02	0.05	<0.02	0.06	0.19	0.03	<0.02	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	<0.04	0.1	<0.04	0.1	0.31	0.07	<0.04	<0.04
Naphthalene	NV	NV	0.6	0.09	0.02	0.05	<0.02	0.06	0.16	0.04	<0.02	<0.02
Phenanthrene	NV	NV	6.2	0.69	0.16	0.75	0.15	0.29	1.46	0.18	<0.02	<0.02
Pyrene	NV	NV	78	1	0.23	0.79	0.22	0.35	1.68	0.17	0.02	0.02

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-9			MW09-10				MW09-11		
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-9 SS1	MW09-9 SS3	SS9	MW09-10 SS1		MW09-10 SS2	SS10	MW09-11 SS1	MW09-11 SS2	SS11
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	7-Jan-09	7-Jan-09	19-May-09	9-Jan-09		9-Jan-09	19-May-09	7-Jan-09	7-Jan-09	19-May-09
Sample Depth (mBGS)					0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6		0.8 - 1.4	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (mASL)					46.5-45.9	45.0-44.4	46.5-46.4	46.46-45.86	Duplicate	45.66-45.06	46.46-46.36	46.16-45.56	45.36-44.76	46.16-46.06
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	0.26	0.5	0.02	0.22	0.19	0.66	<0.02	0.22	0.09	0.02
Acenaphthene	NV	NV	7.9	0.072	0.41	0.28	0.04	0.06	0.05	0.47	<0.02	0.11	0.07	0.03
Anthracene	2.5	NV	0.67	0.22	1.29	1.03	0.11	0.36	0.3	1.66	0.03	0.35	0.23	0.06
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	2	2.33	0.25	1.04	0.66	2.77	0.08	0.91	0.48	0.12
Benzo[a]pyrene	*20*	*1*	0.3	0.3	1.57	2.07	0.22	1	0.64	2.27	0.07	0.83	0.43	0.1
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	2.07	2.77	0.29	1.38	0.86	3.05	0.1	1.03	0.55	0.14
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	0.86	1.26	0.13	0.5	0.32	0.98	0.04	0.47	0.24	0.06
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	0.74	1.01	0.15	0.66	0.41	1.12	0.05	0.42	0.29	0.06
Chrysene	*NV*	*0.01*	7	2.8	1.97	2.47	0.26	1.12	0.71	2.71	0.08	1.01	0.51	0.13
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	0.28	0.37	0.03	0.14	0.1	0.37	<0.02	0.12	0.07	0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	0.83	1.18	0.12	0.47	0.3	1.05	0.04	0.43	0.23	0.06
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	2.442	3.206	0.335	1.511	0.973	3.476	0.098	1.244	0.663	0.16
Biphenyl	NV	NV	0.31	0.05	0.06	0.04	<0.02	<0.04	<0.04	0.06	<0.02	0.13	<0.02	<0.02
Fluoranthene	50	NV	0.69	0.69	3.11	3.42	0.53	1.53	1.06	4.13	0.17	1.46	0.81	0.25
Fluorene	NV	NV	62	0.19	0.72	0.39	0.03	0.08	0.07	0.71	<0.02	0.15	0.1	0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	0.38	0.12	<0.02	0.08	0.07	0.2	<0.02	0.25	0.03	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	0.25	0.14	0.02	0.11	0.08	0.21	<0.02	0.33	0.04	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	0.63	0.26	0.03	0.19	0.15	0.41	<0.04	0.58	0.07	<0.04
Naphthalene	NV	NV	0.6	0.09	0.45	0.23	0.02	0.1	0.07	0.36	<0.02	0.31	0.07	0.02
Phenanthrene	NV	NV	6.2	0.69	3.19	2.69	0.29	0.85	0.71	4	0.1	1.03	0.67	0.17
Pyrene	NV	NV	78	1	2.74	3.26	0.45	1.49	0.99	3.74	0.14	1.39	0.74	0.22

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-12			MW09-13			MW09-14			
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-12 SS1	MW09-12 SS6	SS12	MW09-13 SS1	MW09-13 SS5	SS13	MW09-14 SS1		MW09-14 SS3	SS14
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	8-Jan-09	8-Jan-09	19-May-09	8-Jan-09	8-Jan-09	19-May-09	8-Jan-09		8-Jan-09	19-May-09
Sample Depth (mBGS)					0 - 0.6	3.8 - 4.4	0 - 0.1	0 - 0.6	1.5-2.1	0 - 0.1	0 - 0.6		1.5 - 2.1	0 - 0.1
Elevation (mASL)					47.19-46.59	44.11-42.79	47.19-47.09	45.33-44.73	43.83-43.23	45.33-45.23	45.64-45.04	Duplicate	44.14-43.54	45.64-45.54
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	0.1	<0.02	<0.02	0.04	<0.02	<0.02	0.18	0.21	<0.02	<0.02
Acenaphthene	NV	NV	7.9	0.072	0.07	<0.02	0.02	0.03	<0.02	0.02	0.05	0.4	<0.02	<0.02
Anthracene	2.5	NV	0.67	0.22	0.28	<0.02	0.03	0.12	<0.02	0.03	0.3	1.3	<0.02	0.03
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	0.63	0.02	0.07	0.22	0.02	0.06	0.67	2	0.02	0.06
Benzo[a]pyrene	*20*	*1*	0.3	0.3	0.54	<0.02	0.06	0.2	<0.02	0.05	0.62	1.61	<0.02	0.05
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	0.71	<0.02	0.09	0.25	0.02	0.07	0.83	2.28	0.02	0.08
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	0.31	<0.02	0.04	0.11	<0.02	0.03	0.4	0.69	<0.02	0.03
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	0.41	<0.02	0.04	0.14	<0.02	0.04	0.45	0.8	<0.02	0.03
Chrysene	*NV*	*0.01*	7	2.8	0.68	<0.02	0.07	0.24	0.02	0.06	0.72	1.99	0.02	0.06
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	0.1	0.24	<0.02	<0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	0.27	<0.02	0.03	0.1	<0.02	0.03	0.37	0.73	<0.02	0.03
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	0.832	0.002	0.084	0.295	0.004	0.071	0.963	2.458	0.004	0.071
Biphenyl	NV	NV	0.31	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02
Fluoranthene	50	NV	0.69	0.69	1.13	0.02	0.15	0.44	0.02	0.11	1.03	3.34	0.02	0.12
Fluorene	NV	NV	62	0.19	0.09	<0.02	<0.02	0.04	<0.02	<0.02	0.08	0.55	<0.02	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	0.03	0.03	<0.02	0.02	<0.02	<0.02	0.05	0.17	<0.02	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	0.03	0.03	<0.02	0.02	0.02	<0.02	0.06	0.19	<0.02	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	0.06	0.06	<0.04	0.04	0.03	<0.04	0.11	0.36	<0.04	<0.04
Naphthalene	NV	NV	0.6	0.09	0.03	0.02	<0.02	0.02	<0.02	<0.02	0.06	0.18	<0.02	<0.02
Phenanthrene	NV	NV	6.2	0.69	0.85	<0.02	0.09	0.38	0.02	0.07	0.71	3.92	0.02	0.09
Pyrene	NV	NV	78	1	1.04	0.02	0.12	0.38	0.03	0.1	0.97	2.96	0.02	0.1

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-15				MW09-16		
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-15 SS1		MW09-15 SS4	SS15	BH09-16 SS1	BH09-16 SS3	SS16
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	8-Jan-09		8-Jan-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (mBGS)					0 - 0.6		2.3-2.9	0 - 0.1	0 - 0.6	1.2-1.8	0 - 0.1
Elevation (mASL)					44.4-43.8	Duplicate	42.1-41.5	44.4-44.3	54.54-53.94	53.34-52.74	54.54-54.44
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	0.02	0.02	<0.02	0.02	<0.02	<0.02	<0.02
Acenaphthene	NV	NV	7.9	0.072	0.02	0.02	<0.02	0.04	<0.02	<0.02	<0.02
Anthracene	2.5	NV	0.67	0.22	0.06	0.06	<0.02	0.08	<0.02	<0.02	<0.02
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	0.14	0.13	0.02	0.17	0.02	0.05	0.02
Benzo[a]pyrene	*20*	*1*	0.3	0.3	0.12	0.1	<0.02	0.14	0.02	0.04	0.02
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	0.14	0.14	0.02	0.21	0.03	0.05	0.04
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	0.06	0.05	<0.02	0.09	0.02	0.03	0.02
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	0.07	0.05	<0.02	0.08	<0.02	0.02	<0.02
Chrysene	*NV*	*0.01*	7	2.8	0.15	0.14	0.02	0.18	0.03	0.05	0.03
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	0.05	0.04	<0.02	0.08	<0.02	0.02	<0.02
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	0.162	0.138	0.004	0.227	0.026	0.055	0.027
Biphenyl	NV	NV	0.31	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	50	NV	0.69	0.69	0.24	0.24	0.04	0.35	0.07	0.08	0.05
Fluorene	NV	NV	62	0.19	0.02	0.02	<0.02	0.02	<0.02	<0.02	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	0.03	<0.04	<0.04	0.04	<0.04	<0.04	<0.04
Naphthalene	NV	NV	0.6	0.09	0.03	<0.02	<0.02	0.02	<0.02	<0.02	<0.02
Phenanthrene	NV	NV	6.2	0.69	0.21	0.21	0.03	0.25	0.06	0.04	0.03
Pyrene	NV	NV	78	1	0.23	0.21	0.03	0.31	0.11	0.08	0.04

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-17			MW09-18			MW09-19		
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	BH09-17 SS1	BH09-17 SS2	SS17	MW09-18 SS1	MW09-18 SS10	SS18	MW09-19 SS1	MW09-19 SS9	SS19
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (mBGS)					0 - 0.6	0.6-1.2	0 - 0.1	0 - 0.6	6.9-7.5	0 - 0.1	0 - 0.6	6.1-6.7	0 - 0.1
Elevation (mASL)					52.57-51.97	51.97-51.37	52.57-52.47	65.51-64.91	58.61-58.01	51.51-65.41	52.86-52.26	46.75-46.15	52.86-52.76
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	<0.02	0.07	<0.02	<0.02	0.23	<0.02	0.31	0.51	<0.02
Acenaphthene	NV	NV	7.9	0.072	<0.02	0.04	<0.02	<0.02	0.29	<0.02	0.65	0.53	0.13
Anthracene	2.5	NV	0.67	0.22	<0.02	0.2	<0.02	<0.02	0.46	<0.02	1.68	1.57	0.31
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	<0.02	0.5	0.03	<0.02	0.77	<0.02	3.16	2.83	0.16
Benzo[a]pyrene	*20*	*1*	0.3	0.3	<0.02	0.44	0.02	<0.02	0.73	<0.02	2.61	2.28	0.24
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	<0.02	0.62	0.05	<0.02	1	0.02	3.86	2.99	0.61
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	<0.02	0.27	0.02	<0.02	0.49	<0.02	1.43	1.22	0.25
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	<0.02	0.31	0.02	<0.02	0.49	<0.02	2.01	1.32	0.23
Chrysene	*NV*	*0.01*	7	2.8	<0.02	0.56	0.04	<0.02	0.91	<0.02	3.32	2.96	0.39
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	<0.02	0.06	<0.02	<0.02	0.13	<0.02	0.49	0.39	0.05
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	<0.02	0.23	<0.02	<0.02	0.43	<0.02	1.43	1.13	0.21
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	ND	0.674	0.031	ND	1.143	ND	4.194	3.539	0.417
Biphenyl	NV	NV	0.31	0.05	<0.02	<0.02	<0.02	<0.02	0.15	<0.02	0.06	0.1	<0.02
Fluoranthene	50	NV	0.69	0.69	<0.02	1.01	0.07	<0.02	1.42	0.02	5.59	4.43	0.24
Fluorene	NV	NV	62	0.19	<0.02	0.05	<0.02	<0.02	0.44	<0.02	0.95	0.94	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	<0.02	0.03	<0.02	<0.02	1.16	<0.02	0.14	0.24	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	<0.02	0.05	<0.02	<0.02	1.88	<0.02	0.18	0.33	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	<0.04	0.08	<0.04	<0.04	3.04	<0.04	0.32	0.57	<0.04
Naphthalene	NV	NV	0.6	0.09	<0.02	0.06	<0.02	<0.02	1.56	<0.02	0.58	0.5	0.02
Phenanthrene	NV	NV	6.2	0.69	<0.02	0.6	0.03	<0.02	1.59	<0.02	5.08	4.27	0.09
Pyrene	NV	NV	78	1	<0.02	0.95	0.06	<0.02	1.34	0.02	4.81	4.19	0.21

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-20				MW09-21			MW09-22		
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-20 SS1		MW09-20 SS7	SS20	MW09-21 SS1	MW09-21 SS7	SS21	MW09-22 SS1	MW09-22 SS6	SS22
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	25-Feb-09		25-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (mBGS)					0 - 0.6		4.6-5.18	0 - 0.1	0 - 0.6	4.6-4.88	0 - 0.1	0 - 0.6	3.8-4.4	0 - 0.1
Elevation (mASL)					47.23-46.63	Duplicate	42.63-42.05	47.23-47.13	46.59-45.99	41.99-41.71	46.59-46.49	46.05-45.45	42.25-41.65	46.05-45.95
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	0.44	0.23	0.16	0.03	0.12	0.3	<0.02	0.3	0.1	<0.02
Acenaphthene	NV	NV	7.9	0.072	0.31	0.21	0.15	0.11	0.05	0.17	0.03	0.11	0.37	0.03
Anthracene	2.5	NV	0.67	0.22	1.63	0.9	0.45	0.22	0.23	0.73	0.04	0.52	0.04	0.05
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	2.5	1.5	0.76	0.29	0.53	1.15	0.09	1.19	0.1	0.11
Benzo[a]pyrene	*20*	*1*	0.3	0.3	2.05	1.3	0.65	0.29	0.46	0.94	0.09	1.06	0.08	0.11
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	4.27	1.88	0.87	0.62	0.76	1.73	0.13	1.77	0.12	0.15
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	1.09	0.66	0.36	0.22	0.31	0.6	0.06	0.66	0.05	0.07
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	1.46	0.86	0.43	0.31	0.42	0.93	0.08	0.73	0.07	0.08
Chrysene	*NV*	*0.01*	7	2.8	2.46	1.53	0.79	0.46	0.6	1.2	0.1	1.32	0.1	0.12
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	0.32	0.22	0.1	0.06	0.08	0.14	0.02	0.14	<0.02	0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	1	0.64	0.34	0.2	0.27	0.57	0.05	0.62	0.04	0.06
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	3.329	2.03	1.002	0.499	0.747	1.536	0.147	1.651	0.115	0.172
Biphenyl	NV	NV	0.31	0.05	0.05	0.03	0.04	<0.02	0.02	0.07	<0.02	0.04	<0.02	<0.02
Fluoranthene	50	NV	0.69	0.69	4.25	2.59	1.36	0.69	0.91	1.87	0.17	1.79	0.17	0.21
Fluorene	NV	NV	62	0.19	0.66	0.39	0.32	0.03	0.07	0.24	<0.02	0.15	0.75	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	0.14	0.09	0.61	0.03	0.09	0.17	<0.02	0.17	7.5	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	0.15	0.1	0.52	0.03	0.1	0.31	<0.02	0.23	8.6	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	0.29	0.19	1.13	0.06	0.19	0.48	<0.04	0.4	16.1	<0.04
Naphthalene	NV	NV	0.6	0.09	0.18	0.13	0.29	0.03	0.08	0.26	<0.02	0.2	4.47	<0.02
Phenanthrene	NV	NV	6.2	0.69	3.26	2.1	1.22	0.35	0.67	1.79	0.09	1.4	0.43	0.11
Pyrene	NV	NV	78	1	3.82	2.31	1.29	0.59	0.83	1.64	0.14	1.66	0.16	0.18

