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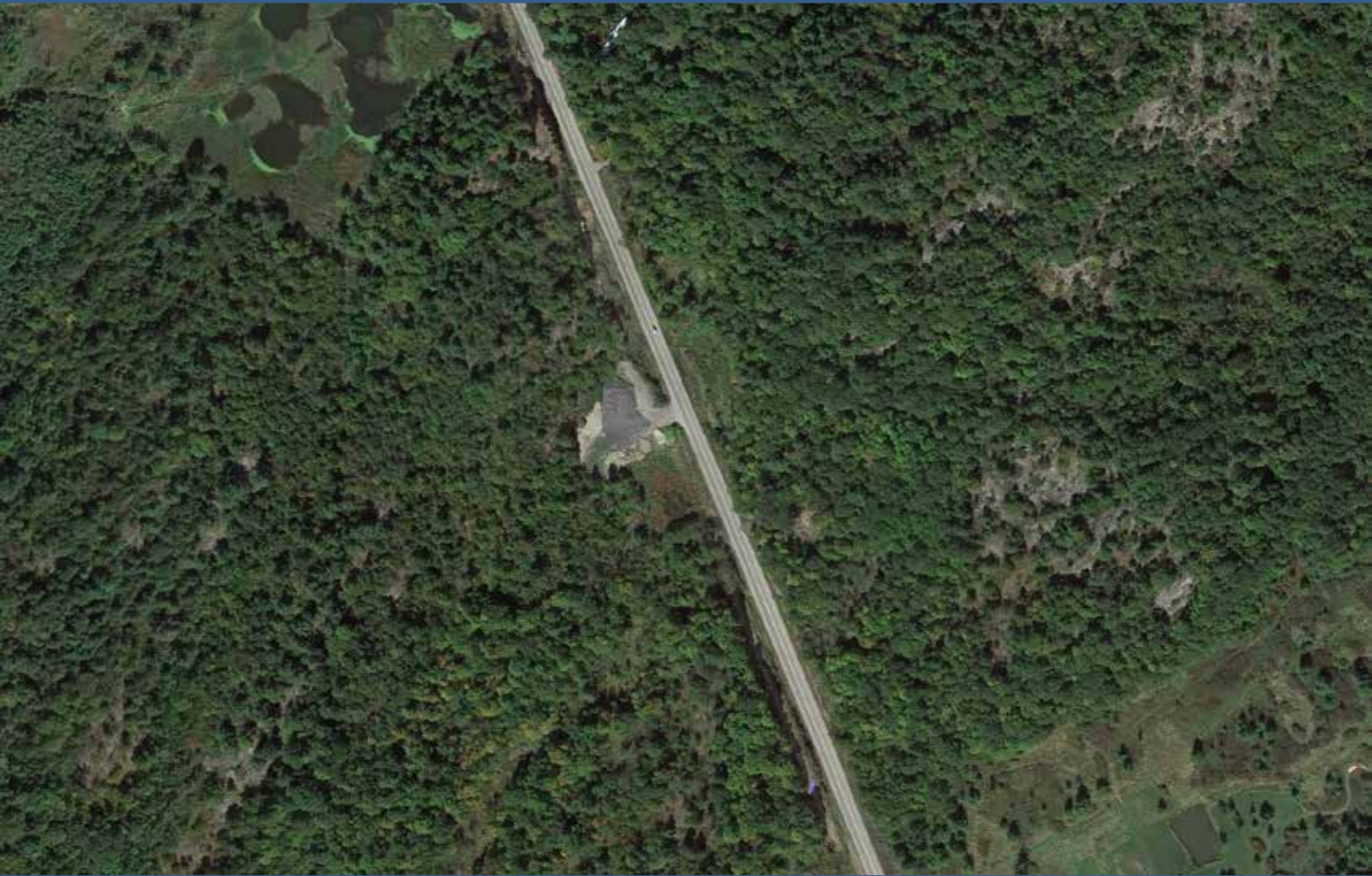
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TOWNSHIP OF LEEDS AND THE THOUSAND ISLANDS

Reynold's Road Waste Disposal Site
2019 Annual Monitoring Report



Appendix D-Monitoring and Screening Checklist General Information and Instructions

General Information: The checklist is to be completed, and submitted with the Monitoring Report.

Instructions: A complete checklist consists of:

- (a) a completed and signed checklist, including any additional pages of information which can be attached as needed to provide further details where indicated.
- (b) completed contact information for the Competent Environmental Practitioner (CEP)
- (c) self-declaration that CEP(s) meet(s) the qualifications as set out below and in Section 1.2 of the Technical Guidance Document.

Definition of Groundwater CEP:

For groundwater, the CEP must have expertise in hydrogeology and meet one of the following:

- (a) the person holds a licence, limited licence or temporary licence under the *Professional Engineers Act*; or
- (b) the person holds a certificate of registration under the *Professional Geoscientists Act, 2000* and is a practicing member, temporary member or limited member of the Association of Professional Geoscientists of Ontario. O. Reg. 66/08, s. 2..

Definition of Surface water CEP:

A CEP for surface water assessments is a scientist, professional engineer or professional geoscientist as described in (a) and (b) above with demonstrated experience and post-secondary education, either a diploma or degree, in hydrology, aquatic ecology, limnology, aquatic biology, physical geography with specialization in surface water, and/or water resource management.

The type of scientific work that a CEP performs must be consistent with that person's education and experience. If an individual has appropriate training and credentials in both groundwater and surface water and is responsible for both areas of expertise, the CEP may then complete and validate both sections of the checklist.

| Monitoring Report and Site Information | |
|---|--|
| Waste Disposal Site Name | Reynold's Road Waste Disposal Site |
| Location (e.g. street address, lot, concession) | Lot 18, Concession2, in the Township of Leeds and the Thousand Islands |
| GPS Location (taken within the property boundary at front gate/ front entry) | 18 T 419161 m E, 4915429 m N |
| Municipality | Township of Leeds and the Thousand Islands |
| Client and/or Site Owner | The Corporation of the Township of Leeds and the Thousand Islands |
| Monitoring Period (Year) | 2019 |
| This Monitoring Report is being submitted under the following: | |
| Environmental Compliance Approval Number: | A442001 |
| Director's Order No.: | NA |
| Provincial Officer's Order No.: | NA |
| Other: | NA |

| | | | |
|--|---|--|--|
| Report Submission Frequency | <input checked="" type="radio"/> Annual <input type="radio"/> Other | | |
| The site is: (Operation Status) | <input type="radio"/> Open <input type="radio"/> Inactive <input checked="" type="radio"/> Closed | | |
| Does your Site have a Total Approved Capacity? | <input type="radio"/> Yes <input checked="" type="radio"/> No | | |
| If yes, please specify Total Approved Capacity | | <i>Units</i> | Cubic Metres |
| Does your Site have a Maximum Approved Fill Rate? | <input type="radio"/> Yes <input checked="" type="radio"/> No | | |
| If yes, please specify Maximum Approved Fill Rate | NA | <i>Units</i> | |
| Total Waste Received within Monitoring Period (Year) | | <i>Units</i> | Cubic Metres |
| Total Waste Received within Monitoring Period (Year) <i>Methodology</i> | | | |
| Estimated Remaining Capacity | | <i>Units</i> | Cubic Metres |
| Estimated Remaining Capacity <i>Methodology</i> | | | |
| Estimated Remaining Capacity <i>Date Last Determined</i> | | | |
| Non-Hazardous Approved Waste Types | <input type="checkbox"/> Domestic <input type="checkbox"/> Industrial, Commercial & Institutional (IC&I) <input type="checkbox"/> Source Separated Organics (Green Bin) <input type="checkbox"/> Tires | <input type="checkbox"/> Contaminated Soil <input type="checkbox"/> Wood Waste <input type="checkbox"/> Blue Box Material <input type="checkbox"/> Processed Organics <input type="checkbox"/> Leaf and Yard Waste | <input type="checkbox"/> Food Processing/Preparation Operations Waste <input type="checkbox"/> Hauled Sewage Other: <input type="text"/> |
| Subject Waste Approved Waste Classes: Hazardous & Liquid Industrial <i>(separate waste classes by comma)</i> | | | |
| Year Site Opened <i>(enter the Calendar Year <u>only</u>)</i> | 1970 | Current ECA Issue Date | November 10, 2016 |
| Is your Site required to submit Financial Assurance? | <input type="radio"/> Yes <input checked="" type="radio"/> No | | |
| Describe how your Landfill is designed. | <input checked="" type="radio"/> Natural Attenuation only <input type="radio"/> Fully engineered Facility <input type="radio"/> Partially engineered Facility | | |
| Does your Site have an approved Contaminant Attenuation Zone? | <input type="radio"/> Yes <input checked="" type="radio"/> No | | |

If closed, specify C of A, control or authorizing document closure date:

Amended ECA A442001, November 10, 2016

Has the nature of the operations at the site changed during this monitoring period?

Yes

No

If yes, provide details:

Type Here

Have any measurements been taken since the last reporting period that indicate landfill gas volumes have exceeded the MOE limits for subsurface or adjacent buildings? (i.e. exceeded the LEL for methane)

Yes

No

Groundwater WDS Verification:

Based on all available information about the site and site knowledge, it is my opinion that:

Sampling and Monitoring Program Status:

| | | |
|--|--|---|
| 1) The monitoring program continues to effectively characterize site conditions and any groundwater discharges from the site. All monitoring wells are confirmed to be in good condition and are secure: | <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| 2) All groundwater, leachate and WDS gas sampling and monitoring for the monitoring period being reported on was successfully completed as required by Certificate(s) of Approval or other relevant authorizing/control document (s): | <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Applicable | If no, list exceptions below or attach information. |

| Groundwater Sampling Location | Description/Explanation for change (change in name or location, additions, deletions) | Date |
|-------------------------------|---|-------------|
| | | |
| | | |
| | | |
| Type Here | Type Here | Select Date |

| | |
|--|--|
| 3) a) Is landfill gas being monitored or controlled at the site? | <input checked="" type="radio"/> Yes <input type="radio"/> No |
|--|--|

If yes to 3(a), please answer the next two questions below.

| | |
|--|--|
| b) Have any measurements been taken since the last reporting period that indicate landfill gas is present in the subsurface at levels exceeding criteria established for the site? | <input type="radio"/> Yes <input checked="" type="radio"/> No |
|--|--|

| | | |
|--|--|--|
| c) Has the sampling and monitoring identified under 3(a) for the monitoring period being reported on was successfully completed in accordance with established protocols, frequencies, locations, and parameters developed as per the Technical Guidance Document , or MECP concurrence. | <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Applicable | If no, list exceptions below or attach additional information. |
|--|--|--|

| Groundwater Sampling Location | Description/Explanation for change (change in name or location, additions, deletions) | Date |
|-------------------------------|---|-------------|
| Type Here | Type Here | Select Date |
| Type Here | Type Here | Select Date |
| Type Here | Type Here | Select Date |
| Type Here | Type Here | Select Date |

| | | |
|--|--|-------------------------|
| 4) All field work for groundwater investigations was done in accordance with standard operating procedures as established/outlined per the Technical Guidance Document (including internal/external QA/QC requirements) (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization): | <input checked="" type="radio"/> Yes <input type="radio"/> No | See report for details. |
|--|--|-------------------------|

Sampling and Monitoring Program Results/WDS Conditions and Assessment:

| | | | |
|--|---|---|--|
| <p>5) The site has an adequate buffer, Contaminant Attenuation Zone (CAZ) and/or contingency plan in place. Design and operational measures, including the size and configuration of any CAZ, are adequate to prevent potential human health impacts and impairment of the environment.</p> | <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> | <p>Buffer lands to the north were purchased in 2016.</p> | |
| <p>6) The site meets compliance and assessment criteria.</p> | <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> | <p>See previous comment and report for details.</p> | |
| <p>7) The site continues to perform as anticipated. There have been no unusual trends/ changes in measured leachate and groundwater levels or concentrations.</p> | <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> | <p>If no, list exceptions and explain reason for increase/change (Type Here):</p> | |
| <p>1) Is one or more of the following risk reduction practices in place at the site: (a) There is minimal reliance on natural attenuation of leachate due to the presence of an effective waste liner and active leachate collection/ treatment; or (b) There is a predictive monitoring program in-place (modeled indicator concentrations projected over time for key locations); or (c) The site meets the following two conditions (typically achieved after 15 years or longer of site operation): <i>i.</i> The site has developed stable leachate mound(s) and stable leachate plume geometry/concentrations; and <i>ii.</i> Seasonal and annual water levels and water quality fluctuations are well understood.</p> | <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> | <p>Note which practice(s):</p> | <p><input type="checkbox"/> (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (c) As discussed in report.</p> |
| <p>9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):</p> | <p><input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Not Applicable</p> | | |

Groundwater CEP Declaration:

I am a licensed professional Engineer or a registered professional geoscientist in Ontario with expertise in hydrogeology, as defined in Appendix D under Instructions. Where additional expertise was needed to evaluate the site monitoring data, I have relied on individuals who I believe to be experts in the relevant discipline, who have co-signed the compliance monitoring report or monitoring program status report, and who have provided evidence to me of their credentials.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed, as deemed appropriate for this Site in my professional judgement, the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended), and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analyzed to ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories, or as amended from time to time by the ministry.

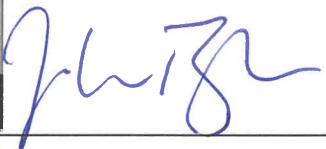
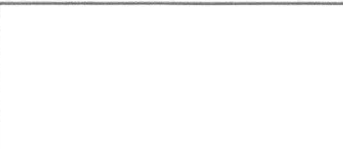
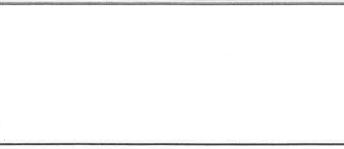
The completion of this Checklist is a requirement of the MECP. As always, we rely upon the MECP to undertake a complete review the report(s) provided regarding the waste disposal site/landfill, and provide their comments and acceptance of our interpretation, conclusions and recommendations. The Checklist should in no way supersede the MECP's responsibility to undertake their complete review of our report(s) to ensure Site compliance with environmental regulations, standards and/or approvals. If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature and will be rectified for the next monitoring/reporting period. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

Select Date

Recommendations:

Based on my technical review of the monitoring results for the waste disposal site:

| | |
|---|---|
| <p><input type="radio"/> No changes to the monitoring program are recommended</p> <p><input checked="" type="radio"/> The following change(s) to the monitoring program is/are recommended:</p> | <p>See report for additional information.</p> <p>Given that the site has been closed since 1971, ground water results indicate little to no leachate impacts in the vicinity of the waste, and that groundwater trends for the leachate indicators (ammonia, boron, dissolved organic carbon (DOC), chloride and conductivity) have been stable or decreasing since 2016 or more, the site has likely reached its final maturation and stabilization phase. Therefore we recommend that sampling at this site be discontinued. Sampling may be resumed should adverse conditions be observed during the site inspections.</p> |
| <p><input checked="" type="radio"/> No Changes to site design and operation are recommended</p> <p><input type="radio"/> The following change(s) to the site design and operation is/are recommended:</p> | |

| | | | |
|--|---|------------------|----------------|
| Name: | John Pyke | | |
| Seal: | Add Image | | |
| Signature: |  | Date: | March 27, 2020 |
| CEP Contact Information: | John Pyke | | |
| Company: | Malroz Engineering Inc. | | |
| Address: | 308 Wellington St., 2nd Floor, Kingston ON | | |
| Telephone No.: | 613-548-3446 ext. 34 | Fax No. : | Type Here |
| E-mail Address: | pyke@malroz.com | | |
| Co-signers for additional expertise provided: | | | |
| Signature: |  | Date: | Select Date |
| Signature: |  | Date: | Select Date |

Surface Water WDS Verification:

Provide the name of surface water body/bodies potentially receiving the WDS effluent and the approximate distance to the waterbody (including the nearest surface water body/bodies to the site):

| | |
|-------------|---|
| Name (s) | Unnamed creek |
| Distance(s) | through west portion of Site and into marsh north of Site |

Based on all available information and site knowledge, it is my opinion that:

Sampling and Monitoring Program Status:

| | | |
|--|--|---|
| <p>1) The current surface water monitoring program continues to effectively characterize the surface water conditions, and includes data that relates upstream/background and downstream receiving water conditions:</p> | <input type="radio"/> Yes <input checked="" type="radio"/> No | No surface water program in place. |
| <p>2) All surface water sampling for the monitoring period being reported was successfully completed in accordance with the Certificate(s) of Approval or relevant authorizing/control document(s) (if applicable):</p> | <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Not applicable (No C of A, authorizing / control document applies) | If no, specify below or provide details in an attachment. |

| Surface Water Sampling Location | Description/Explanation for change (change in name or location, additions, deletions) | Date |
|---------------------------------|---|-------------|
| | | |
| | | |
| | | |
| Type Here | Type Here | Select Date |

| | |
|--|---|
| <p>3) a) Some or all surface water sampling and monitoring program requirements for the monitoring period have been established outside of a ministry C of A or authorizing/control document, or MECP concurrence.</p> | <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input checked="" type="radio"/> Not Applicable</p> |
|--|---|

| | | |
|--|---|--|
| <p>b) If yes, all surface water sampling and monitoring identified under 3 (a) was successfully completed in accordance with the established program from the site, including sampling protocols, frequencies, locations and parameters) as developed per the Technical Guidance Document:</p> | <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input checked="" type="radio"/> Not Applicable</p> | <p>If no, specify below or provide details in an attachment.</p> |
|--|---|--|

| Surface Water Sampling Location | Description/Explanation for change (change in name or location, additions, deletions) | Date |
|---------------------------------|--|-------------|
| | | |
| | | |
| | | |
| Type Here | Type Here | Select Date |

| | | |
|--|---|---|
| <p>4) All field work for surface water investigations was done in accordance with standard operating procedures, including internal/external QA/QC requirements, as established/outlined as per the Technical Guidance Document, MOE 2010, or as amended. (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):</p> | <p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p> | <p>No surface water program in place.</p> |
|--|---|---|

Sampling and Monitoring Program Results/WDS Conditions and Assessment:

5) The receiving water body meets surface water-related compliance criteria and assessment criteria: i.e., there are no exceedences of criteria, based on MECP legislation, regulations, Water Management Policies, Guidelines and Provincial Water Quality Objectives and other assessment criteria (e.g., CWQGs, APVs), as noted in Table A or Table B in the Technical Guidance Document (Section 4.6):

Yes

No

If no, list parameters that exceed criteria outlined above and the amount/percentage of the exceedance as per the table below or provide details in an attachment:

| Parameter | Compliance or Assessment Criteria or Background | Amount by which Compliance or Assessment Criteria or Background Exceeded |
|---|--|--|
| e.g. Nickel | e.g. C of A limit, PWQO, background | e.g. X% above PWQO |
| No surface water program in place. | | |
| | | |
| | | |
| | | |
| | | |
| 6) In my opinion, any exceedances listed in Question 5 are the result of non-WDS related influences (such as background, road salting, sampling site conditions)? | <input checked="" type="radio"/> Yes <input type="radio"/> No | No surface water program in place. |

| | | |
|--|---|--|
| <p>7) All monitoring program surface water parameter concentrations fall within a stable or decreasing trend. The site is not characterized by historical ranges of concentrations above assessment and compliance criteria.</p> | <p><input checked="" type="radio"/> Yes</p> <p><input type="radio"/> No</p> | <p>No surface water program in place.</p> |
| <p>8) For the monitoring program parameters, does the water quality in the groundwater zones adjacent to surface water receivers exceed assessment or compliance criteria (e.g. , PWQOs, CWQGs, or toxicity values for aquatic biota (APVs)):</p> | <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input type="radio"/> Not Known</p> <p><input checked="" type="radio"/> Not Applicable</p> | <p>I</p> |
| <p>9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):</p> | <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p><input checked="" type="radio"/> Not Applicable</p> | <p>If yes, list value(s) that are/have been exceeded and follow-up action taken (Type Here):</p> <p>See report for discussion.</p> |

Surface Water CEP Declaration:

I, the undersigned hereby declare that I am a Competent Environmental Practitioner as defined in Appendix D under Instructions, holding the necessary level of experience and education to design surface water monitoring and sampling programs, conduct appropriate surface water investigations and interpret the related data as it pertains to the site for this monitoring period.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed, as deemed appropriate for this Site in my professional judgement, the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MECP, 2010, or as amended) and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories, or as amended from time to time by the ministry.

The completion of this Checklist is a requirement of the MECP. As always, we rely upon the MOE to undertake a complete review the report(s) provided regarding the waste disposal site/landfill, and provide their comments and acceptance of our interpretation, conclusions and recommendations. This Checklist should in no way supersede the MECP responsibility to undertake their complete review of our report(s) to ensure compliance with environmental regulations, standards and approvals.

If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature or will be rectified for future monitoring events. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

Select Date

Recommendations:

Based on my technical review of the monitoring results for the waste disposal site:

| | |
|---|-----------|
| <p><input checked="" type="radio"/> No Changes to the monitoring program are recommended</p> <p><input type="radio"/> The following change(s) to the monitoring program is/are recommended:</p> | |
| <p><input checked="" type="radio"/> No changes to the site design and operation are recommended</p> <p><input type="radio"/> The following change(s) to the site design and operation is/are recommended:</p> | Type Here |

| | | |
|---------------------------------|---|-------------------|
| CEP Signature |  | |
| Relevant Discipline | Geoscientist with relevant experience and training. | |
| Date: | March 27, 2019 | |
| CEP Contact Information: | John Pyke | |
| Company: | Malroz Engineering Inc. | |
| Address: | 308 Wellington St., 2nd Floor, Kingston ON | |
| Telephone No.: | 613-548-3446 ext. 34 | |
| Fax No. : | Type Here | |
| E-mail Address: | pyke@malroz.com | |
| Save As | | Print Form |

NOTICE TO READER

This document has been prepared by Malroz Engineering Inc. (Malroz) on behalf of the Township of Leeds and the Thousand Islands (TLTI), in fulfilment of Condition 2(3) of Amended Environmental Compliance Approval (ECA) No. A442001.

Malroz has relied upon TLTI staff to provide historic data and the conceptual understanding of the site. Malroz accepts no responsibility for the integrity of the data provided by TLTI or for missing data. Any third-party use or reliance of this report, or decisions made based on this report, are the responsibilities of the third parties. Malroz accepts no responsibility for damages suffered by any third party as a result of decisions made or actions taken based on the contents of this report.

