



August 31, 2011

Project: MM-1027

Ottawa Carleton District School Board

1224 Stittsville Main Street

Stittsville, Ontario

K2S 1S6

Environmental Monitoring and Contaminant Management Plan

Elmdale Public School

49 Iona Street,

Ottawa, Ontario

INTRODUCTION

CM3 Environmental Inc. (CM3) was retained by the Ottawa Carleton District School Board (OCDSSB) to provide environmental monitoring and site assessment related to historic petroleum hydrocarbon (PHC) and polycyclic aromatic hydrocarbon (PAH) impacts identified at the Elmdale Public School property. In addition, CM3 has provided an updated Contaminant Management Plan as part of the scope of work.

SITE FEATURES

Elmdale Public School is located at 49 Iona Street in, Ontario. Surrounding land uses are residential. Potable water and sanitary services are supplied by the City Of Ottawa. The topography generally consists of asphalt, grass, shrubbery and a variety of trees. The subsurface lithology consists of silt and sand underlain sandy to silty clay.

Please refer to **Figures 1** and **2** respectively for site location plan and site plan.

BACKGROUND

The petroleum impacts were discovered during construction activities in the former coal storage room adjacent to the boiler room. In February of 2009 SLR Consulting Ltd. (SLR) inspected the coal storage room. One soil sample was taken directly below the floor slab where visual and olfactory indications of petroleum hydrocarbon impacts were observed at the time of sampling. The sample collected under the slab (SA1) showed concentrations of benzene, toluene, ethylbenzene, xylenes (BTEX), petroleum hydrocarbons (PHC) and polycyclic aromatic hydrocarbons (PAH) compounds in excess of the Ontario Ministry of Environment (MOE) standards.

CM3 Environmental Inc.

120 Robertson Road, Suite 208, Ottawa, Ontario, K2H 5Z1

Subsequent assessment activities consisted of borehole/monitoring well advancement and groundwater sampling and monitoring. A total of twenty two (22) boreholes completed as monitoring wells (MW1 to MW22) were advanced in the interior and exterior of the school for the purpose of soil characterization and groundwater sampling. The assessment work completed at the time had indicated that residual soil and groundwater impacts in excess of MOE Table 3 standards were present at the site. The impacts were found in the basement in the vicinity of the existing boiler room and former coal storage room. Previous soil sample results are included in **Tables 1 to 4** and previous groundwater results are included in **Tables 5 to 8**. Impacts to soil are illustrated on **Figure 3** and groundwater impacts are illustrated on **Figure 4**.

ENVIRONMENTAL STANDARDS

The Ontario Ministry of Environment (MOE), Ontario Regulation 511/09 of the *Environmental Protection Act*, December, 2009 is applicable for use at the site effective July 2001. More specifically the Table 3 Generic Site Condition Standards in a Non-Potable Groundwater Condition (Coarse Textured Soils and Residential, Parkland, Institutional Property Use) were selected for comparison.

The MOE Table 3 Standards were used for the following reasons:

- Contaminants of concern are petroleum products;
- No environmentally sensitive areas are located on site;
- Bedrock is not considered shallow (less than 2 m from ground surface);
- The site is not located within 30 m of a water body;
- Groundwater is not used as a potable water source in the area; and,
- The site use is a school.

Of note, the new environmental standards have generally become more stringent with regards to allowable petroleum hydrocarbon concentrations in soil and groundwater.

CM3 ASSESSMENT ACTIVITIES

BOREHOLE /MONITORING WELL DRILLING AND SOIL ANALYSIS

Under supervision of CM3 personnel, OGS Inc. of Almonte, Ontario advanced six (6) additional boreholes (MW23, MW24, MW25, MW26, MW27, and MW28) completed as monitoring wells around the perimeter of the property at Elmdale Public School on July 13th and 14th, 2011. The purpose of the drilling activities was to complete soil and groundwater delineation and to assess the soil and groundwater conditions at the site. Soil samples were collected continuously throughout the

depth of each borehole using spilt spoon sampling equipment. The spoons were washed and rinsed between each sample to avoid cross-contamination.

Soil samples were logged at the time of drilling by the supervising CM3 personnel for grain size, colour, moisture content, and visual or olfactory evidence of petroleum hydrocarbon impacts. The topography generally consists of asphalt, grass, shrubbery and a variety of trees. The subsurface lithology consists of silt and sand underlain sandy to silty clay. The site stratigraphy is included on the borehole logs in **Appendix A**.

Soil samples were collected continuously throughout the depth of each borehole for combustible soil vapour analysis. At the time of collection, each borehole soil sample was split in the field with the first half placed in a polyethylene bag for headspace combustible vapour analysis, and the other half placed into laboratory-supplied containers for possible laboratory analysis. Soil samples submitted for analysis were collected according to the new sampling procedures outlined in the Ontario Ministry of Environment (MOE), Ontario Regulation 511/09 of the *Environmental Protection Act*, December, 2009. Immediately following collection, all samples were placed in coolers with ice packs, pending shipment to the laboratory. Relative combustible vapour concentrations were measured and recorded from the bag sample headspace using an RKI Eagle combustible vapour meter, calibrated to hexane. The results of the headspace combustible vapour analysis and field evidence of petroleum impacts were used in selecting which soil samples were submitted for laboratory analysis.

The soil combustible vapour analysis showed vapour concentrations between 0 parts per million (ppm) and 10 ppm. Soil samples were analysed for target compounds including PHC in the F1 to F4 ranges, PAHs and metals. All samples were submitted to Paracel Laboratories of Ottawa Ontario.

The six (6) boreholes were completed as monitoring wells with well screens placed across the water table to intercept liquid phase hydrocarbons (LPH), if present. Monitoring well construction consisted of flush threaded 50 mm diameter, schedule 40 PVC well screens and riser pipe. A threaded cap was fitted to the bottom of the well screen and a j-plug was used on the top of the riser. A clean number 2 silica sand pack was placed around each well screen to approximately 0.3 metres above the screened interval when possible. A bentonite seal was then placed above the sand pack to prevent surface water infiltration into the monitoring well sand pack. All monitoring wells were finished below grade as flush mounts. The monitoring well completion details are provided on the borehole logs in **Appendix A**.

Following installation, CM3 personnel developed all monitoring wells using dedicated waterra tubing and foot valves. Wells were developed to ensure that subsequent groundwater samples collected were representative of overburden groundwater conditions. All wells were developed until the purge waters were relatively free of sediment or until a minimum of three standing water volumes was removed from each well.

The locations of all boreholes/monitoring wells were referenced to existing site features. The monitoring well top of casing (TOC) and ground surface elevations were referenced to an arbitrary site benchmark of 100 m. Elevations were measured to the nearest 0.001 m using a CST/Berger SAL Series automatic level.

The soil analytical results are included in **Table 1 PHC's**, **Table 3 PAH's** and **Table 4 Metals**. The laboratory reports are included in **Appendix B** for reference. The borehole/monitoring well locations are illustrated on **Figure 2** and the borehole/monitoring well logs and well completion details are provided in **Appendix A**.

The 2011 soil sample analytical results indicated:

- Concentrations of PHC's in monitoring wells MW23, MW24, MW25, MW26 and MW27 were non-detect or contained concentrations below the 2009 MOE Table 3 Standards;
- Concentrations of PAH's in monitoring wells MW24, MW25, MW26, MW27 and MW28 were non-detect or below the 2009 MOE Table 3 Standards.
- Concentrations of Metals in monitoring well MW27 were non-detect or below the 2009 MOE Table 3 Standards.

GROUNDWATER MONITORING

On July 26th and August 5th, 2011, CM3 personnel measured the depth to liquid phase hydrocarbons (LPH), if any, and groundwater in each monitoring well using a Heron Instruments oil/water interface probe. Prior to monitoring, the interface probe was inspected and tested for proper operation. CM3 recorded the depth to the nearest millimetre from the highest point of the well riser. The interface probe was cleaned with an Alconox and water solution and then rinsed with distilled water between each well to prevent cross contamination. Groundwater levels were determined to be between 2.180 m and 3.997 m from the top of the well risers. Water levels are included in **Table 10** for reference.

CM3 personnel also developed all monitoring wells using dedicated waterra tubing and foot valves on July 26th, 2011. Wells were developed to ensure that subsequent groundwater samples collected were representative of overburden groundwater conditions. All wells were developed until the purge waters were relatively free of sediment or until a minimum of three standing water volumes was removed from each well.

Groundwater samples were obtained from the monitoring wells following well development. All samples were obtained using dedicated tubing or disposable bailers. The collected samples were placed in laboratory-prepared glass jars for laboratory analysis. The groundwater samples were then labelled and placed in an ice-filled cooler and submitted along with an accompanying chain-of-custody form to Paracel Laboratories Ltd, for analysis of petroleum hydrocarbons (PHC) in the F1 to F4 range, and BTEX (benzene, toluene, ethylbenzene, total xylenes).

Detailed laboratory reports are also provided in **Appendix B** for reference.

The 2011 groundwater analytical results indicated:

- Concentrations of BTEX in monitoring wells MW23, MW24, MW25, MW26 and MW27 were non-detect or below the 2009 MOE Table 3 Standards;
- Concentrations of PHCs in monitoring wells MW23, MW24, MW25, MW26 and MW27 were non-detect or contained concentrations below the 2009 MOE Table 3 Standards; and,
- Concentrations of PAH's in monitoring wells MW24, MW25 and MW26 were non-detect or below the 2009 MOE Table 3 Standards.

ENVIRONMENTAL SUMMARY

To date 28 boreholes have been advanced and completed as monitoring wells to assess the soil and groundwater conditions on the site. Based on the information collected from borehole advancement and groundwater monitoring, impacts to both soil and groundwater are present in excess of the applicable MOE Table 3 Standards. The extent of contamination to soil and groundwater is generally located in the boiler room and surrounding storage rooms and corridors. Exceedances to soil are illustrated on **Figure 3**, and exceedances to groundwater are illustrated on **Figure 4**.

The recent drilling activities completed by CM3 consisted of the advancement of six (6) exterior boreholes completed as monitoring wells around the perimeter of the school as well as groundwater monitoring on two occasions. The recent environmental assessment activities have delineated the extent of the chemical impacts which remain on-site.

RECOMMENDATIONS

Given the information collected to date on the soil and groundwater conditions at the site CM3 recommends the following:

- ✓ Remedial activities to address the current contamination issues;
- ✓ Bi-annual groundwater sampling;
- ✓ Annual Contaminant Management Plan.

Remedial activities at the site could range widely and CM3 would be pleased to discuss the remedial options at your convenience.

CLOSURE

This report has been prepared and the work described in this report has been undertaken by CM3 Environmental Inc. (CM3) for The Ottawa Carleton District School Board. It is intended for the sole and exclusive use of The Ottawa Carleton District School Board and their authorized agents for the purpose(s) set out in this report. Any use of, reliance on, or decision made based on this report by any person other than The Ottawa Carleton District School Board for any purpose, or by The Ottawa Carleton District School Board for a purpose other than the purpose(s) set out in this report, is the sole responsibility of such person or The Ottawa Carleton District School Board. CM3 and The Ottawa Carleton District School Board make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expense, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

Nothing in this report is intended to constitute or provide a legal opinion. In addition, revisions to the regulatory standards referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary.

The work undertaken by CM3 for this report and any conclusions or recommendations made in this report reflect CM3's judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report, on information available at the time of preparation of this report, on the interpretation of data collected from the field investigation and on the results of laboratory analyses, which were limited to the quantification in select samples of those substances specifically identified in the report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site; substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken. CM3 expresses no warranty with respect to the accuracy of the analytical results by the laboratory. Actual concentrations of the substances identified in the samples submitted may vary according to the extraction and testing procedures used.

As the evaluation and conclusions reported herein do not preclude the existence of other chemical compounds and/or that variations of conditions within the site may be possible, this report should be used for informational purposes only and should absolutely not be construed as a comprehensive hydrogeological or chemical characterization of the site. If site conditions change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by The Ottawa Carleton District School Board as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of CM3.

We appreciate the opportunity to be of service to you and your organization. Should you have any questions please feel free to contact us at your convenience.

Respectfully submitted,

CM3 Environmental Inc.



Bruce Cochrane, P.Geo.
Principal



Marc MacDonald, P.Eng.
Principal

FIGURES

Environmental Monitoring

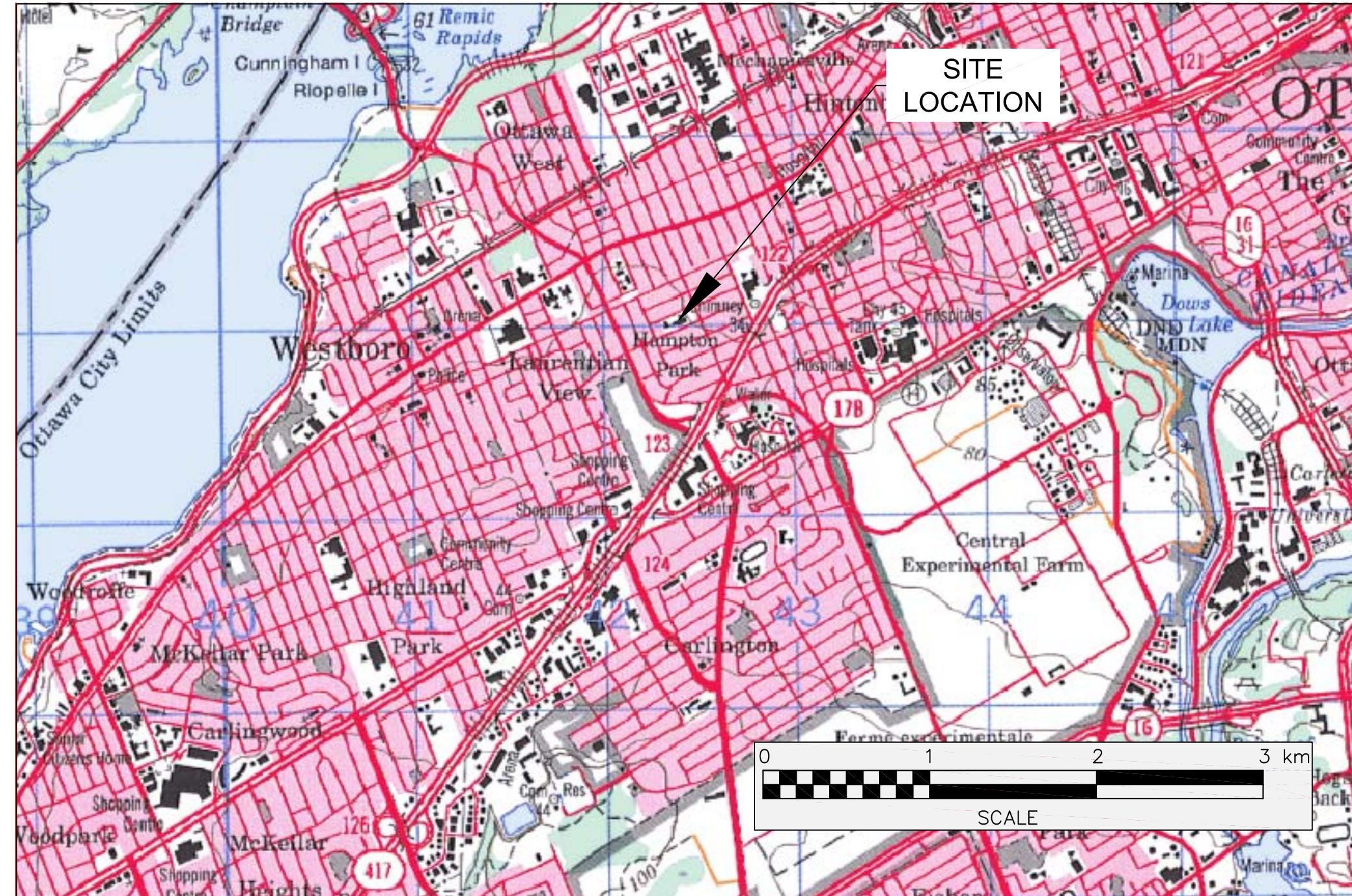
Elmdale Public School

Ottawa, ON

MM-1027

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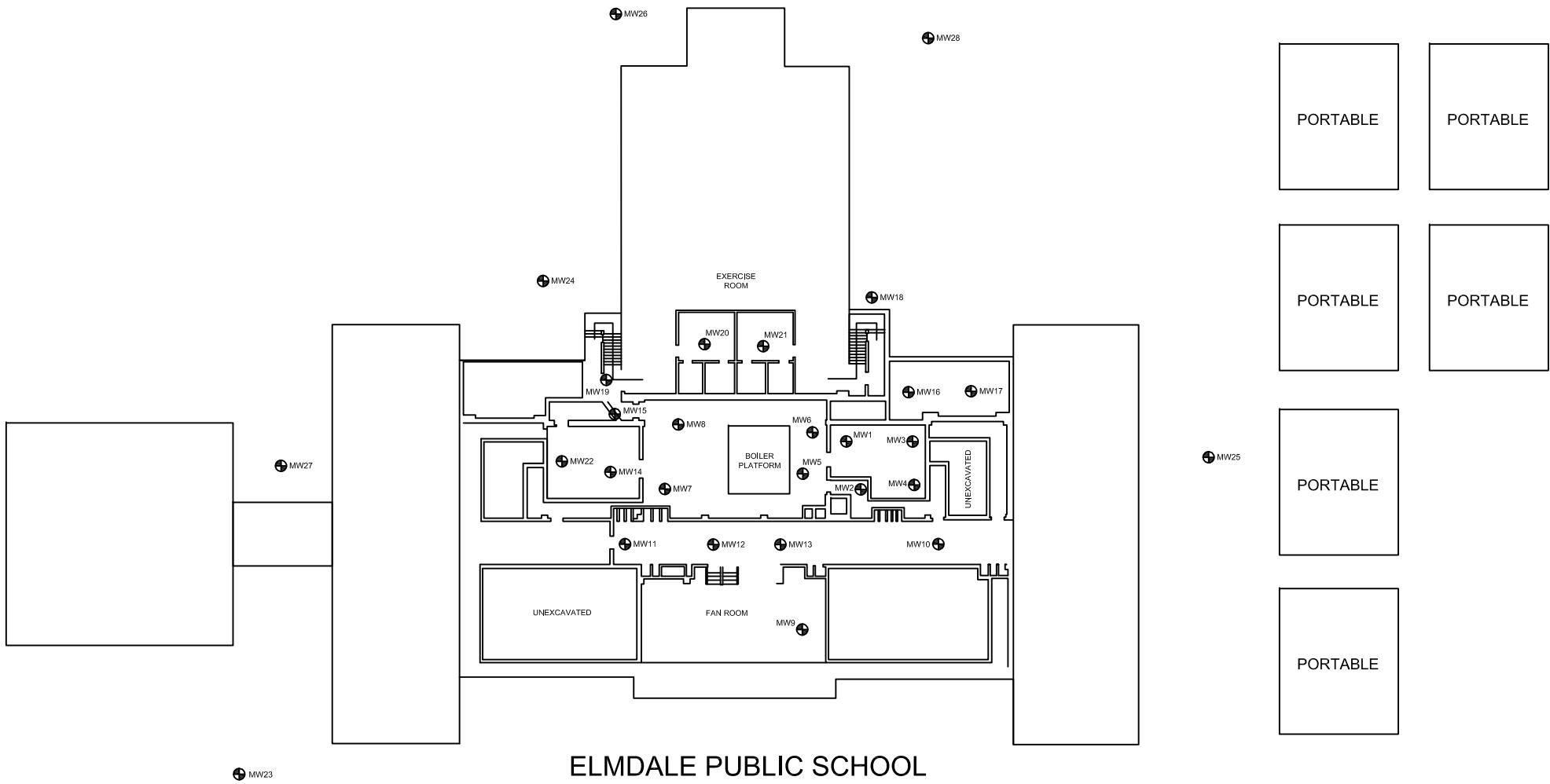
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FIGURE: 1

SITE LOCATION



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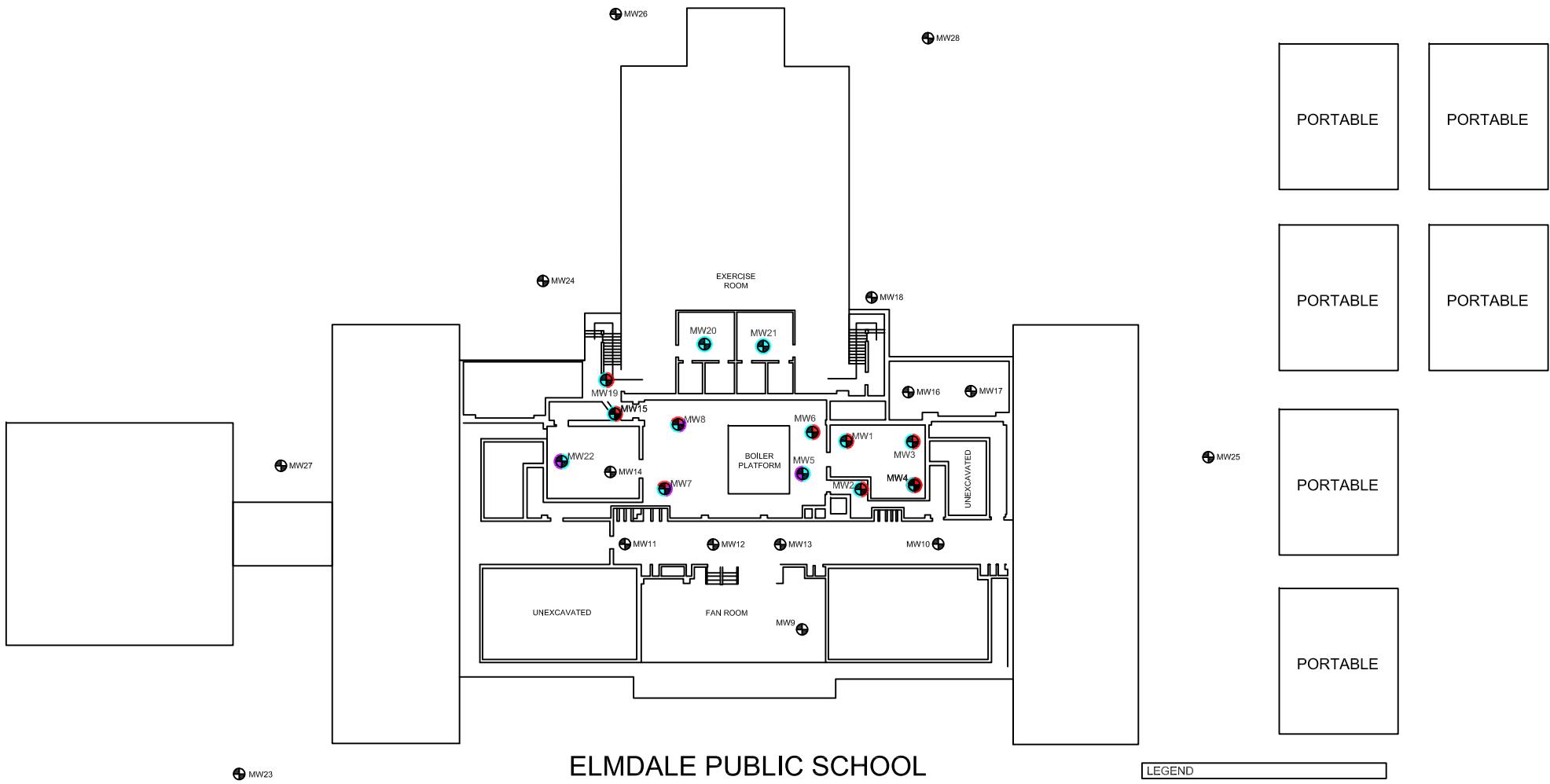
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FIGURE: 2
SITE PLAN



