February 21, 2017

TZ14024.8000

VIA EMAIL

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

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

Dear Ms. Myatt:

RE: Summary of Results – Drive Point Installation and Sampling
NCC Property Asset 97390
P19, Leitrim Road, Ottawa ON

Amec Foster Wheeler Environmental & Infrastructure, a Division of Amec Foster Wheeler Americas Limited ("Amec Foster Wheeler"), was retained by the National Capital Commission (NCC) to carry out installation and sampling of two drive points along the southern property boundary of property asset 97390 (the "Site") located on the north side of Leitrim Road. The installation of these drive points was recommended following completion of the 2016 groundwater monitoring event at the Site and five nearby off-Site wells as part of ongoing environmental due diligence by the NCC to characterize a trichloroethylene (TCE) plume migrating beneath the Site.

Background

The Site, which is listed with a municipal address of 3799 Hawthorne Road (according to the City of Ottawa's online mapping tool (www.maps.ottawa.ca/geoOttawa), comprises a near-rectangular shaped property measuring approximately 204.7 hectares in total area. The location of the Site is shown on Figure 1. The Site consists of a parcel of vacant forested land located within the NCC Greenbelt. It is known colloquially as Pine Grove Forest and is accessed by the public from the on Site parking lot ('P19') for walking and cross country skiing on a series of trails. The Site is located on the north side of Leitrim Road at the southern boundary of the Greenbelt, directly across from a series of smaller private residential and/or commercial lots. A natural gas pipeline runs north south across the central portion of the Site. An overview of the extent of the Site is shown on Figure 2.

The Site has been the subject of a variety of intrusive environmental investigations, most of which have focussed on the historic use of the southern central portion of the Site by the Ontario Ministry of Natural Resources (MNR) (Amec Foster Wheeler, 2015) and concerns regarding impacts to soil and groundwater as a result of historical operations at this location.

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A Phase II Environmental Site Assessment (ESA) and subsequent groundwater monitoring event were completed at the Site by Amec Foster Wheeler in 2016 to further define the extent of a contaminant plume characterized by elevated levels of trichloroethylene (TCE), a volatile organic compound (VOC), migrating in shallow groundwater beneath the southern portion of the Site. The installation and sampling of two drive points was undertaken on behalf of the NCC for internal due diligence purposes in support of developing a comprehensive understanding of the environmental site conditions with respect to the Site, and any soil and/or groundwater restoration or risk management measures that may be required to mitigate any associated potential risks.

Field Preparations

The locations of the drive points were chosen to facilitate enhanced understanding of the groundwater flow conditions at the eastern boundary of the TCE plume located at the Site, as well as to verify the concentration of TCE at these locations by a more economical and practical means than through conventional installation of monitoring wells. The selection of this technology was made in consideration of the shallow depth to groundwater at the Site and by the simple stratigraphy of sand overlying a silty clay, and was ultimately chosen as based on these characteristics and by the challenges presented by the presence of mature vegetation in the area targeted for the installations.

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

The drive point components were cleaned with a solution of Alconox and water prior to assembly and installation to ensure any residues from the manufacturing process were removed and thus prevent any false positives for detection of any of the contaminants of concern in the groundwater samples collected.

Drive Point Installation

Stainless steel drive points 32 mm in diameter and a screen length of 914 mm were chosen for installation at the Site. The screen sizes were #10 and #6 due to an error in packing by the supplier (both were intended to be #10). Due to the coarse nature of the sand at the Site, Amec Foster Wheeler chose to proceed with the installation of the equipment shipped as opposed to delay installation in order to correct the error. Custom machined 32 mm diameter by 910 mm long stainless steel extensions and couplings were used to advance the drive point to the desired depth and extend the drive point above ground surface to result in a configuration similar to a “stick up” monitoring well.

Due to the nature of drive point installation (no soils recovery), it was not possible to establish the precise subsurface conditions at the locations chosen for the drive points. However, borehole logs for nearby monitoring wells were consulted and used in conjunction with field observations including water levels from nearby monitoring wells to optimize the vertical position of the screened portion of the drive point in the subsurface. Periodic measurement of the location of the groundwater table relative to both the ground surface and as a percentage of the length of the drive point screen was undertaken during the installation process.

Two drive points (DP16-68 and DP16-69) were advanced at strategic locations at the Site. Both drive points were installed to a total depth before ground surface of 1.68 mbgs on August 29, 2016. The locations were chosen to intersect the potential groundwater plume associated with Asset 97390, if and where present, in order to facilitate a reasonable assessment of the extent, magnitude and migration of the plume. The locations of the drive points, along with the existing monitoring well network, are shown on Figure 3. Due to the shallow depth of the drive point installations and their construction by hand, Ontario Well Records are not required for these installations. All installation activities were completed by Amec Foster Wheeler field staff.

Groundwater Monitoring and Sampling Program

Both drive points installed at the Site were instrumented with dedicated Waterra inertial lift pumps and sufficient lengths of low density polyethylene (LDPE) tubing to facilitate development of each drive point, purging, and sampling requirements. Approximately three days following installation, each drive point was developed by extracting approximately five to ten screen volumes to remove any residual sediment introduced during the drive point installation process, stabilize the native sand surrounding the drive point, and restore groundwater that may have been disturbed or altered during the installation process. Once developed, the drive points were instrumented with dedicated 6 mm inside diameter LDPE tubing to facilitate low flow sampling using a peristaltic pump.

In September of 2016, the NCC's geomatics services department surveyed the elevation of the ground surface, top of casing, and top of pipe for monitoring wells MW15-60 through MW15-63, DP16-68 and DP16-69. These elevations were used to augment the information shown on the groundwater elevation contour plot for the shallow sand aquifer in conjunction with other data gathered in May of 2016, and to develop an understanding of localized groundwater flow conditions in the vicinity of DP16-68 and DP16-69 after installation in September of 2016. The geomatics team established the Site benchmark (TBM#1) at a spike set horizontally in the northerly face of hydro pole # 638, 10 m east of driveway at 4048 Leitrim Road at an elevation of 86.11 metres above sea level (masl), verifying it with NCC monument 019680121. The accuracy of the elevations is +/- 1 cm or 0.01 m, which was achieved using a Leica GS12 GPS and a Nikon AS-2C level.

Groundwater monitoring, including measuring the depth to the static water level and assessing the presence/absence of dense (D) and/or light (L) non-aqueous phase liquids (NAPL) was conducted at each of the drive points on September 1, 2016. Measurements of depth to groundwater and the presence/absence of LNAPL/DNAPL layering were made using a Heron Instruments electronic interface probe. The depths to groundwater in the drive points were integrated with the survey data and reduced to static elevations based on the monitoring well survey data as supplied by the NCC. Groundwater elevations were taken prior to initiation of sampling and are summarized in Table 2.

Groundwater sampling was carried out on September 1, 2016. Groundwater samples were collected using a low-flow sampling technique to minimize potential sample biasing due to sediment entrainment and/or loss of volatiles at all locations. Using this sampling method, the drive points were purged and sampled at a maximum flow rate of 100 ml per minute while measuring water level in order to ensure a maximum drawdown of not more than 0.3 m. Due to low yield groundwater conditions at drive point DP16-69, total drawdown of less than 0.3 m could

not be achieved. DP16-69 was subsequently sampled after being purged dry and then allowed to reach 90% recovery.

The drive points were purged and sampled using a variable speed peristaltic pump with dedicated 6 mm inside diameter low-density polyethylene (LDPE) sample tubing and disposable pump head tubing. Field parameters including temperature, pH, conductivity, dissolved oxygen (DO) and oxidation-reduction potential (ORP) were measured throughout the purging and sampling process using a YSI 556 multi-parameter water quality probe calibrated to known standards and where yields permitted. Samples were collected upon stabilization of the field parameters. Drive points which went dry did not have field parameters measured, as this condition represents non equilibrium and any data would not be representative of local groundwater conditions. Field parameters measured are included in Table 3.

Groundwater samples from each drive point were collected directly into laboratory supplied 40 ml sample vials with septum lined lids pre-inoculated with any necessary preservatives for VOC analyses. Dedicated (one pair per sample), disposable nitrile gloves were used at each drive point location throughout the proceedings. Sample vials were inverted after filling and inspected to ensure that no head space was present in any vial. Samples were placed in a cooler and stored on ice until delivered to the analytical laboratory. Continuous chain of custody documentation was maintained and consistent labelling and nomenclature was used on chain of custody and sample containers. All groundwater samples, including a blind duplicate, were submitted for laboratory analysis of VOC.

Results

The groundwater elevations observed indicated a locally west to southerly groundwater flow direction in the vicinity of the drive points; however, it is noted that due to the small number of wells and generally linear arrangement of most wells for which water level data was obtained, there are limitations with respect to the sensitivity of this data to other components of flow. The drive points were installed to verify that the contaminant plume does not bifurcate and flow along Leitrim Road to the northeast. The groundwater elevations observed correlate with the southwest to northeast trend of the grade of the nearby ditch centreline, and support the hypothesis that the groundwater plume daylights at the ditch's north wall before migrating off-Site.

Analytical results of the groundwater monitoring event, including the blind duplicate sample, are summarized in Table 4.

As per the attached summary tables and the associated laboratory Certificates of Analysis (Appendix B), none of the volatile organic compounds tested were detected in the samples analysed. The analytical method detection limits stated on the laboratory Certificate of Analysis are all below the applicable Provincial Site Condition Standards for potable water conditions as provided in Table 6 of Ontario Regulation 153/04 – Records of Site Condition, as amended, and/or the Maximum Acceptable Concentrations established under Ontario Regulation 169/03 – Ontario Drinking Water Quality Standards, as amended.

Limitations

This report was prepared for the exclusive use of the NCC and is intended to provide a summary of the late summer 2016 drive point installation and groundwater monitoring program carried out

on NCC owned P19 lands at NCC Property Asset 97390, in Ottawa, Ontario at the time of the Site visits. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Amec Foster Wheeler will be required. With respect to third parties, Amec Foster Wheeler has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

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

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

This Report is also subject to the further Standard Limitations contained in Appendix B.

Closure

We trust the above information is satisfactory. If you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

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

Susan Pfister, M.Eng., P.Eng.
Environmental Engineer
SMP/KDH

Kevin D. Hicks, M.Sc., P.Geo., QP_{ESA}
Principal Hydrogeologist

Attachments (10):

Table 1	Groundwater Monitoring Infrastructure Construction Details
Table 2	Groundwater Elevation Data
Table 3	Groundwater Field Parameter Data and Observations
Table 4	Summary of Volatile Organic Compound Groundwater Analyses 2016
Figure 1	Key Plan
Figure 2	Site Plan
Figure 3	Monitoring Infrastructure Network Location Plan
Figure 4	Groundwater Elevations Surrounding Drive Points
Appendix A	Laboratory Certificates of Analysis
Appendix B	Limitations

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Table 1. Groundwater Monitoring Infrastructure Construction Details