This document has been prepared for TLTI for submission to the Ministry of Environment, Conservation and Parks (MECP) as required by the ECA. Unauthorized re-use of this document for any other purpose, or by third parties without the express written consent of Malroz shall be at such party's sole risk.

This page is an integral part of this document and must remain with it at all times.

Respectfully Submitted,

MALROZ ENGINEERING INC.

per: 
Albert Paschkowiak, C.E.T.
Environmental Technologist

and: 
John Pyke, P. Geo
Project Manager



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1.0 Introduction

The Reynold's Road waste disposal site (the Site) operates under Amended Environmental Compliance Approval (ECA) No. A442001 issued by the Ministry of Environment, Conservation and Parks (MECP), dated November 10, 2016 (see Appendix A). An application to amend the ECA to acknowledge lands purchased to the north of the Site was submitted to the Director on July 9, 2019.

The Site is a closed landfill and is owned by the Corporation of the Township of Leeds and the Thousand Islands. The Site is located on Lot 18, Concession 2 in the Township of Leeds and the Thousand Islands (TLTI), Ontario (Figure 1, Appendix B). In accordance with the ECA, an annual monitoring report (AMR) is to be completed annually.

Malroz was retained by TLTI to conduct the semi-annual sampling and monitoring at the Site. This document presents our methodology, results and interpretation of these results with respect to the ECA. This report was prepared on behalf of the TLTI, using data collected by Malroz and available information provided by TLTI staff.

1.1 Ownership and Key Personnel

The Site is owned and maintained by the Corporation of the Township of Leeds and the Thousand Islands. Key contacts for the Site are as follows:

Municipal Contact

Adam Goheen
Director of Operations
1233 Prince Street, P.O. Box 280
Lansdowne, Ontario, K0E 1L0
613-659-2415 ext. 208
directoroperations@townshipleeds.on.ca

Environmental Professional Contact

John Pyke, P. Geo
Hydrogeologist
308 Wellington St.
Kingston, Ontario, K7K 7A8
613-548-3446 ext. 34
pyke@malroz.com

2.0 Background

The geology, hydrogeology, physiography, and hydrology of the Site are described in this section based on our review of collected data including site observations and previous reports on investigations at the Site.

2.1 Description of the Waste Disposal Site

The Reynolds Road Dump (the Site) consists of a one-hectare site with a fill area of approximately 0.4 hectares. MECP records indicate that the Site operated between 1970 and 1971. The Site is located on Lot 18, Concession 2, in the Township of Leeds and the Thousand Islands (former Township of Front of Lansdowne), United Counties of Leeds and Grenville, Ontario. The site is located approximately 1.3 km north of Highway 401 along the west side County Road 3, otherwise known as Reynold's Road (Figure 1, Appendix B). Geodetic coordinates for the centre of the Site as follows (2015 Site survey):

Zone: NAD 83, 18T
Easting: 419161 m (+/- 0.5 m)
Northing: 4915429 m (+/- 0.5 m)

On November 17th, 2016, the property parcel north of the Site was purchased by the Township. The property is adjacent to and north of the previous boundary of the WDS. The acquisition is also part of Lot 18, Concession 2, Geographic Township of Lansdowne.

2.2 Geological Setting

Based on data from the Ontario Geologic Survey, the Site is underlain by Precambrian granitic gneiss (Hewitt, 1964). Exposed bedrock appears at the eastern boundary of the Site, adjacent to Reynold's Road, and bedrock ridges can be observed in areas to the north and south of the Site. Metasedimentary quartzo-feldspathic and gneissic bedrock is located approximately 500 m to the southwest of the Site (Hewitt, 1964).

According to borehole logs and water well records from adjacent properties (Appendix C), the overburden at the Site is comprised of glacio-lacustrine silts and clays that range in thickness from 0 to 5 metres.

2.3 Hydrogeologic Setting

Shallow groundwater is expected to follow the topography of the site, flowing north and west towards the unnamed creek. Elevations of groundwater in the two wells present at the site are higher than the water level of the adjacent creek suggesting groundwater is discharging to the surface water.

Groundwater flow in the bedrock could not be assessed as there are no bedrock wells present at the site.

A previous report (Day 2016) identified the presence of five domestic drinking water wells within 500 metres of the site. The report stated that drinking water in the area is sourced from the bedrock aquifer and that the overburden is not reportedly used as a source of potable or agricultural water in the vicinity of the Site. The report further states that there has been no interference reported at any of these domestic wells. A summary of these wells is presented below.

Drinking Water Wells within 500 metres

| Reynolds Road Address | Distance to Waste Fill (m) |
|------------------------------|-----------------------------------|
| 628 | 336 south |
| 755 | 337 north |
| 619 | 345 south |
| 612 | 430 south |
| 613 | 432 south |

Previous AMRs for the Site, completed by others (Day 2016), report a bedrock spring approximately 100 m south of the waste fill area. We understand that this spring flows year-round and that it has historically been used as a source of domestic water. Because this spring is on private property and permission to access has not been granted, the spring has not been included in annual monitoring activities.

2.4 Surface Water Features

Surface water at the Site flows southwest. Its movement is directed past the waste pile by a culvert installed in 2016 which is meant to control erosion and sedimentation. The surface water drains from the Site via an unnamed creek into Knight's Creek. This unnamed creek originates north of the Site and passes under Reynolds Road (Country Road 3) into a small wetland caused by a physiographic depression directly north of the waste pile (Figure 2, Appendix B).

Previous AMRs for the Site completed by others report that, prior to 2015, the creek was eroding the adjacent slope of the waste fill area causing waste material to be deposited into the creek. Waste and fill present in the creek was restricting flow, causing ponding to occur north of the Site. In November 2015, the creek was cleaned of all waste and a culvert was installed into the creek along the edge of the waste fill area to limit erosion of the waste mound and limit leachate interaction with surface waters. We understand that the culvert installation was approved by the Cataraqui Regional Conservation Authority.

2.5 MECP Review

Comments from the MECP on the 2018 AMR had not been received at the time this report was prepared.

3.0 Description of Monitoring Program

Results of the environmental monitoring program are reported to the MECP on an annual basis by March 31 of the year following the reporting period.

As per the ECA, groundwater monitoring was conducted on two occasions in 2019. These events were conducted on May 2 (spring) and November 26 (fall).

3.1 Well Inspections

The general condition of each well was assessed during the monitoring program before sampling. This included inspecting the casing, piezometer and visible well seal, and noting if the well was properly secured and capped.

3.2 Site Inspection

The general condition of the site was inspected during each monitoring program. This included inspection for leachate seepage around the site and inspection of the final cover on the waste pile.

3.3 Groundwater Monitoring Program

The field work for the 2018 groundwater monitoring and sampling program included the following activities:

- i. Measuring water levels, depth to well bottom, and methane concentrations in the monitoring wells.
- ii. Purging, monitoring and sampling each monitoring well. Groundwater sampling was conducted using low-flow methods. Groundwater samples submitted for metal analyses were field filtered.

There are two overburden monitoring wells at the site (MW1 and MW2). Monitoring well MW1 is located in the northern waste fill area and is screened below the waste in clay, between 5.2 and 6.7 meters below grade (refer to Appendix D). Well MW2 is located in the southwest region of the waste fill area and is screened in the clay beneath the waste between 9.1 and 10.6 meters below grade. Both wells are intended to detect leachate at the Site (Figure 2, Appendix B).

3.4 Surface Water Monitoring Program

Malroz conducted inspections of the adjacent surface water body during the spring and fall per the ECA. Evidence of seeps within the adjacent waterbody were not observed during the inspections. No surface water sampling is required at this Site (MECP correspondence dated June 9, 2015).

3.5 Data Quality Evaluation

Samples were collected using laboratory supplied sample bottles containing preservatives appropriate for each parameter. Samples were submitted to Caduceon Laboratories (Caduceon) for analyses. A list of analyzed parameters is presented in Table 1 (Appendix E).

Caduceon is a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that uses MECP recognized methods to conduct laboratory analyses. Caduceon reports that they are accredited to conduct the analyses completed for this investigation.

4.0 Discussion of Results

This section discusses the results of the monitoring events that were conducted in 2019. Results of well inspections are presented in Table 2 and groundwater monitoring results are presented in Table 3 (Appendix E). Groundwater water chemistry results are presented in Tables 4, 5 and 6 (Appendix E). Results have been compared to the Ontario Drinking Water Quality Standards (ODWQS) and any observed exceedances are highlighted to allow for visual interpretation. Petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs) have been compared to the O. Reg 153/04 “Table 8” generic standards for use within 30m of a water body in potable water groundwater conditions. O. Reg. 153/04 pertains to brownfield sites and does not directly apply to former landfill properties, however applying these standards provide a cursory evaluation.

4.1 Well Inspection

Results of the 2019 well inspection are summarized in Table 2. The condition of the on-site wells was reported as good and met the requirements of O. Reg. 903.

4.2 Site Inspection

Site inspections were conducted during May and November monitoring events, as per the ECA. Malroz staff did not observe any seeps at the site, and the final cover on the waste pile appeared to be in good condition with no signs of erosion.

4.3 Landfill Gas and Water Level Monitoring

Results from groundwater monitoring are presented in Table 3. Methane concentrations were below detectable limits at MW1 and MW2 during both monitoring events.

4.4 Groundwater Interpretation

The overburden groundwater chemistry at the Site is characterized by two wells: MW1 and MW2. Since no wells are located outside of the waste area, the background water quality has not been evaluated. Thus, the groundwater chemistry will be compared to the Ontario Drinking Water Standards, and PHC, VOC, and PAH data will be compared to the O. Reg. 153/04 “Table 8” generic site condition standards for use within 30 metres of a waterbody.

Both wells in our opinion are suitably located to detect leachate as they are positioned directly below the waste fill area. Typical leachate indicating parameters including ammonia, boron, dissolved organic carbon (DOC), chloride and conductivity were used to infer leachate trends at the Site. Results for the leachate indicating parameters were generally consistent between the two monitoring well locations. Concentrations of the aforementioned parameters were at the low end of the range for typical leachate indicating weak leachate influence.

A review of the chemistry results from MW1 and MW2 indicate the following exceedances of ODWS:

- Hardness – MW1 and MW2 (May, November)

Hardness is an operational guideline and not health related. Elevated hardness is common of the region.

Results from VOC, PAH and PHC analyses (Table 5) for samples from MW1 and MW2 were below their detection limits during both 2019 sampling events and met the O. Reg. 153/04 “Table 8” generic site condition standards for use within 30 metres of a waterbody.

Historical groundwater analytical results and trends are provided in Appendix F.

4.5 Reasonable Use Policy

Reasonable Use Limits (RULs) for the Site have not been determined as no background well is available.

5.0 Conclusions & Recommendations

The Site was reportedly in operation starting in 1970 and closed in 1971. Two groundwater monitoring wells were installed at the Site in 2016. Based on a comparison of groundwater elevations to water elevations in the adjacent creek, water is expected to discharge to surface water. However, given the lack of a third well, the exact flow direction of groundwater cannot be triangulated and is unknown.

Comparison to typical leachate characteristics suggests weak to no leachate plume at the Site.

VOC results from MW1 and MW2 have been below detectable limits since the wells were installed in 2016.

Exceedances of the OWDQS for hardness were observed in MW1 and MW2 during both events in 2019, however, the elevated results may be related to regional geology. Concentrations of PAHs and PHCs were less than detection limits and met the O. Reg. 153/04 “Table 8” generic site standards for use within 30 metres of a waterbody.

The following recommendations are provided for the Reynold’s Road WDS monitoring program:

1. Annual waste disposal site inspections should be completed in compliance with condition 2.2.
2. Given that the site has been closed since 1971, ground water results indicate little to no leachate impacts in the vicinity of the waste, and that groundwater trends for the leachate indicators (ammonia, boron, dissolved organic carbon (DOC), chloride and conductivity) have been stable or decreasing since 2016 or more, the site has likely reached its final maturation and stabilization phase. Therefore we recommend that sampling at this site be discontinued. Sampling may be resumed should adverse conditions be observed during the site inspections.

6.0 References

Day, A. (2016), Groundwater Assessment Report (ECA No. 442001), Township of Leeds and the Thousand Islands.

Hewitt, D.F. (1964) Geological notes for maps Nos. 2053 and 2054 Madoc-Gananoque Area, Ministry of Natural Resources, GC 12, 33p (reprinted 1974). Accompanied by Maps 2053 and 2054, scale 1:126,720

Malroz Engineering Inc. (2017), 2016 Annual Monitoring Report, Reynold's Road Waste Disposal Site, Township of Leeds and Thousand Islands.

Malroz Engineering Inc. (2018), 2017 Annual Monitoring Report, Reynold's Road Waste Disposal Site, Township of Leeds and Thousand Islands.

Malroz Engineering Inc. (2019), 2018 Annual Monitoring Report, Reynold's Road Waste Disposal Site, Township of Leeds and Thousand Islands.

Ontario Drinking Water Standards (ODWS) from Ontario Regulation 169/03 of the Safe Drinking Water Act (2002). Last amendment: O. Reg. 373/15.

Ministry of the Environment and Energy (1994), Provincial Water Quality Objectives (PWQO), Water Management Policies & Guidelines.

Table 1: Summary of Typical Leachate Characteristics, from the Ministry of Environment and Energy (MOEE)'s Landfill Guidance Manual, 1993.

Ministry of the Environment (2010), Technical Guidance Document: Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water.

Appendix A
Amended Environmental Compliance Approval No,
442001

Content Copy Of Original



Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement
climatique

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A442001

Issue Date: November 10, 2016

The Corporation of the Township of Leeds and the Thousand Islands
1233 Prince St Lansdowne
Post Office Box, No. 280
Leeds and the Thousand Islands, Ontario
K0E 1L0

Site Location: Reynolds Road Dump (Closed)
Reynolds Road
Lot 18, Concession 2
Leeds and the Thousand Islands Township, United Counties of Leeds and Grenville

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

for the use and operation of Waste Disposal Site (landfill)

For the purpose of this environmental compliance approval, the following definitions apply:

" **Approval** " means this Environmental Compliance Approval and any Schedules to it, including the application and supporting documentation listed in Schedule "A";

" **Director** " means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part II.1 of the EPA;

" **District Manager** " means the District Manager of the local district office of the *Ministry* in which the *Site* is geographically located;

" **EPA** " means *Environmental Protection Act* , R.S.O. 1990, c. E. 19, as amended;

" **Ministry** " means the Ontario Ministry of the Environment and Climate Change;

" **Owner** " means any person that is responsible for the establishment or operation of the *Site* being approved by this *Approval*, and includes The Corporation of the Township of Leeds and the Thousand Island its successors and assigns;

" **Regional Director** " means the Regional Director of the local Regional Office of the *Ministry* in which the *Site* is located; and

" **Regulation 232** " means Ontario Regulation 232/98 (New Landfill Standards) made under the *EPA* , as amended from time to time;

" **Regulation 347** " means Regulation 347, R.R.O. 1990, made under the *EPA*, as amended;

" **Regulation 903**" means Regulation 903, R.R.O. 1990, made under the *OWRA*, as amended;

" **Site** " means the entire waste disposal site, located at west side of Reynolds Road, Lot 18, Concession 2, Leeds and the Thousand Islands Township, United Counties of Leeds and Grenville

" **FBAL** " means Fill Beyond Approved Limits

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

Compliance

1. The *Owner* and *Operator* shall ensure compliance with all the conditions of this *Approval* and shall ensure that any person authorized to carry out work on or operate any aspect of the *Site* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. Any person authorized to carry out work on or operate any aspect of the *Site* shall comply with the conditions of this *Approval* .

In Accordance

3. Except as otherwise provided by this *Approval*, the *Site* shall be designed, developed, built, operated and maintained in accordance with the documentation listed in the attached Schedule "A".

Interpretation

4. Where there is a conflict between a provision of any document listed in Schedule "A" in this *Approval*, and the conditions of this *Approval*, the conditions in this *Approval* shall take precedence.

5. Where there is a conflict between the application and a provision in any document listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the *Ministry* approved the amendment.

6. Where there is a conflict between any two documents listed in Schedule "A", the document bearing the most recent date shall take precedence.

7. The conditions of this *Approval* are severable. If any condition of this *Approval*, or the application of any condition of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this *Approval* shall not be affected thereby.

Other Legal Obligations

8. The issuance of, and compliance with, this *Approval* does not:

- (a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; or
- (b) limit in any way the authority of the *Ministry* to require certain steps be taken or to require the *Owner* and *Operator* to furnish any further information related to compliance with this *Approval* .

Adverse Effect

9. The *Owner* shall take steps to minimize and ameliorate any adverse effect on the natural environment or impairment of water quality resulting from the *Site*, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
10. Despite an *Owner* or any other person fulfilling any obligations imposed by this *Approval* the person remains responsible for any contravention of any other condition of this *Approval* or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect to the natural environment or impairment of water quality.

Change of Ownership

11. The *Owner* shall notify the *Director*, in writing, and forward a copy of the notification to the *District Manager*, within 30 days of the occurrence of any changes in the following information:
- (a) the ownership of the *Site*;
 - (b) the *Operator* of the *Site*;
 - (c) the address of the *Owner* or *Operator*; and
 - (d) the partners, where the *Owner* or *Operator* is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act* , R. S. O. 1990, c. B.17, shall be included in the notification.

12. No portion of this *Site* shall be transferred or encumbered prior to or after closing of the *Site* unless the *Director* is notified in advance and sufficient financial assurance is deposited with the *Ministry* to ensure that these conditions will be carried out.
13. In the event of any change in ownership of the *Site*, other than change to a successor municipality, the *Owner* shall notify the successor of and provide the successor with a copy of this *Approval*, and the *Owner* shall provide a copy of the notification to the *District Manager* and the *Director*.

Certificate of Requirement/Registration on Title

Registration on Title Requirement

14. Prior to dealing with the property in any way, the *Owner* shall provide a copy of this *Approval* and any amendments, to any person who will acquire an interest in the property as a result of the dealing.
- 15(a) Within thirty (30) calendar days from the date of issuance of this *Approval*, the *Owner* shall submit to the *Director* a completed Certificate of Requirement which shall include:

- (i) a plan of survey prepared, signed and sealed by an Ontario Land Surveyor, which shows the area of the *Site* where waste has been or is to be deposited at the *Site*;
- (ii) proof of ownership of the *Site*;
- (iii) a letter signed by a member of the Law Society of Upper Canada or other qualified legal practitioner acceptable to the *Director*, verifying the legal description provided in the Certificate of Requirement;
- (iv) the legal abstract of the property; and
- (v) any supporting documents including a registerable description of the *Site*.

(b) Within fifteen (15) calendar days of receiving a Certificate of Requirement authorized by the *Director*, the *Owner* shall:

- (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the property; and
- (ii) submit to the *Director* and *District Manager*, written verification that the Certificate of Requirement has been registered on title.

Inspections by the Ministry

16. No person shall hinder or obstruct a *Provincial Officer* from carrying out any and all inspections authorized by the *OWRA*, the *EPA*, the *PA*, the *SDWA* or the *NMA*, of any place to which this *Approval* relates, and without limiting the foregoing:

- (a) to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this *Approval* are kept;
- (b) to have access to, inspect, and copy any records required to be kept by the conditions of this *Approval*;
- (c) to inspect the *Site*, related equipment and appurtenances;
- (d) to inspect the practices, procedures, or operations required by the conditions of this *Approval*; and
- (e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Approval* or the *EPA*, the *OWRA*, the *PA*, the *SDWA* or the *NMA*.

17. The *Site* is closed and is no longer permitted to accept the waste at the *Site*.

2.0 LANDFILL MONITORING

Compliance

1. The *Site* shall be operated in such a way as to ensure compliance with the Provincial Water Quality Objectives included in the July 1994 publication entitled *Water Management Policies, Guidelines, Provincial Water Quality Objectives*, as amended from time to time or limits set by the *Regional Director*, for the protection of the surface water at and off the *Site*.

Inspection

2. The entire Site shall be inspected by a qualified person to identify the presence of any leachate seepage; to ensure the integrity of the final cover and that the activities at the *Site* are not causing any adverse effects. Any deficiencies discovered as a result of the inspection shall be remedied immediately. The inspections required under this condition shall be conducted at least semi-annually when the Site is not covered in snow

Annual Report

3. Subject to Condition 2.7 of the Approval and until such time that the Approval is amended to reflect otherwise, a written report on the monitoring of the *Site*, shall be completed annually (the "Annual Report"). The Annual Report shall be submitted to the *District Manager*, by March 31st of the year following the period being reported upon.

4. The Annual Report shall include but not be limited to the following information:

- (a) the results and an interpretive analysis of the results of all leachate, groundwater, and surface water, including an assessment of the need to amend the monitoring programs;
- (b) site plans showing the final contours of the *Site* and vegetative cover;
- (c) a discussion of any problems encountered at the *Site* and corrective action taken;
- (d) a report on the status of all monitoring wells and a statement as to compliance with *Regulation 903*;
- (e) any other information with respect to the *Site* which the *District Manager* may require from time to time; and
- (f) a summary and analysis of all hydraulic and geochemical monitoring results.
- (g) the inspection findings as per condition 2.2 and corrective actions taken to address any identified concerns at the Site

Groundwater Wells and Monitors

4. The *Owner* shall ensure that all groundwater monitoring wells which form part of the monitoring program are properly capped, locked and protected from damage.

5. All monitoring wells shall be inspected at least twice per year during inspections. Any groundwater monitoring well included in the on-going monitoring program that are damaged shall be assessed, repaired, replaced or decommissioned by the *Owner*, as required.

(a) The *Owner* shall repair or replace any monitoring well which is destroyed or in any way made to be inoperable for sampling such that no more than one regular sampling event is missed.

(b) All monitoring wells which are no longer required as part of the groundwater monitoring program, and have been approved by the *District Manager* for abandonment, shall be decommissioned by the *Owner* in accordance with *Regulation 903*. A report on the decommissioning of the well shall be included in the Annual Report for the period during which the well was decommissioned.

Groundwater Monitoring

6. In addition to the monitoring conducted as per item 1 of Schedule "A", the owner shall conduct groundwater monitoring on two additional occasions in 2016. Groundwater sampling shall be conducted for all parameters listed in Table 1 of Item 1 of Schedule "A".

7. By no later than January 31, 2017, the Owner shall submit to the Director for approval and copies to the District Manager, a groundwater monitoring report on the monitoring conducted as per Condition 2.6 of Approval, which includes but not necessarily limited to the monitoring results, an interpretation of the monitoring data and recommendations regarding ongoing monitoring and ongoing reporting at the Site. Once the groundwater monitoring report is received, the Ministry will determine if further monitoring and reporting is required and amend the Approval accordingly.