ELMDALE PUBLIC SCHOOL

LEGEND

- BOREHOLE LOCATION COMPLETED AS A MONITORING WELL
- CONCENTRATIONS EXCEED MOE TABLE 3 (2009) PHCs F1 TO F4 STANDARDS
- CONCENTRATIONS EXCEED EXCEED MOE TABLE 3 (2009) PAH STANDARDS
- CONCENTRATIONS EXCEED MOE TABLE 3 (2009) METALS STANDARDS

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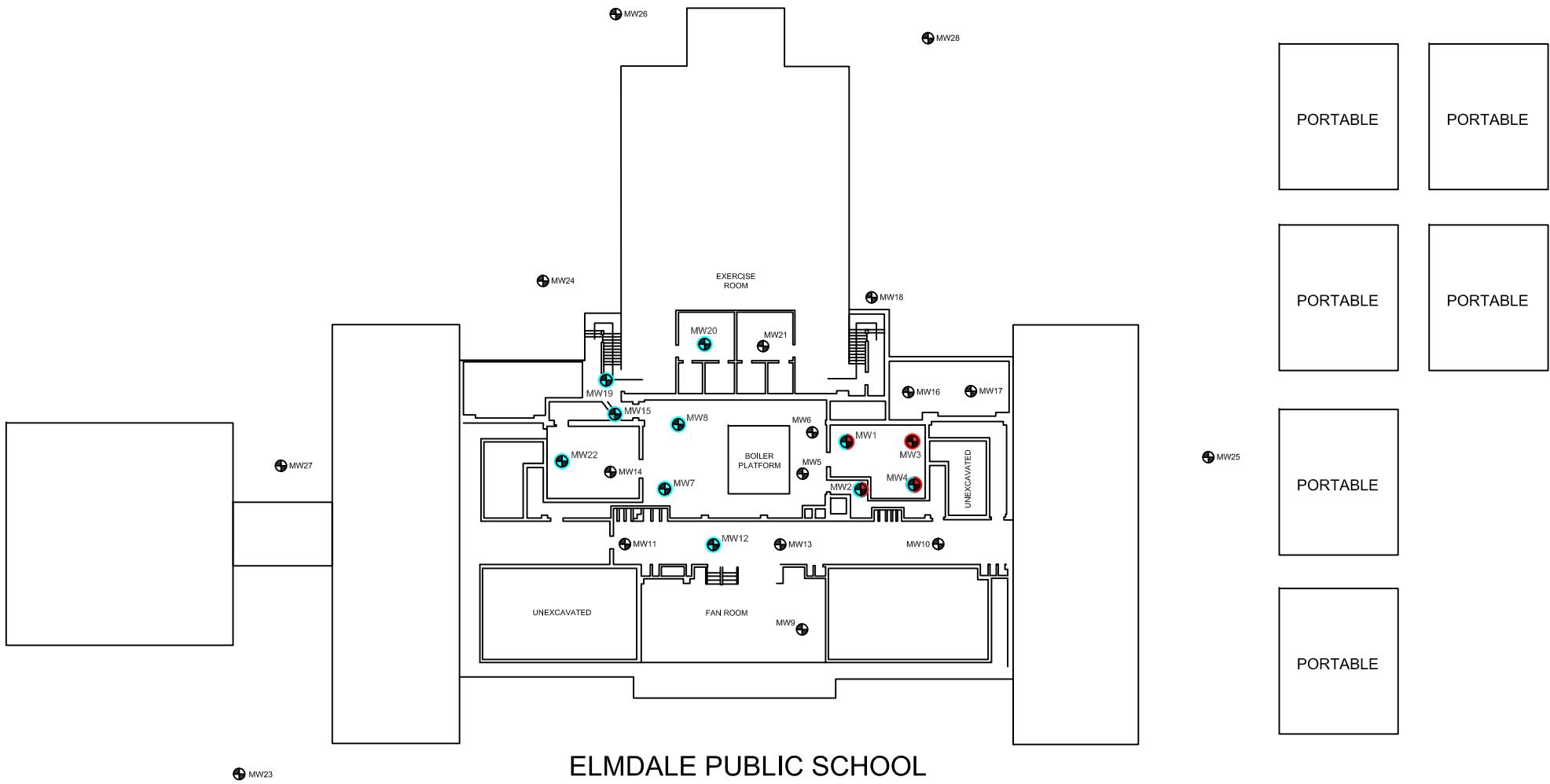
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FIGURE: 3
SOIL EXCEEDANCES



LEGEND



BOREHOLE LOCATION COMPLETED AS A MONITORING WELL



CONCENTRATIONS EXCEED MOE TABLE 3 (2009) PHCs F1 TO F4 STANDARDS



CONCENTRATIONS EXCEED MOE TABLE 3 (2009) PAH STANDARDS

TABLES

Environmental Monitoring

Elmdale Public School

Ottawa, ON

MM-1027

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Table 1
Soil Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	SA1 0.2 24-Feb-09	MW1 SA1 0.3 - 0.5 02-Nov-09	MW2 SA1 0.3 - 0.6 02-Nov-09	MW3 SA1 0.3 - 0.43 02-Nov-09	MW3 SA3 1.2 - 1.73 02-Nov-09	MW4 SA1 0.3 - 0.6 02-Nov-09	MW5 SA1 0.3 - 0.43 02-Nov-09	MW6 SA1 0.3 - 0.6 02-Nov-09
PHC F1 (C6 - C10)	55	10	149	14	<10	85	<10	<10	<10	<10
PHC F2 (C10 - C16)	98	10	8340	1640	882	5370	<10	821	41	146
PHC F3 (C16 - C34)	300	10	5690	1490	1220	<10	<10	956	214	1040
PHC F4 (C34 - C50)	2800	10	<100	<10	<10	<10	<10	<10	37	121

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 1
Soil Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW7 SA1 0.25 - 0.61 12-Feb-10	MW8 SA1 0.25 - 0.61 12-Feb-10	MW9 SA2 1.22 - 1.83 12-Feb-10	MW10 SA5 2.13 - 2.74 12-Feb-10	MW11 SA4 2.13 - 2.74 16-Mar-10	MW12 SA2 1.83 - 2.29 16-Mar-10	MW13 SA4 2.13 - 2.74 16-Mar-10	MW14 SA1 0.15 - 0.61 16-Mar-10
PHC F1 (C6 - C10)	55	10	<10	<10	<10	<10	<10	<10	<10	<10
PHC F2 (C10 - C16)	98	10	170	<100	<10	<10	<10	<10	<10	14
PHC F3 (C16 - C34)	300	10	1910	1030	<10	<10	43	54	10	503
PHC F4 (C34 - C50)	2800	10	358	127	<10	<10	17	15	<10	192

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

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MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 1
Soil Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW15 SA1 0.15 - 0.61 16-Mar-10	MW16 SA6 3.66 - 4.27 16-Mar-10	MW17 SA6 3.66 - 4.27 16-Mar-10	MW18 SA7 3.66 - 4.27 17-Mar-10	MW19 SA1 0.15 - 0.76 05-Jul-10	MW20 SA1 0.15 - 0.76 05-Jul-10	MW21 SA1 0.15 - 0.76 05-Jul-10	MW22 SA1 0.15 - 0.76 05-Jul-10
PHC F1 (C6 - C10)	55	10	<10	<10	<10	<10	<10	<10	<10	<10
PHC F2 (C10 - C16)	98	10	34	<10	17	<10	351	<10	<10	28
PHC F3 (C16 - C34)	300	10	1490	11	40	<10	925	<10	<10	300
PHC F4 (C34 - C50)	2800	10	407	<10	12	<10	18	13	<10	52

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 1
Soil Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW23 SA5 3.05- 3.66 13-Jul-11	MW24 SA5 3.05- 3.66 13-Jul-11	MW25 SA5 3.05- 3.66 13-Jul-11	MW26 SA6 3.66-4.27 13-Jul-11	MW27 SA6 3.05- 3.66 13-Jul-11
PHC F1 (C6 - C10)	55	10	<10	<10	<10	<10	<10
PHC F2 (C10 - C16)	98	10	<10	<10	<10	<10	<10
PHC F3 (C16 - C34)	300	10	<10	<10	45	<10	<10
PHC F4 (C34 - C50)	2800	10	<10	<10	22	<10	<10

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 2
Soil Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter	MOE Table 3 (2009)	MDL	SA1 Grab 0.2 24-Feb-09	MW2 SA1 0.3 - 0.6 02-Nov-09	MW3 SA1 0.3 - 0.43 02-Nov-09	MW3 SA3 1.2 - 1.73 02-Nov-09	MW5 SA1 0.3 - 0.43 02-Nov-09	MW7 SA1 0.25 - 0.61 12-Feb-10
Benzene	0.21	0.002	0.13	<0.002	0.09	<0.002	<0.002	<0.03
Bromoform	0.27	0.002	NA	<0.002	<0.04	<0.002	<0.002	NA
Bromodichloromethane	13	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Bromomethane	0.05	0.003	NA	<0.003	<0.05	<0.003	<0.003	NA
Carbon Tetrachloride	0.05	0.002	NA	<0.002	<0.03	<0.002	<0.002	NA
Monochlorobenzene (Chlorobenzene)	2.4	0.002	NA	<0.002	0.2	<0.002	<0.002	NA
Chloroethane	NV	0.005	NA	<0.005	<0.05	<0.005	<0.005	NA
Chloroform	0.05	0.003	NA	<0.003	<0.03	<0.003	<0.003	NA
Chloromethane	NV	0.02	NA	<0.02	<0.2	<0.02	<0.02	NA
Dibromochloromethane	9.4	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Dibromoethane,1,2-	NV	0.002	NA	<0.002	<0.01	<0.002	<0.002	NA
Dichlorobenzene,1,2-	3.4	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Dichlorobenzene,1,3-	4.8	0.002	NA	<0.002	<0.05	<0.002	<0.002	NA
Dichlorobenzene,1,4-	0.083	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Dichloroethane,1,1-	3.5	0.002	NA	<0.002	<0.03	<0.002	<0.002	NA
Dichloroethane,1,2-	0.05	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Dichloroethylene,cis-1,2-	3.4	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Dichloroethylene,1,1-	0.05	0.002	NA	<0.002	<0.03	<0.002	<0.002	NA
Dichloroethylene,trans-1,2-	0.084	0.002	NA	<0.002	<0.05	<0.002	<0.002	NA
Dichloropropane,1,2-	0.05	0.002	NA	<0.002	<0.03*	<0.002	<0.002	NA
Dichloropropylene,trans-1,3-	NV	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Dichloropropylene,cis-1,3-	NV	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Ethylbenzene	2	0.002	1.15	<0.002	0.4	<0.002	<0.002	<0.05
Dichlormethane (Methylene Chloride)	0.1	0.003	NA	<0.003	<0.2	<0.003	<0.003	NA
Styrene	0.7	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Tetrachloroethane,1,1,1,2-	0.058	0.003	NA	<0.003	<0.03*	<0.003	<0.003	NA
Tetrachloroethane,1,1,2,2-	0.05	0.003	NA	<0.003	<0.03	<0.003	<0.003	NA
Tetrachloroethylene	0.28	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Toluene	2.3	0.002	0.53	<0.002	0.3	<0.002	<0.002	<0.05
Trichloroethane,1,1,1-	0.38	0.002	NA	<0.002	<0.02	<0.002	<0.002	NA
Trichloroethane,1,1,2-	0.05	0.002	NA	<0.002	<0.03	<0.002	<0.002	NA
Trichloroethylene	0.061	0.003	NA	<0.003	<0.03	<0.003	<0.003	NA
Trichlorofluoromethane	4	0.005	NA	<0.005	<0.05	<0.005	<0.005	NA
1,3,5- Trimethylbenzene	NV	0.003	NA	<0.003	0.5	<0.003	<0.003	NA
Vinyl Chloride	0.02	0.002	NA	<0.002	<0.03*	<0.002	<0.002	NA
Xylene (m,p,o)	3.1	0.004	4.05	<0.004	1.5	<0.004	<0.004	<0.1

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE Standard

Table 2
Soil Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter	MOE Table 3 (2009)	MDL	MW8 SA1 0.25 - 0.61 12-Feb-10	MW9 SA2 1.22 - 1.83 12-Feb-10	MW10 SA5 2.13 - 2.74 12-Feb-10	MW11 SA4 2.13 - 2.74 16-Mar-10	MW12 SA2 1.83 - 2.29 16-Mar-10	MW13 SA4 2.13 - 2.74 16-Mar-10
Benzene	0.21	0.002	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromoform	0.27	0.002	NA	NA	NA	NA	NA	NA
Bromodichloromethane	13	0.002	NA	NA	NA	NA	NA	NA
Bromomethane	0.05	0.003	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.05	0.002	NA	NA	NA	NA	NA	NA
Monochlorobenzene (Chlorobenzene)	2.4	0.002	NA	NA	NA	NA	NA	NA
Chloroethane	NV	0.005	NA	NA	NA	NA	NA	NA
Chloroform	0.05	0.003	NA	NA	NA	NA	NA	NA
Chloromethane	NV	0.02	NA	NA	NA	NA	NA	NA
Dibromochloromethane	9.4	0.002	NA	NA	NA	NA	NA	NA
Dibromoethane,1,2-	NV	0.002	NA	NA	NA	NA	NA	NA
Dichlorobenzene,1,2-	3.4	0.002	NA	NA	NA	NA	NA	NA
Dichlorobenzene,1,3-	4.8	0.002	NA	NA	NA	NA	NA	NA
Dichlorobenzene,1,4-	0.083	0.002	NA	NA	NA	NA	NA	NA
Dichloroethane,1,1-	3.5	0.002	NA	NA	NA	NA	NA	NA
Dichloroethane,1,2-	0.05	0.002	NA	NA	NA	NA	NA	NA
Dichloroethylene,cis-1,2-	3.4	0.002	NA	NA	NA	NA	NA	NA
Dichloroethylene,1,1-	0.05	0.002	NA	NA	NA	NA	NA	NA
Dichloroethylene,trans-1,2-	0.084	0.002	NA	NA	NA	NA	NA	NA
Dichloropropane,1,2-	0.05	0.002	NA	NA	NA	NA	NA	NA
Dichloropropylene,trans-1,3-	NV	0.002	NA	NA	NA	NA	NA	NA
Dichloropropylene,cis-1,3-	NV	0.002	NA	NA	NA	NA	NA	NA
Ethylbenzene	2	0.002	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane (Methylene Chloride)	0.1	0.003	NA	NA	NA	NA	NA	NA
Styrene	0.7	0.002	NA	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,1,2-	0.058	0.003	NA	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,2,2-	0.05	0.003	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.28	0.002	NA	NA	NA	NA	NA	NA
Toluene	2.3	0.002	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethane,1,1,1-	0.38	0.002	NA	NA	NA	NA	NA	NA
Trichloroethane,1,1,2-	0.05	0.002	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.061	0.003	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	4	0.005	NA	NA	NA	NA	NA	NA
1,3,5 - Trimethylbenzene	NV	0.003	NA	NA	NA	NA	NA	NA
Vinyl Chloride	0.02	0.002	NA	NA	NA	NA	NA	NA
Xylene (m,p,o)	3.1	0.004	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE Standard

Table 2
Soil Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter	MOE Table 3 (2009)	MDL	MW14 SA1 0.15 - 0.61 16-Mar-10	MW15 SA1 0.15 - 0.61 12-Feb-10	MW16 SA6 3.66 - 4.27 12-Feb-10	MW17 SA6 3.66 - 4.27 16-Mar-10	MW18 SA7 3.66 - 4.27 17-Mar-10	MW19 SA1 0.15 - 0.76 05-Jul-10
Benzene	0.21	0.002	0.22	<0.03	<0.03	<0.03	<0.03	<0.03
Bromoform	0.27	0.002	NA	NA	NA	NA	NA	NA
Bromodichloromethane	13	0.002	NA	NA	NA	NA	NA	NA
Bromomethane	0.05	0.003	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.05	0.002	NA	NA	NA	NA	NA	NA
Monochlorobenzene (Chlorobenzene)	2.4	0.002	NA	NA	NA	NA	NA	NA
Chloroethane	NV	0.005	NA	NA	NA	NA	NA	NA
Chloroform	0.05	0.003	NA	NA	NA	NA	NA	NA
Chloromethane	NV	0.02	NA	NA	NA	NA	NA	NA
Dibromochloromethane	9.4	0.002	NA	NA	NA	NA	NA	NA
Dibromoethane,1,2-	NV	0.002	NA	NA	NA	NA	NA	NA
Dichlorobenzene,1,2-	3.4	0.002	NA	NA	NA	NA	NA	NA
Dichlorobenzene,1,3-	4.8	0.002	NA	NA	NA	NA	NA	NA
Dichlorobenzene,1,4-	0.083	0.002	NA	NA	NA	NA	NA	NA
Dichloroethane,1,1-	3.5	0.002	NA	NA	NA	NA	NA	NA
Dichloroethane,1,2-	0.05	0.002	NA	NA	NA	NA	NA	NA
Dichloroethylene,cis-1,2-	3.4	0.002	NA	NA	NA	NA	NA	NA
Dichloroethylene,1,1-	0.05	0.002	NA	NA	NA	NA	NA	NA
Dichloroethylene,trans-1,2-	0.084	0.002	NA	NA	NA	NA	NA	NA
Dichloropropane,1,2-	0.05	0.002	NA	NA	NA	NA	NA	NA
Dichloropropylene,trans-1,3-	NV	0.002	NA	NA	NA	NA	NA	NA
Dichloropropylene,cis-1,3-	NV	0.002	NA	NA	NA	NA	NA	NA
Ethylbenzene	2	0.002	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane (Methylene Chloride)	0.1	0.003	NA	NA	NA	NA	NA	NA
Styrene	0.7	0.002	NA	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,1,2-	0.058	0.003	NA	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,2,2-	0.05	0.003	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0.28	0.002	NA	NA	NA	NA	NA	NA
Toluene	2.3	0.002	0.4	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethane,1,1,1-	0.38	0.002	NA	NA	NA	NA	NA	NA
Trichloroethane,1,1,2-	0.05	0.002	NA	NA	NA	NA	NA	NA
Trichloroethylene	0.061	0.003	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	4	0.005	NA	NA	NA	NA	NA	NA
1,3,5 - Trimethylbenzene	NV	0.003	NA	NA	NA	NA	NA	NA
Vinyl Chloride	0.02	0.002	NA	NA	NA	NA	NA	NA
Xylene (m,p,o)	3.1	0.004	0.18	<0.1	<0.1	<0.1	<0.1	<0.1

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

NV - No Value

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MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE Standard

Table 2
Soil Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW20 SA1 0.15 - 0.76 05-Jul-10	MW21 SA1 0.15 - 0.76 05-Jul-10	MW22 SA1 0.15 - 0.76 05-Jul-10
Benzene	0.21	0.002	<0.03	<0.03	<0.03
Bromoform	0.27	0.002	NA	NA	NA
Bromodichloromethane	13	0.002	NA	NA	NA
Bromomethane	0.05	0.003	NA	NA	NA
Carbon Tetrachloride	0.05	0.002	NA	NA	NA
Monochlorobenzene (Chlorobenzene)	2.4	0.002	NA	NA	NA
Chloroethane	NV	0.005	NA	NA	NA
Chloroform	0.05	0.003	NA	NA	NA
Chloromethane	NV	0.02	NA	NA	NA
Dibromochloromethane	9.4	0.002	NA	NA	NA
Dibromoethane,1,2-	NV	0.002	NA	NA	NA
Dichlorobenzene,1,2-	3.4	0.002	NA	NA	NA
Dichlorobenzene,1,3-	4.8	0.002	NA	NA	NA
Dichlorobenzene,1,4-	0.083	0.002	NA	NA	NA
Dichloroethane,1,1-	3.5	0.002	NA	NA	NA
Dichloroethane,1,2-	0.05	0.002	NA	NA	NA
Dichloroethylene,cis-1,2-	3.4	0.002	NA	NA	NA
Dichloroethylene,1,1-	0.05	0.002	NA	NA	NA
Dichloroethylene,trans-1,2-	0.084	0.002	NA	NA	NA
Dichloropropane,1,2-	0.05	0.002	NA	NA	NA
Dichloropropylene,trans-1,3-	NV	0.002	NA	NA	NA
Dichloropropylene,cis-1,3-	NV	0.002	NA	NA	NA
Ethylbenzene	2	0.002	<0.05	<0.05	<0.05
Dichlormethane (Methylene Chloride)	0.1	0.003	NA	NA	NA
Styrene	0.7	0.002	NA	NA	NA
Tetrachloroethane,1,1,1,2-	0.058	0.003	NA	NA	NA
Tetrachloroethane,1,1,2,2-	0.05	0.003	NA	NA	NA
Tetrachloroethylene	0.28	0.002	NA	NA	NA
Toluene	2.3	0.002	<0.05	<0.05	<0.05
Trichloroethane,1,1,1-	0.38	0.002	NA	NA	NA
Trichloroethane,1,1,2-	0.05	0.002	NA	NA	NA
Trichloroethylene	0.061	0.003	NA	NA	NA
Trichlorofluoromethane	4	0.005	NA	NA	NA
1,3,5 - Trimethylbenzene	NV	0.003	NA	NA	NA
Vinyl Chloride	0.02	0.002	NA	NA	NA
Xylene (m,p,o)	3.1	0.004	<0.1	<0.1	<0.1