Monitor Well I.D.	Coordinates (MTM)		Date of Construction (mm/dd/yy)	Well Constructed By	Borehole and Groundwater Monitoring Interval Construction Data										
	Easting	Northing			Ground Surface Elevation (masl)	Borehole Depth (m)	Borehole Bottom Elevation (masl)	Depth to Base of Sand Unit (m)	Elevation of Base of Sand Unit (masl)	Top of Well Casing Elevation (masl)	Well Casing Stick-up (m)	Depth to Bottom of Well Screen (m)	Well Screen Interval (masl)	Well Screen Length (m)	Geologic Media Intersected by Well Screen
MW08-1	378159	5023472	06/18/08	Aqua Terre	86.482	4.28	82.20	2.59	83.89	87.25	0.77	4.27	85.26 - 82.21	3.05	Sand / silty clay
MW08-2	378157	5023482	06/18/08	Aqua Terre	86.434	4.28	82.15	1.91	84.52	87.31	0.88	4.27	85.21 - 82.17	3.05	Sand / silty clay
MW08-3	378161	5023498	06/18/08	Aqua Terre	86.225	4.28	81.94	2.21	84.02	87.00	0.78	4.27	85.01 - 81.96	3.05	Sand / silty clay
MW08-4	378173	5023454	06/18/08	Aqua Terre	86.288	4.28	82.01	1.91	84.38	87.05	0.76	4.27	85.07 - 82.02	3.05	Sand / silty clay
MW08-5	378141	5023457	08/26/08	Aqua Terre	86.673	4.89	81.78	2.44	84.23	87.53	0.86	2.13	86.06 - 84.54	1.52	Sand
MW09-8	378181	5023473	08/13/09	Aqua Terre	86.054	3.67	82.38	3.05	83.00	87.21	1.16	2.44	85.14 - 83.62	1.52	Sand
MW09-9	378171	5023490	08/13/09	Aqua Terre	85.882	3.67	82.21	2.13	83.75	86.93	1.05	2.44	84.97 - 83.44	1.52	Sand
MW10-10	378206	5023469	08/25/10	SNC	85.918	6.73	79.19	3.05*	82.87	87.15	1.23	2.44	85.00 - 83.48	1.52	Sand
MW10-11	378196	5023486	08/25/10	SNC	85.816	4.28	81.53	2.79*	83.03	86.96	1.14	2.44	84.90 - 83.38	1.52	Sand
MW10-12	378188	5023504	08/25/10	SNC	85.662	4.28	81.38	2.59	83.07	86.78	1.12	2.44	84.75 - 83.22	1.52	Sand
MW10-13	378224	5023478	08/25/10	SNC	86.288	4.28	82.01	2.97	83.32	87.38	1.09	2.44	85.37 - 83.85	1.52	Sand
MW10-14	378205	5023514	08/25/10	SNC	86.458	4.28	82.18	3.35	83.11	87.52	1.06	2.44	85.54 - 84.02	1.52	Sand
MW10-15	378214	5023496	08/26/10	SNC	86.412	5.50	80.91	3.28	83.13	87.46	1.05	2.44	85.50 - 83.97	1.52	Sand
MW10-16	378233	5023461	09/28/10	SNC	86.034	4.28	81.75	4.30	81.73	87.19	1.16	3.05	84.51 - 82.99	1.52	Sand
MW10-17	378251	5023470	09/28/10	SNC	86.437	4.28	82.16	4.20	82.24	87.51	1.07	3.96	84.00 - 82.47	1.52	Sand
MW10-18	378268	5023478	09/28/10	SNC	86.183	4.28	81.90	2.36	83.82	87.25	1.07	3.05	84.66 - 83.14	1.52	Sand / silty clay
MW10-19	378258	5023496	09/28/10	SNC	86.255	4.28	81.97	2.67	83.59	87.29	1.04	3.05	84.73 - 83.21	1.52	Sand / silty clay
MW10-20	378242	5023487	09/29/10	SNC	86.359	4.28	82.08	3.35	83.01	87.47	1.11	3.20	84.68 - 83.16	1.52	Sand
MW10-21	378297	5023468	09/29/10	SNC	85.279	3.06	82.22	1.30	83.98	86.46	1.18	2.44	84.36 - 82.84	1.52	Sand / silty clay
MW10-22	378332	5023488	09/29/10	SNC	84.650	3.06	81.59	1.13	83.52	85.78	1.13	2.44	83.74 - 82.21	1.52	Sand / silty clay
MW10-23	378313	5023479	09/29/10	SNC	84.983	3.06	81.93	1.45	83.53	86.17	1.19	2.44	84.07 - 82.54	1.52	Sand / silty clay
MW10-24	378262	5023447	09/29/10	SNC	86.565	4.28	82.28	3.96	82.61	87.81	1.25	3.96	84.13 - 82.60	1.52	Sand
MW10-25	378279	5023458	09/29/10	SNC	86.186	3.06	83.13	2.50	83.69	87.24	1.05	2.74	84.97 - 83.44	1.52	Sand / silty clay
MW13-26	378182	5023413	05/15/13	Stantec	85.729	9.17	76.56	1.32	84.41	86.51	0.78	9.14	78.11 - 76.59	1.52	Silty clay
MW13-27	378180	5023414	05/15/13	Stantec	85.754	3.36	82.39	1.22	84.53	86.58	0.83	3.35	83.93 - 82.40	1.52	Silty clay
MW13-28	378207	5023425	05/15/13	Stantec	85.644	9.17	76.47	1.40	84.24	86.47	0.83	9.14	78.02 - 76.50	1.52	Silty clay
MW13-29	378205	5023424	05/15/13	Stantec	85.691	4.57	81.12	1.22	84.47	86.52	0.83	4.57	82.65 - 81.12	1.52	Silty clay
MW13-30	378275	5023455	05/17/13	Stantec	86.304	9.17	77.13	1.83	84.47	87.11	0.81	9.14	78.68 - 77.16	1.52	Silty clay
MW13-31	378273	5023454	05/17/13	Stantec	86.379	6.73	79.65	1.53	84.85	87.09	0.71	6.71	81.20 - 79.67	1.52	Silty clay
MW13-32	378291	5023465	05/16/13	Stantec	85.650	9.17	76.48	1.83	83.82	86.54	0.89	9.14	78.03 - 76.51	1.52	Silty clay
MW13-33	378289	5023465	05/17/13	Stantec	85.735	6.12	79.62	1.76	83.98	86.65	0.92	6.10	81.16 - 79.64	1.52	Silty clay
MW13-34	378307	5023475	05/16/13	Stantec	84.994	9.17	75.82	1.52	83.47	85.82	0.83	9.14	77.37 - 75.85	1.52	Silty clay
MW13-35	378305	5023473	05/16/13	Stantec	85.238	6.12	79.12	1.40	83.84	85.86	0.62	6.10	80.67 - 79.14	1.52	Silty clay
MW13-36	378327	5023486	05/16/13	Stantec	84.739	9.17	75.57	1.22	83.52	85.53	0.79	9.14	77.12 - 75.60	1.52	Silty clay
MW13-37	378326	5023484	05/16/13	Stantec	84.745	6.12	78.63	1.08	83.67	85.59	0.85	6.10	80.17 - 78.65	1.52	Silty clay
MW15-38C	378266	5023444	02/27/15	AFW	86.573	6.71	79.86	3.12	83.45	87.36	0.79	6.61	81.48 - 79.96	1.52	Clay
MW15-39	378266	5023445	02/27/15	AFW	86.545	3.20	83.35	3.12	83.43	87.39	0.85	3.16	84.91 - 83.39	1.52	Sand
MW15-40C	378280	5023450	02/27/15	AFW	86.141	6.71	79.43	2.74	83.40	86.89	0.75	2.43	85.23 - 83.71	1.52	Clay
MW15-41	378280	5023450	02/27/15	AFW	86.156	2.93	83.23	2.74	83.42	86.97	0.81	1.75	85.93 - 84.41	1.52	Sand
MW15-42C	378288	5023455	02/27/15	AFW	85.846	6.10	79.75	2.01	83.84	86.71	0.86	6.01	81.36 - 79.84	1.52	Clay
MW15-43	378289	5023455	02/27/15	AFW	85.791	2.13	83.66	2.01	83.78	86.49	0.70	2.07	84.94 - 83.72	1.22	Sand

Table 1. Groundwater Monitoring Infrastructure Construction Details

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	Easting	Northing			Ground Surface Elevation (masl)	Borehole Depth (m)	Borehole Bottom Elevation (masl)	Depth to Base of Sand Unit (m)	Elevation of Base of Sand Unit (masl)	Top of Well Casing Elevation (masl)	Well Casing Stick-up (m)	Depth to Bottom of Well Screen (m)	Well Screen Interval (masl)	Well Screen Length (m)	Geologic Media Intersected by Well Screen
MW15-44C	378273	5023454	02/27/15	AFW	86.411	6.71	79.70	3.20	83.21	87.30	0.89	2.71	85.23 - 83.71	1.52	Clay
MW15-45	378240	5023434	02/26/15	AFW	85.922	2.44	83.48	1.75	84.17	86.76	0.84	1.88	84.96 - 84.04	0.91	Sand
MW15-46C	378239	5023433	02/26/15	AFW	85.716	6.10	79.62	1.75	83.97	86.63	0.91	5.86	81.38 - 79.86	1.52	Clay
MW15-47C	378238	5023456	03/02/15	AFW	86.054	4.27	81.78	2.13	83.92	86.93	0.88	4.29	83.29 - 81.76	1.52	Clay
MW15-48C	378254	5023469	03/02/15	AFW	86.410	6.10	80.31	3.28	83.13	87.28	0.87	4.38	83.55 - 82.03	1.52	Clay
MW15-49C	378271	5023485	03/02/15	AFW	86.137	3.96	82.18	2.03	84.11	86.95	0.81	1.64	86.02 - 84.50	1.52	Clay
MW15-50	378198	5023452	03/05/15	AFW	85.888	3.05	82.84	1.75	84.14	86.78	0.89	1.87	84.93 - 84.02	0.91	Sand
MW15-51	378205	5023480	03/02/15	AFW	85.933	6.10	79.83	3.66	82.27	86.75	0.82	3.68	83.78 - 82.26	1.52	Sand
MW15-52	378230	5023500	03/02/15	AFW	86.353	4.57	81.78	3.05	83.30	87.14	0.79	2.99	84.89 - 83.37	1.52	Sand
MW15-53	378180	5023491	03/03/15	AFW	85.660	3.05	82.61	1.83	83.83	86.44	0.78	1.83	84.86 - 83.83	1.04	Sand
MW15-54	378153	5023445	02/26/15	AFW	86.230	4.57	81.66	2.29	83.94	86.23	0.00	2.20	85.55 - 84.03	1.52	Sand
MW15-55	378133	5023445	03/03/15	AFW	86.661	3.05	83.61	2.13	84.53	87.56	0.90	2.18	86.01 - 84.48	1.52	Sand
MW15-56	378124	5023456	03/03/15	AFW	86.944	3.05	83.89	2.71	84.23	87.77	0.83	2.71	85.76 - 84.23	1.52	Sand
MW15-57	378135	5023472	03/03/15	AFW	86.823	4.57	82.25	3.60	83.22	87.70	0.88	3.75	84.60 - 83.07	1.52	Sand
MW15-58	378147	5023488	03/03/15	AFW	86.623	3.05	83.57	2.44	84.18	87.29	0.67	2.49	85.04 - 84.13	0.91	Sand
MW15-59	378160	5023513	03/03/15	AFW	86.261	3.05	83.21	2.29	83.97	87.01	0.75	2.41	85.37 - 83.85	1.52	Sand
MW15-60	377944	5023684	11/16/15	AFW	85.87	3.05	82.82	1.70	84.17	86.74	0.87	2.74	84.65 - 83.13	1.52	Sand / clay
MW15-61	378016	5023492	11/16/15	AFW	86.52	3.05	83.47	1.90	84.62	87.38	0.84	3.05	84.99 - 83.47	1.52	Sand / clay
MW15-62	378097	5023443	11/16/15	AFW	86.66	3.05	83.61	2.20	84.46	87.55	0.88	2.74	85.44 - 83.92	1.52	Sand / clay
MW15-63	378276	5023472	11/16/15	AFW	85.92	3.05	82.87	2.25	83.67	86.77	0.85	3.05	84.39 - 82.87	1.52	Sand / clay
MW16-64	378283	5023421	05/06/16	AFW	85.63	2.44	83.19	1.62	84.01	86.38	0.75	2.44	84.10 - 83.19	0.91	Sand / clay
MW16-65	378294	5023429	05/06/16	AFW	85.47	2.44	83.03	1.22	84.25	86.25	0.78	1.22	84.86 - 84.25	0.61	Sand
MW16-66	378303	5023433	05/06/16	AFW	85.14	2.44	82.70	1.22	83.92	85.85	0.72	1.22	84.53 - 83.92	0.61	Sand
MW16-66C	378303	5023434	05/06/16	AFW	85.15	4.88	80.27	1.22	83.93	85.07	-0.08	4.57	82.10 - 80.58	1.52	Clay
MW16-67	378312	5023439	05/06/16	AFW	85.07	2.44	82.63	1.22	83.85	85.85	0.78	1.22	84.46 - 83.85	0.61	Sand
DP16-68	378306	5023463	08/29/16	AFW	85.00	1.68	83.32	n/m	n/c	85.84	0.84	1.68	84.23 - 83.32	0.91	Sand (assumed)
DP16-69	378319	5023469	08/29/16	AFW	84.57	1.68	82.89	n/m	n/c	85.34	0.77	1.68	83.80 82.89	0.91	Sand (assumed)

Notes:
masl = Metres Above Sea Level.
n/m = Not Measured.
n/c = Not Calculated.
* Denotes shallower of two depths reported for base of sand adopted due to suspect caving.
Elevations referenced to geodetic per surveys by OLS Annis, O'Sullivan, Vollebekk (March, 2015) and/or NCC Geomatics (June and September 2016).
SNC = SNC Lavalin, Formerly Aqua Terre.
AFW = Amec Foster Wheeler.

