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General Information and Instructions

General Information

Information requested in this form is collected under the authority of the *Environmental Protection Act* (EPA), *Ontario Water Resources Act* (OWRA) and *Environmental Bill of Rights* (EBR), and will be used to evaluate applications for Environmental Compliance Approvals (ECAs) issued under Part II.1 of the EPA. This application form should not be used for mobile PCB destruction facilities.

For all questions related to preparing or submitting this form or about the Ministry's collection of information related to applying for an ECA, contact:

Client Services and Permissions Branch
135 St. Clair Ave. West, 1st Floor
Toronto Ontario M4V 1P5
Telephone outside Toronto 1-800-461-6290 or in Toronto 416-314-8001.

The Ministry offers environmental permissions services online, and we strongly encourage online submissions for ECA applications. You can apply, track application progress and complete payments online. For more information on setting up an account so that you can apply online please visit: <https://www.ontario.ca/page/environmental-compliance-approval>

Instructions for submitting your ECA application:

1. Applicants are responsible for ensuring that they complete the most recent application form (available in PDF format) available at <https://www.ontario.ca/page/environmental-compliance-approval>. For information about required supporting documentation and technical requirements, you may contact the Client Services and Permissions Branch (the address and phone number are provided in the General Information on this page). As well, you can get this information from your local District Office of the Ministry of the Environment, Conservation and Parks, and online at the link above.
2. A complete application consists of:
 - a completed and signed application form;
 - all required supporting documents and technical requirements identified in:
 - i. this form,
 - ii. Ministry guidance, the Applications for Environmental Compliance Approvals regulation (Ontario Regulation 255/11),
 - iii. and payment of the application fee (in Canadian funds) by certified cheque or money order made payable to the Minister of Finance, or credit card payment (for payments up to \$10,000).

The Ministry may return or refuse incomplete applications to the applicant. The Director may require additional information of any application initially accepted as complete.

3. How to submit:
 - No payment required – email the application form and supporting documents to ECA.Submission@ontario.ca
 - Payment required – see Section 8 for instructions

Do not mail a paper copy of the application submission to our branch

4. For Waste Disposal Sites the applicant must also send a copy of the application without the fee to the Clerk's office of the local municipality (both upper and lower tier) in which the facility/proposed facility is located unless the application is for a revocation or an amendment that is environmentally insignificant or the applicant is a municipality. **Do not** send any payment information to the municipality.

Information contained in this application form (excluding Section 8, payment information) is not considered confidential and will be made available to the public upon request. Information submitted as supporting information may be claimed as confidential under Section 6.10 of this application form but will be subject to the *Freedom of Information and Protection of Privacy Act* (FIPPA) and the *Environmental Bill of Rights* (EBR). If you do not claim confidentiality at the time of submitting the information, the Ministry may make the information available to the public without further notice to the applicant.

It is an offence under the EPA and OWRA to provide false or misleading information in this application and/or accompanying documents.

Complete the sections as shown below.

- Section 1: Applicant Information
- Section 2: Project Information
- Section 3: Regulatory Requirements
- Section 4: Site Information
- Section 5: Facility Information
- Section 6: Supporting Documentation and Technical Requirements
- Section 7: Authorization
- Section 8: Payment Information

Fields marked with an asterisk (*) are mandatory.

1. Applicant Information

1.1 Applicant Information

The applicant name must be the same as the name in the summary section (the electronic form will automatically fill this in).

If the applicant's Business Name is different from the applicant's legal name, enter the Business Name and submit a photocopy of the most recent registration filed under the *Business Names Act*. (The Master Business Licence is also acceptable.) Otherwise, simply select "same as Applicant Name"

Canada Revenue Agency issues business numbers. Enter the first 9 digits of the GST/HST account number

Applicant Type *

- ☐ Corporation
- ☐ Individual
- ☐ Federal Government
- ☒ Municipal Government
- ☐ Partnership
- ☐ Provincial Government
- ☐ Sole Proprietor
- ☐ Other (specify) _____

Applicant Name (Legal name of individual or organization as evidenced by legal documents) *

This is the legal name of the owner of the works or facility to whom the Approval will be issued.

Proof of legal name must be submitted with the application, unless the applicant is a municipal, provincial or federal government. Acceptable proof of legal name for a particular Applicant Type is provided by copies of the following legal documents:

If the corporation is incorporated under Ontario Law, provide the most recent Corporate Profile Report, Master Business Licence or "Initial Notice or Notice of Change", stamped received or effective by the Ministry of Government Services.

If the corporation is incorporated under the *Canada Business Corporations Act*, provide: Articles of Incorporation, Articles of Continuance (Form 11) or Articles of Amendment (Form 4) obtained from the Department of Consumer and Corporate Affairs

Individuals should provide proof of legal name.

Limited Partnerships should provide a declaration under the *Limited Partnerships Act* obtained from the Ministry of Government Services.

General Partnerships should provide documents verifying legal names of all entities constituting the partnership.

Sole proprietors should provide proof of legal name and a copy of the appropriate business registration, if the

business name is different from that of the individual (Master Business Licence).

Township of North Dundas

☒ Select if Business Name same as Applicant Name

Business Name *

Township of North Dundas

Business Number

Business Website Address

Primary North American Industry Classification System (NAICS) Code *

The NAICS Code is a six-digit code that represents your business at this facility or site.

Do not enter the Canadian Standard Industrial Classification (CSIC), United States SIC (USSIC) or International SIC (ISIC) Codes.

For Industrial Sewage Works projects you should provide the NAICS Code for the type of facility the Sewage Works will service, not simply the NAICS Code for "Sewage Works".

The NAICS Codes are published by Statistics Canada; a full list can be found at: www.statcan.gc.ca.

913910

Other NAICS Code

Separate list attached?

☐ Yes ☒ No

Business Activity Description



Completion Status (1.1 Applicant Information)

1.2 Applicant Physical Address

Provide the location of your administration, corporate or head office (business office).

Enter a civic address. Do not provide a P.O. Box number. Provide a survey address only if you do not have a civic address. Provide only one type of survey address: either lot and concession numbers, or part and reference plan numbers. If you provide a survey address, list the Geographic Township in the "Municipality/Unorganized Township" field.

If your business office is represented by more than one adjacent addresses, the civic or survey address should represent the physical location of your front door or main entrance.

Provide a geo reference of two points on the property if this is also your site address.

Example of a civic address: 2 AnyStreet Ave. W., Unit 302

Examples of a survey address: Lot 2, Concession 3 or Part 2, Reference Plan 1234

Address Type? *

☒ Civic Address ☐ Survey Address

Civic Address

Unit Number	Street Number	Street Name
	636	St Lawrence Street

Survey Address

Enter Lot and Concession or Part and Reference Plan

Lot	Concession	Part	Reference Plan

Municipality/Unorganized Township *		County/District	
Winchester			
Province/State *		Country *	Postal/Zip Code *
Ontario		Canada	K0C 2K0
Telephone Number *	Fax Number	Mobile Number	Email Address *
613-774-2105 ext.			dward@northdundas.com

Geo Reference

Provide a geo reference relating to two points on your site.

Map Datum - this is UTM datum of the map or GPS (Global Positioning System) used to specify the position of the point or points of reference. There are two map datums in use: the North American Datum 1927 (NAD27) and NAD83. NAD83 is preferred but NAD27 is also accepted. Use the drop-down menu to select your NAD.

Zone - this is the UTM Zone within which the site is located; there are four UTM Zones within Ontario: 15, 16, 17 and 18.

Use the drop-down menu to select your zone.

Accuracy Estimate - indicate the accuracy (+/- metres) of the UTM Northing and Easting coordinates you provide for the points of reference. (The accuracy of the data depends on the method the data is generated.) Be sure to state the accuracy in metres.

Geo-Referencing Method - this is the method used to generate the data for the UTM Northing and Easting coordinates for the points of reference you are providing. The method could be determined by geodetic survey, estimation from a map, a GPS or any other specified method.

UTM Easting - for this, enter the distance in metres from the western delimiter of the point(s) of reference UTM Zone to the point of reference.

UTM Northing - for this, enter the distance in metres from the equator to the point(s) of reference.

Description of location	Map Datum	Zone	Accuracy Estimate	Geo-Referencing Method	UTM Easting	UTM Northing
Southwest corner of property	NAD83	18	± 50 m	Google Earth	472,685.00	4,992,175.00
Physical location of front door or main entrance	NAD83	18	± 50 m	Google Earth	472,692.00	4,992,317.00

☒ Completion Status (1.2 Applicant Physical Address)

1.3 Applicant Mailing Address

Provide your mailing address if it is different from your business (physical) address.

More Information:

Example of a civic address; 2 AnyStreet Ave. W., Unit 302

The Delivery Designator identifies addresses with information such as a rural route or a P.O. Box. For example: if the mailing address is "P.O. Box 12", in the Delivery Designator box put "P.O. Box" and in the Delivery Identifier box put "12". Acceptable inputs are: Rural Route; General Delivery; Suburban Service; Post Office Box; or Mobile Route.

If your P.O. Box or rural address might be serviced by more than one postal station, provide the name of the appropriate postal station. For example: "Station Main".

☒ Select if same as Physical Address

Unit Number	Street Number *	Street Name *		
	636	St Lawrence Street		
Delivery Designator		Delivery Identifier		Postal Station
Municipality/Unorganized Township *		County/District		
Winchester				
Province/State *		Country *		Postal/Zip Code *
Ontario		Canada		K0C 2K0
Telephone Number *	Fax Number	Mobile Number	Email Address *	
613-774-2105 ext.			dward@northdundas.com	

✓ Completion Status (1.3 Applicant Mailing Address)

Fields marked with an asterisk (*) are mandatory.

2. Project Information

2.1 Project Name and Description

Project Name *

Provide an identifier such as a number, nickname or other label you use to represent your project.
This reference may be used by the Ministry in correspondence with you.

Boyne Road Landfill

Project Description Executive Summary *

This project description executive summary is brief, easy-to-understand description of your project.
See the ECA Application Regulation (O. Reg. 255/11) for specifics of what the summary must include.
The summary should be 400 words or less.
If the application is to amend an existing Approval, the summary must describe the proposed changes
If the application is for Limited Operational Flexibility, please ensure you provide an enhanced description.
The Ministry may change the wording of the summary, as required, to ensure that the public is correctly notified of the subject of the application.
If your proposal is subject to an EBR posting, this summary will be used for the posting.
Use simple, easy-to-understand language and avoid technical terminology.
If Limited Operational Flexibility is selected, please ensure you provide in the Project Description Executive Summary an enhanced description for the purposes of EBR.

The Boyne Road landfill (the Site) is owned and operated by the Township of North Dundas. The Site has been operating as a licensed landfill facility since 1965 and is operating under Environmental Compliance Approval (ECA) No. A482101 issued for the development and operation of an 8.1 hectare waste disposal site. The Site is currently licensed for the disposal of domestic, commercial and industrial non-hazardous solid waste and utilizes approximately 16,000 cubic metres per year of airspace. The Site is open for operation from 8:00 to 16:00 (plus one hour before for site preparations and one hour after to complete placement of daily cover), Monday through Friday year round, and from 8:00 to 12:00 on Saturdays (May through November, and only one Saturday a month from November to May). The Site serves the Township of North Dundas (which includes the Village of Chesterville, the Village of Winchester, the former Township of Winchester, and the former Township of Mountain).

The purpose of this amendment is to expand the landfill horizontally to the south of the existing waste footprint, adding 3.8 hectares to the approved waste footprint, and vertically to provide sufficient capacity for disposal of residual (after diversion) waste to extend the landfill lifespan for a 25-year planning period. Additional buffer land to the east and southeast of the current waste footprint is proposed to be added to the landfill property. The proposed expansion includes a stormwater management system for the expanded landfill to control quantity and quality of clean runoff water from the final cover. Finally, improvements for the section of Volks Municipal Drain roadside ditch along the north side of Boyne Road opposite the landfill site frontage are proposed with a lined ditch design.
Supplemental Application Information (select information button for required information for this field) *

In this section you can provide other information relevant to your application.
This section replaces the cover letter that used to be required.

Information you should provide includes: the proposed start date of your operation; any pre-application consultations with the Ministry; who receives copies of your application (for example, ministry district offices, municipalities).

In addition to the copies sent to the Director of the MECP Client Services and Permissions Branch, an additional copy of this application form and supporting documentation has been sent to the Ministry Area Office in Cornwall. Pre-application consultation: a virtual meeting on June 19, 2023 between the Township, WSP, representatives of the MECP Cornwall Area Office and Permissions Branch. A separate meeting was held on June 29, 2023 with representatives of the MECP Technical Support Section (TSS). Subsequent correspondence with the TSS and written concurrence from the MECP District Office is provided in Appendix B of the Design and Operations Report.

- The following attachments have been included to support this application:
- Attachment 1 - Notice of Approval, EA File No.: 03-08-02 (18056)
 - Attachment 2 - Design and Operations Report
 - Attachment 3 - Zoning Map
 - Attachment 4 - Neighbour and Indigenous Communities Notification Letter
 - Attachment 5 - MNR's Land Use Permit

✓ Completion Status (2.1 Project Name and Description)

2.2 Application Type

New ECA - your proposed activity is not covered by an existing ECA (or current Certificate of Approval). Note, if your activity was regulated under an approval that included an expiry date and that date has passed, you need to apply for a new ECA.

Technical Amendment to existing ECA - your application involves a change to an existing ECA. This can include an amendment to an existing ECA to extend the approval's cessation date or expiry date. Some ECAs for a Hauled Sewage Disposal Site or Processed Organic Waste (Biosolids) Land Application Site include a "cessation of waste acceptance date" and you can apply to amend the approval to extend that date. Alternatively, some approvals (including Hauled Sewage and Processed Organic Waste Sites) include an expiry date. Applicants can seek to amend their ECA to extend the expiry date so long as the approval has not already expired. If the approval has expired, you need to submit an application for a "New ECA".

You should also choose to technically amend your existing ECA if you have an approval and are applying to add Limited Operational Flexibility to your approval.

Do not select the technical amendment option if you are consolidating multiple ECAs; instead, select "Consolidation of existing ECAs".

Type *

- | | |
|--|---|
| <input type="checkbox"/> New ECA | <input checked="" type="checkbox"/> Technical Amendment to existing ECA (including extending the cessation or expiry date of an existing ECA that is not expired) |
| <input type="checkbox"/> Revocation of existing ECA | <input type="checkbox"/> Administrative amendment to existing ECA |
| <input type="checkbox"/> Application for renewal of operational flexibility or limited operational flexibility | <input type="checkbox"/> Consolidation of existing ECAs |

Is this application for the addition of a new project type to the site or a new municipal waste category/class code to the waste management systems or a new sewage facility type?

☐ Yes ☒ No

Is this application for Transfer of Review? *

☐ Yes ☒ No

✓ Completion Status (2.2 Application Type)

2.3 Project Type

Select the project types for which you are seeking approval and not the project types for which you already hold an Environmental Compliance Approval (or Certificate of Approval).

For certain project types you can also select Operational Flexibility.

If the application is for a pilot project, you should check the box for each applicable project type.

Operational Flexibility permits you to make some modifications to specifically defined aspects of your facility's operations or works without having to obtain an amendment to the approval. The types of changes permitted under an ECA with Operational Flexibility are restricted by the operating envelope defined by the ECA, as well as by conditions specified in the ECA. To describe the operating envelope, you will need to provide information over and above requirements for the specific project type. The specifics of the information will depend on your project and may include an enhanced project description executive summary for the EBR, Engineer's Report with a declaration by the professional engineer; facility production limit; and consultation requirements.

Project Type (Select all that apply) *	Operational Flexibility?	Pilot Project?
<input type="checkbox"/> Air - Stationary	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Air - Mobile	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Noise	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Vibration	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Waste Disposal Site - Landfill site	N/A	<input type="checkbox"/>
<input type="checkbox"/> Waste Disposal Site - Transfer site	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Waste Disposal Site - Processing site	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Waste Disposal Site - Composting site	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Waste Disposal Site - Thermal Treatment site	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Waste Disposal Site - Hauled Sewage Disposal Site	N/A	<input type="checkbox"/>
<input type="checkbox"/> Waste Disposal Site - Processed Organic Waste (Biosolids) Land Application Site	N/A	<input type="checkbox"/>
<input type="checkbox"/> Sewage - Industrial	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sewage - Municipal	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sewage - Private	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Waste Management System - General Waste Management System	N/A	<input type="checkbox"/>
<input type="checkbox"/> Waste Management System - Hauled Sewage (Septage)	N/A	<input type="checkbox"/>
<input type="checkbox"/> Waste Management System - Processed Organic Waste for transport to an agricultural or non-agricultural site for storage or land application	N/A	<input type="checkbox"/>
<input type="checkbox"/> Waste Management System - Mobile Waste Processing	N/A	<input type="checkbox"/>
<input type="checkbox"/> Cleanup of contaminated sites - Mobile	N/A	<input type="checkbox"/>
<input type="checkbox"/> Cleanup of contaminated sites - Site specific	N/A	<input type="checkbox"/>

✓ Completion Status (2.3 Project Type)

2.4 Approval Information

Reason for Application - Extend the cessation date or expiry date of an existing ECA: Choose this

option if you have an existing ECA with a cessation date or expiry date (such as for a hauled sewage or processed organic waste site) and you wish to amend the ECA to extend that date in order to continue operating. Note: if your ECA had an expiry date and that date has passed, you must apply for a new ECA.

Reason for Application - Other: Choose this option if you are fulfilling a requirement of an order (other than ones listed). For example, a Director's order or an order that is the result of an appeal, or you have received a letter from a district office recommending you apply for an ECA or modify an existing ECA (Note: you must indicate the reason and include any additional information as required.)

Current Environmental Compliance Approvals: list any ECAs that may be changed or amended by this application. If you are not applying for a New ECA, you must list your current ECAs here.

Other proposed Environmental Compliance Approvals: list any applications for an ECA that you have submitted or intend to submit that relate to the activity that is the subject of this application.

Reason for Application / Application initiated by *

- ☒ Applicant
 ☐ S. 20.18 Order (attach copy)
- ☐ Condition of existing approval
 ☐ Provincial Officer Order (attach copy)
- ☐ Inspection Report (attach copy)
 ☐ Extend the cessation date or expiry date of an existing ECA
- ☐ ECA Review Notice from Director (EPA s20.4)
 ☐ ECA Review Required by Regulation (EPA s20.4)
- ☐ Other (specify) _____

Current Environmental Compliance Approvals that may be changed or amended by this application: ☐ N/A

Environmental Compliance Approval Number *	Date of Issuance (yyyy/mm/dd) *	Cessation/Expiry Date (yyyy/mm/dd)
A482101	2020/01/14	

Separate list attached?

☐ Yes ☒ No

Other proposed Environmental Compliance Approvals related to this project: ☐ N/A

Project Type	Ministry Reference Number (if applicable)	Have Submitted	Have not Submitted
Sewage – Industrial		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Separate list attached?

☐ Yes ☒ No

☒ Completion Status (2.4 Approval Information)

2.5 Other Approval/Permits for Facility

List other approvals or permits or other instruments that you hold, or are applying for, that relate to your proposed activity.(Please note that if you intend to prepare an application for another ECA related to your project, this proposal should be identified under Section 2.4, Other proposed Environmental Compliance Approvals related to this project).

Use this Section 2.5 to list other approvals, permits or instruments that you do not intend to submit an application for, but which still relate to your project. For example, if you are currently applying for an amendment to a hauled sewage land application site, and you have a separate waste management system ECA for hauling the waste that you do not need to amend, then you should list the waste management system ECA here.

Include approvals/permits and other instruments issued under the *Environmental Protection Act*, *Environmental Assessment Act*, *Ontario Water Resources Act* and *Safe Drinking Water Act*. Also include any registrations on the Environmental Activity and Sector Registry.

List all other instruments (approvals or permits) issued by the Ministry of the Environment, Conservation and Parks or applied for under the *Environmental Protection Act*, *Environmental Assessment Act*, *Ontario Water Resources Act* and *Safe Drinking Water Act*, 2002 and any Environmental Activity and Sector Registrations that are relevant to this application. ☐ N/A

Instrument Type	Instrument Number/ Application Reference Number	Approval or Application Date (yyyy/mm/dd)	Cessation/Expiry Date (yyyy/mm/dd)

Separate list attached?

☐ Yes ☒ No

List all other instruments (approvals or permits) issued by an agency, municipality or another ministry that are relevant to this application. ☐ N/A

Issuing Agency	Approval or Permit Name	Approval or Permit Number	Issued Date (yyyy/mm/dd)

Separate list attached?

☐ Yes ☐ No

✓ Completion Status (2.5 Other Approval/Permits for Facility)

2.6 Technical Contacts

A technical contact is an individual who is responsible for providing analysis, design or other reports required by the ECA Application.

You should have a technical contact for each media (air, noise, waste and sewage) related to your proposal. It may be the same person for multiple media if they have relevant education and experience.

The technical contact may be the same person as the signing authority, or an employee of the applicant, or a third-party consultant.

This person may be contacted if the Ministry has questions about the technical information.

Technical Contact 1

Area of Responsibility (Select all that apply) *

☐ Air ☐ Noise/Vibration ☐ Sewage ☒ Waste

Name of Technical Contact

Last Name *

Marcerou

First Name *

Yannick

Company *

WSP Canada Inc.

Address Information

If the technical contact's mailing address is different from the applicant's mailing address, provide it here.

More Information:

Example of a civic address: 2 AnyStreet Ave. W., Unit 302

The Delivery Designator identifies addresses with information such as a rural route or a P.O. Box. For example: if the mailing address is "P.O. Box 12", in the Delivery Designator box put "P.O. Box" and in the Delivery Identifier box put "12". Acceptable inputs are: Rural Route; General Delivery; Suburban Service; Post Office Box; or Mobile Route.

If your P.O. Box or rural address might be serviced by more than one postal station, provide the name of the appropriate postal station. For example: "Station Main".

☐ Select if same as Applicant Mailing Address

Civic Address

Unit Number	Street Number *	Street Name *	
	1931	Robertson Road	
Delivery Designator		Delivery Identifier	Postal Station
Municipality/Unorganized Township *		County/District	
Ottawa			
Province/State *		Country *	Postal/Zip Code *
Ontario		Canada	K2H 5B7
Telephone Number *	Fax Number	Mobile Number	Email Address *
613-592-9600 ext.	613-592-9601		yannick.marcerou@wsp.com

Technical Contact 2

Area of Responsibility (Select all that apply) *

☐ Air ☐ Noise/Vibration ☐ Sewage ☒ Waste

Name of Technical Contact

Last Name *	First Name *
Smolkin	Paul
Company *	
WSP Canada Inc.	

Address Information

If the technical contact's mailing address is different from the applicant's mailing address, provide it here.

More Information:

Example of a civic address: 2 AnyStreet Ave. W., Unit 302

The Delivery Designator identifies addresses with information such as a rural route or a P.O. Box. For example: if the mailing address is "P.O. Box 12", in the Delivery Designator box put "P.O. Box" and in the Delivery Identifier box put "12". Acceptable inputs are: Rural Route; General Delivery; Suburban Service; Post Office Box; or Mobile Route.

If your P.O. Box or rural address might be serviced by more than one postal station, provide the name of the appropriate postal station. For example: "Station Main".

☐ Select if same as Applicant Mailing Address

Civic Address

Unit Number	Street Number *	Street Name *		
	1931	Robertson Road		
Delivery Designator		Delivery Identifier		Postal Station
Municipality/Unorganized Township *		County/District		
Ottawa				
Province/State *		Country *		Postal/Zip Code *
Ontario		Canada		K2H 5B7
Telephone Number *	Fax Number	Mobile Number	Email Address *	
613-592-9600 ext.	613-592-9601		paul.smolkin@wsp.com	

✓ Completion Status (2.6 Technical Contacts)

3. Regulatory Requirements

3.1 Environmental Bill of Rights (EBR) Requirements

This section deals with requirements under the Environmental Bill of Rights (EBR) and the exceptions or exemptions to those requirements. (See O. Reg. 681/94 for details of the EBR requirements.)

If applicable, provide information to substantiate any EBR exemptions that you believe applies to your proposed activity. The Director will decide if the exemption applies.

If you indicate this proposal has been considered in a substantially equivalent process of public participation, provide: details about the type of public participation, including documentation verifying the public participation; a description of how it was conducted; the number of participants; the type of comments received; actions you took as a result of the comments; and whether ministry staff were involved in the process.

If you indicate this proposal is for an emergency situation, provide information demonstrating that the delay incurred in posting the proposal would result in the development of an emergency situation.

If you indicate this proposal is for an amendment to, or revocation of, an existing ECA that is not environmentally significant, you must demonstrate that there will be no significant impact on the environment. Examples include: company name changes; requests to change reporting requirements; revocations of approvals for pollution control equipment for processes no longer in operation.

Is this an application for a classified instrument identified in Section 5 of [O. Reg. 681/94](#), under the Environmental Bill of Rights, 1993 (EBR)? *

☒ Yes ☐ No

If yes, an exception to the requirement to post a proposal notice on the Environmental Registry may apply. These exceptions are set out in the EBR. If you believe an exception may apply to your proposal, please identify which circumstance may be applicable and provide the appropriate supporting information. The information you provide is for background purposes; the Ministry will evaluate the information and determine whether an exception does in fact apply.

☐ This proposal has been considered in a substantially equivalent process of public participation. (EBR, 1993, s.30.). Please provide a description of any processes of public participation that you engaged in, that were substantially equivalent to the process required under the EBR, in respect of the environmentally significant aspects of the ECA application, including:

- The type of public participation
- How, where and when the process of public participation was conducted
- The number of participants
- The type of comments received
- Actions you took as a result of the comments
- Whether ministry staff were involved in the process

Please also include documentation verifying the process of public participation.

Was the public participation process carried out in fulfillment of the requirements related to an approval under the *Planning Act*?

☐ Yes ☐ No

If yes, was the *Planning Act* approval related to a plan of subdivision?

☐ Yes ☐ No

- ☐ This proposal is for an emergency situation. (EBR, 1993, s. 29.) Please provide details about why a delay that would result from posting a proposal for the ECA on the Environmental Registry would result in (a) danger to the health or safety of any person; (b) harm or serious risk of harm to the environment; or (c) injury or damage or serious risk of injury or damage to any property
- ☐ This proposal is for an amendment to or revocation of an existing Environmental Compliance Approval that is not environmentally significant. (EBR, 1993, s. 22 (3).) Please provide details about why the effect of the amendment or revocation on the environment is insignificant.
- ☒ This proposal has been subject to or exempted from Environmental Assessment Act (EAA) Requirements or considered in a decision of a tribunal. (EBR, 1993, s. 32.) Please provide a description of why the ECA would be a step toward implementing an undertaking or other project that is (a) subject to, or exempted from, a decision made under the EAA; or (b) approved by a decision made by a tribunal after affording an opportunity for public participation.
- ☐ Check here if you do not believe any of the above circumstances apply to your proposal.

✓ Completion Status (3.1 Environmental Bill of Rights (EBR) Requirements)

3.2 Environmental Assessment Act (EAA) Requirements

If you indicate this proposal has been subject to, or exempted from, EAA Requirements, provide proof the proposal has met the EAA Requirements or has been exempted.

For more information on environmental assessment requirements please visit <https://www.ontario.ca/page/environmental-assessments>.

Is the proposed undertaking subject to the requirements of the EAA? *

☒ Yes ☐ No

If yes, please select one of the following:

- ☐ The proposed undertaking has fulfilled the requirements of the EAA through the completion of a Class EA process

Name of Class EA _____

Schedule/Group/Category (if applicable) _____

If applicable, please submit a copy of the proof of completion (for example, Notice of Completion).

Was a section 16 order (previously named a Part II Order), under the EAA requested, considered (e.g. Notice of Proposed Order) and/or made on/for the undertaking?

☐ Yes ☐ No

If yes, please submit a copy of the relevant documentation.

- ☐ The proposed undertaking has fulfilled all of the requirements for the EAA through:

Select all that apply:

☐ completion of an Environmental Screening Process pursuant to O. Reg. 101/07 of the EAA

☐ completion of an Environmental Screening Process pursuant to O. Reg. 116/01 of the EAA

Was the undertaking subject of an elevation request(s)?

☐ Yes ☐ No

If yes, please submit a copy of the Director's decision letter. If an appeal was made to the Director's decision, please also submit a copy of the Minister's decision letter.

☐ completion of an Environmental Screening Process pursuant to O. Reg. 231/08 of the EAA

Was the undertaking subject of an objection(s)?

☐ Yes ☐ No

If yes, please submit a copy of the Minister's decision letter.

- ☒ The proposed undertaking has fulfilled the requirements of the EAA through the completion of an individual Environmental Assessment.

Please submit a copy of the signed Notice of Approval.

Was the undertaking exempted from the requirements of the EAA? *

☐ Yes ☒ No

The proposed undertaking has fulfilled the requirements of the EAA through an exemption provided under:

Select one of the following

☐ Section _____ of Ontario Regulation No. _____ or

☐ Declaration/Exemption Order Number _____

If Regulation, Declaration Order or Exemption Order does not refer directly to this undertaking, please provide supporting documentation to explain why it applies to this facility

☒ Completion Status (3.2 *Environmental Assessment Act* (EAA) Requirements)

3.3 Consultation/Notification

Provide consultation/notification documents not otherwise submitted for the purposes of sections 3.1 and 3.2 of this form. Examples of consultation/notification that you might include are:

- Consultation with an aboriginal community about potential impacts of proposed project on asserted or established aboriginal or treaty rights.
- Consultation around an altered air standard or registration of technical standard under O.Reg. 419/05.
- Consultation with a municipality or local authority about local infrastructure and servicing.
- Information about public liaison committee created around the project.
- Notification provided to Environment Canada under article V of the Canada - United States Air Quality Agreement (1991).
- Consultation required to obtain a zoning or planning approval.
- Notification provided to neighbours, if your application relates to a Waste Disposal Site.

Indigenous Consultation:

Is the proposed project/activity on Crown land or does/would it alter access to Crown land? * ☐ Yes ☒ No

Is the proposed project/activity in an open or forested area where hunting, trapping or plant gathering could occur? * ☐ Yes ☒ No

Does the proposed project/activity involve the clearing of forested land? * ☐ Yes ☒ No

Could the proposed project/activity impact a water body (e.g., direct discharge) or alter access to a water body? * ☐ Yes ☒ No

Could the proposed project/activity impact cultural heritage or archaeological resources, or access to them? * ☐ Yes ☒ No

Is the proposed project/activity adjacent or close to a First Nation Reserve? * ☐ Yes ☒ No

Is the applicant aware of any concerns from Indigenous communities about this proposed project/activity? * ☐ Yes ☒ No

Were there conditions placed, or direction provided, in another (or previous) permit or approval for consultation in relation to this project/activity? * ☐ Yes ☒ No

Based on the online Guide to Applying for an Environmental Compliance Approval, or direction provided by the Ministry or another agency, are Indigenous consultation activities likely required as part of this application process? * ☐ Yes ☒ No

If Yes to the question above, please describe the consultation/notification activities undertaken for this application or as part of another process (e.g., EAA) in relation to the proposed project/activity, including a summary of the notification/consultation, First Nation and Métis communities contacted, key issues raised and how they were addressed, any changes to the project as a result of these activities, and any planned consultation/notification activities in the future.

Please attach supporting documents (e.g., record of consultation, delegation letter and/or direction provided by the Crown, materials provided to communities, meeting notes and agendas, correspondence with communities as appropriate).

If the applicant has determined that consultation with First Nation and Métis communities is not likely required for the proposed project/activity, please provide a rationale why:

[Consultation with Indigenous Communities was held during the EA for this project. A notification letter was addressed to them for this application.](#)

Other Consultation/Notification: [Show Information](#)

For waste disposal site proposals (including hauled sewage disposal sites) that were not subject to public consultation through an environmental assessment process, you must notify adjacent property owners who may be impacted by the issuance of an ECA (also called “neighbour notification”).

As the applicant, you are required to provide adjacent property owners with notification of:

- the undertaking (a summary of the details of the proposed application)
- the EPA Part V Director’s contact information:

Attn: EPA Part V Director wasteproposalcomments@ontario.ca

and/or

EPA Part V Director

Client Services and Permissions Branch

Ministry of the Environment, Conservation and Parks

135 St. Clair Avenue West

Toronto, Ontario M4V 1P5

In your notification letter, you should advise the adjacent property owner that they have 15 days to provide comments on the undertaking, if they choose to do so. Make sure you clearly identify the 15-day comment period on your letter.

If your proposal is subject to the EBR notification requirements, members of the public may also have an opportunity to submit their comments through the EBR proposal posting.

Has the applicant had a ministry pre-application consultation in relation to the proposed project? *

☒ Yes ☐ No

If this application is for a waste disposal site (including for a Hauled Sewage Disposal Site), have the neighbour notification requirements been completed? *

☒ Yes ☐ No

If yes, please attach a Public Consultation/Notification Report that includes the notice and list of recipients.

If no, please select the reason for not undertaking neighbour notification: *

☐ Application is for an administrative amendment

☐ other , please explain _____

Are there any other consultation/notification activities that have been undertaken to fulfill requirements by other legislation or through voluntary efforts? *

☒ Yes ☐ No

If yes, please:

1. describe the consultation/notification activities below; and
2. attach documents describing each of these consultation\nnotification activities, any changes to the project as a result of these activities and any planned consultation/notification activities in the future.

Consultation with the public, agencies and other stakeholders was ongoing throughout the EA process. A variety of events and consultation activities were undertaken. These are documented in Volume 4 Consultation Record and summarized in Volume I Section 4.0 of the EA Study Report.

✓ Completion Status (3.3 Consultation/Notification)

Fields marked with an asterisk (*) are mandatory.

4. Site Information

4.1 Site Address or Storage Location

If your activity is stationary, provide the address of the location. If your activity is mobile, provide the address(es) of where you store your equipment. If your activity is a Waste Management System, provide the address(es) where you store your vehicles.

Provide civic addresses if available, otherwise provide survey addresses. Note that if you provide a survey address, the geographic township should go in the "Municipality/Unorganized Township" field.

If your site is represented by adjacent addresses, provide a primary address that represents the front door or main entrance to the site and all the other addresses that represent your site.

Please note, for Hauled Sewage Disposal Site or Processed Organic Waste Land Application Site applications you must submit a separate ECA application for each individual site; therefore only one site should be selected for these types of ECA applications.

Will the vehicles or equipment be stored at more than one location?

☐ Yes ☐ No

(If yes, please enter all vehicle or equipment storage locations below and attach separate list, as necessary.)

☐ Select if same as Applicant Physical Address

Address Type? *

☒ Civic Address ☐ Survey Address

Primary Civic Address

Unit Number	Street Number	Street Name
	12620	Boyne Road

Additional Civic Addresses

Unit Number	Street Number	Street Name

Separate list attached?

☐ Yes ☒ No

Primary Survey Address

Enter Lot and Concession or Part and Reference Plan

Lot	Concession	Part	Reference Plan

Additional Survey Address

Enter Lot and Concession or Part and Reference Plan

Lot	Concession	Part	Reference Plan

Separate list attached?

☐ Yes ☐ No

Municipality/Unorganized Township *	County/District
North Dundas	

Non-address Information (includes any additional information to clarify the physical location)

Geo Reference (required)

Provide a geo reference relating to two points on your site.

Map Datum - this is UTM datum of the map or GPS (Global Positioning System) used to specify the position of the point or points of reference. There are two map datums in use: the North American Datum 1927 (NAD27) and NAD83. NAD83 is preferred but NAD27 is also accepted. Use the drop-down menu to select your NAD.

Zone - this is the UTM Zone within which the site is located; there are four UTM Zones within Ontario: 15, 16, 17 and 18.

Use the drop-down menu to select your zone.

Accuracy Estimate - indicate the accuracy (+/- metres) of the UTM Northing and Easting coordinates you provide for the points of reference. (The accuracy of the data depends on the method the data is generated.) Be sure to state the accuracy in metres.

Geo-Referencing Method - this is the method used to generate the data for the UTM Northing and Easting coordinates for the points of reference you are providing. The method could be determined by geodetic survey, estimation from a map, a GPS or any other specified method.

UTM Easting - for this, enter the distance in metres from the western delimiter of the point(s) of reference UTM Zone to the point of reference.

UTM Northing - for this, enter the distance in metres from the equator to the point(s) of reference.

☐ Select if same as Applicant Physical Geo Reference

Description of location	Map Datum *	Zone *	Accuracy Estimate *	Geo-Referencing Method *	UTM Easting *	UTM Northing *
Southwest corner of property	NAD83	18	± 50 m	AutoCAD	474,595.00	4,994,287.00
Physical location of front door or main entrance	NAD83	18	± 50 m	Google Earth	474,668.00	4,994,589.00

✓ Completion Status (4.1 Site Address or Storage Location)

4.2 Site or Storage Location Information

This section is about your site (if your proposed activity is stationary) or your storage location for vehicles (if your proposed activity is a waste management system or a mobile activity).

The site name will be used to identify the subject of the application in any correspondence.

List the Ministry district office responsible for the area where the works or facility are/is located. A map showing the district office coverage areas is available at: <https://www.ontario.ca/environment-and-energy/ministry-environment-district-locator>.

If you do not own the land where the equipment or facility is, or will be, located, provide a letter showing the land owner's consent to the installation and operation of the equipment or facility. The letter must include the land owner's name and address.

If you are not the operating authority, provide the name, address and phone number of the authority. For

example, an operating authority is a person or entity given responsibility by the owner for operation or management of a Waste Management System.

Submit copies of any agreements between parties (such as agreements between the equipment owner and the operator). Note, however, that the Ministry is not bound by the contractual or informal relationships between parties with respect to any action that may be taken in response to a contravention of the Act, the Regulations or the Approval.

To determine if the site of a proposed activity is located in an area of development control, contact the Niagara Escarpment Commission. An activity subject to the NEPDA that has not received a Development Permit cannot be approved under the EPA.

To determine if the site of a proposed activity is in the Oak Ridges Moraine Conservation Area contact the municipality where the site is located. An activity subject to the Oak Ridges Moraine Conservation Plan that has not received municipal planning approval cannot be approved under the EPA.

Site Name *

Boyne Road Landfill

Days and Hours of Operation *

Mon-Fri 7:00 - 17:00 (Sat 8:00 - 12:00)

Ministry of the Environment District Office *

Cornwall Area Office

Is the site (property) that is the subject of this application owned by the applicant? *

☒ Yes ☐ No

If no, please include the owner's name, address and a signed document indicating that the applicant has the authority to install and operate the proposed activity, or store vehicles or equipment on the land.

Is the applicant the operating authority of the site that is the subject of this application? *

☒ Yes ☐ No

If no, please include the operating authority name, address and phone number.

Is the site located in an area of development control as defined by the *Niagara Escarpment Planning and Development Act* (NEPDA)? *

☐ Yes ☒ No

If yes, please attach a copy of the NEPDA permit for proposed activity.

Is the site within an area covered by the Oak Ridges Moraine Conservation Plan? *

☐ Yes ☒ No

If yes, please attach proof of municipal planning approval for the proposed activity/work (for example, zoning by-law, letter from municipality, etc.).

✓ Completion Status (4.2 Site or Storage Location Information)

4.3 Site Zoning and Classification ☐ N/A

Here you provide information about the current use and zoning of the site where your proposed activity will take place and the current use and zoning of the land adjacent to it.

Current Land Use *

Waste Disposal Facility

Official Plan Designation *

Rural District

Current Zoning (Please attach zoning map, if available.) *

Waste

Adjacent Land Use (select all that apply) *

☐ Industrial ☒ Agricultural ☐ Commercial ☐ Recreational ☐ Residential
☐ Other (specify) _____

Adjacent Land Zoning *

Rural District

Does the current zoning permit the proposed activity? *

☒ Yes ☐ No

Does the applicant have correspondence from the municipality to confirm that the current zoning of the property permits the proposed use? *

☒ Yes ☐ No If yes, please attach correspondence from the municipality.

Does the official plan designation support the proposed activity? *

☒ Yes ☐ No

✓ Completion Status (4.3 Site Zoning and Classification)

4.4 Point of Entry into Ontario ☐ N/A

(for waste management system vehicles that are stored at an address outside of Ontario)

For Waste Management System vehicles that are stored outside of Ontario, indicate the closest town/city to the border where these vehicle(s) enter Ontario. You will need to provide this information if your application relates to a general Waste Management System.

City in closest proximity to the point of entry *

Description of Point of Entry *

✓ Completion Status (4.4 Point of Entry into Ontario)

4.5 Source Protection/Drinking Water Threats (sewage or waste disposal site applications only) ☐ N/A

Provide information about the relationship between your proposed activity and a source protection area. Check off all areas that apply.

Consult your local conservation authority website <https://conservationontario.ca/conservation-authorities/source-water-protection> or office for the local source protection area(s) that may apply. You may also refer to the Ministry's source protection information atlas available at <https://www.ontario.ca/page/source-protection>.

Each source protection area has a ministry-approved assessment report detailing areas of vulnerability across the area where there are risks to sources of drinking water from land-use activities. The vulnerability assessment report for a source protection area contains maps showing the location of vulnerable areas.

Check the source protection area(s) where the activity is/will be located *

- | | | |
|---|--|--|
| <input type="checkbox"/> Ausable Bayfield | <input type="checkbox"/> Cataraqui Region | <input type="checkbox"/> Catfish Creek |
| <input type="checkbox"/> Central Lake Ontario | <input type="checkbox"/> Credit Valley | <input type="checkbox"/> Crowe Valley |
| <input type="checkbox"/> Essex | <input type="checkbox"/> Ganaraska | <input type="checkbox"/> Grand River |
| <input type="checkbox"/> Grey Sauble | <input type="checkbox"/> Halton | <input type="checkbox"/> Hamilton |
| <input type="checkbox"/> Kawartha-Haliburton | <input type="checkbox"/> Kettle Creek | <input type="checkbox"/> Long Point |
| <input type="checkbox"/> Lakehead | <input type="checkbox"/> Lake Simcoe and Couchiching/Black River | <input type="checkbox"/> Lower Trent |
| <input type="checkbox"/> Lower Thames Valley | <input type="checkbox"/> Maitland Valley | <input type="checkbox"/> Mattagami |
| <input type="checkbox"/> Mississippi Valley | <input type="checkbox"/> Niagara | <input type="checkbox"/> North Bay Mattawa |
| <input type="checkbox"/> Northern Bruce Peninsula | <input type="checkbox"/> Nottawasaga Valley | <input type="checkbox"/> Rideau Valley |
| <input type="checkbox"/> Raisin Region | <input checked="" type="checkbox"/> South Nation | <input type="checkbox"/> Saugeen Valley |
| <input type="checkbox"/> Sault Ste. Marie | <input type="checkbox"/> Severn Sound | <input type="checkbox"/> Sudbury |
| <input type="checkbox"/> St. Clair Region | <input type="checkbox"/> Toronto and Region | <input type="checkbox"/> Otonabee-Peterborough |
| <input type="checkbox"/> Outside a source protection area | <input type="checkbox"/> Quinte | <input type="checkbox"/> Upper Thames River |

Is the proposed activity located or planned to be located in a vulnerable area identified in a local assessment report source protection plan under the *Clean Water Act, 2006*? *

☒ Yes ☐ No

If yes, what is/are the vulnerable area(s)/zone(s)? *

- ☒ Wellhead Protection Areas ☐ Surface Water Intake Protection Zones ☐ Highly Vulnerable Aquifers
☐ Significant Groundwater Recharge Areas ☐ Issue Contributing Areas

Is the activity being applied for identified as a significant drinking water threat in the assessment report for the local source protection area? *

The following activities are prescribed drinking water threats under O. Reg. 287/07 under the *Clean Water Act*:

1. The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the EPA.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.
4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.

14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of dense, non-aqueous phase liquid.
17. The handling and storage of organic solvent.
18. The management of runoff containing chemicals used in aircraft de-icing.
19. An activity that takes water from an aquifer or surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.

☐ Yes ☒ No

✓ Completion Status (4.5 Source Protection/Drinking Water Threats)

4.6 Receiver of Effluent Discharge (sewage applications only) ☐ N/A

If your application relates to Sewage Works, you must complete this part of the application.

The intermediate receiver is the lake or stream into which the final effluent from the Sewage Works is, or will be, discharged. If the body is not named, or if it is a drainage ditch, storm sewer or ground sub-surface, provide an identifying descriptor.

The watershed is the name of the lake or river into which the intermediate receiver drains.

Indicate the type of receiver - surface, ground or other.

If the facility is located under the jurisdiction of a Conservation Authority, submit a copy of the clearance/approval provided. If you do not have a clearance, describe any comments documented during consultation with the Conservation Authority.

For more information see: "Water Management - Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy" .

Intermediate Receiver Name *

Watershed Name *

Type of Receiver *

☐ Surface Water ☐ Groundwater ☐ Other (specify) *

Has the facility received local Conservation Authority clearance? (for stormwater management facility discharging to the natural environment) *

☐ Yes ☐ No

If yes, please include a copy of the Conservation Authority clearance.

Final Receivers ☐ N/A

If the final receiver is a critical receiver, provide information about it here.

Identify the critical receiver from the list, where applicable.