Table B.5 - Soil Analytical Results -- Polycyclic Aromatic Hydrocarbons

	Guidelines				MW09-23			MW09-24			MW09-25		
Sample ID	**CCME**	**CCME**	**MOE**	**MOE**	MW09-23 SS1	MW09-23 SS6	SS23	MW09-24 SS1	MW09-24 SS3	SS24	MW09-25 SS1	MW09-25 SS6	SS25
Sample Date	**SQG**	**PEF**	**Table 3**	**Table 9**	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (mBGS)					0 - 0.6	3.8-4.4	0 - 0.1	0 - 0.6	1.6-2.2	0 - 0.1	0 - 0.6	3.7-4.3	0 - 0.1
Elevation (mASL)					46.34-45.74	42.54-41.94	46.34-46.24	46.04-45.44	44.44-43.84	46.04-45.94	45.67-45.07	41.97-41.37	45.67-45.57
Sampler	**(µg/g)**	**(µg/g)**	**(µg/g)**	**(µg/g)**	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Acenaphthylene	NV	NV	0.15	0.093	0.25	0.04	<0.02	0.16	0.1	0.02	0.12	0.03	<0.02
Acenaphthene	NV	NV	7.9	0.072	0.6	<0.02	0.03	0.22	0.07	0.06	0.09	0.03	<0.02
Anthracene	2.5	NV	0.67	0.22	1.21	0.07	0.05	0.78	0.27	0.11	0.42	0.04	<0.02
Benzo[a]anthracene	*NV*	*0.1*	0.5	0.36	1.84	0.17	0.11	1.37	0.57	0.23	0.94	0.09	0.04
Benzo[a]pyrene	*20*	*1*	0.3	0.3	1.49	0.15	0.1	1.11	0.48	0.21	0.69	0.07	0.03
Benzo[b]fluoranthene	*NV*	*0.1*	0.78	0.47	2.26	0.23	0.16	1.89	0.79	0.31	1.13	0.11	0.05
Benzo[g,h,i]perylene	*NV*	*0.01*	6.6	0.68	0.75	0.08	0.06	0.6	0.27	0.12	0.37	0.04	0.02
Benzo[k]fluoranthene	*NV*	*0.1*	0.78	0.48	1.1	0.13	0.07	1.08	0.37	0.13	0.57	0.06	0.03
Chrysene	*NV*	*0.01*	7	2.8	1.91	0.18	0.11	1.47	0.63	0.24	0.98	0.1	0.04
Dibenzo[a,h]anthracene	*NV*	*1*	0.1	0.1	0.2	<0.02	0.02	0.18	0.08	0.03	0.09	<0.02	<0.02
Indeno[1,2,3-cd]pyrene	*NV*	*0.1*	0.38	0.23	0.73	0.06	0.05	0.57	0.26	0.11	0.37	0.04	0.02
B[a]p Total Potency Equivalents	5.30	NV	NV	NV	2.31	0.212	0.161	1.802	0.768	0.322	1.095	0.101	0.045
Biphenyl	NV	NV	0.31	0.05	0.12	<0.02	<0.02	0.04	0.02	<0.02	0.02	0.03	<0.02
Fluoranthene	50	NV	0.69	0.69	3.13	0.25	0.2	2.45	1	0.42	1.64	0.16	0.07
Fluorene	NV	NV	62	0.19	0.62	0.02	<0.02	0.32	0.09	0.02	0.14	0.08	<0.02
Methylnaphthalene, 1-	NV	NV	NV	NV	0.3	0.02	<0.02	0.11	0.06	0.02	0.06	0.59	<0.02
Methylnaphthalene, 2-	NV	NV	NV	NV	0.42	0.02	0.02	0.13	0.08	0.03	0.07	0.25	<0.02
Methylnaphthalene, 2-(1-)-**	NV	NV	0.99	0.59	0.72	0.04	0.03	0.24	0.14	0.05	0.13	0.84	<0.04
Naphthalene	NV	NV	0.6	0.09	0.69	0.02	<0.02	0.23	0.1	0.02	0.1	0.15	<0.02
Phenanthrene	NV	NV	6.2	0.69	3.66	0.16	0.11	2.25	0.82	0.25	1.37	0.14	0.04
Pyrene	NV	NV	78	1	2.77	0.23	0.17	2.11	0.89	0.37	1.39	0.15	0.06

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-1			MW09-2			MW09-3		
				MW09-1 SS1	MW09-01 SS2	SS1	MW09-2 SS1	MW09-2 SS3	SS2	MW09-3 SS1	MW09-3 SS8	SS3
Sample Date				12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09	12-Jan-09	12-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	0.8 - 1.4	0 - 0.1	0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6	5.3 - 5.9	0 - 0.1
Elevation (Ground Surface)				46.61-46.01	45.81-45.21	46.61-46.51	46.36-45.76	44.86-44.26	46.36-46.26	51.65-51.05	46.35-45.75	51.65-51.55
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10-C16)	150	98	10	<10	33	<10	<10	<10	<10	<10	**825**	<10
F3 (C16-C34)	300	300	240	<10	**384**	18	<10	81	21	**334**	**1080**	<10
F4 (C34-C50)	2800	2800	120	<10	328	<10	<10	70	<10	739	<10	<10

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-4			MW09-5			MW09-6		
				MW09-4 SS1	MW09-4 SS10	SS4	MW09-5 SS1	MW09-5 SS5	SS5	MW09-6 SS1	MW09-6 SS2	SS6
Sample Date				9-Jan-09	9-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09	06-Jan-09	06-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	7.6 - 8.2	0 - 0.1	0 - 0.6	3.0-3.6	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (Ground Surface)				49.56-48.96	41.96-41.36	49.56-49.46	47.1-46.5	44.1-43.5	47.1-47.0	47.09-46.49	46.29-45.69	47.09-46.99
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	0.039	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	**67**	<10	<10	<10	<10	<10	<10	<10
F2 (C10-C16)	150	98	10	<10	**1130**	<10	<10	67	<10	<10	<10	<10
F3 (C16-C34)	300	300	240	86	270	125	229	57	26	<10	**317**	<10
F4 (C34-C50)	2800	2800	120	120	<10	36	191	<10	<10	<10	10	<10

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-7				MW09-8			
				MW09-7 SS1	MW09-7 SS4	SS7		MW09-8 SS1	MW09-8 SS6	SS8	
Sample Date				06-Jan-09	06-Jan-09	19-May-09		9-Jan-09	9-Jan-09	19-May-09	
Sample Depth (m)				0 - 0.6	2.3 - 2.9	0 - 0.1		0 - 0.6	3.8 - 4.4	0 - 0.1	
Elevation (Ground Surface)				46.57-45.97	44.27-43.67	46.57-46.47	Duplicate	46.87-46.27	43.07-42.47	46.87-46.77	Duplicate
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10-C16)	150	98	10	<10	77	<10	<10	20	17	<10	<10
F3 (C16-C34)	300	300	240	<10	237	<10	<10	294	139	<10	<10
F4 (C34-C50)	2800	2800	120	<10	32	<10	<10	149	220	<10	<10

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-9			MW09-10				MW09-11		
				MW09-9 SS1	MW09-9 SS3	SS9	MW09-10 SS1		MW09-10 SS2	SS10	MW09-11 SS1	MW09-11 SS2	SS11
Sample Date				7-Jan-09	7-Jan-09	19-May-09	9-Jan-09		9-Jan-09	19-May-09	7-Jan-09	7-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	1.5 - 2.1	0 - 0.1	0 - 0.6		0.8 - 1.4	0 - 0.1	0 - 0.6	0.8 - 1.4	0 - 0.1
Elevation (Ground Surface)				46.5-45.9	45.0-44.4	46.5-46.4	46.46-45.86	Duplicate	45.66-45.06	46.46-46.36	46.16-45.56	45.36-44.76	46.16-46.06
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.02	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.223	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	<10	<10	<10	21	<10	<10
F2 (C10-C16)	150	98	10	75	31	<10	<10	15	<10	<10	**362**	<10	<10
F3 (C16-C34)	300	300	240	142	90	34	138	228	46	<10	111	<10	32
F4 (C34-C50)	2800	2800	120	10	16	<10	287	718	29	<10	21	<10	<10

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-12			MW09-13			MW09-14			
				MW09-12 SS1	MW09-12 SS6	SS12	MW09-13 SS1	MW09-13 SS5	SS13	MW09-14 SS1		MW09-14 SS3	SS14
Sample Date				8-Jan-09	8-Jan-09	19-May-09	8-Jan-09	8-Jan-09	19-May-09	8-Jan-09		8-Jan-09	19-May-09
Sample Depth (m)				0 - 0.6	3.8 - 4.4	0 - 0.1	0 - 0.6	1.5-2.1	0 - 0.1	0 - 0.6		1.5 - 2.1	0 - 0.1
Elevation (Ground Surface)				47.19-46.59	44.11-42.79	47.19-47.09	45.33-44.73	43.83-43.23	45.33-45.23	45.64-45.04	Duplicate	44.14-43.54	45.64-45.54
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10-C16)	150	98	10	<10	57	<10	<10	36	<10	<10	<10	<10	<10
F3 (C16-C34)	300	300	240	242	57	<10	91	279	<10	51	140	<10	<10
F4 (C34-C50)	2800	2800	120	45	<10	<10	<10	160	<10	37	171	<10	<10

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-15				MW09-16		
				MW09-15 SS1		MW09-15 SS4	SS15	BH09-16 SS1	BH09-16 SS3	SS16
Sample Date				8-Jan-09		8-Jan-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6		2.3-2.9	0 - 0.1	0 - 0.6	1.2-1.8	0 - 0.1
Elevation (Ground Surface)				44.4-43.8	Duplicate	42.1-41.5	44.4-44.3	54.54-53.94	53.34-52.74	54.54-54.44
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	<10	<10	<10
F2 (C10-C16)	150	98	10	<10	<10	<10	<10	<10	<10	<10
F3 (C16-C34)	300	300	240	143	<10	<10	26	<10	<10	44
F4 (C34-C50)	2800	2800	120	76	<10	<10	<10	<10	<10	<10

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-17			MW09-18			MW09-19		
				BH09-17 SS1	BH09-17 SS2	SS17	MW09-18 SS1	MW09-18 SS10	SS18	MW09-19 SS1	MW09-19 SS9	SS19
Sample Date				25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09	25-Feb-09	25-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6	0.6-1.2	0 - 0.1	0 - 0.6	6.9-7.5	0 - 0.1	0 - 0.6	6.1-6.7	0 - 0.1
Elevation (Ground Surface)				52.57-51.97	51.97-51.37	52.57-52.47	65.51-64.91	58.61-58.01	61.51-65.41	52.86-52.26	46.75-46.15	52.86-52.76
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	**0.3**	<0.002	<0.002	0.005	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	**1.6**	<0.002	<0.002	0.005	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	0.2	<0.002	<0.002	0.007	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	3.2	<0.004	<0.004	0.023	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	**289**	<10	<10	<10	<10
F2 (C10-C16)	150	98	10	<10	<10	<10	<10	**607**	<10	<10	77	<10
F3 (C16-C34)	300	300	240	<10	68	18	21	**551**	54	<10	187	73
F4 (C34-C50)	2800	2800	120	<10	38	<10	10	18	<10	<10	69	26

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-20				MW09-21			MW09-22		
				MW09-20 SS1		MW09-20 SS7	SS20	MW09-21 SS1	MW09-21 SS7	SS21	MW09-22 SS1	MW09-22 SS6	SS22
Sample Date				25-Feb-09		25-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6		4.6-5.18	0 - 0.1	0 - 0.6	4.6-4.88	0 - 0.1	0 - 0.6	3.8-4.4	0 - 0.1
Elevation (Ground Surface)				47.23-46.63	Duplicate	42.63-42.05	47.23-47.13	46.59-45.99	41.99-41.71	46.59-46.49	46.05-45.45	42.25-41.65	46.05-45.95
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	0.02	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	0.01	<0.002	<0.002	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	0.015	<0.004	<0.004	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	<10	<10	<10	<10	**44**	<10
F2 (C10-C16)	150	98	10	21	19	**177**	<10	<10	<10	<10	<10	**1350**	<10
F3 (C16-C34)	300	300	240	161	106	51	<10	<10	<10	<10	93	237	<10
F4 (C34-C50)	2800	2800	120	108	80	<10	<10	<10	<10	<10	104	<10	<10

Table B.6 - Soil Analytical Results -- Petroleum Hydrocarbons and BTEX

Sample ID	CCME PHC	MOE Table 3	MOE Table 9	MW09-23			MW09-24			MW09-25		
				MW09-23 SS1	MW09-23 SS6	SS23	MW09-24 SS1	MW09-24 SS3	SS24	MW09-25 SS1	MW09-25 SS6	SS25
Sample Date				27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09	27-Feb-09	27-Feb-09	19-May-09
Sample Depth (m)				0 - 0.6	3.8-4.4	0 - 0.1	0 - 0.6	1.6-2.2	0 - 0.1	0 - 0.6	3.7-4.3	0 - 0.1
Elevation (Ground Surface)				46.34-45.74	42.54-41.94	46.34-46.24	46.04-45.44	44.44-43.84	46.04-45.94	45.67-45.07	41.97-41.37	45.67-45.57
Sampler	(µg/g)	(µg/g)	(µg/g)	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow	Trow
Benzene	0.03	0.02	0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Ethylbenzene	0.082	2	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Toluene	0.37	2.3	0.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Xylenes	11	3.1	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
F1 (C6-C10)***	30	55	25	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10-C16)	150	98	10	<10	<10	<10	<10	<10	<10	<10	122	<10
F3 (C16-C34)	300	300	240	81	<10	<10	119	<10	35	<10	31	18
F4 (C34-C50)	2800	2800	120	86	<10	<10	289	<10	<10	<10	<10	<10

Table B.7 - Groundwater Elevations

Monitoring Well ID & Zone	Ground Surface Elevation (mASL)	Top of Well PVC Riser Elevation (mASL)	8-Jan-13		6-Jul-13	
			Water Level Depth (mBTR)	Water Level Elevation (mASL)	Water Level Depth (mBTR)	Water Level Elevation (mASL)
MW09-05	47.1	46.91	--	--	4.751	42.159
MW09-19	52.86	52.81	--	--	Dry (7.45)	<45.36
MW12-01	45.68	45.60	2.49	43.11	3.029	42.57
MW12-02	46.05	45.92	2.80	43.12	3.332	42.59
MW12-03	46.70	46.62	3.50	43.12	4.014	42.61
MW12-04	47.77	47.66	4.55	43.12	5.046	42.62
MW12-05	48.87	48.81	5.71	43.10	6.254	42.56
MW12-06	50.15	50.09	6.97	43.12	7.446	42.64
MW12-07	53.07	53.02	9.24	43.78	9.243	43.78
MW12-08	55.65	55.57	9.69	45.88	8.587	46.99

Notes:

mASL = metres above sea level.