	Shallow sand aquifer well
	Intermediate clay aquifer well
	Deep clay aquifer well

Table 2. Groundwater Elevation Data

Monitoring Well I.D.	Geologic Media Intersected by Well Screen	Ground Surface Elevation (masl)	Top of Well Casing Elevation (masl)	June 17, 2014			October 9, 2014			March 9, 2015			December 4, 2015			May 9, 2016			May 24, 2016			September 1, 2016		
				Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)
MW08-1	Sand / silty clay	86.482	87.25	1.834	1.066	85.416	2.446	1.678	84.804	2.373	1.605	84.877	n/m	n/m	n/c	n/m	n/m	n/c	1.919	1.151	85.331	n/m	n/m	n/c
MW08-2	Sand / silty clay	86.434	87.31	1.899	1.023	85.411	2.525	1.649	84.785	2.447	1.571	84.863	n/m	n/m	n/c	n/m	n/m	n/c	1.986	1.110	85.324	n/m	n/m	n/c
MW08-3	Sand / silty clay	86.225	87.00	1.621	0.846	85.379	2.250	1.475	84.750	2.162	1.387	84.838	n/m	n/m	n/c	n/m	n/m	n/c	1.690	0.915	85.310	n/m	n/m	n/c
MW08-4	Sand / silty clay	86.288	87.05	1.684	0.922	85.366	2.249	1.487	84.801	2.190	1.428	84.860	n/m	n/m	n/c	n/m	n/m	n/c	1.784	1.022	85.266	n/m	n/m	n/c
MW08-5	Sand	86.673	87.53	2.025	1.168	85.505	2.647	1.790	84.883	2.605	1.748	84.925	n/m	n/m	n/c	n/m	n/m	n/c	2.141	1.284	85.389	n/m	n/m	n/c
MW09-8	Sand	86.054	87.21	1.932	0.776	85.278	2.501	1.345	84.709	2.432	1.276	84.778	n/m	n/m	n/c	n/m	n/m	n/c	2.010	0.854	85.200	n/m	n/m	n/c
MW09-9	Sand	85.882	86.93	1.607	0.559	85.323	2.220	1.172	84.710	2.135	1.087	84.795	n/m	n/m	n/c	n/m	n/m	n/c	1.679	0.631	85.251	n/m	n/m	n/c
MW10-10	Sand	85.918	87.15	1.990	0.758	85.160	2.490	1.258	84.660	2.414	1.182	84.736	n/m	n/m	n/c	n/m	n/m	n/c	2.078	0.846	85.072	n/m	n/m	n/c
MW10-11	Sand	85.816	86.96	1.754	0.610	85.206	2.300	1.156	84.660	2.219	1.075	84.741	n/m	n/m	n/c	n/m	n/m	n/c	1.809	0.665	85.151	n/m	n/m	n/c
MW10-12	Sand	85.662	86.78	1.577	0.459	85.203	2.148	1.030	84.632	2.052	0.934	84.728	n/m	n/m	n/c	n/m	n/m	n/c	1.620	0.502	85.160	n/m	n/m	n/c
MW10-13	Sand	86.288	87.38	2.365	1.273	85.015	2.838	1.746	84.542	2.735	1.643	84.645	n/m	n/m	n/c	n/m	n/m	n/c	2.398	1.306	84.982	n/m	n/m	n/c
MW10-14	Sand	86.458	87.52	2.336	1.274	85.184	2.914	1.852	84.606	2.812	1.750	84.708	n/m	n/m	n/c	n/m	n/m	n/c	2.390	1.328	85.130	n/m	n/m	n/c
MW10-15	Sand	86.412	87.46	2.339	1.291	85.121	2.859	1.811	84.601	2.761	1.713	84.699	n/m	n/m	n/c	n/m	n/m	n/c	2.361	1.313	85.099	n/m	n/m	n/c
MW10-16	Sand	86.034	87.19	2.284	1.128	84.906	2.695	1.539	84.495	2.490	1.334	84.700	n/m	n/m	n/c	n/m	n/m	n/c	2.311	1.155	84.879	n/m	n/m	n/c
MW10-17	Sand	86.437	87.51	2.720	1.647	84.790	3.080	2.007	84.430	2.985	1.912	84.525	n/m	n/m	n/c	n/m	n/m	n/c	2.915	1.842	84.595	n/m	n/m	n/c
MW10-18	Sand / silty clay	86.183	87.25	2.514	1.447	84.736	2.842	1.775	84.408	2.749	1.682	84.501	n/m	n/m	n/c	n/m	n/m	n/c	2.525	1.458	84.725	n/m	n/m	n/c
MW10-19	Sand / silty clay	86.255	87.29	2.459	1.424	84.831	2.823	1.788	84.467	2.765	1.730	84.525	n/m	n/m	n/c	n/m	n/m	n/c	2.475	1.440	84.815	n/m	n/m	n/c
MW10-20	Sand	86.359	87.47	2.851	1.740	84.619	2.988	1.877	84.482	2.870	1.759	84.600	n/m	n/m	n/c	n/m	n/m	n/c	2.562	1.451	84.908	n/m	n/m	n/c
MW10-21	Sand / silty clay	85.279	86.46	2.068	0.887	84.392	2.279	1.098	84.181	2.152	0.971	84.308	n/m	n/m	n/c	n/m	n/m	n/c	2.118	0.937	84.342	2.118	0.937	84.342
MW10-22	Sand / silty clay	84.650	85.78	1.565	0.435	84.215	1.749	0.619	84.031	1.685	0.555	84.095	n/m	n/m	n/c	n/m	n/m	n/c	1.712	0.582	84.068	n/m	n/m	n/c
MW10-23	Sand / silty clay	84.983	86.17	1.882	0.695	84.288	2.078	0.891	84.092	1.983	0.796	84.187	n/m	n/m	n/c	n/m	n/m	n/c	1.960	0.773	84.210	1.960	0.773	84.210
MW10-24	Sand	86.565	87.81	3.168	1.923	84.642	3.382	2.137	84.428	3.327	2.082	84.483	n/m	n/m	n/c	n/m	n/m	n/c	3.242	1.997	84.568	n/m	n/m	n/c
MW10-25	Sand / silty clay	86.186	87.24	2.676	1.622	84.564	2.983	1.929	84.257	2.818	1.764	84.422	n/m	n/m	n/c	n/m	n/m	n/c	2.708	1.654	84.532	2.708	1.654	84.532
MW13-26	Silty clay	85.729	86.51	1.328	0.547	85.182	1.641	0.860	84.869	1.718	0.937	84.792	n/m	n/m	n/c	1.265	0.484	85.245	n/m	n/m	n/c	n/m	n/m	n/c
MW13-27	Silty clay	85.754	86.58	1.284	0.458	85.296	1.643	0.817	84.937	1.702	0.876	84.878	n/m	n/m	n/c	n/m	n/m	n/c	1.450	0.624	85.130	n/m	n/m	n/c
MW13-28	Silty clay	85.644	86.47	1.465	0.639	85.005	2.014	1.188	84.456	2.006	1.180	84.464	n/m	n/m	n/c	1.868	1.042	84.602	n/m	n/m	n/c	n/m	n/m	n/c
MW13-29	Silty clay	85.691	86.52	1.450	0.621	85.070	1.778	0.949	84.742	1.740	0.911	84.780	n/m	n/m	n/c	n/m	n/m	n/c	1.516	0.687	85.004	n/m	n/m	n/c
MW13-30	Silty clay	86.304	87.11	2.931	2.125	84.179	3.122	2.316	83.988	2.981	2.175	84.129	n/m	n/m	n/c	2.823	2.017	84.287	n/m	n/m	n/c	n/m	n/m	n/c
MW13-31	Silty clay	86.379	87.09	2.608	1.897	84.482	2.768	2.057	84.322	2.875	2.164	84.215	n/m	n/m	n/c	2.540	1.829	84.550	n/m	n/m	n/c	n/m	n/m	n/c
MW13-32	Silty clay	85.650	86.54	2.594	1.704	83.946	2.689	1.799	83.851	2.630	1.740	83.910	n/m	n/m	n/c	2.539	1.649	84.001	n/m	n/m	n/c	n/m	n/m	n/c
MW13-33	Silty clay	85.735	86.65	2.326	1.411	84.324	3.464	2.549	83.186	2.421	1.506	84.229	n/m	n/m	n/c	2.232	1.317	84.418	n/m	n/m	n/c	n/m	n/m	n/c
MW13-34	Silty clay	84.994	85.82	1.844	1.018	83.976	2.029	1.203	83.791	1.962	1.136	83.858	n/m	n/m	n/c	1.841	1.015	83.979	n/m	n/m	n/c	n/m	n/m	n/c
MW13-35	Silty clay	85.238	85.86	1.620	0.998	84.240	1.964	1.342	83.896	1.748	1.126	84.112	n/m	n/m	n/c	1.549	0.927	84.311	n/m	n/m	n/c	n/m	n/m	n/c
MW13-36	Silty clay	84.739	85.53	1.650	0.859	83.880	1.813	1.022	83.717	1.736	0.945	83.794	n/m	n/m	n/c	1.599	0.808	83.931	n/m	n/m	n/c	n/m	n/m	n/c
MW13-37	Silty clay	84.745	85.59	1.407	0.562	84.183	1.647	0.802	83.943	1.545	0.700	84.045	n/m	n/m	n/c	1.440	0.595	84.150	n/m	n/m	n/c	n/m	n/m	n/c
MW15-38C	Clay	86.573	87.36	n/a	n/a	n/c	n/a	n/a	n/c	3.263	2.476	84.097	n/m	n/m	n/c	2.908	2.121	84.452	n/m	n/m	n/c	n/m	n/m	n/c
MW15-39	Sand	86.545	87.39	n/a	n/a	n/c	n/a	n/a	n/c	2.933	2.088	84.457	n/m	n/m	n/c	n/m	n/m	n/c	2.826	1.981	84.564	n/m	n/m	n/c
MW15-40C	Clay	86.141	86.89	n/a	n/a	n/c	n/a	n/a	n/c	2.968	2.219	83.922	n/m	n/m	n/c	2.550	1.801	84.340	n/m	n/m	n/c	n/m	n/m	n/c
MW15-41	Sand	86.156	86.97	n/a	n/a	n/c	n/a	n/a	n/c	2.540	1.726	84.430	n/m	n/m	n/c	n/m	n/m	n/c	2.480	1.666	84.490	n/m	n/m	n/c
MW15-42C	Clay	85.846	86.71	n/a	n/a	n/c	n/a	n/a	n/c	2.898	2.034	83.812	n/m	n/m	n/c	2.471	1.607	84.239	n/m	n/m	n/c	n/m	n/m	n/c
MW15-43	Sand	85.791	86.49	n/a	n/a	n/c	n/a	n/a	n/c	2.129	1.430	84.361	n/m	n/m	n/c	n/m	n/m	n/c	2.085	1.386	84.405	n/m	n/m	n/c
MW15-44C	Clay	86.411	87.30	n/a	n/a	n/c	n/a	n/a	n/c	3.208	2.319	84.092	n/m	n/m	n/c	2.780	1.891	84.520	n/m	n/m	n/c	n/m	n/m	n/c
MW15-45	Sand	85.922	86.76	n/a	n/a	n/c	n/a	n/a	n/c	2.027	1.189	84.733	n/m	n/m	n/c	n/m	n/m	n/c	1.873	1.035	84.887	n/m	n/m	n/c
MW15-46C	Clay	85.716	86.63	n/a	n/a	n/c	n/a	n/a	n/c	2.388	1.474	84.242	n/m	n/m	n/c	2.079	1.165	84.551	n/m	n/m	n/c	n/m	n/m	n/c
MW15-47C	Clay	86.054	86.93	n/a	n/a	n/c	n/a	n/a	n/c	2.351	1.475	84.579	n/m	n/m	n/c	1.910	1.034	85.020	n/m	n/m	n/c	n/m	n/m	n/c
MW15-48C	Clay	86.410	87.28	n/a	n/a	n/c	n/a	n/a	n/c	3.415	n/c	n/c	n/m	n/m	n/c	2.559	1.689	84.721	n/m	n/m	n/c	n/m	n/m	n/c
MW15-49C	Clay	86.137	86.95	n/a	n/a	n/c	n/a	n/a	n/c	2.440	1.627	84.510	n/m	n/m	n/c	2.050	1.237	84.900	n/m	n/m	n/c	n/m	n/m	n/c
MW15-50	Sand	85.888	86.78	n/a	n/a	n/c	n/a	n/a	n/c	1.970	1.078	84.810	n/m	n/m	n/c	n/m	n/m	n/c	1.650	0.758	85.130	n/m	n/m	n/c
MW15-51	Sand	85.933	86.75	n/a	n/a	n/c	n/a	n/a	n/c	2.020	1.203	84.730	n/m	n/m	n/c	n/m	n/m	n/c	1.630	0.813	85.120	n/m	n/m	n/c
MW15-52	Sand	86.353	87.14	n/a	n/a	n/c	n/a	n/a	n/c	2.508	1.721	84.632	n/m	n/m	n/c	n/m	n/m	n/c	2.140	1.353	85.000	n/m	n/m	n/c
MW15-53	Sand	85.660	86.44	n/a	n/a	n/c	n/a	n/a	n/c	1.660	0.880	84.780	n/m	n/m	n/c	n/m	n/m	n/c	1.223	0.443	85.217	n/m	n/m	n/c
MW15-54	Sand	86.230	86.23	n/a	n/a	n/c	n/a	n/a	n/c	1.338	1.338	84.892	n/m	n/m	n/c	n/m	n/m	n/c	0.912	0.912	85.318	n/m	n/m	n/c