If you have a Policy 2 deviation approval, you must provide approval from two ministry Directors:

1. Regional Director for where the Sewage Works is located; and
2. Approval Director of Environmental Approvals Branch.

Policy 2 states: "Water quality which presently does not meet the Provincial Water Quality Objectives shall not be degraded further and all practical measures shall be taken to upgrade the water quality to the Objectives."

Where new or expanded discharges are proposed, no further degradation will be permitted and all practical measures shall be undertaken to upgrade water quality. It may not be possible to improve water quality towards the Provincial Water Quality Objectives (PWQO). Accordingly, with the Ministry's approval, deviations from this policy may be allowed where it is demonstrated that all reasonable and practical measures to attain the PWQO have been undertaken but the objectives are not attainable; where not allowing deviation would result in substantial and widespread adverse economic and social impact; or where techniques are not available.

For additional information, refer to: "Water Management - Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy, July 1994", at www.ene.gov.on.ca/envision/gp/3303.pdf.

Detailed procedures for preparing a deviation are described in: "Guideline for Handling Requests for Deviations" in the Ministry document: "Procedure B-1-5 -- Deriving Receiving-Water Based, Point Source Effluent Requirements for Ontario Waters (1994)" at: www.ene.gov.on.ca/envision/gp/B1-5.pdf

If the proposed activity will discharge sewage to any of the following critical receivers, please identify the receiver(s): *

☐ Lake Simcoe

☐ Rideau River

☐ Detroit River

☐ Great Lakes

☐ Rouge River

☐ Bay of Quinte

☐ Other (specify) * _____

Is the receiver a Policy 2 receiver? *

☐ Yes ☐ No

Does the applicant have a Policy 2 deviation approval from the directors? *

☐ Yes ☐ No

If yes, please attach a copy of the Director's approval.



Completion Status (4.6 Receiver of Effluent Discharge)

4.7 Site Physical and Distance Parameters (Hauled Sewage Disposal Site and Processed Organic Waste Land Application Site applications only) ☐ N/A

This section should only be completed if the applicant is applying for a hauled sewage disposal site or a processed organic waste (biosolids) land application site.

Total useable area is the portion of the site where hauled sewage may be spread, processed or stored, or in the case of dewatering trenches or exfiltration lagoons, the portion of the site where the trenches/lagoons may be located. A hauled sewage site may have more than one useable area (e.g. storage may occur in one portion of the site, spreading in another portion of the site); in these cases the total useable area would be determined by adding each separate area and reporting the combined total.

Total Site Area (hectares) *

Total Usable Area (hectares) *

Soil T-Time

Percolation time is defined in the Building Code (O. Reg. 350/06) as the average time in minutes that is required for water to drop one centimeter during a percolation test or as determined by a soil evaluation or analysis. Soil test requirements under the Building Code are found in Section 8.2.1.2 of the above regulation. Note, all Hauled Sewage Disposal Site ECA applications must include the submission of supplemental documentation to support the soil T-time claimed in the application form.

For proponents who elect to complete field percolation testing, no less than 3 T-tests should be completed at selected locations suitably spaced to reflect soil conditions across the proposed useable area. For larger hauled sewage sites more than 3 percolation tests may be required.

What is the estimated soil T-time within the usable area of the site based on field percolation tests or equivalent method? (e.g. grain size analyses). Use the check boxes below for your answer (more than one box can be checked) and provide a copy of the soil evaluation/analysis along with this application. *

☐ T-time < 1 minute per cm ☐ T-time > 1 minute per cm and < 50 minutes per cm ☐ T-time > 50 minutes per cm

Soil Permeability

Permeability describes the relative ease of movement of water through a porous medium such as soil. For hauled sewage site ECA applications, proponents are asked to identify the permeability of soils as: slow, moderate, moderately rapid, or rapid (or some combination thereof). Permeability can be directly measured or estimated by performing certain field or laboratory tests on the soil (including field percolation tests and/or grain size analyses). Note, all hauled sewage disposal site ECA applications must include the submission of supplemental documentation to support the soil permeability claimed in the application form.

Provide an estimate of the soil permeability within the usable area of the site based on field percolation tests or equivalent method (e.g. grain size analyses). Use the check boxes below for your answer (more than one box can be checked) and provide a copy of the soil evaluation/ analysis along with this application. *

☐ Slow ☐ Moderate ☐ Moderately Rapid ☐ Rapid

Average Slope

Slope means the change in elevation from the top to the bottom of a slope divided by the length of the slope expressed as a percentage.

Applicants are encouraged to consider using a mapping tool or a device such as a clinometer to help them estimate the slope for the useable area. More than one slope can be indicated if slope varies across the useable area(s).

Provide an estimate of the slope of the land within the usable area of the site. Use the check boxes below for your answer (more than one box can be checked). *

☐ 0-3% (Flat) ☐ 3-6% (Gentle Slope) ☐ 6-9% (Moderate Slope) ☐ >9% (Steep Slope)

Is the land within the usable area tile drained? *

Tile drains are a system of porous or perforated pipes that are installed below the ground surface. They are designed to collect and remove excess water from soil beneath its surface. Hauled sewage disposal on tile drained areas is not recommended.

☐ Yes ☐ No

Distance to Sensitive Features

Closest surface water body: E.g. creek, river, lake, pond, wetland, or artificial channel that carries water throughout the year or intermittently.

Closest house on-site: If there is a house on-site, identify the distance from the house to the edge of the proposed spreading area (metres). If there is no house on-site, select N/A.

For the purposes of this ECA application, a residential area is considered to be 3 or more lots of not more than 1 hectare that are adjacent to each other or not separated by anything other than a road allowance or a right of way and where there is a residential building on each lot.

Please identify whether the distance from the edge of any portion of the site where hauled sewage or processed organic waste will be spread/stored or where hauled sewage will otherwise be deposited (e.g. in a dewatering trench, lagoon, storage) or land applied is:

Within 30 metres of the closest public roadway? *

☐ Yes ☐ No

Within 200 metres of the closest surface water body? *

☐ Yes ☐ No

Within 90 metres of the closest house on-site? *

☐ Yes ☐ No ☐ N/A

Within 90 metres of the closest house off-site? *

☐ Yes ☐ No

Within 450 metres of the closest residential area (i.e. cluster of 3 or more houses)? *

☐ Yes ☐ No

Within 450 metres of the closest commercial, recreational or institutional use, and locations at which people regularly congregate? *

☐ Yes ☐ No

Distance to Local Treatment Facilities

Is there a private or municipal sewage treatment plant that accepts hauled sewage located within 50km of this site? *

☐ Yes ☐ No ☐ N/A

Is there any other type of private or municipal facility (e.g. biodigester) that accepts and treats hauled sewage located within 50km of this site? *

☐ Yes ☐ No ☐ N/A

✓ Completion Status (4.7 Site Physical and Distance Parameters)

Fields marked with an asterisk (*) are mandatory.

5. Facility Information

5.1 Air [Show Information](#)

Fill this section in only if you are applying for an ECA for activities falling under Section 9 of the EPA, including project types involving Air (Stationary) and Air (Mobile).

5.1.1 Summary of Equipment that Discharges Contaminants to the Air

Providing information about the type of equipment that is the subject of your application assists in the calculation of fees.

For "Number of Pieces of Equipment", count only new equipment (not yet under an ECA), or old equipment (previously approved under an ECA) that is being modified as part of this application.

Select Type of Equipment *	Number of Pieces of Equipment *
<input type="checkbox"/> Combustion equipment that uses natural gas, propane, no. 2 oil, landfill gas or sewage treatment gas for fuel for the purpose of providing comfort heating or emergency power, producing hot water or steam, or heating material in a system that does not discharge to the atmosphere (Total Heat input of all units: ≤ 50,000,000 kJ/hr)	
<input type="checkbox"/> Storage tanks	N/A
<input type="checkbox"/> Welding operations that use a maximum of 10 kilograms of welding rod per hour	N/A
<input type="checkbox"/> Combustion equipment that uses waste-derived fuel for the purpose of providing comfort heating, burning ≤ 15 litres per hour	
<input type="checkbox"/> Heat cleaning ovens used for parts cleaning and associated parts washers or degreasing equipment, other than solvent degreasing equipment	
<input type="checkbox"/> Cooling towers	
<input type="checkbox"/> Equipment used to control emissions of contaminants, other than a fume incinerator	
<input type="checkbox"/> Laboratory fume hoods	
<input type="checkbox"/> Paint spray booths and associated equipment that have a design capacity of up to 8 litres per hour of paint	
<input type="checkbox"/> Grain dryers	
<input type="checkbox"/> Any other equipment not listed above with a flow rate of less than or equal to 1.5 m³/second	
<input type="checkbox"/> Any other equipment not listed above with a flow rate of greater than 1.5 m³/second	
<input type="checkbox"/> Equipment that is subject to an Environmental Compliance Approval, and from which there is no proposed increase in the discharge of any contaminant that was previously reviewed by the Director.	N/A

✓ Completion Status (5.1.1 Summary of Equipment that Discharges Contaminants to the Air)

5.1.2 Emission Summary and Dispersion Modelling (ESDM) Report

This section only applies to applications for:

- (i). new equipment at existing facilities, and
- (ii). amendments to existing approvals.

If this application does not fall into one of these two categories, answer "No" to the first question. Information provided here is mainly for calculation of the fee.

An ESDM report may be considered previously reviewed when the equipment specified in it has been used to obtain an ECA (or Certificate of Approval) for that equipment in the past.

To determine the number of emission sources, identify the number of sources described in the ESDM report with contaminants in common with the equipment forming the subject of the application. Do not count sources that have been approved or that do not emit common contaminants.

A "source" may include multiple points of emission; provide the points of emission that are "similar". Points of emission are considered similar if they are:

1. An equivalent process activity;
2. Common contaminant emissions;
3. Emission estimates that are based on equivalent methods or formulas;
4. Dispersion calculations that are performed according to equivalent methods (with an allowance for modified process parameters) and considering equivalent Points of Impingement.

Is the review of an existing, approved ESDM required as part of this proposed application? *

☐ Yes ☐ No

If yes, identify the number of emission sources described in the existing ESDM Report that emit contaminants in common with the sources forming the subject of the application (if none, enter zero). *

Have all of these emission sources been described in an ESDM Report that was previously reviewed as part of an application for an existing Environmental Compliance Approval? *

☐ Yes ☐ No

✓ Completion Status (5.1.2 ESDM Report)

5.1.3 O. Reg. 419/05 Requirements

Select all sections (schedules) of O. Reg. 419/05 that apply, or indicate why the regulation does not apply.

Does s. 20 (Schedule 3) of O. Reg. 419/05 apply to the facility? *

☐ Yes

☐ Does not apply. Please indicate reason *

Has an instrument under O. Reg. 419/05 been issued? *

☐ Yes ☐ No

If yes, what type(s) of instruments (including any notices, orders or approvals) has (have) been issued? (select all that apply) *

☐ ss. 4(2) Adjacent Properties

☐ ss. 7(1) Specified Dispersion Models

☐ ss. 8(2) Negligible Sources

☐ ss. 10(2) Operating Conditions

☐ ss. 11(2) Refined Emission Rates

☐ ss. 13.1 Value of Dispersion Modeling Parameters

☐ ss. 13(1) Meteorological Data

☐ ss. 14(6) Area of Modelling Coverage

☐ ss. 20(4) Speed-up Request

☐ ss. 20(5) Speed-up Order

☐ s. 35 Site-specific Standard

☐ ss. 35(14) Site-specific Standard Order

☐ ss. 39(3) Technical Standard Registration (Industry Standard)

☐ ss. 39(4) Technical Standard Registration (Equipment Standard)

☐ Other (list all that have been issued) *

Is an instrument under O. Reg. 419/05 being requested as part of this application? *

☐ Yes ☐ No

If yes, what type(s) of notice, order or approval is (are) being requested? *

☐ ss. 7(1) Specified Dispersion Models

☐ ss. 8(2) Negligible Sources

☐ ss. 10(2) Operating Conditions

☐ ss. 11(2) Refined Emission Rates

☐ ss. 13(1) Meteorological Data

☐ ss. 14(6) Area of Modelling Coverage

☐ ss. 20(4) Speed-up Request

☐ s. 32 Request for a Site-specific Standard Order

☐ ss. 39(1)(a) Application for Technical Standard Registration (Industry Standard)

☐ ss. 39(1)(b) Application for Technical Standard Registration (Equipment Standard)

☐ Other (list all that have been issued) *

Please attach the form(s) requesting the notice(s) and/or order(s) and any additional supporting information.

Has an s. 30 Upper Risk Threshold (Schedule 6) been exceeded? *

☐ Yes ☐ No

If yes, please include additional supporting information.

Is the facility located in a multi-tenant building? *

☐ Yes ☐ No

If yes, additional information may be requested.

Are all of the contaminants to which the application relates represented in the Ministry of the Environment, Conservation and Parks publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution - Local Air Quality" or have they been screened out based on the publication titled "Jurisdictional Screening Level (JSL) List - A Screening Tool for Ontario Regulation 419"? *

☐ Yes ☐ No

(If no, please attach Supporting Information for a Maximum Ground Level Concentration Acceptability Request for Compounds with no Ministry POI Limit - Supplement to Application for Approval, EPA S. 9).

✓ Completion Status (5.1.3 O. Reg. 419/05 Requirements)

✓ Completion Status (5.1 Air)

5.2 Noise

5.2.1 Noise Assessment

There are different ways of fulfilling noise assessment requirements.

If you indicated in Section 2.3 of the Application Form that your application project type involves "Noise", the default requirement is for you to include an Acoustic Assessment Report (AAR) unless your proposed activity is eligible for a type of screening or Abbreviated Acoustic Assessment Report (A-AAR) and that screening or the A-AAR shows compliance with applicable noise limits.

Has an Acoustic Assessment Report (AAR) been completed in relation to the proposed project/activity? *

☐ Yes ☐ No

If yes, please attach the Acoustic Assessment Report

Does the AAR show that applicable limits are met? *

☐ Yes ☐ No

If no, please attach the Acoustic Assessment Report including the Noise Abatement Action Plan

If no, is the application eligible for Primary or Secondary Noise Screening? *

☐ Yes ☐ No

Note that if the proposed activity is not eligible for either of the screenings, an AAR must be submitted.

If yes, is the proposed activity eligible for the Primary Noise Screening? *

☐ Yes ☐ No

If yes, is the actual separation distance between the facility and the nearest noise sensitive point of reception (POR) greater than the minimum required separation distance calculated from the Primary Noise Screening? *

☐ Yes ☐ No

If yes, please attach the Primary Noise Screening form and supporting documentation.

Note that if the Primary Noise Screening is not successful then the applicant may attempt to proceed with the Secondary Noise Screening.

If no, does the Secondary Noise Screening Form show that the applicable sound level limits are met? *

☐ Yes ☐ No

If yes, please attach the Secondary Noise Screening Form and supporting documentation.

Note that if meeting the applicable sound level limits cannot be demonstrated, then an AAR must be submitted.



Completion Status (5.2.1 Noise Assessment)

5.2.2 Equipment Subject to Noise Review

In the appropriate category on the table, you must identify all equipment included in the Acoustic Assessment Report as a noise source. Equipment that has been previously reviewed does not have to be included in the table, provided this application is not for a modification of the approval in which the equipment was previously reviewed.

The information provided here assists in calculating the fee.

Description *	Number of Pieces of Equipment *
<input type="checkbox"/> Arc Furnaces	
<input type="checkbox"/> Asphalt Plants	
<input type="checkbox"/> Blow-down Devices	
<input type="checkbox"/> Co-Generation Facilities	
<input type="checkbox"/> Crushing Operations	
<input type="checkbox"/> Flares	
<input type="checkbox"/> Gas Turbines	
<input type="checkbox"/> Pressure Blowers or Large Induced Draft Fans (flow rate > 47 m ³ /second or static pressure > 1.25 kilopascals)	
<input type="checkbox"/> Any other equipment not listed above that has not previously been reviewed by the Director in connection with an application for an Environmental Compliance Approval with respect to the facility	
<input type="checkbox"/> Any other equipment not listed above that is identical to equipment for which a noise assessment was previously reviewed by the Director in connection with an application for an Environmental Compliance Approval with respect to the facility	

✓ Completion Status (5.2.2 Equipment Subject to Noise Review)

✓ Completion Status (5.2 Noise)

5.3 Sewage Works [Show Information](#)

Fill in this section only if your application relates to activities involving Sewage Works (in other words, activities mentioned in Section 53 of the *Ontario Water Resources Act*). Only provide information for the proposed activity for which you are seeking approval.

5.3.1 Facility Type - Sewage Works

You must choose at least one of the major facility types: Sewage Treatment Plant; Stormwater Management Facility; Storm, Combined or Sanitary Sewers; Ditches; Force mains; or Pumping Station.

For Sewage Treatment Plants and Stormwater Management Facilities, select at least one of the sub-choices of project types and, where applicable, provide the category and design capacity.

Choose from among these categories:

"New" for applications for new Sewage Works.

"Category 1 Amendment" for an amendment to an existing treatment plant approval to include additional facilities to increase the approved rated capacity of the plant, including expansion, re-rating or upgrading of an existing facility.

"Category 2 Amendment" for an amendment to an existing treatment plant approval to include additional facilities that do not increase the approved rated capacity of the plant, including new tertiary treatment facilities and the established, alteration, expansion, or replacement of an outfall.

"Category 3 Amendment" for an alteration or replacement of treatment plant equipment or processes that do not involve the addition of new facilities, including:

1. The alteration, extension or replacement of a pumping station, an aeration system, a chemical storage or application system, filter media or a standby power supply system.
2. The provision of additional points of process chemical applications.
3. The provision for odour control equipment.

"Category 4 Amendment" for any other amendment requiring a technical review.

For more information, see: "Pipe Data Form: Watermain, storm sewer, sanitary sewer and forcemain design. Supplement to application for approval for Water and Sewage Works"

Select the type of facility that is the subject of the application (select all that apply). *

☐ Sewage Treatment Plant (STP) ☐ Stormwater Management Facility

For the following, the applicant must complete and attach the relevant sections of the pipe data form:

☐ Storm Sewers ☐ Ditches ☐ Combined Sewers
☐ Force mains ☐ Sanitary Sewers ☐ Pumping Station

Does the pumping station pump directly to a sewage treatment plant? *

☐ Yes ☐ No

(If yes, please attach the hydrogeological assessment.)

Sewage Treatment Plant Details

☐ Primary ☐ Secondary ☐ Tertiary
☐ Receives septage ☐ Constructed/Engineered Wetlands ☐ On-site system
☐ Lagoons (check all that apply below) *
☐ Septage ☐ Municipal ☐ Other (specify) * _____

Facility Type *

☐ Municipal or private facility

Category: * ☐ New ☐ 1 ☐ 2 ☐ 3 ☐ 4

Please indicate the maximum design capacity of the municipal or private sewage treatment plant: *

☐ ≤ 4,500 m³/day ☐ > 4,500 m³/day

☐ Facility for the treatment of leachate

Category: * ☐ New ☐ 1 ☐ 2 ☐ 3 ☐ 4

☐ Facility for the treatment of industrial process wastewater

Category: * ☐ New ☐ 1 ☐ 2 ☐ 3 ☐ 4

☐ Facility for the disposal of non-contact cooling water

☐ Subsurface disposal

Please indicate the design capacity of the subsurface disposal: *

☐ ≤ 15m³/day ☐ > 15 m³/day and < 50 m³/day ☐ > 50 m³/day

Stormwater Management Facility Details

Category: * ☐ New ☐ 1 ☐ 2 ☐ 3 ☐ 4

Pond Type *

☐ Wet Pond ☐ Dry Pond ☐ Other (specify) * _____

What is the drainage area (in hectares) associated with the proposed activity? * _____

Does the applicant own all, or part of the drainage area? *

- ☐ Applicant owns all of the drainage area
☐ Applicant owns part of the drainage area
☐ Applicant does not own the drainage area

For the drainage area land that the applicant does not own, does the applicant have an agreement with the owner(s) of the drainage area? *

☐ Yes ☐ No

What is the predominant type of land use in the drainage area? *

☐ Rural or Agricultural ☐ Commercial or Industrial ☐ Residential

Is a Hydrogeological Assessment required? *

☐ Yes ☐ No

(If yes, please attach the hydrogeological assessment.)

Is a review of effluent criteria assessment for stormwater management, cooling water or soil remediation facilities required? *

☐ Yes ☐ No

(If yes, please attach the final effluent criteria accepted by the Regional Office of the Ministry.)

Is a review of effluent criteria assessment for municipal or private sewage, industrial process wastewater or leachate treatment plant required? *

☐ Yes ☐ No

(If yes, please attach the final effluent criteria accepted by the Regional Office of the Ministry.)

Note: The Hydrogeological Assessment, effluent criteria, and surface water assessment must be discussed and prepared with the Ministry's regional technical support section during a pre-application meeting(s) and consultation(s) with the Ministry. A proof of concurrence from technical support must be included as part of the ECA application package.

✓ Completion Status (5.3.1 Facility Type - Sewage Works)

5.3.2 Servicing

You must select at least one of Residential, Commercial or Industrial and for each selection, you must either select or describe at least one of the sub-choices.

In accordance with Procedure D-5-2 "Application of Municipal Responsibility for Communal Water and Sewage Services" the Ministry requires municipal ownership and responsibility for operation and maintenance of proposed new communal Sewage Works, as well as the existing privately owned communal Sewage Works when expansion of them is proposed. In addition, Municipal Responsibility Agreement is for privately owned large subsurface communal works that service permanent full-time or seasonal residential uses or other occupancy as determined by the Ministry. If municipal ownership of communal works is not achieved, you must address this in pre-application consultation with the local District Office and the issue must be resolved before submitting an application for approval of the works.

The works will provide sewage servicing for (select all that apply): *

☐ Residential

Residential Type *

☐ Subdivision

☐ Condominium

☐ Institutional

☐ Other (specify) * _____

Is there a Municipal Responsibility Agreement in place? *

☐ Yes ☐ No ☐ N/A

(If yes, please attach a copy of the Municipal Responsibility Agreement.)

☐ Commercial

Commercial Type *

☐ Hotel, Motel, Inn

☐ Campground, Park

☐ Rental Cabins

☐ Resort

☐ Shopping Malls

☐ Restaurant

☐ Highway Service Station/Gas Bars ☐ Other (specify) * _____

☐ Industrial

Describe * _____

✓ Completion Status (5.3.2 Servicing)

5.3.3 Sewage Servicing for Waste Disposal/Landfill Sites

If your Sewage Works will receive leachate from a Waste Disposal Site, for each site, provide the Waste Disposal Site name, approval number and volume of leachate (cubic metres) to be received.

Does/Will the sewage treatment facility receive waste disposal/landfill site leachate? *

☐ Yes ☐ No

If yes, please identify the site(s) below.

Name of Site Contributing Leachate *	Environmental Compliance Approval Number *	Volume of Leachate (m³) *
1.		

✓ Completion Status (5.3.3 Sewage Servicing for Waste Disposal/Landfill Sites)

✓ Completion Status (5.3 Sewage Works)

5.4 Waste Disposal Site (Including a Hauled Sewage Disposal Site or a Processed Organic Waste (Biosolids) Land Application Site)

Fill this in only if you are applying for an ECA to cover activities related to a Waste Disposal Site mentioned in Section 27 of the EPA. Only provide information for the proposed activity for which you are seeking approval.

5.4.1 Facility Description - Waste Disposal Site (Information on the nature of the proposed business or activity at this site)

Under "Service Area" you must include names of all municipalities served.

Under "Total Area of Site" you should include the size of the on-site buffer zone in the calculation of the total area.

You must select at least one item for each sub-heading (Monitoring, Type(s) of waste to be accepted at this site, etc.).

If your activity includes hazardous and/or liquid industrial waste, use the drop-down menus to specify the appropriate class codes. If you are not using the electronic form, you can find class codes in: "New Ontario Waste Classes".

Note**: If your application is for a Hauled Sewage Disposal site, please proceed to sub-section 5.4.5

Note**: If your application is for a Processed Organic Waste (Biosolids) Land Application site, please proceed to sub-section 5.4.6

Service Area *	Total Area of Site (hectares) *
Township of North Dundas (See Section 3.1 of attached D&O Plan for complete details)	11.90

Monitoring (select all that apply) *

- | | | |
|--|---|---------------------------------------|
| <input checked="" type="checkbox"/> Groundwater | <input checked="" type="checkbox"/> Surface Water | <input type="checkbox"/> Landfill Gas |
| <input type="checkbox"/> Leachate | <input type="checkbox"/> None | |
| <input type="checkbox"/> Other (specify) * _____ | | |

Type(s) of waste to be accepted at this site (select all that apply) *

- | | |
|--|---|
| Subject: | Non-subject: |
| <input type="checkbox"/> Hazardous Waste | <input checked="" type="checkbox"/> Municipal (non-hazardous) |
| <input type="checkbox"/> Liquid Industrial Waste | <input type="checkbox"/> Other Liquid Waste |

Municipal waste categories to be accepted at this site (select all that apply) *

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> All Categories | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Domestic Sources |
| <input type="checkbox"/> IC & I Sources | <input type="checkbox"/> Source Separated Organics | <input type="checkbox"/> Tires |
| <input type="checkbox"/> Leaf and Yard Waste | <input type="checkbox"/> Wood Waste | <input type="checkbox"/> Blue Box Materials |
| <input type="checkbox"/> Other (specify) * _____ | | |

Other liquid waste categories to be accepted at this site (select all that apply) *

- | | |
|--|--|
| <input type="checkbox"/> Processed Organics | <input type="checkbox"/> Hauled Sewage |
| <input type="checkbox"/> Waste from Food Processing/Preparation Operations | <input type="checkbox"/> Other (specify) * _____ |

Hazardous Waste / Liquid Industrial Waste

Class Code *	Class Code	Class Code	Class Code	Class Code

✓ Completion Status (5.4.1 Facility Description - Waste Disposal Site)

5.4.2 Waste Transfer/Processing/Composting - Complete this information if waste transfer and/or processing and/or composting take(s) place at this facility

Fill in this section only if your application relates to waste transfer or processing site projects.

Under the "Maximum Residual for Final Disposal" section on the chart, "residual" refers to the waste that is generated at the site and that would require final disposal.

Waste Type to be Transferred or Processed *

☐ Hazardous waste or liquid industrial waste

Design Capacity *

☐ ≤ 100 tonnes per day

☐ > 100 tonnes per day

☐ Waste other than hazardous waste and liquid industrial waste

Design Capacity *

☐ ≤ 100 tonnes per day

☐ > 100 tonnes per day

Change to Operations *

Information provided in this section is used to calculate the fees.

When selecting which "Change to Operations", consider these options:

Choose "No Change Proposed" if there will be no impact to the transfer/processing operation. This is not applicable to applications for an "Amendment" or "New" ECA.

Choose "Change does not require fundamental design review" if you are applying for an amendment and the environmental impacts associated with the change are minor and can be assessed independently of the remaining facility. Examples include: additional storage at a processing and transfer station; addition of a similar waste class or type of waste; and addition of a household hazardous waste drop off at a landfill. This is not applicable to applications for a "New" ECA.

Choose "Change requires fundamental design review" if the amendment is significant enough to the overall design that the environmental impacts from the amended operations have changed significantly and so must be re-assessed. Examples include: changing from manual sorting to mechanical sorting at a processing site; reconfiguration or redesign of a landfill shape; doubling of the capacity of a thermal treatment facility. You must select this for an application for a "New" ECA.

☐ No Change Proposed

☐ Change does not require fundamental design review

☐ Change requires fundamental design review

Liquid Waste

Maximum Storage Capacity (m³)

Hazardous *

Liquid Industrial *

Other Liquid Waste *

Maximum Residual for Final Disposal (m³)

Hazardous

Daily *

Annually *

Liquid Industrial Waste

Daily *

Annually *

Other Liquid Waste

Daily *

Annually *

Solid Waste

Maximum Storage Capacity (tonnes)

Hazardous *

Non-Hazardous *

Maximum Residual for Final Disposal (tonnes)

Hazardous		Non-hazardous	
Daily *	Annually *	Daily *	Annually *

Maximum Amount of Waste to be Received Daily

Liquid (m³)			Solid (tonnes)	
Hazardous *	Liquid Industrial *	Other Liquid Waste *	Hazardous *	Non-hazardous *

✓ Completion Status (5.4.2 Waste Transfer/Processing/Composting)

5.4.3 Thermal Treatment Facility - Complete this information if thermal treatment takes place at this facility

Fill in this section only if your project involves a thermal treatment project.

Under the "Maximum Residual for Final Disposal" section on the chart (under Liquid Waste and Solid Waste), "residual" refers to the waste that is generated at the site and that would require final disposal.

Waste Type for Thermal Treatment *

- ☐ Hazardous waste or liquid industrial waste
- Design Capacity *
- ☐ ≤ 100 tonnes per day ☐ > 100 tonnes per day
- ☐ Waste other than hazardous waste and liquid industrial waste
- Design Capacity *
- ☐ ≤ 100 tonnes per day ☐ > 100 tonnes per day

Change to Operations *

Information provided in this section is used to calculate the fees.

When selecting which "Change to Operations", consider these options:

Choose "No Change Proposed" if there will be no impact to the thermal treatment landfill operation. This is not applicable to applications for an "Amendment" or "New" ECA.

Choose "Change does not require fundamental design review" if you are applying for an amendment and the environmental impacts associated with the change are minor and can be assessed independently of the remaining facility. Examples include: additional storage at a processing and transfer station; addition of a similar waste class or type of waste; and addition of a household hazardous waste drop off at a landfill. This is not applicable to applications for a "New" ECA.

Choose "Change requires fundamental design review" if the amendment is significant enough to the overall design that the environmental impacts from the amended operations have changed significantly and so must be re-assessed. Examples include: changing from manual sorting to mechanical sorting at a processing site; reconfiguration or redesign of a landfill shape; doubling of the capacity of a thermal treatment facility. You must select this for an application for a "New" ECA.

- ☐ No Change Proposed
- ☐ Change does not require fundamental design review
- ☐ Change requires fundamental design review

Liquid Waste

Maximum Storage Capacity (m³)

Hazardous *	Liquid Industrial *	Other Liquid Waste *
-------------	---------------------	----------------------

Maximum Residual for Final Disposal (m³)

Hazardous		Liquid Industrial Waste		Other Liquid Waste	
Daily *	Annually *	Daily *	Annually *	Daily *	Annually *

Solid Waste

Maximum Storage Capacity (tonnes)

Hazardous *	Non-Hazardous *
-------------	-----------------

Maximum Residual for Final Disposal (tonnes)

Hazardous		Non-hazardous	
Daily *	Annually *	Daily *	Annually *

Maximum Amount of Waste to be Received Daily

Liquid (m³)			Solid (tonnes)	
Hazardous *	Liquid Industrial *	Other Liquid Waste *	Hazardous *	Non-hazardous *

Maximum Daily Feed Rate (tonnes/m³)

Hazardous Waste (tonnes) *	Non-hazardous Waste (tonnes) *	Liquid Industrial Waste (m³) *	Other Liquid Waste (m³) *
----------------------------	--------------------------------	--------------------------------	---------------------------

✓ Completion Status (5.4.3 Thermal Treatment Facility)

5.4.4 Landfill Site - Complete this information if this facility operates as a landfill site

Fill in this section only if your project involves a landfill site.

Waste Types to be accepted at the Landfill *

☐ Hazardous waste or liquid industrial waste

Design Capacity *

☐ ≤ 40,000 m³ ☐ > 40,000 m³ ≤ 3 million m³ ☐ > 3 million m³

☐ Waste is only uncontaminated tree stumps, leaves, branches, concrete and rocks

Design Capacity *

☐ ≤ 40,000 m³ ☐ > 40,000 m³ ≤ 3 million m³ ☐ > 3 million m³

☒ Waste other than hazardous waste and liquid industrial waste, other than uncontaminated tree stumps, leaves, branches, concrete and rocks.

Design Capacity *

☐ ≤ 40,000 m³ ☒ > 40,000 m³ ≤ 3 million m³ ☐ > 3 million m³

Change to Operations *

Information provided in this section is used to calculate the fees.

When selecting which "Change to Operations", consider these options:

Choose "No Change Proposed" if there will be no impact to the thermal treatment operation. This is not applicable to applications for an "Amendment" or "New" ECA.

Choose "Change does not require fundamental design review" if you are applying for an amendment and the environmental impacts associated with the change are minor and can be assessed independently of the remaining facility. Examples include: additional storage at a processing and transfer station; addition of a similar waste class or type of waste; and addition of a household hazardous waste drop off at a landfill. This is not applicable to applications for a "New" ECA.

Choose "Change requires fundamental design review" if the amendment is significant enough to the overall design that the environmental impacts from the amended operations have changed significantly and so must be re-assessed. Examples include: changing from manual sorting to mechanical sorting at a processing site; reconfiguration or redesign of a landfill shape; doubling of the capacity of a thermal treatment facility. You must select this for an application for a "New" ECA.

Note: The Hydrogeological Assessment, effluent criteria, and surface water assessment must be discussed and prepared with the Ministry's regional technical support section during a pre-application meeting(s) and consultation(s) with the Ministry. A proof of concurrence from technical support must be included as part of the ECA application package.

- ☐ No Change Proposed
- ☒ Change does not require fundamental design review or hydrogeological assessment
- ☐ Change requires fundamental design review or hydrogeological assessment

Maximum Landfilling Capacity (m³)

Hazardous Waste *	Non-hazardous Waste *	Liquid Industrial Waste *	Other Liquid Waste *
	1,060,750		0

Maximum Amount of Waste to be Received

Hazardous Waste (tonnes)		Non-hazardous Waste (tonnes)		Liquid Industrial Waste (m³)		Other Liquid Waste (m³)	
Daily *	Annually *	Daily *	Annually *	Daily *	Annually *	Daily *	Annually *
		-	-			0	0

Landfill Information

The area to be landfilled is the area (expressed in hectares) of the portion of the site intended to be used for landfilling, including areas where landfilling has already taken place.

The estimated closure date is the date by which you estimate the site will reach its capacity and will have to be closed.

Area to be Landfilled (hectares) *	11.9	Total Site Area including Buffer Area (hectares) *	113.3
Estimated Date of Closure (yyyy/mm/dd) *	2048/12/31	Population Served	11,700

Control Types (select all that apply) *

- ☐ Leachate Collected and Treated Off-site
- ☐ Landfill Gas Collected and Flared
- ☒ Other (specify) * [Natural Attenuation Site](#)
- ☐ Leachate Collected and Treated On-site
- ☐ Landfill Gas Collected for Energy Generation

✓ Completion Status (5.4.4 Landfill Site)

5.4.5 Hauled Sewage Disposal Site - Complete this section if any of the following activities will take place at the site: land application, disposal in a standard dewatering trench, disposal in a previously approved (existing) non-standard dewatering trench/exfiltration lagoon or storage in a previously approved (existing) storage facility.

Identify the types of Hauled Sewage to be land applied and/or deposited at the site (select all that apply): *

The following waste types are **not** considered hauled sewage. If any of the waste types below are collected and deposited at the site, the applicant should not be applying for a hauled sewage site:

- Grease removed from grease traps at commercial, institutional or industrial kitchens.
- Wastewater or wastes from washing machines located at industrial laundries.
- Wastewater resulting from manufacturing or production processes.
- Wastewater from an abattoir or slaughterhouse.
- Liquid or solid material removed from the first compartment of multiple-compartment septic tanks used by commercial, institutional or industrial kitchens which do not have grease traps.
- Paper mill residue, sludge.

Please note that O. Reg. 347 **does not** permit untreated portable toilet waste to be land applied (i.e. surface spread) unless that material is first treated to meet regulated quality standards.

☐ Portable toilet waste ☐ Septic tank waste ☐ Holding tank waste

☐ Other (specify) * _____

Identify the types of customers from which hauled sewage will be collected, land applied and/or deposited at the site (select all options that may apply to your business). For each category you select, estimate the percentage of all hauled sewage that would come to the site from that category: *

- ☐ Residential, percentage * _____
- ☐ Commercial, percentage * _____
- ☐ Institutional (e.g. hospital, school, nursing home), percentage * _____
- ☐ Industrial, percentage * _____
- ☐ Other (specify) * _____, percentage * _____

Hauled Sewage Operations (select all activities that will take place). Please refer to the Information button for a description of each type of activity identified below: *

Surface spreading of hauled sewage involves the direct application of hauled sewage onto the surface of the ground. Surface spreading with incorporation generally means the mixing of hauled sewage into the soil by tillage with a minimum depth of soil disturbance of 10 centimeters. Surface spreading with injection involves the use of equipment that allows for the placement of hauled sewage just below the surface of the soil of the land.

A dewatering trench is a long, narrow, shallow, gently sloped trench excavated in permeable soils for the purpose of dewatering hauled sewage (aka “septage”) prior to final disposal. In general terms, to be considered a standard dewatering trench the operation must include 2 or more trenches and each trench must be no longer than 75m, no wider than 3m and no deeper than 1m. In a standard dewatering trench system, only one trench is used at a time. After receiving a specified quantity of hauled sewage, the trench must be allowed to run dry and is subject to a 12-month rest period. Residual solids from the bottom of the trench must be removed before the trench can be used again. If you are applying for an approval of a site where the operation does not meet **all** of the requirements above, you **cannot** describe your project as a “Standard Dewatering Trench” proposal site.

An exfiltration lagoon is a lagoon that is designed to allow the liquid portion of the hauled sewage to seep into the subsurface soils (aka “exfiltrate”).

A Non-Standard Dewatering Trench is a long, narrow, shallow, gently sloped trench that is excavated in permeable soils for the purpose of dewatering hauled sewage (aka “septage”) prior to final disposal. After receiving hauled sewage for a period of time, the trench is allowed to run dry and is subject to a rest period before it can be used again. A facility is considered a non-standard dewatering trench system if any of the trenches cannot meet the design and operation specifications for a standard dewatering trench system (see above).

The applicant can fill out Section 5.4.5 if applying to renew or amend an existing ECA for an Exfiltration Lagoon or Non-Standard Dewatering Trench. If this is an application for approval of a NEW Exfiltration Lagoon or Non-Standard Dewatering Trench that has a designed discharge to the environment, the applicant should apply for a SEWAGE WORKS ECA under Section 5.3.

- ☐ Surface Spreading – no incorporation
- ☐ Surface Spreading – with incorporation or injection
- ☐ Standard Dewatering Trench
- ☐ Exfiltration Lagoon or Non-Standard Dewatering Trench
- ☐ Hauled Sewage Storage (with no discharge to the environment) / On-Site Storage Facilities (storage longer than 14 days)
- ☐ Other means of disposing of hauled sewage

If Surface Spreading is proposed, the following questions must be answered:

Will the hauled sewage be treated before it is spread at this site? Treatment of hauled sewage may involve aerobic or anaerobic digestion, or other means of stabilization (e.g. treat with lime) that reduces both odour and pathogen content. *

☐ Yes ☐ No

If yes, describe how the hauled sewage will be treated: *

What type of equipment will be used to spread hauled sewage at this site? *

Will the hauled sewage consistently be injected or incorporated immediately or within 24 hours of spreading? Please refer to the Information button above for more information on the meaning of injection and incorporation. *

☐ Immediately ☐ Within 24 hours ☐ No

Will any crops or ground cover be grown in the spreading area? *

☐ Yes ☐ No

If yes, describe the crop/vegetative cover that will be grown: *

Estimated volume of hauled sewage to be spread at the site on an annual basis: * _____ Unit *

Estimated maximum proposed spreading rate: * _____ Litres per m² per 7 day period

During the spring, summer and fall months, how often do you expect to spread hauled sewage at this site? *

- ☐ Daily (i.e. spreading 5 to 7 days per week)
- ☐ Weekly (spreading most weeks, but less than 5 days per week)
- ☐ Monthly (spreading most months, but only a small number of times in any month)
- ☐ Less than once a month

Identify the time periods when Hauled Sewage is proposed to be brought to this site and/or spread at the site:

Months of Year	Times of Day	Days of Week
Start Month *	Start Time *	Start Day *
End Month *	End Time *	End Day *

Are there any water wells located within a 500 metre radius of the outer edges of any hauled sewage spreading area(s)? *

☐ Yes ☐ No

If yes, please provide the following information for the well located closest to the spreading area(s).

Type of well: *

☐ Drilled ☐ Dug ☐ Other (specify) * _____

Approximate depth of well (metres): * _____

Approximate distance to the well (metres): * _____

Is there a catch basin or tile drainage inlet within 100m of any of the site's proposed spreading area(s)? *

Tile inlets can include open surface tile intakes, perforated inlet risers (e.g. hickenbottoms), rock inlets or other infrastructure for collecting surface run-off and directing it into a tile drainage system. Tile drains are a system of porous or perforated pipes that are installed below the ground surface. They are designed to collect and remove excess water from soil beneath its surface. Hauled sewage disposal on tile drained areas is not recommended.

☐ Yes ☐ No

In the proposed spreading area(s) of the site, is the depth of soil above the underlying water table at least 1 metre? *

The water table is an underground boundary between the soil surface and the subsurface soils where groundwater saturates spaces between sediments and cracks in rock. For hauled sewage spreading sites the minimum depth from the ground surface to the underlying water table should not be less than 1 m.

☐ Yes ☐ No

Describe how the depth to the water table was determined in the proposed spreading area(s) (e.g. field testing, water well records): *

In the proposed spreading area(s) of the site, is the depth of soil above the bedrock at least 1.5 metres? *

☐ Yes ☐ No

Describe how the depth of soil above bedrock was determined in the proposed spreading area(s) (e.g. field testing, soil mapping, water well records): *

Is there any exposed bedrock at ground surface within the spreading area(s)? *

☐ Yes ☐ No

If a Standard Dewatering Trench(es) is proposed, the following questions must be answered:

Does this application include the creation of any new dewatering trenches on the site? *

☐ Yes ☐ No

If yes, does the applicant have ownership or control of all land within a 500 metre radius of the outer edges of each new dewatering trench area? *

☐ Yes ☐ No

How many dewatering trenches will be located at the site? * _____

List the approximate dimensions of the trenches:

List the approximate dimensions of the trenches and indicate the number of trenches at the site that have those dimensions. Add an additional row(s) to the table if the operation includes trenches of significantly different dimensions. For each new row indicate how many trenches have those dimensions.

Number of Trenches *	Length (metres) *	Width (metres) *	Depth (in deepest part of trench) (metres) *

Estimated volume of hauled sewage to be received by the dewatering trenches on an annual basis: * _____ Unit *

Are there any water wells located within a 500 metre radius of the outer edges of the dewatering trench area? *

Down-gradient means in the direction that groundwater flows, similar to "downstream" for surface water.

Cross-gradient means perpendicular to the direction that groundwater flows. Up-gradient means opposite to the direction that groundwater flows, similar to "upstream" for surface water.

Inferred groundwater flow direction can be based on in-situ water well level measurements, water well records, etc. Applicants are required to submit a supplemental document that explains how the inferred groundwater flow direction was determined. This document should be included with this application.

☐ Yes ☐ No

If yes,

Are there any water wells located within 500 metres of any of the hauled sewage dewatering trenches in a down-gradient direction? *

☐ Yes ☐ No

If yes, please provide the following information for the closest down-gradient well:

Type of well: *

☐ Drilled ☐ Dug ☐ Other (specify) * _____

Approximate depth of well (metres): * _____

Approximate distance to the well (metres): * _____

Are there any water wells located within 100 metres of any of the hauled sewage dewatering trenches in a cross-gradient or up-gradient direction? *

☐ Yes ☐ No

If yes, please provide the following information for the closest well:

Type of well: *

☐ Drilled ☐ Dug ☐ Other (specify) * _____

Approximate depth of well (metres): * _____

Approximate distance to the well (metres): * _____

Describe how the inferred (i.e. known or assumed) groundwater flow direction in the vicinity of the site was determined: *

Is there a catch basin or tile drainage inlet:

Tile inlets can include open surface tile intakes, perforated inlet risers (e.g. hickenbottoms), rock inlets or other infrastructure for collecting surface run-off and directing it into a tile drainage system. Tile drains are a system of porous or perforated pipes that are installed below the ground surface. They are designed to collect and remove excess water from soil beneath its surface. Hauled sewage disposal on tile drained areas is not recommended.

Within 100m of any of the dewatering trenches? *

☐ Yes ☐ No

Within 200m of any of the dewatering trenches? *

☐ Yes ☐ No

Is the distance from the bottom of every dewatering trench to the underlying water table at least 1.5 metres? *

The water table is an underground boundary between the soil surface and the subsurface soils where groundwater saturates spaces between sediments and cracks in rock.