mBTR = metres below top of PVC riser

Ottawa River Elevation (8-Jan-13) = 43.1 mASL

Ottawa River Elevation (6-Jul-13) = 42.6 mASL

() = bottom of well measurement with water level tape when well was dry

Table B.8- Groundwater Analytical Results - VOCs

Parameter	FIGQG	MOE	MOE	MW09-2	MW09-3		MW09-4	MW09-5		
Date Sampled>	Tier 1 - Table 2 (µg/L)	Table 3 (µg/L)	Table 9 (µg/L)	21-Jan-09	21-Jan-09	13-Apr-10	21-Jan-09	21-Jan-09	13-Apr-10	Lab Dup 13-Apr-10
Acetone	13000	130000	100000	--	--	<10	--	--	<10	<10
Benzene	140	44	44	<0.5	<0.5	<0.1	0.9	<0.5	<0.1	<0.1
Bromodichloromethane	8500	85000	67000	<0.4	<0.4	<0.1	<0.4	<0.4	<0.1	<0.1
Bromoform	380	380	380	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Bromomethane	5.6	5.6	5.6	<0.7	<0.7	<0.5	<0.7	<0.7	<0.5	<0.5
Carbon Tetrachloride	0.56	0.79	0.79	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.1
Chlorobenzene	1.3	630	500	<0.4	<0.4	<0.1	<0.4	<0.4	<0.1	<0.1
Chloroform	1.8	2.4	2.4	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.1
Dibromochloromethane	1100	82000	65000	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Dichlorobenzene, 1,2-	0.7	4600	4600	<0.4	<0.4	<0.2	<0.4	<0.4	<0.2	<0.2
Dichlorobenzene, 1,3-	42	9600	7600	<0.4	<0.4	<0.2	<0.4	<0.4	<0.2	<0.2
Dichlorobenzene, 1,4-	26	8	8	<0.4	<0.4	<0.2	<0.4	<0.4	<0.2	<0.2
Dichloroethane, 1,1-	320	320	320	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.1
Dichloroethane, 1,2-	10	1.6	1.6	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Dichloroethylene, 1,1-	39	1.6	1.6	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.1
Dichloroethylene, cis-1,2-	1.6	1.6	1.6	<0.4	<0.4	<0.1	<0.4	<0.4	<0.1	<0.1
Dichloroethylene, trans-1,2-	1.6	1.6	1.6	<1	<1	<0.1	<1	<1	<0.1	<0.1
Dichloropropane, 1,2-	16	16	16	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.1
Dichloropropylene, cis-1,3-	NV	NV	NV	<0.4	<0.4	<0.2	<0.4	<0.4	<0.2	<0.2
Dichloropropylene, trans-1,3-	NV	NV	NV	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Ethylbenzene	11000	2300	1800	<0.5	<0.5	<0.1	1.8	<0.5	<0.1	<0.1
Ethylene Dibromide	0.25	0.25	0.25	--	--	<0.2	--	--	<0.2	<0.2
Methylene Chloride	98	610	610	<4	<4	<0.5	<4	<4	<0.5	<0.5
Methyl Isobutyl Ketone	58000	140000	140000	--	--	<5	--	--	<5	<5
Methyl Ethyl Ketone	150000	470000	470000	--	--	<5	--	--	<5	<5
Methyl t-butyl ether	340	190	190	--	--	<0.2	--	--	<0.2	<0.2
Styrene	72	1300	1300	<0.4	<0.4	<0.2	<0.4	<0.4	<0.2	<0.2
Tetrachloroethane, 1,1,1,2-	3.4	3.3	3.3	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.1
Tetrachloroethane, 1,1,2,2-	3.2	3.2	3.2	<0.6	<0.6	<0.2	<0.6	<0.6	<0.2	<0.2
Tetrachloroethylene	110	1.6	1.6	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.1
Toluene	83	18000	14000	<0.5	6.5	0.4	**128**	<0.5	0.2	0.4
Trichloroethane, 1,1,1-	640	640	640	<0.4	<0.4	<0.1	<0.4	<0.4	<0.1	<0.1
Trichloroethane, 1,1,2-	4.7	4.7	4.7	<0.6	<0.6	<0.2	<0.6	<0.6	<0.2	<0.2
Trichloroethylene	20	1.6	1.6	<0.4	<0.4	<0.1	<0.4	<0.4	<0.1	<0.1
Vinyl chloride	1.1	0.5	0.5	<0.4	<0.4	<0.2	<0.4	<0.4	<0.2	<0.2
Xylenes, m,p-	NV	NV	NV	<0.5	<0.5	<0.1	1.9	<0.5	<0.1	<0.1
Xylene, o-	NV	NV	NV	<0.5	<0.5	<0.1	0.9	<0.5	<0.1	<0.1
Xylenes, Total	3900	4200	3300	<0.5	<0.5	<0.1	2.8	<0.5	<0.1	<0.1

Table B.8- Groundwater Analytical Results - VOCs

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-6		MW09-7	MW09-8	MW09-9	MW09-10
Date Sampled>				21-Jan-09	9-Apr-10	21-Jan-09	21-Jan-09	21-Jan-09	21-Jan-09
Acetone	13000	130000	100000	--	<10	--	--	--	--
Benzene	140	44	44	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	8500	85000	67000	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4
Bromoform	380	380	380	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
Bromomethane	5.6	5.6	5.6	<0.7	<0.5	<0.7	<0.7	<0.7	<0.7
Carbon Tetrachloride	0.56	0.79	0.79	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	1.3	630	500	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4
Chloroform	1.8	2.4	2.4	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	1100	82000	65000	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
Dichlorobenzene, 1,2-	0.7	4600	4600	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	42	9600	7600	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	26	8	8	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4
Dichloroethane, 1,1-	320	320	320	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,2-	10	1.6	1.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,1-	39	1.6	1.6	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, cis-1,2-	1.6	1.6	1.6	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4
Dichloroethylene, trans-1,2-	1.6	1.6	1.6	<1	<0.1	<1	<1	<1	<1
Dichloropropane, 1,2-	16	16	16	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Dichloropropylene, cis-1,3-	NV	NV	NV	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4
Dichloropropylene, trans-1,3-	NV	NV	NV	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	11000	2300	1800	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Ethylene Dibromide	0.25	0.25	0.25	--	<0.2	--	--	--	--
Methylene Chloride	98	610	610	<4	<0.5	<4	<4	<4	<4
Methyl Isobutyl Ketone	58000	140000	140000	--	<5	--	--	--	--
Methyl Ethyl Ketone	150000	470000	470000	--	<5	--	--	--	--
Methyl t-butyl ether	340	190	190	--	<0.2	--	--	--	--
Styrene	72	1300	1300	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4
Tetrachloroethane, 1,1,1,2-	3.4	3.3	3.3	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	3.2	3.2	3.2	<0.6	<0.2	<0.6	<0.6	<0.6	<0.6
Tetrachloroethylene	110	1.6	1.6	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Toluene	83	18000	14000	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
Trichloroethane, 1,1,1-	640	640	640	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	4.7	4.7	4.7	<0.6	<0.2	<0.6	<0.6	<0.6	<0.6
Trichloroethylene	20	1.6	1.6	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	1.1	0.5	0.5	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4
Xylenes, m,p-	NV	NV	NV	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Xylene, o-	NV	NV	NV	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Xylenes, Total	3900	4200	3300	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5

Table B.8- Groundwater Analytical Results - VOCs

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-11		MW09-12	MW09-13	MW09-14	MW09-15	
Date Sampled>				21-Jan-09	14-Apr-10	21-Jan-09	21-Jan-09	21-Jan-09	21-Jan-09	Duplicate 21-Jan-09
Acetone	13000	130000	100000	--	<10	--	--	--	--	--
Benzene	140	44	44	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	8500	85000	67000	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4
Bromoform	380	380	380	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	5.6	5.6	5.6	<0.7	<0.5	<0.7	<0.7	<0.7	<0.7	<0.7
Carbon Tetrachloride	0.56	0.79	0.79	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	1.3	630	500	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4
Chloroform	1.8	2.4	2.4	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	1100	82000	65000	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorobenzene, 1,2-	0.7	4600	4600	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	42	9600	7600	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	26	8	8	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethane, 1,1-	320	320	320	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethane, 1,2-	10	1.6	1.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, 1,1-	39	1.6	1.6	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloroethylene, cis-1,2-	1.6	1.6	1.6	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloroethylene, trans-1,2-	1.6	1.6	1.6	<1	<0.1	<1	<1	<1	<1	<1
Dichloropropane, 1,2-	16	16	16	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloropropylene, cis-1,3-	NV	NV	NV	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
Dichloropropylene, trans-1,3-	NV	NV	NV	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	11000	2300	1800	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylene Dibromide	0.25	0.25	0.25	--	<0.2	--	--	--	--	--
Methylene Chloride	98	610	610	<4	<0.5	<4	<4	<4	<4	<4
Methyl Isobutyl Ketone	58000	140000	140000	--	<5	--	--	--	--	--
Methyl Ethyl Ketone	150000	470000	470000	--	<5	--	--	--	--	--
Methyl t-butyl ether	340	190	190	--	<0.2	--	--	--	--	--
Styrene	72	1300	1300	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
Tetrachloroethane, 1,1,1,2-	3.4	3.3	3.3	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	3.2	3.2	3.2	<0.6	<0.2	<0.6	<0.6	<0.6	<0.6	<0.6
Tetrachloroethylene	110	1.6	1.6	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	83	18000	14000	<0.5	0.2	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethane, 1,1,1-	640	640	640	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	4.7	4.7	4.7	<0.6	<0.2	<0.6	<0.6	<0.6	<0.6	<0.6
Trichloroethylene	20	1.6	1.6	<0.4	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4
Vinyl chloride	1.1	0.5	0.5	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
Xylenes, m,p-	NV	NV	NV	1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, o-	NV	NV	NV	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, Total	3900	4200	3300	1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5

Table B.8- Groundwater Analytical Results - VOCs

Parameter Date Sampled>	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-18 13-Apr-10	MW09-20 12-Apr-10	MW09-21 14-Apr-10	MW09-22 9-Apr-10	MW09-25 9-Apr-10
Acetone	13000	130000	100000	<50	<10	<10	<10	<10
Benzene	140	44	44	<0.5	<0.1	<0.1	<0.1	<0.1
Bromodichloromethane	8500	85000	67000	<0.5	<0.1	<0.1	<0.1	<0.1
Bromoform	380	380	380	<1	<0.2	<0.2	<0.2	<0.2
Bromomethane	5.6	5.6	5.6	<3	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.56	0.79	0.79	<0.5	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	1.3	630	500	<0.5	<0.1	<0.1	<0.1	<0.1
Chloroform	1.8	2.4	2.4	<0.5	<0.1	<0.1	<0.1	<0.1
Dibromochloromethane	1100	82000	65000	<1	<0.2	<0.2	<0.2	<0.2
Dichlorobenzene, 1,2-	0.7	4600	4600	<1	<0.2	<0.2	<0.2	<0.2
Dichlorobenzene, 1,3-	42	9600	7600	<1	<0.2	<0.2	<0.2	<0.2
Dichlorobenzene, 1,4-	26	8	8	<1	<0.2	<0.2	<0.2	<0.2
Dichloroethane, 1,1-	320	320	320	<0.5	<0.1	<0.1	<0.1	<0.1
Dichloroethane, 1,2-	10	1.6	1.6	8	<0.2	<0.2	<0.2	<0.2
Dichloroethylene, 1,1-	39	1.6	1.6	<0.5	<0.1	<0.1	<0.1	<0.1
Dichloroethylene, cis-1,2-	1.6	1.6	1.6	<0.5	<0.1	<0.1	<0.1	<0.1
Dichloroethylene, trans-1,2-	1.6	1.6	1.6	<0.5	<0.1	<0.1	<0.1	<0.1
Dichloropropane, 1,2-	16	16	16	<0.5	<0.1	<0.1	<0.1	<0.1
Dichloropropylene, cis-1,3-	NV	NV	NV	<1	<0.2	<0.2	<0.2	<0.2
Dichloropropylene, trans-1,3-	NV	NV	NV	<1	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	11000	2300	1800	<0.5	<0.1	<0.1	<0.1	<0.1
Ethylene Dibromide	0.25	0.25	0.25	<1	<0.2	<0.2	<0.2	<0.2
Methylene Chloride	98	610	610	<3	<0.5	<0.5	<0.5	<0.5
Methyl Isobutyl Ketone	58000	140000	140000	<30	<5	<5	<5	<5
Methyl Ethyl Ketone	150000	470000	470000	<30	<5	<5	<5	<5
Methyl t-butyl ether	340	190	190	<1	<0.2	<0.2	<0.2	<0.2
Styrene	72	1300	1300	<1	<0.2	<0.2	<0.2	<0.2
Tetrachloroethane, 1,1,1,2-	3.4	3.3	3.3	<0.5	<0.1	<0.1	<0.1	<0.1
Tetrachloroethane, 1,1,2,2-	3.2	3.2	3.2	<1	<0.2	<0.2	<0.2	<0.2
Tetrachloroethylene	110	1.6	1.6	<0.5	<0.1	<0.1	<0.1	<0.1
Toluene	83	18000	14000	2	0.3	<0.2	<0.2	<0.2
Trichloroethane, 1,1,1-	640	640	640	<0.5	<0.1	<0.1	<0.1	<0.1
Trichloroethane, 1,1,2-	4.7	4.7	4.7	<1	<0.2	<0.2	<0.2	<0.2
Trichloroethylene	20	1.6	1.6	<0.5	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	1.1	0.5	0.5	<1	<0.2	<0.2	<0.2	<0.2
Xylenes, m,p-	NV	NV	NV	51	<0.1	<0.1	<0.1	<0.1
Xylene, o-	NV	NV	NV	6.4	<0.1	<0.1	<0.1	<0.1
Xylenes, Total	3900	4200	3300	57	<0.1	<0.1	<0.1	<0.1

Table B.9 - Groundwater Analytical Results - Metals

Parameter	FIGQG Tier 1 - Table 2	MOE Table 3	MOE Table 9	MW09-1	MW09-2			MW09-3		MW09-4	
Date Sampled>	(µg/L)	(µg/L)	(µg/L)	21-Jan-09	21-Jan-09	11-Jun-09	16-Apr-10	21-Jan-09	11-Jun-09	21-Jan-09	11-Jun-09
Antimony	2000	20000	16000	0.5	1.3	<1	0.7	1.7	<1	1	<1
Arsenic	5	1900	1500	1	1	<10	<1	1	<10	2	<10
Barium	500	29000	23000	70	23	81	67	64	109	117	129
Beryllium	5.3	67	53	<0.5	<0.5	<1	<0.5	<0.5	<1	<0.5	<1
Boron (available)	5000	45000	36000	218	67	<50	27	177	190	65.3	<50
Cadmium	0.017	2.7	2.1	<0.1	<0.1	**1**	<0.1	<0.1	<1	<0.1	<1
Chromium	8.9	810	640	5	2	<50	<5	2	<50	4	<50
Chromium, Hexavalent	NV	140	110	<10	<10	<10	<5	<10	<10	<10	<10
Cobalt	NV	66	52	1.2	0.6	<5	1.4	0.6	<5	1.3	<5
Copper	2-4*	87	69	**6.8**	**6.1**	<5	<1	**5.7**	**5**	**3.7**	**5**
Iron	300	NV	NV	<100	<100	--	--	<100	--	<100	--
Lead	1-7*	25	20	<0.1	<0.1	<1	<0.5	0.2	<1	<0.1	<1
Magnesium	NV	NV	NV	27700	12100	--	--	24600	--	16500	--
Manganese	NV	NV	NV	30	21	--	--	31	--	925	--
Mercury	0.016	0.29	0.29	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	73	9200	7300	7	33	8	3	**140**	28	7	<5
Nickel	25-150*	490	390	6	4	14	1	5	16	5	8
Selenium	1	63	50	<1	**4**	<5	<2	**5**	<5	<1	<5
Silver	0.1	1.5	1.2	<0.1	<0.1	<1	<0.1	<0.1	<1	<0.1	<1
Sodium	NV	2300000	1800000	267000	53300	52900	45000	71300	420000	45600	28200
Thallium	0.8	510	400	<0.1	<0.1	<1	<0.5	<0.1	<1	<0.1	<1
Vanadium	NV	250	200	3	3	<10	<1	2	<10	7	<10
Zinc	10	1100	890	**47**	<10	**30**	<30	**13**	<20	**12**	<20