3.0 Fill Beyond Approved Limits

1. Within six (6) months of issuance of this Approval, the Owner shall acquire the lands for areas designated as FBAL and shall submit an application for an amendment to the Director for approval for FBAL to be added to the Site.

2.(a) Within thirty (30) calendar days after acquiring land referred in condition 3.1, the *Owner* shall submit to the *Director* a completed Certificate of Requirement which shall include:

- (i) a plan of survey prepared, signed and sealed by an Ontario Land Surveyor, which shows the area of the *Site* where waste has been or is to be deposited at the *Site*;
- (ii) proof of ownership of the *Site*;
- (iii) a letter signed by a member of the Law Society of Upper Canada or other qualified legal practitioner acceptable to the *Director*, verifying the legal description provided in the Certificate of Requirement;
- (iv) the legal abstract of the property; and
- (v) any supporting documents including a registerable description of the *Site*.

(b) Within fifteen (15) calendar days of receiving a Certificate of Requirement authorized by the *Director*, the *Owner* shall:

- (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the property; and
- (ii) submit to the *Director* and *District Manager*, written verification that the Certificate of Requirement has been registered on title.

SCHEDULE "A"

1. Report dated June 2016 titled "Groundwater Assessment", Reynold Road Dump prepared by Andrew Day, P. Geo.

The reasons for the imposition of these terms and conditions are as follows:

1. *The reason for Conditions 1.3 is to ensure that the Site is designed, operated, monitored and*

- maintained in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.*
- 2. The reason for Conditions 1.1,1.2, 1. 4. 1. 5, 1.6,1.7, 1.9, 1.10 is to clarify the legal rights and responsibilities of the Owner under this ECA.*
 - 3. Conditions 1.8 is included to ensure that the appropriate Ministry staff have ready access to information and the operations of the Site, which are approved under this Certificate.*
 - 4. Conditions 1.14 and 1.15 are included, pursuant to subsection 197(1) of the EPA, to provide that any persons having an interest in the Site are aware that the land has been approved and used for the purposes of waste disposal.*
 - 5. The reasons for Condition 1.16 is to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this ECA.*
 - 6. The reasons for Conditions 1.11 and 1.12 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes*
 - 7. Condition 2(1) is included to provide the surface water limits to prevent water pollution at the Site.*
 - 8. The reasons for Condition 2(2) and 2(3) are to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of site design.*
 - 9. Conditions 2(4) and 2(5) are included to ensure the integrity of the groundwater monitoring network so that accurate monitoring results are achieved and the natural environment is protected.*
 - 10. Conditions 2 (6) and 2 (7) are included to require the Owner to demonstrate that the Site is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.*
 - 11. Reason for condition 3(1) is to ensure the land designated as FBAL is purchased by the township and the approval is amended to reflect the correct site area*
 - 12. The reason for condition 3(2) is to ensure that purchased land is registered on title.*

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A442001 issued on June 23, 1971

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

- 1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;*
- 2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.*

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the
purposes of Part II.1 of the
Environmental Protection Act
Ministry of the Environment and
Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

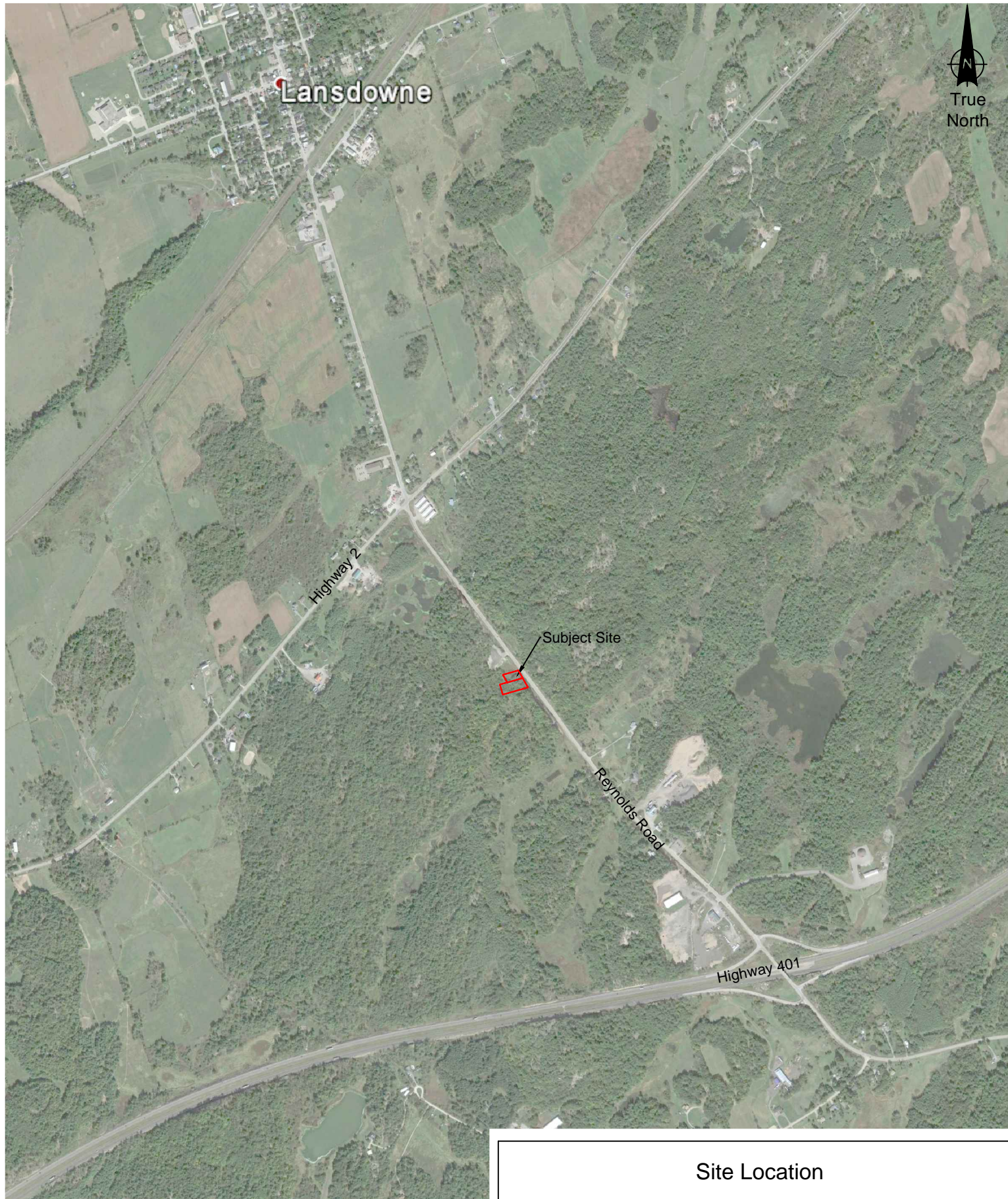
The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 10th day of November,
2016

Dale Gable, P.Eng.
Director
appointed for the purposes of Part II.1 of
the *Environmental Protection Act*

HV/
c: District Manager, MOECC Kingston - District
Field Alert, The Corporation of the Township of Leeds and the Thousand Islands

Appendix B
Figures



Site Location

2019 Annual Monitoring Report
 Reynold's Road WDS
 Township of Leeds and the Thousand Islands, Ontario

Note: figure based on Malroz field observations, survey from Collett surveying and Google Earth imagery

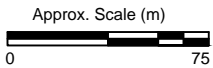
File: 1039-107.00

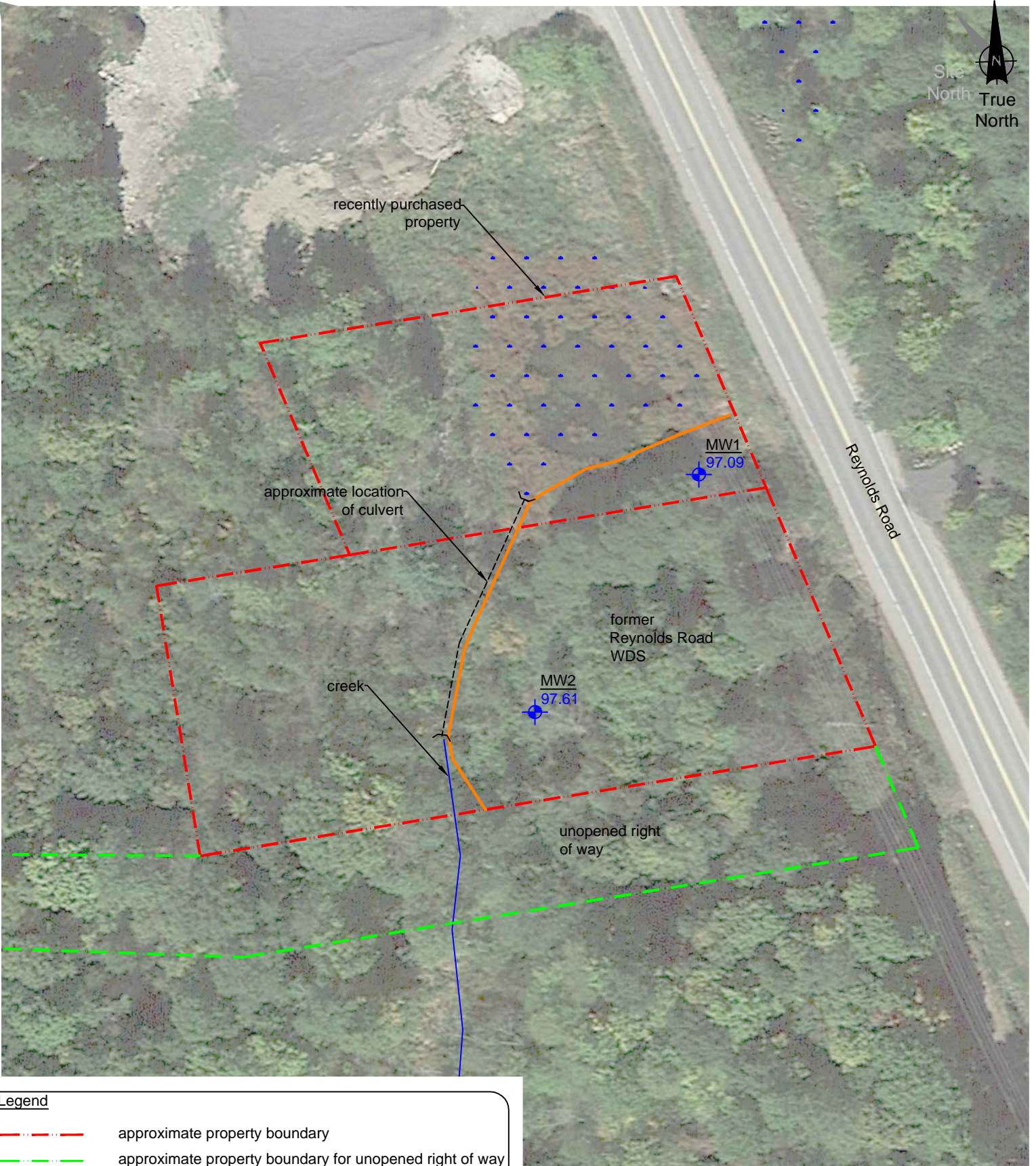
Figure

1





| | | | | |
|-----|------------|-----------------|----|------|
| R0 | 2019/12/05 | issued in final | RB | AP |
| Rev | Date | Description | By | Chkd |





Legend

- - - - - approximate property boundary
- - - - - approximate property boundary for unopened right of way
- - - - - approximate extent of fill
-  MW1 97.09 monitoring well location and groundwater elevation (May 2, 2019)
-  surface water feature

Note: figure based on Malroz field observations, survey from Collett surveying and Google Earth imagery

Site Plan

2019 Annual Monitoring Report
 Reynold's Road WDS
 Township of Leeds and the Thousand Islands, Ontario

File: 1039-107.00

Figure

2



approx. scale (m)



| | | | | |
|-----|------------|-----------------|----|------|
| R0 | 2019/12/05 | issued in final | RB | AP |
| Rev | Date | Description | By | Chkd |

property purchased
November 2016

approximate
location
of culvert

Reynolds Road

MW1
97.05

former
Reynolds Road
WDS

water course

MW2
97.56

unopened right
of way

Legend

- - - - - approximate property boundary
- - - - - approximate property boundary for unopened right of way
- - - - - approximate extent of fill
- + MW1
97.05
monitoring well location and groundwater elevation (November 26, 2019)
- surface water feature
- 95.0 ——— topographic contour

Waste Contours

2019 Annual Monitoring Report
Reynold's Road WDS
Township of Leeds and the Thousand Islands, Ontario

File: 1039-107.00

Figure

3



approx. scale (m)



Note: Figure based on Malroz field observations; survey from Collett Surveying; Google Earth imagery; and topographic data from Digital Raster Acquisition Project, Ministry of Natural Resources and Forestry, 2014.

| Rev | Date | Description | By | Chkd |
|-----|------------|-----------------|----|------|
| R0 | 2019/12/11 | issued in final | MW | RB |

Appendix C
Borehole Logs and Water Well Records from
Adjacent Properties

UTM [] Z [] E

19 R [] N

Elev. 9 R 0 3 3 0

Basin 24 []



ONTARIO

RECEIVED

FEB 28 1954

36

No. 1762

GEOLOGICAL BRANCH
DEPARTMENT OF MINES

The Water-well Drillers Act, 1954

Department of Mines

Water-Well Record

Front of

CON-1
LOT-17

County or Territorial District Front Line Township, Village, Town or City Lansdowne

Village, Town or City Lansdowne

Address Lansdowne Ont

(day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter(s) 6"

Length(s) 3 ft.

Type of screen

Length of screen

Static level 46' 5' from top

Pumping rate 200 gal hour 200

Pumping level 20 ft from top

Duration of test 1/2 hr

Well Log

Water Record

| Overburden and Bedrock Record | From ft. | To ft. | Depth (s) at which water (s) found | No. of feet water rises | Kind of water (fresh, salty, or sulphur) |
|-------------------------------|-------------|--------------|------------------------------------|-------------------------|--|
| <u>Granite</u> | <u>1 ft</u> | <u>57 ft</u> | <u>48 ft</u> | <u>46 ft</u> | <u>fresh</u> |
| | | | | | |
| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

For what purpose(s) is the water to be used?

House and barn

Is water clear or cloudy? Clear

Is well on upland, in valley, or on hillside? Hillside

Drilling firm Raymond Henry

Address Lyndhurst Ont

Name of Driller J. A. Smith

Address Lyndhurst Ont

Licence Number 518

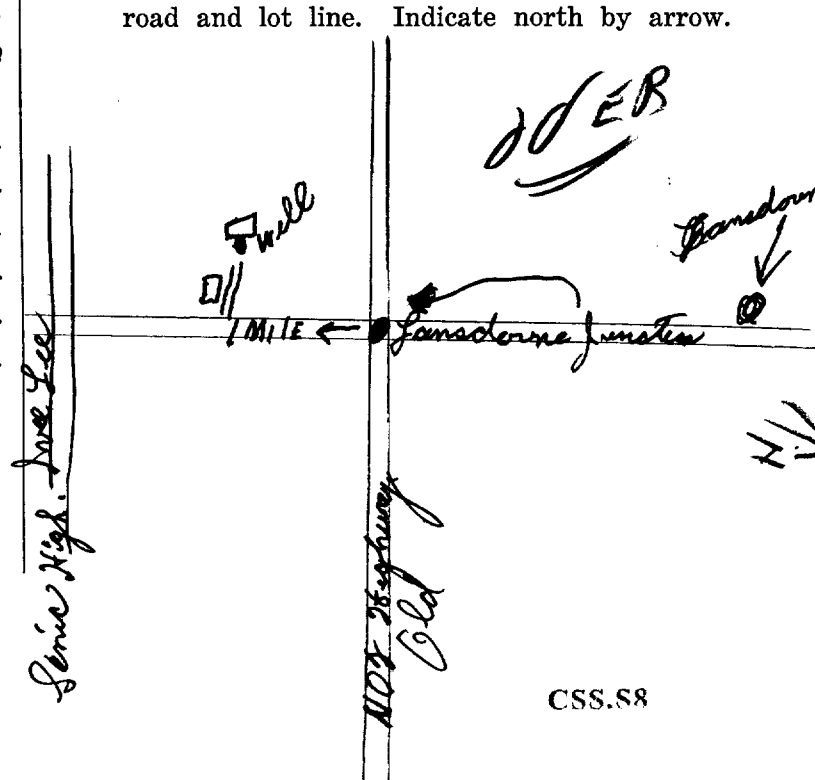
I certify that the foregoing statements of fact are true.

Date J. A. Smith

Signature of Licensee

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.58



ONTARIO

WATER WELL RECORD

31082

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK CORRECT BOX WHERE APPLICABLE

11

3605472 | 36014 | CON | 62

COUNTY OR DISTRICT: LEEDS
 TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Ft. of HANSLOWNE
 CON. BLOCK, TRACT, SURVEY, ETC.: II
 LOT: 25-27: 018
 DATE COMPLETED: DAY 12, MO 09, YR 73
 RR 1 Hansdowne

3605472 18 419112 4915551 4 290 4 24 MAY 05, 1975 59

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

| GENERAL COLOUR | MOST COMMON MATERIAL | OTHER MATERIALS | GENERAL DESCRIPTION | DEPTH - FEET | |
|-------------------|----------------------|-----------------|---------------------|--------------|-----|
| | | | | FROM | TO |
| Brown loam | | | | 0 | 5 |
| Red Black Granite | | | | 5 | 125 |

31 0005602 0125701
 32

41 WATER RECORD

| WATER FOUND AT FEET | KIND OF WATER | | | |
|---------------------|---|------------------------------------|--|--|
| 10-13 | 1 <input checked="" type="checkbox"/> FRESH | 3 <input type="checkbox"/> SULPHUR | | |
| | 2 <input type="checkbox"/> SALTY | 4 <input type="checkbox"/> MINERAL | | |
| 15-18 | 1 <input checked="" type="checkbox"/> FRESH | 3 <input type="checkbox"/> SULPHUR | | |
| | 2 <input type="checkbox"/> SALTY | 4 <input type="checkbox"/> MINERAL | | |
| 20-23 | 1 <input type="checkbox"/> FRESH | 3 <input type="checkbox"/> SULPHUR | | |
| | 2 <input type="checkbox"/> SALTY | 4 <input type="checkbox"/> MINERAL | | |
| 25-28 | 1 <input type="checkbox"/> FRESH | 3 <input type="checkbox"/> SULPHUR | | |
| | 2 <input type="checkbox"/> SALTY | 4 <input type="checkbox"/> MINERAL | | |
| 30-33 | 1 <input type="checkbox"/> FRESH | 3 <input type="checkbox"/> SULPHUR | | |
| | 2 <input type="checkbox"/> SALTY | 4 <input type="checkbox"/> MINERAL | | |

51 CASING & OPEN HOLE RECORD

| DEPTH - FEET | MATERIAL | WALL THICKNESS INCHES | DEPTH - FEET | |
|--------------|---|-----------------------|--------------|------|
| | | | FROM | TO |
| 10-11 | 1 <input checked="" type="checkbox"/> STEEL | | | |
| 11-16 | 2 <input type="checkbox"/> GALVANIZED | 1.188 | 0 | 0022 |
| 17-18 | 3 <input type="checkbox"/> CONCRETE | | | |
| | 4 <input checked="" type="checkbox"/> OPEN HOLE | | | |
| 20-23 | 1 <input type="checkbox"/> STEEL | | | |
| | 2 <input type="checkbox"/> GALVANIZED | | | |
| | 3 <input type="checkbox"/> CONCRETE | | | |
| | 4 <input checked="" type="checkbox"/> OPEN HOLE | | | |
| 24-25 | 1 <input type="checkbox"/> STEEL | | | |
| | 2 <input type="checkbox"/> GALVANIZED | | | |
| | 3 <input type="checkbox"/> CONCRETE | | | |
| | 4 <input type="checkbox"/> OPEN HOLE | | | |

61 PLUGGING & SEALING RECORD

| DEPTH SET AT - FEET | MATERIAL AND TYPE | CEMENT GROUT LEAD PACKER, ETC. |
|---------------------|-------------------|--------------------------------|
| 10-13 | | |
| 13-17 | | |
| 17-21 | | |
| 21-25 | | |
| 25-29 | | |
| 29-33 | | |
| 33-80 | | |

Cement

71 PUMPING TEST

PUMPING TEST METHOD: 1 PUMP, 2 BAILER

PUMPING RATE: 0007 GPM

DURATION OF PUMPING: 01 HOURS 00 MINS

| STATIC LEVEL | WATER LEVEL END OF PUMPING | WATER LEVELS DURING | | | | 1 <input checked="" type="checkbox"/> PUMPING | 2 <input type="checkbox"/> RECOVERY |
|--------------|----------------------------|---------------------|------------|------------|------------|---|-------------------------------------|
| 047 | 047 | 15 MINUTES | 30 MINUTES | 45 MINUTES | 60 MINUTES | | |
| FEET | FEET | FEET | FEET | FEET | FEET | | |
| | | 047 | 047 | 047 | 047 | | |

IF FLOWING: GPM 125

PUMP INTAKE SET AT: 125 FEET

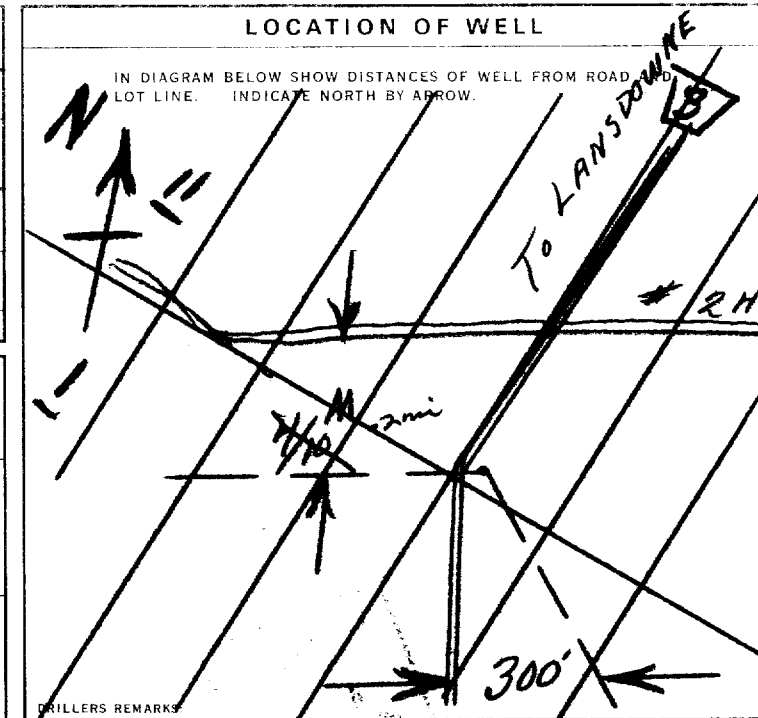
WATER AT END OF TEST: 1 CLEAR, 2 CLOUDY

RECOMMENDED PUMP TYPE: 1 SHALLOW, 2 DEEP

RECOMMENDED PUMP SETTING: 115 FEET

RECOMMENDED PUMPING RATE: 0007 GPM

50-53 014.0 GPM / FT. SPECIFIC CAPACITY



54 FINAL STATUS OF WELL: 1 WATER SUPPLY, 2 OBSERVATION WELL, 3 TEST HOLE, 4 RECHARGE WELL, 5 ABANDONED, INSUFFICIENT SUPPLY, 6 ABANDONED, POOR QUALITY, 7 UNFINISHED