☐ Yes ☐ No

Describe how the depth from the bottom of each trench to the water table was determined (e.g. field testing, water well records): *

Is the distance from the bottom of every dewatering trench to the underlying bedrock at least 3 metres? *

☐ Yes ☐ No

Describe how the depth of soil from the bottom of each trench to bedrock was determined (e.g. field testing, soil mapping, water well records): *

Is there any exposed bedrock at ground surface within 250m of any of the dewatering trenches? *

☐ Yes ☐ No

If this application is for an operation with existing Exfiltration Lagoon(s) or Non-Standard Dewatering Trenches, the following questions must be answered:

Provide the following information for each individual trench/lagoon:

ID Number *	Trench or Lagoon? *	Year Constructed *	Were design drawings prepared for the trenches or lagoons? *	Length (metres) *	Width (metres) *	Maximum Depth (metres) *	Estimated thickness of lagoon sludge layer (metres) *	Year trench/lagoon was last dredged or pumped out *

Are there any groundwater monitoring wells located in the vicinity of the lagoons/trenches? *

☐ Yes ☐ No

If yes, has groundwater sampling/analysis been completed at these wells? *

☐ Yes ☐ No

Are there any surface water monitoring stations located in the vicinity of the lagoons/trenches? *

☐ Yes ☐ No

If yes, has surface water sampling/analysis been completed in the vicinity of the lagoons/trenches? *

☐ Yes ☐ No

Estimated volume of hauled sewage to be received by the dewatering trenches/lagoons on an annual basis: * _____ Unit *

Are there any water wells located within a 500 metre radius of any of the hauled sewage dewatering trenches/lagoons? *

Down-gradient means in the direction that groundwater flows, similar to "downstream" for surface water.

Cross-gradient means perpendicular to the direction that groundwater flows. Up-gradient means opposite to the direction that groundwater flows, similar to "upstream" for surface water.

Inferred groundwater flow direction can be based on in-situ water well level measurements, water well records, etc. Applicants are required to submit a supplemental document that explains how the inferred groundwater flow direction was determined. This document should be included with this application.

☐ Yes ☐ No

If yes,

Are there any water wells located within 500 metres of any of the hauled sewage dewatering trenches/lagoons in a down-gradient direction? *

☐ Yes ☐ No

If yes, please provide the following information for the closest down-gradient well:

Type of well: *

☐ Drilled ☐ Dug ☐ Other (specify) * _____

Approximate depth of well (metres): * _____

Approximate distance to the well (metres): * _____

Are there any water wells located within 100 metres of any of the hauled sewage dewatering trenches/lagoons in a cross-gradient or up-gradient direction? *

☐ Yes ☐ No

If yes, please provide the following information for the closest up-gradient/cross-gradient well:

Type of well: *

☐ Drilled ☐ Dug ☐ Other (specify) * _____

Approximate depth of well (metres): * _____

Approximate distance to the well (metres): * _____

Describe how the inferred (i.e. known or assumed) groundwater flow direction in the vicinity of the site was determined: *

Is there a catch basin or tile drainage inlet:

Tile inlets can include open surface tile intakes, perforated inlet risers (e.g. hickenbottoms), rock inlets or other infrastructure for collecting surface run-off and directing it into a tile drainage system. Tile drains are a system of porous or perforated pipes that are installed below the ground surface. They are designed to collect and remove excess water from soil beneath its surface. Hauled sewage disposal on tile drained areas is not recommended.

Within 100m of any of the dewatering trenches/lagoons? *

☐ Yes ☐ No

Within 200m of any of the dewatering trenches/lagoons? *

☐ Yes ☐ No

Is the distance from the bottom of every dewatering trench/lagoon to the underlying water table at least 1.5 metres? *

The water table is an underground boundary between the soil surface and the subsurface soils where groundwater saturates spaces between sediments and cracks in rock.

☐ Yes ☐ No

Describe how the depth from the bottom of each trench/lagoon to the water table was determined (e.g. field testing, water well records): *

Is the distance from the bottom of every dewatering trench/lagoon to the underlying bedrock at least 3 metres? *

☐ Yes ☐ No

Describe how the depth of soil from the bottom of each trench/lagoon to bedrock was determined (e.g. field testing, soil mapping, water well records): *

Is there any exposed bedrock at ground surface within 250m of any of the dewatering trenches/lagoons? *

☐ Yes ☐ No

If this application is for an operation with an existing Hauled Sewage Storage/ On-Site Storage, the following questions must be answered:

Provide a brief description of the type of storage (e.g. earthen lagoon, concrete tank, etc.). When indicating the dimensions of the storage provide the length/width (for rectangular storages) or the radius (for circular storages):

Type of Storage *	Year Constructed *	Were design drawings prepared for the storage? *	Length (metres)	Width (metres)	Radius (metres)	Maximum Depth (metres) *	Year storage was last cleaned out *

For sites with earthen hauled sewage storage lagoons, were all lagoons constructed with a liner to prevent seepage of hauled sewage into the subsurface? *

☐ Yes ☐ No ☐ N/A

Are there any groundwater monitoring wells located in the vicinity of the storage facilities? *

☐ Yes ☐ No

If yes, has groundwater sampling/analysis been completed at these wells? *

☐ Yes ☐ No

Are there any surface water monitoring stations located in the vicinity of the storage facilities? *

☐ Yes ☐ No

If yes, has surface water sampling/analysis been completed in the vicinity of the monitoring stations? *

☐ Yes ☐ No

Estimated maximum volume of hauled sewage to be kept in storage at the site at any given time: * _____ Unit *

Are there any water wells located within 500 metres of any of the hauled sewage storage facilities? *

☐ Yes ☐ No

If yes,

Please provide the following information for the well located closest to the storage facilities:

Down-gradient means in the direction that groundwater flows, similar to "downstream" for surface water.

Inferred groundwater flow direction can be based on in-situ water well level measurements, water well records, etc. Applicants are required to submit a supplemental document that explains how the inferred groundwater flow direction was determined. This document should be included with this application.

Type of well: *

☐ Drilled ☐ Dug ☐ Other (specify) * _____

Approximate distance to the well from the nearest storage (metres): * _____ Depth of well (metres): * _____

Is the well located in a down gradient location from the storage facilities? *

☐ Yes ☐ No

Describe how the inferred groundwater flow direction in the vicinity of the site was determined (e.g. based on in-situ water well level measurements, water well records, etc.) *

Is there a catch basin or tile drainage inlet:

Tile inlets can include open surface tile intakes, perforated inlet risers (e.g. hickenbottoms), rock inlets or other infrastructure for collecting surface run-off and directing it into a tile drainage system. Tile drains are a system of porous or perforated pipes that are installed below the ground surface. They are designed to collect and remove excess water from soil beneath its surface. Hauled sewage storage on tile drained areas is not recommended.

Within 100m of any of the storage facilities? *

☐ Yes ☐ No

Within 200m of any of the storage facilities? *

☐ Yes ☐ No

Is the distance from the bottom of the storage facility to the water table at least 2 metres? *

The water table is an underground boundary between the soil surface and the subsurface soils where groundwater saturates spaces between sediments and cracks in rock.

☐ Yes ☐ No

Describe how the depth from the bottom of each storage facility to the water table was determined (e.g. field testing, water well records): *

Is the distance from the bottom of every storage facility to the underlying bedrock at least 2 metres? *

☐ Yes ☐ No

Describe how the depth of soil from the bottom of each storage facility to bedrock was determined (e.g. field testing, soil mapping, water well records): *

Is there any exposed bedrock at ground surface within 250m of any of the storage facilities? *

☐ Yes ☐ No

If Other Disposal Methods are proposed, the following questions must be answered:

Describe the "other disposal methods": *

Examples include an outlet pipe that discharges to a surface water body or a pipe that discharges to ground surface (e.g. spray irrigation). It could also include a system designed to allow hauled sewage to enter the subsurface (e.g. hauled sewage is piped into a tile bed, filter bed, or reed bed). If the system is designed to discharge to the environment using a method other than normal land application to ground surface or a standard dewatering trench, you should apply for a Sewage Works ECA under Section 5.3.

Does this "other method" involve the discharge of hauled sewage to the environment? *

☐ Yes ☐ No

✓ Completion Status (5.4.5 Hauled Sewage Disposal Site)

5.4.6 Processed Organic Waste (Biosolids) Land Application Site - Complete this information if the spreading of processed organic waste for beneficial use at a site will take place.

If Processed Organic Waste will be land applied at an agricultural operation, that activity is typically regulated under the *Nutrient Management Act* under a Non-Agricultural Source Material (i.e. NASM) Plan. For more information on NASM Plans visit the Ontario Ministry of Agriculture, Food and Rural Affairs web site at: <http://www.omafra.gov.on.ca/english/nm/nasm.html>.

Will all of the Processed Organic Waste be land applied at a non-agricultural operation (e.g. a mining site, industrial reclamation site, etc.)? *

☐ Yes ☐ No

If no, please note that when Processed Organic Waste is land applied at an agricultural operation, the activity is typically regulated under the Nutrient Management Act and it usually requires a Non-Agricultural Source Material (i.e. NASM) Plan. Do you still want to apply for an ECA application under the EPA for a Processed Organic Waste Land Application site approval? *

☐ Yes ☐ No

Identify the types of Processed Organic Waste that will be land applied at the site: *

An ECA is required for land application of POW if the composted material does **not** meet the criteria set out for Category AA or Category A compost as described in Part II of the Ministry's publication entitled "Ontario Compost Quality Standards", as amended from time to time, originally dated July 25, 2012 available at <https://www.ontario.ca/page/ontario-compost-quality-standards>.

- ☐ Sewage biosolids (processed or otherwise stabilized)
- ☐ Organic food processing wastes (excluding fats, oils and greases)
- ☐ Organic waste from grease traps and interceptors
- ☐ Pulp and paper biosolids
- ☐ Wood ash wastes
- ☐ Composted materials that do **not** meet AA or A compost quality standard
- ☐ Other. Please describe source: *

What state will the Processed Organic Waste be in when it is to be land applied? (choose only one) : *

A material that does not qualify as a solid is considered to be a liquid. Solid means having a dry matter content of 18% or more OR a slump of 150mm or less using the test Method for the Determination of Liquid Waste (slump test) set out in Schedule 9 of O. Reg. 347 made under the *Environmental Protection Act*.

☐ Liquid ☐ Solid ☐ May be both liquid and solid

What is the anticipated beneficial outcome that will result from the proposed land application of Processed Organic Waste at this site (e.g. promote cover crop growth/reduce erosion, improve soil health, create a soil media, reduce infiltration at a contaminated site, etc.)? *

What type of equipment will be used to spread Processed Organic Waste at this site? *

Will the Processed Organic Waste consistently be incorporated within 24 hours of spreading? *

Spreading with incorporation means the mixing of processed organic waste into the soil by tillage generally with a minimum depth of soil disturbance of 10 centimetres.

☐ Yes ☐ No

Will any crops or ground cover be grown in the spreading area? *

☐ Yes ☐ No

If yes, describe the crop/vegetative cover that you plan to grow: *

Will commercial fertilizer or other materials be mixed with the Processed Organic Waste prior to spreading, during spreading, or immediately after land application takes place? *

☐ Yes ☐ No

Provide an estimate of the total quantity of Processed Organic Waste to be spread at the site each year:

Solids (tonnes) *	Liquid (cubic metres) *
-------------------	-------------------------

Provide an estimate of the maximum proposed spreading rate to be used when land applying Processed Organic Waste at the site:

Solids (tonnes/ha) *	Liquid (cubic metres/ha) *
----------------------	----------------------------

Provide an estimate of the maximum depth of Processed Organic Waste that will be land applied at the site:

Solids (centimetres) *	Liquid (centimetres) *
------------------------	------------------------

How often do you expect to spread Processed Organic Waste at this site? Select the answer that best reflects your operation: *

- ☐ Daily (i.e. spreading 5 to 7 days per week)
- ☐ Weekly (spreading most weeks, but less than 5 days per week)
- ☐ Monthly (spreading most months, but only a small number of times in any month)
- ☐ Less than once a month

Identify the time periods when Processed Organic Waste is proposed to be brought to this site and/or spread at the site:

Months of Year	Times of Day	Days of Week
Start Month *	Start Time *	Start Day *
End Month *	End Time *	End Day *

Are there any groundwater monitoring wells located in the vicinity of the proposed spreading area(s)? *

☐ Yes ☐ No

If yes, has groundwater sampling/analysis been completed at these wells? *

☐ Yes ☐ No

Are there any surface water monitoring stations located in the vicinity of the proposed spreading area(s)? *

☐ Yes ☐ No

If yes, has surface water sampling/analysis been completed in the vicinity of the monitoring stations? *

☐ Yes ☐ No

Are there any drinking water wells located within a 500 metre radius of the outer edges of any of the proposed spreading area(s)? *

☐ Yes ☐ No

If yes, please provide the following information for the well located closest to any of the spreading area(s):

Select the type of well: *

☐ Drilled ☐ Dug ☐ Other (specify) * _____

Approximate depth of well (metres): * _____

Approximate distance from spreading area(s) to the nearest well (metres): * _____

Confirm the location of the nearest well in relation to the proposed spreading area(s) (select all that apply) : *

Note that for proposals that include more than one spreading area, the location of the nearest well in relation to the spreading areas may be different. For example, a well could be up-gradient from one spreading area and cross-gradient to a second spreading area.

Down-gradient means in the direction that groundwater flows, similar to "downstream" for surface water.

Cross-gradient means perpendicular to the direction that groundwater flows. Up-gradient means opposite to the direction that groundwater flows, similar to "upstream" for surface water.

Inferred groundwater flow direction can be based on in-situ water well level measurements, water well records, etc. Applicants are required to submit a supplemental document that explains how the inferred groundwater flow direction was determined. This document should be included with this application.

☐ Well is down-gradient of the spreading area(s)

☐ Well is cross-gradient of the spreading area(s)

☐ Well is up-gradient of the spreading area(s)

Describe how the inferred (i.e. known or assumed) groundwater flow direction in the vicinity of the site was determined: *

To the best of your knowledge is there a catch basin or tile drainage inlet anywhere within the proposed spreading area(s)? *

Tile inlets can include open surface tile intakes, perforated inlet risers (e.g. hickenbottoms), rock inlets or other infrastructure for collecting surface run-off and directing it into a tile drainage system. Tile drains are a system of porous or perforated pipes that are installed below the ground surface. They are designed to collect and remove excess water from soil beneath its surface. Land application of processed organic

waste on tile drained areas is not recommended.

☐ Yes ☐ No

Will Processed Organic Waste be land applied on the same day it arrives at the site? *

☐ Yes ☐ No

If no,

Will the duration of storage exceed 14 days? *

☐ Yes ☐ No

Will the storage include liquid Processed Organic Waste? *

☐ Yes ☐ No

Describe the proposed type of storage: *

✓ Completion Status (5.4.6 Processed Organic Waste (Biosolids) Land Application Site)

✓ Completion Status (5.4 Waste Disposal Site)

5.5 Waste Management Systems (Except Mobile Waste Processing)

Fill this in only if you are applying for an ECA for a project type that includes a Waste Management System in Section 27 of the EPA. Only provide information for the proposed activity for which you are seeking approval.

5.5.1 Fleet List (all vehicles and equipment to be used in the operation of the Waste Management System)

You must identify all vehicles and equipment to be used in the operation of the Waste Management System. This list of vehicles and equipment is referred to as a "fleet list".

If there is not enough space provided on this form, attach a separate list that includes all of the required vehicle information such as: year, make, model, vehicle identification number, licence plate number, province/state.

Year *	Make *	Model *	Vehicle Identification Number (VIN) *	License Plate Number *	Province/State *

Separate list attached?

☐ Yes ☐ No

✓ Completion Status (5.5.1 Fleet List)

5.5.2 Vehicle Information

Provide details on ownership of vehicles and/or equipment to be used in operation of the Waste Management System.

If you do not own the vehicles, you must attach a photocopy of the vehicle permit proving ownership, as well as any other documents about the ownership arrangements, for example, leasing agreements.

You must also provide a copy of your Certificate of Insurance confirming that all of the vehicles owned and operated as part of the Waste Management System are insured under a general vehicle liability policy for a minimum of one million dollars (\$1,000,000.00) and that you are the holder of this insurance.

Are all the vehicles to be used owned by the applicant? *

☐ Yes ☐ No

If no, please include additional information about ownership arrangements for each vehicle not owned by the applicant.

Has a minimum of \$1,000,000.00 liability insurance been obtained for all vehicles for which it is required? *

☐ Yes ☐ No

Describe any additional insurances that are held (for example, environmental impairment liability insurance).



Completion Status (5.5.2 Vehicle Information)

5.5.3 General Waste Management System

Do not fill out this section if your project is for hauled sewage or a soil conditioner Waste Management System.

Provide details regarding the type of waste to be transported by the system: non-subject waste (municipal solid waste or other liquid waste) and subject waste (hazardous/liquid industrial) for final disposal at approved disposal sites (not for land applications). **Do not** use this section with regard to the following: processed organic waste destined for application on non-agricultural land and non-agricultural source material destined for application on agricultural land.

Use the drop-down menus to specify the class codes for hazardous/liquid industrial waste. If you are not using the electronic form, you can find class codes at: "New Ontario Waste Classes" .

If necessary, attach a separate list of Class Codes.

If you choose a disposal site in Ontario, it must have a valid ECA allowing for the particular type(s) of waste to be accepted for disposal at the site.

Note** - Do not fill out this section if your project is for a hauled sewage waste management system or if it is for a waste management system that engages in the land application of processed organic waste (aka biosolids/NASM/soil conditioner). Please proceed to section 5.5.4 or 5.5.5 instead.

Type(s) of Waste to be Transported by the General Waste Management System (select all that apply) *

Subject:

☐ Hazardous Waste

☐ Liquid Industrial Waste

Non-subject:

☐ Municipal (non-hazardous)

☐ Other Liquid Waste

Non-subject Categories to be Transported by the General Waste Management System (select all that apply) *

☐ Blue Box Materials

☐ Commercial

☐ Leaf/Yard Waste

☐ Domestic Sources

☐ Non-Hazardous Solid Industrial

☐ Wood Waste

- ☐ Spill Cleanup Material
☐ Tires
☐ Waste Wash Water
☐ Waste from Food Processing/ Preparation Operations
☐ Processed Organics (not for land application)

☐ Contaminated Soil
☐ Asbestos Waste in Bulk
☐ Grease Trap Waste
☐ Dewatered Catch Basin Clean-out Material
☐ Other (specify) * _____

Subject Waste Categories to be Transported by the General Waste Management System

Hazardous Waste / Liquid Industrial Waste

Class Code *	Class Code	Class Code	Class Code	Class Code

Separate list attached?

- ☐ Yes
 ☐ No
- ☐ All drivers are/will be trained in accordance with O. Reg. 347 and all pertinent environmental legislation.
- ☐ Each vehicle used to transport a specific subject waste class is suitable for that waste transportation in order to protect the health and safety of the public and the natural environment.

Note: For transporters of pathological waste and PCBs (waste classes 243 and 312) Operations Manual and Driver Training Manual must also be attached and Financial Assurance must be provided.

General Waste Management System - Disposal Site Information

What is the Final Destination of Waste to be Transported by the General Waste Management System? (select all that apply) *

- ☐ A disposal site in Ontario approved by the Ministry of the Environment
- ☐ Disposal sites outside of Ontario approved by another regulatory agency

List the destination province(s)/state(s)

Province/State *	Province/State	Province/State	Province/State

✓ Completion Status (5.5.3 General Waste Management System)

5.5.4 Waste Management System – Processed Organic Waste/Non-Agricultural Source Material/Soil Conditioner for transport to an agricultural or non-agricultural (where it will be land applied for a beneficial use)

Provide details regarding the system you will be using to transport any of the following materials where those materials are destined to be land applied for a beneficial use: processed organic waste (POW), Non-Agricultural Source Material (NASM) or other waste derived soil conditioners:

- Processed organic waste (POW) is defined in regulation 347 under the *Environmental Protection Act* as waste that is predominantly organic and has been treated by aerobic or anaerobic digestion or other means of stabilization. POWs (example, sewage biosolids) can be applied to land to improve existing soil quality and/or provide a growth media to support the establishment of vegetative cover.
- NASM is defined in O. Reg. 267/03 under the Nutrient Management Act (NMA). It includes a variety of organic and inorganic waste materials that originate from a non-agricultural source that can be land applied as a nutrient at an agricultural operation in accordance to requirements under the NMA.
- Soil conditioners can include both organic and inorganic waste materials that can be land applied to improve soil quality, which can in turn promote the growth of crops and other vegetation. Materials that meet the definition of POW and NASM may also be considered soil conditioners.

If the materials being transported by the waste management system are **not** destined to be land applied for a beneficial use in either an agricultural or non-agricultural setting, then applicants should **not** complete this section of the form. Instead, these applicants should use section 5.5.3 of the form to provide details of their waste management system. When completing section 5.5.3 of the form applicants should indicate they are transporting one of the following categories of waste: Processed Organics (not for land application), Municipal Solid Waste or Other Liquid Waste.

Identify the sources of Processed Organic Waste (POW) that will be collected and transported by this waste management system (select all that apply): *

- ☐ Sewage biosolids (processed or otherwise stabilized)
- ☐ Organic food processing wastes (excluding fats, oils and greases)
- ☐ Pulp and paper biosolids
- ☐ Wood ash wastes
- ☐ Composted materials that do NOT meet AA or A quality standard
- ☐ Other. Please describe type of source: * _____

The POW collected and transported by this waste management system will be (choose only one): *

- ☐ Liquid ☐ Solid ☐ May be both liquid and solid

Estimate the total quantity of POW that will be handled by the waste management system on an annual basis: * _____ Unit *

Please describe any POW storage facilities that are located at your main office/truck yard:

Type of storage (e.g. tank, lagoon, etc.): * _____

Size of storage (cubic metres): * _____

Will this waste management system be involved in the land application of POW at agricultural operations? *

- ☐ Yes ☐ No

Will this waste management system be involved in the land application of POW at non-agricultural operations? *

- ☐ Yes ☐ No

✓ Completion Status (5.5.4 Waste Management System)

5.5.5 Hauled Sewage (Septage) Waste Management System

Provide details about your system for transporting hauled sewage (septage).

Identify the type(s) of hauled sewage to be transported by the Hauled Sewage Waste Management System.

Identify the type, make and model of all equipment used and describe how it is used, or will be used, for spreading of hauled sewage (septage) on land.

What type of hauled sewage waste (septage) materials will be transported by this waste management system? Select all that apply: *

- ☐ Hauled sewage pumped from holding tanks
- ☐ Hauled sewage pumped from septic tanks
- ☐ Portable toilet waste
- ☐ Other. Please describe type of source: * _____

Identify the types of destinations that hauled sewage is proposed to be transported to by this waste management system. Select all that apply: *

- ☐ A land disposal site (e.g. spreading site, dewatering trench, exfiltration lagoon)
- ☐ A temporary storage site (e.g. stabilization pond or lagoon)
- ☐ Municipal sewage works that receives and treats hauled sewage and/or portable toilet waste
- ☐ Private sewage works that receives and treats hauled sewage and/or portable toilet waste
- ☐ Other. Please describe type of site: * _____

List the Environmental Compliance Approval (ECA) Number(s) of all disposal and/or storage site(s) approved by the Ministry of the Environment that would receive the hauled sewage associated with this waste management system.

ECA Number *	Approval or Application Date (yyyy/mm/dd) *	Expiry/Cessation Date (if applicable) (yyyy/mm/dd)

Does or will this system include in-transit storage at your truck yard? *

In-transit storage is the temporary storage of hauled sewage (septage) during transportation prior to final disposal at a sewage treatment plant, spreading field or other waste disposal site. This does not include storage of hauled sewage over longer periods, such as winter storage.

In-transit storage must be at the truck yard that is part of the waste management system and must be for the exclusive use of waste hauled in trucks that form part of that system.

A storage facility used only for in-transit storage must be completely emptied every two weeks.

Prefabricated tanks for in-transit storage must conform to requirements for a Class 5 Sewage System under the Ontario Building Code or CAN/CSA B66-05. In-transit storage facilities built on-site must be certified by a professional engineer.

☐ Yes ☐ No

If yes:

a) What is the maximum duration of storage? (Maximum period of in-transit storage should not exceed 14 days): *

b) Please specify the type of in-transit storage you are proposing to use: *

☐ Pre-fabricated tank

Is the storage tank designed and constructed in accordance with a Class 5 Sewage System under the Ontario Building Code or CAN/CSA B66-05? *

☐ Yes ☐ No

If no, please provide a copy of the design of the storage tank signed and dated by a professional engineer.

☐ Other

Please describe the type of storage (note, any other in-transit storage must have a maximum capacity of 100,000L and be certified by a Professional Engineer): *

Does or will this system include in-transit processing? *

In-transit processing and treatment means processing of hauled sewage (septage) during transportation before final disposal at a spreading field or other waste disposal site, or before being used as a nutrient at a land application site established under the EPA or the *Nutrient Management Act*.

In-transit processing and treatment (such as aerobic or anaerobic digestion, dewatering and lime stabilization or other means of stabilization) will be allowed to take place within the approved waste management system.

☐ Yes ☐ No

If yes:

a) Location of in-transit processing: *

☐ In Vehicle ☐ In-transit Storage Tank

b) Describe the method of in-transit processing: *

Does or will this system use barge/boat to transport hauled sewage (septage)? *

You must indicate whether you are, or will be, using a barge/boat to transport hauled sewage (septage).

To store a barge/boat used to transport hauled sewage you need permission from the owner of the storage place.

If a barge/boat used to transport hauled sewage has an engine of 10 hp or more, you need a commercial vessel licence from Transport Canada.

☐ Yes ☐ No

If yes:

a) Has a minimum of \$1,000,000.00 liability insurance been obtained for the barge/boat for which it is required? *

☐ Yes ☐ No

b) Does the barge/boat have an engine of 10 horsepower (hp) or more, for which a commercial vessel license is required from Transport Canada? *

☐ Yes ☐ No

If yes, please include a copy of the commercial vessel license.

Note: For in-transit storage or processing the applicant must include with the application the consent of the landowner, if the landowner is different than the applicant. A financial assurance estimate must be provided by applicants using in-transit storage or using in-transit processing where processing is conducted in the in-transit storage tanks.

✓ Completion Status (5.5.5 Hauled Sewage (Septage) Waste Management System)

✓ Completion Status (5.5 Waste Management Systems (Except Mobile Waste Processing))

5.6 Waste Management System - Mobile Waste Processing

Provide information in this section only if you are applying for an ECA to cover activities falling under Section 27 of the EPA related to Waste Management Systems - Mobile Waste Processing. Only provide information for the proposed activity for which you are seeking approval.

5.6.1 Mobile Waste Management System Process and Equipment Description

Financial Assurance is required for a private sector waste management system mobile waste processing ECA for the implementation of remedial measures, if necessary, in the event of a spill, fire or waste abandonment.

In column 2 fill in the "Number of Units" for each type of waste to be processed. If a unit will be used to process multiple types of waste, record that unit under "Multiple Types of Waste from the Categories Above".

If you are using the electronic version of the form, the "Financial Assurance Required" in column 4 will automatically fill in, as will the Total Financial Assurance amount. If you are not using the electronic version, multiply the number in column 2 by the number in column 3 and insert that in column 4 and then add all the items in column 4 to determine the Total Financial Assurance amount.

The Total Financial Assurance does not include any amount that you may have previously submitted to the Ministry. The maximum Financial Assurance is based on 10 units times the amount per unit (in other words, the maximum is \$200,000). For more information on financial assurance, see: "Guideline F-15 Financial Assurance Guideline".

Use the drop-down menus to specify the class codes for hazardous/liquid industrial waste. If you are not using the electronic version of the form, you can find the class codes in: "New Ontario Waste Classes".

Type(s) of Waste to be Processed (select all that apply) *

Subject:

☐ Hazardous Waste

☐ Liquid Industrial Waste

Non-subject:

☐ Municipal (non-hazardous)

☐ Other Liquid Waste

Type of Waste to be Processed by the Unit(s)	Number of Units *	Financial Assurance (per unit)	Financial Assurance Required
Non-hazardous Solid Waste		\$5,000	
Hazardous Waste		\$20,000	
Liquid Industrial Waste		\$20,000	
Other Liquid Waste		\$20,000	
Multiple Types of Waste from the Categories Above		\$20,000	

Total Financial Assurance

Municipal (non-hazardous) Waste Categories to be Processed (select all that apply) *

☐ Contaminated Soil at Cleanup Site

☐ Wood Waste

☐ Construction and Demolition Waste

☐ Asbestos Waste

☐ Tires

☐ Domestic Waste

☐ Other (specify) *

Other Liquid Waste Categories to be Processed (select all that apply) *

☐ Hauled Sewage

☐ Waste from Food Processing/Preparation Operations

☐ Processed Organic

☐ Other (specify) *

Hazardous / Liquid Industrial Waste Types to be Processed

Class Code *	Class Code	Class Code	Class Code	Class Code

✓ Completion Status (5.6.1 Mobile Waste Management System Process and Equipment Description)

5.6.2 Equipment Information - Please attach a separate list if more space is required.

Equipment List

Unit No. *	Unit Type *	Process Description *	Equipment Type *	Make *	Model *	Serial Number *	Equipment Capacity (including unit of measurement) *

Separate list attached?

☐ Yes ☐ No

✓ Completion Status (5.6.2 Equipment Information)

✓ Completion Status (5.6 Waste Management System - Mobile Waste Processing)

5.7 Cleanup of Contaminated Sites

This section collects information about the type of cleanup of contaminated sites you are including with regard to your proposed activity. Only provide information for the proposed activity for which you are seeking approval.

Type of Cleanup *

☐ In-situ ☐ Ex-situ ☐ Both

Contaminated media to be treated: *

☐ Groundwater ☐ Surface water ☐ Sediment ☐ Soil

Waste Type *

Subject:

☐ Hazardous Waste
☐ Liquid Industrial Waste

Non-subject:

☐ Municipal (non-hazardous)
☐ Other Liquid Waste

Type of discharge

☐ Air ☐ Groundwater ☐ Storm or sanitary ☐ Surface water
☐ Noise

✓ Completion Status (5.7 Cleanup of Contaminated Sites)

6. Supporting Documentation and Technical Requirements

6.1 General

This is a list of all the supporting documents and technical requirements that you need for your application. All applicants must fill out section 6.1.

Fill out the applicable section(s) from 6.2 to 6.9. Note, if the section is not applicable to your project type, do not fill it out.

In each section, for each mandatory document, indicate whether it is attached or not. If you have chosen not to attach a mandatory document, explain the reason why.

If you consider a document confidential, you must select the confidential checkbox and provide reasons supporting your claim to confidentiality in the "Explanation for confidentiality" attachment.

Note**: Information contained in this application form (excluding Section 8, payment information) is not considered confidential and will be made available to the public upon request. If the applicant is of the view that any part of the supporting information to this application is confidential on the grounds that such information constitutes a trade secret or scientific, technical, commercial, financial or labour relations information, please make this known in the table below by selecting the appropriate checkbox and providing the explanation for confidentiality in Section 6.10. The Ministry may request a redacted copy of this document for public viewing. Although the applicant may identify the supporting information as confidential, the information is subject to the FIPPA and EBR. If you do not claim confidentiality at the time of submitting the information (i.e. select the appropriate checkbox in the table below), the Ministry may make the information available to the public without further notice to the applicant.

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Proof of legal name	Optional	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Not required	<input type="checkbox"/>
Enhanced EBR description	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Provincial Officer Notice	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Inspection Report	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Detailed project and process description	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Pre-application Consultation Record	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Legal Survey(s)	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Site Plan(s)	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Scaled area location plan(s) with geo-referencing points identified	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Documentation in support of EBR Exception	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Proof of Compliance with EAA Requirements	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Proof of Consultation/Notification	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Financial Assurance Estimate	Optional	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Not required (owned by the Township)	<input type="checkbox"/>
Name, address and consent of land/ site owner for the installation and operation of the proposed activity or storage location of equipment or vehicle	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Name, address and phone number of the Operating Authority	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Copy of NEPDA Permit	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Copy/Proof of Municipal Planning Approval (ORMCA, general)	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Municipal Zoning Confirmation Letter	Required	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Zoning Plan attached	<input type="checkbox"/>
Zoning map	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Conservation Authority Clearance	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Director's approval for Policy 2 Deviation	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Application Fee	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Other (please describe)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

✓ Completion Status (6.1 General)

6.2 Air

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Emission Summary and Dispersion Modelling (ESDM) Report prepared in accordance with s. 22 and of O. Reg. 419/05 (including signed checklist)	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Electronic copy of the Dispersion Modelling input and output files prepared in accordance with s. 26 of O. Reg. 419/05	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Supporting Information for a Maximum Ground Level Concentration Acceptability Request for Compounds with no Ministry POI Limit - Supplement to Application for Approval, EPA S. 9	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Copies of forms requesting O. Reg. 419/05 instruments and supporting documentation	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Other (please describe)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

✓ Completion Status (6.2 Air)

6.3 Noise and Vibration

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Primary Noise Screening	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Secondary Noise Screening	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Acoustic Assessment Report including signed checklist (AAR)	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Vibration Assessment Report	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Noise Abatement Action Plan	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Other (please describe)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>



Completion Status (6.3 Noise and Vibration)

6.4 Sewage Works

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Signed Municipal Responsibility Agreement	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Detailed description of the proposed activities/works	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Notice of Completion for the Environmental Study Report (ESR)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Design Brief	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Preliminary Engineering Report	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Final Plans	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Engineering Drawings and Specifications	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Sewage quantity and quality characteristics	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Stormwater Management Report	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Stormwater Management Plan	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Hydrogeological Assessment with proof of concurrence from the Ministry's Regional technical support section	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Environmental Impact Analysis	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Final effluent criteria accepted with proof of concurrence from the Ministry's Regional Technical Support Section	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Sewage Works Operational Flexibility Requirements - Engineer's Report	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Sewage Works Operational Flexibility Requirements - Declarations	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Pipe Design Data Form	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Other (please describe)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

6.5 Waste Disposal Sites

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Design and Operations Report	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Stormwater Management Report	Optional	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Hydrogeological Assessment with proof of concurrence from the Ministry's Regional technical support section	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Assessment of Physical and Water Use Conditions	Optional	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Waste Operational Flexibility Requirements - Engineer's Report	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Waste Operational Flexibility Requirements - Declarations	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Copy of notification to adjacent landowners	Required	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Other (please describe) Copy of valid Land Use Permit for CAZ 1	Optional	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

Hauled Sewage Disposal Sites - Additional Supporting Documentation

For more information on requirements for supporting documentation, please refer to Part C, Section 9 of the Guide to Applying for an Environmental Compliance Approval at www.ontario.ca/documents/guide-applying-environmental-compliance-approval-0

Soil Evaluation / Analysis	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Local Groundwater Conditions Report (e.g. well water records, data to support inferred groundwater flow, groundwater monitoring data, hydrogeological assessment with proof of concurrence from the Ministry's regional technical support section)	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Surface Water Assessment Report (e.g. surface water monitoring data, description of aquatic habitat, surface water users, existing stressors, description of proposed measures to minimize risks)	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Map showing location of the site in relation to local features	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

Processed Organic Waste (Biosolids) Land Application Sites - Additional Supporting Documentation

For more information on requirements for supporting documentation, please refer to Part C, Section 10 of the Guide to Applying for an Environmental Compliance Approval at www.ontario.ca/documents/guide-applying-environmental-compliance-approval-0.

Soil Evaluation / Analysis	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Processed Organic Waste Analysis	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Overview of Beneficial Use and Risk Management Measures	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Map showing location of the site in relation to local features	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>



Completion Status (6.5 Waste Disposal Sites)

6.6 Waste Management Systems

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Proof of vehicle and/or equipment ownerships	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Complete Fleet List (list of all vehicles, trailers and equipment used)	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Copy of the Liability Insurance for all vehicles for which insurance is required	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Copy of the storage tank design	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Copy of commercial vessel licence	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Description of the physical location where the vehicles transporting biomedical waste are being disinfected	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Drivers Training Manual (for PCB/ Biomedical Waste)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
A copy of the applicant's Operation Plan including detailed packaging and biomedical waste handling methods	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Contingency and Emergency Procedures Plan (for PCB/ Biomedical Waste/Hauled Sewage (Septage))	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Other (please describe)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>



Completion Status (6.6 Waste Management Systems)

6.7 Mobile Waste Processing ☐ N/A

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Design and Operations Report - Mobile Waste Processing of General Waste	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Design and Operations Report - Mobile Waste Processing of Liquid Waste	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Other (please describe)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

✓ Completion Status (6.7 Mobile Waste Processing)

6.8 Cleanup of Contaminated Sites ☐ N/A

Attachment	Required, Optional or N/A	Attached?	If no, provide explanation, (include referenced attachment if more space is required for rationale)	Confidential/ Not Suitable for Public Viewing
Design Report for Cleanup of Contaminated Sites	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>
Other (please describe)	Optional	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

✓ Completion Status (6.8 Cleanup of Contaminated Sites)

6.9 Other Attachments ☐ N/A

Title	Reference	Confidential/ Not Suitable for Public Viewing
		<input type="checkbox"/>

Is there an attachment of an additional list of attachments?

☐ Yes ☒ No

If there is not enough space to list all of the attachments included in this application package, please include an additional listing of these attachments.

✓ Completion Status (6.9 Other Attachments)

6.10 Confidentiality / Not Suitable for Public Viewing

Note** Although the applicant may identify the supporting information as confidential, the information is subject to the FIPPA and EBR.

For each attachment selected in tables 6.1 to 6.9 as having confidential information, provide an explanation for confidentiality / why the attachment(s), or information within the attachment(s) is not suitable for public viewing.

Please provide a redacted copy of this document(s) that can be used for public viewing.

Attachment containing confidential information (i.e. Name of document)	Explanation for Confidentiality	Redacted Copy Attached?	Explanation is Confidential/Not Suitable for Public Viewing
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>

✓ Completion Status (6.10 Confidentiality / Not Suitable for Public Viewing)

Attachments

File Name	Size (MB)	Selected File
		<input type="checkbox"/>
Total		

Please note: The collection of personal information in this application is necessary to administer the Ministry's approvals program, which is authorized pursuant to the *Environmental Protection Act* and the *Ontario Water Resources Act*. The personal information collected in this application will be used to administer the program, including for the purposes of the Ministry's compliance and enforcement activities under the aforementioned acts, and for the purposes of making information in respect of Environmental Compliance Approvals available to the public with the exception of payment information. Questions about the collection of the information can be directed to a Client Service Representative, Client Services and Permissions Branch, 135 St. Clair Avenue West, 1st Floor, Toronto ON M4V 1P5; Telephone outside Toronto 1-800-461-6290 or in Toronto 416-314-8001 or Fax 416-314-8452.

7. Authorization

7.1 Statement of the Applicant

This statement certifies that the information provided in this application by the applicant is accurate and complete and that the information the applicant provided to the technical contact is accurate and complete.

The person signing this must have the authority to bind the applicant as per the ECA Application Regulation (O. Reg. 255/11).

If the person signing is not a sole proprietor, written authorization from the applicant must be included with the application. For example, if the person signing is an employee of a corporation, written authorisation from the corporation (typically from an officer of the corporation) must be provided.

If the applicant is a partnership, the person signing must be authorised by the other partners to sign on the partnership's behalf.

I am authorized to prepare and submit this application and to make this certification. I have reviewed the complete application and I have made all inquiries that are necessary to declare to the best of my knowledge, information and belief:

- The information contained in this application is complete and accurate.
- The Technical Contact(s) identified in this application has/have been authorized to prepare certain technical material, and act on behalf of the applicant to discuss this application with the Ministry of the Environment, Conservation and Parks and to provide additional information about this application to the Ministry on request.
- The information provided to the Technical Contact(s) in relation to this application is complete and accurate.

☒ By checking this each of the undersigned acknowledge that in providing their name on the applicable line below in electronic form will constitute a signature for the purposes of the *Electronic Commerce Act, 2000*, S.O. 2000, c. 17. *

Name of Signing Authority (Please print) *		
Danielle Ward		
Title *		
Director of Environmental Services		
Telephone Number	Mobile Number	Fax Number
613-774-2105 ext.		
Email Address		
dward@northdundas.com		
Signature (hard copy submission must be signed)		Date (yyyy/mm/dd) *
		2024/09/24

✓ Completion Status (7.1 Statement of the Applicant)

7.2 Statement of the Municipality ☐ N/A

This declaration is required from the municipality where the Sewage Works are, or will be, located and should be signed by a municipal official authorized to sign on behalf of the municipality.

This declaration is **only** required:

- (i) for private Sewage Works, or
- (ii) if the applicant is a municipality and the Sewage Works are, or will be, located in some other municipality.

This declaration is required to establish the municipality's general concurrence with the proposal, to ensure that the proposed works would not contravene any municipal by-laws or other requirements. It does not, however, imply technical approval or acceptance of responsibility for the works.

If the proposed works are, or will be, connected to an existing sewage collection, treatment or disposal system, this municipal concurrence means the municipality has satisfied itself that the proposed works would be adequately served by the municipal system and would not compromise the existing municipal disposal system's ability to comply with the effluent quantity and quality requirements specified in the existing ECA for the system.

I, the undersigned hereby declare on behalf of the Municipality, that the Municipality has no objection to the construction of the works in the Municipality.

☐ By checking this each of the undersigned acknowledge that in providing their name on the applicable line below in electronic form will constitute a signature for the purposes of the *Electronic Commerce Act, 2000*, S.O. 2000, c. 17. *

Name (Please print) *		
Title *	Name of Municipality *	
Signature (hard copy submission must be signed)		Date (yyyy/mm/dd) *

☒ Completion Status (7.2 Statement of the Municipality)

7.3 Statement of Technical Contacts

Technical Contact 1

I have been authorized by the applicant to prepare the technical materials for the area(s) of responsibility identified in section 2.6 that are included in the application. I have reviewed those technical materials and I have made all inquiries that are necessary to declare to the best of my knowledge, information and belief:

- The technical materials contained in this application in respect of the area(s) of responsibility identified in section 2.6 are complete and accurate.
- I have the relevant education and experience necessary to provide this certification.

☒ By checking this each of the undersigned acknowledge that in providing their name on the applicable line below in electronic form will constitute a signature for the purposes of the *Electronic Commerce Act, 2000*, S.O. 2000, c. 17. *

Name of Technical Contact (Please print) *	
Yannick Marcerou, M.Eng., P.Eng.	
Signature (hard copy submission must be signed)	Date (yyyy/mm/dd) *
	2024/08/29

Technical Contact 2

I have been authorized by the applicant to prepare the technical materials for the area(s) of responsibility identified in section 2.6 that are included in the application. I have reviewed those technical materials and I have made all inquiries that are necessary to declare to the best of my knowledge, information and belief:

- The technical materials contained in this application in respect of the area(s) of responsibility identified in section 2.6 are complete and accurate.
- I have the relevant education and experience necessary to provide this certification.

☒ By checking this each of the undersigned acknowledge that in providing their name on the applicable line below in electronic form will constitute a signature for the purposes of the *Electronic Commerce Act, 2000*, S.O. 2000, c. 17. *

Name of Technical Contact (Please print) *	
Paul Smolkin, P.Eng.	
Signature (hard copy submission must be signed)	Date (yyyy/mm/dd) *
	2024/08/29

✓ Completion Status (7.3 Statement of Technical Contacts)

8. Payment Information - Application for an Environmental Compliance Approval

This is information related to payment of the application fee (do not include financial assurance here).

Do not send payment information to the District Office. Do not send payment information to the municipality, except for Transfer of Review Program Applications.

Payment Options *

The information collected in this section of the form is considered confidential and will only be used to process the application fee. All fees should be paid in Canadian funds.

☐ **Pay online** (under \$10,000)

- Ensure the application form is complete before paying your application fee online.
- The application form and supporting documents (attached in Section 6) will be automatically emailed (up to 13 MB of data) to the Client Services and Permissions Branch after payment has been confirmed.
- If your submission is greater than 13 MB, do not attach the supporting documents, send us a link to download your files by emailing ECA.submission@ontario.ca.

☐ **Credit card payment by mail** (address below) **or facsimile** at 416-314-8452 (under \$10,000)

Type of Credit Card *	Credit Card Number *	Expiry Date (mm/yy) *
<input type="checkbox"/> VISA <input type="checkbox"/> MasterCard		

Name on Credit Card (please print) *

Credit Card Holder's Company Name *

Card Holder's Signature

Date (yyyy/mm/dd)

- Email the application package to ECA.submission@ontario.ca. Wait for the Ministry to provide the reference number, then complete the Application Summary Page below (include the reference number), and mail or fax it to the Client Services and permissions Branch.
- To protect credit card information, do not submit this page containing payment information via e-mail. **Applications containing credit card information that are submitted via e-mail will not be processed and will be destroyed.**

☐ **Certified cheque** (payable to the Minister of Finance)

☐ **Money order** (payable to the Minister of Finance)

If payment by **certified cheque or money order**, email the application package to ECA.submission@ontario.ca. Wait for the Ministry to provide the reference number, then complete the Application Summary Page below (include the reference number), staple the cheque / money order to the page, and mail it to the Client Services and Permissions Branch.

Mailing Address

Client Services and Permissions Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Ave W, 1st Floor
Toronto ON M4V 1P5

If this form has been completed by hand, the fee calculations must be completed and attached separately. The supplemental fee calculations do not need to be included if this form has been completed electronically.

If this form has been completed electronically, the fees for this application have been calculated based on the information provided. The Ministry may require additional information during the review of the application that could impact the total fee required.