Table B.9 - Groundwater Analytical Results - Metals

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-5		MW09-6			MW09-7		MW09-8	
Date Sampled>				21-Jan-09	11-Jun-09	21-Jan-09	11-Jun-09	Duplicate 11-Jun-09	21-Jan-09	11-Jun-09	21-Jan-09	11-Jun-09
Antimony	2000	20000	16000	<0.5	<1	0.6	<1	<1	0.6	<1	<0.5	<1
Arsenic	5	1900	1500	1	<10	<1	<10	<10	<1	<10	<1	<10
Barium	500	29000	23000	96	45	18	49	46	13	26	15	265
Beryllium	5.3	67	53	<0.5	<1	<0.5	<1	<1	<0.5	<1	<0.5	<1
Boron (available)	5000	45000	36000	51.6	<50	14.3	<50	<50	<10	<50	13.4	62
Cadmium	0.017	2.7	2.1	<0.1	<1	<0.1	**1**	<1	<0.1	<1	<0.1	<1
Chromium	8.9	810	640	1	<50	1	<50	<50	<1	<50	<1	<50
Chromium, Hexavalent	NV	140	110	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cobalt	NV	66	52	2	<5	0.5	<5	<5	<0.5	<5	<0.5	<5
Copper	2-4*	87	69	0.8	<5	**3**	<5	<5	**5.6**	<5	**4.9**	<5
Iron	300	NV	NV	<100	--	<100	--	--	<100	--	<100	--
Lead	1-7*	25	20	<0.1	<1	0.3	<1	<1	0.6	<1	0.5	<1
Magnesium	NV	NV	NV	13900	--	3380	--	--	2440	--	3510	--
Manganese	NV	NV	NV	1200	--	138	--	--	<5	--	27	--
Mercury	0.016	0.29	0.29	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	73	9200	7300	6	<5	2	<5	<5	<1	<5	2	8
Nickel	25-150*	490	390	5	5	2	5	5	1	<5	1	12
Selenium	1	63	50	<1	<5	<1	<5	<5	<1	<5	<1	<5
Silver	0.1	1.5	1.2	<0.1	<1	<0.1	<1	<1	<0.1	<1	<0.1	<1
Sodium	NV	2300000	1800000	30700	16400	4240	4040	3940	4780	3860	8210	27700
Thallium	0.8	510	400	<0.1	<1	<0.1	<1	<1	<0.1	<1	<0.1	<1
Vanadium	NV	250	200	<1	<10	<1	<10	<10	<1	<10	<1	<10
Zinc	10	1100	890	<10	<20	<10	<20	<20	<10	<20	<10	<20

Table B.9 - Groundwater Analytical Results - Metals

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-9			MW09-10			MW09-11		
Date Sampled>				21-Jan-09	11-Jun-09	9-Apr-10	21-Jan-09	10-Jun-09	Duplicate 10-Jun-09	21-Jan-09	11-Jun-09	16-Apr-10
Antimony	2000	20000	16000	0.8	1	0.6	<0.5	<1	<1	0.6	<1	0.8
Arsenic	5	1900	1500	3	<10	<1	<1	<10	<10	3	<10	1
Barium	500	29000	23000	6	16	66	10	21	21	8	19	29
Beryllium	5.3	67	53	<0.5	<1	<0.5	<0.5	<1	<1	<0.5	<1	<0.5
Boron (available)	5000	45000	36000	18.6	<50	26	<10	<50	<50	12	<50	20
Cadmium	0.017	2.7	2.1	<0.1	**1**	<0.1	<0.1	<1	<1	<0.1	<1	<0.1
Chromium	8.9	810	640	1	<50	<5	<1	<50	<50	1	<50	<5
Chromium, Hexavalent	NV	140	110	<10	<10	<5	<10	<10	<10	<10	<10	<5
Cobalt	NV	66	52	<0.5	<5	1.7	<0.5	<5	<5	<0.5	<5	1.2
Copper	2-4*	87	69	**41.6**	8	1	**3.8**	<5	**5**	**8.3**	**9**	<1
Iron	300	NV	NV	<100	--	--	<100	--	--	<100	--	--
Lead	1-7*	25	20	0.2	<1	<0.5	0.2	<1	<1	0.2	<1	<0.5
Magnesium	NV	NV	NV	537	--	--	3280	--	--	348	--	--
Manganese	NV	NV	NV	<5	--	--	66	--	--	<5	--	--
Mercury	0.016	0.29	0.29	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	73	9200	7300	5	<5	2	1	<5	<5	5	12	4
Nickel	25-150*	490	390	1	6	<1	1	5	5	3	**34**	<1
Selenium	1	63	50	<1	<5	**3**	<1	<5	<5	<1	<5	<2
Silver	0.1	1.5	1.2	<0.1	<1	<0.1	<0.1	<1	<1	<0.1	<1	<0.1
Sodium	NV	2300000	1800000	4830	4210	17000	4590	7620	7230	4980	17700	10000
Thallium	0.8	510	400	<0.1	<1	<0.05	<0.1	<1	<1	<0.1	<1	<0.05
Vanadium	NV	250	200	6	<10	<1	<1	<10	<10	16	11	3
Zinc	10	1100	890	<10	<20	<100	<10	<20	<20	<10	<20	<30

Table B.9 - Groundwater Analytical Results - Metals

Parameter	FIGQG Tier 1 - Table 2	MOE Table 3	MOE Table 9	MW09-12		MW09-13		MW09-14	MW09-15			
Date Sampled>	(µg/L)	(µg/L)	(µg/L)	21-Jan-09	11-Jun-09	21-Jan-09	10-Jun-09	21-Jan-09	21-Jan-09	Duplicate 21-Jan-09	10-Jun-09	9-Apr-10
Antimony	2000	20000	16000	<0.5	<1	<0.5	<1	0.6	<0.5	<0.5	<1	<0.5
Arsenic	5	1900	1500	<1	<10	<1	<10	<1	<1	<1	<10	<1
Barium	500	29000	23000	10	17	10	28	9	10	10	13	23
Beryllium	5.3	67	53	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<1	<0.5
Boron (available)	5000	45000	36000	<10	<50	<10	<50	<10	<10	<10	<50	<10
Cadmium	0.017	2.7	2.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.1
Chromium	8.9	810	640	<1	<50	<1	<50	<1	<1	<1	<50	<5
Chromium, Hexavalent	NV	140	110	<10	<10	<10	<10	<10	<10	<10	<10	<5
Cobalt	NV	66	52	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<5	2.1
Copper	2-4*	87	69	**5.3**	<5	**4.2**	**5**	**4**	**3**	**2.6**	<5	<1
Iron	300	NV	NV	<100	--	<100	--	<100	<100	<100	--	--
Lead	1-7*	25	20	0.5	<1	0.2	<1	0.2	0.1	0.4	<1	<0.5
Magnesium	NV	NV	NV	2360	--	3030	--	2660	2340	2350	--	--
Manganese	NV	NV	NV	<5	--	44	--	<5	<5	<5	--	--
Mercury	0.016	0.29	0.29	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	73	9200	7300	<1	<5	9	39	<1	<1	<1	<5	<1
Nickel	25-150*	490	390	1	<5	2	7	1	1	1	<5	<1
Selenium	1	63	50	<1	<5	<1	<5	<1	<1	<1	<5	**3**
Silver	0.1	1.5	1.2	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.1
Sodium	NV	2300000	1800000	3910	3530	5320	9600	4110	4000	4110	3050	5400
Thallium	0.8	510	400	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<1	<0.05
Vanadium	NV	250	200	<1	<10	<1	<10	<1	<1	<1	<10	<1
Zinc	10	1100	890	<10	<20	<10	<20	<10	<10	<10	<20	<100

Table B.9 - Groundwater Analytical Results - Metals

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-20		MW09-21		MW09-22			MW09-23	
Date Sampled>				5-Mar-09	11-Jun-09	5-Mar-09	11-Jun-09	5-Mar-09	Duplicate 5-Mar-09	11-Jun-09	5-Mar-09	11-Jun-09
Antimony	2000	20000	16000	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	5	1900	1500	<10	<10	<10	<10	<10	<10	<10	<10	<10
Barium	500	29000	23000	14	66	96	264	<10	<10	24	17	84
Beryllium	5.3	67	53	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron (available)	5000	45000	36000	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cadmium	0.017	2.7	2.1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	8.9	810	640	<50	<50	<50	<50	<50	<50	<50	<50	<50
Chromium, Hexavalent	NV	140	110	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cobalt	NV	66	52	<5	<5	<5	<5	<5	<5	<5	<5	<5
Copper	2-4*	87	69	<5	<5	**7**	<5	<5	<5	<5	**6**	<5
Iron	300	NV	NV	--	--	--	--	--	--	--	--	--
Lead	1-7*	25	20	<1	<1	**4**	<1	<1	<1	<1	<1	<1
Magnesium	NV	NV	NV	--	--	--	--	--	--	--	--	--
Manganese	NV	NV	NV	--	--	--	--	--	--	--	--	--
Mercury	0.016	0.29	0.29	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	73	9200	7300	<5	<5	5	10	<5	<5	<5	<5	<5
Nickel	25-150*	490	390	<5	6	8	13	<5	<5	5	<5	8
Selenium	1	63	50	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	0.1	1.5	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sodium	NV	2300000	1800000	6180	19400	13400	17100	5580	5070	5500	8760	6810
Thallium	0.8	510	400	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	NV	250	200	<10	<10	<10	<10	<10	<10	<10	<10	<10
Zinc	10	1100	890	<20	<20	<20	<20	<20	<20	<20	<20	**28**

Table B.9 - Groundwater Analytical Results - Metals

Parameter	FIGQG Tier 1 - Table 2	MOE Table 3	MOE Table 9	MW09-24	MW09-25		MW12-02	MW12-03	MW12-04	MW12-05	MW12-06	MW12-07
Date Sampled>	(µg/L)	(µg/L)	(µg/L)	21-Jan-09	5-Mar-09	10-Jun-09	11-Jul-13	11-Jul-13	11-Jul-13	11-Jul-13	11-Jul-13	11-Jul-13
Antimony	2000	20000	16000	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	1.3
Arsenic	5	1900	1500	<10	<10	<10	<1	<5	<10	<1	<5	<5
Barium	500	29000	23000	11	<10	30	120	290	320	130	130	120
Beryllium	5.3	67	53	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (available)	5000	45000	36000	<50	<50	<50	20	20	20	20	30	50
Cadmium	0.017	2.7	2.1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	8.9	810	640	<50	<50	<50	<1	3	2	<1	2	1
Chromium, Hexavalent	NV	140	110	<10	<10	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	NV	66	52	<5	<5	<5	1.4	1.6	2.6	3.4	1.3	2.7
Copper	2-4*	87	69	**6**	**7**	<5	<1	<1	<1	1	<1	1
Iron	300	NV	NV	--	--	--	--	--	--	--	--	--
Lead	1-7*	25	20	<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	NV	NV	NV	--	--	--	--	--	--	--	--	--
Manganese	NV	NV	NV	--	--	--	--	--	--	--	--	--
Mercury	0.016	0.29	0.29	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	73	9200	7300	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel	25-150*	490	390	<5	<5	<5	<5	<5	<5	<5	<5	<5
Selenium	1	63	50	<5	<5	<5	<1	<5	<1	<1	<5	<1
Silver	0.1	1.5	1.2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium	NV	2300000	1800000	6270	7380	3890	44000	50000	48000	14000	49000	90000
Thallium	0.8	510	400	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vanadium	NV	250	200	<10	<10	<10	2	8	6	3	6	2
Zinc	10	1100	890	<20	<20	<20	<10	<10	<10	**20**	<10	<10

Table B.10 - Groundwater Analytical Results - PAH

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-1	MW09-2			MW09-3			MW09-4	
Date Sampled>				21-Jan-09	21-Jan-09	11-Jun-09	16-Apr-10	21-Jan-09	11-Jun-09	16-Apr-10	21-Jan-09	11-Jun-09
Acenaphthene	5.8	600	600	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	1.09	0.96
Acenaphthylene	46	1.8	1.4	<0.05	<0.05	<0.05	<0.05	0.25	<0.05	<0.05	0.38	0.22
Anthracene	0.012	2.4	1	**0.04**	**0.03**	<0.01	<0.05	**0.12**	<0.01	<0.05	**0.08**	**0.05**
Benzo[a]anthracene	0.018	4.7	1.8	**0.05**	**0.07**	<0.01	<0.05	**0.21**	<0.01	<0.05	**0.08**	**0.06**
Benzo[a]pyrene	0.01	0.81	0.81	**0.02**	**0.03**	<0.01	**0.018**	**0.13**	<0.01	**0.016**	**0.04**	**0.03**
Benzo[k]fluoranthene	0.48	0.4	0.4	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	NV	0.75	0.75	<0.05	<0.05	<0.05	<0.05	0.18	<0.05	<0.05	<0.05	0.05
Benzo[ghi]perylene	0.17	0.2	0.2	<0.05	<0.05	<0.05	<0.1	0.13	<0.05	<0.1	<0.05	<0.05
Biphenyl	NV	1000	1700	0.05	<0.05	<0.05	--	0.28	<0.05	--	0.2	<0.05
Chrysene	0.1	1	0.7	<0.05	<0.05	<0.05	<0.05	**0.23**	<0.05	<0.05	0.05	0.05
Dibenzo[a,h] anthracene	0.26	0.52	0.4	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.05	<0.05
Fluoranthene	0.04	130	73	**0.05**	**0.08**	<0.01	<0.05	**0.45**	<0.01	<0.05	**0.13**	**0.12**
Fluorene	3	400	290	<0.05	<0.05	<0.05	<0.05	0.22	<0.05	<0.05	1.59	1.41
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	<0.05	<0.05	<0.05	<0.1	0.07	<0.05	<0.1	<0.05	<0.05
1-Methylnaphthalene	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	0.46	<0.05	<0.05	19.9	21.8
2-Methylnaphthalene	NV	NV	NV	0.05	0.05	<0.05	<0.05	0.52	<0.05	<0.05	4.63	2.22
Methylnaphthalene, 2-(1-)-	180	1800	1500	0.05	0.05	<0.1	<0.1	0.98	<0.1	<0.1	24.53	24.02
Naphthalene	1.1	1400	1400	0.11	0.06	<0.05	0.11	0.54	<0.05	<0.05	**4.1**	**2.09**
Phenanthrene	0.4	580	380	0.12	0.12	<0.05	<0.03	**0.58**	<0.05	0.03	**0.77**	**0.61**
Pyrene	0.025	68	5.7	**0.05**	**0.07**	<0.01	<0.05	**0.49**	<0.01	<0.05	**0.12**	**0.15**
PCBs	NV	7.8	0.2	<0.05	<0.05	--	--	<0.05	--	--	<0.05	--