55-56 WATER USE: 1 DOMESTIC, 2 STOCK, 3 IRRIGATION, 4 INDUSTRIAL, 5 COMMERCIAL, 6 MUNICIPAL, 7 PUBLIC SUPPLY, 8 COOLING OR AIR CONDITIONING, 9 NOT USED

57 METHOD OF DRILLING: 1 CABLE TOOL, 2 ROTARY (CONVENTIONAL), 3 ROTARY (REVERSE), 4 ROTARY (AIR), 5 AIR PERCUSSION, 6 BORING, 7 DIAMOND, 8 JETTING, 9 DRIVING

CONTRACTOR: BEAYER Well Drilling, 2533
 ADDRESS: RR 2 MAHORYTOWN N
 NAME OF DRILLER OR BOPER: MURRA BLANCHER, 2533
 SIGNATURE OF CONTRACTOR: [Signature]
 SUBMISSION DATE: DAY 8, MO 1, YR 74

OFFICE USE ONLY

DATA SOURCE: 1, 2333, 1974
 DATE OF INSPECTION: 14 01 74
 CONTRACTOR: 2333, DATE RECEIVED: 1974
 REMARKS: P.K., WI



MINISTRY OF THE ENVIRONMENT
The Ontario Water Resources Act
WATER WELL RECORD

3108
92

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK CORRECT BOX WHERE APPLICABLE

11

3606693

MUNICIPALITY 36014

CON. C/P/N

01

| | | | |
|---|--|---|-------------------|
| COUNTY OR DISTRICT LEEDS | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE FT OF LANSDOWNE | CON. BLOCK, TRACT, SURVEY, ETC. 1 | LOT 018 |
| DATE COMPLETED DAY 29 MO 08 YR 76 | | DATE RECEIVED | |
| ELEVATION 15030 | ELEVATION 40315 | BASIN CODE 424 | |

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

| GENERAL COLOUR | MOST COMMON MATERIAL | OTHER MATERIALS | GENERAL DESCRIPTION | DEPTH - FEET | |
|--------------------|----------------------|-----------------|---------------------|--------------|-----------|
| | | | | FROM | TO |
| BROWN SOIL | | | | 0 | 15 |
| RED GRANITE | | BLACK | | 15 | 98 |

31 0015602 0098721

32

41 WATER RECORD

| WATER FOUND AT - FEET | KIND OF WATER |
|-----------------------|---|
| 10-13 0093 | 1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 15-18 | 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 20-23 | 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 25-28 | 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 30-33 | 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |

51 CASING & OPEN HOLE RECORD

| INCHES DIAM. INCHES | MATERIAL | WALL THICKNESS INCHES | DEPTH - FEET |
|---------------------|--|-----------------------|-------------------------------|
| 10-11 06 | 1 <input checked="" type="checkbox"/> STEEL 2 <input checked="" type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE | 1/88 | FROM 0 TO 0025 |
| 17-18 06 | 1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE | | FROM 25 TO 0098 |
| 24-25 | 1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE | | FROM 27 TO 30 |

SCREEN

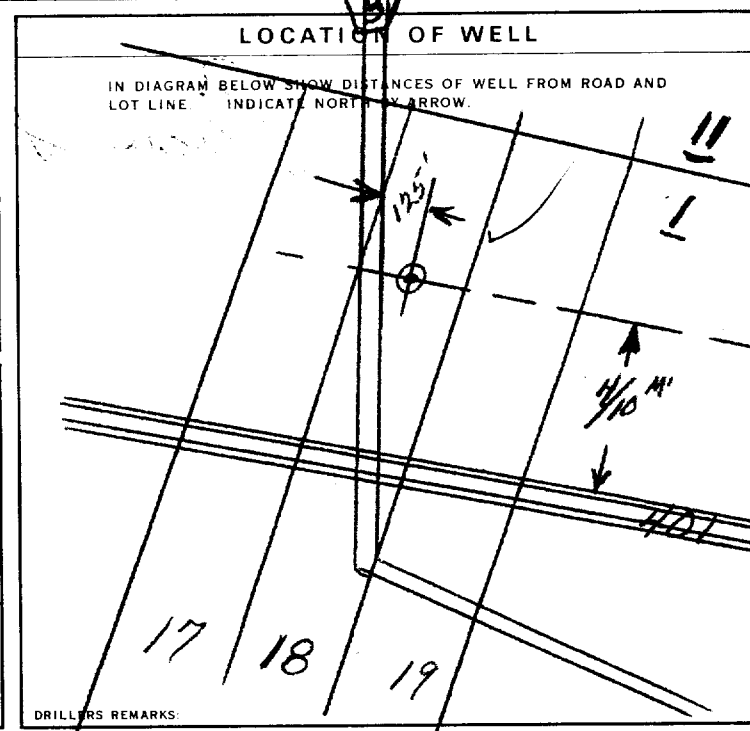
| SIZE (S) OF OPENING (SLOT NO.) | DIAMETER INCHES | LENGTH FEET |
|--------------------------------|-----------------|-----------------------------------|
| 31-33 | 34-38 | 39-40 |
| MATERIAL AND TYPE | | DEPTH TO TOP OF SCREEN 41-44 FEET |

61 PLUGGING & SEALING RECORD

| DEPTH SET AT - FEET | MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.) |
|----------------------|---|
| FROM TO | |
| 10-13 0005 | DRILL CUTTINGS |
| 18-21 | |
| 22-25 | |
| 26-29 | |
| 30-33 | |
| 34-40 | |

71 PUMPING TEST METHOD

| | | |
|--|---------------------------------|---|
| 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER | PUMPING RATE 0012 GPM | DURATION OF PUMPING 15-16 HOURS 10 17-18 MINS |
| STATIC LEVEL | WATER LEVEL END OF PUMPING | WATER LEVELS DURING |
| 19-21 012 | 22-24 023 | 15 MINUTES 25-28 023 |
| | | 30 MINUTES 29-31 023 |
| | | 45 MINUTES 32-34 023 |
| | | 60 MINUTES 35-37 023 |
| IF FLOWING GIVE RATE | PUMP INTAKE SET AT | WATER AT END OF TEST |
| | 98 GPM | 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY |
| RECOMMENDED PUMP TYPE | RECOMMENDED PUMP SETTING | RECOMMENDED PUMPING RATE |
| <input type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP | 060 FEET | 0012 GPM |



FINAL STATUS OF WELL

| | |
|--|---|
| 1 <input checked="" type="checkbox"/> WATER SUPPLY | 5 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY |
| 2 <input type="checkbox"/> OBSERVATION WELL | 6 <input type="checkbox"/> ABANDONED POOR QUALITY |
| 3 <input type="checkbox"/> TEST HOLE | 7 <input type="checkbox"/> UNFINISHED |
| 4 <input type="checkbox"/> RECHARGE WELL | |

WATER USE

| | |
|--|--|
| 1 <input checked="" type="checkbox"/> DOMESTIC | 5 <input type="checkbox"/> COMMERCIAL |
| 2 <input type="checkbox"/> STOCK | 6 <input type="checkbox"/> MUNICIPAL |
| 3 <input type="checkbox"/> IRRIGATION | 7 <input type="checkbox"/> PUBLIC SUPPLY |
| 4 <input type="checkbox"/> INDUSTRIAL | 8 <input type="checkbox"/> COOLING OR AIR CONDITIONING |
| <input type="checkbox"/> OTHER | 9 <input type="checkbox"/> NOT USED |

METHOD OF DRILLING

| | |
|--|------------------------------------|
| 1 <input type="checkbox"/> CABLE TOOL | 6 <input type="checkbox"/> BORING |
| 2 <input type="checkbox"/> ROTARY (CONVENTIONAL) | 7 <input type="checkbox"/> DIAMOND |
| 3 <input type="checkbox"/> ROTARY (REVERSE) | 8 <input type="checkbox"/> JETTING |
| 4 <input type="checkbox"/> ROTARY (AIR) | 9 <input type="checkbox"/> DRIVING |
| 5 <input checked="" type="checkbox"/> AIR PERCUSSION | |

CONTRACTOR

| | |
|--|---|
| NAME OF WELL CONTRACTOR BEAVER WELL DRILLING | LICENCE NUMBER 2333 |
| ADDRESS RR 2 MAHURTOTOWN | |
| NAME OF DRILLER OR BORER J. GIROUX | LICENCE NUMBER 2333 |
| SIGNATURE OF CONTRACTOR <i>J. Giroux</i> | SUBMISSION DATE DAY 4 MO 11 YR 76 |

OFFICE USE ONLY

| | | |
|-------------------------|---------------------------|---------------------------------|
| DATA SOURCE 1 | CONTRACTOR 2333 | DATE RECEIVED 8 11 76 |
| DATE OF INSPECTION | INSPECTOR <i>ku</i> | |
| REMARKS | | |
| | | PH |
| | | WI |



WATER WELL RECORD

130
313/12W

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK CORRECT BOX WHERE APPLICABLE

11 3606699 36006 CON 01

| | | | |
|---|---|--|-------------------|
| COUNTY OR DISTRICT LEEDS | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE ELIZABETH TOWN | CON., BLOCK, TRACT, SURVEY, ETC. I | LOT 036 |
| DATE COMPLETED DAY 22 MO. 10 YR. 76 | | DATE COMPLETED 48-53 | |
| 1 2970 | 2 5 | 3 0270 | 4 5 |
| 5 25 | 6 30 | 7 25 | 8 31 |

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

| GENERAL COLOUR | MOST COMMON MATERIAL | OTHER MATERIALS | GENERAL DESCRIPTION | DEPTH - FEET | |
|----------------|----------------------|-----------------|---------------------|--------------|-----|
| | | | | FROM | TO |
| BROWN | SOIL | Rubble Boulders | | 0 | 17 |
| BROWN | SANDSTONE | | LAYERED | 17 | 185 |

31 001760213 018561874

32

41 WATER RECORD

| WATER FOUND AT - FEET | KIND OF WATER |
|-----------------------|---|
| 10-13 0177 | <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 15-18 | <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 20-23 | <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 25-28 | <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |
| 30-33 | <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL |

51 CASING & OPEN HOLE RECORD

| DEPTH - FEET | MATERIAL | WALL THICKNESS INCHES | DEPTH - FEET | |
|--------------------|---|-----------------------|--------------|------|
| | | | FROM | TO |
| 06-11 06 164 | <input checked="" type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE | 1/8" | 0 | 0025 |
| 17-18 06 | <input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input checked="" type="checkbox"/> OPEN HOLE | | 25 | 0185 |
| 24-25 | <input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE | | | |

SCREEN

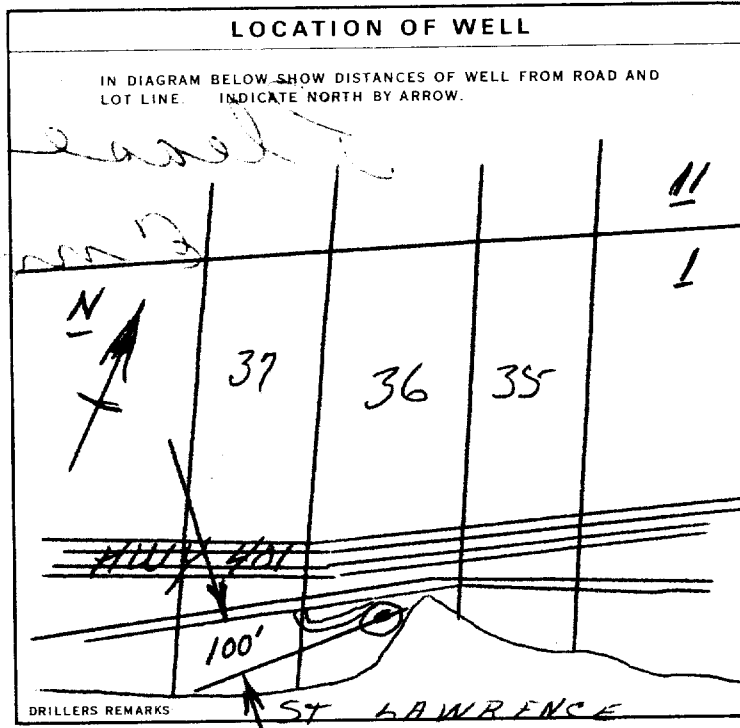
| SIZE(S) OF OPENING (SLOT NO.) | DIAMETER | LENGTH |
|-------------------------------|----------|------------------------|
| | INCHES | FEET |
| MATERIAL AND TYPE | | DEPTH TO TOP OF SCREEN |
| | | 41-44 FEET |

61 PLUGGING & SEALING RECORD

| DEPTH SET AT - FEET | MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.) |
|---------------------|---|
| FROM TO | |
| 10-13 0 | 25" TRAIL CUTTINGS |
| 18-21 | 22-25 |
| 26-29 | 30-33 |

71 PUMPING TEST

| | | |
|--|--|---|
| PUMPING TEST METHOD <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER | PUMPING RATE 0008 GPM | DURATION OF PUMPING 01 15-16 HOURS 00 17-18 MINS |
| STATIC LEVEL 015 FEET | WATER LEVEL END OF PUMPING 035 FEET | WATER LEVELS DURING |
| 19-21 | 22-24 | 15 MINUTES 024 FEET |
| 25-28 | 29-31 | 30 MINUTES 035 FEET |
| 32-34 | 35-37 | 45 MINUTES |
| 38-41 | 42 | 60 MINUTES |
| IF FLOWING GIVE RATE | PUMP INTAKE SET AT 185 GPM | WATER AT END OF TEST 1 CLEAR 2 CLOUDY |
| RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP | RECOMMENDED PUMP SETTING 060 FEET | RECOMMENDED PUMPING RATE 0008 GPM |



FINAL STATUS OF WELL

1 WATER SUPPLY
2 OBSERVATION WELL
3 TEST HOLE
4 RECHARGE WELL

5 ABANDONED, INSUFFICIENT SUPPLY
6 ABANDONED, POOR QUALITY
7 UNFINISHED

WATER USE

01 DOMESTIC
2 STOCK
3 IRRIGATION
4 INDUSTRIAL
5 OTHER

6 COMMERCIAL
7 MUNICIPAL
8 PUBLIC SUPPLY
9 COOLING OR AIR CONDITIONING
10 NOT USED

METHOD OF DRILLING

5 CABLE TOOL
2 ROTARY (CONVENTIONAL)
3 ROTARY (REVERSE)
4 ROTARY (AIR)
5 AIR PERCUSSION

6 BORING
7 DIAMOND
8 JETTING
9 DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR
BEAVER HILL DRILLING

LICENCE NUMBER
2333

ADDRESS
RR 1 ELIZABETH TOWN

NAME OF DRILLER
J. GIBSON

LICENCE NUMBER
2333

SIGNATURE OF CONTRACTOR
J. Gibson

SUBMISSION DATE
DAY **7** MO. **11** YR. **76**

OFFICE USE ONLY

DATA SOURCE
1

CONTRACTOR
2333

DATE RECEIVED
3 11 276

DATE OF INSPECTION

INSPECTOR
Vm

REMARKS

P Th.
WI

Instructions for Completing Form

- For use in the Province of Ontario only. This document is a permanent legal document. Please retain for future reference.
- All Sections must be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- All metre measurements shall be reported to 1/10th of a metre.
- Please print clearly in blue or black ink only.

| Ministry Use Only | | | | | | | | | |
|-------------------|-----|-----|--|--|--|--|--|--|--|
| MUN | CON | LOT | | | | | | | |

Address of Well Location (County/District/Municipality): **Leeds & Grenville**
 Township: **Leeds & Thousand Island** 18-19
 RR#/Street Number/Name: **REYNOLDS R.D.**
 City/Town/Village: **MACELLAN** Site/Compartment/Block/Tract etc.: **1**
 GPS Reading: **8.3** NAD: **18** Zone: **491491** Easting: **4915179** Northing: **MACELLAN**
 Unit Make/Model: **MACELLAN** Mode of Operation: Undifferentiated Averaged Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

| General Colour | Most common material | Other Materials | General Description | Depth Metres | |
|----------------|----------------------|-----------------|---------------------|--------------|------|
| | | | | From | To |
| Brown | Clay | | | 0 | 3.4 |
| Red | Granite | | | 3.4 | 41.1 |
| Grey | " | | | 41.1 | 43 |
| Red | Granite | | | 43 | 48.8 |

Hole Diameter

| Depth From | Metres To | Diameter Centimetres |
|------------|-----------|----------------------|
| 0 | 6 | 25.4 |
| 6 | 48.4 | 15.25 |

Water Record

Water found at **13.7** Metres / Kind of Water: Fresh Sulphur Gas Salty Minerals Other:

45 m Fresh Sulphur Gas Salty Minerals Other:

After test of well yield, water was Clear and sediment free Other, specify

Chlorinated Yes No

Construction Record

| Inside diam centimetres | Material | Wall thickness centimetres | Depth Metres | |
|---|---|----------------------------|--------------|------|
| | | | From | To |
| 15.8 | <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass | .48 | 0 | 6 |
| | <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete | | | |
| | <input type="checkbox"/> Galvanized | | | |
| Screen | | | | |
| Outside diam | <input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass | Slot No. | | |
| | <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete | | | |
| | <input type="checkbox"/> Galvanized | | | |
| No Casing or Screen | | | | |
| <input checked="" type="checkbox"/> Open hole | | | 6 | 48.8 |

Test of Well Yield

| Pumping test method | Draw Down | | Recovery | |
|---|--------------|--------------------|----------|--------------------|
| | Time min | Water Level Metres | Time min | Water Level Metres |
| Pump intake set at (metres) 41.5 | Static Level | -3 | | |
| Pumping rate (litres/min) 54 | 1 | 1.8 | 1 | 12.2 |
| Duration of pumping 2 hrs + 0 min | 2 | 2.4 | 2 | 10.9 |
| Final water level end of pumping metres | 3 | 3 | 3 | 9.4 |
| Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep | 4 | 3.7 | 4 | 8.2 |
| Recommended pump depth 46 metres | 5 | 4.2 | 5 | 7.6 |
| Recommended pump rate (litres/min) 54 | 10 | 7.6 | 10 | 5.5 |
| If flowing give rate (litres/min) | 15 | 9.7 | 15 | 4 |
| | 20 | 11.2 | 20 | 2.7 |
| | 25 | 12.4 | 25 | 1.5 |
| If pumping discontinued, give reason. | 30 | 13.1 | 30 | 1.6 |
| | 40 | 13.4 | 40 | .3 |
| | 50 | 13.7 | 50 | .3 |
| | 60 | 13.7 | 60 | .3 |

Plugging and Sealing Record Annular space Abandonment

| Depth set at From | Metres To | Material and type (bentonite slurry, neat cement slurry) etc. | Volume Placed (cubic metres) |
|-------------------|-----------|---|------------------------------|
| 6 | 0 | CEMENT SLURRY | .2 |

Method of Construction

Cable Tool Rotary (air) Diamond Digging

Rotary (conventional) Air percussion Jetting Other

Rotary (reverse) Boring Driving

Water Use

Domestic Industrial Public Supply Other

Stock Commercial Not used

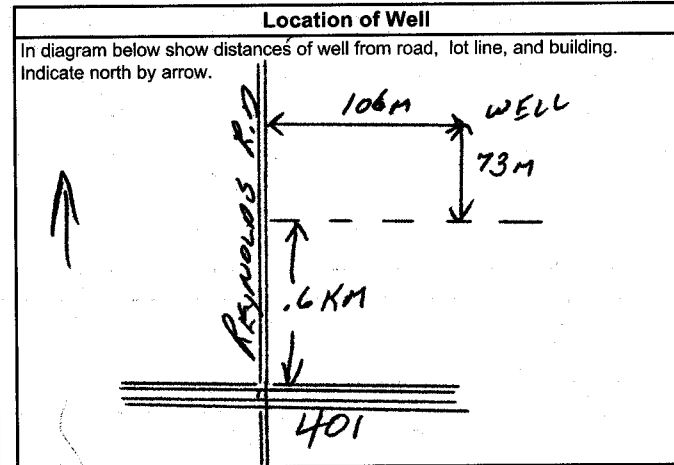
Irrigation Municipal Cooling & air conditioning

Final Status of Well

Water Supply Recharge well Unfinished Abandoned, (Other)

Observation well Abandoned, insufficient supply Dewatering

Test Hole Abandoned, poor quality Replacement well



Audit No. **Z 21908** Date Well Completed **05 3 17**

Was the well owner's information package delivered? Yes No Date Delivered **05 3 17**

Well Contractor/Technician Information

Name of Well Contractor: **JACK KNOX Well Drilling Ltd** Well Contractor's Licence No.: **3202**

Business Address (street name, number, city etc.): **2580 Perth Rd, Glenburnie**

Name of Well Technician (last name, first name): **Knox John** Well Technician's Licence No.:

Signature of Technician/Contractor: *[Signature]* Date Submitted: **APR 18 2005**

Ministry Use Only

Data Source: Contractor **3202**

Date Received: **APR 18 2005** Date of Inspection: **APR 18 2005**

Remarks: Well Record Number:

TOWNSHIP OF LEEDS AND THE THOUSAND ISLANDS

Project: Reynolds Road Dump

Borehole: MW1

Drilling Date: 27-Apr-2016

TOC Elevation: 99.97 mASL

Drill Method: Hollow Stem Auger

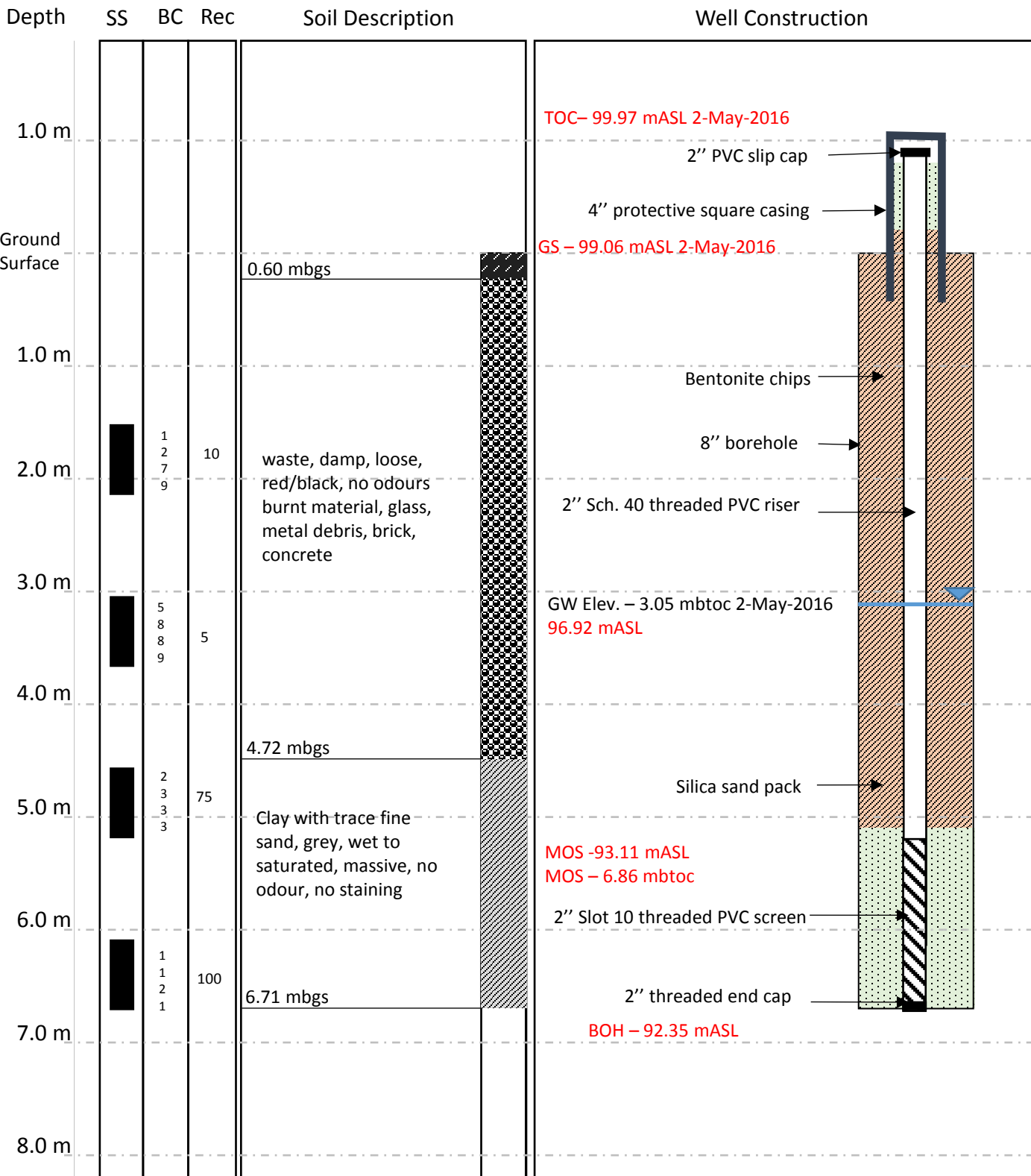
Easting: 0419160

Driller: Aardvark Drilling

Northing: 4915430

Logger: A. Day

Well Tag: A175197 (cluster C24081)



TOWNSHIP OF LEEDS AND THE THOUSAND ISLANDS

Project: Reynolds Road Dump

Borehole: MW2

Drilling Date: 27-Apr-2016

TOC Elevation: 102.28 mASL

Drill Method: Hollow Stem Auger

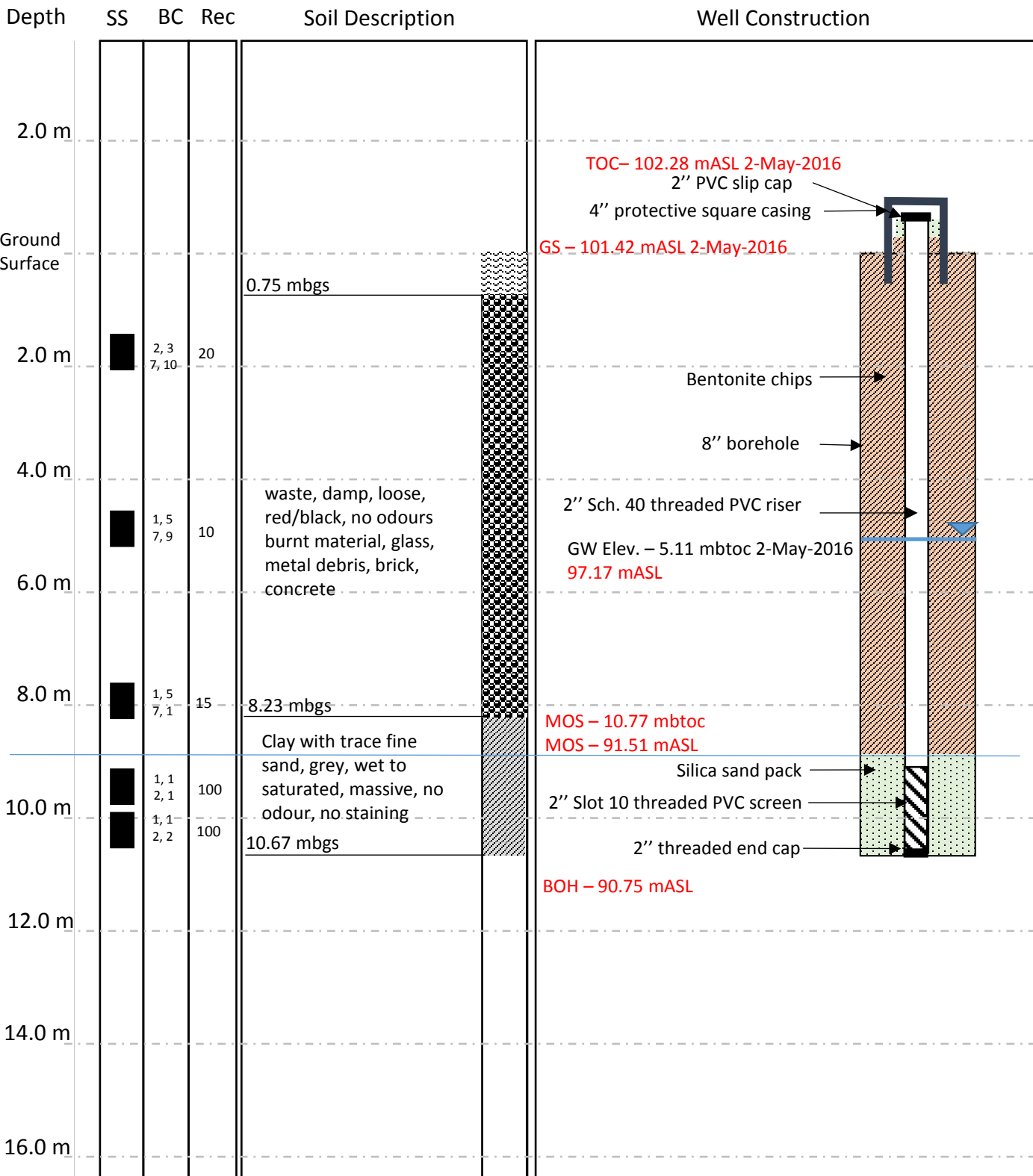
Easting: 0419143

Driller: Aardvark Drilling

Northing: 4915404

Logger: A. Day

Well Tag: A175197 (cluster C24081)



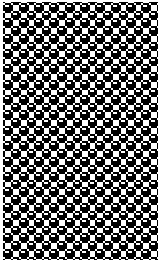
TOWNSHIP OF LEEDS AND THE THOUSAND ISLANDS

Project: Lansdowne WDS
 Borehole: 15-1 (replace 91-2)

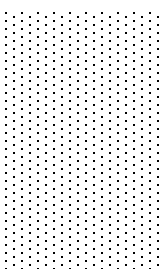
Drilling Date: 21-Sep-2015
 Drill Method: Hollow Stem Auger
 Driller: Aardvark Drilling
 Logger: A. Day

TOC Elevation:
 Easting: 0416333
 Northing: 4916429
 Well Tag: A175282 (1)

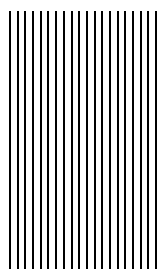
| Depth | SS | BC | Rec | Soil Description | Well Construction |
|----------------|----|----|------|------------------|-------------------|
| 1.0 m | 1 | | 100% | | |
| Ground Surface | | | | | |
| 1.0 m | | | | | |
| 2.0 m | | | | | |
| 3.0 m | | | | | |
| 4.0 m | | | | | |
| 5.0 m | | | | | |
| 6.0 m | | | | | |
| 7.0 m | | | | | |
| 8.0 m | | | | | |



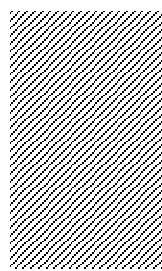
waste



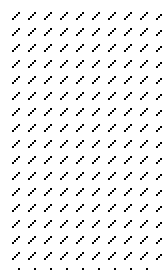
Sand



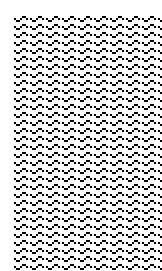
Silt



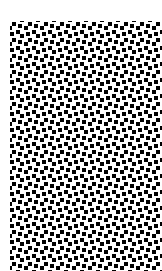
Clay



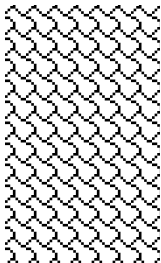
Organics



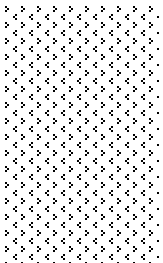
Fill



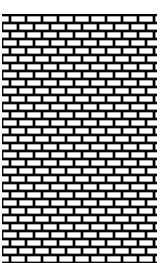
Gravels



Meta –
Bedrock



Ign –
Bedrock



Sedi –
Bedrock

Modified Unified Classification System for Soils

| MAJOR DIVISION | | GROUP SYMBOL | GRAPH SYMBOL | COLOR CODE | TYPICAL DESCRIPTION | LABORATORY CLASSIFICATION CRITERIA |
|--|---|---|--------------|----------------------------------|---|---|
| COARSE-GRAINED SOILS (MORE THAN HALF BY WEIGHT LARGER THAN 200 SIEVE) | GRAVELS MORE THAN HALF COARSE GRAINS LARGER THAN NO. 4 SIEVE | CLEAN GRAVELS (LITTLE OR NO FINES) | GW | | RED | WELL GRADED GRAVELS, LITTLE OR NO FINES $C_u \leq \frac{D_{60}}{D_{10}} \leq 4$ $C_c \leq \frac{(D_{30})^2}{D_{10} D_{60}} \leq 1$ or 3 |
| | | POORLY GRADED GRAVELS, AND GRAVEL-SAND MIXTURES, LITTLE OR NO FINES | GP | | RED | NOT MEETING THE ABOVE REQUIREMENTS |
| | DIRTY GRAVELS (WITH SOME FINES) | GM | | YELLOW | SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES | CONTENT OF FINES EXCEEDS 12% ATTERBERG LIMITS BELOW "A" LINE OR P.I. LESS THAN 4 ATTERBERG LIMITS ABOVE "A" LINE P.I. MORE THAN 7 |
| | | GC | | YELLOW | CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES | |
| | SANDS MORE THAN HALF FINE GRAINS SMALLER THAN NO. 4 SIEVE | CLEAN SANDS (LITTLE OR NO FINES) | SW | | RED | WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES $C_u \leq \frac{D_{60}}{D_{10}} \leq 6$ $C_c \leq \frac{(D_{30})^2}{D_{10} D_{60}} \leq 1$ or 3 |
| | | POORLY GRADED SANDS, LITTLE OR NO FINES | SP | | RED | NOT MEETING THE ABOVE REQUIREMENTS |
| DIRTY SANDS (WITH SOME FINES) | | SM | | YELLOW | SILTY SANDS, SAND-SILT MIXTURES | CONTENT OF FINES EXCEEDS 12% ATTERBERG LIMITS BELOW "A" LINE P.I. LESS THAN 4 ATTERBERG LIMITS ABOVE "A" LINE P.I. MORE THAN 7 |
| | SC | | YELLOW | CLAYEY SANDS, SAND-CLAY MIXTURES | | |
| FINE-GRAINED SOILS (MORE THAN HALF BY WEIGHT PASSES 200 SIEVE) | SILTS BELOW "A" LINE MEASURABLE ORGANIC CONTENT | $W_L < 50\%$ | ML | | GREEN | CLASSIFICATION IS BASED UPON PLASTICITY CHART (SEE BELOW) NOTE: WHENEVER THE NATURE OF THE FINE CONTENT HAS NOT BEEN DETERMINED IT IS DESIGNATED BY THE LETTER "P", E.G. SP IS A MIXTURE OF SAND WITH SILT OR CLAY |
| | | $W_L > 50\%$ | MH | | BLUE | |
| | CLAYS ABOVE "A" LINE ON PLASTICITY CHART MEASURABLE ORGANIC CONTENT | $W_L < 30\%$ | CL | | GREEN | |
| | | $30\% < W_L < 50\%$ | CI | | GREEN-BLUE | |
| | | $W_L > 50\%$ | CH | | BLUE | |
| | ORGANIC SILTS AND CLAYS BELOW "A" LINE ON CHART | $W_L < 50\%$ | OL | | GREEN | |
| $W_L > 50\%$ | | OH | | BLUE | | |
| HIGHLY ORGANIC SOILS | | Pt | | ORANGE | PEAT AND OTHER HIGHLY ORGANIC SOILS | STRONG COLOR OR ODOR, AND OFTEN FIBROUS TEXTURE |

SPECIAL SYMBOLS



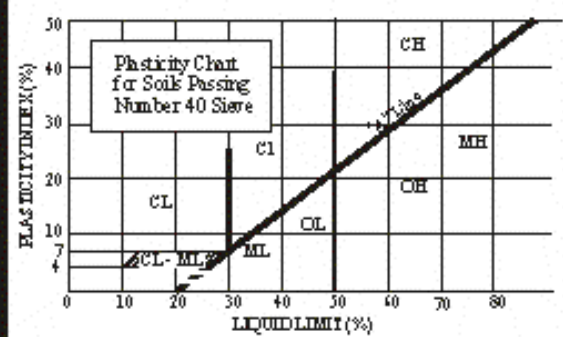
BEDROCK
(UNDIFFERENTIATED)



VOLCANIC ASH

SOIL COMPONENTS

| FRACTION | U.S. STANDARD SIEVE SIZE | DEFINING RANGES OF PERCENTAGE BY WEIGHT OF MINOR COMPONENTS | | |
|-------------------------------------|--------------------------|---|------------|------------------|
| | PASSING - RETAINED | PERCENT | DESCRIPTOR | |
| GRAVEL | 76 mm - 19 mm | 50 - 35 | and | |
| | fin | | | 19 mm - #4 |
| SAND | 4.75 mm - 2.00 mm | 35 - 20 | some | |
| | medium | | | 2.00 mm - +25 µm |
| | fin | | | +25 µm - 75 µm |
| SILT (nonplastic) OR CLAY (plastic) | 75 µm | 10 - 1 | trace | |



- ALL SIEVE SIZES MENTIONED ON THIS CHART ARE U.S. STANDARD, A.S.T.M. #11
- BOUNDARY CLASSIFICATIONS POSSESSING CHARACTERISTICS OF TWO GROUPS ARE GIVEN COMBINED GROUP SYMBOLS, E.G. GP&GC IS A WELL-GRADED GRAVEL-SAND MIXTURE WITH CLAYEY LINE, BETWEEN 5% AND 12%.

OVERSIZE MATERIAL

| | |
|---|---|
| ROUNDED OR SUBROUNDED COBBLES 76 mm to 203 mm BOULDERS > 203 mm | NOT ROUNDED ROCK FRAGMENTS > 76 mm ROCKS > 0.76 cubic metre |
|---|---|



GREAT WHITE NORTH
ENVIRONMENTAL SERVICES LIMITED

Appendix D
MECP Correspondence

Ministry of the Environment,
Conservation and Parks
Client Services and Permissions
Branch
1st Floor
135 St Clair Ave W
Toronto ON M4V 1P5
Fax: (416) 314-8452
Telephone: (416) 314-5132

Ministère de l'Environnement, de la
Protection de la nature et des Parcs
Direction des services à la clientèle
et des permissions
135 av St Clair O
Toronto ON M4V 1P5
Télécopieur : (416) 314-8452
Téléphone : (416) 314-5132



October 10, 2019

Adam Goheen
The Corporation of the Township of Leeds and the Thousand Islands
1233 Prince St Lansdowne
Post Office Box 280
Leeds and the Thousand Islands, Ontario
K0E 1L0

Dear Sir:

**Re: Application for Approval of Waste Disposal Sites
Notice to ECA No. A442001 - Revise Terms and Conditions, Add Lands to Reynolds
Road Landfill Property
Leeds and the Thousand Islands Township, United Counties of Leeds and Grenville
Reference Number 4571-BGJRE2**

We acknowledge receipt of your application for approval dated September 2, 2019 and received on October 1, 2019 for the following:

Approval Type: Waste Disposal Sites
Project Description: This proposal is to amend Environmental Compliance Approval (Waste Disposal Site) No. A442001 issued to The Corporation of the Township of Leeds and the Thousand Islands to recognize the additional lands purchased and to remove conditions 3.0(1) and 3.0(2)
Site Location: Reynolds Road Dump (Closed)
Reynolds Road
Lot 18, Concession 2
Leeds and the Thousand Islands Township, United Counties of Leeds and Grenville

The Ministry's reference number for your application is 4571-BGJRE2. Please quote this number in any correspondence or enquiries regarding this application.

Please note that your submission has only been screened with respect to the presence of the supporting documentation normally required for this type of application, and did not include any technical analysis of the documentation, and therefore you may still be requested to provide some additional information during our detailed technical review of the application. In such a case, the Reviewer will contact you and/or your identified Project Technical Information Contact at this time.

Also, please note that a duplicate copy of the application and all supporting information should have been sent to the local District Office of the Ministry. If this has not been done, please do so as soon as possible.

Should you have any questions related to your application, please contact me at the above phone number.

Sincerely,



Ricki Allum

Application Assessment Officer

- c: District Manager, MECP Kingston - District
Adam Goheen, The Corporation of the Township of Leeds and the Thousand Islands, Email: agoheen@townshipleedsd.on.ca
- John Pyke, Malroz Engineering Inc., Email: pyke@malroz.com
- Albert Paschkowiak, Malroz Engineering Inc., Email: paschkowiak@malroz.com

Appendix E
Tables

Table 1
Sampling Parameters

| Metals | | General Parameters | PHCs and PAHs | | VOCs | |
|-----------|------------|---------------------------------|------------------------------|-------------------------|--|---------------------------|
| Mercury | Molybdenum | Alkalinity as CaCO ₃ | Acenaphthene | 2,6-Dinitrotoluene* | Acetone | Hexane |
| Aluminum | Nickel | Ammonia-N | Acenaphthylene | Fluoranthene | Benzene | Methyl Ethyl Ketone |
| Antimony | Potassium | Biochemical Oxygen Demand | Anthracene | Fluorene | Bromodichloromethane | Methyl Isobutyl Ketone |
| Arsenic | Selenium | Chemical Oxygen Demand | Benzo[a]anthracene | Indeno[1,2,3-cd]pyrene | Bromoform | Methyl tert-butyl ether |
| Barium | Silicon | Dissolved Organic Carbon | Benzo[a]pyrene | 1-Methylnaphthalene | Bromomethane | Methylene Chloride |
| Beryllium | Silver | Conductivity | Benzo[b]fluoranthene | 2-Methylnaphthalene | Carbon Tetrachloride | Styrene |
| Boron | Sodium | Hardness as CaCO ₃ | Benzo[g,h,i]perylene* | Methylnaphthalene (1&2) | Chlorobenzene | 1,1,1,2-Tetrachloroethane |
| Cadmium | Strontium | pH | Benzo[k]fluoranthene | Naphthalene | Chloroform | 1,1,2,2-Tetrachloroethane |
| Calcium | Thallium | Phenols | Benzo[b+k]fluoranthene* | Pentachlorophenol* | Dibromochloromethane | Tetrachloroethylene |
| Chromium | Tin | Total Phosphorus | 1,1-Biphenyl | Phenanthrene | Dichlorodifluoromethane | Toluene |
| Cobalt | Titanium | Total Dissolved Solids | Bis[2-Chloroethyl]ether* | Phenol* | Ethylene Dibromide (1,2-Dibromoethane) | 1,1,1-Trichloroethane |
| Copper | Tungsten | Total Suspended Solids | Bis[2-Chloroisopropyl]ether* | Pyrene | 1,2-Dichlorobenzene | 1,1,2-Trichloroethane |
| Iron | Uranium | Total Kjeldahl Nitrogen-N | Bis[2-ethylhexyl] Phthalate* | 1,2,4-Trichlorobenzene* | 1,3-Dichlorobenzene | Trichloroethylene |
| Lead | Vanadium | Chloride | 4-Chloroaniline* | 2,4,5-Trichlorophenol* | 1,4-Dichlorobenzene | Trichlorofluoromethane |
| Magnesium | Zinc | Nitrate-N | 2-Chlorophenol* | 2,4,6-Trichlorophenol* | 1,1-Dichloroethane | Vinyl Chloride |
| Manganese | | Nitrite-N | Chrysene | | 1,2-Dichloroethane | m/p-Xylene |
| | | Sulphate | Dibenzo[a,h]anthracene | | 1,1-Dichloroethylene | o-Xylene |
| | | | 3,3'-Dichlorobenzidine* | | cis-1,2-Dichloroethylene | Xylenes, total |
| | | | 2,4-Dichlorophenol* | | trans-1,2-Dichloroethylene | |
| | | | Diethyl Phthalate* | | 1,2-Dichloropropane | |
| | | | Dimethyl Phthalate* | | cis-1,3-Dichloropropylene | |
| | | | 2,4-Dimethylphenol* | | trans-1,3-Dichloropropylene | |
| | | | 2,4-Dinitrophenol* | | 1,3-Dichloropropene, total | |
| | | | 2,4-Dinitrotoluene* | | Ethylbenzene | |

Notes: * parameter reported by Caduceon in 2018, but has not historically been reported. Future monitoring programs will not report these parameters.