Table 2. Groundwater Elevation Data

Monitoring Well I.D.	Geologic Media Intersected by Well Screen	Ground Surface Elevation (masl)	Top of Well Casing Elevation (masl)	June 17, 2014			October 9, 2014			March 9, 2015			December 4, 2015			May 9, 2016			May 24, 2016			September 1, 2016		
				Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)	Depth to Water (mbtoc)	Depth to Water (mbgs)	Static Elevation (masl)
MW15-55	Sand	86.661	87.56	n/a	n/a	n/c	n/a	n/a	n/c	2.582	1.683	84.978	n/m	n/m	n/c	n/m	n/m	n/c	2.147	1.248	85.413	n/m	n/m	n/c
MW15-56	Sand	86.944	87.77	n/a	n/a	n/c	n/a	n/a	n/c	2.783	1.957	84.987	n/m	n/m	n/c	n/m	n/m	n/c	2.300	1.474	85.470	n/m	n/m	n/c
MW15-57	Sand	86.823	87.70	n/a	n/a	n/c	n/a	n/a	n/c	2.765	1.888	84.935	n/m	n/m	n/c	n/m	n/m	n/c	2.284	1.407	85.416	n/m	n/m	n/c
MW15-58	Sand	86.623	87.29	n/a	n/a	n/c	n/a	n/a	n/c	2.414	1.747	84.876	n/m	n/m	n/c	n/m	n/m	n/c	1.929	1.262	85.361	n/m	n/m	n/c
MW15-59	Sand	86.261	87.01	n/a	n/a	n/c	n/a	n/a	n/c	2.198	1.449	84.812	n/m	n/m	n/c	n/m	n/m	n/c	1.712	0.963	85.298	n/m	n/m	n/c
MW15-60	Sand / clay	85.57	86.74	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	1.698	n/c	n/c	n/m	n/m	n/c	1.250	n/c	n/c	n/m	n/m	n/c
MW15-61	Sand / clay	86.52	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	2.980	n/c	n/c	n/m	n/m	n/c	1.692	n/c	n/c	n/m	n/m	n/c
MW15-62	Sand / clay	86.66	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	2.422	n/c	n/c	n/m	n/m	n/c	1.946	n/c	n/c	n/m	n/m	n/c
MW15-63	Sand / clay	85.92	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	2.325	n/c	n/c	n/m	n/m	n/c	2.130	n/c	n/c	n/m	n/m	n/c
MW16-64	Sand / clay	85.63	86.38	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/m	n/m	n/c	1.932	1.177	84.448	n/m	n/m	n/c
MW16-65	Sand	85.47	86.25	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/m	n/m	n/c	1.812	1.030	84.442	n/m	n/m	n/c
MW16-66	Sand	85.14	85.85	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/m	n/m	n/c	1.460	0.745	84.391	n/m	n/m	n/c
MW16-66C	Clay	85.15	85.07	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/m	n/m	n/c	0.615	0.695	84.455	n/m	n/m	n/c
MW16-67	Sand	85.07	85.85	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/m	n/m	n/c	1.611	0.832	84.243	n/m	n/m	n/c
DP16-68	Sand (assumed)	85.00	85.84	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	1.735	0.895	84.105
DP16-69	Sand (assumed)	84.57	85.34	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	n/a	n/a	n/c	1.420	0.650	83.920

Notes:

masl = Metres Above Sea Level.

mbtoc = Metres Below Top of (Well) Casing.

mbgs = Metres Below Ground Surface.

Elevations referenced to geodetic per surveys by OLS Annis, O'Sullivan, Vollebekk (March, 2015) and/or NCC Geomatics (June and September 2016).

n/a = Not Available (i.e. well had not been drilled)

n/m = Not Measured.

n/c = Not Calculated.

	Shallow sand aquifer well
	Intermediate clay aquifer well
	Deep clay aquifer well

Table 3. Groundwater Field Parameter Data and Observations

Monitoring Well I.D.	Sampling Date (mm/dd/yy)	Water Level Data			Field Parameters					Laboratory Analyses	General Observations
		Initial Depth to Water (m)	Final Depth to Water (m)	Total Drawdown (m)	pH	Conductivity (mS/cm)	Dissolved Oxygen (DO) (mg/L)	Temper-ature (ºC)	Oxidation Reduction Potential (ORP) (mV)		
MW08-1	05/25/16	1.942	1.949	0.007	6.87	0.338	0.54	11.58	-21.7	VOC	Silty, grey, no sheen or odour
MW08-2	05/25/16	2.007	2.009	0.002	7.05	0.378	0.82	10.54	-30.8	VOC	Clear with some brown solids, no sheen or odour
MW08-3	05/26/16	1.735	1.750	0.015	6.45	0.330	1.02	9.90	-13.9	VOC	Grey, no sheen or odour
MW08-4	05/25/16	1.805	1.809	0.004	6.69	1.454	1.46	9.10	62.9	VOC	Clear with some brown solids, no sheen or odour
MW08-5	05/25/16	2.169	2.175	0.006	6.52	0.403	2.76	9.14	51.2	VOC	Clear, no sheen or odour
MW09-8	05/25/16	2.032	2.040	0.008	6.76	0.465	1.18	8.20	11.0	VOC	Clear with some brown solids, no sheen or odour; DUP 16-4
MW09-9	05/26/16	1.722	1.730	0.008	6.42	0.229	1.55	9.68	34.5	VOC	Grey, no sheen or odour
MW10-10	05/27/16	2.124	2.136	0.012	6.77	1.415	0.69	9.66	6.5	VOC	Turbid, brown; no sheen or odour
MW10-11	05/26/16	1.856	1.870	0.014	6.69	0.111	8.46	8.88	53.8	VOC	Clear; no sheen or odour
MW10-12	05/26/16	1.655	1.661	0.006	6.63	0.229	0.90	10.82	5.5	VOC	Brown; no sheen or odour
MW10-13	05/27/16	2.440	2.460	0.020	6.89	0.427	2.51	10.28	14.9	VOC	Brown; no sheen or odour
MW10-14	05/26/16	2.430	2.440	0.010	5.56	0.032	9.62	9.84	107.3	VOC	Clear with some brown solids, no sheen or odour
MW10-15	05/26/16	2.401	2.412	0.011	6.67	0.189	4.55	8.43	32.2	VOC	Clear; no sheen or odour
MW10-16	05/27/16	2.360	2.380	0.020	6.95	1.472	0.96	11.49	-38.0	VOC	Grey, no sheen or odour
MW10-17	05/27/16	2.785	2.795	0.010	6.89	0.451	0.59	11.66	-39.1	VOC	Grey, no sheen or odour
MW10-18	05/26/16	2.548	2.555	0.007	6.90	0.161	3.37	10.22	36.3	VOC	Purged 2L; clear; no sheen or odour
MW10-19	05/27/16	2.524	2.526	0.002	6.28	0.166	1.18	10.11	52.3	VOC	Grey, no sheen or odour
MW10-20	05/27/16	2.614	2.646	0.032	5.89	0.062	6.04	10.31	107.4	VOC	Clear; no sheen or odour
MW10-21	05/25/16	2.119	2.143	0.024	7.110	0.292	1.20	8.69	-72.2	VOC	Purged 1.5L; clear with some brown solids, no sheen or odour
MW10-22	05/25/16	1.698	Dry	-	-	-	-	-	-	VOC	Purged dry (2L); cloudy to clear, grey
MW10-23	05/25/16	1.973	2.017	0.044	7.36	0.326	1.48	8.62	-60.4	VOC	Purged 1.5L; cloudy to clear; grey; no sheen or odour
MW10-24	05/25/16	3.242	3.255	0.013	6.97	1.168	1.07	9.32		VOC	Purged 2L; clear; no sheen or odour
MW10-25	05/25/16	2.712	2.718	0.006	6.85	0.187	3.09	8.98	-15.6	VOC	Purged 2L; clear to cloudy; no sheen or odour
MW13-26	05/24/16	1.265	Dry	-	-	-	-	-	-	VOC	Purged dry (9 L) May 9, 2016; silty, grey, no sheen or odour; FB 16-1
MW13-27	05/27/16	1.531	Dry	-	-	-	-	-	-	VOC	Purge 3.0L; clear to grey but YSI not stable - no readings
MW13-28	05/24/16	1.868	Dry	-	-	-	-	-	-	VOC	Purged dry (8 L) May 9, 2016; silty, grey, no sheen or odour
MW13-29	05/27/16	1.500	Dry	-	-	-	-	-	-	VOC	Purge 3.0L; clear to grey but YSI not stable - no readings
MW13-30	05/24/16	2.823	Dry	-	-	-	-	-	-	VOC	Purged dry (7 L) May 9, 2016; silty, grey, no sheen or odour
MW13-31	05/24/16	2.540	Dry	-	-	-	-	-	-	VOC	Purged dry (5 L) May 9, 2016; silty, grey, no sheen or odour
MW13-32	05/24/16	2.539	Dry	-	-	-	-	-	-	VOC	Purged dry (6 L) May 9, 2016; clear, brown, no sheen or odour
MW13-33	05/24/16	2.232	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 9, 2016; clear, grey, no sheen or odour
MW13-34	05/24/16	1.841	Dry	-	-	-	-	-	-	VOC	Purged dry (8 L) May 9, 2016; silty, grey, no sheen or odour
MW13-35	05/24/16	1.549	Dry	-	-	-	-	-	-	VOC	Purged dry (5 L) May 9, 2016; silty, grey, no sheen or odour
MW13-36	05/24/16	1.599	Dry	-	-	-	-	-	-	VOC	Purged dry (8 L) May 9, 2016; silty, grey, no sheen or odour
MW13-37	05/24/16	1.440	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 9, 2016; silty, grey, no sheen or odour
MW15-38C	05/24/16	2.908	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 9, 2016; silty, grey, no sheen or odour
MW15-39	05/25/16	2.827	2.841	0.014	6.88	1.217	0.91	8.81	-52.1	VOC	Purged 1.5L; clear, no sheen or odour
MW15-40C	05/24/16	2.550	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 9, 2016; silty, grey/brown, no sheen or odour
MW15-41	05/25/16	2.484	2.492	0.008	6.77	0.197	1.18	8.98	-17.0	VOC	Purged 2L; clear; no sheen or odour; DUP 16-3; FB 16-2
MW15-42C	05/24/16	2.471	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 9, 2016; silty, grey, no sheen or odour
MW15-43	05/25/16	2.081	2.113	0.032	6.83	0.220	1.91	8.32	-28.6	VOC	Purged 2L; clear with some brown solids, no sheen or odour
MW15-44C	05/24/16	2.780	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 9, 2016; silty, grey, no sheen or odour
MW15-45	05/26/16	1.903	1.954	0.051	6.82	0.335	1.34	8.80	44.3	VOC	Purged 2L; clear to cloudy, no sheen or odour
MW15-46C	05/24/16	2.079	Dry	-	-	-	-	-	-	VOC	Purged dry (3 L) May 9, 2016; silty, grey, no sheen or odour
MW15-47C	05/24/16	1.910	Dry	-	-	-	-	-	-	VOC	Purged dry (3 L) May 9, 2016; silty, grey, no sheen or odour; DUP 16-2