Table B.10 - Groundwater Analytical Results - PAH

Parameter	FIGQG	MOE	MOE	MW09-5			
Date Sampled>	Tier 1 - Table 2 (µg/L)	Table 3 (µg/L)	Table 9 (µg/L)	21-Jan-09	11-Jun-09	13-Apr-10	Duplicate MWD2
Acenaphthene	5.8	600	600	0.4	<0.05	<0.05	<0.05
Acenaphthylene	46	1.8	1.4	0.17	0.08	<0.05	<0.05
Anthracene	0.012	2.4	1	**0.05**	**0.05**	<0.05	<0.05
Benzo[a]anthracene	0.018	4.7	1.8	**0.07**	**0.08**	<0.05	<0.05
Benzo[a]pyrene	0.01	0.81	0.81	**0.03**	**0.06**	0.005	0.005
Benzo[k]fluoranthene	0.48	0.4	0.4	<0.05	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	NV	0.75	0.75	0.05	0.09	<0.05	<0.05
Benzo[ghi]perylene	0.17	0.2	0.2	<0.05	0.1	<0.1	<0.1
Biphenyl	NV	1000	1700	<0.05	<0.05	--	--
Chrysene	0.1	1	0.7	0.05	0.08	<0.05	<0.05
Dibenzo[a,h] anthracene	0.26	0.52	0.4	<0.05	<0.05	<0.1	<0.1
Fluoranthene	0.04	130	73	**0.17**	**0.29**	<0.05	<0.05
Fluorene	3	400	290	0.43	0.21	<0.05	<0.05
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	<0.05	<0.05	<0.1	<0.1
1-Methylnaphthalene	NV	NV	NV	3.27	0.49	<0.05	<0.05
2-Methylnaphthalene	NV	NV	NV	1.14	0.14	<0.05	<0.05
Methylnaphthalene, 2-(1-)-	180	1800	1500	4.41	0.63	<0.1	<0.1
Naphthalene	1.1	1400	1400	**1.12**	0.27	0.06	0.08
Phenanthrene	0.4	580	380	0.38	0.3	<0.03	<0.03
Pyrene	0.025	68	5.7	**0.17**	**0.4**	<0.05	<0.05
PCBs	NV	7.8	0.2	<0.05	--	--	--

Table B.10 - Groundwater Analytical Results - PAH

Parameter	FIGQG	MOE	MOE	MW09-6				MW09-7		MW09-8		
Date Sampled>	Tier 1 - Table 2 (µg/L)	Table 3 (µg/L)	Table 9 (µg/L)	21-Jan-09	11-Jun-09	Duplicate 11-Jun-09	9-Apr-10	21-Jan-09	11-Jun-09	21-Jan-09	12-Jun-09	14-Apr-10
Acenaphthene	5.8	600	600	0.29	0.23	0.21	--	0.17	<0.05	1.14	0.32	0.14
Acenaphthylene	46	1.8	1.4	0.8	0.36	0.17	--	0.24	<0.05	1.33	0.22	0.12
Anthracene	0.012	2.4	1	**0.65**	**0.28**	**0.13**	--	**0.62**	**0.11**	**4.02**	**0.5**	**0.42**
Benzo[a]anthracene	0.018	4.7	1.8	**0.54**	**0.23**	**0.12**	--	**1.05**	**0.04**	**8.6**	**1.03**	**1.2**
Benzo[a]pyrene	0.01	0.81	0.81	**0.85**	**0.3**	**0.13**	**0.026**	**1.02**	**0.11**	**8.04**	**0.88**	**0.96**
Benzo[k]fluoranthene	0.48	0.4	0.4	0.45	0.18	0.08	--	0.68	0.08	**5.96**	0.72	0.5
Benzo[b]fluoranthene	NV	0.75	0.75	1.11	0.47	0.2	--	1.25	0.12	10.6	1.28	1.2
Benzo[ghi]perylene	0.17	0.2	0.2	**0.82**	**0.37**	0.17	--	**0.65**	0.15	**4.42**	**0.56**	**0.6**
Biphenyl	NV	1000	1700	0.19	0.16	0.11	--	<0.05	<0.05	0.25	0.09	--
Chrysene	0.1	1	0.7	**0.69**	**0.28**	**0.13**	--	**1.19**	**0.12**	**9.33**	**1.11**	**0.9**
Dibenzo[a,h] anthracene	0.26	0.52	0.4	0.14	0.08	<0.05	--	0.18	<0.05	**0.98**	0.15	0.2
Fluoranthene	0.04	130	73	**0.71**	**0.39**	**0.19**	--	**1.81**	**0.19**	**13.2**	**2.31**	**2.4**
Fluorene	3	400	290	0.66	0.4	0.26	--	0.21	<0.05	1.54	0.39	0.22
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	**0.59**	**0.27**	0.11	--	**0.56**	0.09	**4.06**	**0.48**	**0.7**
1-Methylnaphthalene	NV	NV	NV	4.88	3.63	2.78	--	0.08	<0.05	3.43	3.64	1.6
2-Methylnaphthalene	NV	NV	NV	2.35	1.6	1.15	--	0.1	<0.05	5.7	3.8	1.0
Methylnaphthalene, 2-(1-)-	180	1800	1500	7.23	5.23	3.93	--	0.18	<0.1	9.13	7.44	2.6
Naphthalene	1.1	1400	1400	0.91	0.83	0.58	--	0.3	<0.05	**5.55**	**6.02**	**2.2**
Phenanthrene	0.4	580	380	**0.9**	**0.49**	0.29	--	**1.37**	0.1	**10.9**	**1.93**	**1.3**
Pyrene	0.025	68	5.7	**0.81**	**0.4**	**0.19**	--	**1.6**	**0.25**	**12**	**1.94**	**2.1**
PCBs	NV	7.8	0.2	<0.05	--	--	--	<0.05	--	<0.05	--	--

Table B.10 - Groundwater Analytical Results - PAH

Parameter	FIGQG	MOE	MOE	MW09-9			MW09-10			MW09-11		
Date Sampled>	Tier 1 - Table 2 (µg/L)	Table 3 (µg/L)	Table 9 (µg/L)	21-Jan-09	11-Jun-09	9-Apr-10	21-Jan-09	11-Jun-09	Duplicate 11-Jun-09	21-Jan-09	10-Jun-09	16-Apr-10
Acenaphthene	5.8	600	600	0.5	0.22	--	**7.13**	0.48	0.51	3.12	0.12	<0.05
Acenaphthylene	46	1.8	1.4	0.59	0.26	--	4.1	0.18	0.29	11.5	0.28	<0.05
Anthracene	0.012	2.4	1	**1.59**	**0.69**	--	**3.99**	**0.11**	**0.25**	**5.1**	**0.07**	<0.05
Benzo[a]anthracene	0.018	4.7	1.8	**2.71**	**1.22**	--	**7.43**	**0.13**	**0.34**	**7.82**	**0.1**	<0.05
Benzo[a]pyrene	0.01	0.81	0.81	**2.59**	**1.18**	**0.18**	**6.23**	**0.07**	**0.24**	**7.56**	**0.05**	**0.048**
Benzo[k]fluoranthene	0.48	0.4	0.4	**1.77**	**0.85**	--	**5.05**	0.06	0.19	4.02	<0.05	<0.05
Benzo[b]fluoranthene	NV	0.75	0.75	3.38	1.68	--	10.1	0.13	0.41	7.98	0.08	0.07
Benzo[ghi]perylene	0.17	0.2	0.2	**1.57**	**0.75**	--	**3.95**	0.06	**0.18**	**4.82**	0.05	<0.1
Biphenyl	NV	1000	1700	0.1	<0.05	--	<1.00	<0.05	<0.05	1.31	<0.05	--
Chrysene	0.1	1	0.7	**3.02**	**1.3**	--	**8.44**	**0.15**	**0.39**	**8.39**	0.1	0.05
Dibenzo[a,h] anthracene	0.26	0.52	0.4	0.38	0.16	--	<1.00	<0.05	<0.05	**0.71**	<0.05	<0.1
Fluoranthene	0.04	130	73	**4.34**	**2.53**	--	**11.1**	**0.4**	**0.84**	**19**	**0.28**	**0.09**
Fluorene	3	400	290	0.69	0.25	--	**11.6**	1.03	1.28	**6.53**	0.21	<0.05
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	**1.39**	**0.67**	--	**3.07**	<0.05	0.14	**3.3**	<0.05	<0.1
1-Methylnaphthalene	NV	NV	NV	0.33	0.1	--	115	6.39	5.99	12.4	1.53	<0.05
2-Methylnaphthalene	NV	NV	NV	0.35	0.09	--	150	19.7	1.31	11.8	1.13	0.06
Methylnaphthalene, 2-(1-)-	180	1800	1500	0.68	0.19	--	265	26.09	7.3	24.2	2.66	0.06
Naphthalene	1.1	1400	1400	0.77	0.23	--	**63.8**	**11.3**	**1.46**	**8.34**	0.86	0.05
Phenanthrene	0.4	580	380	**3.86**	**1.65**	--	**14.4**	**0.77**	**0.7**	**19.9**	0.36	0.07
Pyrene	0.025	68	5.7	**3.8**	**2.1**	--	**12.2**	**0.32**	**0.69**	**20.4**	**0.27**	**0.1**
PCBs	NV	7.8	0.2	<0.05	--	--	<0.05	--	--	<0.05	--	--

Table B.10 - Groundwater Analytical Results - PAH

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-12			MW09-13			MW09-14
Date Sampled>				21-Jan-09	11-Jun-09	9-Apr-10	21-Jan-09	10-Jun-09	12-Apr-10	21-Jan-09
Acenaphthene	5.8	600	600	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Acenaphthylene	46	1.8	1.4	0.68	0.1	<0.05	0.18	<0.05	<0.05	<0.05
Anthracene	0.012	2.4	1	**0.71**	**0.12**	<0.05	**0.19**	**0.02**	<0.05	**0.02**
Benzo[a]anthracene	0.018	4.7	1.8	**1.72**	**0.3**	<0.05	**0.44**	**0.07**	<0.05	**0.07**
Benzo[a]pyrene	0.01	0.81	0.81	**1.65**	**0.26**	**0.025**	**0.45**	**0.06**	**0.018**	**0.04**
Benzo[k]fluoranthene	0.48	0.4	0.4	1.02	0.21	<0.05	0.22	0.05	<0.05	<0.05
Benzo[b]fluoranthene	NV	0.75	0.75	2.64	0.48	<0.05	0.6	0.08	<0.05	0.07
Benzo[ghi]perylene	0.17	0.2	0.2	**1.11**	**0.22**	<0.1	**0.6**	0.1	<0.1	<0.05
Biphenyl	NV	1000	1700	0.09	<0.05	--	<0.05	<0.05	--	<0.05
Chrysene	0.1	1	0.7	**2.03**	**0.38**	<0.05	**0.51**	0.1	<0.05	0.06
Dibenzo[a,h] anthracene	0.26	0.52	0.4	0.25	<0.05	<0.1	0.11	<0.05	<0.1	<0.05
Fluoranthene	0.04	130	73	**2.57**	**0.58**	**0.06**	**0.62**	**0.11**	<0.05	**0.11**
Fluorene	3	400	290	0.3	<0.05	<0.05	0.12	<0.05	<0.05	<0.05
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	**0.88**	0.16	<0.1	**0.27**	<0.05	<0.1	<0.05
1-Methylnaphthalene	NV	NV	NV	0.22	<0.05	<0.05	0.23	<0.05	<0.05	<0.05
2-Methylnaphthalene	NV	NV	NV	0.3	0.05	<0.05	0.24	<0.05	<0.05	0.05
Methylnaphthalene, 2-(1-)-	180	1800	1500	0.52	0.05	<0.1	0.47	<0.1	<0.1	0.05
Naphthalene	1.1	1400	1400	0.66	0.08	<0.05	0.32	0.07	0.06	0.1
Phenanthrene	0.4	580	380	**2.18**	0.34	0.07	**0.69**	0.08	<0.03	**0.12**
Pyrene	0.025	68	5.7	**2.48**	**0.55**	**0.06**	**0.67**	**0.13**	<0.05	**0.11**
PCBs	NV	7.8	0.2	<0.05	--	--	<0.05	--	--	<0.05

Table B.10 - Groundwater Analytical Results - PAH

Parameter	FIGQG	MOE	MOE	MW09-15				MW09-20			MW09-21		
Date Sampled>	Tier 1 - Table 2 (µg/L)	Table 3 (µg/L)	Table 9 (µg/L)	21-Jan-09	Duplicate 21-Jan-09	10-Jun-09	9-Apr-10	5-Mar-09	11-Jun-09	14-Apr-10	5-Mar-09	11-Jun-09	14-Apr-10
Acenaphthene	5.8	600	600	0.06	<0.05	<0.05	<0.05	0.96	0.52	0.17	0.27	0.2	<0.05
Acenaphthylene	46	1.8	1.4	<0.05	<0.05	<0.05	<0.05	0.25	0.08	0.17	0.15	0.13	<0.05
Anthracene	0.012	2.4	1	<0.01	0.01	<0.01	<0.05	**0.09**	**0.03**	**0.12**	**0.23**	**0.23**	<0.05
Benzo[a]anthracene	0.018	4.7	1.8	<0.01	0.04	<0.01	<0.05	**0.17**	<0.01	**0.34**	**0.3**	**0.25**	<0.05
Benzo[a]pyrene	0.01	0.81	0.81	<0.01	<0.01	<0.01	<0.005	**0.14**	<0.01	**0.31**	**0.24**	**0.19**	**0.014**
Benzo[k]fluoranthene	0.48	0.4	0.4	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	0.15	0.19	0.17	<0.05
Benzo[b]fluoranthene	NV	0.75	0.75	<0.05	<0.05	<0.05	<0.05	0.25	<0.05	0.39	0.33	0.3	<0.05
Benzo[ghi]perylene	0.17	0.2	0.2	<0.05	<0.05	<0.05	<0.1	0.14	<0.05	**0.2**	0.16	0.17	<0.1
Biphenyl	NV	1000	1700	<0.05	<0.05	<0.05	--	0.15	<0.05	--	0.1	0.05	--
Chrysene	0.1	1	0.7	<0.05	<0.05	<0.05	<0.05	**0.19**	<0.05	**0.25**	**0.31**	**0.3**	<0.05
Dibenzo[a,h] anthracene	0.26	0.52	0.4	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1	<0.05	<0.05	<0.1
Fluoranthene	0.04	130	73	0.03	**0.05**	<0.01	<0.05	**0.28**	**0.13**	**0.52**	**0.55**	**0.67**	<0.05
Fluorene	3	400	290	<0.05	<0.05	<0.05	<0.05	1.44	1.14	0.52	0.26	0.18	<0.05
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	<0.05	<0.05	<0.05	<0.1	0.09	<0.05	0.2	0.13	0.12	<0.1
1-Methylnaphthalene	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	18.3	4.49	0.09	0.41	0.21	<0.05
2-Methylnaphthalene	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	7.39	1.43	<0.1	0.39	0.19	<0.05
Methylnaphthalene, 2-(1-)-	180	1800	1500	<0.1	<0.1	<0.1	<0.1	25.69	5.92	0.09	0.8	0.4	<0.1
Naphthalene	1.1	1400	1400	0.07	<0.05	<0.05	<0.05	**5.26**	**1.31**	0.14	0.58	0.43	0.08
Phenanthrene	0.4	580	380	0.05	0.05	<0.05	<0.03	**0.64**	0.3	0.21	**0.83**	**0.7**	<0.03
Pyrene	0.025	68	5.7	**0.03**	**0.05**	<0.01	<0.05	**0.31**	**0.1**	**0.49**	**0.51**	**0.56**	<0.05
PCBs	NV	7.8	0.2	<0.05	<0.05	--	--	<0.05	--	--	<0.05	--	--