✓ Completion Status (8 Payment Information)

[illegible]

Application Summary

Reference Number	Payment Received (\$)	Date (yyyy/mm/dd)	Initials

Applicant Name

Township of North Dundas

Project Name

Boyne Road Landfill

Project Description Executive Summary

The Boyne Road landfill (the Site) is owned and operated by the Township of North Dundas. The Site has been operating as a licensed landfill facility since 1965 and is operating under Environmental Compliance Approval (ECA) No. A482101 issued for the development and operation of an 8.1 hectare waste disposal site. The Site is currently licensed for the disposal of domestic, commercial and industrial non-hazardous solid waste and utilizes approximately 16,000 cubic metres per year of airspace. The Site is open for operation from 8:00 to 16:00 (plus one hour before for site preparations and one hour after to complete placement of daily cover), Monday through Friday year round, and from 8:00 to 12:00 on Saturdays (May through November, and only one Saturday a month from November to May). The Site serves the Township of North Dundas (which includes the Village of Chesterville, the Village of Winchester, the former Township of Winchester, and the former Township of Mountain).

The purpose of this amendment is to expand the landfill horizontally to the south of the existing waste footprint, adding 3.8 hectares to the approved waste footprint, and vertically to provide sufficient capacity for disposal of residual (after diversion) waste to extend the landfill lifespan for a 25-year planning period. Additional buffer land to the east and southeast of the current waste footprint is proposed to be added to the landfill property. The proposed expansion includes a stormwater management system for the expanded landfill to control quantity and quality of clean runoff water from the final cover. Finally, improvements for the section of Volks Municipal Drain roadside ditch along the north side of Boyne Road opposite the landfill site frontage are proposed with a lined ditch design.

Supplemental Application Information

In addition to the copies sent to the Director of the MECP Client Services and Permissions Branch, an additional copy of this application form and supporting documentation has been sent to the Ministry Area Office in Cornwall. Pre-application consultation: a virtual meeting on June 19, 2023 between the Township, WSP, representatives of the MECP Cornwall Area Office and Permissions Branch. A separate meeting was held on June 29, 2023 with representatives of the MECP Technical Support Section (TSS). Subsequent correspondence with the TSS and written concurrence from the MECP District Office is provided in Appendix B of the Design and Operations Report.

The following attachments have been included to support this application:

Attachment 1 - Notice of Approval, EA File No.: 03-08-02 (18056)

Attachment 2 - Design and Operations Report

Attachment 3 - Zoning Map

Attachment 4 - Neighbour and Indigenous Communities Notification Letter

Attachment 5 - MNR's Land Use Permit

Application Status

This page is a checklist of the sections of the Application Form.

Use this section as a final checklist before submission.

If you complete the form electronically, this section will automatically fill in.

Section	Completed?			
1. Application Information	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
2. Project Information	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
3. Regulatory Requirements	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
4. Site Information	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5. Facility Information	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
6. Supporting Documentation	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
7. Authorization	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
8. Payment Information	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

Fee Summary

Activity	Amount (\$)
Administrative Processing	\$200.00
Review of EPA s. 9 activities	\$0.00
Review of EPA s. 27 activities	\$1,200.00
Review of OWRA s. 53 activities	\$0.00
Total Fee	\$1,400.00

The Ministry may request additional fees upon review of this application.

If this form is submitted in print version only and the smart calculation feature is not used, please attach the fee calculation separately.

Attachment 1
EA Notice

ENVIRONMENTAL ASSESSMENT ACT

SECTION 17.15

NOTICE OF APPROVAL TO PROCEED WITH A PART II.3 PROJECT

RE: Environmental Assessment of the Township of North Dundas Waste Management Plan

Proponent: Township of North Dundas

EA File No.: 03-08-02 (18056)

Part II.3 of the Act establishes the requirements, authority, and process for preparing, submitting, and deciding an application for approval to proceed with a Part II.3 project under the Act. Part IV of O. Reg. 50/24 under the Act designates certain waste management projects as Part II.3 projects, including the Project.

The proponent having submitted the application for approval to proceed with the Project under Part II of the Act and Part II of the Act having been subsequently revoked, pursuant to section 5 of O. Reg. 53/24 under the Act the application is deemed to have been submitted under Part II.3 of the Act.

An application consists of a proposed terms of reference and environmental assessment. In respect of the Project, the proposed *Terms of Reference, Environmental Assessment of the Township of North Dundas Waste Management Plan* was approved by the minister on July 1, 2020. The proponent submitted its environmental assessment on February 2, 2023, for a decision on the application.

A seven-week comment period followed the submission of the environmental assessment to the ministry, during which time any person could submit comments about the environmental assessment and the Project.

The ministry review of the environmental assessment was completed on June 27, 2023, and notice was provided in accordance with the Act. The ministry review concluded that the environmental assessment was prepared in accordance with the approved terms of reference and the Act and contained sufficient information to assess the potential environmental effects of the Project. There were no outstanding issues related to the environmental assessment. The public, government agencies and Indigenous communities had an opportunity to comment on the environmental assessment, the Project, and the ministry review during the five-week comment period.

The proponent and ministry provided identified Indigenous communities with opportunities for consultation with respect to the terms of reference, the environmental assessment and the ministry review.

All comments submitted during the statutory comment periods have been considered. No requests for a hearing by the Ontario Land Tribunal were submitted and I am not aware of any outstanding issues with respect to the application which suggest that a hearing should otherwise be required.

Having considered the purpose of the Act, the approved terms of reference, the environmental assessment, the ministry review of the environmental assessment and submissions received, I am giving approval to proceed with the Project, subject to the conditions set out below.

REASONS FOR DECISION

My reasons for giving approval are:

- (1) The proponent has complied with the requirements of the Act.
- (2) The environmental assessment has been prepared in accordance with the approved terms of reference.
- (3) Taking into consideration the proponent's environmental assessment and the ministry review, the proponent's conclusion that the advantages of the Project outweigh its disadvantages appears to be valid. The Project would address the identified problem and would have the least potential for adverse effects on the natural environment as well as having the lowest capital cost for implementation.
- (4) No other more beneficial alternative method of implementing the Project was identified.
- (5) The proponent has demonstrated that the environmental effects of the Project can be appropriately avoided, managed and mitigated.
- (6) Taken together, the proponent's environmental assessment, the ministry review and the conditions of approval, approval of the Project would be consistent with the purpose of the Act.
- (7) There are no outstanding concerns raised by government agencies, the public or Indigenous communities.

CONDITIONS OF APPROVAL

Approval is given subject to the following conditions:

1. Definitions

1.1 For the purposes of these conditions:

"Act" means the *Environmental Assessment Act*

"Director" means the Director of the Environmental Assessment Branch.

"EAB" means the Environmental Assessment Branch of the Ministry of the Environment, Conservation and Parks.

“environmental assessment” means the *Environmental Assessment of the Township of North Dundas Waste Management Plan*.

“ministry” means the Ministry of the Environment, Conservation and Parks.

“program” means the environmental assessment compliance monitoring program.

“proponent” means the Township of North Dundas.

“construction” means physical construction activities, including site preparation works, but does not include the tendering of contracts.

“Date of Approval” means the date on which the Order in Council pertaining to the approval of the Project was signed by the Lieutenant Governor in council.

“Project” means the expansion of the Boyne Road Landfill as set out in the environmental assessment.

2. General Requirements

- 2.1 The proponent shall implement the Project in accordance with the environmental assessment which is hereby incorporated into this Notice of Approval by reference, except as provided in the conditions of this Notice of Approval and as provided in any other approval or permit that may be issued for the Project.
- 2.2 The proponent shall fulfill any commitments made during the environmental assessment process.
- 2.3 Should the proponent wish to make changes to any document required by these conditions after the document has been accepted or approved by the ministry, the proponent shall obtain written approval for the proposed change from the ministry decision-maker in the condition requiring the document.
- 2.4 For any document required by these conditions to be prepared, submitted and/or posted publicly by the proponent, the Director may provide written notice to the proponent they need no longer prepare, submit and/or post the document.
- 2.5 For any program or plan required by these conditions to be developed or implemented, the Director may provide written notice to the proponent that the program or plan no longer need be developed or implemented.
- 2.6 The Director may change a deadline provided for in a condition in this notice of approval where the Director determines it is appropriate to do so and it is consistent with the purpose of the Act. Any such change must be made in writing by the Director.
- 2.7 More restrictive conditions may be imposed under other statutes.

3. Public Record

- 3.1 Where a document is required for the public record, the proponent shall post the document on the proponent's website and shall provide a hardcopy and electronic copy to the Director.
- 3.2 The environmental assessment file number 03-08-02 (18056) shall be quoted on all documents in any form submitted to the ministry pursuant to this Notice of Approval.
- 3.3 The proponent shall clearly identify on each document the condition of approval pursuant to which the document is being submitted.

4. Compliance Monitoring Program

- 4.1 The proponent shall prepare and submit to the Director for approval and for the public record a program.
- 4.2 The program shall be submitted to the Director within one year from the Date of Approval.
- 4.3 The program shall include a description of how the proponent will:
 - a. ensure the Project is implemented in accordance with the environmental assessment, including mitigation measures, public consultation, and additional studies and work to be carried out;
 - b. monitor compliance with the conditions in this Notice of Approval; and
 - c. ensure all commitments made in the environmental assessment, including with respect to mitigation measures, public consultation, and additional studies and work to be carried out are fulfilled.
- 4.4 The program shall include an implementation schedule for planned monitoring activities.
- 4.5 The Director may require the proponent to amend the program at any time and shall provide notice of the required amendment and deadline for completion in writing to the proponent.
- 4.6 The proponent shall submit the amended program to the Director by the deadline specified in the notice.
- 4.7 The proponent shall implement the program, including any amendments to it.

5. Compliance Reporting

- 5.1 The proponent shall prepare an annual compliance report outlining the results of the program (Condition 4).
- 5.2 The first compliance report shall be submitted to the Director for review and for the public record one year following the Date of Approval. Each subsequent annual compliance report shall be submitted to the ministry for review and for the public record

on the date that is the anniversary of the Date of Approval thereafter. Each report shall cover the period since the last report.

- 5.3 Compliance reports are no longer required to be submitted following the earlier of: (i) all conditions in this Notice of Approval being satisfied, or (ii) the Director giving notice pursuant to Condition 2.3.
- 5.4 The proponent shall notify the Director in writing when the final annual compliance report is being submitted. The ministry will confirm that the requirements in Conditions 5.1-5.3 have been met and the Director will provide written confirmation to the proponent.
- 5.5 The proponent shall retain, either in the proponent's office or in another location approved by the Director, copies of each annual compliance report and any associated documentation of compliance monitoring activities. The proponent shall post the annual compliance report for each reporting year on its website.
- 5.6 The proponent shall make the compliance reports and associated documentation available to the Director or designate in a timely manner when requested to do so by the ministry.

6. Complaint Protocol

- 6.1 The proponent shall prepare and implement a complaint protocol for addressing inquiries and complaints related to the Project. The complaint protocol shall include a procedure for notifying the manager of the ministry's Ottawa District Office of any complaints received by the proponent.
- 6.2 The proponent shall submit the complaint protocol to the Director for approval and for the public record at least 90 days before the start of construction.
- 6.3 The Director may require the proponent to amend the complaint protocol at any time and shall provide notice of the required amendment and deadline for completion in writing to the proponent. The proponent shall submit an amended complaint protocol to the Director by the deadline specified in the notice.
- 6.4 The proponent shall implement the complaint protocol and any amendments to it.
- 6.5 The proponent shall include a summary of the complaints received and how they were addressed in each of the annual compliance reports required by Condition 5.

7. Duration of Approval

- 7.1 If the Project has not been substantially commenced within 10 years of the Date of Approval or by the end of any extension to that period granted by the ministry in writing, this approval expires.

Dated the 7th day of March 2024 at TORONTO.



Minister of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3

Approved by O.C. No. 446/2024

Date O.C. Approved 21 Mar 2024

Attachment 2
Design and Operations Report



FINAL REPORT

Design and Operations Report

Boyne Road Landfill Expansion

Township of North Dundas, Ontario

Submitted to:

Township of North Dundas

636 St. Lawrence Street

P.O. Box 489

Winchester, Ontario

K0C 2K0

Submitted by:

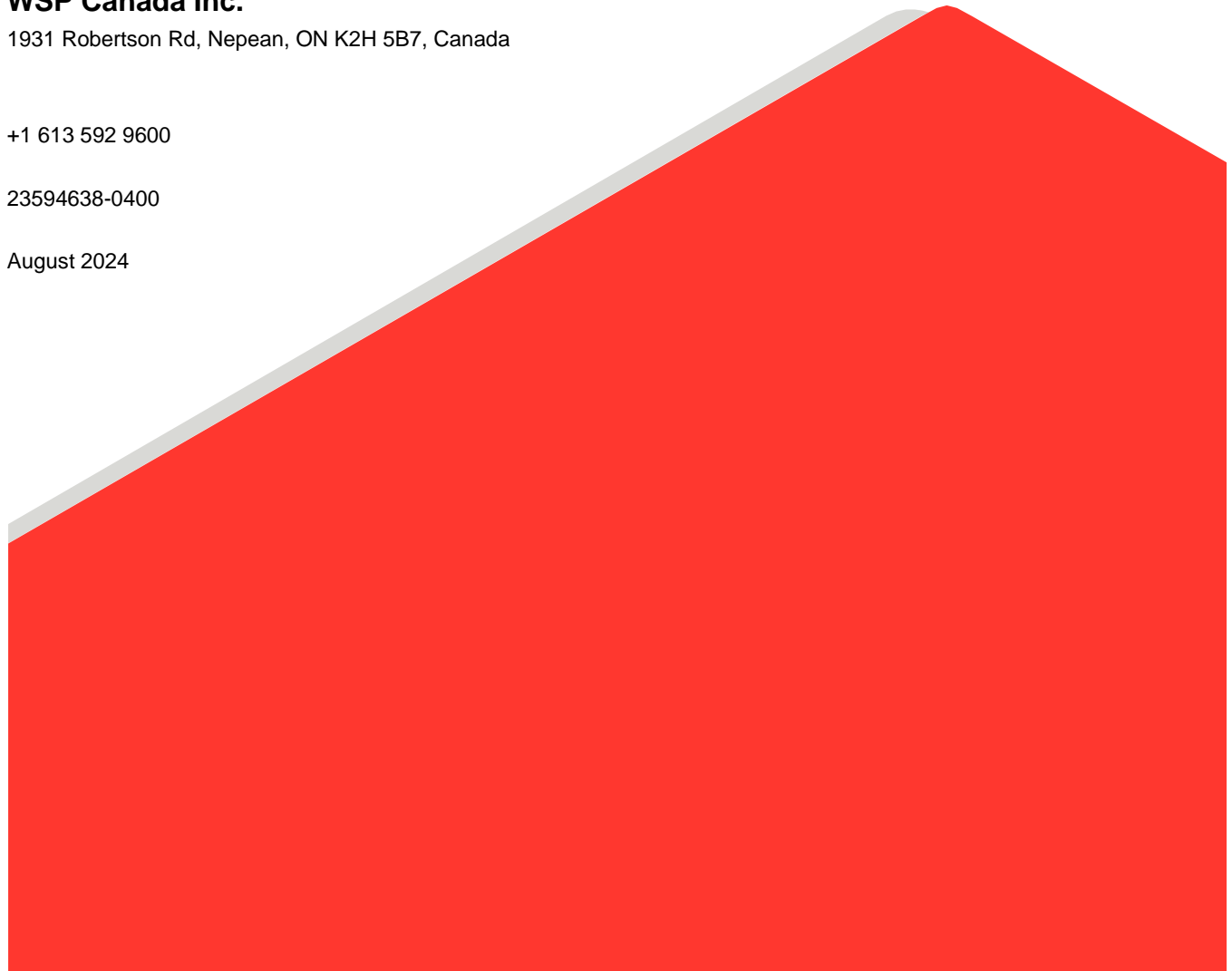
WSP Canada Inc.

1931 Robertson Rd, Nepean, ON K2H 5B7, Canada

+1 613 592 9600

23594638-0400

August 2024



Distribution List

1 e-copy Ministry of the Environment Permissions Branch

1 e-copy Ministry of the Environment (Cornwall Office)

1 e-copy Township of North Dundas

1 e-copy WSP Canada Inc.

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APPENDIX I

Complaints Protocol

1.0 INTRODUCTION

This document, prepared by WSP Canada Inc. (WSP), is the Design and Operations Report (“D&O”) for the expansion of the Boyne Road Landfill Site (herein referred to as the “Site”) that is owned and operated by the Township of North Dundas (herein referred to as the “Township”). This D&O Report supports an application by the Township to amend Environmental Compliance Approval (ECA) No. A482101 issued by the Ministry of Environment, Conservation and Parks (MECP), with the most recent issue date of January 14, 2020 (Notice No. 11). The ECA and amending Notices are provided in Appendix A.

As requested by MECP Permissions Branch during a pre-application consultation meeting on June 19, 2023, a report focused on the groundwater and surface water aspects of the expansion was submitted to the Eastern Region Technical Support Section (TSS) of the MECP in August 2023 to obtain TSS and District Office concurrence prior to submitting the ECA amendment application. A copy of key correspondence with the MECP (including TSS concurrence to submit the application) is provided in Appendix B.

1.1 Background

The Site, located along Boyne Road approximately 1.5 kilometres east of the Village of Winchester, was originally established on Lot 8, Concession VI in the Township (formerly the Township of Winchester), Ontario. The location of the Site is indicated on Figure 1A. Note that for the purposes of the discussion contained in this report, Boyne Road is considered to be oriented in an east-west direction.

The Site has been operating as a licensed landfill facility since 1965. The Site currently operates under ECA No. A482101 issued on December 4, 1989. The ECA was amended on September 5, 1995 to allow the Site to accept waste from the Village of Chesterville, in addition to waste from the Village of Winchester and the Township of Winchester. Subsequent to municipal amalgamation in 2002, the Site was licensed to accept waste from the Township (which includes the Village of Chesterville, the Village of Winchester, the former Township of Winchester and the former Township of Mountain). The ECA was amended on October 2, 1995 to allow the Township to operate a municipal waste recycling facility at the Site. The ECA was again amended on September 18, 1996 to allow the establishment and operation of a household hazardous waste transfer facility at the Site.

An ECA amendment application was prepared in 2013 to recognize the Site Design and Operations Plan (D&O Plan), include all lands used for contamination attenuation purposes on the Site ECA, and allow the Site to receive, and subsequently transfer, waste electronic and electrical equipment (WEEE).

In 2014 it was determined that the Site had exceeded its approved capacity and was in an overfill situation. An emergency approval to continue landfilling until January 31, 2016 at the Site was provided by the MECP in Notices No. 5 and 6 of the Site ECA (dated June 8 and July 10, 2015, respectively). This ECA amendment also authorized the collection and transfer of WEEE at the Site, allowed the receipt of new waste classes at the household hazardous waste depot and recognized land to be used for contamination attenuation purposes. Notice No. 6 also added a 22.04 ha parcel of land to the west of the site as Contaminant Attenuation Zone through an easement agreement between the Township and the landowner.

The amendment to the Site ECA (Notice No. 7 dated January 28, 2016) included approval of the use of Ministry of Natural Resources and Forestry (MNR) land as part of the Site’s Contamination Attenuation Zone (CAZ) following an agreement between the Township and the MNR under a Land Use Permit (LUP). The Township continues to maintain a valid LUP in compliance with the Site ECA.

Following annual applications for and approval of continued landfilling in 2016 through 2019, on January 14, 2020, the Site ECA was amended by the MECP with Notice No. 11 to authorize continued landfilling at the Site until the final waste contours are achieved as described in the 2013 D&O Plan (Golder, 2013).

The Site is licensed for the disposal of domestic, commercial, and industrial solid non-hazardous waste. The approved area of the Site (fill area) is 8.1 hectares. Between 1992 and 2016, buffer zones were added to the original landfill site property on both the south and north sides of Boyne Road, and including the portion of the Boyne Road allowance immediately north of the landfill footprint, to bring the total landfill site property to 97.13 ha.

The Site property boundaries and the CAZ boundaries are indicated on Figure 1B; the full extent of the property on the north side of Boyne Road is shown on Figure 1A.

The following D&O plan also contains Site development details meant to update the existing ECA with the proposed landfilling and Site operations for the proposed Boyne Landfill expansion.

2.0 REGULATORY FRAMEWORK

The expansion of the Boyne Road Landfill requires approval under the Environmental Assessment Act (EAA), and also subsequent ECAs under the Environmental Protection Act (EPA) and Ontario Water Resources Act (OWRA).

2.1 Environmental Assessment Act

Notice of Approval under the EAA to proceed with the expansion of the Boyne Road Landfill site was issued by the Minister of MECP on March 7, 2024 (EA File No. 03-08-02 (18056)).

2.2 Environmental Protection Act

Ontario Regulation (O. Reg.) 232/98 (MOE, 1998) contains detailed requirements for the design, operation, closure, and post-closure care of municipal waste landfills. The document entitled Landfill Standards, A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfill Sites (MOE, 2012) provides guidance on the application of the Regulation. O.Reg. 232/98 is applicable to new and expanding landfill sites, and so is applicable to expansion of the Boyne Road Landfill. An application to amend the current Waste ECA will be submitted for approval.

2.3 Ontario Water Resources Act (OWRA)

The purpose of the Ontario Water Resources Act (OWRA) is for the protection and conservation of surface water and groundwater resources in the Province of Ontario. Any system that discharges to a surface water body requires approval under the OWRA.

OWRA approvals are required for the proposed stormwater management (SWM) system. A separate OWRA (Section 53 – Sewage Works) ECA application will be submitted to the MECP, which includes a separate Stormwater Management Report and design drawings for the proposed landfill expansion.

3.0 SITE DESCRIPTION

3.1 Site Location and Service Area

The Boyne Road Landfill is located on Lot 8, Concession VI in the former Township of Winchester, along the south side of Boyne Road about 2 km east of the Village of Winchester, which is between the two main population centres within the Township – the Villages of Winchester and Chesterville. The Site location is shown on Figure 1A. The service area for the landfill is the Township of North Dundas. The Site has been operating as a

licensed landfill for the disposal of solid, non-hazardous waste since 1965. The Boyne Road Landfill is the only operational waste disposal site in the Township and receives all the residential and some of the Institutional, Commercial, and Industrial (IC&I) residual waste from the entire Township. The Township is mainly rural with several small villages, with Winchester and Chesterville being the two largest villages. The landfill site operates under ECA No. A482101.

3.2 Existing and Proposed Site Boundaries

The existing landfill site boundaries are shown on Figure 1B, with the full northern extent of the property shown on Figure 1A.

The landfill site property is currently 97.13 ha. It is proposed to add the 16.21 ha of Township-owned property to the east and southeast to the landfill property (refer to area shown on Figure 1B and to Plan 8R-5539 deposited at the Land Registrar Office on August 3, 2016, provided in Appendix A), resulting in a proposed total landfill property area of 113.3 ha. The proposed landfill property on the south side of Boyne Road and expanded landfill footprint are shown on Figure 2.

3.3 Land Use

The current Boyne Road Landfill site is zoned Special Rural – Waste Disposal (SRD) under the Township of Winchester Zoning By-law No. 12-93. The balance of the Township owned lands, including the Township-owned land to the southeast and east proposed to be added to the landfill property as part of the expansion, are zoned as Rural.

Re-zoning of the landfill is not required to accommodate the proposed landfill expansion. However, it is proposed that the additional land to the south and east to become part of the landfill site property for buffer area be rezoned to SRD, so that the 500 metre study area is correctly identified when using the land use schedule to the Zoning By-law; this study area is in regard to land use restrictions and potential development within the 500 metre restricted zone around the landfill site.

3.4 Topography and Drainage

The landfill site is located in a rural agricultural area of flat to undulating farmland. Drainage in this area is via a network of constructed municipal drains, primarily the Volks Municipal Drain and the Quart Municipal Drain (historically known as the Irving-Quart Drain or Irving Drain). The area directly east and south of the existing landfill mound is forested with a shallow groundwater level.

Drainage along the northern extents of the landfill mound is directed towards the Boyne Road ditch along the south side of the road. This includes the operations area of the landfill, which is centrally located along the north of the current disposal area. The remainder of the landfill drains to a constructed drainage ditch (perimeter ditch) that was constructed along the west, south, and east boundaries of the approved disposal area of the landfill site (fill area) in 1991, as indicated on Figure 1B. Surface water runoff from the fill area drains into this perimeter drain, which then discharges to the south roadside ditch along Boyne Road. The roadside ditch flows east and then is directed north, under Boyne Road via a culvert located near the northeast corner of the landfill. The roadside ditch along the north side of Boyne Road is part of the Volks Municipal Drain and flows east and discharges into Black Creek, approximately 1.5 km east of the landfill. Black Creek is a tributary of the East Castor River.

The upstream extent of the Quart Municipal Drain is located southwest of the fill area, outside of the landfill site property, and within the landfill site's CAZ zone to the west. The Quart Drain adjacent to the landfill has been historically observed as dry and does not connect perimeter ditch around the current landfill fill area.

3.5 Geology and Hydrogeology

The following text is taken from Section 9.2 of the EA study report, with updates where appropriate using more recent data from the 2023 annual monitoring report.

For this landfill site where there have been numerous subsurface and hydrogeological investigations, as well as an annual groundwater and surface water monitoring program, carried out over the past 30 years, there is a thorough understanding of the geological and hydrogeological setting of the existing landfill. These include borehole drilling programs, monitoring well installations in overburden and bedrock, in situ hydraulic conductivity testing, groundwater level measurements and groundwater sampling and analysis. As discussed and agreed to with the TSS groundwater reviewer, there is not a need for a separate Hydrogeology Report to be prepared and submitted in support of the ECA amendment application. Instead, the summary of the hydrogeological conditions and the predictive modelling to assess the requirements for the expanded landfill to achieve Reasonable Use Guideline (RUG) compliance included in the EA study report are provided in this report.

Previous borehole and monitoring well installation locations are shown on Figure 1B.

3.5.1 Geological Conditions

3.5.1.1 Regional Geology

Published geological maps indicate that overburden in the area of the Boyne Road Landfill site consists of: organic deposits comprised primarily of peat; underlain by offshore marine deposits comprised of clay, silty clay, and silt; underlain by silty sand and sandy silt till (Geological Survey of Canada, 1982). Published geological maps indicate that bedrock in the area of the Site consists mainly of limestone of the Bobcaygeon and Gull River Formations (Ontario Geological Survey, 2007; Ministry of Natural Resources, 1985).

The topography in the general area in which the Boyne Road Landfill site is situated is generally flat lying to undulating. Ground surface elevations in the area of the landfill typically range from approximately 73.5 to 75.0 metres above sea level (masl). The stratigraphic sequence is derived from recently deposited materials of glacial, glacio-fluvial and marine origins. Spatially the most dominant units consist of glacial till and marine clays, with a thickness ranging between a few metres (m) to 20 m. The glacial till in the broader area in which the landfill site is located tend to be stony and sandy and are generally characterized as silty sands.

3.5.1.2 Boyne Road Landfill Geology

Based on subsurface conditions encountered during borehole drilling programs completed at the landfill site, overburden in the area consists of the following:

- A topsoil/peat unit (between 0 and 2 metres in thickness). This unit is generally thickest to the north of Boyne Road.
- A silt/clay unit at surface or underlying topsoil/peat where present (generally between 0 and 3 metres in thickness). However, the thickness of this unit appears to increase to the north and east of the landfill site, with a maximum thickness of 5.8 metres encountered at BH16-3.

- A silty sand/sandy silt till (between 0.9 and 6.0 metres in thickness) was encountered where boreholes were advanced through the base of the silt/clay unit. A sequence of sand and gravel with a 1.9 metre thickness was encountered at the top surface of this unit at BH16-3.

Bedrock, consisting of limestone (interbedded with shale), has been encountered at between 1.4 and 11.6 metres below ground surface (mbgs). The greatest depth to bedrock encountered during the drilling of on-site boreholes was encountered at BH16-3, located to the northeast of the landfill site about midway through the Township-owned lands north of Boyne Road. The least depth to bedrock was observed to the south of the existing fill area at MW15-1 and MW15-2, where auger refusal was encountered at 1.7 mbgs and 1.4 mbgs, respectively.

Available borehole logs for boreholes included in the monitoring program are included in Appendix C.

3.5.2 Hydrogeological Conditions

3.5.2.1 Groundwater Elevations and Groundwater Flow Directions

Topography on and in the area surrounding the landfill site is flat; as a result, hydraulic gradients, and groundwater flow directions may vary temporarily/seasonally and can be influenced by very slight variations in groundwater elevations. Based on review of topographic maps of the regional area within which the landfill site is located, the regional groundwater flow direction is expected to be north, toward the East Castor River (located approximately 4 km to the north).

Groundwater levels have been measured biannually in monitoring wells at the landfill site since 2005. This data base shows that the water levels are fairly consistent over time, as are the seasonal variations in interpreted groundwater flow direction(s) and hydraulic gradients, and the estimated average groundwater velocity.

In close proximity to the waste disposal area, groundwater elevations may be influenced by leachate buildup within the waste mound, resulting in a local groundwater divide in close proximity to the landfill. Data from both historical groundwater elevations and historical groundwater chemistry indicate that local groundwater mounding associated with the waste pile has been influencing local groundwater flow direction at the site. However, the radial groundwater flow caused by the mounding does not affect groundwater flow patterns beyond the immediate vicinity of the waste pile. Groundwater flow in the area to the north of the landfill is generally to the north, and groundwater flow in the area to the south of the landfill is generally to the south. These flow directions can be variable with flow to the north occasionally being to the northeast and flow to the south occasionally being to the southwest or southeast.

Groundwater elevation in the bedrock show very minimal spatial variation. Historically, groundwater levels at BRW1 and BRW3 indicated that groundwater flow was to the south in the area immediately south of the landfill site. Further south of the landfill site, groundwater levels at BRW3 and BRW15-3 indicated the bedrock groundwater flow was to the north. Groundwater flow directions in the bedrock have been observed to vary historically.

3.5.2.2 Hydraulic Gradients

Based on groundwater elevations measured in overburden monitoring wells, the horizontal hydraulic gradient in the area of the waste mound (in the general direction of the interpreted horizontal groundwater flow) is typically measured at approximately 0.005 m/m.

North of the waste mound area (in the main interpolated direction of horizontal groundwater flow), hydraulic gradients in the order of 0.001 – 0.01 m/m are typically measured. South of the waste mound, lower hydraulic

gradients in the order of 0.001 – 0.003 m/m are observed, with a negative (northwards) hydraulic gradient occasionally measured at the southern-most boundary of the site. Hydraulic gradients to the east and west of the landfill site are much lower than the north or south direction, typically in the order of 0.0005 m/m.

Horizontal gradients in the bedrock have historically been weak and variable in direction.

Vertical hydraulic gradients from the overburden to the bedrock vary by location; with upwards, downwards and negligible vertical gradients being observed across the site. The bedrock monitoring well located in the area of the waste mound features three groundwater screens, BRW1-A, BRW1-B and BRW1-C. Historically, weak and oscillating gradients in bedrock are observed at this location, with overall downward vertical hydraulic gradients being typically observed.

3.5.2.3 Horizontal Hydraulic Conductivity

Estimates of horizontal hydraulic conductivity of overburden materials in the area of the Site, have been determined based on the results of slug tests and grain size distribution analysis completed as part of previously completed studies. The geometric mean horizontal hydraulic conductivity (based on slug test analysis) for the monitoring wells is 2.1×10^{-3} cm/second.

Hydrogeological investigations conducted at the landfill site in 2015 and 2016 included slug tests in eight monitoring wells screened in the silty sand or sandy silt till, three monitoring wells screened in the clay/silt, and five monitoring wells screened in the limestone bedrock. The resulting geometric mean for the overburden monitoring wells of 3×10^{-4} cm/s is one order of magnitude lower than the value previously reported by OMM (1991), and likely reflects the higher silt and clay content in the soils adjacent to the most recently installed monitoring wells.

3.5.2.4 Groundwater Velocity

The average linear groundwater velocity in the overburden, in the area of the waste mound was calculated based on the geometric mean hydraulic conductivity (3.0×10^{-4} centimetres per second), the average observed horizontal hydraulic gradient in the interpreted direction of groundwater flow (0.005 m/m), and an assumed average porosity of 35 percent. An average porosity of 35 percent is assumed for the overburden deposits in the area of the landfill site. In 2023, the average linear groundwater velocity in the vicinity of the waste mound is estimated to be about 1 metre per year. The average linear velocity has ranged between 0.9 and 45 metres per year (as measured between 2007 and 2023) but is typically within the range of 1 to 4 metres per year.

The average linear groundwater velocity in the overburden in the areas north and south of the waste mound is lower than what is measured within the waste mound vicinity; the groundwater velocities estimated using data from August 2020 were 0.33 metres per year, 0.23 metres per year, and 0.02 metres per year in the north, south, and west directions of groundwater flow from the waste mound, respectively. Higher reported groundwater velocities in previous years have been the result of higher historical groundwater levels observed at MW06-22 and the associated higher horizontal hydraulic gradients in the area of the waste mound. Recent reporting has indicated a lower degree of mounding in MW06-22R and lower groundwater velocities. Based on the upper bound of the typical groundwater velocity (4 metres per year), it is estimated that the leachate plume could be expected to have travelled approximately 230 metres from the waste fill area during the 58 years of operation at the landfill site (as of 2023). This slow groundwater velocity is as expected considering the low horizontal hydraulic gradients (reflective of the flat topography) and the clay and till soils in the area of the landfill.

4.0 PROPOSED EXPANSION DESIGN

This section describes the buffer areas; the design criteria; the layout, size, and shape of the proposed expanded waste disposal area; the proposed design of the expansion base pad; landfill development phasing. There are also subsections describing the geotechnical assessment of the proposed expansion as well as the assessment of the potential effects of the expansion on off-site groundwater quality; these subsections are taken from the EA study report.

4.1 Buffer Areas

The landfill expansion footprint will have a 30 m buffer within the landfill property on the west side (followed by the CAZ lands), and with the addition of the Township-owned lands to the east and southeast a buffer with a width of 257 metres width on the east side and a width of 313 metres on the south side. On the north side is the Boyne Road allowance and the buffer zone within the landfill property then extends approximately two kilometres. The lands leased from MNRF as CAZ on the north side of Boyne Road and west of the landfill property extend a similar distance northward.

4.2 Design Criteria

The following design criteria were used in the conceptual design of the proposed expansion, following the requirements of O.Reg. 232/98 where relevant:

- Additional volumetric capacity (airspace) of 417,700 m³ beyond 2023 for waste and daily cover.
- Above-grade perimeter side slopes no steeper than 4(H):1(V) (note: H denotes horizontal and V denotes vertical).
- Above-grade top slopes no flatter than 20(H):1(V) (or 5%).
- The expansion consists of a vertical expansion above the approved top of waste contours within an area limited to the southern half of the current footprint, tying into a horizontal expansion to the south where the majority of the additional disposal airspace will be achieved.
- The site design and operation will continue as a natural attenuation landfill.
- The groundwater table in the area of the proposed expansion is at shallow depth below ground surface. A vertical separation distance between the base of the waste and the high groundwater table will be provided. In the horizontal expansion area, this will require the construction of a base pad of suitable thickness, using imported permeable fill material (for example, sandy material) above the ground surface to provide a base for waste disposal. The use of permeable fill will also allow the leachate to infiltrate into the groundwater system while minimizing the potential for both the development of a leachate mound within the waste and lateral leachate seeps at the perimeter of the expanded disposal area footprint.
- Minimum vegetated final soil cover with a 0.75 metre total thickness.

4.3 Waste Fill Limit and Landfill Capacity

The horizontal expansion adds an additional 3.8 hectares of footprint, for a total landfill footprint area of 11.9 ha.

The total expanded landfill capacity for waste and daily cover (excluding final cover), including the additional 417,700 m³ beyond 2023 provided by the expansion, is 1,060,750 m³.

4.4 Design Modification

During the ECA-level design, an AutoCAD volume calculation error was discovered for the Alternative Method of expansion identified as preferred based on the comparison of Alternative Methods in the EA (Alternative Method 3). This error resulted in a reduction in the target 25-year expansion airspace volume of 417,700 m³ beyond 2023. The expansion geometry presented in the EA was modified to realize the target airspace as part of this ECA-level design, and it is this modified geometry that is proposed for approval under the application for an ECA amendment. The proposed expansion configuration is shown on Figure 2.

The proposed modifications to the geometry of Alternative Method 3 as presented in the EA are as follows:

- It has exactly the same horizontal expansion footprint of 3.8 hectares to the south of the existing landfill footprint (with the same perimeter buffers as presented in the EASR).
- It maintains the same total landfill volume for waste and daily cover of 1,060,750 m³.
- It provides the intended additional 417,700 m³ of airspace beyond January 1, 2023.
- There is a small increase in the height of the expansion of up to 1.5 metres compared to Alternative Method 3 presented in the EA, so 4 metres higher than the currently approved landfill design instead of 2.5 metres.
- It is still primarily a horizontal expansion.
- The northern limit of the expansion area extends approximately only 30 metres further north onto the south portion of the existing landfill (limited vertical expansion) compared to Alternative Method 3 presented in the EASR.
- During the ECA-level design, to maintain 1 metre of separation between the base of the waste and the high groundwater table (as described in Section 4.2), it was necessary to raise the top of the base pad to elevation 75.78 masl and provide a 0.5% slope on the top. This consumed approximately 15,000 m³ of airspace; so, even without the volume calculation error, a minor design modification to allow an increase in landfill height of approximately 0.5 metres was going to be requested in the ECA application.

The potential effects of raising the landfill height by up to 1.5 metres and extending the new waste a limited distance northward above the existing landfill on the findings and conclusions of the EA were reviewed in relation to the comparison of Alternative Methods, the identification of the preferred expansion alternative and the detailed impact assessment for the proposed expansion. It was concluded that the proposed expansion geometry modifications have no effect on the EA.

4.5 Landfill Development and Phasing

As shown on Figure 3, the landfill expansion consists primarily of a horizontal expansion to the south of the existing footprint tying into a vertical expansion above a limited southern portion of the existing landfill. The top of waste contours shown on Figure 3 rise from the west, east and south at 4H1V sideslopes to a top deck area sloped at 20H:1V, reaching a central north-south oriented ridge at elevation 91.25 masl (92.0 masl for the top of final cover). The limited height north sideslope of the vertical expansion portion has variable sideslope angle that is 4H:1V or flatter to tie into the existing approved contours. Cross-sections of the expanded landfill are provided on Figure 5.

It is proposed to develop the expansion in four phases as shown on Figure 4 in plan view and on Figure 5 in cross-section view. Phase 1 is the vertical expansion portion, and landfilling can proceed within Phase 1 without any new construction in the horizontal expansion area. Access for disposal in Phase 1 will be via the existing haul road from the main Site entrance up onto the waste mound. In the horizontal expansion area are Phases 2, 3, and 4 proceeding sequentially from north to south. Access for disposal in Phases 2, 3 and 4 will be via a new access road to be constructed along the west side of the existing landfill as shown on Figures 2 and 4. Each Phase will be filled to its proposed final waste contours; temporary internal sideslopes of 3H:1V are proposed between each of Phases 2 and 3 and Phases 3 and 4. The estimated airspace and corresponding approximate operational period (based on approximately 16,000 m³ per year air space consumption) in each phase is as follows, thereby providing disposal capacity for a 25-year period through 2048 (with the balance of the capacity within the existing landfill below under the top of waste contours approved in ECA Notice No. 11):

- Phase 1 – 43,706 m³; 2.7 years
- Phase 2 – 118,579 m³; 7.4 years
- Phase 3 – 99,719 m³; 6.2 years
- Phase 4 – 129,353 m³; 8.1 years

4.6 Expansion Base Preparation and Design

In preparation for landfilling beginning in Phase 2, the existing vegetation cover would first be removed. The existing layer of topsoil or peat would then be stripped to prepare the area for construction of the base pad. The access road along the west side of the existing landfill from Boyne Road would be constructed and extended eastward across the south side to reach the Phase 2 area. This would be repeated progressively for each of Phases 3 and 4, with the south side access road removed westward for each of Phases 3 and then 4.

The proposed elevations and configuration of the base pad are shown on Figure 3. The minimum separation of one metre between the base of the waste and the high groundwater table in the area of the horizontal expansion was established by review of all groundwater elevation data from MW7, MW12, MW15, MW15-1 and MW15-2 (locations shown in Figure 1B) from 2010 through 2023. The maximum groundwater elevation is 74.78 masl; the lowest elevation of the top of the base pad beneath the waste was then set at 75.8 masl. It is proposed to slope the top surface of the base pad at 0.5 % from north to south such that precipitation will drain outwards and not potentially pond on the base pad. The proposed top of base pad elevations are shown on Figure 3 in plan view and on Figure 5 in cross-section view. It is also proposed to extend the base pad five metres outside the limit of waste on the west, south and east sides to keep waste placement on top of the pad and allow a ring of somewhat less permeable fill material around the perimeter to minimize the potential for leachate seepage (as discussed below).

To allow the Site to continue operating as a natural attenuation site and minimize the potential for leachate mounding and leachate seeps, the base pad material has been designed to allow the leachate produced by the waste to enter the underlying soil and groundwater.

The material should be permeable enough for leachate to reach the underlying soil and groundwater. In general, the presence of some gravel (and occasionally cobbles) within the base material would not adversely affect the permeability; however, if the material is too permeable, there is a risk that leachate accumulating above the native soil could possibly create a preferred pathway and result in seeps at the toe of the landfill. Therefore, it is

recommended to use two gradation envelopes: an envelope recommended for the construction of a 5 metre wide outer perimeter ring of the base with a finer grained material (silty sand) and another one that would allow the presence of some gravel sizes (and occasionally cobbles in the material would also be considered acceptable) for the larger interior portion of the base. The proposed gradation requirements for the base pad materials are presented in Table 4-1 below.

Table 4-1: Gradation Requirements for Base Pad Materials

Sieve Openings	Percent passing for material on the 5 metre wide outer perimeter ring of the base pad	Percent passing for material within the interior of the base pad
106 mm	–	100
19 mm	–	90 – 100
9.5 mm	100	85 – 100
4.75 mm	80 – 100	75 – 100
2.36 mm	65 – 100	65 – 100
1.18 mm	50 – 100	50 – 100
600 µm	30 – 100	25 – 80
300 µm	19 – 100	10 – 50
150 µm	12 – 40	0 – 10
75 µm	10 – 30	0 – 3

It is estimated that construction of the base pad will require approximately 75,600 m³ of sand materials to be imported (approximately 31,100 m³ for Phase 2; 15,000 m³ for Phase 3; 25,200 m³ for Phase 4; and 4,300 m³ for the whole outer perimeter ring of the base pad).

The base pad will be constructed progressively for each of Phases 2, 3 and 4. Since the base pad material is intended to allow leachate to percolate through it and reach the underlying native soils without creating ponding and seepage at the toe of the landfill, it is proposed to not compact this base material beyond the nominal expected compaction due to construction equipment traffic used to build the base pad.

4.7 Final Cover

The landfill will be progressively closed in phases after the final waste contours have been reached and landfill operations have proceeded into the next Phase. The final cover on the landfill will consist of 600 mm of soil, which is expected to consist of imported materials from off-Site sources. This is intended to be a permeable final cover design, to allow infiltrating precipitation to enter the waste and remove the contaminants from the waste as leachate, and thereby reduce the contaminating lifespan of the landfill site. This will be topped with 150 mm of soil capable of sustaining vegetation. This final cover design approach is in accordance with O. Reg. 232/98.

4.8 Site Closure

Two years prior to the Site reaching its approved capacity, the Township will submit a Closure Plan to the MECP that will include a proposed post-closure monitoring, maintenance and reporting program.

4.9 Landfill Gas

As per O.Reg. 232/98, there is no requirement for a landfill site with a total capacity of less than 1.5 million m³ to include a landfill gas collection and control system. A landfill gas collection and flaring system is therefore not proposed for the Boyne Road Landfill expansion (total capacity of 1,060,750 m³).

Also, considering the high water table that is almost at ground surface on and in the area of the landfill site, off-site lateral migration of landfill gas through the subsurface is not expected. Rather, the landfill gas generated at the site is expected to vent to atmosphere through the landfill cover soils. Methane detectors are in place at on-site buildings and are proposed to be maintained throughout the operating period. In addition, there are no existing structures within 500 metres of the landfill area.

4.10 Geotechnical Assessment

As part of the EA that resulted in expansion of the Boyne Road Landfill, a geotechnical assessment was carried out to confirm the stability of the proposed expanded landfill configuration and the results are provided in Appendix D. The landfill expansion area is underlain by a layer of competent glacial till followed by bedrock. The proposed 4H:1V landfill side slopes have an acceptable factor of safety in terms of slope stability.

The glacial till is a granular soil type that will undergo limited compression under the applied load of the landfilled waste. It is also noted that there is no landfill infrastructure beneath the existing landfill or proposed vertical and horizontal expansion that could be adversely affected by compression of subgrade soils under the weight of the waste.

4.11 Assessment of Potential Effects of Landfill Expansion on Off-Site Groundwater Quality

The following assessment is a summary from the EA documents.