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1

of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE Standard

Table 3
Soil Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	SA1 Grab 0.2 24-Feb-09	MW1 SA1 0.3 - 0.5 02-Nov-09	MW2 SA1 0.3 - 0.6 02-Nov-09	MW3 SA1 0.3 - 0.43 02-Nov-09	MW3 SA3 1.2 - 1.73 02-Nov-09	MW4 SA1 0.3 - 0.6 02-Nov-09	MW5 SA1 0.3 - 0.43 02-Nov-09	MW6 SA1 0.3 - 0.6 02-Nov-09
Acenaphthene	7.9	0.02	4.82	4.6	<2	29.4	0.27	4.07	6.56	112
Acenaphthylene	0.15	0.02	2.11	6.39	13.3	8.73	0.09	1.8	4.11	59.8
Anthracene	0.67	0.02	4.55	15.5	13.4	31.5	0.23	8.83	27	272
Benzo (a) anthracene	0.5	0.02	3.38	16.8	41.5	11.8	0.06	5.17	30	273
Benzo (a) pyrene	0.3	0.02	2.15	14.3	37.1	6.05	0.02	3.38	20.4	204
Benzo (b) fluoranthene	0.78	0.02	3.11	26.3	60.5	9.75	0.03	5.05	29.5	287
Benzo (g,h,i) perylene	6.6	0.02	0.93	8.61	20.3	3.11	<0.02	2.09	11.5	107
Benzo (k) fluoranthene	0.78	0.02	1.52	9.92	37.2	5.86	0.02	3.55	17.3	190
Biphenyl	0.31	0.02	3.16	<2*	<2*	11.9	0.13	<1*	<2*	9.21
Chrysene	7	0.02	3.15	18.4	43.2	13	0.07	5.88	32.3	268
Dibenzo (a,h) anthracene	0.1	0.02	<0.2	<2*	6.24	<2*	<0.02	<1*	<2*	35.8
Fluoranthene	0.69	0.02	8.89	45.2	95.1	56	0.37	18.6	99.9	795
Fluorene	62	0.02	7.06	5.88	<2	43.4	0.52	6.6	12.8	161
Ideno (1,2,3-cd) pyrene	0.38	0.02	0.83	8.11	19.8	2.92	<0.02	1.76	10.5	107
Methylnaphthalene,1-										
Methylnaphthalene,2-	0.99	0.02	11.5	2.52	<2*	66.3	0.73	3.74	<2*	29.4
Naphthalene	0.6	0.02	10.4	<2	<2*	57	0.64	2.97	<2*	32.9
Phenanthrene	6.2	0.02	41	12	<2*	141	1.52	24.5	<2*	52.8
Pyrene	78	0.02	7.08	36.9	86.9	41.5	0.27	14.9	76.4	629

Notes:

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"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 3
Soil Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW7 SA1 0.25 - 0.61 12-Feb-10	MW8 SA1 0.25 - 0.61 12-Feb-10	MW11 SA4 2.13 - 2.74 16-Mar-10	MW12 SA2 1.83 - 2.29 16-Mar-10	MW13 SA4 2.13 - 2.74 16-Mar-10	MW14 SA1 0.15 - 0.61 16-Mar-10	MW15 SA1 0.15 - 0.61 16-Mar-10	MW16 SA6 3.66 - 4.27 16-Mar-10
Acenaphthene	7.9	0.02	18.5	0.59	<0.02	<0.02	<0.02	<0.4	3.39	<0.02
Acenaphthylene	0.15	0.02	15.5	1.45	<0.02	<0.02	<0.02	5.92	2.03	<0.02
Anthracene	0.67	0.02	44.8	2.6	<0.02	<0.02	<0.02	4.94	7.86	<0.02
Benzo (a) anthracene	0.5	0.02	68.5	5.97	<0.02	<0.02	<0.02	9.81	24	<0.02
Benzo (a) pyrene	0.3	0.02	51.9	4.92	<0.02	<0.02	<0.02	9.61	21.6	<0.02
Benzo (b) fluoranthene	0.78	0.02	86	8.55	<0.02	<0.02	<0.02	12.8	29.3	<0.02
Benzo (g,h,i) perylene	6.6	0.02	26.1	2.63	<0.02	<0.02	<0.02	5.06	12.9	<0.02
Benzo (k) fluoranthene	0.78	0.02	41.6	4.45	<0.02	<0.02	<0.02	8.44	17.3	<0.02
Biphenyl	0.31	0.02	<2*	<0.4*	<0.02	<0.02	<0.02	<0.4*	<0.4*	<0.02
Chrysene	7	0.02	69	6.16	<0.02	<0.02	<0.02	9.78	25.6	<0.02
Dibenzo (a,h) anthracene	0.1	0.02	9.2	1.18	<0.02	<0.02	<0.02	1.76	3.47	<0.02
Fluoranthene	0.69	0.02	175	14.3	<0.02	<0.02	<0.02	19.4	60.1	<0.02
Fluorene	62	0.02	22.5	0.53	<0.02	<0.02	<0.02	0.45	2.64	<0.02
Ideno (1,2,3-cd) pyrene	0.38	0.02	26.1	2.59	<0.02	<0.02	<0.02	5.47	13.1	<0.02
Methylnaphthalene,1-										
Methylnaphthalene,2-	0.99	0.02	4.43	<0.4	<0.02	<0.02	<0.02	1.16	<0.4	<0.02
Naphthalene	0.6	0.02	3.31	<0.4	<0.02	<0.02	<0.02	1.56	<0.4	<0.02
Phenanthrene	6.2	0.02	7.48	<0.4	5.44	<0.02	<0.02	4.79	32.6	<0.02
Pyrene	78	0.02	141	12.5	<0.02	<0.02	<0.02	18	49.4	<0.02

Notes:

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MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 3
Soil Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW17 SA6 3.66 - 4.27 16-Mar-10	MW18 SA7 3.66 - 4.27 17-Mar-10	MW19 SA1 0.15 - 0.76 05-Jul-10	MW20 SA1 0.15 - 0.76 05-Jul-10	MW21 SA1 0.15 - 0.76 05-Jul-10	MW22 SA1 0.15 - 0.76 05-Jul-10	MW24 SA5 3.05- 3.66 13-Jul-11	MW25 SA5 3.05- 3.66 13-Jul-11
Acenaphthene	7.9	0.02	<0.02	<0.02	<u>175</u>	3.43	<u>9.6</u>	1.1	<0.02	<0.02
Acenaphthylene	0.15	0.02	<0.02	<0.02	<u>6.81</u>	<u>5.27</u>	<2*	<u>5.97</u>	<0.02	<0.02
Anthracene	0.67	0.02	<0.02	<0.02	<u>275</u>	<u>9.64</u>	<u>11</u>	<u>5.81</u>	<0.02	<0.02
Benzo (a) anthracene	0.5	0.02	<0.02	<0.02	<u>466</u>	31.4	<u>15.1</u>	<u>17</u>	<0.02	<0.02
Benzo (a) pyrene	0.3	0.02	<0.02	<0.02	<u>377</u>	<u>25.2</u>	<u>11.6</u>	<u>15.1</u>	<0.02	<0.02
Benzo (b) fluoranthene	0.78	0.02	<0.02	<0.02	<u>406</u>	<u>32.2</u>	<u>14.2</u>	<u>19.8</u>	<0.02	<0.02
Benzo (g,h,i) perylene	6.6	0.02	<0.02	<0.02	<u>162</u>	<u>13.2</u>	5.23	<u>7.67</u>	<0.02	<0.02
Benzo (k) fluoranthene	0.78	0.02	<0.02	<0.02	<u>270</u>	<u>19.7</u>	<u>9.36</u>	<u>10.6</u>	<0.02	<0.02
Biphenyl	0.31	0.02	<0.02	<0.02	<u>11.4</u>	<0.8*	<2*	<0.8*	<0.02	<0.02
Chrysene	7	0.02	<0.02	<0.02	<u>506</u>	<u>34.1</u>	<u>21.6</u>	<u>18.8</u>	<0.02	<0.02
Dibenzo (a,h) anthracene	0.1	0.02	<0.02	<0.02	<u>34.8</u>	<u>2.59</u>	<2*	<u>1.25</u>	<0.02	<0.02
Fluoranthene	0.69	0.02	<0.02	<0.02	<u>1260</u>	<u>75.2</u>	<u>49.3</u>	<u>34.6</u>	<0.02	<0.02
Fluorene	62	0.02	<0.02	<0.02	<u>162</u>	1.75	7.36	1.28	<0.02	<0.02
Ideno (1,2,3-cd) pyrene	0.38	0.02	<0.02	<0.02	<u>171</u>	<u>12.5</u>	<u>4.61</u>	<u>7.26</u>	<0.02	<0.02
Methylnaphthalene,1-					<u>36.1</u>	<0.8*	<u>2.1</u>	<0.8*	<0.02	<0.02
Methylnaphthalene,2-	0.99	0.02	<0.02	<0.02	<u>52.8</u>	<0.8*	<u>3.46</u>	<0.8*	<0.02	<0.02
Naphthalene	0.6	0.02	<0.02	<0.02	<u>95.7</u>	<u>0.85</u>	<u>16.4</u>	<u>2.67</u>	<0.02	<0.02
Phenanthrene	6.2	0.02	<0.02	<0.02	<u>1380</u>	<u>31.4</u>	<u>54.7</u>	<u>10.2</u>	<0.02	<0.02
Pyrene	78	0.02	<0.02	0.02	<u>952</u>	62.2	38	31.8	0.02	0.02

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 3
Soil Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW26 SA6 3.66-4.27 13-Jul-11	MW27 SA6 3.05- 3.66 14-Jul-11	MW28 SA5 2.44- 3.05 14-Jul-11
Acenaphthene	7.9	0.02	<0.02	<0.02	<0.02
Acenaphthylene	0.15	0.02	<0.02	<0.02	<0.02
Anthracene	0.67	0.02	<0.02	<0.02	<0.02
Benzo (a) anthracene	0.5	0.02	<0.02	<0.02	<0.02
Benzo (a) pyrene	0.3	0.02	<0.02	<0.02	<0.02
Benzo (b) fluoranthene	0.78	0.02	<0.02	<0.02	<0.02
Benzo (g,h,i) perylene	6.6	0.02	<0.02	<0.02	<0.02
Benzo (k) fluoranthene	0.78	0.02	<0.02	<0.02	<0.02
Biphenyl	0.31	0.02	<0.02	<0.02	<0.02
Chrysene	7	0.02	<0.02	<0.02	<0.02
Dibenzo (a,h) anthracene	0.1	0.02	<0.02	<0.02	<0.02
Fluoranthene	0.69	0.02	<0.02	<0.02	<0.02
Fluorene	62	0.02	<0.02	<0.02	<0.02
Ideno (1,2,3-cd) pyrene	0.38	0.02	<0.02	<0.02	<0.02
Methylnaphthalene,1-					
Methylnaphthalene,2-	0.99	0.02	<0.02	<0.02	<0.02
Naphthalene	0.6	0.02	<0.02	<0.02	<0.02
Phenanthrene	6.2	0.02	<0.02	<0.02	<0.02
Pyrene	78	0.02	0.02	0.02	0.02

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 4
Soil Laboratory Analytical Results - Metals
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW5 SA1 0.3 - 0.43 02-Nov-09	MW7 SA1 0.25 - 0.61 12-Feb-10	MW8 SA1 0.25 - 0.61 12-Feb-10	MW9 SA2 1.22 - 1.83 12-Feb-10	MW10 SA5 2.13 - 2.74 12-Feb-10	MW11 SA4 2.13 - 2.74 16-Mar-10	MW12 SA2 1.83 - 2.29 16-Feb-10
Antimony	7.5	1	<1	3	2	<1	<1	<1	<1
Arsenic	18	1	47	39	86	<1	<1	<1	<1
Barium	390	10	358	356	361	238	82	339	152
Beryllium	4	0.5	1.6	1.2	<0.5	0.5	<0.5	0.5	<0.5
Boron (Hot water Ext.)	120	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	1.2	0.5	<0.5	0.5	0.6	<0.5	<0.5	<0.5	<0.5
Chromium	160	5	19	22	21	40	16	60	51
Chromium (VI)	8	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	22	1	260	15	35	11	6	15	12
Copper	140	5	242	67	141	28	12	30	20
Lead	120	1	194	103	264	5	3	6	6
Mercury	0.27	0.1	0.4	0.4	0.5	<0.1	<0.1	<0.1	<0.1
Molybdenum	6.9	1	8	7	17	<1	<1	<1	<1
Nickel	100	5	26	31	30	23	13	35	26
Selenium	2.4	1	1	2	<1	<1	<1	<1	<1
Silver	20	0.3	8	0.4	0.5	<0.3	<0.3	<0.3	<0.3
Thallium	1	1	<1	<1	<1	<1	<1	<1	<1
Uranium	23	1	na	na	na	na	na	na	na
Vanadium	86	10	30	22	33	54	25	74	59
Zinc	340	20	162	81	212	56	21	82	50

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

'ns" - no standard

'na" - not analysed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 4
Soil Laboratory Analytical Results - Metals
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW13 SA4 2.13 - 2.74 16-Mar-10	MW14 SA1 0.15 - 0.61 16-Mar-10	MW15 SA1 0.15 - 0.61 16-Mar-10	MW16 SA6 3.66 - 4.27 16-Mar-10	MW17 SA6 3.66 - 4.27 16-Mar-10	MW18 SA7 3.66 - 4.27 17-Mar-10	MW19 SA1 0.15 - 0.76 05-Jul-10
Antimony	7.5	1	<1	<1	<1	<1	<1	<1	<1
Arsenic	18	1	<1	108	2	<1	<1	<1	2
Barium	390	10	107	397	92	100	59	280	143
Beryllium	4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5
Boron (Hot water Ext.)	120	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
Cadmium	1.2	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	160	5	18	19	30	16	12	38	14
Chromium (VI)	8	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	22	1	7	14	9	6	4	11	22
Copper	140	5	12	49	17	10	8	22	11
Lead	120	1	4	60	73	4	3	5	110
Mercury	0.27	0.1	<0.1	0.4	0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	6.9	1	<1	10	<1	<1	<1	<1	<1
Nickel	100	5	13	29	13	12	9	22	13
Selenium	2.4	1	<1	1	<1	<1	<1	<1	<1
Silver	20	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
Uranium	23	1	na						
Vanadium	86	10	28	30	22	27	21	54	20
Zinc	340	20	23	47	84	20	<20	51	43

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

'ns" - no standard

'na" - not analysed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 4
Soil Laboratory Analytical Results - Metals
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter depth (m)> date>	MOE Table 3 (2009)	MDL	MW20 SA1 0.15 - 0.76 05-Jul-10	MW21 SA1 0.15 - 0.61 05-Jul-10	MW22 SA1 0.15 - 0.61 05-Jul-10	MW27 SA1 0.15 - 0.61 05-Jul-10
Antimony	7.5	1	<1	<1	2	<1
Arsenic	18	1	3	2	31	<1
Barium	390	10	158	61	338	294
Beryllium	4	0.5	<0.5	<0.5	1	0.6
Boron (Hot water Ext.)	120	0.5	<0.5	<0.5	<0.5	<5.0
Cadmium	1.2	0.5	<0.5	<0.5	<0.5	<0.5
Chromium	160	5	32	11	16	53
Chromium (VI)	8	0.4	<0.4	<0.4	<0.4	<0.4
Cobalt	22	1	23	23	20	14
Copper	140	5	24	14	284	27
Lead	120	1	15	6	72	6
Mercury	0.27	0.1	<0.1	<0.1	0.3	<0.1
Molybdenum	6.9	1	1	1	4	<1
Nickel	100	5	23	11	19	30
Selenium	2.4	1	<1	<1	<1	<1
Silver	20	0.3	0.4	0.3	0.6	<0.3
Thallium	1	1	<1	<1	<1	<1
Uranium	23	1	na	na	na	<1
Vanadium	86	10	36	19	23	68
Zinc	340	20	38	24	35	63

Notes:

ppm - all concentrations provided in parts per million (micrograms per gram µg/g)

"<" - less than detection limits indicated

'ns' - no standard

'na' - not analysed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 5
Groundwater Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW1 11-Nov-09	MW2 11-Nov-09	MW3 11-Nov-09	MW4 11-Nov-09	MW5 11-Nov-09	MW6 11-Nov-09	MW7 25-Mar-10	MW8 25-Mar-10
PHC F1 (C6 - C10)	750	200	<200	<200	<200	<200	<200	<200	<200	<200
PHC F2 (C10 - C16)	150	100	221	697	328	1980	118	<100	<100	<100
PHC F3 (C16 - C34)	500	100	226	777	260	1710	128	<100	<100	<100
PHC F4 (C34 - C50)	500	100	<100	<100	<100	<100	<100	<100	<100	<100

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram $\mu\text{g}/\text{L}$)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 5
Groundwater Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW9 25-Mar-10	MW10 25-Mar-10	MW11 25-Mar-10	MW12 31-Mar-10	MW13 25-Mar-10	MW14 25-Mar-10	MW15 25-Mar-10	MW16 25-Mar-10
PHC F1 (C6 - C10)	750	200	<200	<2000*	<200	<200	<200	<200	<2000*	<200
PHC F2 (C10 - C16)	150	100	<100	<217*	<100	<100	<100	<100	<100	<100
PHC F3 (C16 - C34)	500	100	<100	<217	<100	<100	<100	<100	<100	<100
PHC F4 (C34 - C50)	500	100	<100	<217	<100	<100	<100	<100	<100	<100

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram $\mu\text{g}/\text{L}$)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 5
Groundwater Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW17 25-Mar-10	MW18 25-Mar-10	MW19 20-Jul-10	MW20 23-Jul-10	MW21 23-Jul-10	MW22 20-Jul-10	MW23 26-Jul-11	MW24 26-Jul-11
PHC F1 (C6 - C10)	750	200	<200	<200	<200	<200**	<200**	<200	<25	<25
PHC F2 (C10 - C16)	150	100	<100	<100	<186*	<100	<100	<407*	<100	<100
PHC F3 (C16 - C34)	500	100	<100	<100	<186	<100	<100	<407	<100	<100
PHC F4 (C34 - C50)	500	100	<100	<100	<186	<100	<100	<407	<100	<100

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram $\mu\text{g}/\text{L}$)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 5
Groundwater Laboratory Analytical Results - Petroleum Hydrocarbons F1 - F4
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW25 26-Jul-10	MW26 26-Jul-10	MW27 26-Jul-10
PHC F1 (C6 - C10)	750	200	<25	<25	<25
PHC F2 (C10 - C16)	150	100	<100	<100	<100
PHC F3 (C16 - C34)	500	100	<100	137	<100
PHC F4 (C34 - C50)	500	100	<100	<100	<100

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram $\mu\text{g}/\text{L}$)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

* MDL exceeds MOE standard

Table 6
Groundwater Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter	MOE Table 3 (2009)	MDL	MW1 11-Nov-09	MW3 11-Nov-09	MW6 11-Nov-09	MW7 25-Mar-10	MW8 25-Mar-10
Benzene	44	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	380	0.5	<0.5	<0.5	<0.5	NA	NA
Bromodichloromethane	85000	0.4	<0.4	<0.4	<0.4	NA	NA
Bromomethane	5.6	0.7	<0.7	<0.7	<0.7	NA	NA
Carbon Tetrachloride	0.79	0.5	<0.5	<0.5	<0.5	NA	NA
Monochlorobenzene (Chlorobenzene)	630	0.4	<0.4	<0.4	<0.4	NA	NA
Chloroethane	NV	1	<1	<1	<1	NA	NA
Chloroform	2.4	0.5	1.5	0.9	0.6	NA	NA
Chloromethane	NV	3	<3	<3	<3	NA	NA
Dibromochloromethane	82000	0.5	<0.5	<0.5	<0.5	NA	NA
Dibromoethane,1,2-	NV	1	<1	<1	<1	NA	NA
Dichlorobenzene,1,2-	4600	0.4	<0.4	<0.4	<0.4	NA	NA
Dichlorobenzene,1,3-	9600	0.4	<0.4	<0.4	<0.4	NA	NA
Dichlorobenzene,1,4-	8	0.4	<0.4	<0.4	<0.4	NA	NA
Dichloroethane,1,1-	320	0.5	<0.5	<0.5	<0.5	NA	NA
Dichloroethane,1,2-	1.6	0.5	<0.5	<0.5	<0.5	NA	NA
Dichloroethylene,cis-1,2-	1.6	0.4	<0.4	<0.4	<0.4	NA	NA
Dichloroethylene,1,1-	1.6	0.5	<0.5	<0.5	<0.5	NA	NA
Dichloroethylene,trans-1,2-	1.6	1	<1	<1	<1	NA	NA
Dichloropropane,1,2-	16	0.5	<0.5	<0.5	<0.5	NA	NA
Dichloropropylene,trans-1,3-	NV	0.4	<0.4	<0.4	<0.4	NA	NA
Dichloropropylene,cis-1,3-	NV	0.5	<0.5	<0.5	<0.5	NA	NA
Ethylbenzene	2300	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloromethane (Methylene Chloride)	82000	4	<4	<4	<4	NA	NA
Styrene	1300	0.4	<0.4	<0.4	<0.4	NA	NA
Tetrachloroethane,1,1,1,2-	3.4	0.5	<0.5	<0.5	<0.5	NA	NA
Tetrachloroethane,1,1,2,2-	3.2	0.6	<0.6	<0.6	<0.6	NA	NA
Tetrachloroethylene	1.6	0.5	<0.5	<0.5	<0.5	NA	NA
Toluene	18000	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethane,1,1,1-	640	0.4	<0.4	<0.4	<0.4	NA	NA
Trichloroethane,1,1,2-	4.7	0.6	<0.6	<0.6	<0.6	NA	NA
Trichloroethylene	1.6	0.4	<0.4	<0.4	<0.4	NA	NA
Trichlorofluoromethane	2500	1	<1	<1	<1	NA	NA
1,3,5- Trimethylbenzene	NV	0.5	<0.5	<0.5	<0.5	NA	NA
Vinyl Chloride	0.5	0.4	<0.4	<0.4	<0.4	NA	NA
Xylene (m,p,o)	4200	1	<1	<1	<1	<1	<1