Table 3. Groundwater Field Parameter Data and Observations

Monitoring Well I.D.	Sampling Date (mm/dd/yy)	Water Level Data			Field Parameters					Laboratory Analyses	General Observations
		Initial Depth to Water (m)	Final Depth to Water (m)	Total Drawdown (m)	pH	Conductivity (mS/cm)	Dissolved Oxygen (DO) (mg/L)	Temper-ature (ºC)	Oxidation Reduction Potential (ORP) (mV)		
MW15-48C	05/24/16	2.559	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 9, 2016; silty, grey, no sheen or odour
MW15-49C	05/24/16	2.050	Dry	-	-	-	-	-	-	VOC	Purged dry (1.5 L) May 9, 2016; silty, grey, no sheen or odour
MW15-50	05/26/16	1.681	1.700	0.019	6.91	0.749	2.12	10.89	40.9	VOC	Purged 3L; clear to cloudy, no sheen or odour
MW15-51	05/27/16	1.681	1.691	0.010	6.59	0.836	0.83	8.18	14.5	VOC	Clear; no sheen or odour
MW15-52	05/27/16	2.190	2.195	0.005	6.26	0.239	2.63	8.28	70.7	VOC	Cloudy; no sheen or odour
MW15-53	05/26/16	1.262	1.273	0.011	6.52	0.233	0.94	9.61	12.4	VOC	Clear with some brown solids, no sheen or odour
MW15-54	05/25/16	0.924	0.929	0.005	6.44	0.328	0.97	10.90	11.5	VOC	Clear with some brown solids, no sheen or odour
MW15-55	05/27/16	2.199	2.234	0.035	6.980	0.429	5.270	10.540	92.5	VOC	Purged 3L; clear, no sheen or odour
MW15-56	05/27/16	2.362	2.379	0.017	6.70	0.211	7.54	9.83	88.3	VOC	Purged 2.5L; clear, no sheen or odour
MW15-57	05/25/16	2.310	2.320	0.010	6.41	0.204	3.16	9.29	82.7	VOC	Clear with some brown solids, no sheen or odour
MW15-58	05/25/16	1.952	1.961	0.009	6.45	0.157	5.79	9.46	87.6	VOC	Brown purgeate; no sheen or odour
MW15-59	05/26/16	1.758	1.779	0.021	6.27	0.109	8.03	8.57	68.2	VOC	Clear; no sheen or odour; DUP 16-5
MW15-60	05/27/16	1.290	1.303	0.013	7.17	0.133	1.24	8.37	-53.7	Pesticides	Purged 1.5L; clear, no sheen or odour; DUP 16-8; FB 16-3
MW15-61	05/27/16	1.769	1.780	0.011	7.19	0.269	1.03	8.73	-45.1	VOC	Purged 1.5L; clear, no sheen or odour
MW15-62	05/27/6	2.023	2.048	0.025	7.02	0.192	4.77	10.30	17.7	VOC	Purged 2.5L; clear, no sheen or odour
MW15-63	05/26/16	2.150	2.159	0.009	6.61	0.225	2.02	8.72	41.8	VOC	Purged 2L; clear with some brown solids; no sheen or odour
MW16-64	05/26/16	1.951	1.977	0.026	6.22	0.068	3.50	12.09	144.8	VOC	Purged 1.5L; clear; no sheen or odour
MW16-65	05/26/16	1.827	Dry	-	-	-	-	-	-	VOC	Purge 1.5L; clear but YSI not stable - no readings
MW16-66	05/26/16	1.486	1.520	0.034	6.67	0.058	2.27	13.19	86.1	VOC	Purged 1L; cloudy to clear; no sheen or odour; DUP 16-6
MW16-66C	05/26/16	1.460	Dry	-	-	-	-	-	-	VOC	Purged dry (4 L) May 24, 2016. Note: flushmount
MW16-67	05/26/16	1.625	1.776	0.151	6.71	0.134	1.21	13.46	13.3	VOC	Purged 1.5L; clear; no sheen or odour
DP16-68	09/01/16	1.735	1.780	0.045	6.54	2.916	2.07	16.30	49.2	VOC	Purged 1.5L Sep 1, 2016; clear; no sheen or odour; DUP-DP
DP16-69	09/01/16	1.420	Dry	-	-	-	-	-	-	VOC	Purge dry Sep 1, 2016; clear but YSI not stable - no readings

Notes:

Water Level Data as Recorded During Low-Flow Sampling Performed Using a Peristaltic Pump.
Field Parameters Measured Using a YSI 556 Multi-Parameter Water Quality Monitoring Instrument.
DUP - QA/QC Blind Duplicate Sample.
VOC = Volatile Organic Compounds.
n/m = Not Measured.

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Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW08-1	MW08-2	MW08-3	MW08-4	MW08-5	MW09-8
Sample No.						MW08-1	MW08-2	MW08-3	MW08-4	MW08-5	MW09-8
Stratigraphic Unit						Sand	Sand	Sand	Sand	Sand	Sand
Laboratory ID						CKL368	CKL369	CKU657	CKL370	CKL371	CKL372
Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	25-May-16	25-May-16	26-May-16	25-May-16	25-May-16	25-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	**2.5**	< 0.1	< 0.1	< 0.1	< 0.1	0.62
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	0.21	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	3.5	< 0.1	< 0.1	< 0.1	0.35	9
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW09-8	MW09-8	MW09-8	MW09-9	MW10-10	MW10-11
Sample No.						DUP16-4			MW09-9	MW10-10	MW10-11
Stratigraphic Unit		Residential/			Table 6: Residential/				Sand	Sand	Sand
Laboratory ID		Parkland	MAC	AO/OG	Parkland/ Institutional	CKL401	AVERAGE	RPD	CKU658	CKZ032	CKU659
Sample Date					Potable	25-May-16		(%)	26-May-16	27-May-16	26-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	-	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	-	< 0.5	< 0.50	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	-	< 0.5	< 0.50	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	0.64	0.63	-	< 0.1	0.32	**1.6**
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	0.15	0.15	-	< 0.1	< 0.10	0.39
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	-	< 0.5	< 0.50	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	-	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.5	-	< 0.5	< 0.50	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	-	< 0.1	< 0.20	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	11	10	20.0	< 0.1	4.7	2.4
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.20	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	-	< 0.1	< 0.10	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW10-12	MW10-13	MW10-14	MW10-15	MW10-16	MW10-17
Sample No.						MW10-12	MW10-13	MW10-14	MW10-15	MW10-16	MW10-17
Stratigraphic Unit						Sand	Sand	Sand	Sand	Sand	Sand
Laboratory ID						CKU660	CKZ033	CKU661	CKU662	CKZ034	CKZ035
Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	26-May-16	27-May-16	26-May-16	26-May-16	27-May-16	27-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	0.16	< 0.1	< 0.1	< 0.10	1.2
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Bromoform	5	380	100*	-	5	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.50	< 0.5	< 0.5	< 0.50	< 0.50
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.50	< 0.5	< 0.5	< 0.50	< 0.50
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.10	< 0.1	< 0.1	0.16	0.15
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	0.3
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	0.95	< 0.1	0.6	< 0.10	**5.7**
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	0.22	< 0.1	< 0.1	< 0.10	1.4
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.50	< 0.5	< 0.5	< 0.50	< 0.50
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Hexane	5	-	-	-	5	< 0.5	< 0.50	< 0.5	< 0.5	< 0.50	< 0.50
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.20	< 0.1	< 0.1	< 0.20	< 0.20
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Toluene	0.5	83	60	24	24	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	9.7	< 0.1	1.9	< 0.10	**23**
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.20	< 0.2	< 0.2	< 0.20	< 0.20
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.10	< 0.1	< 0.1	< 0.10	< 0.10

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	MW10-17 DUP16-7 CKZ047 27-May-16	AVERAGE	RPD (%)	MW10-18 MW10-18 Sand CKU663 26-May-16	MW10-19 MW10-19 Sand CKZ036 27-May-16	MW10-20 MW10-20 Sand CKZ037 27-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	-	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	1.1	1.2	8.7	< 0.1	< 0.10	< 0.10
Bromodichloromethane	2	8500	100*	-	16	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Bromoform	5	380	100*	-	5	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Bromomethane	0.5	5.6	-	-	0.89	< 0.50	< 0.50	-	< 0.5	< 0.50	< 0.50
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Chloroform	1	1.8	100*	-	2	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Dibromochloromethane	2	1100	100*	-	25	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Dichlorodifluoromethane	2	-	-	-	590	< 0.50	< 0.50	-	< 0.5	< 0.50	< 0.50
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	0.14	0.15	-	< 0.1	< 0.10	< 0.10
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	0.26	0.28	-	< 0.2	< 0.20	< 0.20
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	**5.3**	**5.5**	7.3	< 0.1	< 0.10	< 0.10
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	1.2	1.3	15.4	< 0.1	< 0.10	< 0.10
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.50	< 0.50	-	< 0.5	< 0.50	< 0.50
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	-	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Hexane	5	-	-	-	5	< 0.50	< 0.50	-	< 0.5	< 0.50	< 0.50
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Styrene	0.5	72	-	-	5.4	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.20	< 0.20	-	< 0.1	< 0.20	< 0.20
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Toluene	0.5	83	60	24	24	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Trichloroethylene (TCE)	0.5	20	5	-	0.5	**21**	**22**	9.1	< 0.1	< 0.10	< 0.10
Trichlorofluoromethane	5	-	-	-	150	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.20	< 0.20	-	< 0.2	< 0.20	< 0.20
Xylenes (total)	0.5	3900	90	20	72	< 0.10	< 0.10	-	< 0.1	< 0.10	< 0.10