A series of analytical contaminant transport calculations were conducted based on a conceptual model of groundwater flow and contaminant transport at the site to calibrate to current conditions and assess expected future compliance with MECP Reasonable Use Guideline B-7. The calculations were completed using GoldSim, a flexible, non-specific modelling code, designed to provide the user with an understanding of the factors that control the performance of an engineered or natural system (as defined by a user-specified mathematical model) and to predict the future behaviour of the defined system. With respect to addressing the landfill expansion groundwater quality, GoldSim was used to simulate the passage of contaminants in the landfill leachate from the source area (i.e., the current and expanded landfill area) through the downstream groundwater flow systems to the downgradient boundary of the CAZ. GoldSim is fully documented in the Main Users Guide (GTG, 2010a) and the Contaminant Transport Module Users Guide (GTG, 2010b). These calculations were completed for both current conditions at the Site and expected conditions under the proposed expansion.

This impact assessment describes the background information and provides a summary of the conceptual hydrogeological model in Section 4.11.1, and the analytical screening calculation set-up, calibration to current conditions, adaptation for predictive simulations, and assumptions in Section 4.11.2. The calculation results and a summary discussion are provided in Section 4.11.3.

4.11.1 Conceptual Model Background Information

The general geological and hydrogeological conditions at the site are described in Section 3.5 of this report.

Based on the landfill expansion area subsurface conditions encountered during borehole drilling programs completed at the Site, overburden in the area consists of discontinuous topsoil/peat (between 0 and 2 metres in thickness), underlain by discontinuous silt/clay (between 0 and 2.9 metres in thickness), underlain by silty sand/sandy silt till (between 0.9 and 6.0 metres in thickness). Bedrock, consisting of limestone (interbedded with shale), has been encountered at between 1.4 and 9.0 mbgs.

Based on existing groundwater elevations and groundwater flow directions as described in Section 3.5.2 of this report, the model considered two groundwater pathways from the disposal area, one towards the south and one towards the north. One-dimensional contaminant transport pathways were represented assuming that the flow path is linear between points in the model represented by existing monitoring locations.

Estimates of horizontal hydraulic conductivity of overburden materials in the area of the Site were obtained from the results of slug tests and grain size distribution analysis completed as part of previously completed studies.

Monitoring wells MW13 and BR07-26 (to the east of the Site) have been established as representative of background water quality in the overburden and the bedrock, respectively. Monitoring well MW06-22 and the replacement well MW06-22R are screened in the silty sand unit immediately below the waste mound and have been used as indicators of leachate strength at the existing landfill. Based on a comparison of background groundwater quality, leachate quality and mobility of the leachate parameters, leachate indicator parameters for the existing landfill are: alkalinity, aluminum, ammonia, barium, BOD, boron, chloride, cobalt, conductivity, DOC, hardness, iron, manganese, phenols, potassium, sodium, and TDS. Use of chloride as a leachate indicator parameter is complicated due to the additional sources of chloride such as road salting activities along Boyne Road and the snow storage facility on the north side of Boyne Road to the northeast of the landfill footprint. Based on the relatively low concentrations of chloride observed at the background monitoring locations, chloride remains a useful leachate indicator parameter for monitoring locations upgradient (south) of Boyne Road and the snow storage facility.

Conservative and mobile leachate indicators were considered for the contaminant transport calculations. Of those available, chloride and boron were considered most appropriate as they are present in low concentrations in background groundwater in both the overburden and the bedrock, and generally show decreasing concentration trends in the downgradient direction. A summary of the observed concentrations of boron and chloride are shown in the table below for groundwater monitoring wells included in the areas of consideration for the north and south groundwater flow pathways.

Table 4-2: Observed Chloride and Boron Concentrations in Groundwater

Location	Distance from Landfill Area	Chloride Observed Conc. (mg/L)	Chloride Observed Conc. (mg/L)	Chloride Observed Conc. (mg/L)	Boron Observed Conc. (mg/L)	Boron Observed Conc. (mg/L)	Boron Observed Conc. (mg/L)
	(m)	Maximum	Minimum	Average	Maximum	Minimum	Average
Source							
MW06-22R	0	521	170	367	2.5	2	2.1
North							
MW10	101	343	44	266	0.73	0.53	0.62
MW16	205	484	180	283	1.20	0.54	0.81
MW07-25	325	130	3	75.2	0.60	0.21	0.43
South							
MW7	11	510	390	456	1.1	0.7	0.89
MW15	16	670	140	356	1.10	0.1	0.77
MW12	94	390	40	175	0.84	0.23	0.50
MW18	165	430	74	201	0.95	0.35	0.63
MW19	172	460	36	207	1.4	0.05	0.61

4.11.2 Analytical Calculations

One-dimensional contaminant transport calculations were completed to provide an assessment of contaminant transport based on the available data for the existing landfill. The following assumptions were made for the calculations:

- One-dimensional contaminant transport pathways were represented. This representation assumes that the flow path is linear between points.
- The leachate plume in the overburden is assumed to be more extensive than the plume in the bedrock. For the purposes of the calculations, leachate source concentrations were applied to overburden only. It is acknowledged that some portion of the plume may extend into bedrock. The vertical spreading of the plume to the bedrock would result in lower concentrations in the bedrock relative to what is represented in the one-dimensional calculations. As such, it is assumed that if regulatory compliance is met in the overburden, compliance would also be met in the bedrock at the same distance from the disposal area.
- The overburden pathway thickness in the model was specified as the average saturated overburden thickness from available data (4.4 metres). The analytical solute transport simulations were completed using the geometric mean hydraulic conductivity of 3.0×10^{-4} cm/s for the overburden.
- The calibration is considered at steady-state (long term) conditions; data for calibration was limited to points within 200 metres to the north and south of the fill area.
- For current conditions, a leachate chloride concentration of 500 mg/L was applied based on approximate maximum concentrations of chloride in leachate-impacted groundwater at MW-06-22R. For the expansion, a chloride concentration of 1,500 mg/L was applied (as per O. Reg. 232/98 (MECP, 2012)). For the closure period, a chloride source depletion curve was generated using POLLUTEv7 (Rowe and Booker, 2005).

- The leachate source term for boron under current conditions was set at 2.1 mg/L based on approximate average boron concentrations in leachate-impacted groundwater from MW06-22R. For the expansion, a boron concentration of 5 mg/L was applied based on historical data from landfills in Eastern Ontario of similar size to the proposed expansion. For the expansion, in the post-closure period, a boron source depletion curve was generated using POLLUTEv7 (Rowe and Booker, 2005).
- The contaminant depletion within the source, as accounted for in the POLLUTE model, is due to wash-out by moisture infiltration/percolation through the waste mass for the contaminants of interest.
- Advection of chloride and boron was assumed to be conservative in the assessment (i.e., retardation and decay rates of chloride or boron in the downgradient flow path, which would decrease the concentrations in groundwater, were assumed to be zero).
- To account for the potential impacts on groundwater quality due to the Township-owned snow storage facility to the northeast of the disposal area, additional loading of chloride (associated with snow melt) was applied to the flow path adjacent to the snow storage facility. Between the landfill area and MW-10, a loading rate of 1,000 grams/day (g/d) of chloride was applied; between MW-10 and MW-16, a loading rate of 3,600 g/day was applied.
- As the transport calculations are one-dimensional, any transverse dispersion or spreading of the plume is not explicitly accounted for. To account for these processes, along with potential recharge of unimpacted water downgradient, the calculations were calibrated by “mixing” additional volumes of groundwater, at background concentrations, between the landfill source area and the CAZ. These volumes were estimated based on the model calibration to existing groundwater parameter concentrations.
- The expansion of the landfill is not expected to affect existing groundwater flow directions or gradients.
- Considering that the groundwater flow systems are similar in the northward and southward directions, predictive calculations were carried out to the north only. Results for the northern flow path apply to the south of the proposed landfill expansion.

4.11.3 Results

As described above, screening calculations were calibrated to existing conditions by adding recharge volumes of water (at background groundwater concentrations) to the northward and southward downgradient flow paths until calculated steady-state concentrations were similar to the average concentrations from observed data at each monitoring location in the groundwater flow paths. For the northern flow path, an additional chloride load was added between the landfill and MW10 and between MW10 and MW16 to account for the effects of the snow storage facility on groundwater quality. Mixing volumes equivalent to 150 mm per year were added to each portion of the flow path. For the northern flow path, an additional chloride load of 1,000 g/d was added between the landfill and MW10, and 3,600 g/d was added between MW10 and MW16.

For both the southward and northward pathways, the simulated steady state groundwater concentrations of chloride and boron provided an acceptable match to the observed concentrations. For chloride, the simulated values were generally consistent with the observed values, with no indication of spatial bias in the residual error (i.e., simulated minus observed values) for the northward or southward pathways. At the furthest downgradient location along the southward pathway (i.e., MW18/MW19), the simulated chloride concentration was lower than the measured value by a factor of approximately 2. For boron, the average observed concentrations decrease with distance from the landfill in both the northward and southward directions, which was well represented in the model.

Predictive calculations were used to determine the peak chloride and boron concentrations at various distances downgradient from the fill area. Results were compared to the 2020 calculated Reasonable Use Performance Objectives (RUPO) for chloride and boron for the landfill (as described under Guideline B-7 (MOE, 1994a)). Chloride concentrations are simulated to be closer to the RUPO as compared to boron. The predictive results indicate that chloride concentrations are likely to meet the RUPO for overburden groundwater beyond 700 metres downgradient of the fill area. The current landfill site property and/or CAZ lands currently available to the Township for leachate-impacted groundwater plume attenuation consist of the following: 1) a 1,200 metres distance from the north side of the disposal area on the north side of Boundary Road as part of the landfill site property and CAZ easement; and 2) a 313 metre distance from the edge of the proposed landfill expansion southward to the property and/or CAZ boundary. As such, to achieve compliance with the RUPO in future, it will be necessary for the Township in future to obtain control over an additional 400 metres of groundwater travel distance towards the south as CAZ through either property acquisition or groundwater easement below this land area. The approximate extent of CAZ required in the southward direction is illustrated on Figure 6; it is noted that this additional CAZ land is not needed immediately, and the timing such that the landfill site remains in compliance with the RUG will be dependent on the ongoing groundwater monitoring program results.

4.11.4 Summary of Predicted Effects on Off-Site Groundwater Quality

To achieve compliance with the RUPO for the expanded landfill, it will be necessary for the Township in future to obtain control over an additional 400 metres of groundwater travel distance towards the south as CAZ through either property acquisition or groundwater easement below this land area. The approximate extent of CAZ required in the southward direction is illustrated on Figure 6; it is noted that this additional CAZ land is not needed immediately, and the timing such that the landfill site remains in compliance with the RUG will be dependent on the ongoing groundwater monitoring program results.

The contaminant transport modelling completed for the EA to determine the CAZ requirements for the expansion to achieve compliance with the RUG used the two conservative and mobile leachate indicator parameters for this site, chloride, and boron. O.Reg. 232/98 sets out the list of parameters to be considered for assessing off-site groundwater protection as chloride, lead, cadmium, benzene, 1,4 dichlorobenzene, dichloromethane, toluene, and vinyl chloride. Monitoring at this Site has shown that of this parameter list, only chloride is detected in the leachate monitor beneath the landfill; lead and cadmium concentrations are consistently below their detection limit and organic compounds are consistently not detected or occasionally detected at low concentrations. As such, it is considered that the modelling carried out at the EA stage to assess groundwater protection requirements and RUG compliance for the site-specific natural attenuation design is considered to also be appropriate for Waste ECA-level approval.

4.11.5 Contaminating Lifespan

Using the source concentration output files from POLLUTE (provided in Appendix F), the contaminating lifespan of the proposed expanded landfill can be determined using the parameter chloride and the RUG. It is anticipated that chloride concentrations in the leachate beneath the landfill expansion will be below the RUG at approximately year 2070 – or 22 years post closure. This is a relatively short amount of time but not unexpected for a natural attenuation landfill with a permeable soil cover.

5.0 STORMWATER MANAGEMENT

It is proposed to provide a stormwater management system for the expanded landfill to provide quality and quantity control for clean runoff water from the final cover. This section of the D&O Report provides a summary of the proposed stormwater management (SWM) system. Details are provided in the Stormwater Management Report and accompanying drawings provided in Appendix E. The SWM Report and drawings are being submitted under separate cover in support of an application for an OWRA Section 53 ECA.

The proposed stormwater wetland pond location is shown on Figures 2, 3 and 4.

Surface water runoff from the expanded landfill mound is proposed to be collected and conveyed by ditches constructed on the lower sideslopes of the mound and have been sized to convey the 1:100 year return period design storm. These perimeter ditches will be constructed with a berm with 3H:1V sideslopes on either side and a minimum depth of 0.75 metres. The ditch is positioned above the toe of the landfill sideslope to be able to provide suitable slope to the wetland pond and to avoid leachate-impacted groundwater entering the ditch. Similarly, on the north side of the existing landfill mound, a ditch will be constructed in the lower sideslope to maximize the area of the landfill surface water runoff that can be conveyed to the wetland pond. Along the west side of the landfill an access road will be constructed to provide access for the filling of the landfill expansion cells to the south of the existing landfill. This access road will include a roadside ditch on the west side, which will convey surface water runoff from the access road north across Boyne Road via a new culvert and to Volks Municipal Drain.

A raised berm will be constructed adjacent to the south side of the landfill expansion to prevent surface water from the south flowing toward the landfill mound expansion and thereby prevent the creation of additional leachate-impacted water. Instead, this surface water will drain via the existing Municipal Drain at the southwest corner of the Site. The existing perimeter ditch currently in place around the existing landfill footprint will be filled.

The proposed ditch immediately upstream of the proposed wetland pond will be constructed at grade with a raised berm on the south side to prevent surface water from the south, outside of the landfill mound area, from entering.

The proposed wetland pond is as described in Section 3.3 and includes a 1.0 metre depth forebay and a wetland pond configuration designed in accordance with the MECP Design Manual. A low flow channel is provided in the main pond. The elevation of the pond has been set to be below the peat layer of subsoil within the clay layer. Berms will be constructed from native clay material to prevent intrusion of groundwater or escape of surface water captured in the wetland pond.

It is proposed as a component of the expansion design to modify the Volks Municipal Drain roadside ditch along the north side of Boyne Road opposite the landfill site frontage. This modification is labelled on Figures 2, 3 and 4. The length of ditch to be modified is approximately 590 metres. This modification would isolate and convey surface water past the landfill site from upstream (west) to downstream (east) and prevent potential seepage of leachate-impacted groundwater into the surface water in the ditch. The leachate-impacted groundwater would continue northward as groundwater flow into the landfill buffer zone and the approved CAZ easement located north of Boyne Road.

The lined ditch option would consist of a low permeability liner system (60 mil linear low-density polyethylene (LLDPE) geomembrane liner) in the base and sides of the ditch to reduce the likelihood of potentially leachate-impacted groundwater seepage entering the Drain. This would also maintain fish passage and access to upstream habitats. The liner will be protected above and below using geotextile cushion fabrics and be covered with a layer of Granular B Type II.

6.0 SITE OPERATIONS AND CONTROLS

In addition to the expanded landfill, the existing waste diversion facilities will continue to operate in the north central portion of the landfill area. These facilities include preparation of recyclables in the material recycling building for transfer off-Site; and acceptance of Waste Electrical and Electronic Equipment (WEEE), Household Hazardous Waste (HHW), tires, fluorescent bulbs, scrap metal and refrigerant appliances for temporary storage in the appropriate facilities/areas and/or preparation for transfer off-Site. Wood and brush will also be accepted with planned grinding for use as alternative daily cover. As of January 1, 2025, the Site will no longer accept recyclable materials at the Site's Material Recycling Facility, as part of Ontario's transition of the Blue Box Program to producer responsibility.

6.1 Hours of Operation

The expanded landfill will continue to operate from 8 a.m. to 4 p.m., Monday through Friday plus one hour before, i.e., 7 a.m. to 8 a.m., for site preparations and one hour after, i.e., 4 p.m. to 5 p.m. to complete placement of daily cover. The Site will continue Saturday operations from 8 a.m. to 12 p.m. May through November and only one Saturday a month from 8 a.m. to 12 p.m. November through May. The Site will be closed on Sunday.

6.2 On-site Roads

The Site access road from Boyne Road into the landfill Site is paved. The surface within the operations compound is also paved. Repairs and replacement of pavement in this area is contracted out as required.

The proposed new access road along the west side of the landfill area will also be paved.

The temporary access roads to the active fill area are constructed using various suitable waste materials, such as concrete, stones, boulders, bricks, and crushed glass overlain with gravel or some other permeable aggregate material. These temporary roads are maintained as necessary by landfill staff and either removed or filled over once no longer in use.

During the winter, snow removal is carried out by Township staff using the Township's front-end loader on the paved portions of the Site. Snow removal on the temporary access roads is carried out by Township staff using the landfill compactor.

6.3 Fencing and Security

A page-wire fence surrounds the existing landfill (fill area) to prevent entry to the Site by unauthorized persons. The fence on the south side of the existing landfill will be removed to construct the horizontal expansion; considering that the lands to the south are either occupied by trees or are privately owned agricultural fields, it is not proposed to provide a fence along the south side. The existing fence along the east side will be removed and replaced along the new eastern property boundary. There is a lockable gate at the entrance along the northern boundary of the Site off of Boyne Road. When the new access road to the horizontal expansion area is constructed from Boyne Road along the west side of the fill area, a lockable gate at Boyne Road will also be provided. The gates will be locked when the Site is not in use.

6.4 Entrance Signage

The signage present at the main entrance to the Boyne Road Landfill, off Boyne Road, indicates the following information:

Township of North Dundas

Boyne Road Landfill, Recycling Facility, Household Hazardous Waste Facility

Hours of Operation: Monday – Friday 8:00 am – 4:00 pm; Saturday 8:00 a.m. to 11:30 a.m.

For more information (or in case of emergency) contact:

Township of North Dundas

613-774-2105

MECP Environmental Compliance Approval #A482101

*Accepted Wastes: Domestic, Commercial, Non-Hazardous Solid Industrial, and Non-Hazardous Solids
(Limited to Miscellaneous Debris from Agriculture)*

The signage at the main entrance will be modified to reflect the Saturday open hours as described in Section 6.1.

When the new access road for waste disposal vehicles to access the horizontal expansion area is constructed along the west side of the fill area, additional signage will be provided at Boyne Road to direct waste haulage vehicles to use this access.

6.5 Visual Screening

The landfill Site is located in a relatively remote area with no residential properties within close proximity. To the north of the landfill Site is Boyne Road, beyond which are forested properties owned by the MNRF and the Township. To the west and south of the landfill Site is a strip/area of vegetation/trees beyond which are agricultural properties. To the east of the landfill Site is forested properties.

Due to limited space between the landfill and footprint and Boyne Road, construction of a separate vegetated screening feature is not feasible. Instead, the Township constructed a small berm on the northeast side of the Site. The sideslope of the area facing Boyne Road, behind the constructed berm, was completed to final contours, and final cover applied and vegetated. This completed portion, in combination with the constructed berm, provides a visual screen for subsequent waste placement within the licensed fill area to the south.

As recommended from the visual impact assessment completed during the EA, additional trees will be planted within the tree line between the proposed expansion and the southwestern property boundaries to further mitigate visibility from the south and reduce contrast with the surrounding landscape.

6.6 Landfill Equipment and Weigh Scales

The Site equipment consists of a 2020 Caterpillar 816 landfill compactor, a Caterpillar Skid Steer, a 1-tonne truck, and a truck used for the transportation of roll-off containers. A Case Loader may be added to the Site equipment in the future. The Site currently contracts a bulldozer and an excavator, when necessary. Similar equipment may be purchased for the Site in the future.

The Site is not equipped with weigh scales. The volume of landfill airspace consumed annually is determined by comparison of successive annual topographic surveys.

6.7 Waste Placement

Waste will be placed in the expansion in horizontal lifts having a thickness of approximately 1 to 1.5 metres; this thickness reflects the relatively small quantity of waste received daily at the Site for disposal and the practicality of operations for vehicle access and covering of the waste. The waste lifts will be compacted with several passes of the landfill compactor.

6.8 Waste Cover

The current ECA requires that waste material should be covered when it reaches dimensions of 2 metres in height by 10 metres in width, or every two weeks, whichever occurs first. The minimum thickness of cover is 150 millimetres. This practice is proposed to continue. As the volume of waste received at the Site through the winter is low in comparison to the remainder of the year, it is proposed that cover material be placed 1 time per month during the winter months (December through March).

If placement of waste in a portion of the landfill is to be suspended for a period of greater than three months in the non-winter months, the thickness of cover soil will be increased to a total of 300 millimetres. When filling is resumed in this area, the additional cover soil can be removed for re-use.

Cover material for the Site is obtained mainly from construction/excavation activities completed within the Township. When this source provides insufficient material, additional cover material is purchased from an aggregate supplier. During the winter, and wet periods, if and when placement and contouring of the soil cover materials becomes difficult, or at other times of the year, wood chips can be used as cover. Wood chips are available from HydroOne or from grinding of wood and brush received at the landfill Site.

Contaminated and potentially contaminated soils are also accepted at the Site and used for waste cover, provided they meet with requirements of Ontario Regulation 347/90 (as amended by Ontario Regulation 324/22).

Select agricultural waste products and biosolids may also be used for cover, provided they are not going to result in adverse effects, i.e., excessive odour, vehicle access, etc.

6.9 Handling of Other Materials

6.9.1 Tires

Rubber tires arriving at the Site are segregated and stored in a specified area within the operations compound in stockpiles of approximately 500 tires each. The tires accumulate until sufficient numbers are present on-Site and then the tires are removed for recycling.

6.9.2 Recyclable Materials

All recyclables collected within the Township are taken to the recycling transfer station within the operations compound in the centre of the Site. From there they are transferred off-Site by a recycling contractor. As of January 1, 2025, the Site will no longer accept recyclable materials for processing in its on-site Material Recycling Facility, as part of Ontario's transition of the Blue Box Program to producer responsibility.

6.9.3 Refrigerated Appliances

Refrigerated appliances (e.g., air conditioners, refrigerators, freezers, heat pumps, etc.) that are delivered to the Boyne Road Landfill have the chlorofluorocarbon (CFC) refrigerant removed. A trained and MECP certified technician removes the CFC refrigerant and affixes a sticker to the appliance once this has been completed. A scrap metal dealer subsequently removes these items from the Site.

6.9.4 Contaminated Soil

Contaminated soil may be received at the Boyne Road Landfill. Acceptance into the landfill is contingent upon its generator demonstrating to the Township that the contaminated soil is a non-hazardous waste in accordance with Ontario Regulation 347 (as amended by Ontario Regulation 324) (RRO 1990, Reg 347; O Reg 324/22).

6.9.5 Household Hazardous Waste

The Boyne Road Landfill is licensed under ECA No. A482101 (amendment dated September 18, 1996) to operate a household hazardous waste transfer facility. The facility is located within the operations compound in the north central portion of the landfill area and consists of a roofed building with open walls to provide adequate ventilation. The facility is surrounded by a fence with a lockable gate.

The Township operates Household Hazardous Waste Days approximately six times a year from 9:00 a.m. until noon, generally in the spring, summer, and fall. In addition, residents are permitted to drop off such items as used oil, automotive batteries, and propane tanks at any time.

During operating hours, the facility is staffed by an attendant who is responsible for inspecting all wastes received to determine their acceptability. The attendant is also responsible for handling and packaging the received waste appropriately so that it can be removed from the Site in accordance with MECP regulatory requirements. Materials collected during Household Hazardous Waste Days are shipped off-Site by a licensed contractor for proper disposal or recycling, within one month of their collection on-Site.

The Township has established a monthly summary, in accordance with Condition 9 of the ECA, to track material manifests and inspections of the household hazardous waste facility. Any spills or other problems are also recorded. These summaries are submitted in the annual report, to the MECP District Manager, in accordance with Condition 9c of the ECA. This practice is proposed to continue.

The hazardous waste transfer facility has signs indicating a prohibition on smoking in the vicinity of the facility.

6.9.6 Wood and Brush

Wood waste and brush currently received at the Site is temporarily stored on a completed or inactive area of the landfill. It will be processed through a grinder brought to the site on an as needed basis for use as an alternative cover material.

6.9.7 Waste Electrical and Electronic Equipment

The MECP issued an amendment to the ECA in 2015 (Notice No. 5) that allowed the establishment and continued operations of the WEEE program at the Site. All WEEE received at the Site is documented and placed on pallets in a shed located on the west portion of the operations compound. The materials are then stockpiled in the Coverall building located in the operations compound until they are transferred off-Site.

6.10 Site Controls

6.10.1 Tree Removal

As a result of natural environment studies completed during the EA, an Information Gathering Form was prepared and submitted to the MECP Species at Risk Branch in October 2023. A response from the MECP was received in December 2023 and indicated that an ECA Permit was not required in relation to construction or operation of the landfill expansion. To avoid potential adverse impacts to specific bat species or their habitat, tree removal required to construct the expansion is to be carried out outside of March 15 through November 30, leaving a tree removal window between December 1 and March 14.

6.10.2 Dust Control

The main source of dust will be the unpaved on-Site access roads and from equipment movement around the landfill working area. As well, dust may be generated by the construction of the landfill expansion due to excavation, placing of sand and grading. To minimize the potential for on-Site and off-Site impacts due to dust, the following best management practices will be implemented at the Site:

- To avoid excessive dust generation, on-Site roads will be routinely maintained as part of the normal Site operations.
- On-Site roads will be watered to control dust as needed using available on-Site equipment such as loader with attachments and backhoe with attachments. The Township also dispatches to the Site, when needed, a sidewalk cleaner to clean the site entrance area).
- Calcium chloride, sodium chloride, or oil will not be used for dust control within the Site area because the chemicals could affect groundwater or surface water quality. Other MECP approved dust suppressants could be used, when required.
- A speed limit of 20 kilometres per hour on unpaved roads will be enforced to avoid excessive amounts of airborne dust. These speed limits will be posted on-Site and communicated to vehicles entering the Site by the attendant.
- Where feasible and practical, movements of soil (i.e. excavation activities and movements of cover soils) will be minimized during extremely dry/windy weather conditions.

6.10.3 Odour Control

Landfill odours may originate from exposed waste at the working face, or landfill leachate (which could potentially emerge to surface as seeps at the toe of the sideslopes). This odour is generally regarded as unpleasant; considering that the nearest residents to the Site are greater than 500 metres away, odour is unlikely to result in an off-property nuisance. In an effort to reduce the potential for odour emissions, the following best management practices will be implemented:

- Regular inspection of the landfill for leachate outbreaks/seeps and any required cover repairs or other mitigative actions will be carried out;
- Waste compaction and the application of cover;
- Immediately covering extremely odorous waste after placement in the disposal area;
- Minimize the size of the working face; and

- If an odour complaint is received, efforts will be made to identify the problem and apply mitigative measures to control the odour.

Odours may originate from cracks or fissures in the soil cover well after landfilling has taken place. Regular inspections will identify any cracks or fissures to be repaired by filling with cover soil.

6.10.4 Noise Control

Landfill noises may come from equipment, compaction of waste, and placing of waste. To reduce the nuisances associated with excessive noise, the following best management practices will be implemented:

- All equipment working at the facility will have properly operating mufflers; and,
- Heavy equipment operating hours will be limited to the hours of 7:00 am to 5:00 pm.

6.10.5 Bird and Non-Bird Vector Control

Animals may be attracted to a landfill or waste processing site because it provides a suitable foraging habitat. Consequently, they could move onto the landfill or into a facility temporarily or permanently.

An external firm is contracted by the Township to check the landfill facilities on a monthly basis for signs of pests/vermin at the landfill. If vermin are detected, the external contractor takes measures to remove the pests. Bait is continually set near the active fill area. These practices will continue.

Birds such as gulls may become a nuisance by attending the Site and adjacent or nearby properties, creating noise and fouling those lands.

Specific control measures for bird and non-bird vector control include, but are not limited to:

- Daily cover of waste;
- Efforts to minimize size of working face;
- Use of pyrotechnics, birds of prey, distress calls, models, kites, or other options available to control birds, as and if required; and
- When and if required, implement the use of scare pistols (e.g., bangers and crackers) to discourage gulls at the active face, overhead, and in loafing areas.

6.10.6 Litter Control

The following preventative litter control measures will continue to be undertaken at the Site:

- Application of cover material to the waste in the active area of the landfill;
- When practical, maintain a working face shielded from the wind to be used on days with strong winds;
- Permanent litter fencing installed at the perimeter roads or other strategic locations;
- Minimizing the size of the active working face to reduce potential litter generation;
- Vehicles transporting waste will be tarped, if required, to prevent litter from blowing out of the vehicle while on the Site; and

- Landfill staff will pick up litter from around the Site on a regular basis and as required as a result of specific events such as high winds. Collected litter will be disposed at the working face. Litter pick-up on adjacent properties will be undertaken as required, and where the property owner or tenant permits access.

6.10.7 Wildlife Management

The Wildlife Observation Protocol (refer to Appendix G) developed for the landfill expansion should be implemented when Site disturbance activities such as construction and operations may interact with species at risk and wildlife.

6.10.8 Site Inspections

The Township performs, and proposes to continue, monthly inspections of the landfill site. A Site Inspection form template is provided in Appendix H.

The Township performs an annual spring cleanup during which the landfill is inspected for erosion. Eroded areas are fixed, and litter is collected.

6.10.9 Complaints Protocol

In the event that a complain is received in relation to the landfill site, the Boyne Road Landfill Complaints Protocol will be implemented. The Complaints Protocol is provided in Appendix I.

6.10.10 Fire Control

Small, localized fires will be dealt with, if possible, using fire extinguishers to be located in the on-Site buildings and on heavy equipment units. The area of the fire will be evacuated, and the Fire and Emergency Services will be called (911) to provide advice or to perform follow up inspections.

In cases involving a larger fire or explosion, staff will evacuate the area and will direct all residents and vehicles to leave the Site and assemble in a location away from the danger area. Emergency Services will assume situation control and direct other staff.

In all cases, the MECP District Office and the Ontario Spill Action Centre will be notified of fires / or explosions and an incident report will be completed.

The following three elements are required for a fire to exist: (i) fuel source, (ii) ignition source (flame, heat, or spark), and (iii) oxygen (air). Removal of one of these elements will assist in the control of a fire.

The following preventative fire control measures will continue to be undertaken at the Site:

- Smoking and open flames will not be allowed on-Site, except in pre-designated areas;
- Catalytic converters on the underside of vehicles are sufficiently hot to ignite dry materials such as grass. Vehicles will not be left running in a stationary position over dry grass or other combustible materials for extended periods of time, unless required for health and safety reasons; and
- Suitable fire extinguishers will be kept and maintained in working order in all landfill vehicles and equipment.

Damage to landfilled batteries can start fires in the waste pile. These conditions may be created as heavy equipment drives on the waste pile, reinforcing the importance of maintaining fire extinguishers in heavy equipment units.

Dry chemical fire extinguishers are effective for surface fires involving ordinary combustibles such as wood, grass, flammable liquids and electrical equipment. These fire extinguishers are appropriate for small, localized fires such as a drum of burning refuse, a small burning gasoline spill, a vehicle engine fire, etc. No attempt will be made to use these extinguishers for well-established fires or large areas or volumes of flammable liquids. In case of larger fires, the work area will be evacuated immediately, and the fire department called.

In the event of surface fire or explosion:

- Call the local fire department;
- If the situation can be readily controlled with available resources without jeopardizing the health and safety of Site workers, take immediate action by:
 - Standing or operating equipment upwind from the fire;
 - Using fire extinguishers; and
 - Covering the area(s) with soil.
- If the fire cannot be controlled, as specified above:
 - If possible, isolate the fire to prevent spreading;
 - Clear the area of all personnel working in the immediate vicinity; and
 - Immediately notify Site and emergency personnel and the fire department.

6.11 Emergency Response

In the event of an emergency at the Boyne Road Landfill, 911 emergency response services, the Ontario Spill Response Centre (1-800-268-6060), and the Township of North Dundas Emergency Management Coordinator will be contacted as appropriate. The MECP will be notified of the occurrence and any corrective action taken.

7.0 GROUNDWATER AND SURFACE WATER MONITORING PROGRAMS, TRIGGER MECHANISMS AND CONTINGENCY PLANS

This section of the D&O Report is taken from the August 2023 report submitted to the MECP TSS and has been updated to reflect the approach agreed upon through subsequent comments and responses, as documented in Appendix B.

7.1 Groundwater Monitoring Program

For the proposed landfill expansion, the continued objectives of the groundwater monitoring program are to monitor the quality of leachate and groundwater to determine the extent and degree of leachate effects on groundwater quality and assess site compliance with the MECP Reasonable Use Guideline as required by O.Reg. 232/98. The proposed groundwater monitoring program is described below and shown on Figure 7.

The proposed monitoring program is similar to that for the existing landfill, which has been developed and has evolved over the 30 years that groundwater monitoring has been carried out at this Site. In view of this long history of monitoring, the understanding of both the hydrogeological setting and the current leachate-impacts on groundwater and the slow rate of plume migration, it is appropriate that the groundwater monitoring program at this Site does not need to meet all the requirements set out in O.Reg. 232/98.

Existing monitoring wells MW7, MW12, BRW3, MW15-1, and MW15-2 are within or immediately adjacent to the proposed expansion. These monitoring wells will be decommissioned as part of the site preparation work for the expansion.

The existing monitoring well network provides good coverage for monitoring purposes, except to the south. New monitoring wells, numbered MW22-B (overburden) and BRW22-A (upper bedrock zone) will be installed to the south of the expanded waste footprint at the approximate location shown on Figure 7.

Monitoring Locations: MW1, MW4, MW5, MW9, MW13, MW14, MW16, MW17, MW18, MW19, BRW1-A, BRW1-B, BRW1-C, BRW2, MW06-20, MW06-21, MW06-22R, MW07-23, MW07-24, MW07-25, BRW07-26, BRW15-3, BRW16-1A, MW16-1B, MW16-2, BRW16-3A, MW16-3B, MW16-3C, BRW22-A (to be installed), MW22-B (to be installed)

Monitoring Frequency: Spring, Late Summer

Field Measured Parameters: groundwater levels at all accessible monitoring wells, temperature, conductivity, pH

Laboratory Analytical Parameters: potassium, boron, iron, manganese, barium, aluminum, cadmium, chromium, cobalt, lead, zinc, TDS, alkalinity, sulphate, sodium, nitrate, chloride, BOD, DOC, ammonia, dissolved reactive phosphorous (DRP), phenols, hardness (calculated from laboratory calcium and magnesium analysis), copper, nickel; VOCs (at MW06-22R, MW1, MW4, MW5 and MW16 only)

The monitoring program may be adjusted based on the annual monitoring results in consultation with the MECP. It is acknowledged that additional monitoring wells may be required in the future when the new CAZ to the south of the expansion is established, noting that the need for installation of those additional monitoring wells will be determined through monitoring and will be triggered at a time when the trigger mechanism (refer to Section 7.2) is exceeded along the existing south boundary of the landfill site property, i.e., at MW-22B or BRMW-22A.

7.2 Groundwater Trigger Mechanisms and Contingency Plan

7.2.1 Groundwater Trigger Mechanisms

The objective of the groundwater trigger mechanism for the Site is to use the results of the ongoing groundwater monitoring program to assess Site compliance with MECP-Guideline B-7, and to trigger implementation of a Contingency Plan when and if necessary, so to prevent leachate-impacted groundwater in excess of MECP Guideline B-7 from migrating beyond the boundaries of the CAZ.

To develop the groundwater trigger mechanism for the landfill expansion, leachate indicator parameters have been differentiated into Key and Secondary groupings based on the ratio of the median parameter concentrations in leachate compared to background groundwater quality. The Key Leachate Indicator Parameters are barium, boron, chloride, and sodium (ratios of 34, 25, 265, and 40, respectively). The Secondary Leachate Indicator Parameters are DOC, iron, manganese, and TDS (ratios of 3, 9, 1 and 7, respectively).

For the purpose of the trigger mechanism, the following shall apply:

- The *Compliance Evaluation Parameters* for the Boyne Road Landfill are leachate indicator parameters with Ontario Drinking Water Quality Objectives (ODWQO) for health and aesthetics: barium, boron, chloride, DOC, iron, manganese, sodium and TDS. It is noted that chloride and TDS concentrations in monitoring wells along Boyne Road are consistently above RUPO. Elevated concentrations of these parameters, as well as sodium, may be derived from landfill leachate and/or road salting activities; thus, it is difficult to assess compliance

with Guideline B-7 based on the results for these parameters only. It is also noted that manganese concentrations in groundwater to the north of Boyne Road appear to be naturally elevated; thus, compliance with Guideline B-7 cannot be evaluated based on the results for manganese only.

As mentioned above, it is proposed to differentiate Compliance Evaluation Parameters into Key and Secondary groupings:

- *Key Compliance Evaluation Parameters:* barium, boron, chloride and sodium
- *Secondary Compliance Evaluation Parameters:* alkalinity, DOC, iron, manganese and TDS
- The *Compliance Evaluation Monitoring Wells* for the Boyne Road Landfill are the monitoring wells located closest to the down-gradient property/CAZ boundaries (as indicated on Figure 7) as follows: MW07-24, BRW16-3A, MW16-3B and MW16-3C for the north property boundary; BRW16-1A, MW16-1B and MW07-23 for the west property boundary; MW13 and BR07-26 for the east property boundary; and MW06-20, BRW15-3, BRW22-A and MW22-B for the south property boundary.
- The Trigger Concentrations for the Boyne Road Landfill shall be the Reasonable Use Performance Objectives for the Compliance Evaluation Parameters.
- The Reasonable Use Performance Objective (RUPO) refers to the maximum allowable concentration for a Compliance Evaluation Parameter in groundwater at the point of compliance under MECP Guideline B-7.
- The Contingency Plan shall be implemented when a Trigger Concentration at a Compliance Evaluation Monitoring Well has been exceeded during two consecutive monitoring sessions for two Compliance Evaluation Parameters, provided that at least one of the Compliance Evaluation Parameters is a Key Compliance Evaluation Parameter (i.e., barium, boron, chloride or sodium), although as noted earlier, chloride and sodium concentrations in groundwater monitors representative of the compliance boundaries north of Boyne Road could be materially influenced by road salting and/or snow disposal activities in the vicinity.

Provided the trigger exceedance indicates a change in groundwater quality when considering the historical groundwater quality data at the monitoring location, any observed trigger of the *Contingency Plan* will be verified by re-sampling for the parameter(s) of concern within one month of the original sampling session at which non-compliance with the trigger was initially measured. If the exceedance is not confirmed by the follow-up sample (Confirmatory Monitoring Session), then the initial exceedance will be considered anomalous and will be discounted. Historical trends in groundwater quality at the trigger location shall also be used to assess whether or not monitoring results are anomalous.

Concurrent with the Special Monitoring Session will be the initiation of a three-step process for the purpose of determining whether implementation of an additional investigation program and/or the *Contingency Plan* is warranted.

The three-step process will be as follows:

Step 1

Assess whether or not non-compliance with the applicable *Trigger Concentration* is likely due to migration of the landfill leachate plume as a whole or whether it is partially or wholly explicable by other factors. This will be achieved by considering trends in parameter concentrations at all relevant monitoring locations. In addition, if a Secondary CEP and a Key CEP exceed 75% of their calculated RUPO limits and the exceeding parameters have

both increased in concentration for two consecutive sampling events at any CEMW location, groundwater sampling at the CEWM location and analysis for PFAS will be carried out to further identify/differentiate groundwater impacts associated with landfill leachate from other possible sources.

Step 2

Discuss the results of Step 1 among the Township and the MECP District Manager to decide whether implementation of an additional investigation program and/or the contingency plan is warranted.

Step 3

If the conclusion to Step 2 is affirmative, then the additional investigation program and/or *Contingency Plan* would be formulated and would be implemented.

If triggered and considered an appropriate action, the additional investigation program could include PFAS analysis in selected groundwater monitors as a tool to identify/differentiate groundwater impacts associated with landfill leachate from other possible sources.

7.2.2 Groundwater Contingency Plan

Both the existing landfill and the proposed expansion are intended to operate in compliance with the RUG B-7 as a natural attenuation landfill using adequate CAZ lands to provide the required attenuation of leachate effects on groundwater quality at the CAZ boundaries. The approved contingency plan approach for the existing landfill is considered generally appropriate for the proposed expansion as described and appropriately updated for the expansion (with consideration of the historical monitoring data base at the *Compliance Evaluation Monitoring Wells* to minimize the occurrence of false triggering) as follows.

Under MECP Guideline B-7, the owner of a waste disposal site is responsible for preventing unacceptable off-property groundwater impacts. *Compliance Evaluation Monitoring Wells* BRW16-3A, MW16-3B and MW16-3C are approximately 360 metres upgradient of the closest downgradient boundaries of the CAZ or landfill property (to the north), the following actions are proposed as a *Contingency Plan* in the event that the trigger mechanism has been exceeded at BRW16-3A, MW16-3B or MW16-3C. The same is applicable for MW22-B and BRW22-A, which will be located about 250 metres upgradient of the closest downgradient property boundary and about 650 metres upgradient of the additional CAZ to be added to the south:

- 1) Installation of additional monitoring well(s) towards and/or at the closest downgradient boundary to the exceeding *Compliance Evaluation Monitoring Well*.
- 2) Modification to the monitoring program to include the additional *Compliance Evaluation Monitoring Well* location(s).
- 3) Modification of the trigger mechanism to replace the exceeding *Compliance Evaluation Monitor* with the additional monitoring well(s).

It is noted that once the CAZ lands to the south are added, MW 06-20 and BRW15-3 will be located about 400 metres inside the southern limit of the additional CAZ. At that time, the above contingency actions will also apply to these existing monitoring locations and, in consultation with MECP, the trigger mechanism can be modified appropriately.

Should the ongoing groundwater monitoring program at any of the *Compliance Evaluation Monitoring Wells* define the existence of, or potential for, unacceptable impacts on groundwater quality beyond the CAZ boundaries,

i.e., off-Site, the Township will prepare and present a mitigation plan for the approval of the MECP Director and/or the District Manager. Contingency actions to be taken by the Township to prevent or remediate the off-property impacts could consist of:

- Delineation of the extent of the leachate impact on groundwater, and acquisition of, or obtain a groundwater easement for, additional CAZ land to bring the Site into compliance with MECP Guideline B-7.
- Developing and implementing groundwater control/treatment measures (for example, a groundwater interceptor trench in overburden or purge wells in bedrock) to bring the Site into compliance with Guideline B-7.

7.3 Surface Water Monitoring Program

7.3.1 Establishment of Background Surface Water Quality

Surface water station SW1 is located upstream of the Site and is therefore considered to represent background surface water quality in the Volks Drain. SW4 is located further upgradient to SW1 and could provide a more representative background comparison for surface water quality as it is located further upgradient to SW1. However, as SW4 is further west, it is expected to intercept less discharging groundwater than other downgradient surface water stations. As a result, SW4 has reported dry conditions more frequently than SW1. There could also be additional runoff entering the Volks Drain between SW4 and downstream location SW1. For this reason, SW1 is considered a more suitable station for relative comparison of surface water quality for downgradient stations SW2 and SW3.

An assessment of whether SW1 and/or SW4 are considered likely to have been impacted by landfill leachate was previously carried out and reported in the 2022 annual monitoring report. Radial flow from the fill area has been inferred from historical groundwater elevations, with primary groundwater flow components to the north and south, and weaker components to the west. Calculated groundwater velocities from the western edge of the fill area (MW5, MW15) towards overburden well MW07-23 (located approximately 160 m northeast of SW4) in 2022 were estimated at approximately 0.5 metres per year towards the fill area and not towards MW07-23. Assuming the westward component of groundwater flow was equivalent to the average velocity measured in the primary northward flow component (approximately 1 metre per year), radial flow from the fill area would require approximately 240 years to reach surface water station SW4 or approximately 90 years to reach SW1. As such, it is reasonable to infer that SW4 and SW1 are not expected to be under the influence of radial groundwater flow from the fill area, and so the surface water quality at these locations is not affected by landfill leachate.

Background surface water quality in the Volks Drain was assessed using both the UTL and 75th percentile of the available data at SW1 and the results are provided in the Table 5-1 below; the parameters shown are leachate indicator parameters that have PWQO or CWQG and are used in the surface water quality assessment for the site. It can be seen that:

- With the exception of phenols where the background values calculated by both methods are essentially the same, the values calculated using UTL are consistently higher than those calculated using the 75th percentile approach, by a factor of about 4 to 6 times.
- For the leachate indicator parameters with PWQO or CWQG, the use of the UTL to establish background parameter concentrations results in chloride, cobalt and iron being Policy 2 parameters. When considering all available data at background surface water quality monitor SW1 and for parameters other than those

provided in Table 5-1, the parameters dissolved oxygen, nitrate, total phosphorus and phenols may also be considered Policy 2.

- The use of the 75th percentile to establish background parameter concentrations results in only iron being a Policy 2 parameter. When considering all available data at background surface water quality monitor SW1 and for parameters other than those provided in Table 7-1, the parameters dissolved oxygen, nitrate, and total phosphorus may also be considered Policy 2.