Notes:

ppb - all concentrations provided in parts per billion (micrograms per litre µg/L)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 6
Groundwater Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW9	MW10	MW11	MW12	MW13
			25-Mar-10	25-Mar-10	25-Mar-10	25-Mar-10	25-Mar-10
Benzene	44	0.5	<0.5	<5	<0.5	<0.5	<0.5
Bromoform	380	0.5	NA	NA	NA	NA	NA
Bromodichloromethane	85000	0.4	NA	NA	NA	NA	NA
Bromomethane	5.6	0.7	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.79	0.5	NA	NA	NA	NA	NA
Monochlorobenzene (Chlorobenzene)	630	0.4	NA	NA	NA	NA	NA
Chloroethane	NV	1	NA	NA	NA	NA	NA
Chloroform	2.4	0.5	NA	NA	NA	NA	NA
Chloromethane	NV	3	NA	NA	NA	NA	NA
Dibromochloromethane	82000	0.5	NA	NA	NA	NA	NA
Dibromoethane,1,2-	NV	1	NA	NA	NA	NA	NA
Dichlorobenzene,1,2-	4600	0.4	NA	NA	NA	NA	NA
Dichlorobenzene,1,3-	9600	0.4	NA	NA	NA	NA	NA
Dichlorobenzene,1,4-	8	0.4	NA	NA	NA	NA	NA
Dichloroethane,1,1-	320	0.5	NA	NA	NA	NA	NA
Dichloroethane,1,2-	1.6	0.5	NA	NA	NA	NA	NA
Dichloroethylene,cis-1,2-	1.6	0.4	NA	NA	NA	NA	NA
Dichloroethylene,1,1-	1.6	0.5	NA	NA	NA	NA	NA
Dichloroethylene,trans-1,2-	1.6	1	NA	NA	NA	NA	NA
Dichloropropane,1,2-	16	0.5	NA	NA	NA	NA	NA
Dichloropropylene,trans-1,3-	NV	0.4	NA	NA	NA	NA	NA
Dichloropropylene,cis-1,3-	NV	0.5	NA	NA	NA	NA	NA
Ethylbenzene	2300	0.5	<0.5	7.8	<0.5	<0.5	<0.5
Dichloromethane (Methylene Chloride)	82000	4	NA	NA	NA	NA	NA
Styrene	1300	0.4	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,1,2-	3.4	0.5	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,2,2-	3.2	0.6	NA	NA	NA	NA	NA
Tetrachloroethylene	1.6	0.5	NA	NA	NA	NA	NA
Toluene	18000	0.5	<0.5	<5	<0.5	<0.5	<0.5
Trichloroethane,1,1,1-	640	0.4	NA	NA	NA	NA	NA
Trichloroethane,1,1,2-	4.7	0.6	NA	NA	NA	NA	NA
Trichloroethylene	1.6	0.4	NA	NA	NA	NA	NA
Trichlorofluoromethane	2500	1	NA	NA	NA	NA	NA
1,3,5- Trimethylbenzene	NV	0.5	NA	NA	NA	NA	NA
Vinyl Chloride	0.5	0.4	NA	NA	NA	NA	NA
Xylene (m,p,o)	4200	1	<1	20.6	<1	<1	<1

Notes:

ppb - all concentrations provided in parts per billion (micrograms per litre $\mu\text{g/L}$)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 6
Groundwater Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW14	MW15	MW16	MW17	MW18
			25-Mar-10	25-Mar-10	25-Mar-10	25-Mar-10	25-Mar-10
Benzene	44	0.5	<0.5	<5	<0.5	<0.5	<0.5
Bromoform	380	0.5	NA	NA	NA	NA	NA
Bromodichloromethane	85000	0.4	NA	NA	NA	NA	NA
Bromomethane	5.6	0.7	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.79	0.5	NA	NA	NA	NA	NA
Monochlorobenzene (Chlorobenzene)	630	0.4	NA	NA	NA	NA	NA
Chloroethane	NV	1	NA	NA	NA	NA	NA
Chloroform	2.4	0.5	NA	NA	NA	NA	NA
Chloromethane	NV	3	NA	NA	NA	NA	NA
Dibromochloromethane	82000	0.5	NA	NA	NA	NA	NA
Dibromoethane,1,2-	NV	1	NA	NA	NA	NA	NA
Dichlorobenzene,1,2-	4600	0.4	NA	NA	NA	NA	NA
Dichlorobenzene,1,3-	9600	0.4	NA	NA	NA	NA	NA
Dichlorobenzene,1,4-	8	0.4	NA	NA	NA	NA	NA
Dichloroethane,1,1-	320	0.5	NA	NA	NA	NA	NA
Dichloroethane,1,2-	1.6	0.5	NA	NA	NA	NA	NA
Dichloroethylene,cis-1,2-	1.6	0.4	NA	NA	NA	NA	NA
Dichloroethylene,1,1-	1.6	0.5	NA	NA	NA	NA	NA
Dichloroethylene,trans-1,2-	1.6	1	NA	NA	NA	NA	NA
Dichloropropane,1,2-	16	0.5	NA	NA	NA	NA	NA
Dichloropropylene,trans-1,3-	NV	0.4	NA	NA	NA	NA	NA
Dichloropropylene,cis-1,3-	NV	0.5	NA	NA	NA	NA	NA
Ethylbenzene	2300	0.5	<0.5	<5	<0.5	<0.5	<0.5
Dichloromethane (Methylene Chloride)	82000	4	NA	NA	NA	NA	NA
Styrene	1300	0.4	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,1,2-	3.4	0.5	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,2,2-	3.2	0.6	NA	NA	NA	NA	NA
Tetrachloroethylene	1.6	0.5	NA	NA	NA	NA	NA
Toluene	18000	0.5	<0.5	<5	<0.5	<0.5	<0.5
Trichloroethane,1,1,1-	640	0.4	NA	NA	NA	NA	NA
Trichloroethane,1,1,2-	4.7	0.6	NA	NA	NA	NA	NA
Trichloroethylene	1.6	0.4	NA	NA	NA	NA	NA
Trichlorofluoromethane	2500	1	NA	NA	NA	NA	NA
1,3,5- Trimethylbenzene	NV	0.5	NA	NA	NA	NA	NA
Vinyl Chloride	0.5	0.4	NA	NA	NA	NA	NA
Xylene (m,p,o)	4200	1	<1	<10	<1	<1	<1

Notes:

ppb - all concentrations provided in parts per billion (micrograms per litre $\mu\text{g/L}$)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 6
Groundwater Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter	MOE Table 3 (2009)	MDL	MW19 20-Jul-10	MW20 20-Jul-10	MW21 20-Jul-10	MW22 20-Jul-10	MW23 26-Jul-11
Benzene	44	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	380	0.5	NA	NA	NA	NA	NA
Bromodichloromethane	85000	0.4	NA	NA	NA	NA	NA
Bromomethane	5.6	0.7	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.79	0.5	NA	NA	NA	NA	NA
Monochlorobenzene (Chlorobenzene)	630	0.4	NA	NA	NA	NA	NA
Chloroethane	NV	1	NA	NA	NA	NA	NA
Chloroform	2.4	0.5	NA	NA	NA	NA	NA
Chloromethane	NV	3	NA	NA	NA	NA	NA
Dibromochloromethane	82000	0.5	NA	NA	NA	NA	NA
Dibromoethane,1,2-	NV	1	NA	NA	NA	NA	NA
Dichlorobenzene,1,2-	4600	0.4	NA	NA	NA	NA	NA
Dichlorobenzene,1,3-	9600	0.4	NA	NA	NA	NA	NA
Dichlorobenzene,1,4-	8	0.4	NA	NA	NA	NA	NA
Dichloroethane,1,1-	320	0.5	NA	NA	NA	NA	NA
Dichloroethane,1,2-	1.6	0.5	NA	NA	NA	NA	NA
Dichloroethylene,cis-1,2-	1.6	0.4	NA	NA	NA	NA	NA
Dichloroethylene,1,1-	1.6	0.5	NA	NA	NA	NA	NA
Dichloroethylene,trans-1,2-	1.6	1	NA	NA	NA	NA	NA
Dichloropropane,1,2-	16	0.5	NA	NA	NA	NA	NA
Dichloropropylene,trans-1,3-	NV	0.4	NA	NA	NA	NA	NA
Dichloropropylene,cis-1,3-	NV	0.5	NA	NA	NA	NA	NA
Ethylbenzene	2300	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloromethane (Methylene Chloride)	82000	4	NA	NA	NA	NA	NA
Styrene	1300	0.4	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,1,2-	3.4	0.5	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,2,2-	3.2	0.6	NA	NA	NA	NA	NA
Tetrachloroethylene	1.6	0.5	NA	NA	NA	NA	NA
Toluene	18000	0.5	<0.5	<0.5	<0.5	<0.5	1.4
Trichloroethane,1,1,1-	640	0.4	NA	NA	NA	NA	NA
Trichloroethane,1,1,2-	4.7	0.6	NA	NA	NA	NA	NA
Trichloroethylene	1.6	0.4	NA	NA	NA	NA	NA
Trichlorofluoromethane	2500	1	NA	NA	NA	NA	NA
1,3,5- Trimethylbenzene	NV	0.5	NA	NA	NA	NA	NA
Vinyl Chloride	0.5	0.4	NA	NA	NA	NA	NA
Xylene (m,p,o)	4200	1	<1	<1	<1	<1	2.1

Notes:

ppb - all concentrations provided in parts per billion (micrograms per litre $\mu\text{g/L}$)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2004).

Table 6
Groundwater Laboratory Analytical Results - Volatile Organic Compounds (VOCs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW24 20-Jul-10	MW25 20-Jul-10	MW26 20-Jul-10	MW27 20-Jul-10
Benzene	44	0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	380	0.5	NA	NA	NA	NA
Bromodichloromethane	85000	0.4	NA	NA	NA	NA
Bromomethane	5.6	0.7	NA	NA	NA	NA
Carbon Tetrachloride	0.79	0.5	NA	NA	NA	NA
Monochlorobenzene (Chlorobenzene)	630	0.4	NA	NA	NA	NA
Chloroethane	NV	1	NA	NA	NA	NA
Chloroform	2.4	0.5	NA	NA	NA	NA
Chloromethane	NV	3	NA	NA	NA	NA
Dibromochloromethane	82000	0.5	NA	NA	NA	NA
Dibromoethane,1,2-	NV	1	NA	NA	NA	NA
Dichlorobenzene,1,2-	4600	0.4	NA	NA	NA	NA
Dichlorobenzene,1,3-	9600	0.4	NA	NA	NA	NA
Dichlorobenzene,1,4-	8	0.4	NA	NA	NA	NA
Dichloroethane,1,1-	320	0.5	NA	NA	NA	NA
Dichloroethane,1,2-	1.6	0.5	NA	NA	NA	NA
Dichloroethylene,cis-1,2-	1.6	0.4	NA	NA	NA	NA
Dichloroethylene,1,1-	1.6	0.5	NA	NA	NA	NA
Dichloroethylene,trans-1,2-	1.6	1	NA	NA	NA	NA
Dichloropropane,1,2-	16	0.5	NA	NA	NA	NA
Dichloropropylene,trans-1,3-	NV	0.4	NA	NA	NA	NA
Dichloropropylene,cis-1,3-	NV	0.5	NA	NA	NA	NA
Ethylbenzene	2300	0.5	<0.5	<0.5	<0.5	<0.5
Dichloromethane (Methylene Chloride)	82000	4	NA	NA	NA	NA
Styrene	1300	0.4	NA	NA	NA	NA
Tetrachloroethane,1,1,1,2-	3.4	0.5	NA	NA	NA	NA
Tetrachloroethane,1,1,2,2-	3.2	0.6	NA	NA	NA	NA
Tetrachloroethylene	1.6	0.5	NA	NA	NA	NA
Toluene	18000	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethane,1,1,1-	640	0.4	NA	NA	NA	NA
Trichloroethane,1,1,2-	4.7	0.6	NA	NA	NA	NA
Trichloroethylene	1.6	0.4	NA	NA	NA	NA
Trichlorofluoromethane	2500	1	NA	NA	NA	NA
1,3,5- Trimethylbenzene	NV	0.5	NA	NA	NA	NA
Vinyl Chloride	0.5	0.4	NA	NA	NA	NA
Xylene (m,p,o)	4200	0.5	<0.5	<0.5	<0.5	<0.5

Notes:

ppb - all concentrations provided in parts per billion (micrograms per litre µg/L)

"<" - less than detection limits indicated

NV - No Value

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2004).

Table 7
Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter	MOE Table 3 (2009) date>	MDL	MW1 11-Nov-09	MW2 11-Nov-09	MW3 11-Nov-09	MW4 11-Nov-09	MW5 11-Nov-09	MW6 11-Nov-09	MW7 25-Mar-10
Acenaphthene	600	0.05	2.39	2.16	1.6	11.4	0.06	<0.05	0.92
Acenaphthylene	1.8	0.05	0.43	1.61	0.49	2.61	0.07	0.66	0.41
Anthracene	2.4	0.01	0.78	2.53	0.57	6.92	0.07	0.05	1.13
Benzo (a) anthracene	4.7	0.01	0.61	3.89	0.62	3.71	0.19	0.09	0.93
Benzo (a) pyrene	0.81	0.01	0.47	3.18	0.31	2.26	0.13	0.05	0.7
Benzo (b) fluoranthene	0.75	0.05	0.62	4.09	0.21	3.09	0.17	0.07	0.99
Benzo (g,h,i) perylene	0.2	0.05	0.26	1.7	0.12	1.07	0.07	<0.05	0.37
Benzo (k) fluoranthene	0.4	0.05	0.24	1.97	0.17	1.23	0.08	<0.05	0.59
Biphenyl	1000	0.05	0.53	0.34	0.16	2.82	0.11	0.09	0.1
Chrysene	1	0.05	0.58	3.65	0.51	3.16	0.2	0.08	0.97
Dibenzo (a,h) anthracene	0.52	0.05	<0.05	0.43	<0.05	0.3	<0.05	<0.05	0.06
Fluoranthene	130	0.01	2.1	11.1	3.02	16.7	0.37	0.27	3.8
Fluorene	400	0.05	2.11	2.32	0.64	12.9	0.09	0.1	0.88
Indeno (1,2,3-cd) pyrene	0.2	0.05	0.23	1.53	0.11	1	0.06	<0.05	0.35
Methylnaphthalene,1-									
Methylnaphthalene,2-	1800	0.05	<0.05	0.65	0.17	4.17	0.11	0.11	0.17
Naphthalene	1400	0.05	2.12	2.44	0.78	31.4	0.15	0.15	0.38
Phenanthrene	580	0.05	2.35	5.91	1.75	21.7	0.27	0.2	2.72
Pyrene	68	0.01	1.61	9.77	2.64	13.4	0.85	0.71	3.09

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram µg/L)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 7
Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter	MOE Table 3 (2009) date>	MDL	MW8 25-Mar-10	MW9 25-Mar-10	MW10 25-Mar-10	MW11 25-Mar-10	MW12 25-Mar-10	MW13 25-Mar-10	MW14 25-Mar-10
Acenaphthene	600	0.05	0.48	<0.05	0.35	0.06	1.21	<0.05	<0.05
Acenaphthylene	1.8	0.05	0.24	<0.05	<0.15	0.09	0.23	<0.05	<0.05
Anthracene	2.4	0.01	0.89	<0.01	0.18	0.08	0.99	<0.01	<0.01
Benzo (a) anthracene	4.7	0.01	0.66	<0.01	0.15	0.07	0.54	<0.01	<0.01
Benzo (a) pyrene	0.81	0.01	0.49	<0.01	0.05	0.07	0.31	<0.01	<0.01
Benzo (b) fluoranthene	0.75	0.05	0.74	<0.05	<0.15	0.07	0.72	<0.05	<0.05
Benzo (g,h,i) perylene	0.2	0.05	0.27	<0.05	<0.15	<0.05	0.19	<0.05	<0.05
Benzo (k) fluoranthene	0.4	0.05	0.43	<0.05	<0.15	0.05	0.68	<0.05	<0.05
Biphenyl	1000	0.05	0.05	<0.05	0.19	0.07	0.3	0.06	<0.05
Chrysene	1	0.05	0.69	<0.05	<0.15	0.12	0.52	<0.05	<0.05
Dibenzo (a,h) anthracene	0.52	0.05	0.05	<0.05	<0.15	<0.05	<0.1	<0.05	<0.05
Fluoranthene	130	0.01	3.47	<0.01	0.47	0.77	2.43	<0.01	0.05
Fluorene	400	0.05	0.55	<0.05	0.37	0.07	1.57	<0.05	<0.05
Indeno (1,2,3-cd) pyrene	0.2	0.05	0.25	<0.05	<0.15	<0.05	0.17	<0.05	<0.05
Methylnaphthalene,1-									
Methylnaphthalene,2-	1800	0.05	0.12	<0.05	0.32	0.07	0.79	0.07	0.08
Naphthalene	1400	0.05	0.24	<0.05	0.78	0.16	4.15	0.1	0.12
Phenanthrene	580	0.05	3.42	<0.05	1	0.66	4.25	<0.05	<0.05
Pyrene	68	0.01	2.71	<0.01	0.51	0.99	1.89	<0.01	0.04

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram µg/L)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 7
Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW15 25-Mar-10	MW16 31-Mar-10	MW17 31-Mar-10	MW18 31-Mar-10	MW19 20-Jul-10	MW20 20-Jul-10	MW21 20-Jul-10
Acenaphthene	600	0.05	27.3	<0.05	<0.05	<0.05	18.9	38.8	<0.15
Acenaphthylene	1.8	0.05	1.24	<0.05	<0.05	<0.05	<0.15	<0.05	<0.15
Anthracene	2.4	0.01	10.1	<0.01	<0.01	<0.01	7.41	11.4	<0.03
Benzo (a) anthracene	4.7	0.01	7.09	<0.01	<0.01	<0.01	12.3	2.54	<0.03
Benzo (a) pyrene	0.81	0.01	6.45	<0.01	<0.01	<0.01	11.2	1.79	<0.03
Benzo (b) fluoranthene	0.75	0.05	7.88	<0.05	<0.05	<0.05	14.5	2.34	<0.15
Benzo (g,h,i) perylene	0.2	0.05	3.59	<0.05	<0.05	<0.05	6.37	0.99	<0.15
Benzo (k) fluoranthene	0.4	0.05	5.04	<0.05	<0.05	<0.05	5.23	0.84	<0.15
Biphenyl	1000	0.05	2	<0.05	<0.05	<0.05	0.99	3.6	<0.15
Chrysene	1	0.05	7.9	<0.05	<0.05	<0.05	12.5	2.48	<0.15
Dibenzo (a,h) anthracene	0.52	0.05	0.95	<0.05	<0.05	<0.05	1.93	<0.15	<0.15
Fluoranthene	130	0.01	24.5	<0.01	<0.01	<0.01	31.8	13.9	<0.03
Fluorene	400	0.05	18.6	<0.05	<0.05	<0.05	11.7	21.9	<0.15
Indeno (1,2,3-cd) pyrene	0.2	0.05	3.69	<0.05	<0.05	<0.05	6.34	0.91	<0.15
Methylnaphthalene,1-									
Methylnaphthalene,2-	1800	0.05	8.93	<0.05	<0.05	<0.05	5.72	15.4	<0.15
Naphthalene	1400	0.05	41.2	<0.05	<0.05	<0.05	24.1	146	<0.15
Phenanthrene	580	0.05	39.6	<0.05	<0.05	<0.05	43.9	62.3	<0.15
Pyrene	68	0.01	18.9	0.04	<0.01	<0.01	24.8	9.96	<0.03