Table B.10 - Groundwater Analytical Results - PAH

Parameter	FIGQG	MOE	MOE	MW09-22				MW09-23		MW09-24	MW09-25		
Date Sampled>	Tier 1 - Table 2 (µg/L)	Table 3 (µg/L)	Table 9 (µg/L)	5-Mar-09	Duplicate 5-Mar-09	11-Jun-09	9-Apr-10	5-Mar-09	11-Jun-09	5-Mar-09	5-Mar-09	10-Jun-09	9-Apr-10
Acenaphthene	5.8	600	600	0.69	0.66	0.11	<0.05	0.08	0.08	1.68	0.23	<0.05	<0.05
Acenaphthylene	46	1.8	1.4	0.72	0.48	0.06	<0.05	0.29	0.14	0.26	0.12	0.07	<0.05
Anthracene	0.012	2.4	1	**0.6**	**0.43**	**0.06**	<0.05	**0.27**	**0.13**	**1.74**	**0.09**	**0.06**	<0.05
Benzo[a]anthracene	0.018	4.7	1.8	**0.94**	**0.59**	**0.09**	<0.05	**1.1**	**0.45**	**2.27**	**0.26**	**0.14**	<0.05
Benzo[a]pyrene	0.01	0.81	0.81	**0.97**	**0.61**	**0.04**	**0.024**	**1.12**	**0.42**	**2.0**	**0.24**	**0.11**	**0.011**
Benzo[k]fluoranthene	0.48	0.4	0.4	0.72	0.3	<0.05	<0.05	0.65	0.31	**1.34**	0.18	0.11	<0.05
Benzo[b]fluoranthene	NV	0.75	0.75	1.51	0.88	0.09	<0.05	1.69	0.59	2.62	0.36	0.18	<0.05
Benzo[ghi]perylene	0.17	0.2	0.2	**0.75**	**0.48**	<0.05	<0.1	**0.82**	**0.34**	**1.1**	**0.18**	0.11	<0.1
Biphenyl	NV	1000	1700	0.14	<0.05	<0.05	--	<0.05	<0.05	0.24	<0.05	<0.05	--
Chrysene	0.1	1	0.7	**1.13**	**0.73**	0.1	<0.05	**1.2**	**0.47**	**2.61**	**0.31**	**0.16**	<0.05
Dibenzo[a,h] anthracene	0.26	0.52	0.4	0.07	0.08	<0.05	<0.1	0.07	0.07	0.2	<0.05	<0.05	<0.1
Fluoranthene	0.04	130	73	**1.8**	**1.23**	**0.28**	<0.05	**1.16**	**0.58**	**4.43**	**0.42**	**0.29**	<0.05
Fluorene	3	400	290	1.2	1.07	0.2	<0.05	0.06	<0.05	1.28	0.13	0.06	<0.05
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	**0.61**	**0.38**	<0.05	<0.1	**0.49**	**0.22**	**0.88**	0.13	0.07	<0.1
1-Methylnaphthalene	NV	NV	NV	5.05	5.29	0.58	<0.05	<0.05	<0.05	1.01	0.65	0.27	<0.05
2-Methylnaphthalene	NV	NV	NV	0.85	0.75	<0.05	<0.05	0.05	<0.05	1.1	0.15	<0.05	<0.05
Methylnaphthalene, 2-(1-)-	180	1800	1500	5.9	6.04	0.58	<0.1	<0.1	<0.1	2.01	0.8	0.27	<0.1
Naphthalene	1.1	1400	1400	1.0	0.94	0.3	<0.05	0.08	0.05	**2.68**	0.29	0.12	<0.05
Phenanthrene	0.4	580	380	**1.89**	**1.51**	0.33	<0.03	**0.52**	0.24	**5.89**	0.34	0.18	<0.03
Pyrene	0.025	68	5.7	**1.65**	**1.09**	**0.25**	<0.05	**1.09**	**0.52**	**4.18**	**0.39**	**0.28**	<0.05
PCBs	NV	7.8	0.2	<0.05	<0.05	--	--	<0.05	--	<0.05	<0.05	--	--

Table B.10 - Groundwater Analytical Results - PAH

Parameter Date Sampled>	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW12-02 11-Jul-13	MW12-03 11-Jul-13	MW12-04 11-Jul-13	MW12-05 11-Jul-13	MW12-06 11-Jul-13	MW12-07 11-Jul-13
Acenaphthene	5.8	600	600	<0.1	0.3	0.2	0.2	<0.1	<0.1
Acenaphthylene	46	1.8	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	0.012	2.4	1	<0.1	**0.2**	<0.1	**1**	<0.1	<0.1
Benzo[a]anthracene	0.018	4.7	1.8	<0.1	**0.5**	**0.2**	**3.8**	**0.2**	<0.1
Benzo[a]pyrene	0.01	0.81	0.81	<0.1	**0.54**	**0.18**	**3.83**	**0.3**	**0.8**
Benzo[k]fluoranthene	0.48	0.4	0.4	<0.05	0.46	0.19	**2.92**	0.23	<0.05
Benzo[b]fluoranthene	NV	0.75	0.75	<0.05	0.45	0.17	3.12	0.24	<0.05
Benzo[ghi]perylene	0.17	0.2	0.2	<0.1	**0.3**	0.1	**2.3**	**0.2**	<0.1
Biphenyl	NV	1000	1700	--	--	--	--	--	--
Chrysene	0.1	1	0.7	<0.05	**0.55**	**0.25**	**3.55**	**0.25**	0.1
Dibenzo[a,h] anthracene	0.26	0.52	0.4	<0.1	0.1	<0.1	**1**	<0.1	<0.1
Fluoranthene	0.04	130	73	<0.1	**1**	**0.4**	**5.8**	**0.5**	**0.2**
Fluorene	3	400	290	<0.1	<0.1	0.5	<0.1	<0.1	<0.1
Indeno[1,2,3-cd]pyrene	0.21	0.2	0.2	<0.1	0.3	0.1	**2.1**	0.2	<0.1
1-Methylnaphthalene	NV	NV	NV	<0.1	5.9	1.8	<0.1	7	<0.1
2-Methylnaphthalene	NV	NV	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methylnaphthalene, 2-(1-)-	180	1800	1500	<0.1	5.9	1.8	<0.1	7	<0.1
Naphthalene	1.1	1400	1400	<0.1	<0.1	<0.1	0.6	<0.1	<0.1
Phenanthrene	0.4	580	380	<0.1	**0.8**	**0.5**	**3.1**	**1.3**	0.2
Pyrene	0.025	68	5.7	<0.1	**0.9**	**0.3**	**5.6**	**0.6**	**0.2**
PCBs	NV	7.8	0.2	--	--	--	--	--	--

Table B.11 - Groundwater Analytical Results - PHC/BTEX and Field Readings

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-1	MW09-2			MW09-3			MW09-4		MW09-5		
Date Sampled>				21-Jan-09	21-Jan-09	11-Jun-09	13-Apr-10	21-Jan-09	11-Jun-09	13-Apr-10	21-Jan-09	11-Jun-09	21-Jan-09	11-Jun-09	13-Apr-10
Petroleum Hydrocarbons (PHC)															
F1 PHCs (C6-C10)	810	750	420	<200	<200	<200	<100	<200	<200	<100	<200	<200	<200	<200	<100
F2 PHCs (C10-C16)	1300	150	150	<100	<100	<100	<100	<100	<100	<100	863	480	<100	101	<100
F3 PHCs (C16-C34)	NV	500	500	<100	<100	<100	<100	<100	580	<100	300	340	<100	<100	<100
F4 PHCs (C34-C50)	NV	500	500	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
BTEX															
Benzene	140	44	44	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	--	0.9	<0.5	<0.5	<0.5	--
Ethylbenzene	11000	2300	1800	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	--	1.8	<0.5	<0.5	<0.5	--
Toluene	83	18000	14000	<0.5	<0.5	<0.5	<0.2	6.5	<0.5	--	**128**	<0.5	<0.5	1	--
Xylenes, m,p-	NV	NV	NV	<0.5	<0.5	<0.5	<0.4	<0.5	<0.5	--	1.9	<0.5	<0.5	<0.5	--
Xylene, o-	NV	NV	NV	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	--	0.9	<0.5	<0.5	<0.5	--
Xylenes, Total	3900	4200	3300	<1	<1	<1	<0.4	<1	<1	--	2.8	<1.0	<1	<1	--
Field Data															
Conductivity (ms/cm)	NV	NV	NV	--	--	--	1.13	--	--	2.76	--	--	--	--	0.537
Temperature (^{o}C)	NV	NV	NV	--	--	--	8.6	--	--	10.8	--	--	--	--	9.91
Dissolved Oxygen (mg/L)	NV	NV	NV	--	--	--	11.4	--	--	5.8	--	--	--	--	8.71
ORP (mV)	NV	NV	NV	--	--	--	--	--	--	185.5	--	--	--	--	149.3
pH	6.5-9.0	6.5-8.7	6.5-8.7	--	--	--	7.73	--	--	7.22	--	--	--	--	7.9
Ferrous Iron (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--
Sulphide (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--

Table B.11 - Groundwater Analytical Results - PHC/BTEX and Field Readings

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-6			MW09-7		MW09-8			MW09-9		
Date Sampled>				21-Jan-09	11-Jun-09	9-Apr-10	21-Jan-09	11-Jun-09	21-Jan-09	11-Jun-09	13-Apr-10	21-Jan-09	10-Jun-09	9-Apr-10
Petroleum Hydrocarbons (PHC)														
F1 PHCs (C6-C10)	810	750	420	<200	<200	<100	<200	<200	<200	<200	<100	<200	<200	<100
F2 PHCs (C10-C16)	1300	150	150	1290	743	<100	<100	<100	<100	195	<100	<100	<100	<100
F3 PHCs (C16-C34)	NV	500	500	920	147	<100	<100	<100	<100	108	<100	<100	<100	<100
F4 PHCs (C34-C50)	NV	500	500	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
BTEX														
Benzene	140	44	44	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2
Ethylbenzene	11000	2300	1800	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2
Toluene	83	18000	14000	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2
Xylenes, m,p-	NV	NV	NV	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.4	<0.5	<0.5	<0.4
Xylene, o-	NV	NV	NV	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2
Xylenes, Total	3900	4200	3300	<1	<1	--	<1	<1	<1	<1	<0.4	<1	<1	<0.4
Field Data														
Conductivity (ms/cm)	NV	NV	NV	--	--	0.29	--	--	--	--	--	--	--	0.409
Temperature (^{o}C)	NV	NV	NV	--	--	5.06	--	--	--	--	--	--	--	4.93
Dissolved Oxygen (mg/L)	NV	NV	NV	--	--	6.99	--	--	--	--	--	--	--	12.3
ORP (mV)	NV	NV	NV	--	--	36.1	--	--	--	--	--	--	--	128.5
pH	6.5-9.0	6.5-8.7	6.5-8.7	--	--	7.4	--	--	--	--	--	--	--	7.6
Ferrous Iron (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Sulphide (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--

Table B.11 - Groundwater Analytical Results - PHC/BTEX and Field Readings

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-10			MW09-11			MW09-12			MW09-13			
Date Sampled>				21-Jan-09	10-Jun-09	Duplicate	21-Jan-09	10-Jun-09	14-Apr-10	21-Jan-09	11-Jun-09	9-Apr-10	21-Jan-09	10-Jun-09	12-Apr-10	Duplicate
Petroleum Hydrocarbons (PHC)																
F1 PHCs (C6-C10)	810	750	420	<200	<200	<200	<200	<200	<100	<200	<200	<100	<200	<200	<100	<100
F2 PHCs (C10-C16)	1300	150	150	**1590**	897	1000	**172000**	**1480**	<100	<100	<100	<100	344	270	<100	<100
F3 PHCs (C16-C34)	NV	500	500	320	<100	240	27000	201	<100	<100	<100	<100	1620	3370	<100	<100
F4 PHCs (C34-C50)	NV	500	500	<100	<100	<100	<160	<100	<100	<100	<100	<100	680	1650	<100	<100
BTEX																
Benzene	140	44	44	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Ethylbenzene	11000	2300	1800	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Toluene	83	18000	14000	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Xylenes, m,p-	NV	NV	NV	<0.5	<0.5	<0.5	1	<0.5	--	<0.5	<0.5	<0.4	<0.5	<0.5	<0.4	<0.4
Xylene, o-	NV	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.2
Xylenes, Total	3900	4200	3300	<1	<1	<1	1	<1	--	1	<1	<0.4	<1	<1	<0.4	<0.4
Field Data																
Conductivity (ms/cm)	NV	NV	NV	--	--	--	--	--	0.37	--	--	0.531	--	--	0.356	--
Temperature (^{o}C)	NV	NV	NV	--	--	--	--	--	5.2	--	--	3.74	--	--	6.3	--
Dissolved Oxygen (mg/L)	NV	NV	NV	--	--	--	--	--	7.87	--	--	10.5	--	--	9.88	--
ORP (mV)	NV	NV	NV	--	--	--	--	--	--	--	--	84.6	--	--	153.7	--
pH	6.5-9.0	6.5-8.7	6.5-8.7	--	--	--	--	--	8.29	--	--	7.65	--	--	7.82	--
Ferrous Iron (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulphide (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B.11 - Groundwater Analytical Results - PHC/BTEX and Field Readings

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-14	MW09-15				MW09-18		MW09-20			MW09-21		
Date Sampled>				21-Jan-09	21-Jan-09	Duplicate	10-Jun-09	9-Apr-10	6-Mar-09	16-Apr-10	5-Mar-09	11-Jun-09	12-Apr-10	5-Mar-09	11-Jun-09	14-Apr-10
Petroleum Hydrocarbons (PHC)																
F1 PHCs (C6-C10)	810	750	420	<200	<200	<200	<200	<100	280	**1400**	<200	<200	<100	<200	<200	<100
F2 PHCs (C10-C16)	1300	150	150	<100	<100	<100	<100	<100	<100	--	**1740**	254	540	424	130	400
F3 PHCs (C16-C34)	NV	500	500	<100	<100	<100	<100	<100	<100	--	421	<100	<100	<100	<100	<100
F4 PHCs (C34-C50)	NV	500	500	<100	<100	<100	<100	<100	<100	--	<100	<100	<100	<100	<100	<100
BTEX																
Benzene	140	44	44	<0.5	<0.5	<0.5	<0.5	<0.2	34.1	21	<0.5	<0.5	<0.1	<0.5	<0.5	--
Ethylbenzene	11000	2300	1800	<0.5	<0.5	<0.5	<0.5	<0.2	30.1	12	<0.5	<0.5	<0.1	1.4	1.5	--
Toluene	83	18000	14000	<0.5	<0.5	<0.5	<0.5	<0.2	50.9	**420**	<0.5	<0.5	0.3	5.9	5.6	--
Xylenes, m,p-	NV	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.4	--	80	--	<0.5	<0.1	--	1.3	--
Xylene, o-	NV	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.2	--	12	--	<0.5	<0.1	--	<0.5	--
Xylenes, Total	3900	4200	3300	<1	<1	<1	<1	<0.4	112.2	92	1	<1	<0.1	1	1.3	--
Field Data																
Conductivity (ms/cm)	NV	NV	NV	--	--	--	--	0.153	--	--	--	--	0.549	--	--	1.02
Temperature (^{o}C)	NV	NV	NV	--	--	--	--	7.32	--	--	--	--	8	--	--	8.5
Dissolved Oxygen (mg/L)	NV	NV	NV	--	--	--	--	10.07	--	--	--	--	2.52	--	--	1.82
ORP (mV)	NV	NV	NV	--	--	--	--	137.7	--	--	--	--	-36.2	--	--	-59.3
pH	6.5-9.0	6.5-8.7	6.5-8.7	--	--	--	--	8.18	--	--	--	--	7.01	--	--	7.18
Ferrous Iron (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulphide (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B.11 - Groundwater Analytical Results - PHC/BTEX and Field Readings