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW10-21	MW10-22	MW10-23	MW10-24	MW10-25	MW13-26
Sample No.						MW10-21	MW10-22	MW10-23	MW10-24	MW10-25	MW13-26
Stratigraphic Unit						Sand	Sand	Sand	Sand	Sand	Deep Clay
Laboratory ID						CKL373	CKL374	CKL375	CKL376	CKL377	CKF811
Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	25-May-16	25-May-16	25-May-16	25-May-16	25-May-16	24-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	0.25	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	0.22	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	0.21	0.94	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW13-27	MW13-28	MW13-29	MW13-30	MW13-31	MW13-32
Sample No.						MW13-27	MW13-28	MW13-29	MW13-30	MW13-31	MW13-32
Stratigraphic Unit		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	Int Clay	Deep Clay	Int Clay	Deep Clay	Int Clay	Deep Clay
Laboratory ID						CKZ038	CKF812	CKZ039	CKF813	CKF814	CKF815
Sample Date						27-May-16	24-May-16	27-May-16	24-May-16	24-May-16	24-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.10	< 0.1	< 0.10	< 0.1	0.11	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.50	< 0.5	< 0.50	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.50	< 0.5	< 0.50	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.10	< 0.1	< 0.10	< 0.1	0.68	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.50	< 0.5	< 0.50	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.50	< 0.5	< 0.50	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.20	< 0.1	< 0.20	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.10	< 0.1	< 0.10	< 0.1	1.8	< 0.1
Trichlorofluoromethane	5	-	-	-	150	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.20	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.10	< 0.1	< 0.10	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW13-33	MW13-34	MW13-35	MW13-36	MW13-37	MW13-37
Sample No.						MW13-33	MW13-34	MW13-35	MW13-36	MW13-37	DUP16-1
Stratigraphic Unit		Residential/			Table 6: Residential/	Int Clay	Deep Clay	Int Clay	Deep Clay	Int Clay	
Laboratory ID		Parkland	MAC	AO/OG	Parkland/ Institutional Potable	CKF816	CKF817	CKF818	CKF819	CKF820	CKF834
Sample Date						24-May-16	24-May-16	24-May-16	24-May-16	24-May-16	24-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	AVERAGE	RPD (%)	MW15-38C MW15-38C Clay CKF826 24-May-16	MW15-39 MW15-39 Sand CKL394 25-May-16	MW15-40C MW15-40C Clay CKF827 24-May-16	MW15-41 MW15-41 Sand CKL395 25-May-16
Acetone	30	13000	-	-	2700	< 10	-	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	-	< 0.1	< 0.1	< 0.1	0.57
Bromodichloromethane	2	8500	100*	-	16	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	-	0.14	< 0.1	0.46	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	-	< 0.1	0.26	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	-	< 0.1	0.18	< 0.1	3
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	-	< 0.1	< 0.1	< 0.1	0.6
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	-	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	-	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	-	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	-	< 0.1	< 0.1	< 0.1	8.9
Trichlorofluoromethane	5	-	-	-	150	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	MW15-41 DUP16-3 CKL400 25-May-16	AVERAGE	RPD (%)	MW15-42C MW15-42C Clay CKF828 24-May-16	MW15-43 MW15-43 Sand CKL396 25-May-16	MW15-44C MW15-44C Clay CKF829 24-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	-	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	0.5	0.54	-	< 0.1	< 0.1	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	**2.4**	**2.7**	22.2	< 0.1	0.24	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	0.44	0.52	-	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	-	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	8.3	8.6	7.0	< 0.1	< 0.1	0.21
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	MW15-45 MW15-45 Sand CKU664 26-May-16	MW15-46C MW15-46C Clay CKF830 24-May-16	MW15-47C MW15-47C Clay CKF831 24-May-16	MW15-47C DUP16-2 CKF835 24-May-16	AVERAGE	RPD (%)
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	-
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	0.22	< 0.1	< 0.1	-
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	-
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	11	< 5.0	< 5.0	-
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW15-48C	MW15-49C	MW15-50	MW15-51	MW15-52	MW15-53
Sample No.						MW15-48C	MW15-49C	MW15-50	MW15-51	MW15-52	MW15-53
Stratigraphic Unit						Clay	Clay	Sand	Sand	Sand	Sand
Laboratory ID						CKF832	CKF833	CKU665	CKZ040	CKZ041	CKU666
Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	24-May-16	24-May-16	26-May-16	27-May-16	27-May-16	26-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.5	< 0.50	< 0.50	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 0.5	< 0.50	< 0.50	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	**2.6**	0.14	0.29
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	0.72	< 0.10	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 0.5	< 0.50	< 0.50	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 0.5	< 0.50	< 0.50	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.20	< 0.20	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	0.26	< 0.1	< 0.1	**27**	0.51	4.3
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.1	< 0.10	< 0.10	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						MW15-54	MW15-55	MW15-56	MW15-57	MW15-58	MW15-59
Sample No.						MW15-54	MW15-55	MW15-56	MW15-57	MW15-58	MW15-59
Stratigraphic Unit						Sand	Sand	Sand	Sand	Sand	Sand
Laboratory ID						CKL397	CKZ042	CKZ043	CKL398	CKL399	CKU673
Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	25-May-16	27-May-16	27-May-16	25-May-16	25-May-16	26-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.50	< 0.50	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.50	< 0.50	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.50	< 0.50	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.50	< 0.50	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.20	< 0.20	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.10	0.13	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.20	< 0.20	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.10	< 0.10	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	MW15-59 DUP16-5 CKU675 26-May-16	AVERAGE	RPD (%)	MW15-61 MW15-61 Sand/Clay CKZ045 27-May-16	MW15-62 MW15-62 Sand/Clay CKZ046 27-May-16	MW15-63 MW15-63 Sand/Clay CKU674 26-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	-	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	-	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	-	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	MW16-64 MW16-64 Sand CLA235 26-May-16	MW16-65 MW16-65 Sand CLA236 26-May-16	MW16-66 MW16-66 Sand CLA237 26-May-16	MW16-66 DUP16-6 CLA240 26-May-16	AVERAGE	RPD (%)
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	-
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	-
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation Sample Location Sample No. Stratigraphic Unit Laboratory ID Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	MW16-66C MW16-66C Clay CLA238 26-May-16	MW16-67 MW16-67 Sand CLA239 26-May-16	DP16-68 DP16-68 Sand CZM662 1-Sep-16	DUP-DP DP16-68 CZM664 1-Sep-16	AVERAGE	RPD (%)
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	-
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.50	< 0.50	< 0.50	-
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 1.0	< 1.0	< 1.0	-
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.50	< 0.50	< 0.50	-
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.20	< 0.20	< 0.20	-
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 1.0	< 1.0	< 1.0	-
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.50	< 0.50	< 0.50	-
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.50	< 0.50	< 0.50	-
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 2.0	< 2.0	< 2.0	-
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.50	< 0.50	< 0.50	-
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 1.0	< 1.0	< 1.0	-
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 10	< 10	< 10	-
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	-
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.50	< 0.50	< 0.50	-
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.20	< 0.20	< 0.20	-
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.50	< 0.50	< 0.50	-
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.20	< 0.20	< 0.20	-
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.20	< 0.20	< 0.20	-

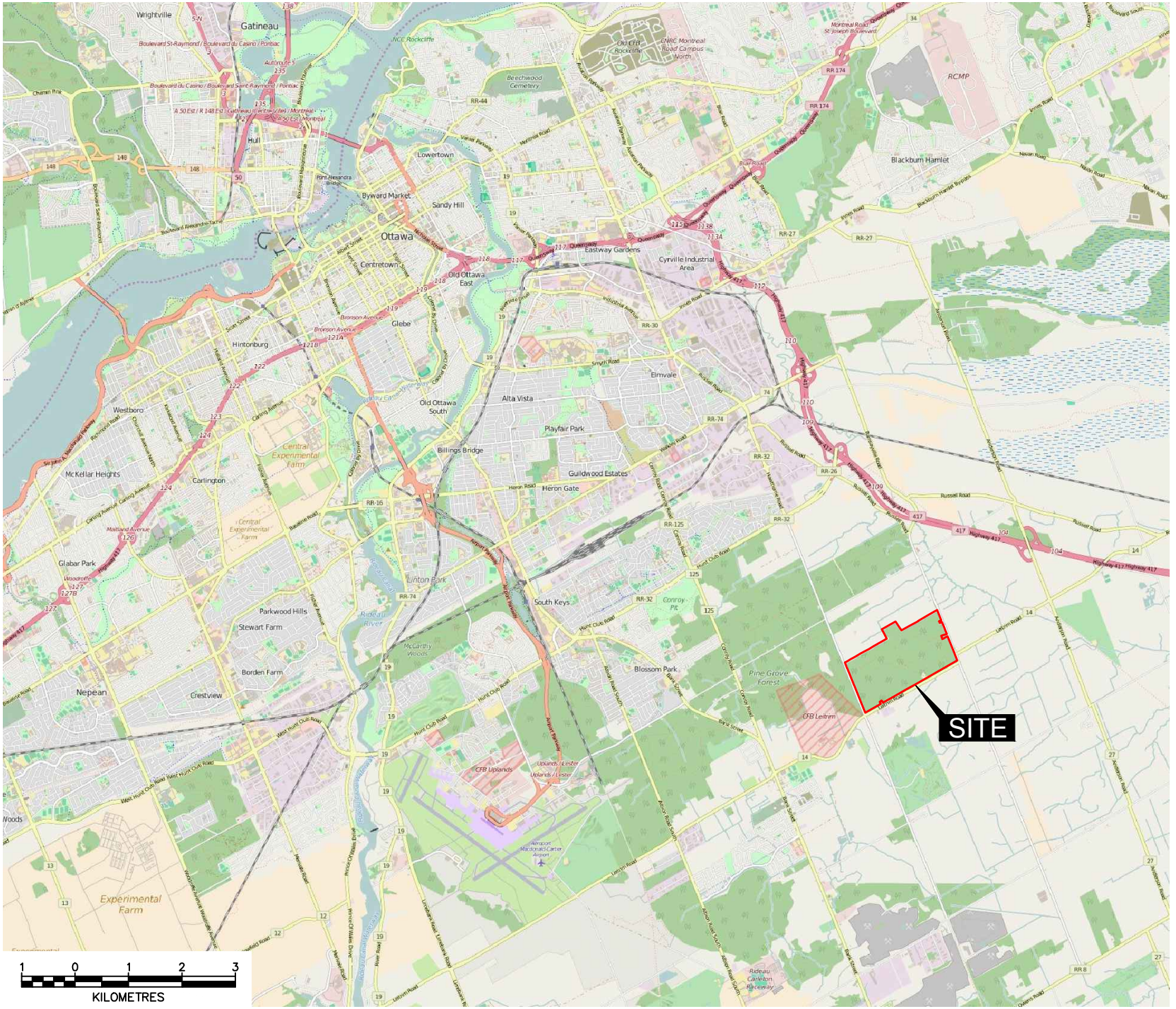
Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation						DP16-69	MW13-26	MW15-41	TRIP BLANK	TRIP BLANK	TRIP BLANK
Sample Location							FB16-1	FB16-2	TB16-1	TB16-2	TB16-3
Sample No.							N/A	N/A	N/A	N/A	N/A
Stratigraphic Unit							CKF852	CKL402	CKF854	CKL403	CKU676
Laboratory ID						CZM663					
Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	1-Sep-16	24-May-16	25-May-16	24-May-16	25-May-16	26-May-16
Acetone	30	13000	-	-	2700	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	0.5	140	5	-	0.5	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromodichloromethane	2	8500	100*	-	16	< 0.50	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform	5	380	100*	-	5	< 1.0	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane	0.5	5.6	-	-	0.89	< 0.50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform	1	1.8	100*	-	2	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibromochloromethane	2	1100	100*	-	25	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorodifluoromethane	2	-	-	-	590	< 1.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.50	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.50	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 2.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.50	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexane	5	-	-	-	5	< 1.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Styrene	0.5	72	-	-	5.4	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.50	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.5	83	60	24	24	< 0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	5	-	-	-	150	< 0.50	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Xylenes (total)	0.5	3900	90	20	72	< 0.20	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Table 4. Summary of Volatile Organic Compound Groundwater Analyses - 2016