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram µg/L)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 7
Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW22 20-Jul-10	MW24 05-Aug-11	MW25 05-Aug-11	MW26 05-Aug-11
Acenaphthene	600	0.05	1.1	<0.05	<0.05	<0.05
Acenaphthylene	1.8	0.05	8.89	<0.05	<0.05	<0.05
Anthracene	2.4	0.01	7.71	<0.01	<0.01	<0.01
Benzo (a) anthracene	4.7	0.01	19	<0.01	<0.01	<0.01
Benzo (a) pyrene	0.81	0.01	20	<0.01	<0.01	<0.01
Benzo (b) fluoranthene	0.75	0.05	25.5	<0.05	<0.05	<0.05
Benzo (g,h,i) perylene	0.2	0.05	11.6	<0.05	<0.05	<0.05
Benzo (k) fluoranthene	0.4	0.05	9.63	<0.05	<0.05	<0.05
Biphenyl	1000	0.05	0.19	0.07	0.07	0.28
Chrysene	1	0.05	17.6	<0.05	<0.05	<0.05
Dibenzo (a,h) anthracene	0.52	0.05	4.25	<0.05	<0.05	<0.05
Fluoranthene	130	0.01	29.9	<0.01	<0.01	<0.01
Fluorene	400	0.05	1.16	<0.05	<0.05	<0.05
Indeno (1,2,3-cd) pyrene	0.2	0.05	11.4	<0.05	<0.05	<0.05
Methylnaphthalene,1-						
Methylnaphthalene,2-	1800	0.05	0.49	<0.05	<0.05	<0.05
Naphthalene	1400	0.05	1.59	0.12	1.41	0.9
Phenanthrene	580	0.05	7.06	<0.05	<0.05	0.14
Pyrene	68	0.01	27.8	<0.01	<0.01	<0.01

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram µg/L)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 8
Groundwater Laboratory Analytical Results - Metals
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW5 11-Nov-09	MW7 25-Mar-10	MW8 25-Mar-10	MW9 25-Mar-10	MW10 25-Mar-10	MW11 25-Mar-10	MW12 25-Mar-10
Antimony	20000	1	9	<1	<1	<1	<1	<1	<1
Arsenic	1900	10	<10	<10	<10	<10	<10	<10	<10
Barium	29000	10	564	514	1030	1180	31	64	48
Beryllium	67	1	<1	<1	<1	<1	<1	<1	<1
Boron (Hot water Ext.)	45000	50	<50	63	<50	54	<50	<50	<50
Cadmium	2.7	1	<1	<1	<1	<1	<1	<1	<1
Chromium	810	50	<50	<50	<50	<50	<50	<50	<50
Cobalt	66	5	<5	<5	<5	<5	<5	<5	<5
Copper	87	5	<5	7	<5	5	8	8	12
Lead	25	1	<1	<1	<1	<1	<1	<1	<1
Molybdenum	9200	5	<5	43	<5	<5	25	<5	<5
Nickel	490	5	<5	<5	<5	<5	5	<5	<5
Selenium	63	5	<5	<5	<5	<5	<5	<5	<5
Silver	1.5	1	<1	<1	<1	<1	<1	<1	<1
Thallium	510	1	<1	2	<1	<1	<1	<1	<1
Vanadium	250	10	<10	<10	<10	<10	<10	<10	<10
Zinc	1100	20	<20	<20	<20	<20	<20	<20	<20

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram µg/L)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 8
Groundwater Laboratory Analytical Results - Metals
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW13 25-Mar-10	MW14 25-Mar-10	MW15 25-Mar-10	MW16 25-Mar-10	MW17 25-Mar-10	MW18 25-Mar-10	MW19 20-Jul-10
Antimony	20000	1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1900	10	<10	<10	<10	<10	<10	<10	<10
Barium	29000	10	249	1450	156	301	632	99	320
Beryllium	67	1	<1	<1	<1	<1	<1	<1	<1
Boron (Hot water Ext.)	45000	50	<50	63	<50	54	<50	52	<50
Cadmium	2.7	1	<1	<1	<1	<1	<1	<1	<1
Chromium	810	50	<50	<50	<50	<50	<50	<50	<50
Chromium VI	140	10	NA	NA	NA	NA	NA	NA	<10
Cobalt	66	5	6	<5	<5	<5	<5	<5	<5
Copper	87	5	<5	6	<5	6	<5	<5	<5
Lead	25	1	<1	<1	<1	<1	<1	<1	<1
Mercury	0.29	0.1	NA	NA	NA	NA	NA	NA	<0.1
Molybdenum	9200	5	<5	43	26	<5	<5	<5	28
Nickel	490	5	<5	<5	9	<5	<5	<5	7
Selenium	63	5	<5	<5	<5	<5	<5	<5	<5
Silver	1.5	1	<1	<1	<1	<1	<1	<1	<1
Thallium	510	1	1	<1	<1	<1	<1	<1	<1
Vanadium	250	10	<10	<10	13	<10	<10	<10	<10
Zinc	1100	20	<20	<20	<20	<20	<20	<20	<20

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram $\mu\text{g/L}$)

"<" - less than detection limits indicated

NA - Not Analyzed

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2009).

Table 8
Groundwater Laboratory Analytical Results - Metals
49 Iona Street, Ottawa, Ontario
Elmdale Public School

Parameter date>	MOE Table 3 (2009)	MDL	MW20 20-Jul-10	MW21 20-Jul-10	MW22 20-Jul-10
Antimony	20000	1	<1	<1	1
Arsenic	1900	10	<10	<10	<10
Barium	29000	10	71	261	214
Beryllium	67	1	<1	<1	<1
Boron (Hot water Ext.)	45000	50	60	<50	<50
Cadmium	2.7	1	<1	<1	<1
Chromium	810	50	<50	<50	<50
Chromium VI	140	10	<10	<10	<10
Cobalt	66	5	<5	<5	<5
Copper	87	5	<5	<5	<5
Lead	25	1	<1	<1	<1
Mercury	0.29	0.1	<0.1	<0.1	<0.1
Molybdenum	9200	5	22	9	41
Nickel	490	5	6	6	10
Selenium	63	5	<5	<5	<5
Silver	1.5	1	<1	<1	<1
Thallium	510	1	<1	<1	<1
Vanadium	250	10	<10	<10	<10
Zinc	1100	20	<20	<20	<20

Notes:

ppb - all concentrations provided in parts per billion (micrograms per gram µg/L)

"<" - less than detection limits indicated

MOE Table 3 - Table 3 standards from the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, July 2009, for institutional land use in a non-potable groundwater situation, coarse textured soils.

3.05 - Indicates exceedance of applicable MOE standards (2004).

TABLE 9: Groundwater Level Measurements
49 Iona St, Ottawa, Ontario
MM-1027

Well ID	Date	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)		
MW1	11-Nov-09		--	0.384	--	-0.384		
MW1	25-Mar-10			0.378				
MW2	11-Nov-09		--	0.279	--	-0.279		
MW2	25-Mar-10			0.267				
MW3	11-Nov-09		--	0.442		-0.442		
MW3	25-Mar-10			0.437		-0.437		
MW4	11-Nov-09		--	0.429	--	-0.429		
MW4	25-Mar-10			0.419		-0.419		
MW5	11-Nov-09		--	0.334		-0.334		
MW5	25-Mar-10			0.330		-0.330		
MW6	11-Nov-09		--	0.356		-0.356		
MW6	25-Mar-10			0.358		-0.358		
MW7	25-Mar-10			0.388		-0.388		
MW7						NV		
MW8	25-Mar-10			0.409		-0.409		
MW8						NV		
MW9	25-Mar-10			0.566		-0.566		
MW9						NV		
MW10	25-Mar-10			1.649		-1.649		
MW11	25-Mar-10			1.415		-1.415		
MW12	25-Mar-10			1.458		-1.458		
MW13	25-Mar-10			1.726		-1.726		
MW14	25-Mar-10			0.165		-0.165		
MW15	25-Mar-10			0.205		-0.205		
MW16	25-Mar-10			3.631		-3.631		
MW17	25-Mar-10			3.429		-3.429		
MW18	25-Mar-10			3.806		-3.806		

TABLE 9: Groundwater Level Measurements
49 Iona St, Ottawa, Ontario
MM-1027

Well ID	Date	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)		
MW19	20-Jul-10			0.450		-0.450		
MW20	20-Jul-10			0.813		-0.813		
MW21	20-Jul-10			0.956		NV		
MW22	20-Jul-10			0.100		-0.100		
MW23	26-Jul-11	100.000		2.182		97.818		
MW23	Aug 5-11	100.000		2.180		97.820		
MW24	26-Jul-11	100.020		3.636		96.384		
MW24	Aug 5-11	100.020		3.997		96.023		
MW25	26-Jul-11	99.215		2.597		96.618		
MW25	Aug 5-11	99.215		2.700		96.515		
MW26	26-Jul-11	99.720		3.385		96.335		
MW26	Aug 5-11	99.720		3.720		96.000		
MW27	26-Jul-11	100.475		2.763		97.712		
MW27	Aug 5-11	100.475		2.940		97.535		
MW28	26-Jul-11	98.675		Dry		NV		
MW28	Aug 5-11	98.675		Dry		NV		

Notes:

TOC - top of casing
 marl - metres above arbitrary reference level
 mbtoc - metres below top of casing
 LPH - liquid phase hydrocarbons
 GW - groundwater
 NM - not measured
 NV - no value

APPENDIX A – BOREHOLE / MONITORING WELL LOGS

Environmental Monitoring

Elmdale Public School

Ottawa, ON

MM-1027

CM3 Environmental Inc.
120 Robertson Road, Suite 208, Ottawa, Ontario, K2H 5Z1



CM³ JOB NO: MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

No: MW1

SURFACE ELEVATION:

CM JOB NO.: MIV-1027 | Ottawa, Ontario | SURFACE ELEVATION: 0.00 m

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)								
						1	10	100	1000	10000				
0.0					Ground Surface									0.0
0.0	SA1				CONCRETE SLAB grey, dry									flush mount bentonite seal silica sand
0.0	SA1				GRAVEL product and strong odour, black, wet									32 mm 010 slot PVC pipe
0.0	SA1				BOULDER grey, dry									end cap
0.8	SA2				SANDY CLAY some gravel, refusal possibly bedrock, grey, wet									
1.7					End of borehole at 1.7 m									
1.7					Well Completion Details: Screened interval from 0.5 m to 1.7 m below surface Elevation at top of pipe (TOP) = 0.38 m									
1.7					Groundwater Information: Depth to groundwater from TOP = 0.38 m									
1.7														

The diagram illustrates the soil profile and well completion. The soil profile shows layers from the ground surface down to 1.7m. Layer 1 (0-0.5m) is described as 'CONCRETE SLAB' (grey, dry). Layer 2 (0.5-1.0m) is 'GRAVEL' (black, wet) with a 'BOULDER' (grey, dry) at the bottom. Layer 3 (1.0-1.7m) is 'SANDY CLAY' (grey, wet). A borehole is shown ending at 1.7m. A well completion is installed between 0.5m and 1.7m, with a screen from 0.5m to 1.7m. The well has a 32 mm 010 slot PVC pipe and an end cap. A flush mount bentonite seal and silica sand are used at the top. The water level is indicated at 0.38m above the top of the pipe (TOP).

DRILLING METHOD: Pionjar Portable Drilling

Notes:  GRAB SAMPLE
 SPLIT SPOON

DRILL DATE: 2 November 2009

LOGGED BY: JF Dion

Sheet 1 of 1



CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

- MW2

BORROWEES NO.

DRILLING METHOD: Pionjar Portable Drilling

Notes:  GRAB SAMPLE
 SPLIT SPOON

DRILL DATE: 2 November 2009

LOGGED BY: JF Dion

Sheet 1 of 1



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

No: MW3

SURFACE ELEVATION

DRILLING METHOD: Pionjar Portable Drilling

Notes:  GRAB SAMPLE
 SPLIT SPOON

DRILL DATE: 2 November 2009

LOGGED BY: JF Dion

Sheet 1 of 1



CM³ JOB NO: MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

• MW4

SURFACE ELEVATION

DRILLING METHOD: Pionjar Portable Drilling

Notes:  GRAB SAMPLE
 SPLIT SPOON

DRILL DATE: 2 November 2009

LOGGED BY: JF Dion

Sheet 1 of 1

cm³				CLIENT: Ottawa Carleton District School Board PROJECT: Elmdale Public School 49 Iona Street Ottawa, Ontario				BOREHOLE LOG								
								MW5				SURFACE ELEVATION:				
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION				ORGANIC VAPOUR LEVEL (ppmv)				WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
									1	10	100	1000	10000			
1.0	SA1				CONCRETE SLAB grey, dry									flush mount bentonite seal silica sand		
	SA2				GRAVEL product and strong odour, black, wet									32 mm 010 slot PVC pipe	1.0	
	SA3				SANDY CLAY some gravel, refusal possibly bedrock, grey, wet									end cap		
					End of borehole at 1.7 m											
					Well Completion Details: Screened interval from 0.5 m to 1.7 m below surface Elevation at top of pipe (TOP) = m											
					Groundwater Information: Depth to groundwater from TOP = 0.33 m ()											
DRILLING METHOD: Pionjar Portable Drilling				Notes:  GRAB SAMPLE  SPLIT SPOON												
DRILL DATE: 2 November 2009																
LOGGED BY: JF Dion																



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

No: MW6

SURFACE ELEVATION:

DRILLING METHOD: Pionjar Portable Drilling

Notes:  GRAB SAMPLE
 SPLIT SPOON

DRILL DATE: 2 November 2009

LOGGED BY: JF Dion

Sheet 1 of 1



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

• MW7

SURFACE ELEVATION:

CM JOB NO.: MIV-1027 | Ottawa, Ontario | SURFACE ELEVATION:

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)								
					1	10	100	1000	10000					
0					Ground Surface									0.0
-0.5		SA1			CONCRETE SLAB staining on the under side of the concrete slab, grey, dry									
-0.5		SA2			GRAVELY SAND Strong hydrocarbon like odour, black, wet									
-0.5		SA3			CLAY trace of gravel, grey, wet									
-1.8					BEDROCK shale, black, wet End of borehole at 1.8 m									
					Well Completion Details: Screened interval from 0.5 m to 1.8 m below surface Elevation at top of pipe (TOP) = m									
					Groundwater Information: Depth to groundwater from TOP = 0.39 m ()									

The diagram illustrates the borehole profile with three soil samples (SA1, SA2, SA3) and the resulting geological column. The borehole starts at the ground surface and ends at a depth of 1.8 m at the bedrock. The soil profiles are as follows:

- SA1:** Top layer is a concrete slab with staining on the underside. Below it is a thin layer of gravelly sand with a strong hydrocarbon-like odor, followed by a layer of clay with trace amounts of gravel.
- SA2:** Consists of gravelly sand (with a strong hydrocarbon-like odor) and clay layers.
- SA3:** Consists of clay and shale layers, ending at the bedrock at 1.8 m depth.

Well Completion Details: The screened interval is from 0.5 m to 1.8 m below the surface. The elevation at the top of the pipe (TOP) is m. The well completion includes a flush mount bentonite seal, silica sand, a 32 mm 010 slot PVC pipe, and an end cap.

Groundwater Information: The depth to groundwater from the top of the pipe (TOP) is 0.39 m.

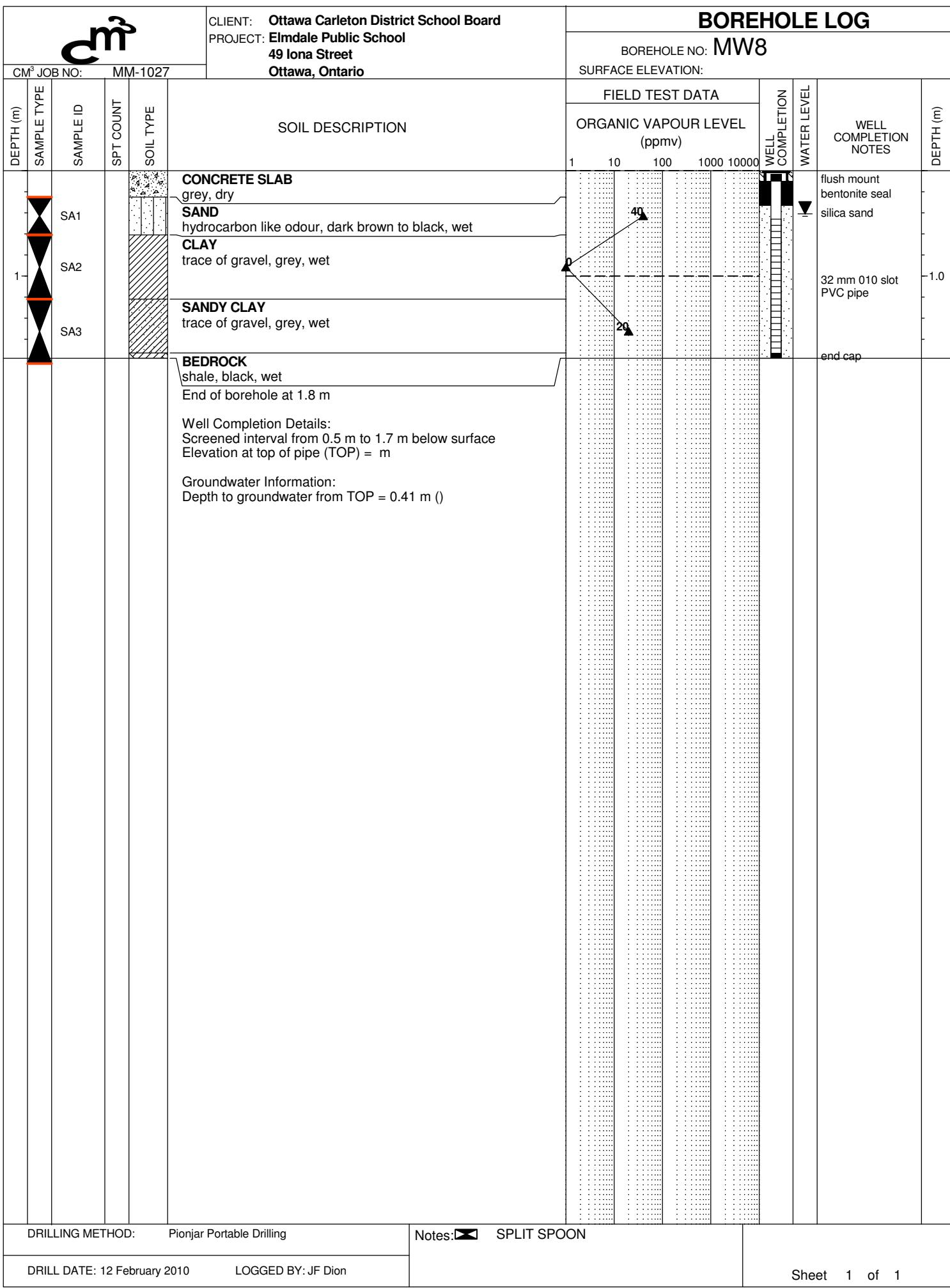
DRILLING METHOD: Pionjar Portable Drilling

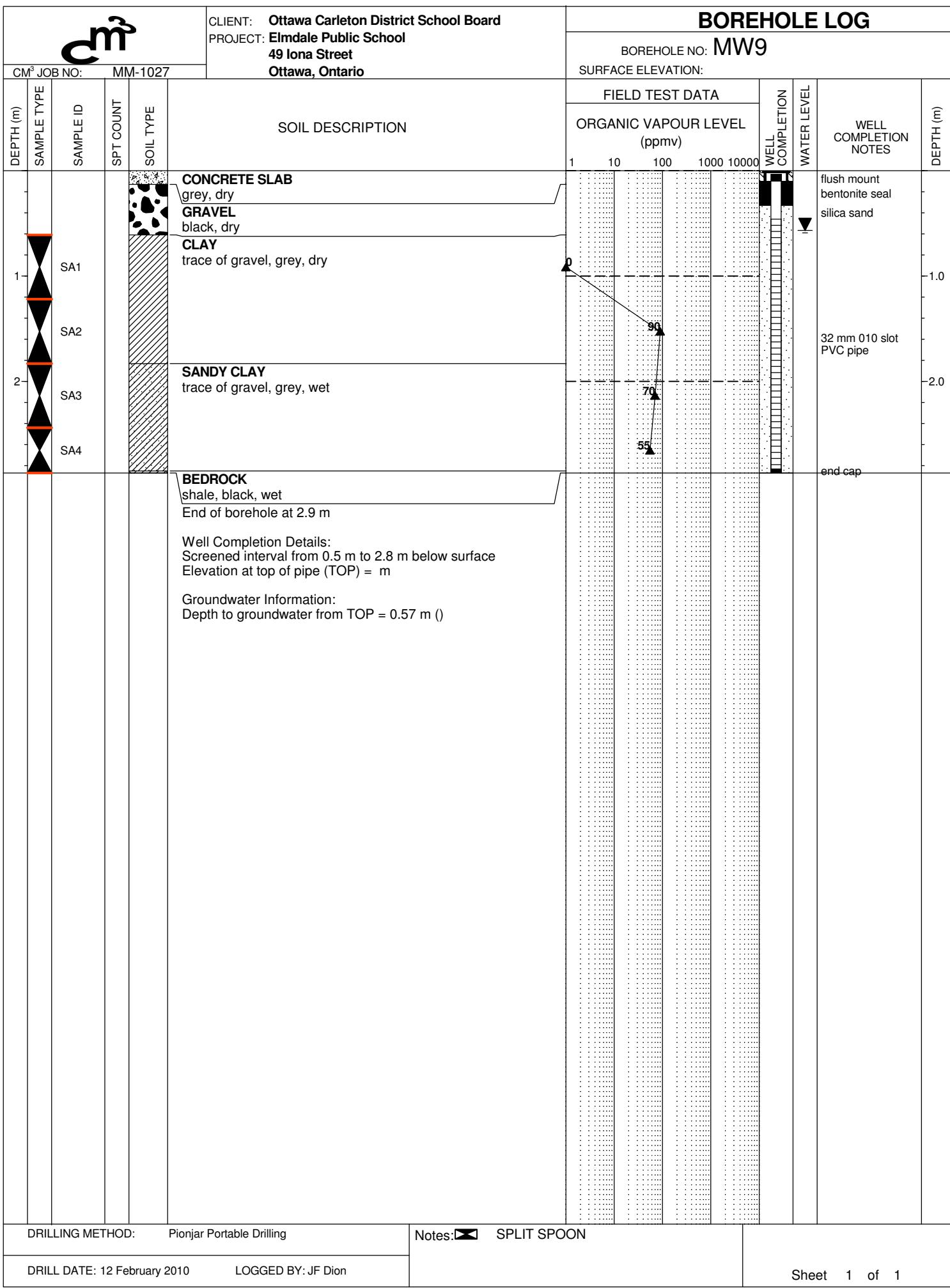
Notes: SPLIT SPOON

DRILL DATE: 12 February 2010

LOGGED BY: JF Dion

Sheet 1 of 1







CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

CM³ JOB NO: MM-1027

BOREHOLE LOG

MW10

SURFACE ELEVATION:

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)							
1	SA1	CONCRETE SLAB grey, dry				1	35					flush mount	
1	SA2	GRAVELY CLAY grey, moist				10	40					bentonite seal	
1	SA3					100						silica sand	
2	SA4					1000							
2	SA5	SANDY CLAY grey, wet				10000							
2	SA6	trace of gravel, grey, wet										32 mm 010 slot PVC pipe	2.0
3		End of borehole at 3.7 m										end cap	3.0
		Well Completion Details: Screened interval from 0.6 m to 2.6 m below surface Elevation at top of pipe (TOP) = m											
		Groundwater Information: Depth to groundwater from TOP = 1.65 m ()											
DRILLING METHOD: Pionjar Portable Drilling					Notes: SPLIT SPOON								
DRILL DATE: 12 February 2010					LOGGED BY: JF Dion					Sheet 1 of 1			



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

No: MW11

SURFACE ELEVATION:

CM JOB NO.: MIV-1027 | Ottawa, Ontario | SURFACE ELEVATION:

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)								
					1	10	100	1000	10000					
0					Ground Surface									0.0
0.0	SA1				CONCRETE SLAB									flush mount
1.0	SA2				CLAY grey, dry									bentonite seal
1.6	SA3													
2.0	SA4													
2.5	SA5				Silty CLAY some gravel, grey, wet									
3.0	SA6													
4.0					End of borehole at 4.0 m									
					Well Completion Details: Screened interval from 1.6 m to 3.9 m below surface Elevation at top of pipe (TOP) = m									
					Groundwater Information: Depth to groundwater from TOP = 1.42 m ()									

The diagram illustrates the borehole profile with various soil samples (SA1 to SA6) and the well completion assembly. The borehole starts at the ground surface and extends downwards to a total depth of 4.0 m. Soil samples SA1 through SA4 are taken from the surface down to approximately 2.5 m, where they encounter a layer of silty clay containing some gravel. Soil samples SA5 and SA6 are taken from this layer down to the bottom of the borehole at 4.0 m. The well completion assembly consists of a 32 mm 010 slot PVC pipe, a silica sand filter, a bentonite seal, and a flush mount end cap. The top of the pipe is at a depth of 1.6 m, and the elevation at the top of the pipe (TOP) is 1.42 m above the groundwater level.