Tables 7-2 and 7-3 also show the application of the surface water assessment criteria using each of the background quality approaches. As would be expected, there are more exceedances of the assessment criteria using the 75th percentile approach. Although the use of the 75th percentile value as background is more conservative, it is noted that neither approach resulted in non-compliance with the existing Surface Water Trigger mechanism, which requires exceedance of the assessment criteria during three consecutive sampling sessions.

The ongoing annual surface water monitoring program indicates that there are periodic impacts on surface water quality in the Volks Drain from the landfill leachate, either due to landfill site runoff or the seepage of leachate-impacted groundwater into the Volks Drain. The intent of the proposed modifications to the Volks Drain as part of the expanded landfill design is to eliminate the potential for leachate-impacted groundwater to the surface water in the Drain, which should result in fewer parameter concentration exceedances of background values along the section of Volks Drain opposite the landfill site. The use of the UTL to determine background parameter concentrations using the large number of data points available is a statistically valid approach and appropriately incorporates the higher values in the data set in the ongoing update of background values. Conversely, there is little consideration of these higher, valid data points when applying the 75th percentile approach. It is proposed to use the 75th percentile in calculating the background concentration and applying the assessment criteria for the expanded landfill (refer to Section 7.4).

Table 7-1: Comparison of UTL and 75th Percentile Calculated Based on Historical Analytical Results at SW1

Compliance Evaluation Parameter	Assessment Criteria ⁽¹⁾⁽²⁾	Upper Tolerance Limit	75 th Percentile of Background Concentrations
Unionized ammonia	0.020	0.0143	0.0023
Boron	1.5	0.21	0.055
Chloride	120	365	62
Cobalt	0.0009	0.0024	0.0005
Iron	0.30	7.14	1.1
Phenols	0.001	0.0096	0.001

Notes:

All units are in mg/L. Based on historical analytical results reported at SW1 from June 2001 to April 2023.

⁽¹⁾ Assessment Criteria is PWQO (Ministry of the Environment, 1999). Where PWQO criteria are not available (in the case of chloride) Assessment Criteria is CWQG (CCME, 2016)

⁽²⁾ Assessment Criteria for boron is CWQG as requested by the 2019 MECP surface water specialist.

Table 7-2: Evaluation of 2022 and April 2023 Data According to the Surface Water Trigger Mechanism

Compliance Evaluation Parameter	Assessment Criteria ⁽¹⁾⁽²⁾	Upper Tolerance Limit	SW2				SW3			
			April 2022	September 2022	November 2022	April 2023	April 2022	September 2022	November 2022	April 2023
Unionized ammonia	0.020	0.0143	<0.00004	0.0038	0.0002	<0.02	0.0017	0.0043	0.0014	0.0004
Boron	1.5	0.21	0.03	0.20	0.09	0.03	0.17	0.26 (0.09)	0.13	0.05
Chloride	120	365	86	363 (550)	131	29	48	453 (550)	160	36
Cobalt	0.0009	0.0024	<0.0002	0.0016 (0.0006)	0.0003	0.0002	0.0016	0.0020 (0.0006)	0.0007	0.0002
Iron	0.30	7.14	0.52	11.9 (3.52)	0.24	0.52 (0.38)	2.02	6.57 (3.52)	0.89	0.43
Phenols	0.001	0.0096	<0.001	0.004 (<0.001)	<0.001	0.001	0.001	<0.001	<0.001	0.001

Notes:

Bold indicates exceedance of Assessment Criteria⁽¹⁾, Upper Tolerance Limit, and concentrations at SW1 during the same monitoring event. Concentration reported at SW1 during the same monitoring session included in brackets for comparison purposes.

All units are in mg/L

⁽¹⁾ Assessment Criteria is PWQO (Ministry of the Environment, 1999). Where PWQO criteria are not available (in the case of chloride) Assessment Criteria is CWQG (CCME, 2016)

⁽²⁾ Assessment Criteria for boron is CWQG.

Table 7-3: Evaluation of 2022 and April 2023 Data using the 75th Percentile of Historical Background Concentrations

Compliance Evaluation Parameter	Assessment Criteria ⁽¹⁾⁽²⁾	75 th Percentile of Background Concentrations	SW2				SW3			
			April 2022	September 2022	November 2022	April 2023	April 2022	September 2022	November 2022	April 2023
Unionized ammonia	0.020	0.0023	<0.00004	0.0038	0.0002	<0.02	0.00171	0.00434	0.00138	0.00045
Boron	1.5	0.055	0.03	0.20	0.09	0.03	0.17	0.26	0.13	0.05
Chloride	120	62	86	363 (550)	131 (71)	29	48	453 (550)	160 (71)	36
Cobalt	0.0009	0.0005	<0.0002	0.0016 (0.0006)	0.0003 (0.0003)	0.002	0.0016 (<0.0002)	0.0020 (0.0006)	0.0007 (0.0003)	0.0002
Iron	0.30	1.1	0.52	11.9 (3.52)	0.24	0.52	2.02 (0.37)	6.57 (3.52)	0.89	0.43
Phenols	0.001	0.001	<0.001	0.004 (<0.001)	<0.001	0.001	0.001	<0.001	<0.001	0.001

Notes:

Bold indicates exceedance of Assessment Criteria⁽¹⁾, 75th Percentile of Background Concentrations (as reported at SW1), and concentrations at SW1 during the same monitoring event.

Concentration reported at SW1 during the same monitoring session included in brackets for comparison purposes.

All units are in mg/L

⁽¹⁾ Assessment Criteria is PWQO (Ministry of the Environment, 1999). Where PWQO criteria are not available (in the case of chloride) Assessment Criteria is CWQG (CCME, 2016)

⁽²⁾ Assessment Criteria for boron is CWQG (CCME, 2016)

Prepared by: HA

Checked by: RPM

7.3.2 Surface Water Monitoring

There are currently four surface water monitoring stations located within the drainage ditch (Volks Drain) along the north side of Boyne Road (on the opposite side of the road from the disposal area). SW1 and SW4 are located upstream of the landfill site, SW2 is located opposite the disposal area, and SW3 is located downstream of the landfill site. The locations of the four existing surface water monitoring stations are indicated on Figure 7. These sampling locations are proposed to continue for the expansion. In addition, a new sampling station, SW5, will be established at the end of the lined ditch section of the Volks Drain, which will be upstream from where the stormwater wetland discharges through a culvert under Boyne Road into Volks Drain. The approximate location of SW5 is shown on Figure 7. The proposed surface water monitoring program is summarized below.

Monitoring Locations: SW1, SW2, SW3, SW4, SW5 – refer to Figure 7

Monitoring Frequency: Spring, Late Summer, Late Fall

Field Measured Parameters: temperature, conductivity, pH, dissolved oxygen, approximate flow rate

Field Observations at Sampling Locations: natural environment conditions, i.e., vegetation, algae growth, litter/debris

Laboratory Analytical Parameters: boron, iron (total and dissolved), manganese, barium, aluminum, cadmium, chromium, cobalt, lead, zinc, alkalinity, nitrate, nitrite, chloride, BOD, ammonia, total phosphorous, phenols, potassium, copper, nickel, sodium, sulfate, TDS, total suspended solids, chemical oxygen demand, DOC, total Kjeldahl nitrogen, hardness (calculated from laboratory calcium and magnesium analysis), unionized ammonia (calculated from ammonia and field temperature analysis)

In addition to the above parameters, PFAS could possibly be used in future to differentiate surface water quality effects due to landfill leachate effects from other possible sources, i.e., agricultural, road salt runoff, snow disposal site. To provide a baseline for future comparison, PFAS analysis would be done for samples obtained from SW1, SW2 and SW3 for spring, summer and fall prior to constructing the modifications in Volks Drain, and then would be repeated again following the completion of the modifications. After the modifications are constructed, baseline PFAS analysis would be completed at new station SW5. PFAS analysis in surface water would be considered in future if needed to differentiate between potential sources of surface water quality impact.

During monitoring events the runoff/flow patterns from the snow disposal site relative to the Volks Drain surface water sampling stations would be observed and documented; this information would be included in the annual monitoring report.

7.3.3 Stormwater Monitoring

There is no existing stormwater management infrastructure at the Site. It is proposed for the expansion that a sampling location (SW6, refer to Figure 7) be added at the outfall for the stormwater management pond, and it be sampled four times per year after significant rainfall events, once in spring and fall and two other sampling events. The samples collected will be analyzed for the same field measured parameters and laboratory parameters as listed above for surface water.

7.4 Surface Water Trigger Mechanism and Contingency Plan

7.4.1 Surface Water Trigger Mechanism

7.4.1.1 Landfill Site

The objective of the surface water trigger mechanism will continue to be to use results of the ongoing surface water monitoring program to monitor for consistent impacts resulting from the discharge of landfill leachate-impacted groundwater to surface water within the Volks Drain in the section of the Drain opposite the landfill site and to trigger implementation of a contingency plan if necessary to protect surface water quality within the drainage ditch. The Surface Water Trigger Mechanism for the landfill expansion considers the proposed modifications to the Volks Drain section opposite the landfill site, which are intended to separate surface water in the Drain from leachate-impacted groundwater discharge.

For the purpose of the trigger mechanism, the following shall apply:

- The *Compliance Evaluation Parameters* are leachate indicator parameters for which there are established PWQO: unionized ammonia, phenols, boron, cobalt and iron; or CWQG: chloride and boron.
- The *Compliance Evaluation Locations* within the drainage ditch are: SW2 and SW5 (located opposite the disposal area) and SW3 (located downstream of the area of potential leachate or other site effects).
- The *Surface Water Trigger Concentration* is as follows:
 - for a Policy 1 parameter, the PWQO or CWQG;
 - for a Policy 2 parameter, the 75th percentile of historical background concentrations (as reported since 2001) at SW1.
- The *Contingency Plan* shall be implemented when a *Trigger Concentration* at a single *Compliance Evaluation Location* has been exceeded during three consecutive monitoring sessions.

The 75th percentile values will be updated as additional background data is collected as part of the annual monitoring program. These limits will be used as background concentrations for comparison in the evaluation of *Trigger Concentrations*.

Any observed trigger of the *Contingency Plan* will be verified by re-sampling for the parameter(s) of concern within one month of the original sampling session at which non-compliance with the trigger was initially measured. If the exceedance is not confirmed by the follow-up sample (Confirmatory Monitoring Session), then the initial exceedance will be considered anomalous and will be discounted. Historical trends in surface water quality at the trigger location, together with the measured concentration of the parameter(s) of concern at SW1 reported the same day, shall also be used to assess whether or not monitoring results are anomalous.

Concurrent with the Confirmatory Monitoring Session will be the initiation of a three-step process for the purpose of determining whether implementation of an additional investigation program and/or the *Contingency Plan* is warranted.

The three-step process will be as follows:

Step 1

Assess whether or not exceedance of the *Trigger Concentration* is likely due to the discharge of leachate-impacted groundwater into the Volks Drain or whether it is partially or wholly explicable by other factors. This will be achieved by re-sampling surface water locations SW1, SW2, SW5 and SW3 in the Volks Drain within 60 days of the exceedance of the *Trigger Concentration*. If the trigger is confirmed, the process will proceed to Step 2.

Step 2

Representatives of the Township and the MECF District Manager will discuss the results of Step 1 and Step 2 to decide whether implementation of an additional investigation program and/or the contingency plan is warranted.

Step 3

If the conclusion of Step 2 is affirmative, then the additional investigation program and/or the contingency plan would be implemented.

If triggered and considered an appropriate action, the additional investigation program could include PFAS analysis at selected surface water stations as a tool to identify/differentiate surface water impacts associated with landfill leachate from other possible sources.

7.4.1.2 Stormwater Pond

It is expected that the Sewage Works ECA issued for the stormwater management wetland will have an effluent objective for total suspended solids; it is proposed that the limit be 25 mg/L, as is typically applied to these types of control structures. Total suspended solids will be the key trigger parameter used to assess performance of the pond.

The monitoring results at SW6 will also be used to assess whether leachate impacts on pond discharge water quality are suspected. The proposed effluent objective parameters for assessment of leachate impact are unionized ammonia, boron and chloride, with proposed effluent objective concentrations at the PWQO or CWQG (0.02, 1.5 and 120 mg/L, respectively).

If the ongoing monitoring program at trigger location SW6 indicates that this total suspended solids objective is exceeded, or if leachate impacts are suspected based on the monitoring results and the Assessment Criteria are exceeded, a re-sampling of the pond discharge will be carried out within one month of the original sampling session at which non-compliance with the trigger or suspicion of leachate impact was initially reported. PFAS will be included in the suite of analytical parameters for the re-sampling event to provide additional information for assessment of potential leachate impacts. If the exceedance/suspicion is not confirmed by the follow-up sample, then the initial exceedance/suspicion will be considered anomalous and will be discounted. Historical trends in total suspended solids concentrations and overall water quality at the trigger location shall also be used to assess whether or not monitoring results are anomalous.

If the total suspended solids exceedance or leachate impacts is confirmed, the contingency plan will be implemented.

7.4.2 Surface Water Contingency Plan

7.4.2.1 Volks Drain

If it is confirmed that the modifications to Volks Drain (lined ditch) are not performing as designed, then an investigation program would be prepared to determine the reasons. The investigation program might include such components as a liner leak detection survey, sectional monitoring of water quality along the lined ditch to try to delineate the section of ditch containing a defect, etc. Once determined, appropriate mitigation measures would be designed and implemented, and an appropriate monitoring program specifically to assess the performance/effectiveness of the mitigation measure developed and submitted for MECP approval.

7.4.2.2 Stormwater Pond

During normal Site operations, the valve on the stormwater management pond will be open. The results of the stormwater pond discharge quality sampling will be compared to the effluent objectives.

As described in Section 7.4.1.2, in the event of an exceedance of a trigger, additional stormwater sampling and analysis would be conducted at the wetland pond to confirm the result. If the second sample results in an exceedance, then the stormwater management pond would be operated in batch discharge mode with the gate valve closed.

During batch discharge mode operation, surface water sampling would occur prior to the discharge of any surface water from the pond. When the concentration for each effluent objective parameter is less than the corresponding effluent objective concentration, the surface water would be released to the downstream receiver (Volks Drain). If the impounded stormwater quality does not meet these concentrations, it would be pumped into a tanker and hauled to the municipality's sewage lagoons.

In the event that it was determined that leachate-impacted water was adversely affecting the stormwater pond quality, an investigation would be carried out to determine the mechanism by which this was occurring and appropriate mitigation measures developed and implemented.

7.5 Annual Reporting

An annual report describing the groundwater and surface water monitoring programs (Sections 7.1 and 7.2) and Site operations activities for the previous year has been prepared each year since 1997. It is proposed that preparation of an annual report and submission of the report to the MECP will continue. Changes in the scope and/or frequency of annual reports may be requested by the Township and modified by approval from the MECP District Manager.

8.0 LIMITATIONS AND USE OF REPORT

This report was prepared for the exclusive use of the Township of North Dundas; it is understood that this report is intended for submission to the MECP. The report, which specifically includes all tables, figures and appendices, is based on data and information collected by WSP Canada Inc. and is based solely on the conditions of the properties at the time of the work, supplemented by historical information and data obtained by WSP Canada Inc. as described in this report.

The assessment of environmental conditions and possible hazards at this site has been made using the results of physical measurements and chemical analyses of groundwater and surface water from a number of locations. The Site conditions between sampling locations have been inferred based on conditions observed at borehole and monitoring well locations. Subsurface conditions may vary from these sampled locations.

The services performed, as described in this report, were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. WSP Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, WSP Canada Inc. should be requested to re-evaluate the conclusions of this report, and to provide amendments as required. The groundwater monitors installed during the course of this investigation or previous investigations by WSP Canada Inc. have been left in place. These groundwater monitors are the property of the Township of North Dundas and not WSP Canada Inc.

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We trust this report meets your current needs. If you have any questions regarding this report, please contact the undersigned.

WSP Canada Inc.



Yannick Marcerou, M.Eng., P.Eng.
Senior Environmental/Waste Engineer

A handwritten signature in black ink, appearing to read "Paul Smolkin".

Paul Smolkin, P.Eng.
Senior Geo-environmental Engineer

RW/YJM/PAS/sg

[https://wsponline.sharepoint.com/sites/gld-170799/project files/6 deliverables/0400 design & operations report/23594638-0400_rev 0_boyne rd lf design & operations report_29aug2024.docx](https://wsponline.sharepoint.com/sites/gld-170799/project%20files/6%20deliverables/0400%20design%20&%20operations%20report/23594638-0400_rev%200_boyer%20rd%20lf%20design%20&%20operations%20report_29aug2024.docx)

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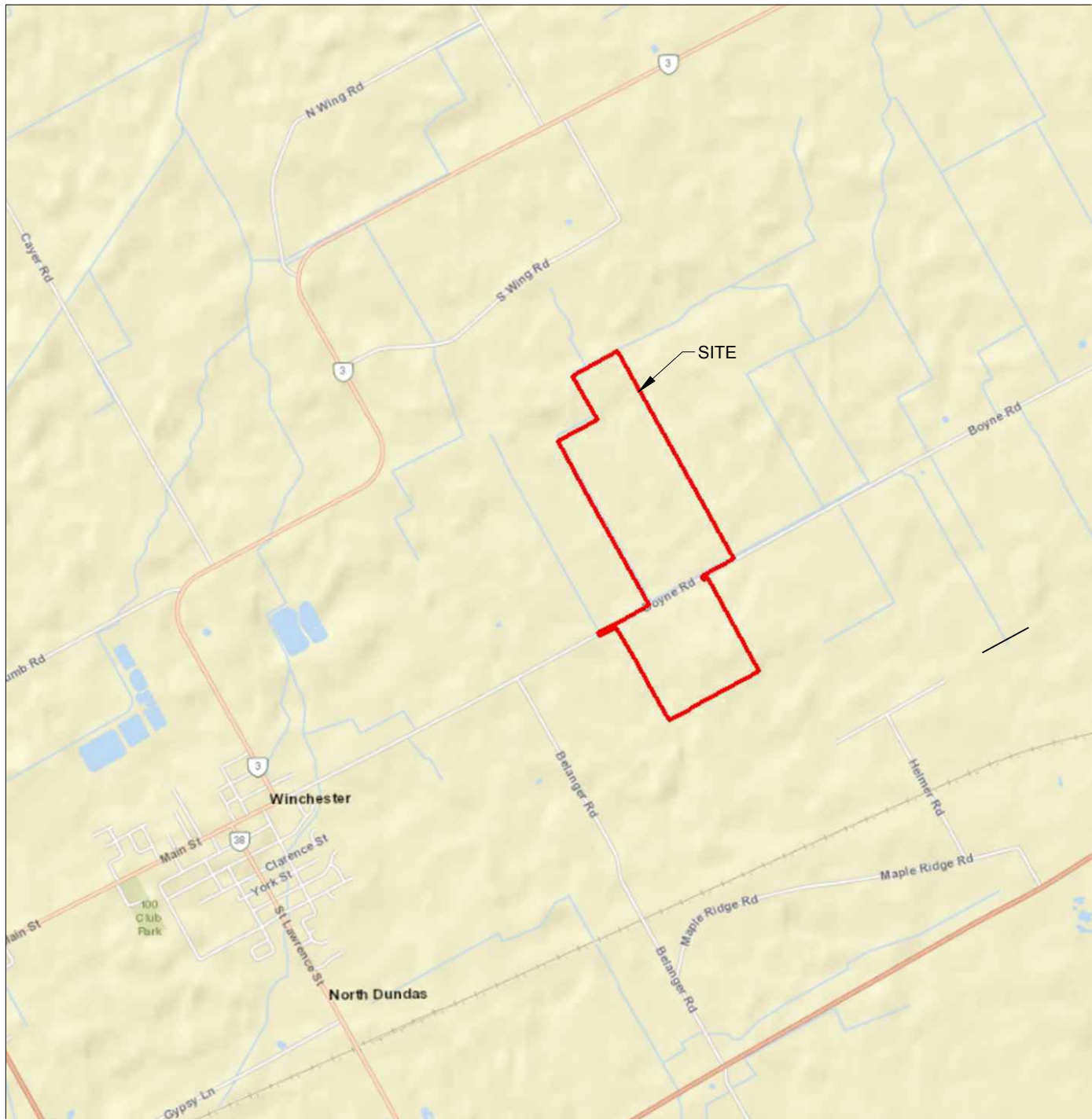
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Figures

Last Edited By: mforget Date: 2024-07-09 Time: 2:29:32 PM | Printed By: gdi_mforget Date: 2024-08-30 Time: 6:03:44 AM
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LEGEND

— PROPOSED PROPERTY BOUNDARY OF LANDFILL SITE

REFERENCE(S)

1. COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28
2. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT



YYYY-MM-DD	2024-09-02
DESIGNED	HAYJM
PREPARED	ABD/MLF
REVIEWED	RMW/YJM
APPROVED	PAS

NOT FOR CONSTRUCTION



PROJECT
BOYNE ROAD LANDFILL EXPANSION
DESIGN & OPERATIONS REPORT

TITLE
KEY PLAN

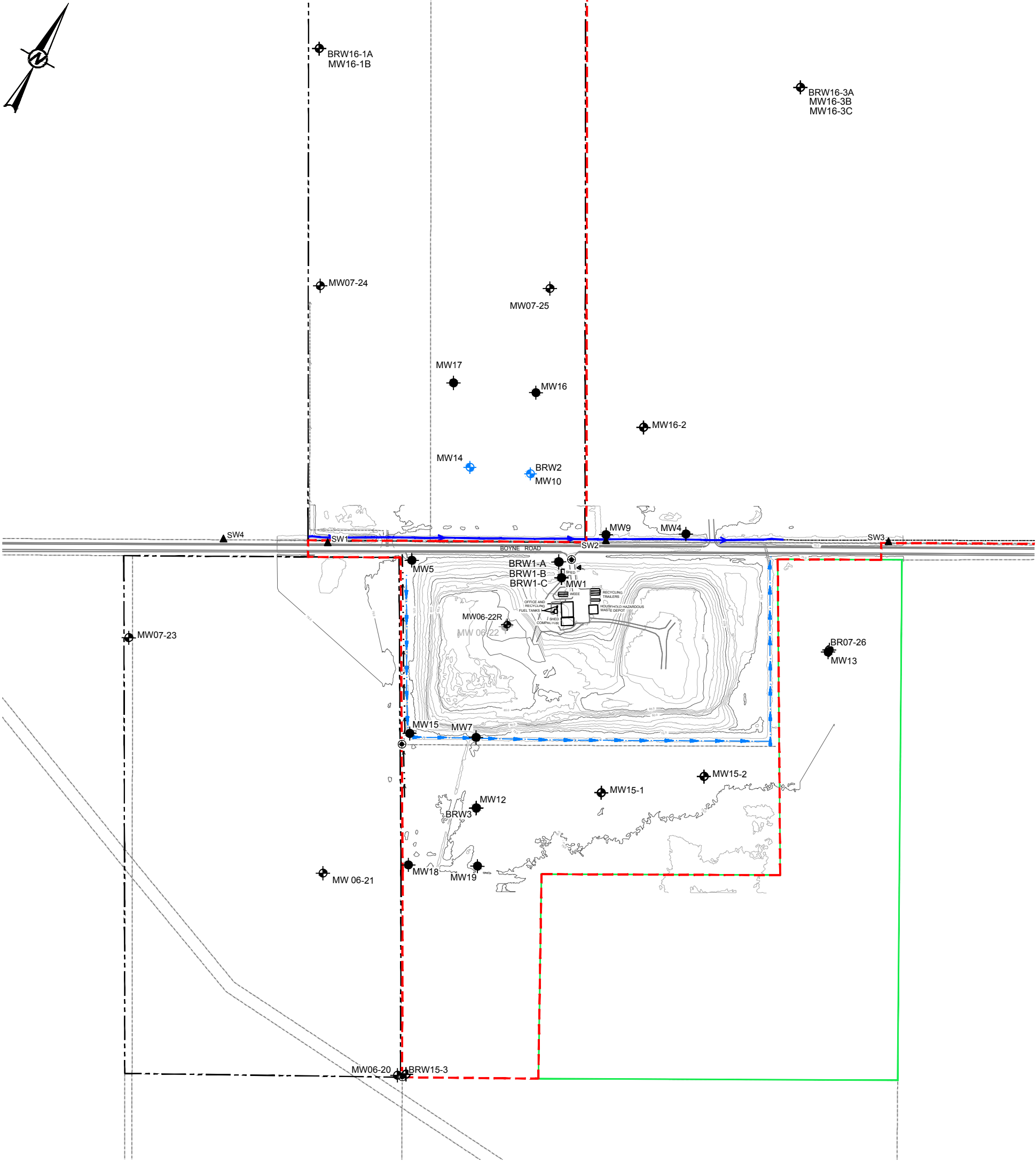
PROJECT NO.
23594638

CONTROL
0003

REV.
0

FIGURE
1A

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A
25 mm



LEGEND

GROUNDWATER LEVEL ONLY MONITORING LOCATION

DESTROYED MONITORING WELL NO LONGER IN USE

APPROXIMATE BOREHOLE LOCATION IN PLAN, ESTABLISHED BY WSP CANADA INC.

APPROXIMATE BOREHOLE LOCATION IN PLAN, ESTABLISHED BY OTHERS

APPROXIMATE SURFACE WATER SAMPLING LOCATION IN PLAN

GEO-REFERENCING POINTS

GROUND SURFACE CONTOURS (MASL), NOVEMBER 2023

APPROXIMATE PROPERTY BOUNDARY OF LANDFILL SITE

APPROXIMATE BOUNDARY OF EXISTING CONTAMINANT ATTENUATION ZONE EASEMENT LANDS

APPROXIMATE LOCATION OF PERIMETER DITCH AND FLOW DIRECTION

PROPOSED NEW LANDFILL PROPERTY BOUNDARY TO BE ADDED THROUGH AN ECA AMENDMENT

- REFERENCE(S)
1.

BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
2.

TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. FROM THE MAY 5, 2023 DRONE SURVEY UPDATED WITH WSP GROUND SURVEY COMPLETED ON NOV. 14-15, 2023
3.

COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28

- NOTE(S)
1.

ALL LOCATIONS ARE APPROXIMATE.

CLIENT

TOWNSHIP OF NORTH DUNDAS

CONSULTANT



YYYY-MM-DD	2024-09-02
DESIGNED	HA/YJM
PREPARED	ABD/MLF
REVIEWED	RMW/YJM
APPROVED	PAS

PROJECT

BOYNE ROAD LANDFILL EXPANSION

DESIGN & OPERATIONS REPORT

TITLE

SITE PLAN - EXISTING CONDITIONS

PROJECT NO.

23594638

CONTROL

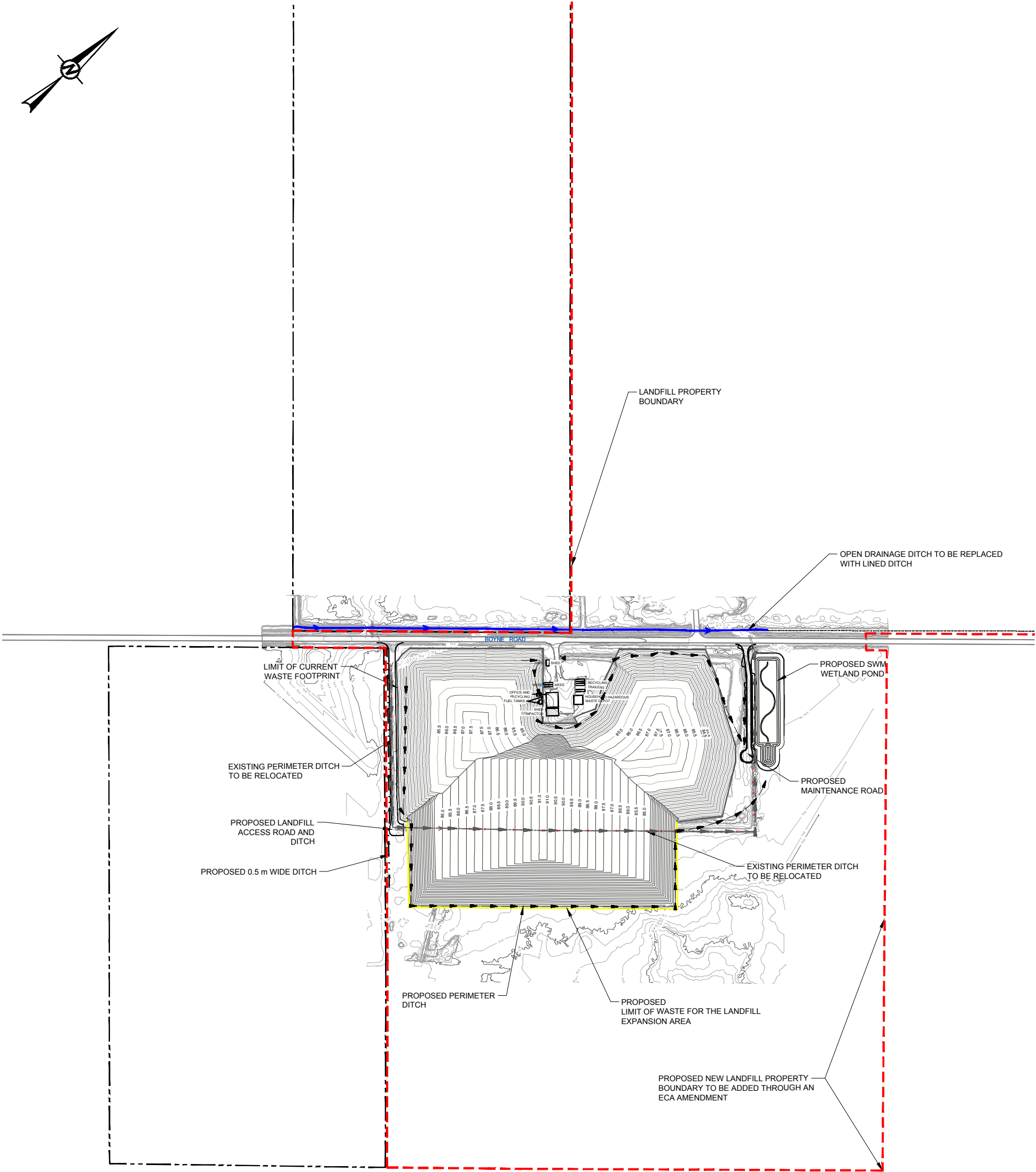
0003

REV.

0

FIGURE

1B



- LEGEND**
- 85.5 ——— APPROVE 2013 TOP OF WASTE ELEVATION CONTOURS (MASL)
 - 86.0 ———
 - 86.5 ——— PROPOSED EXPANSION TOP OF WASTE ELEVATION CONTOURS (MASL)
 - 88.0 ———
 - 85.0 ——— GROUND SURFACE CONTOURS (MASL), 2023 LIDAR TOPOGRAPHY (MAY 5, 2023)
 - - - - - PROPOSED PROPERTY BOUNDARY OF LANDFILL SITE
 - - - - - APPROXIMATE BOUNDARY OF EXISTING CONTAMINANT ATTENUATION ZONE EASEMENT LANDS
 - - - - - EXISTING PERIMETER DITCH TO BE REMOVED
 - - - - - PROPOSED PERIMETER DITCH
 - - - - - EXISTING ROADSIDE DITCH TO BE REPLACED WITH A LINED DITCH (APPROXIMATE LOCATION)

- REFERENCE(S)**
1. BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
 2. TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. FROM THE MAY 5, 2023 DRONE SURVEY UPDATED WITH WSP GROUND SURVEY COMPLETED ON NOV. 14-15, 2023
 3. COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28

CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT

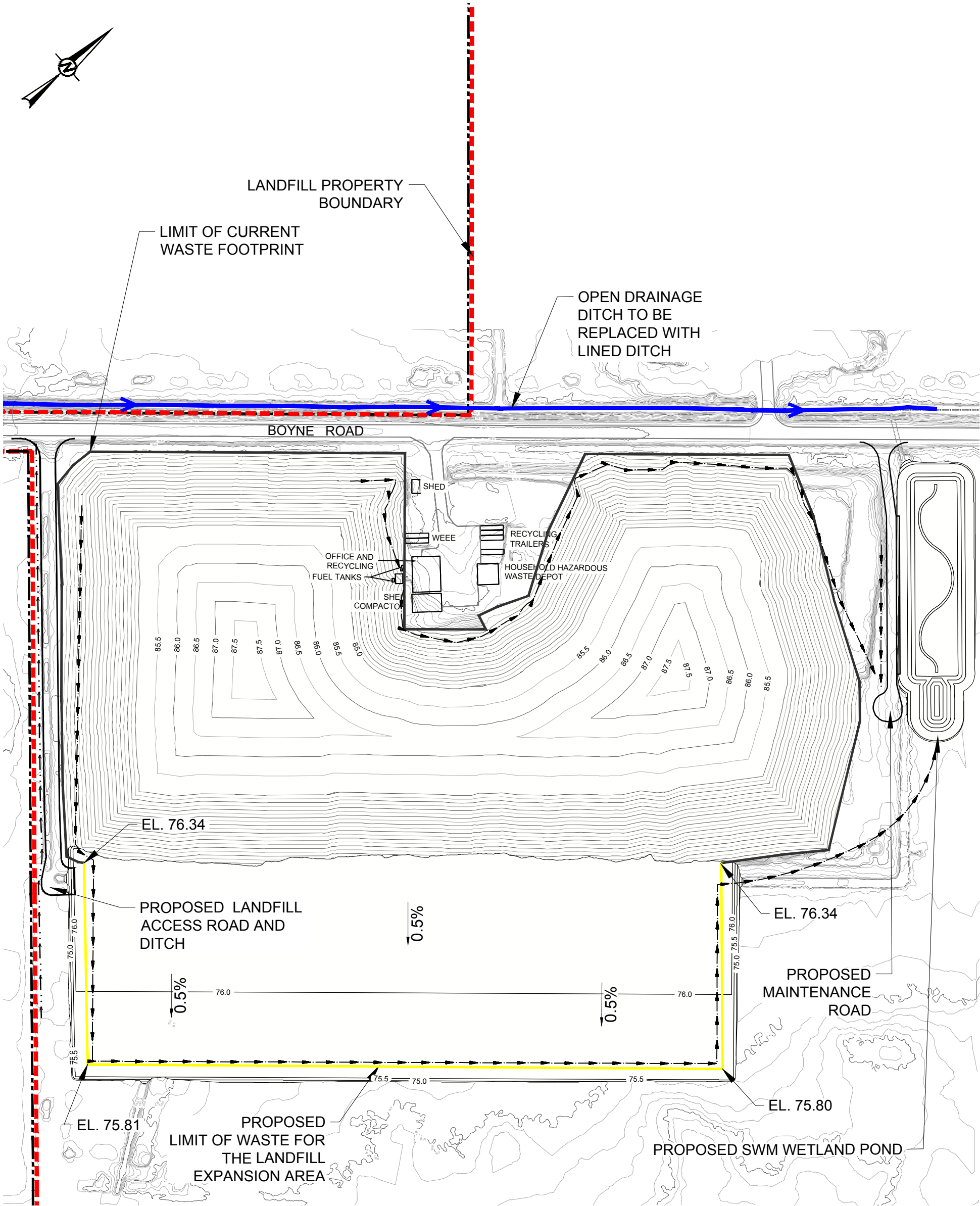


YYYY-MM-DD	2024-09-02
DESIGNED	HA/YJM
PREPARED	ABD/MLF
REVIEWED	RMW/YJM
APPROVED	PAS

PROJECT
BOYNE ROAD LANDFILL EXPANSION
DESIGN & OPERATIONS REPORT

TITLE
**SITE PLAN - LANDFILL EXPANSION
PROPOSED TOP OF WASTE CONTOURS**

PROJECT NO.	CONTROL	REV.	FIGURE
23594638	0003	0	2



LEGEND	
	APPROVED 2013 TOP OF WASTE ELEVATION CONTOURS (MASL)
	PROPOSED EXPANSION TOP OF BASE PAD ELEVATION CONTOURS (MASL)
	GROUND SURFACE CONTOURS (MASL), 2023 LIDAR TOPOGRAPHY, (MAY 5, 2023)
	PROPOSED PROPERTY BOUNDARY OF LANDFILL SITE
	APPROXIMATE BOUNDARY OF EXISTING CONTAMINANT ATTENUATION ZONE EASEMENT LANDS
	PROPOSED PERIMETER DITCH

- REFERENCE(S)
- BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
 - TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. FROM THE MAY 5, 2023 DRONE SURVEY UPDATED WITH WSP GROUND SURVEY COMPLETED ON NOV. 14-15, 2023
 - COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28

CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT



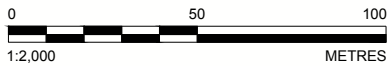
YYYY-MM-DD	2024-09-02
DESIGNED	HA/YJM
PREPARED	ABD/MLF
REVIEWED	RMW/YJM
APPROVED	PAS

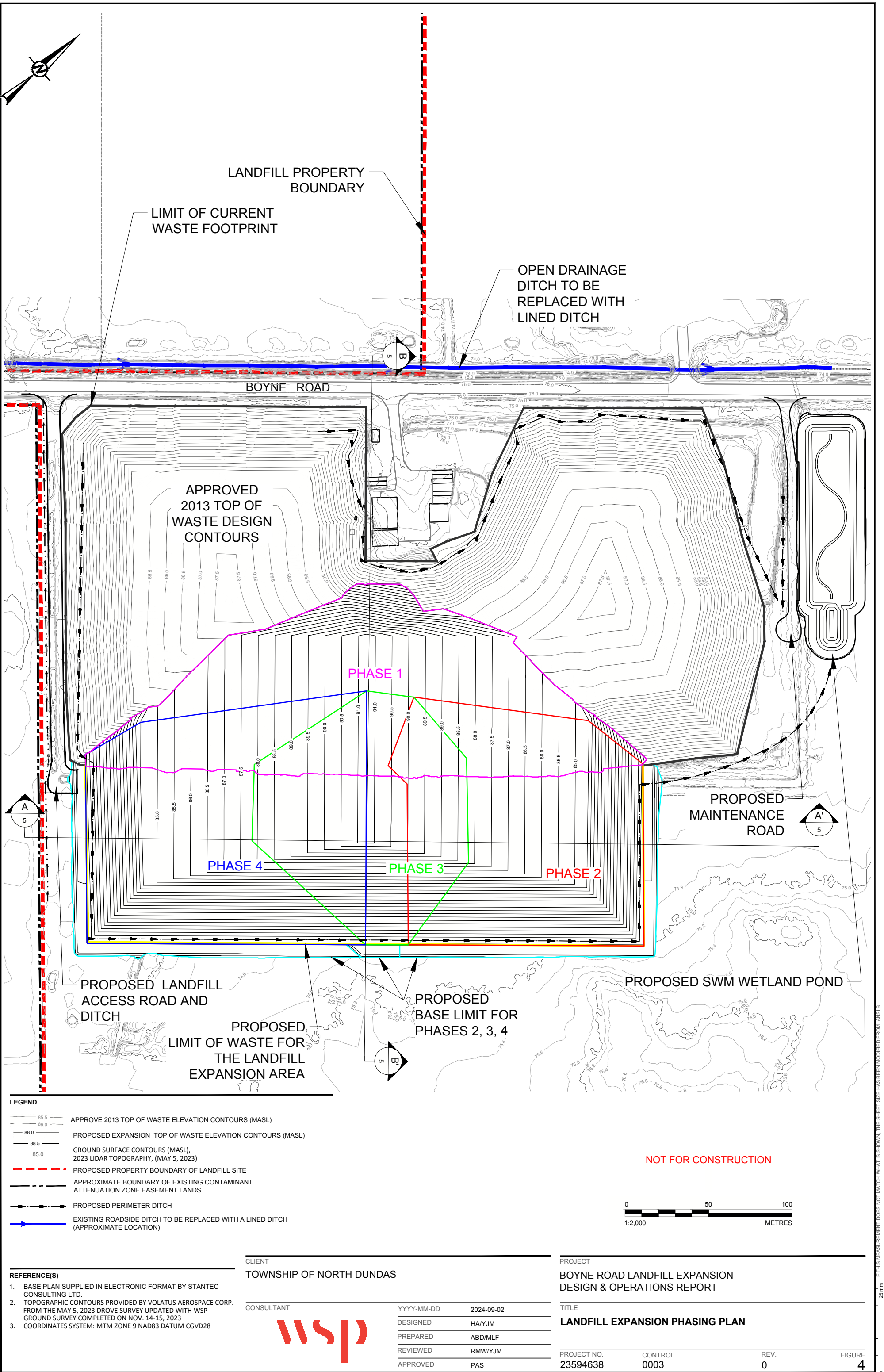
PROJECT
BOYNE ROAD LANDFILL EXPANSION
DESIGN & OPERATIONS REPORT

TITLE
SITE PLAN - LANDFILL EXPANSION BASE PAD

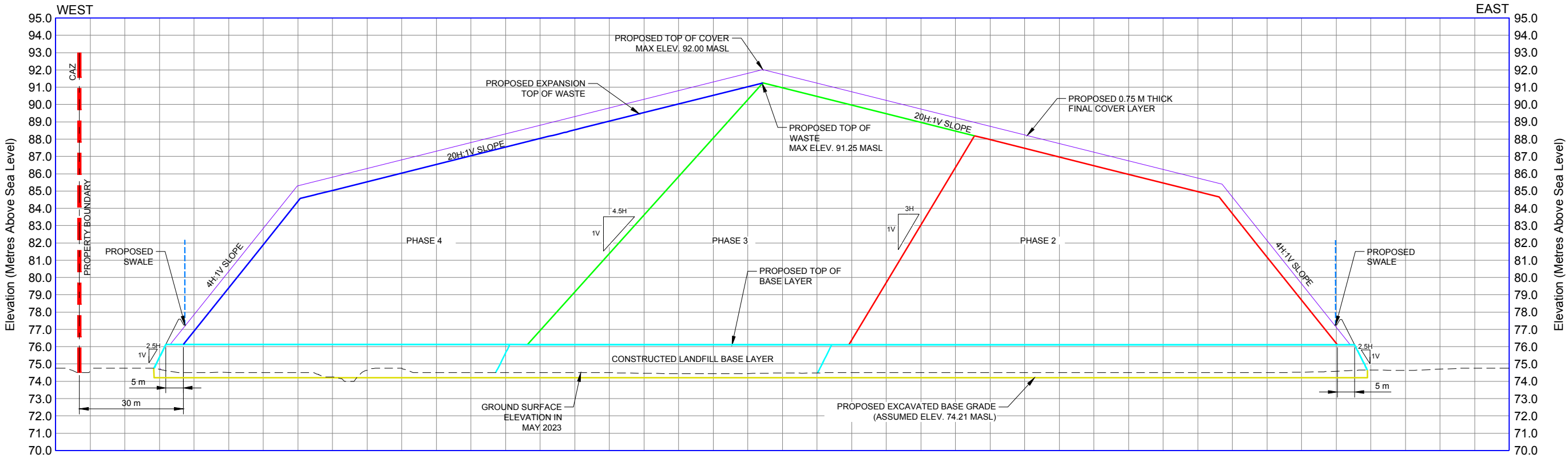
PROJECT NO.	CONTROL	REV.	FIGURE
23594638	0003	0	3

NOT FOR CONSTRUCTION

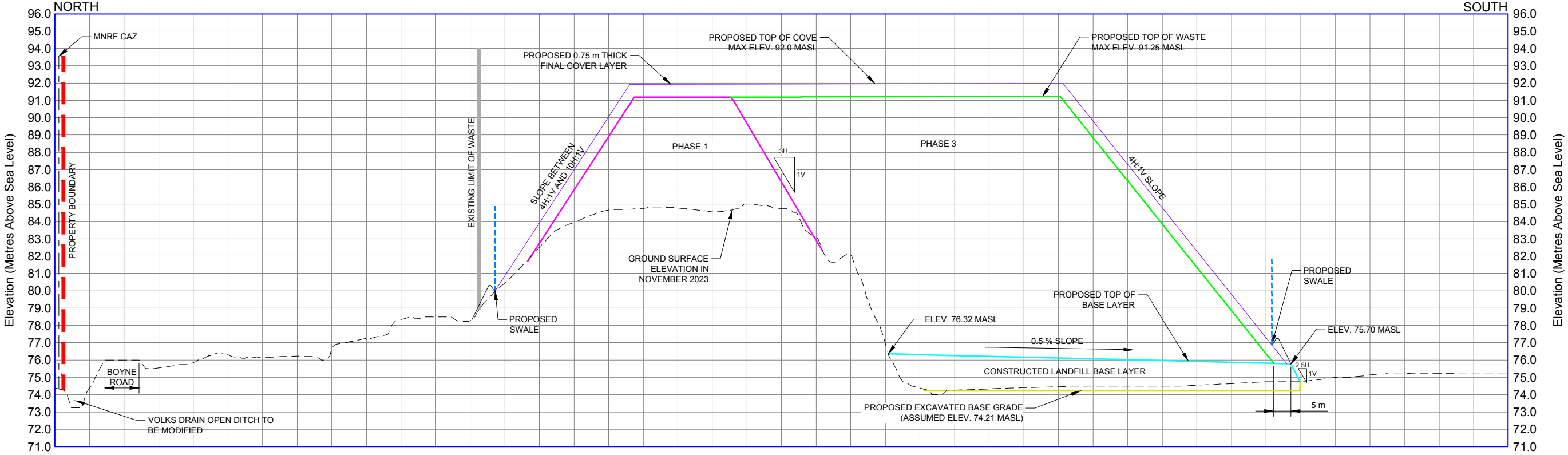




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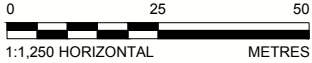