Parameters	RL (MOE)	FIGQG	GCDWQ		EPA Standards	Analytical Results - µg/L					
Area of Investigation											
Sample Location						TRIP BLANK	AFW PUMP	PINE PUMP			
Sample No.						TB 16-4	EB16-1	EB16-2			
Stratigraphic Unit						N/A	N/A	N/A			
Laboratory ID						CKZ050	CKF853	CKL405			
Sample Date		Residential/ Parkland	MAC	AO/OG	Table 6: Residential/ Parkland/ Institutional Potable	27-May-16	24-May-16	25-May-16			
Acetone	30	13000	-	-	2700	< 10	< 10	< 10			
Benzene	0.5	140	5	-	0.5	< 0.1	< 0.1	< 0.1			
Bromodichloromethane	2	8500	100*	-	16	< 0.1	< 0.1	< 0.1			
Bromoform	5	380	100*	-	5	< 0.2	< 0.2	< 0.2			
Bromomethane	0.5	5.6	-	-	0.89	< 0.5	< 0.5	< 0.5			
Carbon Tetrachloride	0.2	0.56	2	-	0.2	< 0.1	< 0.1	< 0.1			
Chlorobenzene	0.5	1.3	80	≤ 30	30	< 0.1	< 0.1	< 0.1			
Chloroform	1	1.8	100*	-	2	< 0.1	< 0.1	< 0.1			
Dibromochloromethane	2	1100	100*	-	25	< 0.2	< 0.2	< 0.2			
Dibromoethane, 1,2- (Ethylene Dibromide)	0.2	0.25	-	-	0.2	< 0.2	< 0.2	< 0.2			
Dichlorobenzene, 1,2- (o-DCB)	0.5	0.7	200	≤ 3	3	< 0.2	< 0.2	< 0.2			
Dichlorobenzene, 1,3- (m-DCB)	0.5	42	-	-	59	< 0.2	< 0.2	< 0.2			
Dichlorobenzene, 1,4- (p-DCB)	0.5	26	5	≤ 1	0.5	< 0.2	< 0.2	< 0.2			
Dichlorodifluoromethane	2	-	-	-	590	< 0.5	< 0.5	< 0.5			
Dichloroethane, 1,1- (1,1-DCA)	0.5	320	-	-	5	< 0.1	< 0.1	< 0.1			
Dichloroethane, 1,2- (1,2-DCA)	0.5	10	5	-	0.5	< 0.2	< 0.2	< 0.2			
Dichloroethylene, 1,1- (1,1-DCE)	0.5	39	14	-	0.5	< 0.1	< 0.1	< 0.1			
Dichloroethylene, cis-1,2- (c-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1			
Dichloroethylene, trans-1,2- (t-1,2-DCE)	0.5	1.6	-	-	1.6	< 0.1	< 0.1	< 0.1			
Dichloromethane (Methylene Chloride)	5	98	50	-	26	< 0.5	< 0.5	< 0.5			
Dichloropropane, 1,2-	0.5	16	-	-	0.58	< 0.1	< 0.1	< 0.1			
Dichloropropene, 1,3-	0.5	5.2	-	-	0.5	< 0.28	< 0.28	< 0.28			
Ethylbenzene	0.5	11000	140	1.6	2.4	< 0.1	< 0.1	< 0.1			
Hexane	5	-	-	-	5	< 0.5	< 0.5	< 0.5			
Methyl Ethyl Ketone (MEK)	20	150000	-	-	1800	< 5.0	< 5.0	< 5.0			
Methyl Isobutyl Ketone (MIBK)	20	58000	-	-	640	< 5.0	< 5.0	< 5.0			
Methyl Tert Butyl Ether (MTBE)	2	340	-	15	15	< 0.2	< 0.2	< 0.2			
Styrene	0.5	72	-	-	5.4	< 0.2	< 0.2	< 0.2			
Tetrachloroethane, 1,1,1,2-	0.5	3.4	-	-	1.1	< 0.1	< 0.1	< 0.1			
Tetrachloroethane, 1,1,2,2-	0.5	3.2	-	-	0.5	< 0.2	< 0.2	< 0.2			
Tetrachloroethylene (PCE)	0.5	110	30	-	0.5	< 0.1	< 0.1	< 0.1			
Toluene	0.5	83	60	24	24	< 0.2	< 0.2	< 0.2			
Trichloroethane, 1,1,1- (1,1,1-TCA)	0.5	640	-	-	23	< 0.1	< 0.1	< 0.1			
Trichloroethane, 1,1,2- (1,1,2-TCA)	0.5	4.7	-	-	0.5	< 0.2	< 0.2	< 0.2			
Trichloroethylene (TCE)	0.5	20	5	-	0.5	< 0.1	< 0.1	< 0.1			
Trichlorofluoromethane	5	-	-	-	150	< 0.2	< 0.2	< 0.2			
Vinyl Chloride	0.5	1.1	2	-	0.5	< 0.2	< 0.2	< 0.2			
Xylenes (total)	0.5	3900	90	20	72	< 0.1	< 0.1	< 0.1			

\\OTT-FS1\PROJECTS\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 ROA 2016 - FIGURE 1.DWG



LEGEND

SOURCE: WWW.OPENSTREETMAP.ORG

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

TITLE:

KEY PLAN

DRIVE POINT INSTALLATION
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT

NATIONAL CAPITAL COMMISSION

DRAWN BY: SMP

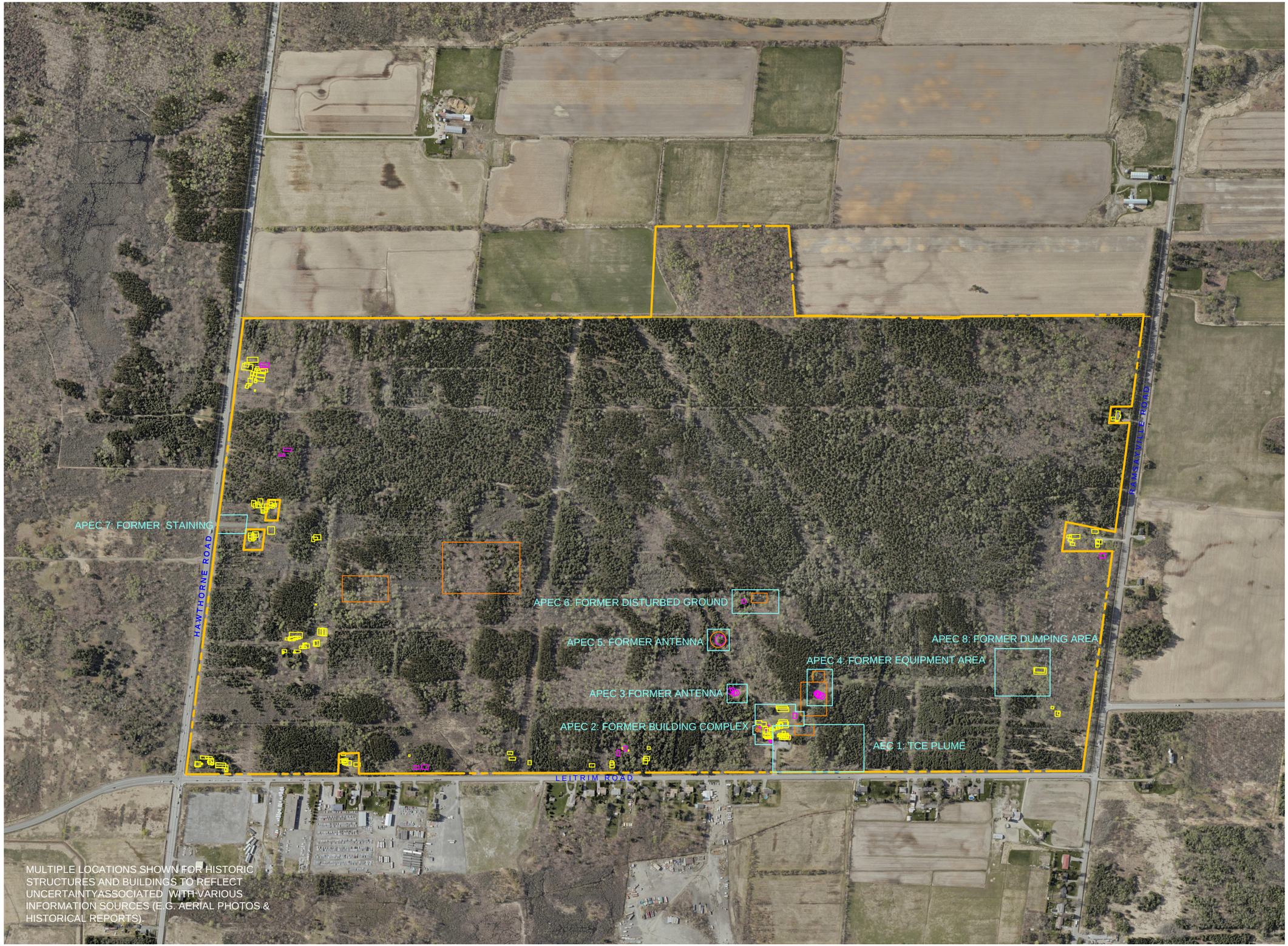
CHECKED BY: KDH

DATE: FEBRUARY 2017

PROJECT NO: TZ14024

SCALE: 1 : 100,000

FIGURE NO: **1**



LEGEND

- SITE BOUNDARY
- HISTORIC STRUCTURES
- HISTORIC BUILDINGS
- HISTORIC DISTURBED AREAS
- AEC/APEC INVESTIGATED IN 2016 PHASE II ESA

80 0 80 160 240
METRES

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

TITLE:

SITE PLAN

PROJECT:

DRIVE POINT INSTALLATION
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY:	SMP
DRAWN BY:	SMP
CHECKED BY:	KDH
DATE:	FEBRUARY 2017
SCALE:	1 : 8,000
PROJECT NO:	TZ14024
FIGURE NO:	2

\\OTT-FS1\PROJECTS\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 DRIVE POINTS 2016 - SITE WIDE FIGURE.DWG

LEGEND

- SITE BOUNDARY
- MONITORING WELL (SHALLOW SAND)
- MONITORING WELL (INTERMEDIATE CLAY)
- MONITORING WELL (DEEP CLAY)
- DRIVE POINT (SHALLOW SAND)

10 0 10 20 30
METRES

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

TITLE:
MONITORING INFRASTRUCTURE NETWORK LOCATION PLAN

PROJECT:
2016 GROUNDWATER MONITORING PROGRAM
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:
NATIONAL CAPITAL COMMISSION

DESIGNED BY: SMP
DRAWN BY: SMP
CHECKED BY: KDH
DATE: FEBRUARY 2017
SCALE: 1 : 800
PROJECT NO: TZ14024
FIGURE NO: 3

\\OTT-FS1\PROJECTS\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 DRIVE POINTS - 2016.DWG

LEGEND

- SITE BOUNDARY
- MONITORING WELL (SHALLOW SAND)
- DRIVE POINT (SHALLOW SAND)
- 84.23 GROUNDWATER ELEVATION (masl)
- CENTRELINE OF DITCH WITH FLOW DIRECTION; DITCH CENTRELINE ELEVATIONS SHOWN

10 0 10 20 30
METRES

amec foster wheeler

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

TITLE:

GROUNDWATER ELEVATION PLAN
SHALLOW SAND AQUIFER

PROJECT:

2016 DRIVE POINT INSTALLATION
PROPERTY ASSET 97390
LEITRIM ROAD - P19
OTTAWA, ONTARIO

CLIENT:

NATIONAL CAPITAL COMMISSION

DESIGNED BY:	SMP
DRAWN BY:	SMP
CHECKED BY:	KDH
DATE:	FEBRUARY 2017
SCALE:	1 : 800
PROJECT NO:	TZ14024
FIGURE NO:	4

\\OTT-FS1\PROJECTS\2014\PROJECTS\TZ14024_NCC_LEITRIM_ROAD_GW_MONITOR\11_CAD\TZ14024 DRIVE POINTS - 2016.DWG

Appendix A

Laboratory Certificates of Analysis

Your P.O. #: TZ14024.8000
Your C.O.C. #: 576148-01-01

Attention:Susan Pfister

AMEC Foster Wheeler Environment & Infrastructure
Ottawa - Standing Offer
210 Colonnade Rd S
Suite 300
Ottawa, ON
K2E 7L5

Report Date: 2016/09/08
Report #: R4159388
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6I6920
Received: 2016/09/01, 11:16