DRILLING METHOD: Pionjar Portable Drilling

Notes:   CORE SAMPLE
SPLIT SPOON

DRILL DATE: 16 March 2010

LOGGED BY: JF Dion

Sheet 1 of 1



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

No: MW12

SURFACE ELEVATION:

CM JOB NO.: MIV-1027 | Ottawa, Ontario | SURFACE ELEVATION:

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)								
1	10	100	1000	10000										
0					Ground Surface									0.0
0.0					CONCRETE SLAB CLAY grey, dry									
0.6		SA1												-1.0
0.6		SA2			Silty CLAY some gravel, strong odour, grey, wet									-2.0
2.3					End of borehole at 2.3 m Well Completion Details: Screened interval from 0.6 m to 2.2 m below surface Elevation at top of pipe (TOP) = m Groundwater Information: Depth to groundwater from TOP = 1.46 m ()									

DRILLING METHOD: Pionjar Portable Drilling

Notes:  CORE SAMPLE
 NO RECOVERY
 SPLIT SPOON

DRILL DATE: 16 March 2010

LOGGED BY: JF Dion

Sheet 1 of 1

cm³				CLIENT: Ottawa Carleton District School Board PROJECT: Elmdale Public School 49 Iona Street Ottawa, Ontario				BOREHOLE LOG									
								MW13				SURFACE ELEVATION:					
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION				FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
									ORGANIC VAPOUR LEVEL (ppmv)								
					1	10	100	1000	10000								
0					Ground Surface											0.0	
0.0					CONCRETE SLAB											flush mount	
0.0					CLAY grey, dry											bentonite seal	
0.0																silica sand	
0.9																	
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CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

: MW14

BOREHOLE NO.
SURFACE ELEVATION:

CM JOB NO: MM-1027 | Ottawa, Ontario | SURFACE ELEVATION:

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)								
					1	10	100	1000	10000					
0					Ground Surface									0.0
0.0	SA1				CONCRETE SLAB									
0.0	SA2				Sandy GRAVEL black, wet									flush mount bentonite seal silica sand
0.6	SA3				Silty CLAY some gravel, grey, wet									32 mm 010 slot PVC pipe
1.8					End of borehole at 1.8 m									end cap
					Well Completion Details: Screened interval from 0.6 m to 1.8 m below surface Elevation at top of pipe (TOP) = m									
					Groundwater Information: Depth to groundwater from TOP = 0.17 m ()									

DRILLING METHOD: Pionjar Portable Drilling

Notes: CORE SAMPLE
 SPLIT SPOON

DRILL DATE: 16 March 2010

LOGGED BY: JF Dion

Sheet 1 of 1



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

NO: MW15

SURFACE ELEVATION:

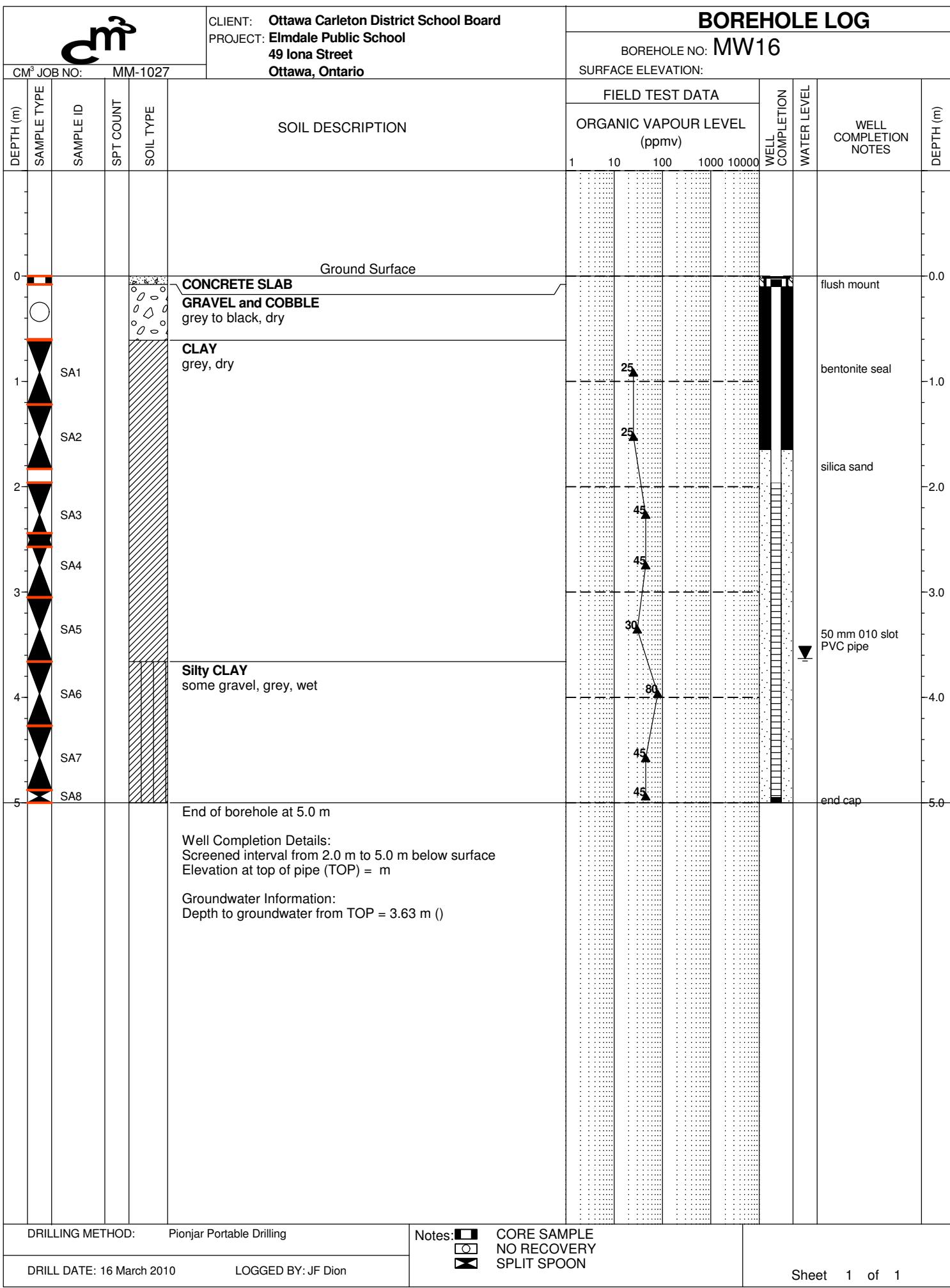
DRILLING METHOD: Pionjar Portable Drilling

Notes: CORE SAMPLE
 SPLIT SPOON

DRILL DATE: 16 March 2010

LOGGED BY: JF Dion

Sheet 1 of 1





CM³, JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

: MW17

SURFACE ELEVATION:



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

: MW18

SUBSURFACE ELEVATION:

CM JOB NO.: MVI-1027 | Ottawa, Ontario | SURFACE ELEVATION:

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)								
					1	10	100	1000	10000					
0.0					Ground Surface									0.0
0.0	SA1				TOPSOIL black, dry									flush mount
0.0	SA2				SAND brown, dry									bentonite seal
0.0	SA3				CLAY grey, dry									silica sand
0.0	SA4													
0.0	SA5													
0.0	SA6													
0.0	SA7				Silty CLAY some gravel, grey, wet									
0.0	SA8													
4.8					End of borehole at 4.8 m									
4.8					Well Completion Details: Screened interval from 2.0 m to 4.8 m below surface Elevation at top of pipe (TOP) = m									
4.8					Groundwater Information: Depth to groundwater from TOP = 3.81 m ()									



CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

NO: MW19

SUBSURFACE ELEVATION:

CM JOB NO:		MM-1027		Ottawa, Ontario		SURFACE ELEVATION:						
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION		FIELD TEST DATA					
							ORGANIC VAPOUR LEVEL (ppmv)		WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
							1	10	100	1000	10000	
0					Ground Surface							0.0
0.0	SA1				CONCRETE SLAB							
0.0					Sandy GRAVEL some brick and glass, black, wet							
0.6	SA2				Silty CLAY some gravel, grey, wet							
1.0	SA3											-1.0
2.1	SA4				End of borehole at 2.1 m							-2.0
					Well Completion Details: Screened interval from 0.6 m to 2.1 m below surface Elevation at top of pipe (TOP) = m							
					Groundwater Information: Depth to groundwater from TOP = 0.45 m ()							

DRILLING METHOD: Pionjar Portable Drilling

Notes:  CORE SAMPLE
 SPLIT SPOON

DRILL DATE: 5 July 2010

LOGGED BY: JF Dion

Sheet 1 of 1

cm³				CLIENT: Ottawa Carleton District School Board PROJECT: Elmdale Public School 49 Iona Street Ottawa, Ontario	BOREHOLE LOG															
					MW20				SURFACE ELEVATION:											
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	FIELD TEST DATA								WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)				
					ORGANIC VAPOUR LEVEL (ppmv)															
					1	10	100	1000	10000											
0					Ground Surface											0.0				
0	SA1				CONCRETE SLAB Sandy GRAVEL some brick and glass, black, wet											0.0				
0.5	SA2				Silty CLAY some gravel, grey, wet											0.5				
1.0	SA3				End of borehole at 2.0 m											1.0				
					Well Completion Details: Screened interval from 0.5 m to 1.9 m below surface Elevation at top of pipe (TOP) = m															
					Groundwater Information: Depth to groundwater from TOP = 0.81 m ()															
DRILLING METHOD:				Pionjar Portable Drilling				Notes:  CORE SAMPLE  SPLIT SPOON												
DRILL DATE: 5 July 2010				LOGGED BY: JF Dion												Sheet 1 of 1				



CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, Ontario

BOREHOLE LOG

No: MW21

SURFACE ELEVATION

CM JOB NO: MM-1027 | Ottawa, Ontario | SURFACE ELEVATION:

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA					WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
						ORGANIC VAPOUR LEVEL (ppmv)								
					1	10	100	1000	10000					
0					Ground Surface									0.0
0.0	SA1				CONCRETE SLAB									
0.0	SA1				Sandy GRAVEL some brick and glass, black, wet									flush mount bentonite seal silica sand
0.5	SA2				Silty CLAY some gravel, grey, wet									32 mm 010 slot PVC pipe
1.0	SA3													end cap
2.0					End of borehole at 2.0 m Well Completion Details: Screened interval from 0.5 m to 1.9 m below surface Elevation at top of pipe (TOP) = m Groundwater Information: Depth to groundwater from TOP = 0.96 m ()									

DRILLING METHOD: Pionjar Portable Drilling

Notes:  CORE SAMPLE
 SPLIT SPOON

DRILL DATE: 5 July 2010

LOGGED BY: JF Dion

Sheet 1 of 1

cm³				CLIENT: Ottawa Carleton District School Board PROJECT: Elmdale Public School 49 Iona Street Ottawa, Ontario	BOREHOLE LOG											
					MW22				SURFACE ELEVATION:							
DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION				FIELD TEST DATA				WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	DEPTH (m)
					ORGANIC VAPOUR LEVEL (ppmv)				1	10	100	1000	10000			
0					Ground Surface											0.0
0	SA1				CONCRETE SLAB											
-0.5					Sandy GRAVEL black, wet											
-1.0	SA2				Silty CLAY some gravel, grey, wet											-1.0
-1.5	SA3				End of borehole at 1.7 m											
					Well Completion Details: Screened interval from 0.4 m to 1.6 m below surface Elevation at top of pipe (TOP) = m											
					Groundwater Information: Depth to groundwater from TOP = 0.10 m ()											



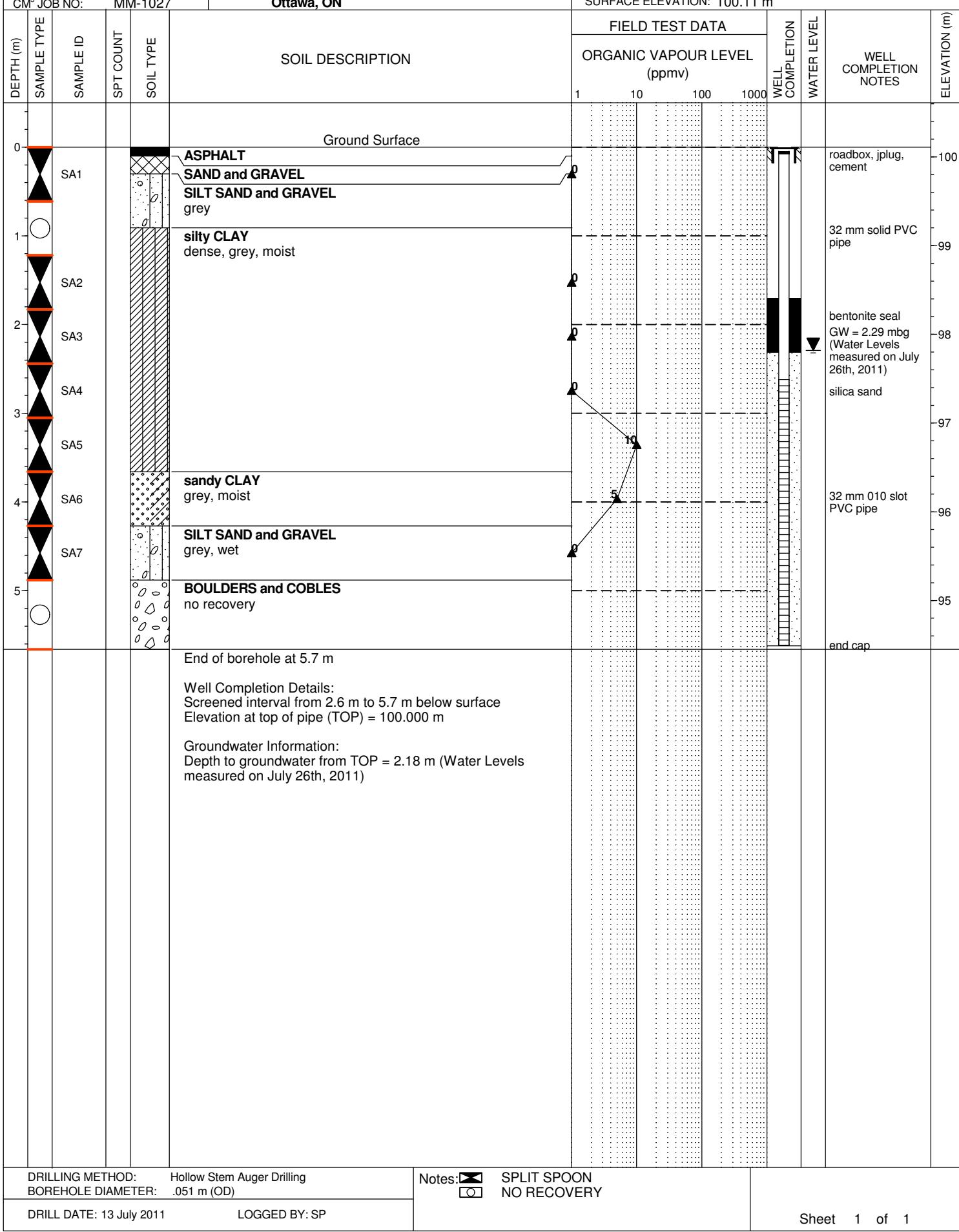
CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, ON

CM³ JOB NO: MM-1027

BOREHOLE LOG

MW23

SURFACE ELEVATION: 100.11 m





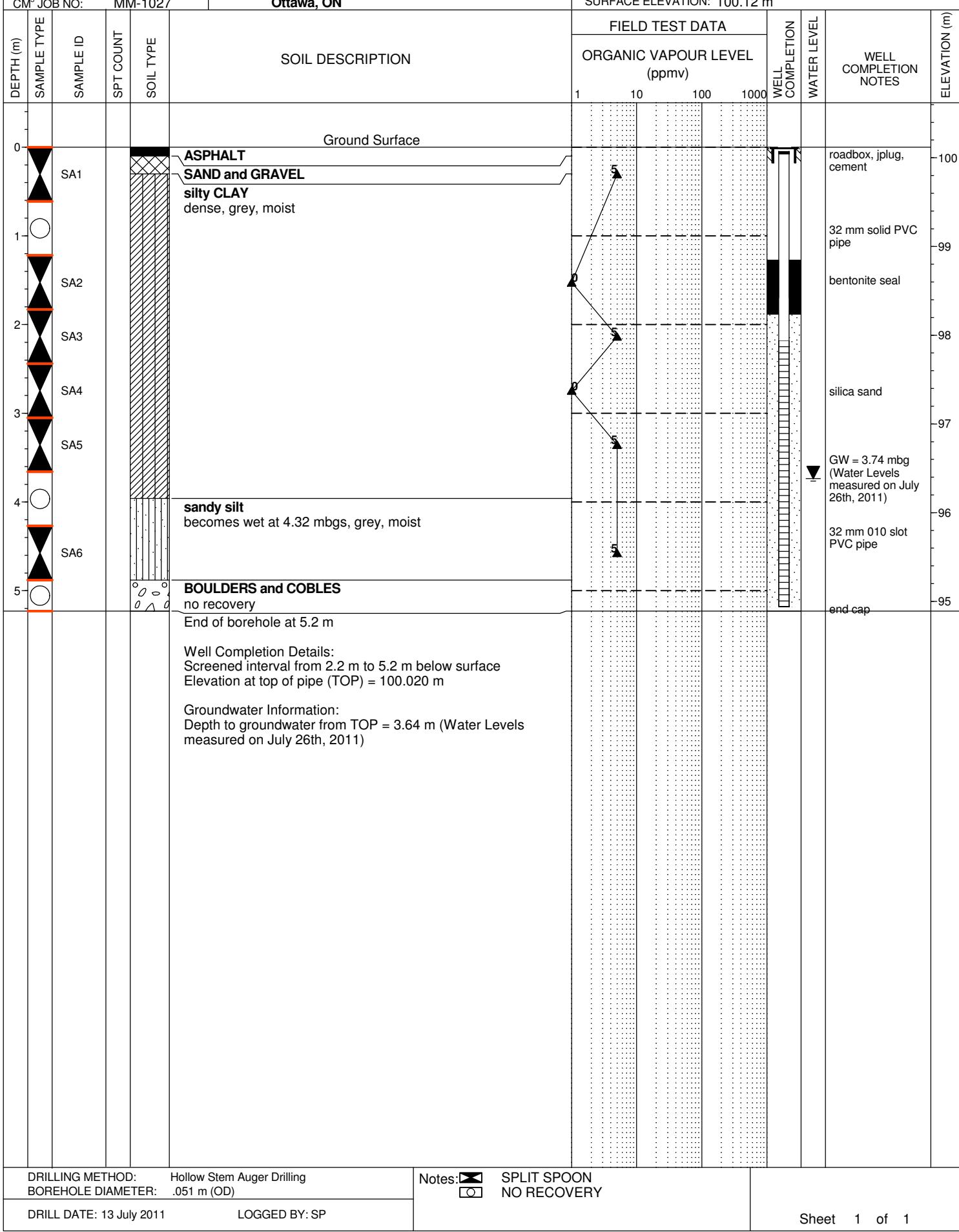
CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, ON