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW09-22				MW09-23		MW09-24	MW09-25		
Date Sampled>				5-Mar-09	Duplicate	11-Jun-09	9-Apr-10	5-Mar-09	11-Jun-09	5-Mar-09	5-Mar-09	10-Jun-09	9-Apr-10
Petroleum Hydrocarbons (PHC)													
F1 PHCs (C6-C10)	810	750	420	<200	<200	**1080**	<100	<200	<200	<200	<200	<200	<100
F2 PHCs (C10-C16)	1300	150	150	**86300**	**69900**	**1920**	<100	<100	<100	<100	960	980	<100
F3 PHCs (C16-C34)	NV	500	500	11400	9570	207	<100	<100	<100	<100	221	187	<100
F4 PHCs (C34-C50)	NV	500	500	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
BTEX													
Benzene	140	44	44	<0.5	<0.5	25.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
Ethylbenzene	11000	2300	1800	<0.5	<0.5	8.4	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
Toluene	83	18000	14000	0.5	<0.5	45.6	--	<0.5	<0.5	<0.5	<0.5	<0.5	--
Xylenes, m,p-	NV	NV	NV	--	--	5.2	--	--	<0.5	--	<0.5	<0.5	--
Xylene, o-	NV	NV	NV	--	--	4.9	--	--	<0.5	--	<0.5	<0.5	--
Xylenes, Total	3900	4200	3300	0.9	<1	10.1	--	<1	<1	<1	<1	<1	--
Field Data													
Conductivity (ms/cm)	NV	NV	NV	--	--	--	0.581	--	--	--	--	--	0.59
Temperature (^{o}C)	NV	NV	NV	--	--	--	4.9	--	--	--	--	--	3.87
Dissolved Oxygen (mg/L)	NV	NV	NV	--	--	--	3.47	--	--	--	--	--	3.3
ORP (mV)	NV	NV	NV	--	--	--	15.6	--	--	--	--	--	-5.6
pH	6.5-9.0	6.5-8.7	6.5-8.7	--	--	--	7.18	--	--	--	--	--	7.14
Ferrous Iron (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--
Sulphide (mg/L)	NV	NV	NV	--	--	--	--	--	--	--	--	--	--

Table B.11 - Groundwater Analytical Results - PHC/BTEX and Field Readings

Parameter	FIGQG Tier 1 - Table 2 (µg/L)	MOE Table 3 (µg/L)	MOE Table 9 (µg/L)	MW12-01	MW12-02		MW12-03	MW12-04	MW12-05	MW12-06	MW12-07	MW12-08
Date Sampled>				7-Jul-13	7-Jul-13	Duplicate	7-Jul-13	7-Jul-13	7-Jul-13	7-Jul-13	7-Jul-13	7-Jul-13
Petroleum Hydrocarbons (PHC)												
F1 PHCs (C6-C10)	810	750	420	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2 PHCs (C10-C16)	1300	150	150	**1500**	<100	100	800	**2000**	300	**2600**	<100	<100
F3 PHCs (C16-C34)	NV	500	500	1300	<200	<200	600	1600	<200	700	1100	660
F4 PHCs (C34-C50)	NV	500	500	<200	<200	<200	<200	<200	<200	<200	<200	<200
BTEX												
Benzene	140	44	44	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	11000	2300	1800	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	83	18000	14000	<0.5	<0.5	<0.5	2	4.2	<0.5	<0.5	<0.5	<0.5
Xylenes, m,p-	NV	NV	NV	<0.5	<0.5	<0.5	0.9	2.1	<0.5	<0.5	<0.5	<0.5
Xylene, o-	NV	NV	NV	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5
Xylenes, Total	3900	4200	3300	<1.0	<1.0	<1.0	<1.0	3	<1.0	<1.0	<1.0	<1.0
Field Data												
Conductivity (ms/cm)	NV	NV	NV	0.47	0.39		1.25	1.11	0.69	0.56	1.05	3.31
Temperature (^{o}C)	NV	NV	NV	15.32	15.98		13.74	16.08	16.28	15.46	15.09	18.66
Dissolved Oxygen (mg/L)	NV	NV	NV	1.31	2.24		0.74	1.95	2.4	1.02	--	--
ORP (mV)	NV	NV	NV	200.6	168.8		108.3	199.5	242	187.5	240.1	297.4
pH	6.5-9.0	6.5-8.7	6.5-8.7	6.93	6.92		**6.13**	6.4	6.44	6.21	7.19	6.97
Ferrous Iron (mg/L)	NV	NV	NV	0.8	4.5		>10	>10	1.5	>10	3	4.5
Sulphide (mg/L)	NV	NV	NV	0	0		0	0	0	0	0	0

APPENDIX C

2013 Laboratory Analytical Reports

EXOVA OTTAWA

Certificate of Analysis

Client: Geofirma Engineering Ltd.
1 Raymond St., Suite 200
Ottawa, ON
K1R 1A2
Attention: Mr. Drew Paulusse
PO#: 132351-001
Invoice to: Geofirma Engineering Ltd.

Report Number: 1314622
Date Submitted: 2013-07-12
Date Reported: 2013-07-19
Project: 13-215-1
COC #: 167223

Dear Drew Paulusse:

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

Report Comments:

APPROVAL: _____

Diana Cameron
Team Leader, Inorganics

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

Exova (Ottawa) is certified and accredited for specific parameters by:
CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is certified and accredited for specific parameters by:
SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Certificate of Analysis

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Report Number: 1314622
Date Submitted: 2013-07-12
Date Reported: 2013-07-19
Project: 13-215-1
COC #: 167223

Group	Analyte	MRL	Units	Guideline	1041865 Groundwater 2013-07-11 MW12-01	1041866 Groundwater 2013-07-11 MW12-02	1041867 Groundwater 2013-07-11 MW12-03	1041868 Groundwater 2013-07-11 MW12-04
	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.							
Inorganics	Antimony	0.5	ug/L	STD-20		<0.5	<0.5	<0.5
	Arsenic	1	ug/L	STD-1.9		<1		
		10	ug/L	STD-1.9				<10
		5	ug/L	STD-1.9			<5	
	Barium	10	ug/L	STD-29		120*	290*	320*
	Beryllium	0.5	ug/L	STD-0.067		<0.5	<0.5	<0.5
	Boron (total)	10	ug/L	STD-45		20	20	20
	Cadmium	0.1	ug/L	STD-0.0027		<0.1	<0.1	<0.1
	Chromium Total	1	ug/L	STD-0.81		<1	3*	2*
	Cobalt	0.2	ug/L	STD-0.066		1.4*	1.6*	2.6*
	Copper	1	ug/L	STD-0.087		<1	<1	<1
	Lead	1	ug/L	STD-0.025		<1	<1	<1
	Mercury	0.1	ug/L	STD-0.00029		<0.1	<0.1	<0.1
	Molybdenum	5	ug/L	STD-9.2		<5	<5	<5
	Nickel	5	ug/L	STD-0.49		<5	<5	<5
	Selenium	1	ug/L	STD-0.063		<1		<1
		5	ug/L	STD-0.063			<5	
	Silver	0.1	ug/L	STD-0.0015		<0.1	<0.1	<0.1
	Sodium	2000	ug/L	STD-2300		44000*	50000*	48000*
	Thallium	0.1	ug/L	STD-0.51		<0.1	<0.1	<0.1
	Uranium	1	ug/L	STD-0.42		<1	<1	<1
	Vanadium	1	ug/L	STD-0.25		2*	8*	6*
	Zinc	10	ug/L	STD-1.1		<10	<10	<10
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	0.1	mg/L	STD-0.75	<0.1	<0.1	<0.1	<0.1
	Petroleum Hydrocarbons F1-BTEX	0.1	mg/L		<0.1	<0.1	<0.1	<0.1
	Petroleum Hydrocarbons F2	0.1	mg/L	STD-0.15	1.5*	<0.1	0.8*	2.0*

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

**-Analysis completed in Mississauga
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Methods references and/or additional QA/QC information available on request.

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	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.							
Petroleum Hydrocarbons	Petroleum Hydrocarbons F3	0.2	mg/L	STD-0.5	1.3*	<0.2	0.6*	1.6*
	Petroleum Hydrocarbons F4	0.2	mg/L	STD-0.5	<0.2	<0.2	<0.2	<0.2
Semi-Volatiles	Acenaphthene	0.1	ug/L	STD-600		<0.1	0.3	0.2
	Acenaphthylene	0.1	ug/L	STD-1.8		<0.1	<0.1	<0.1
	Anthracene	0.1	ug/L	STD-2.4		<0.1	0.2	<0.1
	Benz[a]anthracene	0.1	ug/L	STD-4.7		<0.1	0.5	0.2
	Benzo[a]pyrene	0.01	ug/L	STD-0.81		<0.01	0.54	0.18
	Benzo[b]fluoranthene	0.05	ug/L	STD-0.75		<0.05	0.45	0.17
	Benzo[ghi]perylene	0.1	ug/L	STD-0.2		<0.1	0.3*	0.1
	Benzo[k]fluoranthene	0.05	ug/L	STD-0.4		<0.05	0.46*	0.19
	Chrysene	0.05	ug/L	STD-1		<0.05	0.55	0.25
	Dibenz[a h]anthracene	0.1	ug/L	STD-0.52		<0.1	0.1	<0.1
	Fluoranthene	0.1	ug/L	STD-130		<0.1	1.0	0.4
	Fluorene	0.1	ug/L	STD-400		<0.1	<0.1	0.5
	Indeno[1 2 3-cd]pyrene	0.1	ug/L	STD-0.2		<0.1	0.3*	0.1
	Methlynaphthalene, 1-	0.1	ug/L	STD-1800		<0.1	5.9	1.8
	Methlynaphthalene, 2-	0.1	ug/L	STD-1800		<0.1	<0.1	<0.1
	Naphthalene	0.1	ug/L	STD-1400		<0.1	<0.1	<0.1
	Phenanthrene	0.1	ug/L	STD-580		<0.1	0.8	0.5
	Pyrene	0.1	ug/L	STD-68		<0.1	0.9	0.3
Subcontracted	Chromium VI	0.50	ug/L	STD-0.14		<0.50	<0.50	<0.50
VOCs	Benzene	0.5	ug/L	STD-44	<0.5	<0.5	<0.5	<0.5
	Ethylbenzene	0.5	ug/L	STD-2300	<0.5	<0.5	<0.5	0.5
	m/p-xylene	0.5	ug/L		<0.5	<0.5	0.9	2.1
	o-xylene	0.5	ug/L		<0.5	<0.5	<0.5	0.9
	Toluene	0.5	ug/L	STD-18000	<0.5	<0.5	2.0	4.2

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K1R 1A2
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Invoice to: Geofirma Engineering Ltd.

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Date Reported: 2013-07-19
Project: 13-215-1
COC #: 167223

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.			
					1041865 Groundwater 2013-07-11 MW12-01	1041866 Groundwater 2013-07-11 MW12-02	1041867 Groundwater 2013-07-11 MW12-03	1041868 Groundwater 2013-07-11 MW12-04
VOCs	Xylene Mixture	1.0	ug/L	STD-4200	<1.0	<1.0	<1.0	3.0
VOCs Surrogates (%	Toluene-d8	1	%		96	101	97	94

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.			
					1041869 Groundwater 2013-07-11 MW12-05	1041870 Groundwater 2013-07-11 MW12-06	1041871 Groundwater 2013-07-11 MW12-07	1041872 Groundwater 2013-07-12 MW12-08
Inorganics	Antimony	0.5	ug/L	STD-20	<0.5	<0.5	1.3	
	Arsenic	1	ug/L	STD-1.9	<1			
		5	ug/L	STD-1.9		<5	<5	
	Barium	10	ug/L	STD-29	130*	130*	120*	
	Beryllium	0.5	ug/L	STD-0.067	<0.5	<0.5	<0.5	
	Boron (total)	10	ug/L	STD-45	20	30	50*	
	Cadmium	0.1	ug/L	STD-0.0027	<0.1	<0.1	<0.1	
	Chromium Total	1	ug/L	STD-0.81	<1	2*	1*	
	Cobalt	0.2	ug/L	STD-0.066	3.4*	1.3*	2.7*	
	Copper	1	ug/L	STD-0.087	1*	<1	1*	
	Lead	1	ug/L	STD-0.025	<1	<1	<1	
	Mercury	0.1	ug/L	STD-0.00029	<0.1	<0.1	<0.1	
	Molybdenum	5	ug/L	STD-9.2	<5	<5	<5	
	Nickel	5	ug/L	STD-0.49	<5	<5	<5	
	Selenium	1	ug/L	STD-0.063	<1		<1	
		5	ug/L	STD-0.063		<5		
	Silver	0.1	ug/L	STD-0.0015	<0.1	<0.1	<0.1	

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

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Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1041869 Groundwater 2013-07-11 MW12-05	1041870 Groundwater 2013-07-11 MW12-06	1041871 Groundwater 2013-07-11 MW12-07	1041872 Groundwater 2013-07-12 MW12-08
Inorganics	Sodium	2000	ug/L	STD-2300		14000*	49000*	90000*	
	Thallium	0.1	ug/L	STD-0.51		<0.1	<0.1	<0.1	
	Uranium	1	ug/L	STD-0.42		<1	<1	<1	
	Vanadium	1	ug/L	STD-0.25		3*	6*	2*	
	Zinc	10	ug/L	STD-1.1		20*	<10	<10	
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	0.1	mg/L	STD-0.75		<0.1	<0.1	<0.1	<0.1
	Petroleum Hydrocarbons F1-BTEX	0.1	mg/L			<0.1	<0.1	<0.1	
	Petroleum Hydrocarbons F2	0.1	mg/L	STD-0.15		0.3*	2.6*	<0.1	
	Petroleum Hydrocarbons F3	0.2	mg/L	STD-0.5		<0.2	0.7*	1.1*	
	Petroleum Hydrocarbons F4	0.2	mg/L	STD-0.5		<0.2	<0.2	<0.2	
Semi-Volatiles	Acenaphthene	0.1	ug/L	STD-600		0.2	<0.1	<0.1	
	Acenaphthylene	0.1	ug/L	STD-1.8		<0.1	<0.1	<0.1	
	Anthracene	0.1	ug/L	STD-2.4		1.0	<0.1	<0.1	
	Benz[a]anthracene	0.1	ug/L	STD-4.7		3.8	0.2	<0.1	
	Benzo[a]pyrene	0.01	ug/L	STD-0.81		3.83*	0.30	0.08	
	Benzo[b]fluoranthene	0.05	ug/L	STD-0.75		3.12*	0.24	<0.05	
	Benzo[ghi]perylene	0.1	ug/L	STD-0.2		2.3*	0.2	<0.1	
	Benzo[k]fluoranthene	0.05	ug/L	STD-0.4		2.92*	0.23	<0.05	
	Chrysene	0.05	ug/L	STD-1		3.55*	0.25	0.10	
	Dibenz[a h]anthracene	0.1	ug/L	STD-0.52		1.0*	<0.1	<0.1	
	Fluoranthene	0.1	ug/L	STD-130		5.8	0.5	0.2	
	Fluorene	0.1	ug/L	STD-400		<0.1	<0.1	<0.1	
	Indeno[1 2 3-cd]pyrene	0.1	ug/L	STD-0.2		2.1*	0.2	<0.1	
	Methlynaphthalene, 1-	0.1	ug/L	STD-1800		<0.1	7.0	<0.1	
	Methlynaphthalene, 2-	0.1	ug/L	STD-1800		<0.1	<0.1	<0.1	
	Naphthalene	0.1	ug/L	STD-1400		0.6	<0.1	<0.1	

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Group	Analyte	MRL	Units	Guideline	1041869 Groundwater 2013-07-11 MW12-05	1041870 Groundwater 2013-07-11 MW12-06	1041871 Groundwater 2013-07-11 MW12-07	1041872 Groundwater 2013-07-12 MW12-08
	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.							
Semi-Volatiles	Phenanthrene	0.1	ug/L	STD-580	3.1	1.3	0.2	
	Pyrene	0.1	ug/L	STD-68	5.6	0.6	0.2	
Subcontracted	Chromium VI	0.50	ug/L	STD-0.14	<0.50	<0.50	<0.50	
VOCs	Benzene	0.5	ug/L	STD-44	<0.5	<0.5	<0.5	<0.5
	Ethylbenzene	0.5	ug/L	STD-2300	<0.5	<0.5	<0.5	<0.5
	m/p-xylene	0.5	ug/L		<0.5	<0.5	<0.5	<0.5
	o-xylene	0.5	ug/L		<0.5	<0.5	<0.5	<0.5
	Toluene	0.5	ug/L	STD-18000	<0.5	<0.5	<0.5	<0.5
	Xylene Mixture	1.0	ug/L	STD-4200	<1.0	<1.0	<1.0	
VOCs Surrogates (%	Toluene-d8	1	%		95	94	93	95

Group	Analyte	MRL	Units	Guideline	1041873 Groundwater 2013-07-11 MW-Dup
	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.				
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	0.1	mg/L	STD-0.75	<0.1
	Petroleum Hydrocarbons F1-BTEX	0.1	mg/L		<0.1
	Petroleum Hydrocarbons F2	0.1	mg/L	STD-0.15	0.1
	Petroleum Hydrocarbons F3	0.2	mg/L	STD-0.5	<0.2
	Petroleum Hydrocarbons F4	0.2	mg/L	STD-0.5	<0.2
VOCs	Benzene	0.5	ug/L	STD-44	<0.5
	Ethylbenzene	0.5	ug/L	STD-2300	<0.5
	m/p-xylene	0.5	ug/L		<0.5
	o-xylene	0.5	ug/L		<0.5

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

**-Analysis completed in Mississauga

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Invoice to: Geofirma Engineering Ltd.