Table 2
Well Inspection Summary

| Well Type | UTM Corrdinates ² | | Well Construction | Well Integrity | | | Well Observations | |
|-----------|------------------------------|---------|-------------------|----------------|----------|--------|-------------------|---------|
| | Protective Casing | Easting | | Northing | Material | Locked | | Capped |
| MW1 | | 419160 | 4915430 | steel monument | yes | J-Plug | good | A175197 |
| MW2 | | 419143 | 4915404 | steel monument | yes | J-Plug | good | A175197 |

Notes: Well inspection completed on May 2 and November 26, 2019 .

Data Input: AP

¹ Well conditions ranked as good (no maintenance required),
 fair (minor maintenance required),
 poor (requires maintenance or abandonment)

Data Check: MW

² UTM coordinates reference NAD 83 Zone 18

na not applicable

Table 3
Groundwater Monitoring Results

| Location | Sample Date | DTW (m) | DTB (m) | Groundwater/ Surface Water Elev. (m) | TOP Elev. (m) | Methane Concentration (%LEL) | Observations | | |
|----------------|-------------|---------|---------|---|---------------|------------------------------|--------------|----------|-------|
| | | | | | | | Colour | Sediment | Odour |
| MW-1 | 19-May-02 | 2.88 | 7.65 | 97.09 | 99.97 | nr | clear | trace | none |
| | 19-Nov-26 | 2.92 | 7.57 | 97.05 | 99.97 | nr | cloudy | trace | none |
| MW-2 | 19-May-02 | 4.67 | 11.60 | 97.61 | 102.28 | nr | clear | none | none |
| | 19-Nov-26 | 4.72 | 11.60 | 97.56 | 102.28 | nr | clear | none | none |
| Culvert Inflow | 19-May-02 | 0.65 | - | 95.75 | 96.40 | - | - | - | - |
| | 19-Nov-26 | [1] | - | - | 96.40 | - | - | - | - |

Notes:

- LEL denotes lower explosive limit
- nr indicates no response
- DTW depth to water
- denotes "not analyzed"
- [1] not collected

Data Input: AP

Data Check: MW

Table 5 - Groundwater Chemistry PHC and PAH Analysis

| Location | Parameter | | F1 PHCs (C6-C10) | F2 PHCs (C10-C16) | F3 PHCs (C16-C34) | F4 PHCs (C34-C50) | Acenaphthene | Acenaphthylene | Anthracene | Benzo[a]anthracene | Benzo[a]pyrene | Benzo[b]fluoranthene | Benzo[b+k]fluoranthene | Benzo[g,h,i]perylene | Benzo[k]fluoranthene | 1,1-Biphenyl | Chrysene | Dibenzo[a,h]anthracene | Fluoranthene | Fluorene | Indeno[1,2,3-cd]pyrene | 1-Methylnaphthalene | 2-Methylnaphthalene | Methylnaphthalene (1&2) | Naphthalene | Phenanthrene | Pyrene |
|----------|----------------------|-----------|------------------|-------------------|-------------------|-------------------|--------------|----------------|------------|--------------------|----------------|----------------------|------------------------|----------------------|----------------------|--------------|----------|------------------------|--------------|----------|------------------------|---------------------|---------------------|-------------------------|-------------|--------------|--------|
| | Units | | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| | RL (2019) | | 50 | 50 | 400 | 400 | 0.05 | 0.05 | 0.05 | 0.05 | 0.01 | 0.05 | 0.1 | 0.05 | 0.05 | 0.2 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.08 | 1 | 0.05 | 0.05 | 0.05 |
| | O.Reg 153/04 Table 8 | | 420 | 150 | 500 | 500 | 4.1 | 1 | 1 | 1 | 0.01 | 0.1 | | 0.2 | 0.1 | 0.5 | 0.1 | 0.2 | 0.41 | 120 | 0.2 | 3.2 | 3.2 | 3.2 | 11 | 1 | 4.1 |
| | ODWS | Sample ID | - | - | - | - | - | - | - | - | - | 0.01 CS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW1 | 19-May-02 | 19-W002 | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < |
| MW1 | 19-Nov-26 | 19-W003 | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < |
| MW2 | 19-May-02 | 19-W001 | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < |
| MW2 | 19-Nov-26 | 19-W004 | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < |

Notes:

- "---" denotes not analyzed
- "<" denotes results below reporting limit
- "<#" denotes elevated reporting limit
- "MW###" denotes groundwater monitoring well
- "RL" denotes reporting limit

denotes concentration exceeds the Ontario Drinking Water Standards
 AO indicates aesthetic objective OG indicates operational guidelines CS Chemical standards
 shading indicates exceedance of Ontario Regulation 153/04 MECP 2011 Table 8 Standards

Malroz was not able to independently validate historic chemistry and exceedances, provided by the Township of Leeds and the Thousand Islands

Input: MW
 Checked: JMP

Table 6 - Groundwater Chemistry VOC Analysis

| Location | Parameter | Sample ID | Acetone | Benzene | Bromodichloromethane | Bromoform | Bromomethane | Carbon Tetrachloride | Chlorobenzene | Chloroethane | Chloroform | Chloromethane | Dibromochloromethane | Dichlorodifluoromethane | Ethylene dibromide (dibromoethane, 1,2-) | 1,2-Dichlorobenzene | 1,3-Dichlorobenzene | 1,4-Dichlorobenzene | 1,1-Dichloroethane | 1,2-Dichloroethane | 1,1-Dichloroethylene | cis-1,2-Dichloroethylene | trans-1,2-Dichloroethylene | 1,2-Dichloroethylene, total | 1,2-Dichloropropane | cis-1,3-Dichloropropylene | trans-1,3-Dichloropropylene | 1,3-Dichloropropene, total | Ethylbenzene | Hexane | Methyl Ethyl Ketone (2-Butanone) | Methyl Butyl Ketone (2-Hexanone) | Methyl Isobutyl Ketone | Methyl tert-butyl ether | Methylene Chloride | Styrene | 1,1,1,2-Tetrachloroethane | 1,1,2,2-Tetrachloroethane | Tetrachloroethylene | Toluene | 1,1,1-Trichloroethane | 1,1,2-Trichloroethane | Trichloroethylene | Trichlorofluoromethane | 1,3,5-Trimethylbenzene | Vinyl Chloride | m/p-Xylene | o-Xylene | Xylenes, total | | | | |
|----------|-----------|-----------|-----------|---------|----------------------|-----------|--------------|----------------------|---------------|--------------|------------|---------------|----------------------|-------------------------|--|---------------------|---------------------|---------------------|--------------------|--------------------|----------------------|--------------------------|----------------------------|-----------------------------|---------------------|---------------------------|-----------------------------|----------------------------|--------------|--------|----------------------------------|----------------------------------|------------------------|-------------------------|--------------------|---------|---------------------------|---------------------------|---------------------|---------|-----------------------|-----------------------|-------------------|------------------------|------------------------|----------------|------------|----------|----------------|------|-------|------|------|
| | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| | | | RL (2019) | 30 | 0.5 | 2 | 5 | 0.5 | 0.2 | 0.5 | - | 1 | - | 2 | 2 | 0.2 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | - | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 5 | 20 | - | 20 | 2 | 5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 5 | - | 0.2 | 1 | 0.5 | 1.1 | | |
| | | | ODWS | - | 1 CS | - | - | - | 2 CS | 80 CS | - | - | - | - | - | - | 200 CS | - | 5 CS | - | 5 CS | 14 CS | - | - | - | - | - | - | - | - | 140 CS | - | - | - | - | - | 50 CS | - | - | - | 10 CS | 60 CS | - | - | 5 CS | - | - | 1 CS | - | - | 90 CS | | |
| MW1 | 19-May-02 | 19-W002 | < 30 | < | < | < | < | < | - | < | - | < | < | < | < | < | < | < | < | < | < | - | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | | | |
| MW1 | 19-Nov-26 | 19-W003 | < 30 | < | < | < | < | < | - | < | - | < | < | < | < | < | < | < | < | < | < | - | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | | |
| MW2 | 19-May-02 | 19-W001 | < 30 | < | < | < | < | < | - | < | - | < | < | < | < | < | < | < | < | < | < | - | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | | |
| MW2 | 19-Nov-26 | 19-W004 | < 30 | < | < | < | < | < | - | < | - | < | < | < | < | < | < | < | < | < | < | - | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | < | |

Notes:

"-" denotes not analyzed
 "<" denotes results below reporting limit
 "MW###" denotes groundwater monitoring well
 "RL" denotes reporting limit
 denotes concentration exceeds the Ontario Drinking Water Standards
 AO indicates aesthetic objective OG indicates operational guidelines CS Chemical standards
 Malroz was not able to independently validate historic chemistry and exceedances, provided by the Township of Leeds and the Thousand Islands

Data input: MW
 Data check: JMP

Appendix F
Historical Groundwater Analyses and Trends

Historical Groundwater Chemistry - PHC and PAH Analysis

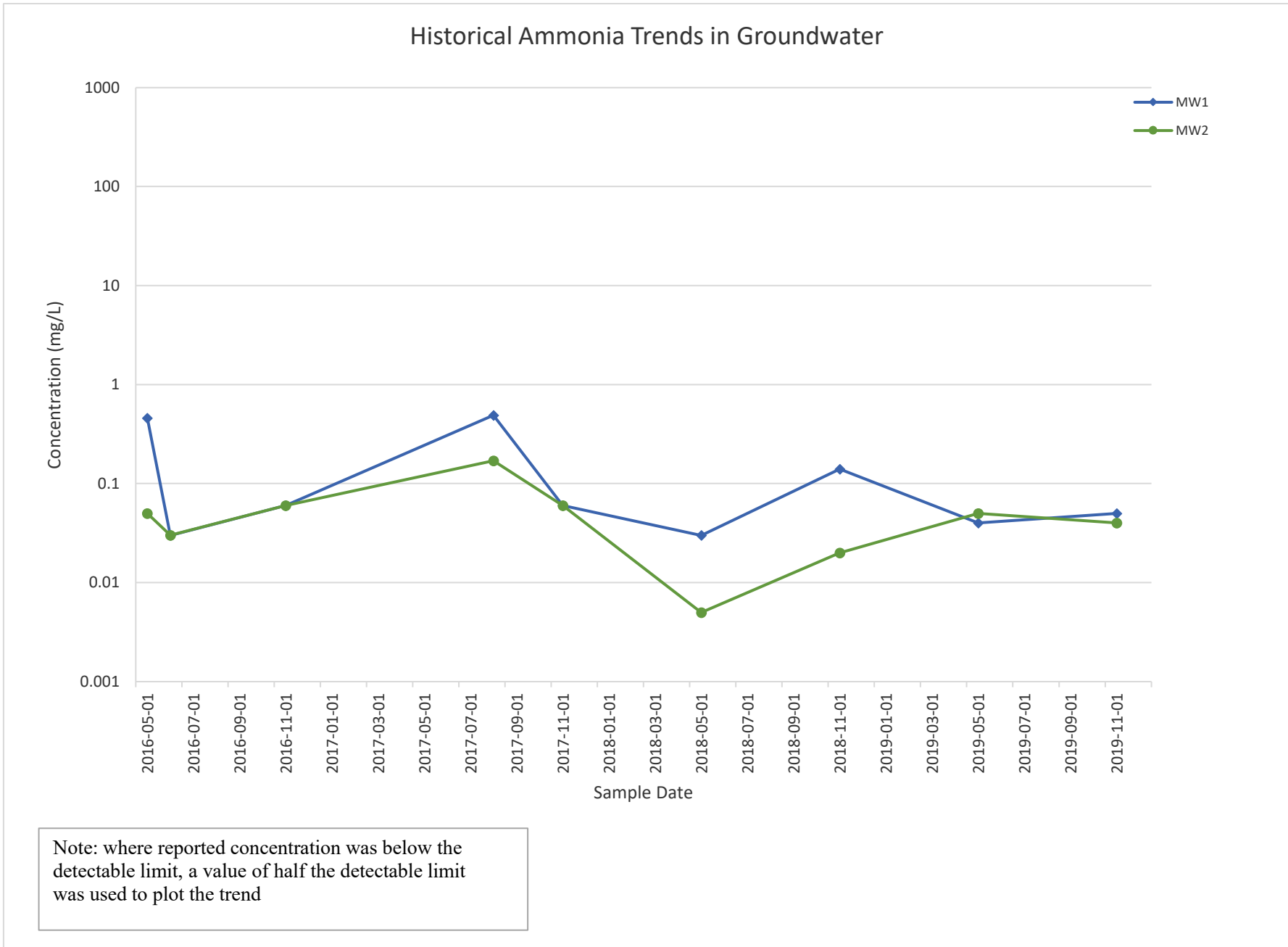
| Location | Parameter | F1 PHCs (C6-C10) | F2 PHCs (C10-C16) | F3 PHCs (C16-C34) | F4 PHCs (C34-C50) | Acenaphthene | Acenaphthylene | Anthracene | Benzofluoranthene | Benzo[a]pyrene | Benzofluoranthene | Benzofluoranthene | Benzofluoranthene | Benzofluoranthene | 1,1-Biphenyl | Chrysene | Dibenzo[a,h]anthracene | Fluoranthene | Fluorene | Indeno[1,2,3-cd]pyrene | 1-Methylnaphthalene | 2-Methylnaphthalene | Methylnaphthalene (1&2) | Naphthalene | Phenanthrene | Pyrene | |
|-------------|----------------------|------------------|-------------------|-------------------|-------------------|--------------|----------------|------------|-------------------|----------------|-------------------|-------------------|-------------------|-------------------|--------------|----------|------------------------|--------------|----------|------------------------|---------------------|---------------------|-------------------------|-------------|--------------|--------|-------|
| | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | |
| | RL (2019) | 50 | 50 | 400 | 400 | 0.05 | 0.05 | 0.05 | 0.05 | 0.01 | 0.05 | 0.1 | 0.05 | 0.05 | 0.2 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.08 | 0.08 | 0.05 | 0.05 | 0.05 |
| | O.Reg 153/04 Table 8 | 420 | 150 | 500 | 500 | 4.1 | 1 | 1 | 1 | 0.01 | 0.1 | | 0.2 | 0.1 | 0.5 | 0.1 | 0.2 | 0.41 | 120 | 0.2 | 3.2 | 3.2 | 3.2 | 11 | 1 | 4.1 | |
| | ODWS | - | - | - | - | - | - | - | - | - | 0.01 CS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Field Blank | 17-Nov-20 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.01 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.05 | <0.05 | <0.01 |
| MW1 | 16-May-19 | < 25 | 219 | 695 | 322 | 1.18 | 0.91 | 2.83 | 3.33 | 3.2 | 3.61 | - | 1.89 | 2.16 | 0.55 | 3.19 | 0.53 | 11.2 | 1.65 | 1.78 | 1.04 | 2.04 | 3.08 | 1.92 | 11.1 | 8.75 | |
| MW1 | 16-Jun-26 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.01 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.05 | <0.05 | <0.01 | |
| MW1 | 16-Nov-16 | < 25 | < 100 | < 100 | <100 | 0.05 | <0.05 | 0.06 | 0.05 | 0.07 | 0.06 | - | 0.1 | 0.05 | <0.05 | 0.07 | 0.09 | 0.07 | 0.06 | 0.09 | 0.1 | 0.08 | 0.18 | <0.05 | 0.06 | 0.07 | |
| MW1 | 17-Aug-03 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.01 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.05 | <0.05 | <0.01 | |
| MW1 | 17-Aug-03 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.01 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.05 | <0.05 | <0.01 | |
| MW1 | 17-Nov-20 | < 25 | 200 | 600 | 300 | 1.93 | 1.13 | 6.41 | 8.44 | 8.14 | 8.24 | - | 4.42 | 5.01 | 0.28 | 8.64 | 1.26 | 23.3 | 3.2 | 4.13 | 0.53 | 0.7 | 1.23 | 0.81 | 21.6 | 18.4 | |
| MW1 | 18-May-30 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | - | < 0.1 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.07 | < 0.05 | < 0.05 | < 0.05 | |
| MW1 | 18-Nov-29 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | < 0.1 | <0.05 | < 0.05 | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.07 | 0.12 | < 0.05 | < 0.05 | |
| MW1 | 19-May-02 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | < 0.1 | <0.05 | < 0.05 | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.08 | < 1 | < 0.05 | < 0.05 | < 0.05 | |
| MW1 | 19-Nov-26 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | < 0.1 | <0.05 | < 0.05 | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.08 | < 1 | < 0.05 | < 0.05 | < 0.05 | |
| MW2 | 16-May-19 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.19 | <0.05 | <0.05 | 0.08 | 0.11 | 0.2 | 0.1 | 0.15 | 0.25 | |
| MW2 | 16-Jun-26 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.01 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.05 | <0.05 | <0.01 | |
| MW2 | 16-Nov-16 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | 0.05 | 0.04 | 0.06 | 0.05 | - | 0.08 | 0.06 | <0.05 | 0.05 | 0.07 | 0.06 | 0.05 | 0.07 | 0.09 | 0.09 | 0.18 | <0.05 | 0.05 | 0.06 | |
| MW2 | 17-Aug-03 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.01 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.05 | <0.05 | <0.01 | |
| MW2 | 17-Nov-20 | < 25 | < 100 | < 100 | <100 | <0.05 | <0.05 | <0.01 | <0.01 | <0.01 | <0.05 | - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.01 | <0.05 | <0.05 | <0.05 | <0.05 | <0.10 | <0.05 | <0.05 | <0.01 | |
| MW2 | 18-May-30 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | - | < 0.1 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.07 | < 0.05 | < 0.05 | < 0.05 | |
| MW2 | 18-Nov-29 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | < 0.1 | <0.05 | < 0.05 | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.07 | < 0.05 | < 0.05 | < 0.05 | |
| MW2 | 19-May-02 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | < 0.1 | <0.05 | < 0.05 | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.08 | < 1 | < 0.05 | < 0.05 | < 0.05 | |
| MW2 | 19-Nov-26 | < 50 | < 50 | < 400 | < 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.01 | < 0.05 | < 0.1 | <0.05 | < 0.05 | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.08 | < 1 | < 0.05 | < 0.05 | < 0.05 | |

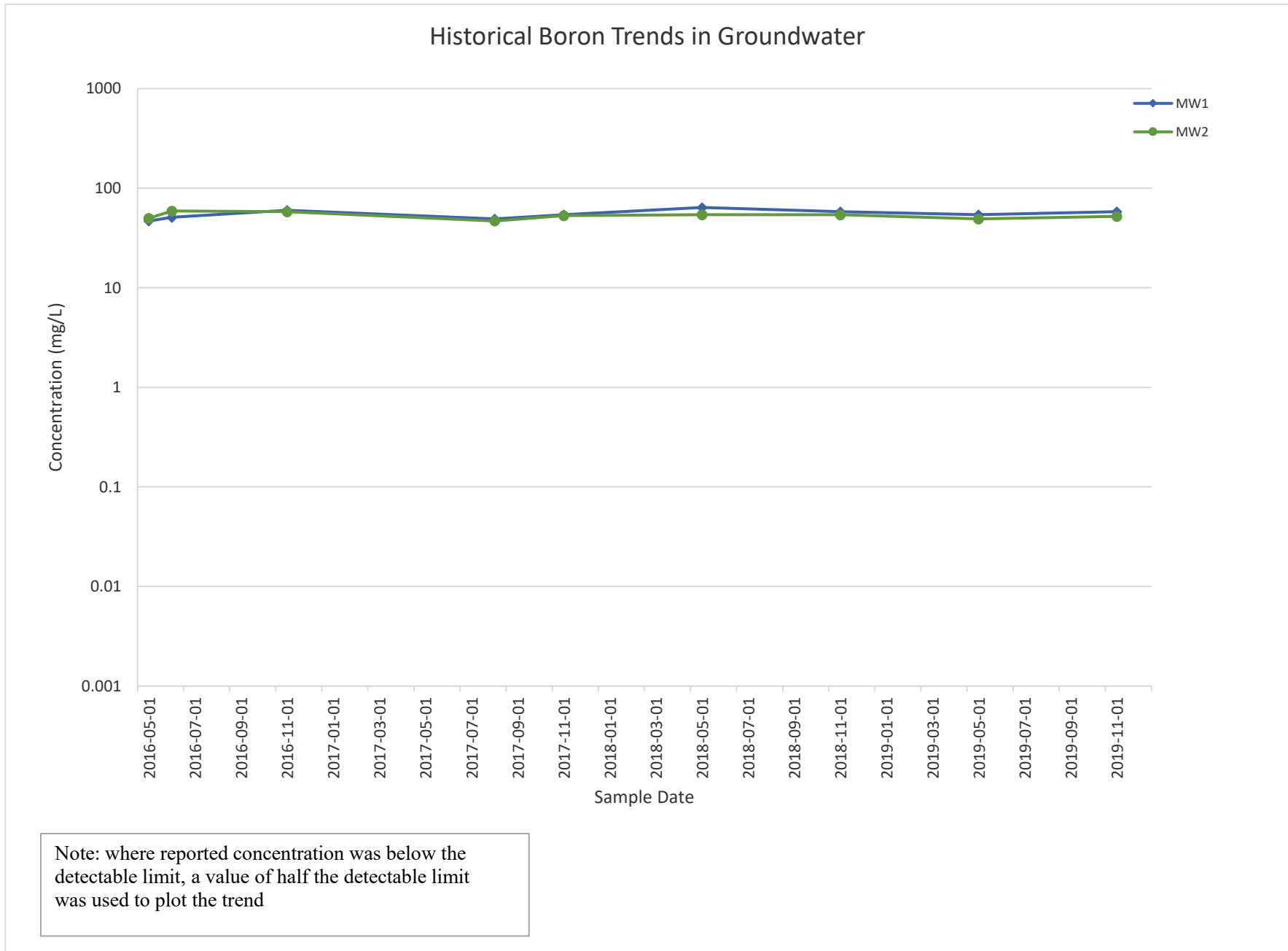
Notes:
 "----" denotes not analyzed
 "<###" denotes results below reporting limit
 "MW###" denotes groundwater monitoring well
 "RL" denotes reporting limit