CM³ JOB NO: MM-1027

BOREHOLE LOG

MW24

SURFACE ELEVATION: 100.12 m





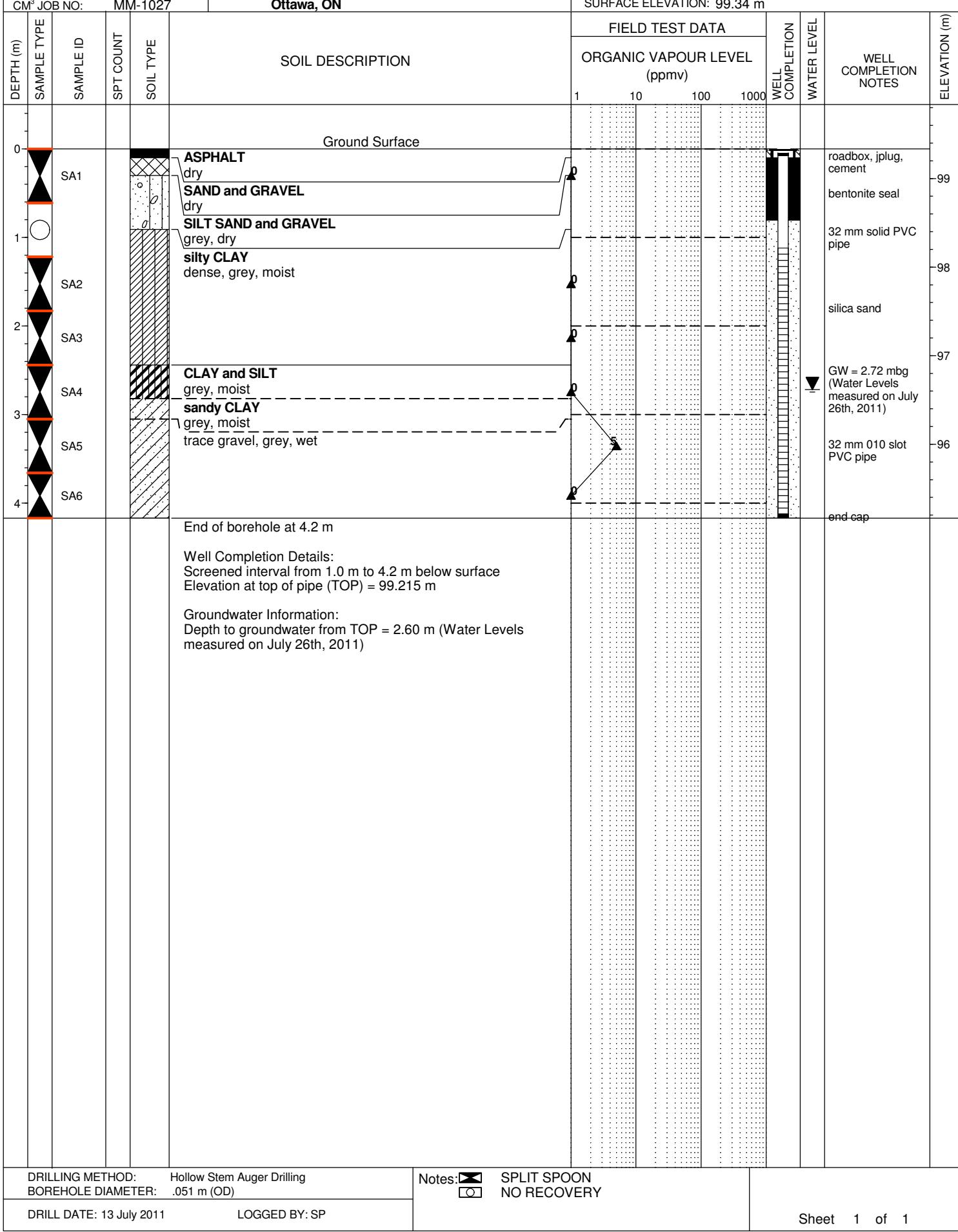
CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, ON

CM³ JOB NO: MM-1027

BOREHOLE LOG

MW25

SURFACE ELEVATION: 99.34 m





CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, ON

BOREHOLE LOG

No: MW26

SUBSURFACE ELEVATION: 99.82 m

CM JOB NO: MM-1027 | Ottawa, ON | SURFACE ELEVATION: 99.82 m

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA				WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	ELEVATION (m)
						ORGANIC VAPOUR LEVEL (ppmv)							
					1	10	100	1000					
0					Ground Surface								-100
0.0					ASPHALT								
0.1					SAND and GRAVEL								99
0.2					dry								
0.3					SILT SAND and GRAVEL								
0.4					grey, dry								
0.5					silty CLAY								
0.6					trace gravel, grey, moist								
0.7					moist at 3.05 mbgs, grey, moist								
1.0	SA1												roadbox, jplug, cement
1.2	SA2												32 mm solid PVC pipe
1.5	SA3												bentonite seal
2.0	SA4												
3.0	SA5												
4.0	SA6												
4.7	SA7					sandy CLAY							
					grey, moist								GW = 3.48 mbg (Water Levels measured on July 26th, 2011)
					trace gravel, grey, wet								32 mm 010 slot PVC pipe
													end cap
					End of borehole at 4.7 m								
					Well Completion Details:								
					Screened interval from 1.7 m to 4.7 m below surface								
					Elevation at top of pipe (TOP) = 99.720 m								
					Groundwater Information:								
					Depth to groundwater from TOP = 3.39 m (Water Levels measured on July 26th, 2011)								

DRILLING METHOD: Hollow Stem Auger Drilling
BOREHOLE DIAMETER: .051 m (OD)

Notes: NO RECOVERY
 SPLIT SPOON

DRILL DATE: 13 July 2011

LOGGED BY: SP

Sheet 1 of 1



CM³, JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, ON

BOREHOLE LOG

NO: MW27

SURFACE ELEVATION: 100.56 m

DRILLING METHOD: Hollow Stem Auger Drilling
BOREHOLE DIAMETER: .051 m (OD)

Notes: SPLIT SPOON

DRILL DATE: 14 July 2011

LOGGED BY: MM

Sheet 1 of 1



CM³.JOB NO. MM-1027

CLIENT: Ottawa Carleton District School Board
PROJECT: Elmdale Public School
49 Iona Street
Ottawa, ON

BOREHOLE LOG

: MW28

SURFACE ELEVATION: 98.75 m

CM JOB NO.: MIV-1027 | Ottawa, ON | SURFACE ELEVATION: 98.75 m

DEPTH (m)	SAMPLE TYPE	SAMPLE ID	SPT COUNT	SOIL TYPE	SOIL DESCRIPTION	FIELD TEST DATA				WELL COMPLETION	WATER LEVEL	WELL COMPLETION NOTES	ELEVATION (m)
						ORGANIC VAPOUR LEVEL (ppmv)							
						1	10	100	1000				
0					Ground Surface								-99
0.0	SA1				ASPHALT								
0.0	SA1				SAND and GRAVEL								
0.0	SA1				brown to grey, dry								
0.0	SA2				silty CLAY								
0.0	SA2				trace sand, grey, dry								
0.0	SA2				becomes wet at 3.05 mbgs, grey								
0.8	SA3												
1.0	SA4												
1.2	SA5												
3.0	SA7												
3.6					End of borehole at 3.6 m								
					Well Completion Details:								
					Screened interval from 0.8 m to 3.6 m below surface								
					Elevation at top of pipe (TOP) = 98.675 m								

DRILLING METHOD: Hollow Stem Auger Drilling
BOREHOLE DIAMETER: .051 m (OD)

Notes: SPLIT SPOON

DRILL DATE: 14 July 2011

LOGGED BY: MM

Sheet 1 of 1

APPENDIX B –ANALYTICAL LABORATORY REPORTS

Environmental Monitoring

Elmdale Public School

Ottawa, ON

MM-1027

CM3 Environmental Inc.
120 Robertson Road, Suite 208, Ottawa, Ontario, K2H 5Z1



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e: paracel@paracellabs.com
www.paracellabs.com

Certificate of Analysis

CM3 Environmental Inc.

120 Robertson Road, Suite 208

Ottawa, ON K2H 5Z1

Attn: Marc MacDonald

Phone: (613) 820-4343

Fax: (613) 820-7695

Client PO: MM-1027

Report Date: 25-Jul-2011

Project: MM-1027 Elmdale P.S.

Order Date: 15-Jul-2011

Custody: 88623

Order #: 1129267

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1129267-01	MW23 SA5
1129267-02	MW24 SA5
1129267-03	MW25 SA5
1129267-04	MW26 SA6

Approved By:

Dale Robertson, BSc
Laboratory Director

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027

Project Description: MM-1027 Elmdale P.S.

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
CCME PHC F1	CWS Tier 1 - P&T GC-FID	15-Jul-11	17-Jul-11
CCME PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	20-Jul-11	20-Jul-11
PAHs by GC-MS, standard scan	EPA 8270 - GC-MS, extraction	22-Jul-11	23-Jul-11
Solids, %	Gravimetric, calculation	21-Jul-11	21-Jul-11

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027

Project Description: MM-1027 Elmdale P.S.

Client ID:	MW23 SA5	MW24 SA5	MW25 SA5	MW26 SA6
Sample Date:	13-Jul-11	13-Jul-11	13-Jul-11	13-Jul-11
Sample ID:	1129267-01	1129267-02	1129267-03	1129267-04
MDL/Units	Soil	Soil	Soil	Soil

Physical Characteristics

% Solids	0.1 % by Wt.	63.7	69.3	78.0	66.9
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Hydrocarbons

F1 PHCs (C6-C10)	10 ug/g dry	<10	<10	<10	<10
F2 PHCs (C10-C16)	10 ug/g dry	<10	<10	<10	<10
F3 PHCs (C16-C34)	10 ug/g dry	<10	<10	45	<10
F4 PHCs (C34-C50)	10 ug/g dry	<10	<10	22	<10

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Acenaphthylene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Anthracene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [a] anthracene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [a] pyrene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [b] fluoranthene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [g,h,i] perylene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [k] fluoranthene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Biphenyl	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Chrysene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Dibenzo [a,h] anthracene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Fluoranthene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Fluorene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
1-Methylnaphthalene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
2-Methylnaphthalene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Methylnaphthalene (1&2)	0.04 ug/g dry	-	<0.04	<0.04	<0.04
Naphthalene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Phenanthrene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Pyrene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
2-Fluorobiphenyl	Surrogate	-	98.0%	94.2%	93.5%
Terphenyl-d14	Surrogate	-	94.0%	130%	85.4%

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: MM-1027

Project Description: MM-1027 Elmdale P.S.

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	ND	10	ug/g
F2 PHCs (C10-C16)	ND	10	ug/g
F3 PHCs (C16-C34)	ND	10	ug/g
F4 PHCs (C34-C50)	ND	10	ug/g

Semi-Volatiles

Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Biphenyl	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.02	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	0.993	0.01	ug/g	74.4	32-156				
Surrogate: Terphenyl-d14	1.38	0.01	ug/g	103	39-146				

Certificate of Analysis
 Client: CM3 Environmental Inc.
 Client PO: MM-1027

Project Description: MM-1027 Elmdale P.S.

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	ND	10	ug/g dry	ND		40		
F2 PHCs (C10-C16)	ND	10	ug/g dry	ND		50		
F3 PHCs (C16-C34)	ND	10	ug/g dry	ND		50		
F4 PHCs (C34-C50)	ND	10	ug/g dry	ND		50		

Physical Characteristics

% Solids	90.1	0.1	% by Wt.	91.4		1.4	25	
----------	------	-----	----------	------	--	-----	----	--

Semi-Volatiles

Acenaphthene	ND	0.02	ug/g dry	ND		50		
Acenaphthylene	ND	0.02	ug/g dry	ND		50		
Anthracene	ND	0.02	ug/g dry	ND		50		
Benzo [a] anthracene	ND	0.02	ug/g dry	ND		50		
Benzo [a] pyrene	ND	0.02	ug/g dry	ND		50		
Benzo [b] fluoranthene	ND	0.02	ug/g dry	ND		50		
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND		50		
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND		50		
Biphenyl	ND	0.02	ug/g dry	ND		50		
Chrysene	ND	0.02	ug/g dry	ND		50		
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND		50		
Fluoranthene	ND	0.02	ug/g dry	ND		50		
Fluorene	ND	0.02	ug/g dry	ND		50		
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND		50		
1-Methylnaphthalene	ND	0.02	ug/g dry	ND		50		
2-Methylnaphthalene	ND	0.02	ug/g dry	ND		50		
Naphthalene	ND	0.02	ug/g dry	ND		50		
Phenanthrene	ND	0.02	ug/g dry	ND		50		
Pyrene	ND	0.02	ug/g dry	ND		50		
Surrogate: 2-Fluorobiphenyl	1.50	0.01	ug/g dry	ND	92.1	32-156		
Surrogate: Terphenyl-d14	1.34	0.01	ug/g dry	ND	82.3	39-146		

Certificate of Analysis
 Client: CM3 Environmental Inc.
 Client PO: MM-1027

Project Description: MM-1027 Elmdale P.S.

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	187	10	ug/g	ND	93.6	80-120			
F2 PHCs (C10-C16)	318	10	ug/g	198	132	61-129			QM-04
F3 PHCs (C16-C34)	208	10	ug/g	41	73.7	61-129			
F4 PHCs (C34-C50)	88	10	ug/g	ND	65.0	61-129			

Semi-Volatiles

Acenaphthene	0.093	0.02	ug/g	ND	56.1	31-121			
Acenaphthylene	0.099	0.02	ug/g	ND	59.6	26-124			
Anthracene	0.098	0.02	ug/g	ND	59.0	29-128			
Benzo [a] anthracene	0.130	0.02	ug/g	ND	77.9	29-129			
Benzo [a] pyrene	0.094	0.02	ug/g	ND	56.5	29-111			
Benzo [b] fluoranthene	0.097	0.02	ug/g	ND	58.0	26-111			
Benzo [g,h,i] perylene	0.093	0.02	ug/g	ND	55.6	23-128			
Benzo [k] fluoranthene	0.088	0.02	ug/g	ND	52.7	23-135			
Biphenyl	0.091	0.02	ug/g	ND	54.3	31-107			
Chrysene	0.119	0.02	ug/g	ND	71.2	28-136			
Dibenzo [a,h] anthracene	0.118	0.02	ug/g	ND	70.7	20-131			
Fluoranthene	0.096	0.02	ug/g	ND	57.5	24-131			
Fluorene	0.098	0.02	ug/g	ND	59.1	28-123			
Indeno [1,2,3-cd] pyrene	0.100	0.02	ug/g	ND	59.8	20-128			
1-Methylnaphthalene	0.108	0.02	ug/g	ND	64.7	24-127			
2-Methylnaphthalene	0.104	0.02	ug/g	ND	62.2	21-127			
Naphthalene	0.106	0.02	ug/g	ND	63.7	29-118			
Phenanthrene	0.094	0.02	ug/g	ND	56.2	34-108			
Pyrene	0.083	0.02	ug/g	ND	49.5	29-131			
Surrogate: 2-Fluorobiphenyl	1.02	0.01	ug/g		76.4	32-156			
Surrogate: Terphenyl-d14	2.63	0.01	ug/g		197	39-146			

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: MM-1027

Project Description: MM-1027 Elmdale P.S.

Sample and QC Qualifiers Notes

- 1 - QM-04 : Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.



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Page 1 of 1

Client Name:	CM3	Project Reference:	Elmdale P.S.	TAT: <input checked="" type="checkbox"/> Regular <input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day <input type="checkbox"/> Same Day Date Required: _____
Contact Name:	Marc MacDonald	Quote #	11-113	
Address:		PO #	MM-1027	
Telephone:		Email Address:	marc@cm3environmental.com	

Samples Submitted Under: O. Reg. 153/04 Table O. Reg 511/09 Table 3 PWQO CCME Sewer Use (Storm) Sewer Use (Sanitary) Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)				Required Analyses			
Paracel Order Number:	Sample ID/Location Name	Matrix	Air Volume	Sample Taken		Metals	PACs
				Date	Time		
1	MW 23 SA5	S	2	Jul. 13-11		✓	250mL + vial
2	MW 24 SA5		1			✓	
3	MW 25 SA5					✓	
4	MW 26 SA6	↓	↓	↓		✓	↓
5							
6							
7							
8							
9							
10							

Comments:	Method of Delivery:
Relinquished By (Print & Sign): Sean Parsons	Received by Driver/Depot: Sof
Date/Time: Jul 15/11 9:09	Received at Lab: Sof
Temperature: 10.0 °C	Verified By: Sean
Date/Time: Jul 15/11 9:09	Date/Time: Jul 15/11
Temperature: 10.0 °C	pH Verified [] By: _____

Chain of Custody (Env) - Rev 0.0 April 2011

9:15a



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Certificate of Analysis

CM3 Environmental Inc.

120 Robertson Road, Suite 208

Ottawa, ON K2H 5Z1

Attn: Marc MacDonald

Phone: (613) 820-4343

Fax: (613) 820-7695

Client PO:

Report Date: 26-Jul-2011

Project: Elmdale

Order Date: 15-Jul-2011

Custody: 88695

Order #: 1129339

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1129339-01	MW27 SA6
1129339-02	MW28 SA5

Approved By:

A handwritten signature in blue ink, appearing to read "Dale Robertson".

Dale Robertson, BSc
Laboratory Director

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

Certificate of Analysis
 Client: CM3 Environmental Inc.
 Client PO:

Report Date: 26-Jul-2011
 Order Date: 15-Jul-2011

Project Description: Elmdale

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Jul-11	21-Jul-11
CCME PHC F1	CWS Tier 1 - P&T GC-FID	17-Jul-11	20-Jul-11
CCME PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	21-Jul-11	21-Jul-11
Chromium, hexavalent	MOE E3056 - Extraction, colourimetric	18-Jul-11	18-Jul-11
Mercury	EPA 7471A - CVAA, digestion	20-Jul-11	20-Jul-11
Metals	EPA 6020 - Digestion - ICP-MS	20-Jul-11	20-Jul-11
PAHs by GC-MS, standard scan	EPA 8270 - GC-MS, extraction	23-Jul-11	23-Jul-11
Solids, %	Gravimetric, calculation	21-Jul-11	21-Jul-11

Certificate of Analysis
Client: CM3 Environmental Inc.

Client PO:

Project Description: Elmdale

Client ID:	MW27 SA6	MW28 SA5	-	-
Sample Date:	14-Jul-11	14-Jul-11	-	-
Sample ID:	1129339-01	1129339-02	-	-
MDL/Units	Soil	Soil	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	63.8	74.8	-	-
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Metals

Antimony	1 ug/g dry	<1	-	-	-
Arsenic	1 ug/g dry	<1	-	-	-
Barium	1 ug/g dry	294	-	-	-
Beryllium	0.5 ug/g dry	0.6	-	-	-
Boron	5.0 ug/g dry	<5.0	-	-	-
Boron, available	0.5 ug/g dry	<0.5	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5 ug/g dry	53	-	-	-
Chromium (VI)	0.4 ug/g dry	<0.4	-	-	-
Cobalt	1 ug/g dry	14	-	-	-
Copper	5 ug/g dry	27	-	-	-
Lead	1 ug/g dry	6	-	-	-
Mercury	0.1 ug/g dry	<0.1	-	-	-
Molybdenum	1 ug/g dry	<1	-	-	-
Nickel	5 ug/g dry	30	-	-	-
Selenium	1 ug/g dry	<1	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1 ug/g dry	<1	-	-	-
Uranium	1 ug/g dry	<1	-	-	-
Vanadium	10 ug/g dry	68	-	-	-
Zinc	20 ug/g dry	63	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	10 ug/g dry	<10	-	-	-
F2 PHCs (C10-C16)	10 ug/g dry	<10	-	-	-
F3 PHCs (C16-C34)	10 ug/g dry	<10	-	-	-
F4 PHCs (C34-C50)	10 ug/g dry	<10	-	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g dry	<0.02	<0.02	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	<0.02	-	-
Anthracene	0.02 ug/g dry	<0.02	<0.02	-	-
Benzo [a] anthracene	0.02 ug/g dry	<0.02	<0.02	-	-
Benzo [a] pyrene	0.02 ug/g dry	<0.02	<0.02	-	-

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO:
Report Date: 26-Jul-2011
Order Date: 15-Jul-2011
Project Description: Elmdale

	Client ID: Sample Date: Sample ID:	MW27 SA6 14-Jul-11 1129339-01 Soil	MW28 SA5 14-Jul-11 1129339-02 Soil	-	-
	MDL/Units				
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	<0.02	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	<0.02	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	<0.02	-	-
Biphenyl	0.02 ug/g dry	<0.02	<0.02	-	-
Chrysene	0.02 ug/g dry	<0.02	<0.02	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	<0.02	-	-
Fluoranthene	0.02 ug/g dry	<0.02	<0.02	-	-
Fluorene	0.02 ug/g dry	<0.02	<0.02	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	<0.02	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	<0.04	-	-
Naphthalene	0.02 ug/g dry	<0.02	<0.02	-	-
Phenanthrene	0.02 ug/g dry	<0.02	<0.02	-	-
Pyrene	0.02 ug/g dry	<0.02	<0.02	-	-
2-Fluorobiphenyl	Surrogate	81.8%	63.0%	-	-
Terphenyl-d14	Surrogate	89.6%	67.8%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	ND	10	ug/g
F2 PHCs (C10-C16)	ND	10	ug/g
F3 PHCs (C16-C34)	ND	10	ug/g
F4 PHCs (C34-C50)	ND	10	ug/g

Metals

Antimony	ND	1	ug/g
Arsenic	ND	1	ug/g
Barium	ND	1	ug/g
Beryllium	ND	0.5	ug/g
Boron, available	ND	0.5	ug/g
Boron	ND	5.0	ug/g
Cadmium	ND	0.5	ug/g
Chromium (VI)	ND	0.4	ug/g
Chromium	ND	5	ug/g
Cobalt	ND	1	ug/g
Copper	ND	5	ug/g
Lead	ND	1	ug/g
Mercury	ND	0.1	ug/g
Molybdenum	ND	1	ug/g
Nickel	ND	5	ug/g
Selenium	ND	1	ug/g
Silver	ND	0.3	ug/g
Thallium	ND	1	ug/g
Uranium	ND	1	ug/g
Vanadium	ND	10	ug/g
Zinc	ND	20	ug/g