Section A-A'



Section B-B'

NOT FOR CONSTRUCTION



CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT



YYYY-MM-DD 2024-09-02

DESIGNED HA/YJM

PREPARED ABD/MLF

REVIEWED RMW/YJM

APPROVED PAS

PROJECT
BOYNE ROAD LANDFILL EXPANSION
DESIGN & OPERATIONS REPORT

TITLE
LANDFILL EXPANSION PHASING PLAN CROSS-SECTIONS

PROJECT NO.
23594638

CONTROL
0003

REV.
0

FIGURE
5

25 mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3/B



LEGEND

PROPOSED EXPANSION TOP OF WASTE ELEVATION CONTOURS (MASL)

GROUND SURFACE CONTOURS (MASL),
2023 LIDAR TOPOGRAPHY, (MAY 5, 2023)

PROPOSED PROPERTY BOUNDARY OF LANDFILL SITE

APPROXIMATE BOUNDARY OF EXISTING CONTAMINANT
ATTENUATION ZONE EASEMENT LANDS

LIMIT OF CURRENT WASTE FOOTPRINT

PROPOSED LIMIT OF WASTE FOR THE LANDFILL EXPANSION AREA

APPROXIMATE BOUNDARY OF ADDITIONAL CAZ FOR FUTURE RUPO
COMPLIANCE

- REFERENCE(S)**
1. BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
 2. TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. FROM THE MAY 5, 2023 DRONE SURVEY UPDATED WITH WSP GROUND SURVEY COMPLETED ON NOV. 14-15, 2023
 3. COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28

NOT FOR CONSTRUCTION



CLIENT
TOWNSHIP OF NORTH DUNDAS

PROJECT
BOYNE ROAD LANDFILL EXPANSION
DESIGN & OPERATIONS REPORT

CONSULTANT

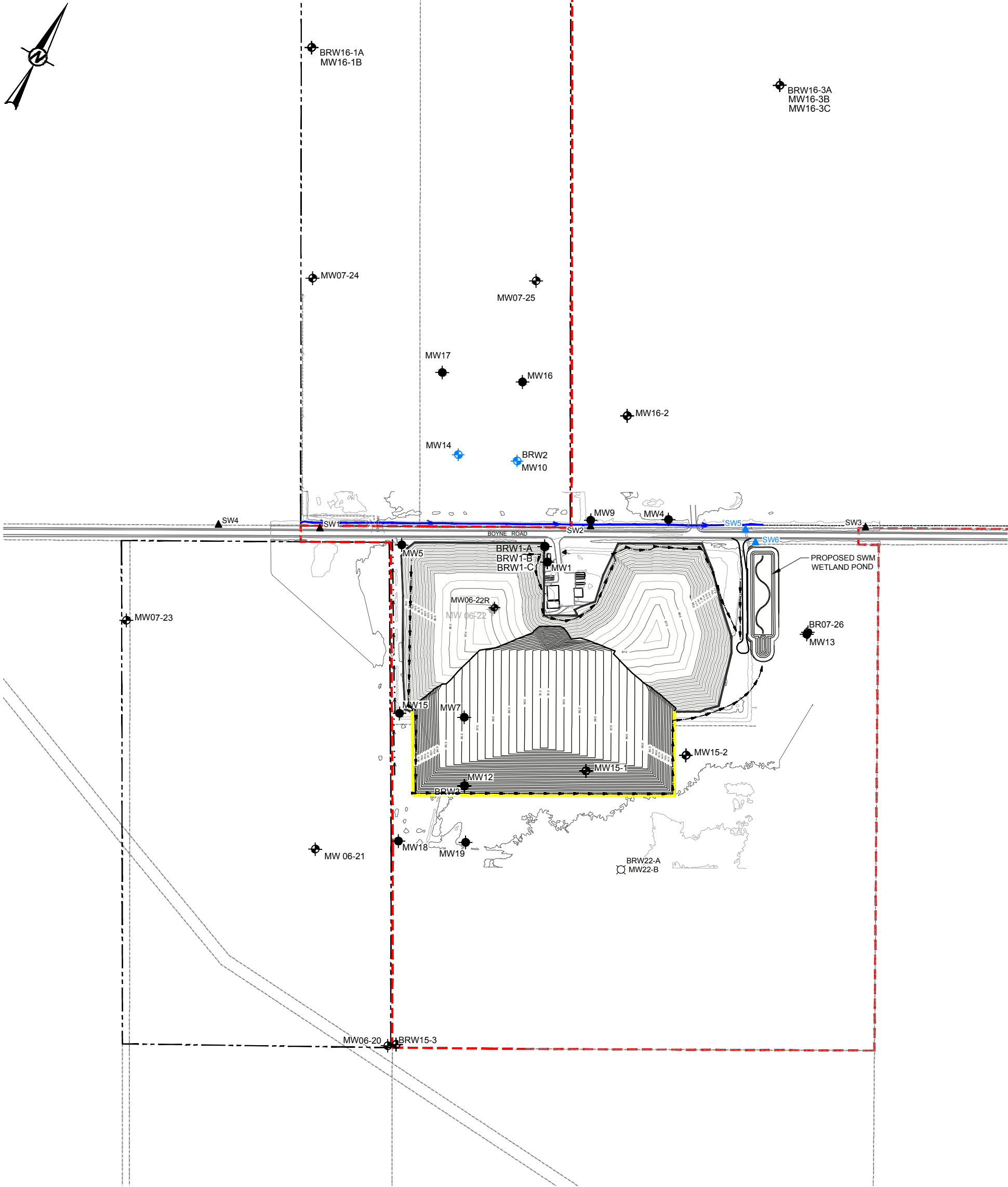


YYYY-MM-DD	2024-09-02
DESIGNED	HA/RMW
PREPARED	ABD/MLF
REVIEWED	RMW/YJM
APPROVED	PAS

TITLE

**PROPOSED ADDITIONAL CONTAMINANT
ATTENUATION ZONE FOR LANDFILL EXPANSION**

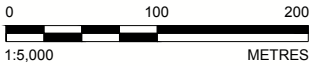
PROJECT NO.	CONTROL	REV.	FIGURE
23594638	0003	0	6



LEGEND

- NEW APPROXIMATE SURFACE WATER SAMPLING LOCATION IN PLAN
- NEW PROPOSED GROUNDWATER MONITORING LOCATION
- WATER LEVEL ONLY MONITORING LOCATION
- DESTROYED MONITORING WELL NO LONGER IN USE
- APPROXIMATE BOREHOLE LOCATION IN PLAN, ESTABLISHED BY WSP INC.
- APPROXIMATE BOREHOLE LOCATION IN PLAN, ESTABLISHED BY OTHERS
- APPROXIMATE SURFACE WATER SAMPLING LOCATION IN PLAN
- LIMIT OF CURRENT WASTE FOOTPRINT
- PROPOSED LIMIT OF WASTE FOR THE LANDFILL EXPANSION AREA
- PROPOSED PERIMETER DITCH
- GROUND SURFACE CONTOURS (MASL), 2023 LIDAR TOPOGRAPHY, (MAY 5, 2023)
- PROPOSED PROPERTY BOUNDARY OF LANDFILL SITE
- APPROXIMATE BOUNDARY OF EXISTING CONTAMINANT ATTENUATION ZONE EASEMENT LANDS
- APPROVED 2013 TOP OF WASTE ELEVATION CONTOURS (MASL)
- PROPOSED EXPANSION TOP OF WASTE ELEVATION CONTOURS (MASL)

NOT FOR CONSTRUCTION



- REFERENCE(S)
- BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
 - TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. FROM THE MAY 5, 2023 DRONE SURVEY UPDATED WITH WSP GROUND SURVEY COMPLETED ON NOV. 14-15, 2023
 - COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28

- NOTE(S)
- ALL LOCATIONS ARE APPROXIMATE.

CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT



YYYY-MM-DD	2024-09-02
DESIGNED	HA/RMW
PREPARED	ABD/MLF
REVIEWED	RMW/YJM
APPROVED	PAS

PROJECT
BOYNE ROAD LANDFILL EXPANSION
DESIGN & OPERATIONS REPORT

TITLE
**PROPOSED LANDFILL EXPANSION GROUNDWATER AND
SURFACE WATER MONITORING PROGRAM LOCATIONS**

PROJECT NO. 23594638	CONTROL 0003	REV. 0	FIGURE 7
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APPENDIX A

**Environmental Compliance Approval No. A482101,
Legal Plans, and Easements**



Department of Energy and Resources Management
Waste Management Branch

017/030
DEPT. OF ENERGY AND
RESOURCES MANAGEMENT
ONTARIO

AUG 3 1971

WASTE MANAGEMENT BRANCH

APPLICATION FOR A CERTIFICATE OF APPROVAL
FOR A WASTE DISPOSAL SITE

TO: THE DEPARTMENT OF ENERGY AND RESOURCES MANAGEMENT
880 Bay Street.
Toronto, Ontario

To be submitted through Regional
Waste Management Engineer

(1) Under the Waste Management Act, 1970 and the regulations, this applica-
tion is made by Township of Winchester

Owner of Facility

Morewood, Ontario

Address

(2) for the Renewal of a Certificate of Approval for a

Delete item inapplicable

Landfilling

Site

North Part Lot Eight, Concession Six

Type of Disposal

(3) located

Full particulars of Location

(4) A Certificate of Approval No. 482101 for this
Provisional Certificate. June 4 19 71
site was issued.

Delete item inapplicable

(5) No change in use, operation, or ownership of the site has occurred since
the date of the original application.

Dated this 28th day of July 19 71

William Mackenzie, Clerk
Signature of Applicant

(6) The following changes in use, operation or ownership (have occurred
since the date of the original application) (are proposed)

Delete item inapplicable

If necessary, provide additional
details on separate sheets and attach
to application.

Continued on Attached Sheets ☐

(7) The site will be operated in accordance with The Waste Management Act,
1970 and the regulations by

Name of Operator

Address

The required supporting information to the application is appended hereto.

(8) Notice of this application has been published in the

on and

19 and a copy of the notice is attached.

(9) A certificate that the site does not contravene any of the by-laws of the

To be completed if applicant is a

**SUPPORTING INFORMATION
TO AN
APPLICATION FOR APPROVAL
OF A
LANDFILL DISPOSAL SITE**

1. Wastes to be Disposed of Comprise

Domestic	75 %
Commercial	25 %
Industrial Waste	%
Hauled Liquid Industrial Waste	%
Agricultural Waste	%
Hazardous Waste	%
Hauled Sewage	%
Other	%
	100%

*Describe

Total 5 Tons/Day

Population Served 5,000

Distance to Nearest Watercourse 1000 Ft.
 Distance to Source of Potable Water 5000 Ft.
 Distance to Dwelling 5000 Ft.
 Distance to Public Road 100 Ft.
 Distance to Cemetery 3 mi. Ft.

Total Area of Site 20 Acres
 Anticipated Life 18 Years

General Description of Site

situated in bush and swamp area

2. Origin and Composition of Principal Component Waste (other than domestic and commercial)

4. Maximum Depth of Excavation Below Surface 10
 Maximum Height of Fill Above Surface 6
 Type(s) of Material Encountered From Surface

muck 10
 clay 20

Depth of Water Table Below Surface 10
 on July 27, 1971 (De

5. Proposed Future Land Use

returned to bush

6. Operating Equipment

bulldozer rented when required

Hours of Operation 20 hours per month

7. The Following Documents are Attached**FOR DEPARTMENTAL USE****8. Authorities Consulted:**

Health Unit	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
O.W.A.C.	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
A.M.B.	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
Municipality	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
Conservation Authority	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec

Other



Ministry
of the
Environment
Ontario

Provisional Certificate No.

A 462101

PROVISIONAL CERTIFICATE OF APPROVAL WASTE DISPOSAL SITE

Under The Environmental Protection Act, 1971 and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Township of Winchester,
Horseshoe, Ontario.
RDA 270

for the use and operation of a 8.1 hectare (20 acres) landfilling site

all in accordance with the following plans and specifications:

1. Application and Supporting Information

Located: S. 1/4 lot 8, Concession 6,
Township of Winchester,
County of Dundas

which includes the use of the site only for the disposal of the following categories of waste (NOTE: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval) domestic, commercial, non-hazardous solid industrial, and non-hazardous solid (limited to miscellaneous debris from agriculture)

and subject to the following conditions:

1. No operation shall be carried out at the site after sixty days from this condition becoming enforceable unless this Certificate including the reasons for this condition has been registered by the applicant as an instrument in the appropriate Land Registry Office against title to the site and a duplicate registered copy thereof has been returned by the applicant to the Director.
2. Wastes are to be deposited in an orderly manner in the fill area, compacted and adequately covered by cover material once a week between April 15 and November 15 and monthly during the remainder of the year or as directed from time to time by the Director of the Southeastern Region of the Ministry of the Environment.
3. The burning of domestic waste at the site is to be discontinued immediately.

Dated this 10th day of July, 1981.

T. L. Brown
Director, Section 24,
The Environmental Protection Act, 1971

THE SHERIFFS ACT
DECLARATION UNDER
SECTION 23 OF THE ACT

I, Glenn Mastreger, of the Township of Winchester
do solemnly declare that I am the Clerk of the
Township of Winchester which affects the following
lands:

"That part of the North Half of lot Eight (8)
in the Sixth (6th) Concession of the Township
of Winchester in the County of Dundas as
described in Instrument No. 74138."

Declared before me at the
Township of Winchester in
the County of Dundas
this 24th day of September
1981:

Glenn Mastreger
.....
Clerk - Treasurer

[Signature]
.....
Commissioner



42197

Ontario

MINISTRY OF THE ENVIRONMENT

NOTICE

TO: Township of Winchester,
Moorewood, Ontario.
ROA 283

You are hereby notified that Provisional Certificate of Approval No. A 482101 has been issued to you subject to the conditions outlined therein.

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

1. A reason for the condition requiring registration of the Certificate is that Section 46 of The Environmental Protection Act, 1971 prohibits any use being made of the lands after they cease to be used for waste disposal purposes within a period of twenty-five years from the year in which such land ceased to be used unless the approval of the Minister for the proposed use has been given. The purpose of this prohibition is to protect future occupants of the site and the environment from any hazards which might occur as a result of waste being disposed of on the site. This prohibition and potential hazard should be drawn to the attention of future owners and occupants by the Certificate being registered on title.
2. The reason for the imposition of condition 2 is to ensure that the development of this landfilling site will be in an orderly and systematic manner and the landfilling operation will be in accordance with the provisions of The Environmental Protection Act, 1971 and Regulation 824 pursuant to that Act and the use and operation of the site without such a condition may create a nuisance.
3. The reason for the imposition of condition 3 is that smoke from burning waste has created offensive odours and the continued practice of burning waste at the site may create a nuisance or cause a hazard to the health and safety of any person.

You may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board.


This Notice should be served upon:

The Secretary
Environmental Appeal Board
1 St. Clair Avenue West
5th Floor
Toronto, Ontario, M4V 1K7

AND

The Director
Section 39, E.P.A.
Ministry of the Environment
135 St. Clair Avenue West
Toronto, Ontario, M4V 1P5

Dated at Toronto this 10th day of July, 1981.


Director
Section 39, E.P.A.
Ministry of the Environment

MOE 0490

42197

DATED THE 20th DAY OF
July, 1981

42197

No.
Registry Office of Ontario, No. 41
I CERTIFY that this instrument is registered as of

7/14/81

OCT 14 1981

Land
Registry Office
of Ontario

P. J. McFadden
LAND REGISTRAR

BETWEEN

THE DIRECTOR

-and-

TOWNSHIP OF WILKINSON

PROVISIONAL CERTIFICATE
OF APPROVAL
UNDER
THE ENVIRONMENTAL
PROTECTION ACT, 1971

M. & J. B. COMMISSION 6,
TOWNSHIP OF WILKINSON,
COUNTY OF DUNDAS

PROPERTY OF LAND
REGISTRY OFFICE



Ministry of the Environment
Ministère de l'Environnement

Provisional Certificate of Approval for a
Waste Disposal Site

Certificat provisoire d'autorisation du
lieu d'élimination des déchets

THIS IS A TRUE COPY OF THE
ORIGINAL CERTIFICATE MAILED

ON Dec 12/89
8

Provisional Certificate of Approval No. A 452101
Certificat provisoire d'autorisation no

Page 1 of 2
page de 2

Under the Environmental Protection Act and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Aux termes de la Loi sur la protection de l'environnement et des règlements y afférents et sous réserve des restrictions qui s'y appliquent, ce Certificat provisoire d'autorisation est délivré à:

The Corporation of the
Township of Winchester
R.R. #4
Winchester, Ontario
K0C 2K0

for the use and operation of a 3.1 hectare (20 acres) landfilling site

all in accordance with the following plans and specifications:

1. Application and Supporting Information

Located: N.1/4 Lot 8, Concession 6
Township of Winchester
County of Dundas

which includes the use of the site only for the disposal of the following categories of waste (NOTE: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval) domestic, commercial, non-hazardous solid industrial, and non-hazardous solid (limited to miscellaneous debris from agriculture)

and subject to the following conditions:

1. No operation shall be carried out at the site after sixty days from this condition becoming enforceable unless this Certificate including the reasons for this condition has been registered by the applicant as an instrument in the appropriate Land Registry Office against title to the site and a duplicate registered copy thereof has been returned by the applicant to the Director.
2. Wastes are to be deposited in an orderly manner in the fill area. All waste shall be compacted and covered with 15 cm of cover material on the exposed surfaces of the lifts when they reach a maximum of 2 m in height by 10 m in width or every two weeks, whichever occurs first.
3. The burning of all wastes shall be discontinued immediately.
4. A suitable design report with plans and specifications detailing site development including operation, closure, and schedules shall be submitted for approval by the Township to the Director of Approvals Branch, 250 Davisville Avenue, 3rd Floor Toronto, Ontario M4S 1R2 (the "Director"), by November 30, 1990. The design report shall detail measures for progressive closure and rehabilitation of the site to a natural passive state. The design report shall be implemented forthwith upon written notice of the Director, as amended in writing by the Director.

4th

December

89

Dated this
date of

day of
year of

19

Director, Section 39
Environmental Protection Act
Directeur, Section 39

DEC 28 8-59 FRI 1990 04:08 27 1127

P.03



Ontario

Ministry
of the
EnvironmentPROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE

The following conditions are additional to the conditions shown on Provisional Certificate
of Approval Number A 482101 dated December 4, 1989

5. A report outlining the hydrogeology of the site, the extent of the leachate plume, and the potential for future movement of leachate off-site shall be submitted by the Township, to the Director, by November 30, 1990. The hydrogeology report must be prepared by a competent hydrogeologist.
6. The Township shall submit for approval a detailed program for monitoring surface and groundwater including leachate movement, to the Director, by November 30, 1990.
7. A proper rodent control program shall be implemented by having bait set near the exposed waste at all times.
8. Provisional Certificate of Approval No. A 482101 dated October 30, 1989 is revoked and replaced by this Provisional Certificate of Approval No. A 482101 dated November 30, 1989.

Ministry
of the
Environment

Ontario

NOTICE

TO:

The Corporation of the
Township of Winchester
R.R. #4
Winchester, Ontario
K0C 2K0

1. A reason for the condition requiring registration of the Certificate is that Section 46 of The Environmental Protection Act, 1971 prohibits any use being made of the lands after they cease to be used for waste disposal purposes within a period of twenty-five years from the year in which such land ceased to be used unless the approval of the Minister for the proposed use has been given. The purpose of this prohibition is to protect future occupants of the site and the environment from any hazards which might occur as a result of waste being disposed of on the site. This prohibition and potential hazard should be drawn to the attention of future owners and occupants by the Certificate being registered on title.
2. The reason for the imposition of condition 2 is to ensure that the development of this landfilling site will be in orderly and systematic manner. The use and operation of the site without such a condition may create a nuisance.
3. The reason for the imposition of condition 3 is that smoke from burning waste has created offensive odours and the continued practice of burning waste at the site may create a nuisance or cause a hazard to the health and safety of any person.
4. The reason for condition 4 is to ensure that an orderly and systematic development of the site is conducted in accordance with the provisions of the Environmental Protection Act. A closure plan is to ensure that the site is closed in a satisfactory manner and maintained and monitored after closure. Operation of the site without such a condition may create a nuisance and would not be in the public interest.
5. The reason for condition 5 is that a hydrogeological study is an integral part of the use and operation of a landfill site. It is necessary to ensure that sufficient pollutant attenuation is taking place on site and contaminants are not migrating off site at an unacceptable level. The use and operation of the site without these conditions may create a nuisance or result in a hazard to the health and safety of any person.
6. The reason for condition 6 is that a monitoring program is an integral part of the use and operation of a waste disposal site. Should monitoring show a significant impact on or off site, corrective measures may be required. The operation of the site without the monitoring program may create a hazard to the health and safety of any person and would not be in the public interest.

- 2 -

7. The reason for condition 8 is to ensure that the rodent population will not result in a hazard to the health and safety of any person or the natural environment.
8. The reason for condition 8 is to clarify that the site is to be used and operated pursuant to the Provisional Certificate of Approval dated November 30, 1989.

You may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 122a of the Environmental Protection Act, R.S.O. 1980, c. 141, as amended, provides that the Notice requiring the hearing shall state the portions of each term or condition in the approval in respect of which the hearing is required and the grounds on which you intend to rely at the hearing.

This Notice should be served upon:

The Secretary
Environmental Appeal Board
112 St. Clair Ave. West
Suite 502
Toronto, Ontario M4V 1N3.


AND

The Director
Section 38, E.P.A.
Ministry of the Environment
250 Davisville Ave.
Toronto, Ontario M4S 1H2

Dated at Toronto this 4th day of December, 1989.

THIS IS A TRUE COPY OF THE
ORIGINAL NOTICE MAILED

ON Dec. 12/89
8
50043


Director,
Section 38, E.P.A.
Ministry of the Environment.



Ministry of
Environment
and Energy

Ministère de
l'Environnement
et de l'Énergie

250 Davisville Avenue
Toronto ON M4S 1H2

250, avenue Davisville
Toronto ON M4S 1H2

APPROVALS BRANCH

3rd Floor

Tel: (416) 440-3544

Fax: (416) 440-6973

September 5, 1995

David Sloane
Waste Coordinator
The Corporation of the Township of Winchester
R.R.#1 Winchester,
K0C 2K0

Dear Mr. Sloaner,

RE: Provisional Certificate of Approval No. A482101

Please find attached a Notice amending the Certificate of Approval dated December 4, 1989.

This Notice has been issued to allow the Township of Winchester landfill site to accept waste from the Village of Chesterville.

The amendment is supported by Regulation 299/94 which amends Regulation 347 under the Environmental Protection Act and a certified copy of the deed naming the Township of Winchester, the Village of Winchester and the Village of Chesterville as co-owners of the landfill property since 1977.

If you have any questions, please feel free to contact Sara Darker at (416) 440-3575.

Sincerely,

A. Dominski, P. Eng., Supervisor
Waste Unit

SD/es

cc: B. Ward, Eastern Region
B. Helliar, Cornwall District Office
N. Krisjanis, Township of Winchester





Ministry of
Environment
and Energy

Ministère de
l'Environnement
et de l'Énergie

NOTICE
Page 1 of 2

TO: The Corporation of the Township of Winchester
R.R. #4 Winchester, Ontario
K0C 2K0

You are hereby notified that Provisional Certificate of Approval No. A 482101 dated December 4, 1989 is amended as follows:

Condition 8 is amended as follows:

8. Provisional Certificate of Approval No. A 482101 dated October 30, 1989 is revoked and replaced by this Provisional Certificate of Approval No. A 482101 dated December 4, 1989.

Condition 9 is added as follows:

9. The landfill site may serve the areas of the Township of Winchester, the Village of Winchester, and the Village of Chesterville.

REASONS

1. The reason for amending condition 8 is to correct the date of the Provisional Certificate of Approval referenced.
2. The reason for adding condition 9 is to clearly identify the municipalities who have co-owned the site since 1977 and who therefore may use the site according to Ontario Regulation 299/94.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990 c. E-19, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. *The portions of the approval or each term or condition in the 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.*



Ontario

Ministry of
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and EnergyMinistère de
l'Environnement
et de l'ÉnergieNOTICE
Page 2 of 2

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, you may, by written notice served upon me, the Environmental Appeal Board and the Environmental Commissioner, Environmental Bill of Rights, S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the approval or each term or condition in the 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.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

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

This Notice must be served upon:


The Secretary,
Environmental Appeal Board,
112 St. Clair Avenue West,
Suite 502,
Toronto, Ontario,
M4V 1N3

The Environmental Commissioner,
1075 Bay Street,
Suite 605
6th Floor
Toronto, Ontario
M5S 2W5

The Director,
Section 39, Environmental Protection Act,
Ministry of the Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario,
M4S 1H2

This instrument is subject to Section 38 of the Environmental Bill of Rights, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.

DATED AT TORONTO this 5th day of September, 1995.


A. Dominski, P. Eng.
Director
Section 39
Environmental Protection Act



Ministry of
Environment
and Energy

Ministère de
l'Environnement
et de l'Énergie

250 Davisville Avenue
Toronto ON M4S 1H2

250, avenue Davisville
Toronto ON M4S 1H2

APPROVALS BRANCH

3rd Floor

Tel: (416) 440-3544

Fax: (416) 440-6973

October 2, 1995

David Sloane
Waste Coordinator
The Corporation of the Township of Winchester
R.R.#4 Winchester,
K0C 2K0

Dear Mr. Sloane:

RE: Provisional Certificate of Approval No. A482101

Please find attached a Notice amending the Certificate of Approval dated December 4, 1989.

This Notice has been issued to allow the Township of Winchester to operate a municipal waste recycling facility at the Township of Winchester Landfill Site.

If you have any questions, please feel free to contact Robert Bruce at (416) 440-3575.

Sincerely,

A. Dominski, P. Eng., Supervisor
Waste Unit

SD/es
Enclosure

cc: B. Ward - Eastern Region
B. Helliard - Cornwall District Office
Paul Scalco - Waste Reduction Branch
N. Krisjanis - Township of Winchester
D. Phippen - M.S. Thompson and Associates





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Page 1 of 2

TO: The Corporation of the Township of Winchester
R.R. #4
Winchester, Ontario
K0C 2K0

You are hereby notified that Provisional Certificate of Approval No. A 482101 dated December 4, 1989 is amended as follows:

Conditions 10 and 11 are added as follows:

Municipal Waste Recycling Facility (Transfer/Processing Station)

10. Except as otherwise provided by Regulation 101/94, the municipal waste recycling site shall be operated and maintained in accordance with:
 - a) Application for Approval of a Waste Disposal Site dated June 27, 1995 and signed by David Sloane of the Township of Winchester.
 - b) Letter to Mr. Bob Helliard of the Ministry of Environment and Energy from Dale Phippen of M.S. Thompson and Associates Ltd. dated June 28, 1995 regarding the municipal waste recycling facility located at the municipal landfill.
 - c) Report entitled "The Township of Winchester Municipal Waste Recycling Facility" dated July 1994 (updated July 1995) by M.S. Thompson and Associates Ltd.
11. The municipal waste recycling site may collect, process and transfer blue box waste from the Township of Winchester; the Village of Winchester; the Village of Chesterville; the United Counties of Stormont, Dundas and Glengarry; Grenville County; the Township of Russell; and the Township of Osgoode.

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

1. The reason for adding Condition 10 is to allow the operation of a municipal waste recycling facility in accordance with the Environmental Protection Act at the Township of Winchester landfill site.
2. The reason for adding condition 11 is to identify the approved service area of the municipal waste recycling facility only. Otherwise, the service area for the Township of Winchester landfill site is limited to the Township of Winchester, the Village of Winchester and the Village of Chesterville.



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et de l'ÉnergieNOTICE
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In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, you may by written notice served upon me, the Environmental Appeal Board and the Environmental Commissioner, Environmental Bill of Rights, S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the approval or each term or condition in the 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.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

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

This Notice must be served upon:


The Secretary,
Environmental Appeal Board,
112 St. Clair Avenue West,
Suite 502,
Toronto, Ontario,
M4V 1N3

The Environmental Commissioner,
1075 Bay Street,
Suite 505
6th Floor
Toronto, Ontario
M5S 2W5

The Director,
Section 39, Environmental Protection Act,
Ministry of the Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario,
M4S 1H2

This instrument is subject to Section 38 of the Environmental Bill of Rights, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.

DATED AT TORONTO this 2nd day of October, 1995


 A. Dominski, P. Eng.
 Director
 Section 39
 Environmental Protection Act



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Ministry of
Environment
and Energy

Ministère de
l'Environnement
et de l'Énergie

250 Davisville Avenue
Toronto ON M4S 1H2

250, avenue Davisville
Toronto ON M4S 1H2

APPROVALS BRANCH

3rd Floor

Phone: (416) 440-3717

Fax: (416) 440-6973

September 18, 1996

Mr. Dave Salone, Waste Co-ordinator
The Corporation of the Township of Winchester
R.R. #4
Winchester, Ontario
K2E 7J5

Dear Mr. Salone:

Re: Provisional Certificate of Approval No. A 482101, Boyne Road
Landfill Site

Enclosed is a Notice of Amendment for the above mentioned
Provisional Certificate of Approval. The Notice approves the
establishment and operation of a household hazardous waste transfer
facility at the Boyne Road Landfill Site.

Please note that all other terms and conditions as outlined in the
original Certificate of Approval No. A482101 and subsequent Notices
of Amendment remain unchanged.

Should you have any questions or comments concerning the above,
please feel free to contact Mr. Osman Ibrahim at (416) 440-3717.

Sincerely,

A. Dominski, P.Eng. Supervisor
Waste Unit

Encl.
OI/es

cc: Brian Ward, Eastern Region
Jeff Columbus, Cornwall District Office





Ontario

Ministry of
Environment
and EnergyMinistère de
l'Environnement
et de l'ÉnergieNOTICE
Page 1 of 6

TO: The Corporation of the Township of Winchester
R.R. #4
Winchester, Ontario
K2E 7J5

You are hereby notified that Provisional Certificate of Approval No. A 482101 dated December 4, 1989 and all subsequent Notices of Amendment are hereby amended to include the approval of the establishment and operation of facilities for the acceptance, storage, packaging, and bulking of household hazardous waste and subsequent transfer of hazardous waste codes 145, 148, 213, 221, 241, 242, 252, 261, 263, 269, and 331, as described in the document entitled "Ministry of the Environment New Ontario Waste Classes" January 1986, in accordance with the following plans and specifications:

- i. The application for a Waste Disposal Site dated September 10, 1996 and the supporting information as provided in the document entitled "Boyne Road Landfill Site and Recycling Facility Household Hazardous Waste Transfer Facility Design and Operation Report", prepared by Oliver, Mangione, McCalla & Associates Ltd., dated July 1996.
- ii. The letter dated July 25, 1996 from Brenda L. Burrows-Rabb, Oliver, Mangione, McCalla & Associates Ltd. to Wilfred Ng, MOEE Approvals Branch.

In addition, the following conditions are added:

6. (a) The Household Hazardous Waste Transfer Facility shall be operated in accordance with the application for a Waste Disposal Site (Transfer) submitted September 10, 1996 and supporting information as provided in the document entitled "Boyne Road Landfill Site and Recycling Facility Household Hazardous Waste Transfer Facility Design and Operation Report", prepared by Oliver, Mangione, McCalla & Associates Ltd., dated July 1996.
- (b) The letter dated July 25, 1996 from Brenda L. Burrows-Rabb, Oliver, Mangione, McCalla & Associates Ltd. to Wilfred Ng, MOEE Approvals Branch.
7. (a) The Township shall ensure that the wastes are stored in a safe and secure manner; that the operation of this facility does not interfere with any other activities associated with this site; and that the wastes are properly handled, packaged or contained so as not to pose any threat to the general public, site personnel and the environment.



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- (b) No storage facilities other than those approved under this Certificate shall be used and fixed storage facilities shall not be moved, replaced or altered.
 - (c) Notwithstanding Condition 7 (a), all storage buildings and tanks shall be clearly marked indicating the type and nature of the hazardous waste stored. All points of access to the transfer storage facilities shall be posted to warn that the area contains hazardous materials. Smoking restrictions shall be adhered to and non-smoking signs posted as required by regulation.
 - (d) All storage buildings shall be properly ventilated and shall be constructed in compliance with fire regulations and municipal by-laws and approvals and in accordance with Ministry of Labour guidelines.
 - (e) All hazardous waste storage tanks and buildings shall be maintained under lock and key and access to these facilities shall be limited to trained site personnel.
 - (f) All storage facilities shall be inspected daily during operating hours by site personnel trained in contingency measures and all inspections shall be recorded and these records shall be maintained by the Township for a period of three years.
8. (a) No PCB's shall be accepted at this site. Oil and oil-based paints which have been manufactured prior to 1972; or whose manufacturing date cannot be determined, may contain PCBs and shall be handled in the manner prescribed:
- (i) The oil and oil-based paints shall not be mixed (bulked) with other paints prior to testing. Paints which are lab-packed are not considered to be mixed under this Certificate.
 - (ii) The oil and oil-based paints shall be tested for PCB content and shall be handled in the manner outlined in subcondition (a)(iii) if found to contain PCB.



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(iii) If the oil and oil-based paints are found to have PCBs at or above levels identified in subcondition (a)(iv), it shall be forthwith reported to the MOEE District Manager and shall be managed in accordance with Regulation 362/92 and stored or removed from the site to an approved PCB storage site, in accordance with written instructions from the District Manager.

(iv) The oil and oil-based paints shall not be distributed for reuse if they have any measurable PCB content. The oil and oil-based paint is considered to be a PCB waste, if measured levels are equal to or greater than 50 parts per million.

(b) Except as specified in subcondition (a)(iv), paints collected at the site may be returned or sold to the general public for reuse provided all transactions are recorded by invoice. Information on the type and volume of paint returned to the public through this site shall be recorded in the report specified in Condition 9.

9. (a) The Township shall establish a monthly summary of waste received at the site which shall include, but not necessarily be limited to, the documentation of waste types and quantities, source of generation, and ultimate disposal sites; and document of spills and upsets and environmental and other problems encountered in operating this site.

(b) Wastes that are collected and stored shall be in amounts which can be safely handled on the site. In the event that larger amounts are received than anticipated, the Township shall have extra drums and lab-packed containers available on the premises for the storage of the additional waste collected. When site capacity is reached, arrangements for the removal of waste from the site shall be made as soon as possible, but in any event, within five (5) working days. Records shall be maintained each time the capacity is exceeded and submitted in the report specified in subcondition (c).

(c) The information collected under subcondition (a) and (b) shall be submitted in a report to the District Manager on or before the first day of December during each year of operation.



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10. The Township shall ensure that only site personnel who are trained are on duty at all times during the operation of the site.
11. (a) Prior to commencing operations on the site, the Township shall have prepared an operation manual for use by site personnel which shall contain, but not necessarily be limited to the following:
 - (i) an outline of the responsibilities of site personnel;
 - (ii) personnel training protocols;
 - (iii) proper receiving and recording procedures (including recording procedures of wastes which are refused at the site);
 - (iv) paint waste identification, analysis information and separating procedures;
 - (v) proper storage, handling, sorting and shipping procedures;
 - (vi) contingency procedures to be followed by personnel in the event of spills, fire or other emergencies.
- (b) On commencing the Household Hazardous Waste Collection Program, a copy of the manual shall be placed in a central location on the site and this manual shall be accessible to all site personnel during operating hours.
12. The Township shall ensure that adequate fire fighting and contingency spill cleanup equipment is available at the site and that on-site supervisors are familiar with the use of such equipment and its location(s) on the site.
13. The local police and fire departments shall be informed of this site and this Certificate and shall be notified in writing of operating hours and any changes to scheduled operating hours prior to the changes being made.
14. Any spills shall be forthwith reported directly to the Ministry of Environment and Energy Spills Action Centre (1-800-268-6060) and shall be cleaned up immediately. A record of all spills and upsets, cleanup and corrective action shall be maintained and submitted in the report specified under Condition 9 (c).



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15. Except as specified under Conditions 8(a)(iii) and (b), all waste collected shall be transported from the site by an approved waste management system and disposed of at landfill, transfer and processing sites certified to accept these types of wastes.

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

1. Condition 6 is included to ensure that this site is operated in accordance with the application and supporting information submitted by the Township, and not in a manner which the Director has not been asked to consider.
2. Conditions 7 and 8 are included to ensure that this site is used only to collect and handle approved waste from approved site users; and that the waste is stored in a secure and safe manner.
3. Condition 9 is to provide the Township and the Ministry of Environment and Energy with an assessment of the Household Hazardous Waste Collection Program.
4. Condition 10 and 11 is to ensure that the Household Hazardous Waste Collection Program is conducted in an organized manner by adequately trained persons to ensure the safety of the general public, site personnel and the environment.
5. Condition 12 is to ensure that any emergency which may occur on site can be dealt with as expeditiously as possible.
6. Condition 13 is to ensure the police and/or fire department personnel are adequately prepared for and are able to assist with the operation of the site and Household Hazardous Waste Collection Program day should an emergency arise.
7. Condition 14 is to ensure that all spills are reported and properly cleaned up.
8. Condition 15 is to ensure that all waste is transported and disposed of in an environmentally acceptable manner in accordance with legislation governing the handling of waste material.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990 c. E-19, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the approval or each term or condition in the 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.



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In addition to these legal requirements the Notice should also include:

3. *The name of the appellant;*
4. *The address of the appellant;*
5. *The Certificate of Approval number;*
6. *The date of the Certificate of Approval;*
7. *The name of the Director;*
8. *The municipality within which the waste disposal site is located;*

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

This Notice must be served upon:

The Secretary,
Environmental Appeal Board,
112 St. Clair Avenue West,
Suite 502,
Toronto, Ontario,
M4V 1N3.

AND

The Director,
Section 39, Environmental Protection Act,
Ministry of Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario,
M4S 1H2

DATED AT TORONTO this 18th day of September, 1996.

A. Dominski, P. Eng.
Director
Section 39
Environmental Protection Act

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 5

Issue Date: June 8, 2015

The Corporation of the Township of North Dundas
636 St. Lawrence St
Post Office Box, No. 489
North Dundas, Ontario
K0C 2K0

Site Location: Boyne Road Landfill
12620 Boyne Road
Lot 8, Concession 6
Township of North Dundas, United Counties of Stormont, Dundas and Glengarry

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as subsequently amended for the use and operation of an 8.1 hectare (20 acres) landfilling area with additional 14.13 hectare (34.89 acres) lands for use as Buffer and 22.04 hectares (54.42 acres) Contaminant Attenuation Zone , as follows:

1. EMERGENCY APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Section 20.2 (1) of the Environmental Protection Act, a temporary approval lasting until January 31, 2016, is hereby granted for the continued landfilling operation at the Boyne Road Landfill Site, to alleviate the emergency situation for waste management in the local Township resulting from overfilling at the Site , as determined from the theoretical capacity estimate for the Site ;

2. ESTABLISHMENT AND OPERATION OF WEEE PROGRAM

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the establishment and operation of Waste Electrical and Electronic Equipment (WEEE) program at the Boyne Road Landfill Site, for the collection, temporary storage and transfer of WEEE;

3. RECEIPT OF NEW WASTE CLASSES AT THE HHW DEPOT

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the acceptance, storage, packing and/or bulking and subsequent transfer of additional hazardous waste codes **146T, 147I and 212L**, at the Household Hazardous Waste Depot;

4. ADDITION OF BUFFER/CONTAMINANT ATTENUATION LANDS

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the revision of the total site area from **8.1 hectares (20 acres)** to **22.23 hectares (54.89 acres)**, by adding parcels of lands for **use as Buffer, and additional 22.04 hectares (54.42 acres) Contaminant Attenuation Zone subject to Easement**. The waste fill area of 8.1 hectares (20 acres) remains unchanged. The additional **Buffer and/or Contaminant Attenuation** lands are described in a report dated January, 2015, prepared by Golder Associates Ltd., Item 4 of Schedule "A" attached to this *ECA* , as follows:

- (a) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-3142 dated July 22, 1991, as Part 2, Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (b) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-4441 dated January 7, 2002, as Part 1, part of Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (c) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-5197 dated June 15, 2011, as Part 7, Lot 8, Concession 6, Township of Winchester, County of Dundas; and
- (d) **Contaminant Attenuation Zone** - A 22.04 hectares (54.45 acres) parcel of land to the south and west of the landfill as shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , includes that property owned by Blair Hutchinson, located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive on Plan 8R-5197 dated June 15, 2011.

Whereas the rights of access and easement on the property listed under (d) above, for the purposes of groundwater contaminant attenuation has been secured by the Corporation of the Township of North Dundas as per the following document:

- (i) *Indenture* (Easement Agreement) made October 1, 2011 and signed on October 24, 2011, in respect of the property defined by PIN # 66149-0055 (Parts 1 to 6 inclusive, Lot 7, Concession 6), listed as Item 5 in Schedule "A", attached to this *ECA* .

all in accordance with the following documentation and subject to the terms and conditions listed herein:

DOCUMENTATION

The following items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A482101:

1. Environmental Compliance Approval Application dated May 14, 2013, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
2. Report entitled "Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated May 2013, prepared by Golder Associates Ltd..
3. Letter dated January 29, 2015, from Yannick J. Marcerou and Paul A. Smolkin of Golder Associates Ltd. to the *Director* , Environmental Approvals Access and Service Integration Branch, Ministry of the Environment and Climate Change, with attached Environmental Compliance Approval Application dated January 29, 2015, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
4. Report entitled "Addendum To The Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated January, 2015, prepared by Golder Associates Ltd.
5. *Indenture* (Easement Agreement) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas in respect of lands located at Part of Lot 7, Concession 6, Township of Winchester, Township of North Dundas, County of Dundas, being part of the property defined by PIN # 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.

For the purposes of this Environmental Compliance Approval and the terms and conditions specified herein, the following definitions apply:

DEFINITIONS

- (a) **"Approval"** or **"Certificate"** or **"ECA"** means this entire Environmental Compliance Approval No. A482101, issued in accordance with Section 20.3 of Part II.1 of the *Environmental Protection Act* (EPA) , and includes any schedules to it, the application and the supporting documentation listed in Schedule "A";
- (b) **"Township"** means The Corporation of the Township of North Dundas, and includes its successors and assigns;
- (c) **"Director "** means any *Ministry* employee appointed in writing by the Minister of the Environment and Climate Change pursuant to Section 5 of the EPA as a Director for the purposes of Part II.1 of the EPA;
- (d) **"District Manager "** means the District Manager of the local district office of the Ministry of the Environment and Climate Change in which the Site is geographically located or his/her representative;

- (e) **"EPA "** means *Environmental Protection Act* , R.S.O. 1990, c. E. 19, as amended;
- (f) **"Ministry"** means the Ontario Ministry of the Environment and Climate Change
- (g) **"Owner"** or **"Operator"** means any person that is responsible for the establishment or operation of the *Site* approved by this *Certificate* , and includes The Corporation of the Township of North Dundas, its successors and assigns;
- (h) **"OWRA"** means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended;
- (i) **"Regional Director "** means the Regional Director of the local Regional Office of the Ministry of the Environment and Climate Change in which the Site is located.
- (j) **"Site "** means the entire waste disposal site described as the **8.1 hectares (20 acres) Landfilling area** within a total Waste Disposal Site area of **22.23 hectares (54.89 acres)**, including the Buffer lands; **and additional 22.04 hectares (54.42 acres) Contaminant Attenuation Zone subject to Easement**. The **Buffer (Zones 1 to 3) lands** are described as follows:
 - (i) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 2 on Plan 8R-3142 dated July 22, 1991;
 - (ii) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 1 on Plan 8R-4441 dated January 7, 2002;
 - (iii) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 7 on Plan 8R-5197 dated June 15, 2011.
- (k) **"CAZ"** means **Contaminant Attenuation Zone** being, the **22.04 hectares (54.42 acres)** of other lands to the south and west of the landfill site, owned by Blair Hutchinson, shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , assembled for the purposes of expanding the Compliance Boundary for contaminant attenuation, and includes that property located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.
- (l) **"Indenture"** refers to **Contaminant Attenuation Zone Easement Agreement(s)** made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas.
- (m) **"WEEE"** refers to Waste Electrical and Electronic Equipment, and includes computers, printers, scanners, monitors, radios, stereos, televisions, VCR's, DVD players and telephones.

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

TERMS AND CONDITIONS

1.0 GENERAL PROVISIONS

Compliance

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

Interpretation

- 1.2 Where there is a conflict between a provision of any document, including the application, referred to in this *Certificate*, and the conditions of this *Certificate*, the conditions in this *Certificate* shall take precedence.
- 1.3 Where there is a conflict between the application and a provision in any documents 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.
- 1.4 Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

Other Legal Obligations

- 1.5 The issuance of, and compliance with, this *Certificate* 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* to furnish any further information related to compliance with this *Certificate* ;

Adverse Effect

- 1.6 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.