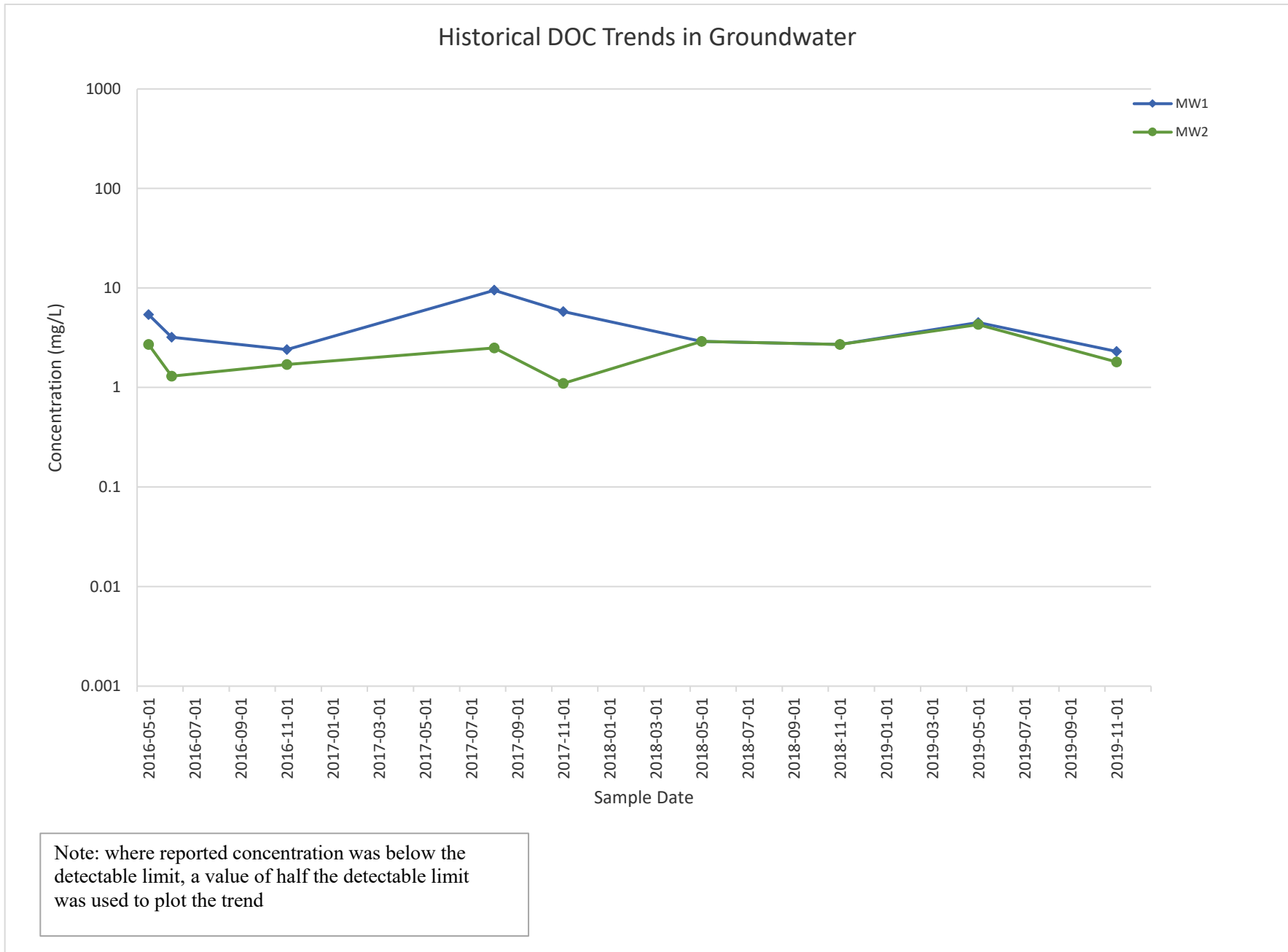
denotes concentration exceeds the Ontario Drinking Water Standards
 AO indicates aesthetic objective OG indicates operational guidelines CS Chemical standards
 shading indicates exceedance of Ontario Regulation 153/04 MECP 2011 Table 8 Standards

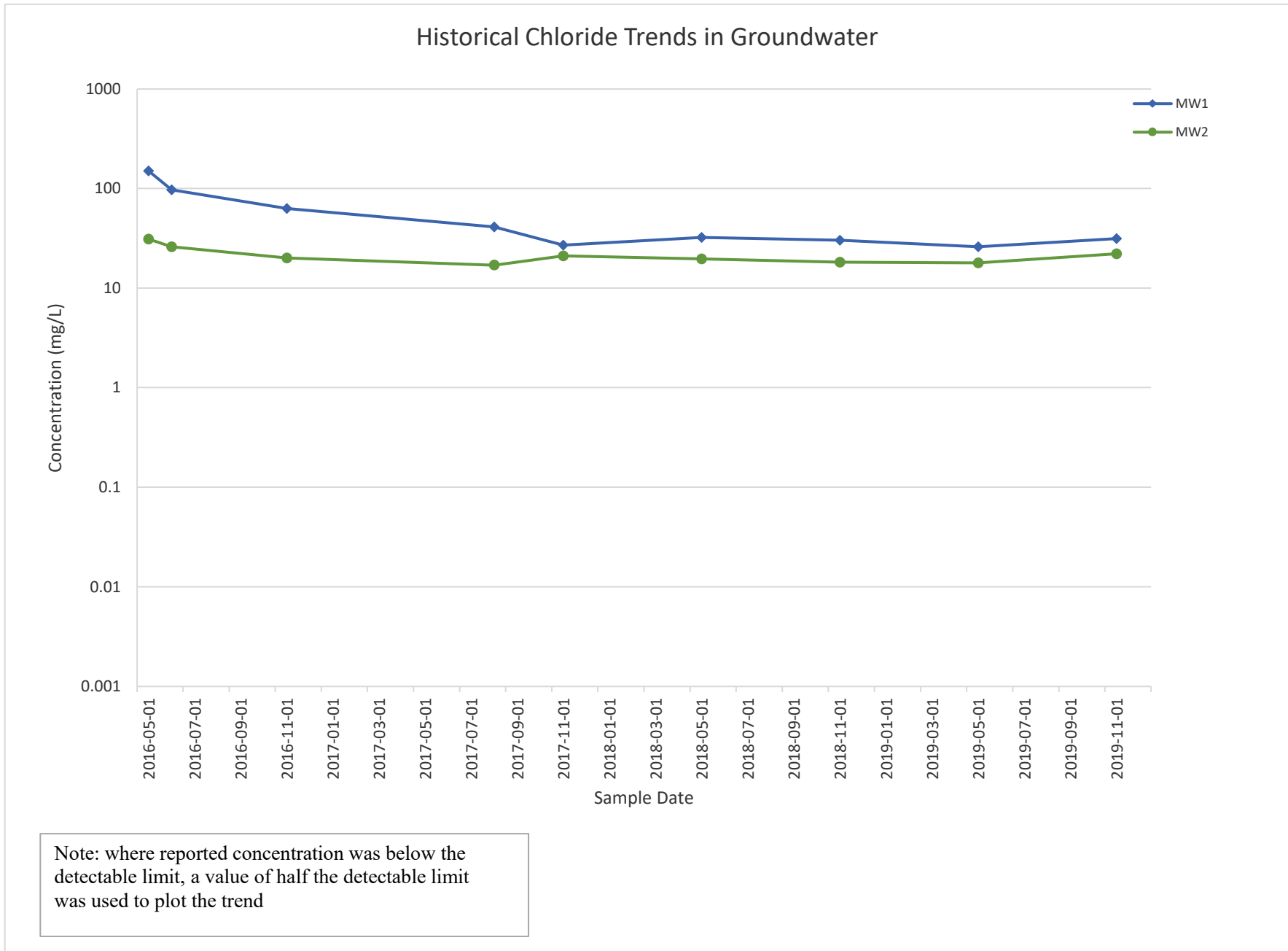
Malroz was not able to independently validate historic chemistry and exceedances, provided by the Township of Leeds and the Thousand Islands

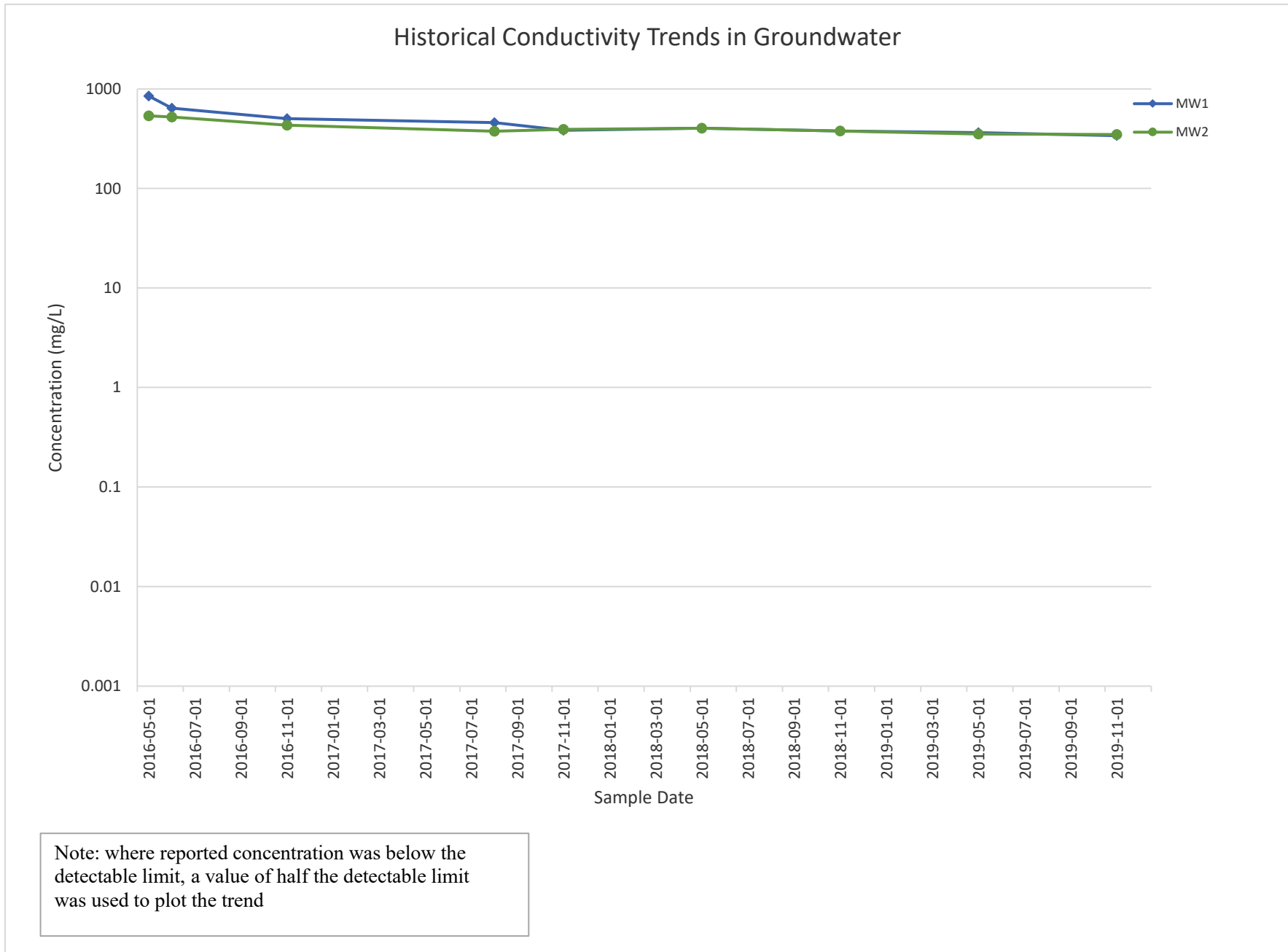
Input: MW
 Checked: JMP

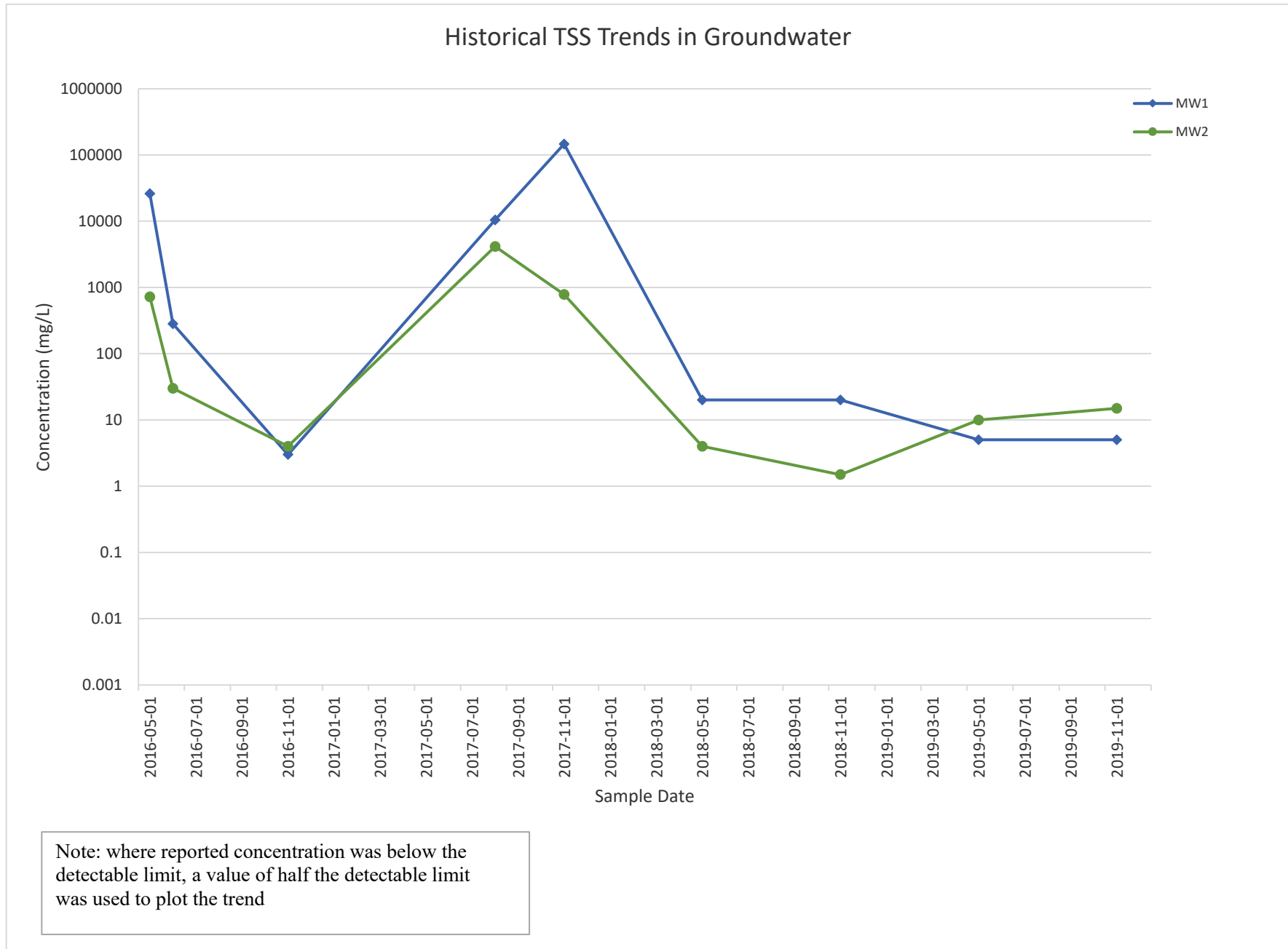


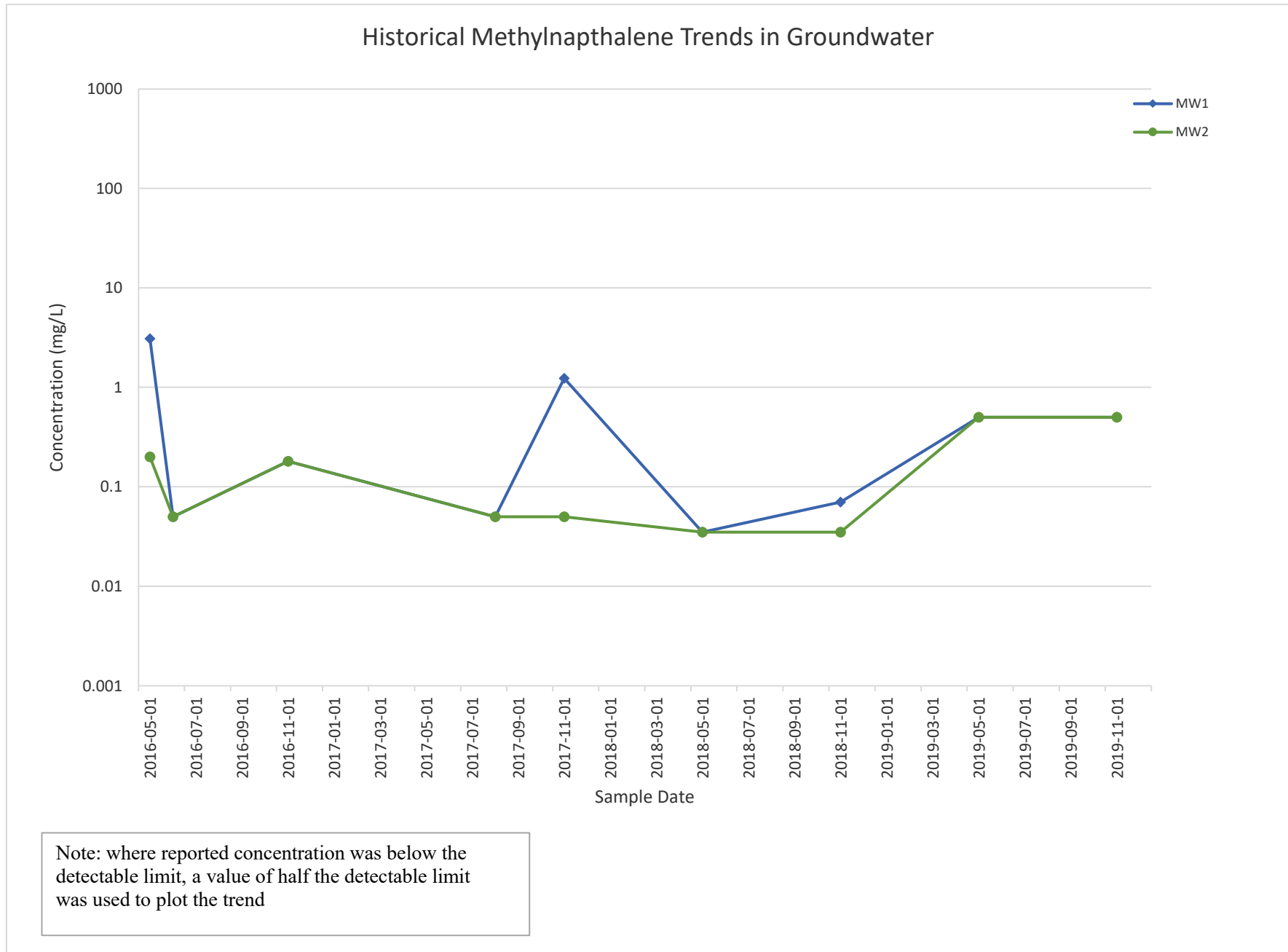












Appendix G
Site Photos



Well ID: MW1
Nov-2019



Well ID: MW2
Nov-2019



Description: view of the culvert monitored
May-2019



Description: view of the west of the property
May-2019

Appendix H
Laboratory Certificates of Analyses

C.O.C.: G78003

REPORT No. B19-11836 (i)

Rev. 1

Report To:

Malroz Engineering Inc.
308 Wellington Street, 2nd Floor
Kingston ON K7K 7A8 Canada

Attention: Camille Malcolm

Caduceon Environmental Laboratories

285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 02-May-19

JOB/PROJECT NO.: 1039

DATE REPORTED: 21-Jan-20

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W001 | 19-W002 | | |
| Sample I.D. | B19-11836-1 | B19-11836-2 | | |
| Date Collected | 02-May-19 | 02-May-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|----------------------------|----------|-------|------------------|--------------------|---------|---------|--|--|
| Alkalinity(CaCO3) to pH4.5 | mg/L | 5 | SM 2320B | 06-May-19/O | 123 | 132 | | |
| pH @25°C | pH Units | | SM 4500H | 06-May-19/O | 8.13 | 8.18 | | |
| Conductivity @25°C | µmho/cm | 1 | SM 2510B | 06-May-19/O | 351 | 362 | | |
| Chloride | mg/L | 0.5 | SM4110C | 16-May-19/O | 17.9 | 26.0 | | |
| Nitrite (N) | mg/L | 0.05 | SM4110C | 16-May-19/O | < 0.05 | < 0.05 | | |
| Nitrate (N) | mg/L | 0.05 | SM4110C | 16-May-19/O | < 0.05 | < 0.05 | | |
| Sulphate | mg/L | 1 | SM4110C | 16-May-19/O | 18 | 4 | | |
| Total Suspended Solids | mg/L | 3 | SM2540D | 08-May-19/K | 10 | 5 | | |
| Phosphorus-Total | mg/L | 0.01 | E3199A.1 | 14-May-19/K | 0.23 | 0.05 | | |
| Total Kjeldahl Nitrogen | mg/L | 0.1 | E3199A.1 | 14-May-19/K | 0.1 | 0.1 | | |
| Ammonia (N)-Total | mg/L | 0.01 | SM4500-NH3-H | 07-May-19/K | 0.05 | 0.04 | | |
| Total Dissolved Solids | mg/L | 3 | SM 2540D | 07-May-19/O | 181 | 186 | | |
| Dissolved Organic Carbon | mg/L | 0.2 | EPA 415.2 | 11-May-19/O | 4.3 | 4.5 | | |
| Phenolics | mg/L | 0.002 | MOEE 3179 | 08-May-19/K | < 0.002 | < 0.002 | | |
| COD | mg/L | 5 | SM 5220D | 10-May-19/O | 10 | < 5 | | |
| Hardness (as CaCO3) | mg/L | 1 | SM 3120 | 08-May-19/O | 143 | 126 | | |
| Aluminum | µg/L | 10 | SM 3120 | 08-May-19/O | 30 | 20 | | |
| Arsenic | µg/L | 0.1 | EPA 200.8 | 07-May-19/O | 1.2 | 0.7 | | |
| Barium | µg/L | 1 | SM 3120 | 08-May-19/O | 49 | 51 | | |
| Boron | µg/L | 5 | SM 3120 | 08-May-19/O | 49 | 54 | | |
| Cadmium | µg/L | 0.015 | EPA 200.8 | 07-May-19/O | 0.018 | < 0.015 | | |
| Calcium | µg/L | 20 | SM 3120 | 08-May-19/O | 32600 | 27500 | | |
| Chromium | µg/L | 1 | EPA 200.8 | 07-May-19/O | 1 | 1 | | |
| Cobalt | µg/L | 0.1 | EPA 200.8 | 07-May-19/O | < 0.1 | < 0.1 | | |
| Copper | µg/L | 0.1 | EPA 200.8 | 07-May-19/O | 2.5 | 1.4 | | |
| Iron | µg/L | 5 | SM 3120 | 08-May-19/O | < 5 | < 5 | | |
| Lead | µg/L | 0.02 | EPA 200.8 | 07-May-19/O | 0.24 | 0.13 | | |