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Project: 13-215-1
COC #: 167223

Group	Analyte	MRL	Units	Guideline	Lab I.D. 1041873 Sample Matrix Groundwater Sample Type Sampling Date 2013-07-11 Sample I.D. MW-Dup
VOCs	Toluene	0.5	ug/L	STD-18000	<0.5
	Xylene Mixture	1.0	ug/L	STD-4200	<1.0
VOCs Surrogates (%	Toluene-d8	1	%		96

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 0 **Analysis Date** 2013-07-17 **Method** O CCME			
Petroleum Hydrocarbons F1-BTEX			
Xylene Mixture			
Run No 254401 **Analysis Date** 2013-07-16 **Method** M SM3120B-3500C			
Sodium	<2000 ug/L	97	80-120
Run No 254405 **Analysis Date** 2013-07-16 **Method** EPA 200.8			
Silver	<0.1 ug/L	99	89-111
Arsenic	<1 ug/L	102	81-119
Boron (total)	<10 ug/L	91	81-119
Barium	<10 ug/L	101	91-109
Beryllium	<0.5 ug/L	103	82-118
Cadmium	<0.1 ug/L	98	86-114
Cobalt	<0.2 ug/L	104	88-112
Chromium Total	<1 ug/L	102	89-111
Copper	<1 ug/L	102	86-114

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

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

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

Client: Geofirma Engineering Ltd.
1 Raymond St., Suite 200
Ottawa, ON
K1R 1A2
Attention: Mr. Drew Paulusse
PO#: 132351-001
Invoice to: Geofirma Engineering Ltd.

Report Number: 1314622
Date Submitted: 2013-07-12
Date Reported: 2013-07-19
Project: 13-215-1
COC #: 167223

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Molybdenum	<5 ug/L	104	84-116
Nickel	<5 ug/L	105	92-108
Lead	<1 ug/L	104	89-111
Antimony	<0.5 ug/L	105	77-123
Selenium	<1 ug/L	105	77-123
Thallium	<0.1 ug/L	104	88-112
Uranium	<1 ug/L	104	87-113
Vanadium	<1 ug/L	99	88-112
Zinc	<10 ug/L	99	89-111
Run No 254462 **Analysis Date** 2013-07-17 **Method** O CCME			
Petroleum Hydrocarbons F1	<0.1 mg/L	93	80-120
Run No 254463 **Analysis Date** 2013-07-16 **Method** V 8260B			
Benzene	<0.5 ug/L	110	80-120
Ethylbenzene	<0.5 ug/L	117	80-120
m/p-xylene	<0.5 ug/L	116	80-120
o-xylene	<0.5 ug/L	115	80-120
Toluene	<0.5 ug/L	115	80-120

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Report Number: 1314622
Date Submitted: 2013-07-12
Date Reported: 2013-07-19
Project: 13-215-1
COC #: 167223

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Toluene-d8	103 %	96	80-120
Run No 254473 **Analysis Date** 2013-07-16 **Method** P 8270			
Methlynaphthalene, 1-	<0.1 ug/L	52	20-140
Methlynaphthalene, 2-	<0.1 ug/L	50	20-140
Acenaphthene	<0.1 ug/L	58	20-140
Acenaphthylene	<0.1 ug/L	54	20-140
Anthracene	<0.1 ug/L	72	20-140
Benz[a]anthracene	<0.1 ug/L	84	20-140
Benzo[a]pyrene	<0.01 ug/L	81	20-140
Benzo[b]fluoranthene	<0.05 ug/L	81	20-140
Benzo[ghi]perylene	<0.1 ug/L	92	20-140
Benzo[k]fluoranthene	<0.05 ug/L	83	20-140
Chrysene	<0.05 ug/L	81	20-140
Dibenz[a h]anthracene	<0.1 ug/L	90	20-140
Fluoranthene	<0.1 ug/L	84	20-140
Fluorene	<0.1 ug/L	62	20-140
Indeno[1 2 3-cd]pyrene	<0.1 ug/L	96	20-140

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

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Report Number: 1314622
Date Submitted: 2013-07-12
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Project: 13-215-1
COC #: 167223

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Naphthalene	<0.1 ug/L	48	20-140
Phenanthrene	<0.1 ug/L	72	20-140
Pyrene	<0.1 ug/L	84	20-140
Run No 254491 **Analysis Date** 2013-07-17 **Method** EPA 200.8			
Arsenic	<5 ug/L	101	81-119
Antimony	<0.5 ug/L	98	77-123
Selenium	<1 ug/L	96	77-123
Run No 254504 **Analysis Date** 2013-07-17 **Method** O CCME			
Petroleum Hydrocarbons F2	<0.1 mg/L	103	50-120
Petroleum Hydrocarbons F3	<0.2 mg/L	103	50-120
Petroleum Hydrocarbons F4	<0.2 mg/L	103	50-120
Run No 254516 **Analysis Date** 2013-07-17 **Method** M SM3112B-3500B			
Mercury	<0.1 ug/L	98	70-130
Run No 254540 **Analysis Date** 2013-07-19 **Method** O CCME			
Petroleum Hydrocarbons F4	<0.2 mg/L	73	50-120
Run No 254620 **Analysis Date** 2013-07-19 **Method** SUBCONTRACT-M-INORG			
Chromium V	<0.50 ug/L		

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

**-Analysis completed in Mississauga

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

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

Client: Geofirma Engineering Ltd.
1 Raymond St., Suite 200
Ottawa, ON
K1R 1A2
Attention: Mr. Drew Paulusse
PO#: 132351-001
Invoice to: Geofirma Engineering Ltd.

Report Number: 1314622
Date Submitted: 2013-07-12
Date Reported: 2013-07-19
Project: 13-215-1
COC #: 167223

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 254640 **Analysis Date** 2013-07-19 **Method** O CCME			
Petroleum Hydrocarbons F2	<0.1 mg/L	73	50-120
Petroleum Hydrocarbons F3	<0.2 mg/L	73	50-120

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

**-Analysis completed in Mississauga

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

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

Client: Geofirma Engineering Ltd.
1 Raymond St., Suite 200
Ottawa, ON
K1R 1A2
Attention: Mr. Drew Paulusse
PO#: 132351-001
Invoice to: Geofirma Engineering Ltd.

Report Number: 1314622
Date Submitted: 2013-07-12
Date Reported: 2013-07-19
Project: 13-215-1
COC #: 167223

Sample Comment Summary

Sample ID: 1041866	MW12-02	Samples weres subcontracted for Cr(VI) analysis for entire report.
Sample ID: 1041867	MW12-03	Arsenic and Selenium MRL elevated due to matrix interference (dilution was done).
Sample ID: 1041868	MW12-04	Arsenic MRL elevated due to matrix interference (dilution was done).
Sample ID: 1041870	MW12-06	Arsenic and Selenium MRL elevated due to matrix interference (dilution was done).
Sample ID: 1041871	MW12-07	Arsenic MRL elevated due to matrix interference (dilution was done).

Guideline = O.Reg 153-T3-Non-Potable GW *** = Guideline Exceedence**

**-Analysis completed in Mississauga

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Certificate of Analysis

Client: Geofirma Engineering Ltd.
1 Raymond St., Suite 200
Ottawa, ON
K1R 1A2
Attention: Mr. Drew Paulusse
PO#: 132151-001
Invoice to: Geofirma Engineering Ltd.

Report Number: 1314789
Date Submitted: 2013-07-15
Date Reported: 2013-07-22
Project: 13-215-1
COC #: 167224

Dear Drew Paulusse:

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

Report Comments:

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

Certificate of Analysis

Client: Geofirma Engineering Ltd.
1 Raymond St., Suite 200
Ottawa, ON
K1R 1A2
Attention: Mr. Drew Paulusse
PO#: 132151-001
Invoice to: Geofirma Engineering Ltd.

Report Number: 1314789
Date Submitted: 2013-07-15
Date Reported: 2013-07-22
Project: 13-215-1
COC #: 167224

Group	Analyte	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.
					1042257 / Groundwater / / 2013-07-15 / MW17-08
Hydrocarbons	F2 (C10-C16)	100	ug/L	STD-150	<100
	F3 (C16-C34)	200	ug/L	STD-500	660*
	F4 (C34-C50)	200	ug/L	STD-500	<200

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Geofirma Engineering Ltd.
1 Raymond St., Suite 200
Ottawa, ON
K1R 1A2
Attention: Mr. Drew Paulusse
PO#: 132151-001
Invoice to: Geofirma Engineering Ltd.

Report Number: 1314789
Date Submitted: 2013-07-15
Date Reported: 2013-07-22
Project: 13-215-1
COC #: 167224

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 254659 **Analysis Date** 2013-07-19 **Method** O CCME			
F2 (C10-C16)	<100 ug/L	73	50-120
F3 (C16-C34)	<200 ug/L	73	50-120
F4 (C34-C50)	<200 ug/L	73	50-120

Guideline = O.Reg 153-T3-Non-Pot GW-Coarse *** = Guideline Exceedence**
** = Analysis completed at Mississauga, Ontario.
Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

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

CHAIN OF CUSTODY

167223

Exova

☐ 146 Colonnade Rd., Unit 8, Ottawa, ON K2E 7Y1 Ph: (613) 727-5692 Fax: (613) 727-5222
☐ 608 Norris Court, Kingston, ON K7P 2R9 Ph: (613) 634-9307 Fax: (613) 634-9308
☐ 380 Vansickle Rd., Unit 630, St. Catharines, ON L2R 6P7 Ph: (905) 680-8887 Fax: (905) 680-4256
☐ 2395 Speakman Drive, Mississauga, ON, L5K 1B3 Phone: (905) 822-4111 Fax : (905) 823-1446

LABORATORY USE ONLY
Report #: 1314622

Report Information*:
Client: Geofirma Engineering
Contact: DREW PAULUSSE
Address: 1 RAYMOND ST, SUITE 200 OTTAWA
Email: dpaulusse@geofirma.com Phone: 613-722-2592
Project: 13-215-1

Invoice Information*:
Invoice to the same as above? (Yes) / No, or:
Client:
Contact:
Address:
Email: Phone:
Purchase Order #: 132151-001
Exova Quote # *: 130434

Criteria Required*:
☐ ODWSOG ☐ Other, Specify:
☐ PWQO
☐ Ont. Reg. 558
☐ CCME
☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☒ Ont. Reg 153/04
Table # 3, (Coarse)/Fine, Surface/Subsurface
Type: Com-Ind / Res-Park / Agri / GW / Other

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04 *:
YES / (NO)

Is this a drinking water sample? YES / (NO)
If yes, complete the drinking water COC

Additional Email/Fax:
1. Email:
2. Email:
3. Email:
Fax:

Report Format:
☒ PDF ☒ Excel ☐ Other, Specify:

Turnaround Time (*rush surcharges may apply*)*:
(☒) 5 Business Days (Standard)
☐ 3 Business Days (Rush)
☐ 2 Business Days (Rush)
☐ 1 Business Day (Rush)
☐ Other (specifiy date):

Notes:
- Decant PHC/PAH as nessesary
- Filter MW12-02 - Hg - Preserv Rinsed.

* Indicates a required field
Please note that incomplete information may result in turnaround time delays.
Samples should be kept cool (4-10°C) from sampling time through drop-off at the laboratory.

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location	Parameters: PHC-BTEX	PAH	Inorganics	F1-BTEX	Lab Use Only
MW12-01	11-Jul-13 16:00	GW	3		✓				1018
MW12-02	15:30		7		✓	✓	✓		69
MW12-03	15:00		7		✓	✓	✓		68
MW12-04	14:30		7		✓	✓	✓		67
MW12-05	14:00		7		✓	✓	✓		70
MW12-06	13:30		7		✓	✓	✓		71
MW12-07	13:00		7		✓	✓	✓		72
MW12-08	12:40		2					✓	
~~MW12~~									
MW-DUP	—		3		✓				73

Samples Relinquished By:	Date/Time:	Samples Received By:	Date/Time:	Temperature:	Condition:
	12-Jul-13 11:15			1C	
Samples Relinquished By:	Date/Time:	Samples Received By:	Date/Time: 3:00 2013-07-15	Page # 1 of 1	

CHAIN OF CUSTODY

167224

☐ 146 Colonnade Rd., Unit 8, Ottawa, ON K2E 7Y1 Ph: (613) 727-5692 Fax: (613) 727-5222
☐ 608 Norris Court, Kingston, ON K7P 2R9 Ph: (613) 634-9307 Fax: (613) 634-9308
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☐ 2395 Speakman Drive, Mississauga, ON, L5K 1B3 Phone: (905) 822-4111 Fax : (905) 823-1446

LABORATORY USE ONLY
Report #: 1314789

Report Information*:
Client: Geofirma Engineering
Contact: Drew Paulusse
Address: 1 Raymond Street Suite 200 Ottawa
Email: dpaulusse@geofirma.com Phone: 613 2227892
Project: 13-215-1

Invoice Information*:
Invoice to the same as above? (Yes) / No, or:
Client:
Contact:
Address:
Email: Phone:
Purchase Order #: 132151-001
Exova Quote # *: 130434

Criteria Required*:
☐ ODWSOG ☐ Other, Specify:
☐ PWQO
☐ Ont. Reg. 558
☐ CCME
☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☒ Ont. Reg 153/04
Table # 3, Coarse/Fine, Surface/Subsurface
Type: Com-Ind / Res-Park / Agri / GW / Other

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04 *:
YES / (NO)

Is this a drinking water sample? YES / (NO)
If yes, complete the drinking water COC

Additional Email/Fax:
1. Email:
2. Email:
3. Email:
Fax:

Report Format:
☒ PDF ☒ Excel ☐ Other, Specify:

Turnaround Time (*rush surcharges may apply*)*:
☒ 5 Business Days (Standard)
☐ 3 Business Days (Rush)
☐ 2 Business Days (Rush)
☐ 1 Business Day (Rush)
☐ Other (specifiy date):

Notes:

* Indicates a required field
Please note that incomplete information may result in turnaround time delays.
Samples should be kept cool (4-10°C) from sampling time through drop-off at the laboratory.

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location	Parameters: PHC F2-F4	Lab Use Only
MW12-08	15-Jul-13 09:30	GW	1		✓	109257

Samples Relinquished By:	Date/Time:	Samples Received By:	Date/Time:	Temperature:	Condition:
Drew Paulusse	15-Jul-13 10:30			11°	
Samples Relinquished By:	Date/Time:	Samples Received By:	Date/Time: 15/7/13 430	Page # 1 of 1	