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
1,3-Dichloropropene Sum (1)	4	N/A	2016/09/08		EPA 8260C m
Volatile Organic Compounds in Water (1)	4	N/A	2016/09/07	CAM SOP-00228	EPA 8260C m

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Analytics Mississauga

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Madison Bingley, Project Manager
Email: MBingley@maxxam.ca
Phone# (613)274-3549

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B6I6920
Report Date: 2016/09/08

AMEC Foster Wheeler Environment & Infrastructure
Your P.O. #: TZ14024.8000
Sampler Initials: BJ

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		CZM662	CZM663		CZM664	CZM665		
Sampling Date		2016/09/01 09:00	2016/09/01 10:12		2016/09/01	2016/09/01		
COC Number		576148-01-01	576148-01-01		576148-01-01	576148-01-01		
	UNITS	DP16-68	DP16-69	QC Batch	DUP-DP	TRIP BLANK	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	<0.50	4644126	<0.50	<0.50	0.50	4644415
Volatile Organics								
Acetone (2-Propanone)	ug/L	<10	<10	4647413	<10	<10	10	4647413
Benzene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Bromodichloromethane	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
Bromoform	ug/L	<1.0	<1.0	4647413	<1.0	<1.0	1.0	4647413
Bromomethane	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
Carbon Tetrachloride	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Chlorobenzene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Chloroform	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Dibromochloromethane	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	<1.0	4647413	<1.0	<1.0	1.0	4647413
1,1-Dichloroethane	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
1,2-Dichloroethane	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
1,1-Dichloroethylene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
cis-1,2-Dichloroethylene	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
trans-1,2-Dichloroethylene	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
1,2-Dichloropropane	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
cis-1,3-Dichloropropene	ug/L	<0.30	<0.30	4647413	<0.30	<0.30	0.30	4647413
trans-1,3-Dichloropropene	ug/L	<0.40	<0.40	4647413	<0.40	<0.40	0.40	4647413
Ethylbenzene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Ethylene Dibromide	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Hexane	ug/L	<1.0	<1.0	4647413	<1.0	<1.0	1.0	4647413
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	4647413	<2.0	<2.0	2.0	4647413
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	<10	4647413	<10	<10	10	4647413
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	4647413	<5.0	<5.0	5.0	4647413
Methyl t-butyl ether (MTBE)	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
Styrene	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
1,1,1,2-Tetrachloroethane	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
1,1,2,2-Tetrachloroethane	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
Tetrachloroethylene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Toluene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B6I6920
Report Date: 2016/09/08

AMEC Foster Wheeler Environment & Infrastructure
Your P.O. #: TZ14024.8000
Sampler Initials: BJ

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		CZM662	CZM663		CZM664	CZM665		
Sampling Date		2016/09/01 09:00	2016/09/01 10:12		2016/09/01	2016/09/01		
COC Number		576148-01-01	576148-01-01		576148-01-01	576148-01-01		
	UNITS	**DP16-68**	**DP16-69**	**QC Batch**	**DUP-DP**	**TRIP BLANK**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
1,1,2-Trichloroethane	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
Trichloroethylene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	<0.50	4647413	<0.50	<0.50	0.50	4647413
Vinyl Chloride	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
p+m-Xylene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
o-Xylene	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Total Xylenes	ug/L	<0.20	<0.20	4647413	<0.20	<0.20	0.20	4647413
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	99	100	4647413	99	99		4647413
D4-1,2-Dichloroethane	%	108	109	4647413	108	107		4647413
D8-Toluene	%	96	96	4647413	95	96		4647413

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B6I6920
Report Date: 2016/09/08

AMEC Foster Wheeler Environment & Infrastructure
Your P.O. #: TZ14024.8000
Sampler Initials: BJ

TEST SUMMARY

Maxxam ID: CZM662 **Collected:** 2016/09/01
Sample ID: DP16-68 **Shipped:**
Matrix: Water **Received:** 2016/09/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4644126	N/A	2016/09/08	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4647413	N/A	2016/09/07	Blair Gannon

Maxxam ID: CZM662 Dup **Collected:** 2016/09/01
Sample ID: DP16-68 **Shipped:**
Matrix: Water **Received:** 2016/09/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds in Water	GC/MS	4647413	N/A	2016/09/07	Blair Gannon

Maxxam ID: CZM663 **Collected:** 2016/09/01
Sample ID: DP16-69 **Shipped:**
Matrix: Water **Received:** 2016/09/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4644126	N/A	2016/09/08	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4647413	N/A	2016/09/07	Blair Gannon

Maxxam ID: CZM664 **Collected:** 2016/09/01
Sample ID: DUP-DP **Shipped:**
Matrix: Water **Received:** 2016/09/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4644415	N/A	2016/09/08	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4647413	N/A	2016/09/07	Blair Gannon

Maxxam ID: CZM665 **Collected:** 2016/09/01
Sample ID: TRIP BLANK **Shipped:**
Matrix: Water **Received:** 2016/09/01

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4644415	N/A	2016/09/08	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4647413	N/A	2016/09/07	Blair Gannon

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B6I6920
Report Date: 2016/09/08

AMEC Foster Wheeler Environment & Infrastructure
Your P.O. #: TZ14024.8000
Sampler Initials: BJ

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 32 Colonnade Rd, Unit #1000, Nepean, ON K2E 7J6 Phone: 613 274-0573 Fax: 613 274-0574 Website: www.maxxam.ca

Maxxam Job #: B6I6920
Report Date: 2016/09/08

QUALITY ASSURANCE REPORT

AMEC Foster Wheeler Environment & Infrastructure
Your P.O. #: TZ14024.8000
Sampler Initials: BJ

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4647413	4-Bromofluorobenzene	2016/09/07	102	70 - 130	101	70 - 130	100	%		
4647413	D4-1,2-Dichloroethane	2016/09/07	109	70 - 130	108	70 - 130	111	%		
4647413	D8-Toluene	2016/09/07	97	70 - 130	98	70 - 130	97	%		
4647413	1,1,1,2-Tetrachloroethane	2016/09/07	96	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
4647413	1,1,1-Trichloroethane	2016/09/07	101	70 - 130	103	70 - 130	<0.20	ug/L	NC	30
4647413	1,1,2,2-Tetrachloroethane	2016/09/07	98	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
4647413	1,1,2-Trichloroethane	2016/09/07	98	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
4647413	1,1-Dichloroethane	2016/09/07	102	70 - 130	103	70 - 130	<0.20	ug/L	NC	30
4647413	1,1-Dichloroethylene	2016/09/07	106	70 - 130	107	70 - 130	<0.20	ug/L	NC	30
4647413	1,2-Dichlorobenzene	2016/09/07	91	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
4647413	1,2-Dichloroethane	2016/09/07	104	70 - 130	104	70 - 130	<0.50	ug/L	NC	30
4647413	1,2-Dichloropropane	2016/09/07	101	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
4647413	1,3-Dichlorobenzene	2016/09/07	90	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
4647413	1,4-Dichlorobenzene	2016/09/07	91	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
4647413	Acetone (2-Propanone)	2016/09/07	110	60 - 140	109	60 - 140	<10	ug/L	NC	30
4647413	Benzene	2016/09/07	99	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4647413	Bromodichloromethane	2016/09/07	104	70 - 130	104	70 - 130	<0.50	ug/L	NC	30
4647413	Bromoform	2016/09/07	95	70 - 130	96	70 - 130	<1.0	ug/L	NC	30
4647413	Bromomethane	2016/09/07	89	60 - 140	87	60 - 140	<0.50	ug/L	NC	30
4647413	Carbon Tetrachloride	2016/09/07	103	70 - 130	106	70 - 130	<0.20	ug/L	NC	30
4647413	Chlorobenzene	2016/09/07	99	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4647413	Chloroform	2016/09/07	102	70 - 130	103	70 - 130	<0.20	ug/L	NC	30
4647413	cis-1,2-Dichloroethylene	2016/09/07	104	70 - 130	104	70 - 130	<0.50	ug/L	NC	30
4647413	cis-1,3-Dichloropropene	2016/09/07	112	70 - 130	107	70 - 130	<0.30	ug/L	NC	30
4647413	Dibromochloromethane	2016/09/07	97	70 - 130	98	70 - 130	<0.50	ug/L	NC	30
4647413	Dichlorodifluoromethane (FREON 12)	2016/09/07	84	60 - 140	87	60 - 140	<1.0	ug/L	NC	30
4647413	Ethylbenzene	2016/09/07	97	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4647413	Ethylene Dibromide	2016/09/07	97	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
4647413	Hexane	2016/09/07	103	70 - 130	105	70 - 130	<1.0	ug/L	NC	30
4647413	Methyl Ethyl Ketone (2-Butanone)	2016/09/07	111	60 - 140	109	60 - 140	<10	ug/L	NC	30
4647413	Methyl Isobutyl Ketone	2016/09/07	110	70 - 130	109	70 - 130	<5.0	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4647413	Methyl t-butyl ether (MTBE)	2016/09/07	104	70 - 130	104	70 - 130	<0.50	ug/L	NC	30
4647413	Methylene Chloride(Dichloromethane)	2016/09/07	104	70 - 130	104	70 - 130	<2.0	ug/L	NC	30
4647413	o-Xylene	2016/09/07	97	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
4647413	p+m-Xylene	2016/09/07	95	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4647413	Styrene	2016/09/07	95	70 - 130	97	70 - 130	<0.50	ug/L	NC	30
4647413	Tetrachloroethylene	2016/09/07	91	70 - 130	93	70 - 130	<0.20	ug/L	NC	30
4647413	Toluene	2016/09/07	93	70 - 130	94	70 - 130	<0.20	ug/L	NC	30
4647413	Total Xylenes	2016/09/07					<0.20	ug/L	NC	30
4647413	trans-1,2-Dichloroethylene	2016/09/07	102	70 - 130	103	70 - 130	<0.50	ug/L	NC	30
4647413	trans-1,3-Dichloropropene	2016/09/07	104	70 - 130	97	70 - 130	<0.40	ug/L	NC	30
4647413	Trichloroethylene	2016/09/07	96	70 - 130	98	70 - 130	<0.20	ug/L	NC	30
4647413	Trichlorofluoromethane (FREON 11)	2016/09/07	103	70 - 130	105	70 - 130	<0.50	ug/L	NC	30
4647413	Vinyl Chloride	2016/09/07	100	70 - 130	100	70 - 130	<0.20	ug/L	NC	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

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Maxxam Job #: B6I6920
Report Date: 2016/09/08

AMEC Foster Wheeler Environment & Infrastructure
Your P.O. #: TZ14024.8000
Sampler Initials: BJ

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere

Cristina Carriere, Scientific Services

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Appendix B

Limitations

LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
   (a) The terms of the Standing Offer Agreement (586101 dated June 13, 2013) between Amec Foster Wheeler (then Amec Environment & Infrastructure) and the National Capital Commission (NCC);
   (b) The Scope of Services;
   (c) Time and Budgetary limitations as described in our Contract; and,
   (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures, which were not reasonably available, in Amec Foster Wheeler's opinion, for direct observation.
4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in- council, legislative enactments and regulations was not performed.
5. The site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.
6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on site and may be revealed by different or other testing not provided for in our contract.
7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Amec Foster Wheeler must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of Amec Foster Wheeler's services during the implementation of any remedial measures will allow Amec Foster Wheeler to observe compliance with the conclusions and recommendations contained in the report. Amec Foster Wheeler's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or the part, or any reliance thereon or decisions made based on any information or conclusions in the report, is the sole responsibility of such third party. Amec Foster Wheeler accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set our therein.
10. Provided that the report is still reliable, and less than 12 months old, Amec Foster Wheeler will issue a third-party reliance letter to parties client identifies in writing, upon payment of the then current fee for such letters. All third parties relying on Amec Foster Wheeler's report, by such reliance agree to be bound by our proposal and Amec Foster Wheeler's standard reliance letter. Amec Foster Wheeler's standard reliance letter indicates that in no event shall Amec Foster Wheeler be liable for any damages, howsoever arising, relating to third-party reliance on Amec Foster Wheeler's report. No reliance by any party is permitted without such agreement.