Semi-Volatiles

Acenaphthene	ND	0.02	ug/g
Acenaphthylene	ND	0.02	ug/g
Anthracene	ND	0.02	ug/g
Benzo [a] anthracene	ND	0.02	ug/g
Benzo [a] pyrene	ND	0.02	ug/g
Benzo [b] fluoranthene	ND	0.02	ug/g
Benzo [g,h,i] perylene	ND	0.02	ug/g
Benzo [k] fluoranthene	ND	0.02	ug/g
Biphenyl	ND	0.02	ug/g
Chrysene	ND	0.02	ug/g
Dibenzo [a,h] anthracene	ND	0.02	ug/g
Fluoranthene	ND	0.02	ug/g
Fluorene	ND	0.02	ug/g
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g
1-Methylnaphthalene	ND	0.02	ug/g
2-Methylnaphthalene	ND	0.02	ug/g
Methylnaphthalene (1&2)	ND	0.04	ug/g
Naphthalene	ND	0.02	ug/g
Phenanthrene	ND	0.02	ug/g
Pyrene	ND	0.02	ug/g
Surrogate: 2-Fluorobiphenyl	1.51	0.01	ug/g
Surrogate: Terphenyl-d14	0.988	0.01	ug/g
			113 32-156
			74.1 39-146

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	10	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	10	ug/g dry	ND				50	
F3 PHCs (C16-C34)	851	10	ug/g dry	1200			34.1	50	
F4 PHCs (C34-C50)	1100	10	ug/g dry	1360			21.5	50	
Metals									
Antimony	ND	1	ug/g dry	ND				30	
Arsenic	ND	1	ug/g dry	ND				30	
Barium	38.6	1	ug/g dry	38.8			0.6	30	
Beryllium	ND	0.5	ug/g dry	ND				30	
Boron, available	1.52	0.5	ug/g dry	1.40			8.5	35	
Boron	7.3	5.0	ug/g dry	6.2			17.3	30	
Cadmium	ND	0.5	ug/g dry	ND				30	
Chromium (VI)	ND	0.4	ug/g dry	ND				35	
Chromium	7.9	5	ug/g dry	7.7			2.8	30	
Cobalt	2.0	1	ug/g dry	1.9			1.3	30	
Copper	ND	5	ug/g dry	ND				30	
Lead	2.3	1	ug/g dry	2.2			4.1	30	
Mercury	ND	0.1	ug/g dry	ND				35	
Molybdenum	1.4	1	ug/g dry	ND				30	
Nickel	10.9	5	ug/g dry	11.1			2.2	30	
Selenium	ND	1	ug/g dry	ND				30	
Silver	ND	0.3	ug/g dry	ND				30	
Thallium	ND	1	ug/g dry	ND				30	
Uranium	ND	1	ug/g dry	ND				30	
Vanadium	11.2	10	ug/g dry	10.5			6.9	30	
Zinc	ND	20	ug/g dry	ND				30	
Physical Characteristics									
% Solids	90.1	0.1	% by Wt.	91.4			1.4	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND				50	
Acenaphthylene	ND	0.02	ug/g dry	ND				50	
Anthracene	ND	0.02	ug/g dry	ND				50	
Benzo [a] anthracene	ND	0.02	ug/g dry	ND				50	
Benzo [a] pyrene	ND	0.02	ug/g dry	ND				50	
Benzo [b] fluoranthene	ND	0.02	ug/g dry	ND				50	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND				50	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND				50	
Biphenyl	ND	0.02	ug/g dry	ND				50	
Chrysene	ND	0.02	ug/g dry	ND				50	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND				50	
Fluoranthene	ND	0.02	ug/g dry	ND				50	
Fluorene	ND	0.02	ug/g dry	ND				50	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND				50	
1-Methylnaphthalene	ND	0.02	ug/g dry	ND				50	
2-Methylnaphthalene	ND	0.02	ug/g dry	ND				50	
Naphthalene	ND	0.02	ug/g dry	ND				50	
Phenanthrene	ND	0.02	ug/g dry	ND				50	
Pyrene	ND	0.02	ug/g dry	ND				50	
Surrogate: 2-Fluorobiphenyl	1.03	0.01	ug/g dry	ND	73.3	32-156			
Surrogate: Terphenyl-d14	1.21	0.01	ug/g dry	ND	86.2	39-146			

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO:
Project Description: Elmdale
Report Date: 26-Jul-2011
Order Date: 15-Jul-2011
Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	107	10	ug/g	ND	107	80-120			
F2 PHCs (C10-C16)	341	10	ug/g	178	175	61-129			QM-04
F3 PHCs (C16-C34)	231	10	ug/g	36	84.0	61-129			
F4 PHCs (C34-C50)	118	10	ug/g	ND	84.9	61-129			

Metals

Antimony	51.4		ug/L	0.008	103	70-130			
Arsenic	49.9		ug/L	0.3	99.2	70-130			
Barium	66.0		ug/L	15.5	101	70-130			
Beryllium	46.0		ug/L	0.05	91.8	70-130			
Boron, available	7.14	0.5	ug/g	1.40	115	70-122			
Boron	44.5		ug/L	2.5	84.1	70-130			
Cadmium	48.2		ug/L	0.06	96.4	70-130			
Chromium (VI)	5.3	0.4	ug/g	ND	106	89-123			
Chromium	54.2		ug/L	3.1	102	70-130			
Cobalt	48.9		ug/L	0.8	96.3	70-130			
Copper	47.0		ug/L	1.4	91.1	70-130			
Lead	49.2		ug/L	0.9	96.7	70-130			
Mercury	1.64	0.1	ug/g	ND	110	72-128			
Molybdenum	49.9		ug/L	0.4	99.0	70-130			
Nickel	50.7		ug/L	4.5	92.6	70-130			
Selenium	49.5		ug/L	0.07	98.8	70-130			
Silver	44.5		ug/L	0.02	88.9	70-130			
Thallium	51.5		ug/L	ND	103	70-130			
Uranium	44.2		ug/L	0.2	88.0	70-130			
Vanadium	56.3		ug/L	4.2	104	70-130			
Zinc	49.9		ug/L	2.3	95.1	70-130			

Semi-Volatiles

Acenaphthene	0.106	0.02	ug/g	ND	60.3	31-121			
Acenaphthylene	0.112	0.02	ug/g	ND	63.5	26-124			
Anthracene	0.120	0.02	ug/g	ND	67.9	29-128			
Benzo [a] anthracene	0.161	0.02	ug/g	ND	91.1	29-128			
Benzo [a] pyrene	0.123	0.02	ug/g	ND	69.8	29-111			
Benzo [b] fluoranthene	0.120	0.02	ug/g	ND	67.9	26-111			
Benzo [g,h,i] perylene	0.106	0.02	ug/g	ND	60.3	23-128			
Benzo [k] fluoranthene	0.122	0.02	ug/g	ND	69.3	23-135			
Biphenyl	0.099	0.02	ug/g	ND	56.4	31-107			
Chrysene	0.193	0.02	ug/g	ND	109	28-136			
Dibenzo [a,h] anthracene	0.094	0.02	ug/g	ND	53.2	20-131			
Fluoranthene	0.145	0.02	ug/g	ND	82.5	24-131			
Fluorene	0.120	0.02	ug/g	ND	68.0	28-123			
Indeno [1,2,3-cd] pyrene	0.095	0.02	ug/g	ND	54.0	20-128			
1-Methylnaphthalene	0.118	0.02	ug/g	ND	66.9	24-127			
2-Methylnaphthalene	0.107	0.02	ug/g	ND	60.9	21-127			
Naphthalene	0.104	0.02	ug/g	ND	59.1	29-118			
Phenanthrene	0.117	0.02	ug/g	ND	66.5	34-108			
Pyrene	0.135	0.02	ug/g	ND	76.5	29-131			
Surrogate: 2-Fluorobiphenyl	1.23	0.01	ug/g		87.2	32-156			
Surrogate: 2-Fluorobiphenyl	1.36	0.01	ug/g		102	32-156			

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO:
Project Description: Elmdale
Report Date: 26-Jul-2011
Order Date: 15-Jul-2011
Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Surrogate: Terphenyl-d14 1.44 0.01 ug/g 102 39-146
 Surrogate: Terphenyl-d14 1.65 0.01 ug/g 123 39-146

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO:

Project Description: Elmdale

Sample and QC Qualifiers Notes

- 1 - QM-04 : Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.



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Chain of Custody

(Lab Use Only)

Nº 88695

Page 1 of 1

Client Name:	Cm3 Env.	Project Reference:	Elmdale	TAT:	<input checked="" type="checkbox"/> Regular
Contact Name:	Marc MacDonald	Quote #	OCDSB	<input type="checkbox"/>	2 Day
Address:	120 Robertson Rd	PO #		<input type="checkbox"/>	1 Day
Telephone:	613 618 3554	Email Address:	Marc@cm3environmental.com	<input type="checkbox"/>	Same Day
			Date Required:		

Samples Submitted Under: O. Reg. 153/04 Table O. Reg 511/09 Table 3 PWQO CCME Sewer Use (Storm) Sewer Use (Sanitary) Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)				Required Analyses							
Paracel Order Number:	Sample ID/Location Name	Matrix	Air Volume	Sample Taken		pH	PAH	metals			
				# of Containers	Date						
1	MW27 SA6	S	-	2	July 14, 2011	✓	✓	✓	120 ml + vial		
2	MW27 SA7	S	-	1	"	HOLD			120 ml		
3											
4	MW28 SA6	S	-	3	"		✓		2 x 120 ml + vial		
5	MW28 SA6	S	-	2	"	HOLD			2 x 120 ml		
6											
7											
8											
9											
10											

Comments:	Method of Delivery:
	Walk-in

Relinquished By (Print & Sign): 	Received by Driver/Depot: Karen Waggon	Received at Lab: M/C L	Verified By: M/C L
Date/Time: 07/15/11	2:08	Date/Time: July 15/11 3:20	Date/Time: July 15/11 6:58
Date/Time:	Temperature: 5.4 °C	Temperature: 5.1 °C	pH Verified <input checked="" type="checkbox"/> By: Karen Waggon



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Certificate of Analysis

CM3 Environmental Inc.

120 Robertson Road, Suite 208

Ottawa, ON K2H 5Z1

Attn: Marc MacDonald

Phone: (613) 820-4343

Fax: (613) 820-7695

Client PO: MM-1027

Report Date: 29-Jul-2011

Project: Elmdale P.S.

Order Date: 26-Jul-2011

Custody: 87479

Order #: 1131140

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1131140-01	MW23
1131140-02	MW24
1131140-03	MW25
1131140-04	MW26
1131140-05	MW27

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027

Report Date: 29-Jul-2011
 Order Date: 26-Jul-2011

Project Description: Elmdale P.S.

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX	EPA 624 - P&T GC-MS	26-Jul-11	27-Jul-11
CCME PHC F1	CWS Tier 1 - P&T GC-FID	26-Jul-11	27-Jul-11
CCME PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	27-Jul-11	27-Jul-11

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027

Project Description: Elmdale P.S.

Client ID:	MW23	MW24	MW25	MW26
Sample Date:	26-Jul-11	26-Jul-11	26-Jul-11	26-Jul-11
Sample ID:	1131140-01	1131140-02	1131140-03	1131140-04
MDL/Units	Water	Water	Water	Water

Volatiles

Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	1.4	<0.5	<0.5	2.0
m,p-Xylenes	0.5 ug/L	1.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	0.6	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	2.1	<0.5	<0.5	<0.5
Toluene-d8	Surrogate	114%	114%	115%	114%

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	137
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100
F1 + F2 PHCs	125 ug/L	<125	<125	<125	<125
F3 + F4 PHCs	200 ug/L	<200	<200	<200	<200

Client ID:	MW27	-	-	-
Sample Date:	26-Jul-11	-	-	-
Sample ID:	1131140-05	-	-	-
MDL/Units	Water	-	-	-

Volatiles

Benzene	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
Toluene-d8	Surrogate	116%	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-
F1 + F2 PHCs	125 ug/L	<125	-	-	-
F3 + F4 PHCs	200 ug/L	<200	-	-	-

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027
Report Date: 29-Jul-2011
Order Date: 26-Jul-2011
Project Description: Elmdale P.S.
Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	ND	25	ug/L
F2 PHCs (C10-C16)	ND	100	ug/L
F3 PHCs (C16-C34)	ND	100	ug/L
F4 PHCs (C34-C50)	ND	100	ug/L

Volatiles

Benzene	ND	0.5	ug/L
Ethylbenzene	ND	0.5	ug/L
Toluene	ND	0.5	ug/L
m,p-Xylenes	ND	0.5	ug/L
o-Xylene	ND	0.5	ug/L
Xylenes, total	ND	0.5	ug/L
<i>Surrogate: Toluene-d8</i>	36.5		ug/L
		114	50-140

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027
Report Date: 29-Jul-2011
Order Date: 26-Jul-2011
Project Description: Elmdale P.S.
Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	ND	25	ug/L	ND			30
F2 PHCs (C10-C16)	ND	100	ug/L	ND			30
F3 PHCs (C16-C34)	ND	100	ug/L	ND			30
F4 PHCs (C34-C50)	ND	100	ug/L	ND			30

Volatiles

Benzene	ND	0.5	ug/L	ND			30
Ethylbenzene	ND	0.5	ug/L	ND			30
Toluene	ND	0.5	ug/L	ND			30
m,p-Xylenes	ND	0.5	ug/L	ND			30
o-Xylene	ND	0.5	ug/L	ND			30
Surrogate: Toluene-d8	36.1		ug/L	ND	113	50-140	

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027
Project Description: Elmdale P.S.
Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Hydrocarbons

F1 PHCs (C6-C10)	2110	25	ug/L	ND	106	68-117		
F2 PHCs (C10-C16)	1480	100	ug/L	ND	92.7	60-140		
F3 PHCs (C16-C34)	3600	100	ug/L	ND	89.9	60-140		
F4 PHCs (C34-C50)	2190	100	ug/L	ND	91.1	60-140		

Volatiles

Benzene	40.2	0.5	ug/L	ND	101	60-130		
Ethylbenzene	35.1	0.5	ug/L	ND	87.7	60-130		
Toluene	45.0	0.5	ug/L	ND	112	60-130		
m,p-Xylenes	74.2	0.5	ug/L	ND	92.8	60-130		
o-Xylene	35.7	0.5	ug/L	ND	89.3	60-130		
<i>Surrogate: Toluene-d8</i>	29.7		ug/L		92.9	50-140		

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: MM-1027

Project Description: Elmdale P.S.

Sample and QC Qualifiers Notes

None

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.



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Chain of Custody

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Nº 87479

Page 1 of 1

Client Name:	CM3	Project Reference:	Elmdale P.S.	TAT:	<input checked="" type="checkbox"/> Regular
Contact Name:	Marc MacDonald	Quote #	11-113		<input type="checkbox"/> 2 Day
Address:		PO #	MM-1027		<input type="checkbox"/> 1 Day
Telephone:		Email Address:	Mar@cm3environmental.com		<input type="checkbox"/> Same Day
Date Required: _____					

Samples Submitted Under: O. Reg. 153/04 Table O. Reg 51/09 Table 3 PWQO CCME Sewer Use (Storm) Sewer Use (Sanitary) Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)				Required Analyses			
Paracel Order Number:	Matrix	Air Volume	# of Containers	Sample Taken			
				Date	Time	PC	TE
1 MW23	GW	6L	3	Jul 26/11		/	
2 MW24		1	1	/	/	/	
3 MW25				/	/		
4 MW26				/	/		
5 MW27		↓	↓	↓	/	/	
6							
7							
8							
9							
10							

Comments:

Method of Delivery:

Walk-in

Relinquished By (Print & Sign): 	Received by Driver/Depot: 103-106-1081EQ WWW	Received at Lab: Sgt	Verified By: MC
Date/Time: July 26/11 12:22	Date/Time: July 26/11 12:23p	Temperature: 18.5 °C	Date/Time: July 26/11 5:46
Date/Time: July 26/11 12:22	Temperature: 18.5 °C	pH Verified <input type="checkbox"/> By: _____	



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Certificate of Analysis

CM3 Environmental Inc.

120 Robertson Road, Suite 208

Ottawa, ON K2H 5Z1

Attn: Marc MacDonald

Phone: (613) 820-4343

Fax: (613) 820-7695

Client PO: MM-1027

Report Date: 10-Aug-2011

Project: Elmdale P.S.

Order Date: 5-Aug-2011

Custody: 87690

Order #: 1132215

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1132215-01	MW24
1132215-02	MW25
1132215-03	MW26

Approved By:

Dale Robertson, BSc
Laboratory Director

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

Certificate of Analysis
 Client: CM3 Environmental Inc.
 Client PO: MM-1027

Report Date: 10-Aug-2011
 Order Date: 5-Aug-2011

Project Description: Elmdale P.S.

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PAHs by GC-MS, standard scan	EPA 625 - GC-MS, extraction	8-Aug-11	8-Aug-11

Certificate of Analysis
Client: CM3 Environmental Inc.
Client PO: MM-1027
Report Date: 10-Aug-2011
Order Date: 5-Aug-2011
Project Description: Elmdale P.S.

Client ID:	MW24	MW25	MW26	-
Sample Date:	05-Aug-11	05-Aug-11	05-Aug-11	-
Sample ID:	1132215-01	1132215-02	1132215-03	-
MDL/Units	Water	Water	Water	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Biphenyl	0.05 ug/L	0.07	0.07	0.28	-
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	<0.01	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	0.10	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	0.15	-
Naphthalene	0.05 ug/L	0.12	1.41	0.90	-
Phenanthrene	0.05 ug/L	<0.05	0.10	0.14	-
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01	-
2-Fluorobiphenyl	Surrogate	78.9%	84.0%	74.3%	-
Terphenyl-d14	Surrogate	105%	114%	97.8%	-

Certificate of Analysis
 Client: CM3 Environmental Inc.
 Client PO: MM-1027

Project Description: Elmdale P.S.

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Semi-Volatiles

Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Biphenyl	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	15.1		ug/L		75.3	31-154			
Surrogate: Terphenyl-d14	20.5		ug/L		103	37-156			

Certificate of Analysis
 Client: CM3 Environmental Inc.
 Client PO: MM-1027

Project Description: Elmdale P.S.

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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Semi-Volatiles

Acenaphthene	3.89	0.05	ug/L	ND	77.8	50-140			
Acenaphthylene	3.94	0.05	ug/L	ND	78.8	50-140			
Anthracene	3.70	0.01	ug/L	ND	74.0	50-140			
Benzo [a] anthracene	4.75	0.01	ug/L	ND	95.0	50-140			
Benzo [a] pyrene	4.13	0.01	ug/L	ND	82.6	50-140			
Benzo [b] fluoranthene	4.75	0.05	ug/L	ND	94.9	50-140			
Benzo [g,h,i] perylene	2.82	0.05	ug/L	ND	56.5	50-140			
Benzo [k] fluoranthene	3.89	0.05	ug/L	ND	77.7	50-140			
Biphenyl	3.08	0.05	ug/L	ND	61.6	50-140			
Chrysene	5.70	0.05	ug/L	ND	114	50-140			
Dibenzo [a,h] anthracene	3.21	0.05	ug/L	ND	64.3	50-140			
Fluoranthene	4.02	0.01	ug/L	ND	80.5	50-140			
Fluorene	3.51	0.05	ug/L	ND	70.3	50-140			
Indeno [1,2,3-cd] pyrene	3.17	0.05	ug/L	ND	63.3	50-140			
1-Methylnaphthalene	4.15	0.05	ug/L	ND	83.0	50-140			
2-Methylnaphthalene	3.97	0.05	ug/L	ND	79.5	50-140			
Naphthalene	4.46	0.05	ug/L	ND	89.2	50-140			
Phenanthrene	3.99	0.05	ug/L	ND	79.9	50-140			
Pyrene	3.65	0.01	ug/L	ND	72.9	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	16.5		ug/L		82.5	31-154			

Certificate of Analysis

Client: CM3 Environmental Inc.

Client PO: MM-1027

Project Description: Elmdale P.S.

Sample and QC Qualifiers Notes

None

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.



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Page ____ of ____

Client Name: CM3	Project Reference: Elmdale P.S.	TAT: <input checked="" type="checkbox"/> Regular
Contact Name: Marc MacDonald	Quote # 11-113	<input type="checkbox"/> 2 Day
Address:	PO # MM-1027	<input type="checkbox"/> 1 Day
Telephone:	Email Address: MARC@CM3ENVIRONMENTAL.COM	<input type="checkbox"/> Same Day
Date Required: _____		

Samples Submitted Under: O. Reg. 153/04 Table _____ O. Reg. 51/09 Table 3 PWQO CCME Sewer Use (Storm) Sewer Use (Sanitary) Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)				Required Analyses															
Paracel Order Number: 1132215				Matrix	Air Volume	# of Containers	Sample Taken		PAHs	PCBs	DMS	PCP	PCN	PCB	PCP	PCN	PCB	PCP	PCN
Sample ID/Location Name							Date	Time											
1	MW24	6W	1	Aug 5-11															
2	MW25	1	1																
3	MW26	1	1																
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Comments: Temp OK - in cooling down process

Method of Delivery:

Walk-in

Relinquished By (Print & Sign): Sean Parsons	Received by Driver/Depot: Karen Wiggins	Received at Lab: MC	Verified By: MC
Date/Time: 3:00 Aug 5-11	Date/Time: 08/05/11 2:04	Date/Time: Aug 5/11 5:15	Date/Time: Aug 5/11 6:41
Temperature: 21.1 °C	Temperature: 16.7 °C	Temperature: 16.7 °C	pH Verified <input checked="" type="checkbox"/> By: Karen Wiggins