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G78003

REPORT No. B19-11836 (i)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada

Attention: Camille Malcolm

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 02-May-19

JOB/PROJECT NO.: 1039

DATE REPORTED: 21-Jan-20

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W001 | 19-W002 | | |
| Sample I.D. | B19-11836-1 | B19-11836-2 | | |
| Date Collected | 02-May-19 | 02-May-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|-----------|-------|------|------------------|--------------------|--------|--------|--|--|
| Magnesium | µg/L | 20 | SM 3120 | 08-May-19/O | 15000 | 13900 | | |
| Manganese | µg/L | 1 | SM 3120 | 08-May-19/O | 1 | 2 | | |
| Mercury | µg/L | 0.02 | SM 3112 B | 07-May-19/O | < 0.02 | < 0.02 | | |
| Potassium | µg/L | 100 | SM 3120 | 08-May-19/O | 1300 | 1400 | | |
| Silver | µg/L | 0.1 | EPA 200.8 | 07-May-19/O | < 0.1 | < 0.1 | | |
| Sodium | µg/L | 200 | SM 3120 | 08-May-19/O | 17300 | 27000 | | |
| Strontium | µg/L | 1 | SM 3120 | 08-May-19/O | 831 | 448 | | |
| Uranium | µg/L | 0.05 | EPA 200.8 | 07-May-19/O | 0.69 | 0.62 | | |
| Vanadium | µg/L | 5 | SM 3120 | 08-May-19/O | < 5 | < 5 | | |
| Zinc | µg/L | 5 | SM 3120 | 08-May-19/O | < 5 | < 5 | | |

1 Revised to change reporting units for metals



Michelle Dubien
 Lab Manager

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G78003

REPORT No. B19-11836 (ii)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada

Attention: Camille Malcolm

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 02-May-19

JOB/PROJECT NO.: 1039

DATE REPORTED: 21-Jan-20

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W001 | 19-W002 | | |
| Sample I.D. | B19-11836-1 | B19-11836-2 | | |
| Date Collected | 02-May-19 | 02-May-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|---|-------|------|------------------|--------------------|-------|-------|--|--|
| Acetone | µg/L | 30 | EPA 8260 | 09-May-19/R | < 30 | < 30 | | |
| Benzene | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Bromodichloromethane | µg/L | 2 | EPA 8260 | 09-May-19/R | < 2 | < 2 | | |
| Bromoform | µg/L | 5 | EPA 8260 | 09-May-19/R | < 5 | < 5 | | |
| Bromomethane | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Carbon Tetrachloride | µg/L | 0.2 | EPA 8260 | 09-May-19/R | < 0.2 | < 0.2 | | |
| Chloroform | µg/L | 1 | EPA 8260 | 09-May-19/R | < 1 | < 1 | | |
| Dibromochloromethane | µg/L | 2 | EPA 8260 | 09-May-19/R | < 2 | < 2 | | |
| Dibromoethane, 1,2- (Ethylene Dibromide) | µg/L | 0.2 | EPA 8260 | 09-May-19/R | < 0.2 | < 0.2 | | |
| Dichlorobenzene, 1,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichlorobenzene, 1,3- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichlorobenzene, 1,4- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichlorodifluoromethane | µg/L | 2 | EPA 8260 | 09-May-19/R | < 2 | < 2 | | |
| Dichloroethane, 1,1- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloroethane, 1,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloroethene, cis-1,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloroethene, trans-1,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloroethylene, 1,1- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloromethane (Methylene Chloride) | µg/L | 5 | EPA 8260 | 09-May-19/R | < 5 | < 5 | | |
| Dichloropropane, 1,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloropropene 1,3- cis+trans | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloropropene, cis-1,3- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Dichloropropene, trans-1,3- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Ethylbenzene | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Hexane | µg/L | 5 | EPA 8260 | 09-May-19/R | < 5 | < 5 | | |



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill, B-Barrie

Michelle Dubien
 Lab Manager

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G78003

REPORT No. B19-11836 (ii)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada

Attention: Camille Malcolm

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 02-May-19

JOB/PROJECT NO.: 1039

DATE REPORTED: 21-Jan-20

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W001 | 19-W002 | | |
| Sample I.D. | B19-11836-1 | B19-11836-2 | | |
| Date Collected | 02-May-19 | 02-May-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|-----------------------------------|-------|------|------------------|--------------------|-------|-------|--|--|
| | | | | | | | | |
| Methyl Ethyl Ketone | µg/L | 20 | EPA 8260 | 09-May-19/R | < 20 | < 20 | | |
| Methyl Isobutyl Ketone | µg/L | 20 | EPA 8260 | 09-May-19/R | < 20 | < 20 | | |
| Methyl-t-butyl Ether | µg/L | 2 | EPA 8260 | 09-May-19/R | < 2 | < 2 | | |
| Monochlorobenzene (Chlorobenzene) | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Styrene | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Tetrachloroethane, 1,1,1,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Tetrachloroethane, 1,1,2,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Tetrachloroethylene | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Toluene | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Trichloroethane, 1,1,1- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Trichloroethane, 1,1,2- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Trichloroethylene | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| Trichlorofluoromethane | µg/L | 5 | EPA 8260 | 09-May-19/R | < 5 | < 5 | | |
| Vinyl Chloride | µg/L | 0.2 | EPA 8260 | 09-May-19/R | < 0.2 | < 0.2 | | |
| Xylene, m,p- | µg/L | 1.0 | EPA 8260 | 09-May-19/R | < 1.0 | < 1.0 | | |
| Xylene, m,p,o- | µg/L | 1.1 | EPA 8260 | 09-May-19/R | < 1.1 | < 1.1 | | |
| Xylene, o- | µg/L | 0.5 | EPA 8260 | 09-May-19/R | < 0.5 | < 0.5 | | |
| PHC F1 (C6-C10) | µg/L | 50 | MOE E3421 | 10-May-19/R | < 50 | < 50 | | |
| PHC F2 (>C10-C16) | µg/L | 50 | MOE E3421 | 03-May-19/K | < 50 | < 50 | | |
| PHC F3 (>C16-C34) | µg/L | 400 | MOE E3421 | 03-May-19/K | < 400 | < 400 | | |
| PHC F4 (>C34-C50) | µg/L | 400 | MOE E3421 | 03-May-19/K | < 400 | < 400 | | |



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
 Lab Manager

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G78003

REPORT No. B19-11836 (iii)

Rev. 1

Report To:

Malroz Engineering Inc.
308 Wellington Street, 2nd Floor
Kingston ON K7K 7A8 Canada

Attention: Camille Malcolm

Caduceon Environmental Laboratories

285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 02-May-19

JOB/PROJECT NO.: 1039

DATE REPORTED: 21-Jan-20

P.O. NUMBER:

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W001 | 19-W002 | | |
| Sample I.D. | B19-11836-1 | B19-11836-2 | | |
| Date Collected | 02-May-19 | 02-May-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|--------------------------|-------|------|------------------|--------------------|--------|--------|--|--|
| Acenaphthene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Acenaphthylene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Anthracene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Benzo(a)anthracene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Benzo(a)pyrene | µg/L | 0.01 | EPA 8270 | 06-May-19/K | < 0.01 | < 0.01 | | |
| Benzo(b)fluoranthene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Benzo(b+k)fluoranthene | µg/L | 0.1 | EPA 8270 | 06-May-19/K | < 0.1 | < 0.1 | | |
| Benzo(k)fluoranthene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Benzo(g,h,i)perylene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Biphenyl, 1, 1- | µg/L | 0.2 | EPA 8270 | 06-May-19/K | < 0.2 | < 0.2 | | |
| Chrysene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Dibenzo(a,h)anthracene | µg/L | 0.05 | EPA 8270 | 21-Jan-20/K | < 0.05 | < 0.05 | | |
| Fluoranthene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Fluorene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Indeno(1,2,3,-cd)pyrene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Methylnaphthalene,1- | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Methylnaphthalene,2- | µg/L | 0.08 | EPA 8270 | 06-May-19/K | < 0.08 | < 0.08 | | |
| Methylnaphthalene 2-(1-) | µg/L | 1 | EPA 8270 | 06-May-19/K | < 1 | < 1 | | |
| Naphthalene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Phenanthrene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |
| Pyrene | µg/L | 0.05 | EPA 8270 | 06-May-19/K | < 0.05 | < 0.05 | | |

1. Low phenol surrogate recovery due to sample matrix interferences



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

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C.O.C.: G91326

REPORT No. B19-38407 (i)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada
Attention: Mallory Wright

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 26-Nov-19

JOB/PROJECT NO.: Reynolds Road

DATE REPORTED: 21-Jan-20

P.O. NUMBER: 1039

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W003 | 19-W004 | | |
| Sample I.D. | B19-38407-1 | B19-38407-2 | | |
| Date Collected | 26-Nov-19 | 26-Nov-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|----------------------------|----------|-------|------------------|--------------------|---------|---------|--|--|
| Alkalinity(CaCO3) to pH4.5 | mg/L | 5 | SM 2320B | 28-Nov-19/O | 126 | 125 | | |
| pH @25°C | pH Units | | SM 4500H | 28-Nov-19/O | 8.05 | 8.04 | | |
| Conductivity @25°C | µmho/cm | 1 | SM 2510B | 28-Nov-19/O | 340 | 348 | | |
| Chloride | mg/L | 0.5 | SM4110C | 12-Dec-19/O | 31.3 | 22.1 | | |
| Nitrite (N) | mg/L | 0.05 | SM4110C | 12-Dec-19/O | < 0.05 | < 0.05 | | |
| Nitrate (N) | mg/L | 0.05 | SM4110C | 12-Dec-19/O | 0.12 | 0.11 | | |
| Sulphate | mg/L | 1 | SM4110C | 12-Dec-19/O | 2 | 20 | | |
| Total Suspended Solids | mg/L | 3 | SM2540D | 27-Nov-19/K | 5 | 15 | | |
| Phosphorus-Total | mg/L | 0.01 | E3199A.1 | 29-Nov-19/K | 0.05 | 0.10 | | |
| Total Kjeldahl Nitrogen | mg/L | 0.1 | E3199A.1 | 29-Nov-19/K | 0.2 | 0.1 | | |
| Ammonia (N)-Total | mg/L | 0.01 | SM4500-NH3-H | 28-Nov-19/K | 0.05 | 0.04 | | |
| Total Dissolved Solids | mg/L | 3 | SM 2540D | 29-Nov-19/O | 175 | 179 | | |
| Dissolved Organic Carbon | mg/L | 0.2 | EPA 415.2 | 09-Dec-19/O | 2.3 | 1.8 | | |
| Phenolics | mg/L | 0.001 | MOEE 3179 | 29-Nov-19/K | < 0.001 | 0.004 | | |
| COD | mg/L | 5 | SM 5220D | 29-Nov-19/O | < 5 | < 5 | | |
| Hardness (as CaCO3) | mg/L | 1 | SM 3120 | 28-Nov-19/O | 119 | 145 | | |
| Aluminum | µg/L | 10 | SM 3120 | 28-Nov-19/O | 20 | 20 | | |
| Arsenic | µg/L | 0.1 | EPA 200.8 | 29-Nov-19/O | 0.9 | 1.2 | | |
| Barium | µg/L | 1 | SM 3120 | 28-Nov-19/O | 56 | 56 | | |
| Boron | µg/L | 5 | SM 3120 | 28-Nov-19/O | 58 | 52 | | |
| Cadmium | µg/L | 0.015 | EPA 200.8 | 29-Nov-19/O | < 0.015 | < 0.015 | | |
| Calcium | µg/L | 20 | SM 3120 | 28-Nov-19/O | 25600 | 33400 | | |
| Chromium | µg/L | 1 | EPA 200.8 | 29-Nov-19/O | < 1 | < 1 | | |
| Cobalt | µg/L | 0.1 | EPA 200.8 | 29-Nov-19/O | < 0.1 | < 0.1 | | |
| Copper | µg/L | 0.1 | EPA 200.8 | 29-Nov-19/O | 2.0 | 3.6 | | |
| Iron | µg/L | 5 | SM 3120 | 28-Nov-19/O | 36 | < 5 | | |
| Lead | µg/L | 0.02 | EPA 200.8 | 29-Nov-19/O | 0.07 | 0.08 | | |



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
 Lab Manager

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C.O.C.: G91326

REPORT No. B19-38407 (i)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada
Attention: Mallory Wright

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 26-Nov-19

JOB/PROJECT NO.: Reynolds Road

DATE REPORTED: 21-Jan-20

P.O. NUMBER: 1039

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W003 | 19-W004 | | |
| Sample I.D. | B19-38407-1 | B19-38407-2 | | |
| Date Collected | 26-Nov-19 | 26-Nov-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|-----------|-------|------|------------------|--------------------|--------|--------|--|--|
| Magnesium | µg/L | 20 | SM 3120 | 28-Nov-19/O | 13500 | 15000 | | |
| Manganese | µg/L | 1 | SM 3120 | 28-Nov-19/O | 11 | 1 | | |
| Mercury | µg/L | 0.02 | SM 3112 B | 03-Dec-19/O | < 0.02 | < 0.02 | | |
| Potassium | µg/L | 100 | SM 3120 | 28-Nov-19/O | 1500 | 1400 | | |
| Silver | µg/L | 0.1 | EPA 200.8 | 29-Nov-19/O | < 0.1 | < 0.1 | | |
| Sodium | µg/L | 200 | SM 3120 | 28-Nov-19/O | 27400 | 16700 | | |
| Strontium | µg/L | 1 | SM 3120 | 28-Nov-19/O | 431 | 830 | | |
| Uranium | µg/L | 0.05 | EPA 200.8 | 29-Nov-19/O | 0.35 | 0.55 | | |
| Vanadium | µg/L | 5 | SM 3120 | 28-Nov-19/O | < 5 | < 5 | | |
| Zinc | µg/L | 5 | SM 3120 | 28-Nov-19/O | 5 | < 5 | | |

1. Revised to change reporting units for metals to ug/L



Michelle Dubien
 Lab Manager

R.L. = Reporting Limit

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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C.O.C.: G91326

REPORT No. B19-38407 (ii)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada

Attention: Mallory Wright

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 26-Nov-19

JOB/PROJECT NO.: Reynolds Road

DATE REPORTED: 21-Jan-20

P.O. NUMBER: 1039

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W003 | 19-W004 | | |
| Sample I.D. | B19-38407-1 | B19-38407-2 | | |
| Date Collected | 26-Nov-19 | 26-Nov-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|---|-------|------|------------------|--------------------|-------|-------|--|--|
| Acetone | µg/L | 30 | EPA 8260 | 04-Dec-19/R | < 30 | < 30 | | |
| Benzene | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Bromodichloromethane | µg/L | 2 | EPA 8260 | 04-Dec-19/R | < 2 | < 2 | | |
| Bromoform | µg/L | 5 | EPA 8260 | 04-Dec-19/R | < 5 | < 5 | | |
| Bromomethane | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Carbon Tetrachloride | µg/L | 0.2 | EPA 8260 | 04-Dec-19/R | < 0.2 | < 0.2 | | |
| Chloroform | µg/L | 1 | EPA 8260 | 04-Dec-19/R | < 1 | < 1 | | |
| Dibromochloromethane | µg/L | 2 | EPA 8260 | 04-Dec-19/R | < 2 | < 2 | | |
| Dibromoethane, 1,2- (Ethylene Dibromide) | µg/L | 0.2 | EPA 8260 | 04-Dec-19/R | < 0.2 | < 0.2 | | |
| Dichlorobenzene, 1,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichlorobenzene, 1,3- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichlorobenzene, 1,4- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichlorodifluoromethane | µg/L | 2 | EPA 8260 | 04-Dec-19/R | < 2 | < 2 | | |
| Dichloroethane, 1,1- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloroethane, 1,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloroethene, cis-1,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloroethene, trans-1,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloroethylene, 1,1- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloromethane (Methylene Chloride) | µg/L | 5 | EPA 8260 | 04-Dec-19/R | < 5 | < 5 | | |
| Dichloropropane, 1,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloropropene 1,3- cis+trans | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloropropene, cis-1,3- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Dichloropropene, trans-1,3- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Ethylbenzene | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Hexane | µg/L | 5 | EPA 8260 | 04-Dec-19/R | < 5 | < 5 | | |



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill, B-Barrie

Michelle Dubien
 Lab Manager

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

C.O.C.: G91326

REPORT No. B19-38407 (ii)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada
Attention: Mallory Wright

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 26-Nov-19
 DATE REPORTED: 21-Jan-20
 SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: Reynolds Road
 P.O. NUMBER: 1039
 WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W003 | 19-W004 | | |
| Sample I.D. | B19-38407-1 | B19-38407-2 | | |
| Date Collected | 26-Nov-19 | 26-Nov-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|-----------------------------------|-------|------|------------------|--------------------|-------|-------|--|--|
| | | | | | | | | |
| Methyl Ethyl Ketone | µg/L | 20 | EPA 8260 | 04-Dec-19/R | < 20 | < 20 | | |
| Methyl Isobutyl Ketone | µg/L | 20 | EPA 8260 | 04-Dec-19/R | < 20 | < 20 | | |
| Methyl-t-butyl Ether | µg/L | 2 | EPA 8260 | 04-Dec-19/R | < 2 | < 2 | | |
| Monochlorobenzene (Chlorobenzene) | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Styrene | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Tetrachloroethane, 1,1,1,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Tetrachloroethane, 1,1,2,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Tetrachloroethylene | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Toluene | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Trichloroethane, 1,1,1- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Trichloroethane, 1,1,2- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Trichloroethylene | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| Trichlorofluoromethane | µg/L | 5 | EPA 8260 | 04-Dec-19/R | < 5 | < 5 | | |
| Vinyl Chloride | µg/L | 0.2 | EPA 8260 | 04-Dec-19/R | < 0.2 | < 0.2 | | |
| Xylene, m,p- | µg/L | 1.0 | EPA 8260 | 04-Dec-19/R | < 1.0 | < 1.0 | | |
| Xylene, m,p,o- | µg/L | 1.1 | EPA 8260 | 04-Dec-19/R | < 1.1 | < 1.1 | | |
| Xylene, o- | µg/L | 0.5 | EPA 8260 | 04-Dec-19/R | < 0.5 | < 0.5 | | |
| PHC F1 (C6-C10) | µg/L | 50 | MOE E3421 | 05-Dec-19/R | < 50 | < 50 | | |
| PHC F2 (>C10-C16) | µg/L | 50 | MOE E3421 | 02-Dec-19/K | < 50 | < 50 | | |
| PHC F3 (>C16-C34) | µg/L | 400 | MOE E3421 | 02-Dec-19/K | < 400 | < 400 | | |
| PHC F4 (>C34-C50) | µg/L | 400 | MOE E3421 | 02-Dec-19/K | < 400 | < 400 | | |



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill, B-Barrie

Michelle Dubien
 Lab Manager

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C.O.C.: G91326

REPORT No. B19-38407 (iii)

Rev. 1

Report To:

Malroz Engineering Inc.
 308 Wellington Street, 2nd Floor
 Kingston ON K7K 7A8 Canada
Attention: Mallory Wright

Caduceon Environmental Laboratories

285 Dalton Ave
 Kingston Ontario K7K 6Z1
 Tel: 613-544-2001
 Fax: 613-544-2770

DATE RECEIVED: 26-Nov-19

JOB/PROJECT NO.: Reynolds Road

DATE REPORTED: 21-Jan-20

P.O. NUMBER: 1039

SAMPLE MATRIX: Groundwater

WATERWORKS NO.

| | | | | |
|-----------------------|-------------|-------------|--|--|
| Client I.D. | 19-W003 | 19-W004 | | |
| Sample I.D. | B19-38407-1 | B19-38407-2 | | |
| Date Collected | 26-Nov-19 | 26-Nov-19 | | |

| Parameter | Units | R.L. | Reference Method | Date/Site Analyzed | | | | |
|--------------------------|-------|------|------------------|--------------------|--------|--------|--|--|
| Acenaphthene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Acenaphthylene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Anthracene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Benzo(a)anthracene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Benzo(a)pyrene | µg/L | 0.01 | EPA 8270 | 29-Nov-19/K | < 0.01 | < 0.01 | | |
| Benzo(b)fluoranthene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Benzo(b+k)fluoranthene | µg/L | 0.1 | EPA 8270 | 29-Nov-19/K | < 0.1 | < 0.1 | | |
| Benzo(g,h,i)perylene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Benzo(k)fluoranthene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Biphenyl, 1, 1- | µg/L | 0.2 | EPA 8270 | 29-Nov-19/K | < 0.2 | < 0.2 | | |
| Chrysene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Dibenzo(a,h)anthracene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Fluoranthene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Fluorene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Indeno(1,2,3,-cd)pyrene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Methylnaphthalene 2-(1-) | µg/L | 1 | EPA 8270 | 29-Nov-19/K | < 1 | < 1 | | |
| Methylnaphthalene,1- | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Methylnaphthalene,2- | µg/L | 0.08 | EPA 8270 | 29-Nov-19/K | < 0.08 | < 0.08 | | |
| Naphthalene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Phenanthrene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |
| Pyrene | µg/L | 0.05 | EPA 8270 | 29-Nov-19/K | < 0.05 | < 0.05 | | |



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
 Lab Manager

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