- 1.7 Despite an *Owner* , or any other person fulfilling any obligations imposed by this *Certificate*, the person remains responsible for any contravention of any other condition of this *Certificate* 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.
- 1.8 No portion of this *Site* shall be transferred or encumbered unless the *Director* is notified in advance and sufficient financial assurance, as applicable, is deposited with the *Ministry* to ensure that these conditions will be carried out. In the event of any change in ownership of the works, other than change to a successor municipality, the *Owner* shall notify the successor of and provide the successor with a copy of this *Certificate* , and the *Owner* shall provide a copy of the notification to the *District Manager* and the *Director*.

Inspections

- 1.9 No person shall hinder or obstruct a Ministry's authorized representative(s), upon presentation of credentials, from carrying out any and all inspections authorized by the *OWRA* , or the *EPA* , of any place to which this *Certificate* 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 *Certificate* are kept;
 - (b) to have access to, inspect, and copy any records required to be kept by the conditions of this *Certificate* ;
 - (c) to inspect the *Site*, related equipment and appurtenances;
 - (d) to inspect the practices, procedures, or monitoring/maintenance required by the conditions of this *Certificate* ; and
 - (e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Certificate* or the *EPA* , or the *OWRA* or any applicable legislation.

Information and Record Retention

- 1.10 Any information requested, by the *Ministry* , concerning the *Site*, under this *Certificate* , including but not limited to any records required to be kept by this *Certificate* shall be provided to the *Ministry* , upon request, in a timely manner. Records shall be retained for the contaminating life span of the *Site* except for as otherwise authorized in writing by the *Director*.
- 1.11 The receipt of any information by the *Ministry* or the failure of the *Ministry* to prosecute any person or to require any person to take any action, under this *Certificate* or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
- (a) an approval, waiver, or justification by the *Ministry* of any act or omission of any person that contravenes any term or condition of this *Certificate* or any statute, regulation or other legal requirement; or
 - (b) acceptance by the *Ministry*, of the information's completeness or accuracy.

- 1.12 Any information relating to this *ECA* and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, C. F-31.

Certificate of Requirement

- 1.13 Pursuant to Section 197 of the *EPA*, no person having an interest in the *Site* shall deal in any way with the *Site* without first giving a copy of this *Certificate* to each person acquiring an interest in the *Site* as a result of the dealing.
- 1.14 The *Owner* shall:
- (a) within sixty (60) calendar days from the date of issuance of this *Certificate*, submit to the *Director* for his/her signature:
 - (i) plans of survey of the Buffer Zones 1, 2, 3 and the *CAZ*, prepared, signed and sealed by a licensed Ontario Land Surveyor;
 - (ii) proof of ownership, as appropriate;
 - (iii) legal abstract of the properties in (i) above;
 - (iv) copy of the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement(s) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, listed as Item 5 of Schedule "A", attached to this *ECA*; and,
 - (v) a completed Certificate of Requirement, and its supporting documents, containing a registerable description of the Buffer Zones 1, 2, and 3, and a completed Certificate of Requirement for the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in accordance with Form 4 of Regulation 688 under Land Registration Reform Act, R.R.O. 1990c. L.4, as amended.
 - (vi) Section 8 of Form 4, above, shall be completed in accordance with the wording in Schedule "B" of this *Approval*.
 - (b) within fifteen (15) calendar days of receiving the Certificate of Requirement signed/authorized by the *Director*, the *Owner* shall:
 - (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the Buffer Zones 1, 2, and 3; and
 - (ii) submit to the *Director*, copy to the *District Manager*, a written verification that the Certificate of Requirement has been duly registered on title to the Buffer Zones 1, 2, and 3.
 - (c) within fifteen (15) calendar days of receiving the Certificate of Requirement signed/authorized by the *Director*, the *Owner* shall:

- (i) register the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in the appropriate Land Registry Office on title to the *CAZ* lands; and,
 - (ii) submit to the *Director* , copy to the *District Manager* , proof of registration of the entire *Indenture* on the title to the *CAZ* lands.
- (d) The *Township* shall not amend, or remove, or consent to the removal of the *Indenture* , or the removal of the *CAZ* from title of the property without the prior approval of the *Director* .

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING

- 2.1 The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2016, to alleviate the emergency situation for waste management in the *Township* resulting from overfilling at the *Site* . No waste shall be landfilled at the *Site* after January 31, 2016 without the approval of the *Director* .
- 2.2 Except as provided by the conditions in this *ECA* and applicable Legislation, landfilling operation at the *Site*, as provided in Condition 2.1 above, shall be in accordance with Item 2 of Schedule "A", as amended by Item 4 of Schedule "A", attached to this *Approval* .
- 2.3 By August 31, 2015, the *Township* shall submit to the *District Manager* , a plan for the long-term management of the waste for the affected users of the *Site* .
- 2.4 Where it is not proposed to continue landfilling operation at the *Site* beyond January 31, 2016, the *Township* shall submit for the approval of the *Director* , with copy to the *District Manager* , a detailed Closure Plan, to permanently close the *Site* for landfilling operations, post-closure inspections and maintenance, monitoring and reporting, and the end-use for the *Site* . The Closure Plan shall be submitted by November 1, 2015, and shall include, at least the following:
- (a) A plan showing site appearance after closure;
 - (b) A description of the proposed end-use of the *Site* ;
 - (c) Descriptions of the procedures for the closure of the *Site* , including:
 - (i) Advance notification of the public of the landfill closure;
 - (ii) Posting of a sign at the *Site* entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
 - (iii) Completion, inspection and maintenance of the final cover and landscaping;
 - (iv) Site security;
 - (v) Removal of unnecessary landfill-related structures, buildings and facilities; and,
 - (vi) Final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;

- (d) Descriptions of the procedures for post-closure care of the *Site* , including:
 - (i) Operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas (if any);
 - (ii) Record keeping and reporting; and,
 - (iii) Complaint contact and response procedures;
- (e) An assessment of the adequacy of and need to implement the contingency plans for leachate and landfill gas; and
- (f) An updated estimate of the contaminating life span of the *Site* , based on the results of the monitoring programs to date.

3.0 WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) FACILITY

- 3.1 The operation of the *WEEE* facility at the *Site* shall be limited to the collection, storage and transfer of *WEEE* that are accepted under the *WEEE* Program Plan as approved by the *Ministry* and administered by the Ontario Electronic Stewardship (OES) and includes the following items, as listed in letter dated January 29, 2015, included in Appendix "B" of Item 4 in Schedule "A", attached to this :
 - (i) Desktop, portable and personal hand-held computers;
 - (ii) Display devices (including monitors and televisions);
 - (iii) Computer peripherals (mice, keyboards, external hard drives, floppy-disk drives, optical drives and modems);
 - (iv) Printing, copying and Multi-function devices (including printers, photocopiers, scanners, fax machines and typewriters)
 - (v) Telephones and telephone answering machines, cellular devices, and pagers;
 - (iv) Image, audio and video devices (tape, disk, digital audio and video players and recorders radios, receivers, speakers, turntables, digital frames, cameras, equalizers, amplifiers, and video projectors).
- 3.2 The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed two (2) tonnes on each operating day, with a maximum accumulated storage on-site not to exceed five (5) tonnes at any time. The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed fifty-two (52) tonnes per year.
- 3.3 The *Township* may increase the type and quantity of *WEEE* materials managed at the *WEEE* facility as Ontario Electronic Stewardship (OES) programs are brought forward to increase the diversion of *WEEE* designated materials (Schedules 1 through 7, O. Reg.393/04), subject to the availability of storage capacity and prior written approval of the *District Manager* .
- 3.4 The *WEEE* shall be stored in two (2) lockable 30-cubic yard roll-off enclosed containers placed in a secure manner at the *Site* , such that unauthorized persons cannot enter these Facilities without supervision.

- 3.5 The *Township* shall ensure that the *WEEE* is operated in a safe and secure manner, such that all items are properly handled, packaged and stored so as not to pose any threat to the general public, site personnel and the natural environment.
- 3.6 The *Township* shall maintain separate records for all wastes received at all on-site Waste Management Facilities. The records shall include the documentation of waste types and quantities received, source of generation, ultimate disposal sites, and the documentation of any spills and/or upsets, and environmental and/or any other problems encountered in operating the *Site* .
- 3.7 The *Township* shall ensure that an up-to-date operations manual is maintained at the *Site* for use by site personnel during the operating lives of all on-site Waste Management Facilities. The operations manual shall contain as a minimum, the following information:
- (a) outline of the responsibilities of site personnel;
 - (b) personnel training protocol;
 - (c) proper receiving and recording procedures, including recording procedures for wastes which are refused at the *Site* ;
 - (d) identification of all wastes and procedures for bulking/separation;
 - (e) proper storage, handling, sorting and shipping procedures;
 - (f) contingency procedures to be followed by personnel in the event of spill, fire and any other emergencies.
- 3.8 The *Township* shall ensure that a copy of the up-to-date operations manual for the operations of all on-site Waste Management Facilities, is submitted to the *District Manager* for his/her information.
- 3.9 The *Township* shall ensure that the storage facilities for the operations of all on-site Waste Management Facilities meet the local fire regulations and the storage capacities for the respective structures and/or containers.
- 3.10 All wastes generated at the on-site Waste Management Facilities shall be managed and disposed of in accordance with the *EPA* and Ontario Regulation 347, as amended.

4.0 **INSPECTION AND MAINTENANCE**

- 4.1 The *Township* shall conduct regular inspections of the *Site* , including the active waste tipping area, all on-site Waste Management Facilities and associated equipment, buildings/shacks, final cover, security fencing and barriers, to ensure that all are maintained in good working order and secure at all times and to ensure that no off-site impacts such as vermin, vectors, odour, dust, and litter, result from the operations of the *Site* and Waste Management Facilities, to cause any nuisance or adverse

effect on the environment.

- 4.2 If any inspection indicates that there is an area of ponding or zero slope in the final soil capped area, and/or any deficiencies detected during these regular inspections, the *Township* shall take all steps necessary to provide positive drainage and rehabilitate the final soil cap, and/or any deficiencies detected as soon as practically possible.
- 4.3 A written record of the inspections shall be maintained at the *Site* , and shall include the following:
- (a) name and signature of trained personnel conducting the inspection;
 - (b) date and time of the inspection;
 - (c) list of equipment and Facilities inspected and all deficiencies and/or any nuisance impacts observed;
 - (d) a detailed description of any maintenance/repairs carried out and/or remedial action taken in order to control the nuisance;
 - (e) date and time of maintenance/repair activity; and,
 - (f) recommendations for remedial action and any preventative measures taken to prevent future reoccurrences.

5.0 ENVIRONMENTAL CONTROL AND MONITORING

- 5.1 Subject to the inclusion of monitoring well, MW7 in the existing regular monitoring program for groundwater quality monitoring, the *Township* shall carry out monitoring programs for groundwater/leachate and surface water, as summarized in Tables 3 and 4, respectively, in Item 2 of Schedule "A", attached to this Approval, and as per written instructions of the *District Manager* , through the review of the Annual Monitoring Reports, and any related OWRA requirements.
- 5.2 By December 31, 2015, the *Township* shall submit to the *Director* for approval, copied to the *District Manager* , a Land Use Permit obtained from the Ministry of Natural Resources and Forestry, permitting the use of the Crown lands to the north of the *Site* as contaminant attenuation zone, to bring the *Site* in compliance with Guideline B-7. Failing the acquisition of a Land Use Permit, as noted in this condition, the *Township* shall submit for the approval of the *Director* , copy to the *District Manager* , a proposed plan to bring the *Site* into compliance with Guideline B-7.
- 5.3 The *Township* shall ensure by means of a water monitoring program, that the *Site* shall be in compliance with the *Ministry's* Reasonable Use Guideline (Guideline B-7) for groundwater, and the Provincial Water Quality Objectives (PWQO) for surface water.
- 5.4 Where groundwater interacts with surface water/wetland and test results confirm non-compliance with the Provincial Water Quality Objectives, an assessment of the potential impact of the discharging groundwater quality on the receiving surface water/wetland, along with mitigation action, as necessary, shall be carried out.
- 5.5 A recommendation to change the monitoring programs under this *Approval* , including reporting frequency, may be made in the Annual Monitoring Report, based on the results to date, and may be

implemented, subject to the prior written concurrence of the *District Manager* .

- 5.6 Any groundwater/leachate monitoring well or landfill gas probe, included in the monitoring program that gets damaged or in any way made inoperable for sampling, shall be assessed, repaired, replaced or decommissioned, as the case may be, by the *Township* .

Surface Water Management

- 5.7 The *Township* shall ensure that approval is obtained under Section 53 (sewage works) of OWRA, for any future surface water management works, including stormwater management ponds, if any, prior to construction and/or use.

Landfill Gas Monitoring

- 5.8 The *Township* shall ensure that all buildings and structures existing at the *Site* or to be built on-*Site* which at times are occupied by people, or contains electrical equipment, or a potential source of ignition, are situated, constructed and monitored in a manner which minimizes the potential for explosive hazards due to landfill gas.

6.0 TRIGGER MECHANISM AND CONTINGENCY PLANS

- 6.1 The *Township* shall follow the trigger mechanism for groundwater/leachate and surface water, as described in Section 6.0 in Item 2 of Schedule "A", attached to this *Approval* , and as per written recommendations of the *District Manager* , through the review of the Annual Monitoring Reports.
- 6.2 Notwithstanding Condition 6.1 above, the *Township* shall employ 75th percentile of PWQO at the background station, as trigger concentration for all trigger parameters.
- 6.3 In the event of a confirmed exceedance of the site-specific trigger level relating to groundwater/leachate, or surface water impacts due to leachate, the *Township* shall immediately notify the *District Manager* , and an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the *Township* in accordance with the trigger mechanisms and associated contingency plans, as described in Section 6.2 and 6.4 in Item 2 of Schedule "A", attached to this *Approval* .
- 6.4 A recommendation to change the site-specific trigger mechanism for leachate impacts to the groundwater and/or surface, under this *Approval* , may be made in the Annual Monitoring Report, based on the results to date, and may be implemented, subject to the prior written concurrence of the *District Manager*.

7.0 ANNUAL REPORT

- 7.1 **By March 31, of each year**, the *Township* shall submit to the *District Manager* , an Annual Monitoring Report, prepared by a qualified professional engineer or geoscientist, covering the results of the *Site* operations, inspection/maintenance and monitoring of the *Site* . The Annual

Monitoring Report shall cover the preceding calendar year, and shall include, as a minimum, the following:

- (a) an updated drawing(s) indicating all leachate, groundwater, surface water and landfill gas monitoring locations, including off-site monitoring wells, if any;
- (b) tables outlining monitoring locations, analytical parameters of sampled water and frequency of sampling;
- (c) the results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs;
- (d) an assessment of the adequacy of and need to implement contingency measures for groundwater/leachate and surface water;
- (e) an assessment of the water quality with respect to the Ontario Reasonable Use Guidelines (Guideline B-7) and/or the Provincial Water Quality Objectives;
- (f) the status of compliance with all conditions of the *Approval* , including the operation, inspection, maintenance, monitoring and reporting requirements for all waste management activities at the *Site* ; and,
- (g) recommendations with respect to any proposed changes in the inspection/maintenance and monitoring of the landfill site and/or the reporting frequency.

REASONS

The reason(s) for this amendment to the Approval is (are) as follows:

1. The reason for **Conditions 1.1 to 1.7** and **1.10 to 1.12** is to clarify the legal rights and responsibilities of the *Township*.
2. The reasons for **Condition 1.8** are to restrict potential transfer or encumbrance of the *Site* without the approval of the *Director* and to ensure that any transfer or encumbrance can be made only on the basis that it will not endanger compliance with this *Certificate* .
4. The reason for **Condition 1.9** is to ensure that appropriate *Ministry* staff have ready access to the *Site* for inspection of facilities, equipment, practices and operations required by the conditions in this *Certificate* . This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the *EPA* and *OWRA* .
5. The reason for **Conditions 1.13** and **1.14** is to ensure 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.
6. The reasons for **Conditions 2.1** and **2.3** are to allow temporary operation of landfilling to alleviate

emergency situation for waste management in the *Township* resulting from overfilling at the *Site*, and to develop long-term waste management plan.

7. The reason for **Conditions 2.2, 3.1 to 3.4, 5.5 and 6.4** is to ensure the *Site* is designed, developed, operated or closed, 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.
8. The reasons for **Conditions 2.4** are to ensure that waste disposal ceases at the *Site* having reached its capacity, and to ensure that *Site* closure is completed in an aesthetically pleasing manner, to provide long-term protection of the natural environment.
9. The reason for **Conditions 3.5, 3.7 to 3.10, 4.1 and 4.2** is to ensure the *Site* is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.
10. The reasons for **Conditions 3.6 and 4.3** are to provide for the proper assessment of effectiveness and efficiency of the *Site* performance, its effect or relationship to any nuisance or environmental impacts, and the occurrence and prompt response to any public concerns. Record keeping is necessary to determine compliance with this *Approval*, the *EPA* and its regulations.
11. The reasons for **Conditions 5.1 to 5.9** are 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 action can be taken.
12. The reasons for **Condition 6.1 to 6.3** are to ensure that the *Township* follows a plan with an organized set of procedures for identifying and responding to unexpected but possible problems at the *Site*. A remedial action / contingency plan is necessary to ensure protection of the natural environment and public health and safety.
13. The reasons for **Condition 7.1** are to ensure that regular review of *Site* operations and monitoring data is documented and any possible improvements to the *Site* operations or monitoring programs are identified. An annual report is an important tool used in reviewing *Site* activities and for determining conformance of this *Certificate*, the *EPA* and its regulations.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989, as amended.

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
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

* 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) 314-3717 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 8th day of June, 2015



Dale D. Gable

Dale Gable, P.Eng.

Director

appointed for the purposes of Part II.1 of the
Environmental Protection Act

DO/

- c: Area Manager, MOECC Cornwall
c: District Manager, MOECC Ottawa
Paul Smolkin/Yannick Marcerou, Golder Associates Ltd.

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 6

Issue Date: July 10, 2015

The Corporation of the Township of North Dundas
636 St. Lawrence St P.O. Box 489, Winchester
North Dundas, Ontario
K0C 2K0

Site Location: Boyne Road Landfill
Lot 8, Concession 4
North Dundas Township, United Counties of Stormont, Dundas and Glengarry

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as subsequently amended for the use and operation of an 8.1 hectare (20 acres) landfilling area with additional 14.13 hectare (34.89 acres) lands for use as Buffer and 22.04 hectares (54.42 acres) Contaminant Attenuation Zone , as follows:

1. EMERGENCY APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Section 20.2 (1) of the Environmental Protection Act, a temporary approval lasting until January 31, 2016, is hereby granted for the continued landfilling operation at the Boyne Road Landfill Site, to alleviate the emergency situation for waste management in the local Township resulting from overfilling at the *Site* , as determined from the theoretical capacity estimate for the *Site* ;

2. ESTABLISHMENT AND OPERATION OF WEEE PROGRAM

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the establishment and operation of Waste Electrical and Electronic Equipment (WEEE) program at the Boyne Road Landfill Site, for the collection, temporary storage and transfer of WEEE;

3. RECEIPT OF NEW WASTE CLASSES AT THE HHW DEPOT

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the acceptance, storage, packing and/or bulking and subsequent transfer of additional hazardous waste codes **146T, 147I and 212L**, at the Household Hazardous Waste Depot;

4. ADDITION OF BUFFER/CONTAMINANT ATTENUATION LANDS

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the revision of the total site area from **8.1 hectares (20 acres)** to **22.23 hectares (54.89 acres)**, by adding parcels of lands for **use as Buffer, and additional 22.04 hectares (54.42 acres)**

Contaminant Attenuation Zone subject to Easement. The waste fill area of 8.1 hectares (20 acres) remains unchanged. The additional **Buffer and/or Contaminant Attenuation** lands are described in a report dated January, 2015, prepared by Golder Associates Ltd., Item 4 of Schedule "A" attached to this *ECA* , as follows:

- (a) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-3142 dated July 22, 1991, as Part 2, Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (b) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-4441 dated January 7, 2002, as Part 1, part of Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (c) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-5197 dated June 15, 2011, as Part 7, Lot 8, Concession 6, Township of Winchester, County of Dundas; and
- (d) **Contaminant Attenuation Zone** - A 22.04 hectares (54.45 acres) parcel of land to the south and west of the landfill as shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , includes that property owned by Blair Hutchinson, located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive on Plan 8R-5197 dated June 15, 2011.

Whereas the rights of access and easement on the property listed under (d) above, for the purposes of groundwater contaminant attenuation has been secured by the Corporation of the Township of North Dundas as per the following document:

- (i) *Indenture* (Easement Agreement) made October 1, 2011 and signed on October 24, 2011, in respect of the property defined by PIN # 66149-0055 (Parts 1 to 6 inclusive, Lot 7, Concession 6), listed as Item 5 in Schedule "A", attached to this *ECA* .

all in accordance with the following documentation and subject to the terms and conditions listed herein:

DOCUMENTATION

The following items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A482101:

1. Environmental Compliance Approval Application dated May 14, 2013, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
2. Report entitled "Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated May 2013, prepared by Golder Associates Ltd..
3. Letter dated January 29, 2015, from Yannick J. Marcerou and Paul A. Smolkin of Golder Associates Ltd. to the *Director*, Environmental Approvals Access and Service Integration Branch, Ministry of the Environment and Climate Change, with attached Environmental Compliance Approval Application dated January 29, 2015, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
4. Report entitled "Addendum To The Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated January, 2015, prepared by Golder Associates Ltd.
5. *Indenture* (Easement Agreement) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas in respect of lands located at Part of Lot 7, Concession 6, Township of Winchester, Township of North Dundas, County of Dundas, being part of the property defined by PIN # 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.

For the purposes of this Environmental Compliance Approval and the terms and conditions specified herein, the following definitions apply:

DEFINITIONS

- (a) **"Approval"** or **"Certificate"** or **"ECA"** means this entire Environmental Compliance Approval No. A482101, issued in accordance with Section 20.3 of Part II.1 of the *Environmental Protection Act* (EPA), and includes any schedules to it, the application and the supporting documentation listed in Schedule "A";
- (b) **"Township"** means The Corporation of the Township of North Dundas, and includes its successors and assigns;
- (c) **"Director"** means any *Ministry* employee appointed in writing by the Minister of the Environment and Climate Change pursuant to Section 5 of the EPA as a Director for the purposes of Part II.1 of the EPA;
- (d) **"District Manager"** means the District Manager of the local district office of the Ministry of the Environment and Climate Change in which the Site is geographically located or his/her

representative;

- (e) "**EPA** " means *Environmental Protection Act* , R.S.O. 1990, c. E. 19, as amended;
- (f) "**Ministry**" means the Ontario Ministry of the Environment and Climate Change
- (g) "**Owner**" or "**Operator**" means any person that is responsible for the establishment or operation of the *Site* approved by this *Certificate* , and includes The Corporation of the Township of North Dundas, its successors and assigns;
- (h) "**OWRA**" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended;
- (i) "**Regional Director** " means the Regional Director of the local Regional Office of the Ministry of the Environment and Climate Change in which the *Site* is located.
- (j) "**Site** " means the entire waste disposal site described as the **8.1 hectares (20 acres)** Landfilling area within a total Waste Disposal Site area of **22.23 hectares (54.89 acres)**, including the Buffer lands; and **additional 22.04 hectares (54.42 acres) Contaminant Attenuation Zone subject to Easement**. The **Buffer (Zones 1 to 3) lands** are described as follows:
 - (i) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 2 on Plan 8R-3142 dated July 22, 1991;
 - (ii) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 1 on Plan 8R-4441 dated January 7, 2002;
 - (iii) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 7 on Plan 8R-5197 dated June 15, 2011.
- (k) "**CAZ**" means **Contaminant Attenuation Zone** being, the **22.04 hectares (54.42 acres)** of other lands to the south and west of the landfill site, owned by Blair Hutchinson, shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , assembled for the purposes of expanding the Compliance Boundary for contaminant attenuation, and includes that property located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.
- (l) "**Indenture**" refers to **Contaminant Attenuation Zone Easement Agreement(s)** made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas.

- (m) "**WEEE**" refers to Waste Electrical and Electronic Equipment, and includes computers, printers, scanners, monitors, radios, stereos, televisions, VCR's, DVD players and telephones.

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

TERMS AND CONDITIONS

1.0 GENERAL PROVISIONS

Compliance

- 1.1 (a) **This Notice replaces Notice No. 5, issued on June 8, 2015.**
- (b) The *Owner* shall ensure compliance with all the conditions of this *Certificate* and shall ensure that any person authorized to carry out work on any aspect of the *Site* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

Interpretation

- 1.2 Where there is a conflict between a provision of any document, including the application, referred to in this *Certificate*, and the conditions of this *Certificate*, the conditions in this *Certificate* shall take precedence.
- 1.3 Where there is a conflict between the application and a provision in any documents 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.
- 1.4 Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

Other Legal Obligations

- 1.5 The issuance of, and compliance with, this *Certificate* 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* to furnish any further information related to compliance with this *Certificate* ;

Adverse Effect

- 1.6 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.
- 1.7 Despite an *Owner* , or any other person fulfilling any obligations imposed by this *Certificate*, the person remains responsible for any contravention of any other condition of this *Certificate* 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.
- 1.8 No portion of this *Site* shall be transferred or encumbered unless the *Director* is notified in advance and sufficient financial assurance, as applicable, is deposited with the *Ministry* to ensure that these conditions will be carried out. In the event of any change in ownership of the works, other than change to a successor municipality, the *Owner* shall notify the successor of and provide the successor with a copy of this *Certificate* , and the *Owner* shall provide a copy of the notification to the *District Manager* and the *Director*.

Inspections

- 1.9 No person shall hinder or obstruct a Ministry's authorized representative(s), upon presentation of credentials, from carrying out any and all inspections authorized by the *OWRA* , or the *EPA* , of any place to which this *Certificate* 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 *Certificate* are kept;
 - (b) to have access to, inspect, and copy any records required to be kept by the conditions of this *Certificate* ;
 - (c) to inspect the *Site*, related equipment and appurtenances;
 - (d) to inspect the practices, procedures, or monitoring/maintenance required by the conditions of this *Certificate* ; and
 - (e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Certificate* or the *EPA* , or the *OWRA* or any applicable legislation.

Information and Record Retention

- 1.10 Any information requested, by the *Ministry* , concerning the *Site*, under this *Certificate* , including but not limited to any records required to be kept by this *Certificate* shall be provided to the *Ministry* , upon request, in a timely manner. Records shall be retained for the contaminating life span of the *Site* except for as otherwise authorized in writing by the *Director*.
- 1.11 The receipt of any information by the *Ministry* or the failure of the *Ministry* to prosecute any person or to require any person to take any action, under this *Certificate* or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
- (a) an approval, waiver, or justification by the *Ministry* of any act or omission of any person that

contravenes any term or condition of this *Certificate* or any statute, regulation or other legal requirement; or

(b) acceptance by the *Ministry*, of the information's completeness or accuracy.

1.12 Any information relating to this *ECA* and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, C. F-31.

Certificate of Requirement

1.13 Pursuant to Section 197 of the *EPA*, no person having an interest in the *Site* shall deal in any way with the *Site* without first giving a copy of this *Certificate* to each person acquiring an interest in the *Site* as a result of the dealing.

1.14 The *Owner* shall:

(a) within sixty (60) calendar days from the date of issuance of this *Certificate*, submit to the *Director* for his/her signature:

- (i) plans of survey of the Buffer Zones 1, 2, 3 and the *CAZ*, prepared, signed and sealed by a licensed Ontario Land Surveyor;
- (ii) proof of ownership, as appropriate;
- (iii) legal abstract of the properties in (i) above;
- (iv) copy of the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement(s) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, listed as Item 5 of Schedule "A", attached to this *ECA*; and,
- (v) a completed Certificate of Requirement, and its supporting documents, containing a registerable description of the Buffer Zones 1, 2, and 3, and a completed Certificate of Requirement for the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in accordance with Form 4 of Regulation 688 under Land Registration Reform Act, R.R.O. 1990c. L.4, as amended.
- (vi) Section 8 of Form 4, above, shall be completed in accordance with the wording in Schedule "B" of this *Approval*.

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

- (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the Buffer Zones 1, 2, and 3; and
- (ii) submit to the *Director*, copy to the *District Manager*, a written verification that the Certificate of Requirement has been duly registered on title to the Buffer Zones 1, 2, and

3.

- (c) within fifteen (15) calendar days of receiving the Certificate of Requirement signed/authorized by the *Director* , the *Owner* shall:
 - (i) register the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in the appropriate Land Registry Office on title to the *CAZ* lands; and,
 - (ii) submit to the *Director* , copy to the *District Manager* , proof of registration of the entire *Indenture* on the title to the *CAZ* lands.
- (d) The *Township* shall not amend, or remove, or consent to the removal of the *Indenture* , or the removal of the *CAZ* from title of the property without the prior approval of the *Director* .

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING

- 2.1 The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2016, to alleviate the emergency situation for waste management in the *Township* resulting from overfilling at the *Site* . No waste shall be landfilled at the *Site* after January 31, 2016 without the approval of the *Director* .
- 2.2 Except as provided by the conditions in this *ECA* and applicable Legislation, landfilling operation at the *Site*, as provided in Condition 2.1 above, shall be in accordance with Item 2 of Schedule "A", as amended by Item 4 of Schedule "A", attached to this *Approval* .
- 2.3 By August 31, 2015, the *Township* shall submit to the *District Manager* , a plan for the long-term management of the waste for the affected users of the *Site* .
- 2.4 (1) Where it is not proposed to continue landfilling operation at the *Site* beyond January 31, 2016, the *Township* shall submit for the approval of the *Director* , with copy to the *District Manager* , a detailed Closure Plan, to permanently close the *Site* for landfilling operations, post-closure inspections and maintenance, monitoring and reporting, and the end-use for the *Site* . The Closure Plan shall be submitted by January 1, 2016, and shall include, at least the following:
 - (a) A plan showing site appearance after closure;
 - (b) A description of the proposed end-use of the *Site* ;
 - (c) Descriptions of the procedures for the closure of the *Site* , including:
 - (i) Advance notification of the public of the landfill closure;
 - (ii) Posting of a sign at the *Site* entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
 - (iii) Completion, inspection and maintenance of the final cover and landscaping;

- (iv) Site security;
 - (v) Removal of unnecessary landfill-related structures, buildings and facilities; and,
 - (vi) Final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
- (d) Descriptions of the procedures for post-closure care of the *Site* , including:
- (i) Operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas (if any);
 - (ii) Record keeping and reporting; and,
 - (iii) Complaint contact and response procedures;
- (e) An assessment of the adequacy of and need to implement the contingency plans for leachate and landfill gas; and
- (f) An updated estimate of the contaminating life span of the *Site* , based on the results of the monitoring programs to date.
- (2) Upon the site ceasing accepting waste, the Owner shall place 300 mm of interim clayey cover until an approved Closure Plan has been approved into the ECA.

3.0 WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) FACILITY

- 3.1 The operation of the *WEEE* facility at the *Site* shall be limited to the collection, storage and transfer of *WEEE* that are accepted under the *WEEE* Program Plan as approved by the *Ministry* and administered by the Ontario Electronic Stewardship (OES) and includes the following items, as listed in letter dated January 29, 2015, included in Appendix "B" of Item 4 in Schedule "A", attached to this :
- (i) Desktop, portable and personal hand-held computers;
 - (ii) Display devices (including monitors and televisions);
 - (iii) Computer peripherals (mice, keyboards, external hard drives, floppy-disk drives, optical drives and modems);
 - (iv) Printing, copying and Multi-function devices (including printers, photocopiers, scanners, fax machines and typewriters)
 - (v) Telephones and telephone answering machines, cellular devices, and pagers;
 - (iv) Image, audio and video devices (tape, disk, digital audio and video players and recorders radios, receivers, speakers, turntables, digital frames, cameras, equalizers, amplifiers, and video projectors).
- 3.2 The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed two (2) tonnes on each operating day, with a maximum accumulated storage on-site not to exceed five (5) tonnes at any time. The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed fifty-two (52) tonnes per year.

- 3.3 The *Township* may increase the type and quantity of *WEEE* materials managed at the *WEEE* facility as Ontario Electronic Stewardship (OES) programs are brought forward to increase the diversion of *WEEE* designated materials (Schedules 1 through 7, O. Reg.393/04), subject to the availability of storage capacity and prior written approval of the *District Manager* .
- 3.4 The *WEEE* shall be stored in two (2) lockable 30-cubic yard roll-off enclosed containers placed in a secure manner at the *Site* , such that unauthorized persons cannot enter these Facilities without supervision.
- 3.5 The *Township* shall ensure that the *WEEE* is operated in a safe and secure manner, such that all items are properly handled, packaged and stored so as not to pose any threat to the general public, site personnel and the natural environment.
- 3.6 The *Township* shall maintain separate records for all wastes received at all on-site Waste Management Facilities. The records shall include the documentation of waste types and quantities received, source of generation, ultimate disposal sites, and the documentation of any spills and/or upsets, and environmental and/or any other problems encountered in operating the *Site* .
- 3.7 The *Township* shall ensure that an up-to-date operations manual is maintained at the *Site* for use by site personnel during the operating lives of all on-site Waste Management Facilities. The operations manual shall contain as a minimum, the following information:
- (a) outline of the responsibilities of site personnel;
 - (b) personnel training protocol;
 - (c) proper receiving and recording procedures, including recording procedures for wastes which are refused at the *Site* ;
 - (d) identification of all wastes and procedures for bulking/separation;
 - (e) proper storage, handling, sorting and shipping procedures;
 - (f) contingency procedures to be followed by personnel in the event of spill, fire and any other emergencies.
- 3.8 The *Township* shall ensure that a copy of the up-to-date operations manual for the operations of all on-site Waste Management Facilities, is submitted to the *District Manager* for his/her information.
- 3.9 The *Township* shall ensure that the storage facilities for the operations of all on-site Waste Management Facilities meet the local fire regulations and the storage capacities for the respective structures and/or containers.
- 3.10 All wastes generated at the on-site Waste Management Facilities shall be managed and disposed of in accordance with the *EPA* and Ontario Regulation 347, as amended.

4.0 INSPECTION AND MAINTENANCE

- 4.1 The *Township* shall conduct regular inspections of the *Site* , including the active waste tipping area, all on-site Waste Management Facilities and associated equipment, buildings/shacks, final cover, security fencing and barriers, to ensure that all are maintained in good working order and secure at all times and to ensure that no off-site impacts such as vermin, vectors, odour, dust, and litter, result from the operations of the *Site* and Waste Management Facilities, to cause any nuisance or adverse effect on the environment.
- 4.2 If any inspection indicates that there is an area of ponding or zero slope in the final soil capped area, and/or any deficiencies detected during these regular inspections, the *Township* shall take all steps necessary to provide positive drainage and rehabilitate the final soil cap, and/or any deficiencies detected as soon as practically possible.
- 4.3 A written record of the inspections shall be maintained at the *Site* , and shall include the following:
- (a) name and signature of trained personnel conducting the inspection;
 - (b) date and time of the inspection;
 - (c) list of equipment and Facilities inspected and all deficiencies and/or any nuisance impacts observed;
 - (d) a detailed description of any maintenance/repairs carried out and/or remedial action taken in order to control the nuisance;
 - (e) date and time of maintenance/repair activity; and,
 - (f) recommendations for remedial action and any preventative measures taken to prevent future reoccurrences.

5.0 ENVIRONMENTAL CONTROL AND MONITORING

- 5.1 Subject to the inclusion of monitoring well, MW7 in the existing regular monitoring program for groundwater quality monitoring, the *Township* shall carry out monitoring programs for groundwater/leachate and surface water, as summarized in Tables 3 and 4, respectively, in Item 2 of Schedule "A", attached to this Approval, and as per written instructions of the *District Manager* , through the review of the Annual Monitoring Reports, and any related OWRA requirements.
- 5.2 By December 31, 2015, the *Township* shall submit to the *Director* for approval, copied to the *District Manager* , a Land Use Permit obtained from the Ministry of Natural Resources and Forestry, permitting the use of the Crown lands to the north of the *Site* as contaminant attenuation zone, to bring the *Site* in compliance with Guideline B-7. Failing the acquisition of a Land Use Permit, as noted in this condition, the *Township* shall submit for the approval of the *Director* , copy to the *District Manager* , a proposed plan to bring the *Site* into compliance with Guideline B-7.
- 5.3 The *Township* shall ensure by means of a water monitoring program, that the *Site* shall be in compliance with the *Ministry's* Reasonable Use Guideline (Guideline B-7) for groundwater, and the Provincial Water Quality Objectives (PWQO) for surface water.

- 5.4 Where groundwater interacts with surface water/wetland and test results confirm non-compliance with the Provincial Water Quality Objectives, an assessment of the potential impact of the discharging groundwater quality on the receiving surface water/wetland, along with mitigation action, as necessary, shall be carried out.
- 5.5 A recommendation to change the monitoring programs under this *Approval* , including reporting frequency, may be made in the Annual Monitoring Report, based on the results to date, and may be implemented, subject to the prior written concurrence of the *District Manager* .
- 5.6 Any groundwater/leachate monitoring well or landfill gas probe, included in the monitoring program that gets damaged or in any way made inoperable for sampling, shall be assessed, repaired, replaced or decommissioned, as the case may be, by the *Township* .

Surface Water Management

- 5.7 The *Township* shall ensure that approval is obtained under Section 53 (sewage works) of OWRA, for any future surface water management works, including stormwater management ponds, if any, prior to construction and/or use.

Landfill Gas Monitoring

- 5.8 The *Township* shall ensure that all buildings and structures existing at the *Site* or to be built on-*Site* which at times are occupied by people, or contains electrical equipment, or a potential source of ignition, are situated, constructed and monitored in a manner which minimizes the potential for explosive hazards due to landfill gas.

6.0 TRIGGER MECHANISM AND CONTINGENCY PLANS

- 6.1 The *Township* shall follow the trigger mechanism for groundwater/leachate and surface water, as described in Section 6.0 in Item 2 of Schedule "A", attached to this *Approval* , and as per written recommendations of the *District Manager* , through the review of the Annual Monitoring Reports.
- 6.2 Notwithstanding Condition 6.1 above, the *Township* shall employ 75th percentile of PWQO at the background station, as trigger concentration for all trigger parameters.
- 6.3 In the event of a confirmed exceedance of the site-specific trigger level relating to groundwater/leachate, or surface water impacts due to leachate, the Township shall immediately notify the *District Manager* , and an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the *Township* in accordance with the trigger mechanisms and associated contingency plans, as described in Section 6.2 and 6.4 in Item 2 of Schedule "A", attached to this *Approval* .
- 6.4 A recommendation to change the site-specific trigger mechanism for leachate impacts to the groundwater and/or surface, under this *Approval* , may be made in the Annual Monitoring Report,

based on the results to date, and may be implemented, subject to the prior written concurrence of the *District Manager*.

7.0 ANNUAL REPORT

7.1 **By March 31, of each year**, the *Township* shall submit to the *District Manager*, an Annual Monitoring Report, prepared by a qualified professional engineer or geoscientist, covering the results of the *Site* operations, inspection/maintenance and monitoring of the *Site*. The Annual Monitoring Report shall cover the preceding calendar year, and shall include, as a minimum, the following:

- (a) an updated drawing(s) indicating all leachate, groundwater, surface water and landfill gas monitoring locations, including off-site monitoring wells, if any;
- (b) tables outlining monitoring locations, analytical parameters of sampled water and frequency of sampling;
- (c) the results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs;
- (d) an assessment of the adequacy of and need to implement contingency measures for groundwater/leachate and surface water;
- (e) an assessment of the water quality with respect to the Ontario Reasonable Use Guidelines (Guideline B-7) and/or the Provincial Water Quality Objectives;
- (f) the status of compliance with all conditions of the *Approval*, including the operation, inspection, maintenance, monitoring and reporting requirements for all waste management activities at the *Site*; and,
- (g) recommendations with respect to any proposed changes in the inspection/maintenance and monitoring of the landfill site and/or the reporting frequency.

REASONS

The reason(s) for this amendment to the Approval is (are) as follows:

1. The reason for **Conditions 1.1 to 1.7** and **1.10 to 1.12** is to clarify the legal rights and responsibilities of the *Township*.
2. The reasons for **Condition 1.8** are to restrict potential transfer or encumbrance of the *Site* without the approval of the *Director* and to ensure that any transfer or encumbrance can be made only on the basis that it will not endanger compliance with this *Certificate*.

4. The reason for **Condition 1.9** is to ensure that appropriate *Ministry* staff have ready access to the *Site* for inspection of facilities, equipment, practices and operations required by the conditions in this *Certificate* . This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the *EPA* and *OWRA* .
5. The reason for **Conditions 1.13** and **1.14** is to ensure 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.
6. The reasons for **Conditions 2.1** and **2.3** are to allow temporary operation of landfilling to alleviate emergency situation for waste management in the *Township* resulting from overfilling at the *Site*, and to develop long-term waste management plan.
7. The reason for **Conditions 2.2, 3.1 to 3.4, 5.5** and **6.4** is to ensure the *Site* is designed, developed, operated or closed, 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.
8. The reasons for **Conditions 2.4** are to ensure that waste disposal ceases at the *Site* having reached its capacity, and to ensure that *Site* closure is completed in an aesthetically pleasing manner, to minimize infiltration to reduce leachate generation prior to final cover installation, and to provide long-term protection of the natural environment.
9. The reason for **Conditions 3.5, 3.7 to 3.10, 4.1** and **4.2** is to ensure the *Site* is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.
10. The reasons for **Conditions 3.6** and **4.3** are to provide for the proper assessment of effectiveness and efficiency of the *Site* performance, its effect or relationship to any nuisance or environmental impacts, and the occurrence and prompt response to any public concerns. Record keeping is necessary to determine compliance with this *Approval*, the *EPA* and its regulations.
11. The reasons for **Conditions 5.1 to 5.9** are 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 action can be taken.
12. The reasons for **Condition 6.1 to 6.3** are to ensure that the *Township* follows a plan with an organized set of procedures for identifying and responding to unexpected but possible problems at the *Site* . A remedial action / contingency plan is necessary to ensure protection of the natural environment and public health and safety.
13. The reasons for **Condition 7.1** are to ensure that regular review of *Site* operations and monitoring data is documented and any possible improvements to the *Site* operations or monitoring programs are identified. An annual report is an important tool used in reviewing *Site* activities and for determining conformance of this *Certificate* , the *EPA* and its regulations.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989, as amended.

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

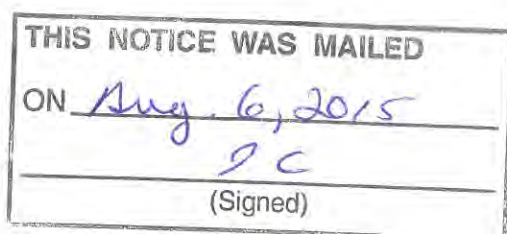
AND

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) 314-3717 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 July, 2015



Dale Gable, P.Eng.

Director

appointed for the purposes of Part II.1 of the

Environmental Protection Act

DO/

- c: Area Manager, MOECC Cornwall
- c: District Manager, MOECC Ottawa
- Melissa Bunn, Golder Associates Ltd. ✓

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 7

Issue Date: January 28, 2016

The Corporation of the Township of North Dundas
636 St. Lawrence St
Post Office Box, No. 489
North Dundas, Ontario
K0C 2K0

Site Location: Boyne Rd. Landfill
12620 Boyne Rd
Lot 8, Concession 6
Township of North Dundas, United Counties of Stormont, Dundas and Glengarry

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as subsequently amended for the use and operation of an 8.1 hectare (20 acres) landfilling area with additional 14.13 hectare (34.89 acres) lands for use as Buffer and 22.04 hectares (54.45 acres) Contaminant Attenuation Zone , as follows:

1. ADDITION OF CONTAMINANT ATTENUATION ZONE TO THE SITE - LAND USE PERMIT

Pursuant to Condition 5.2 in Notice No. 6, dated July 10, 2015, approval is hereby granted for the inclusion of a **49.21 hectare Contaminant Attenuation Zone (CAZ)** to the north of the Site, subject to easement by **Land Use Permit**. The waste fill area of 8.1 hectares (20 acres) remains unchanged. The additional **Contaminant Attenuation** lands, controlled by the Ministry of Natural Resources and Forestry, are described as part Lot 8, Concession 7, Township of Winchester, County of Dundas, on Plan 8R-225, deposited on July 19, 1974, included in a report dated January, 2015, prepared by Golder Associates Ltd., listed as Item 4 of Schedule "A" attached to Notice No. 6 dated July 10, 2015;

Whereas the rights of access and easement on the property listed above, for the purposes of groundwater contaminant attenuation has been secured by the Township of North Dundas per the following document:

- (a) Ontario Ministry of Natural Resources and Forestry Land Use Permit, No. LUP1735-1000641, dated October 14, 2015, attached to letter dated October 15, 2015 from Doug Froats, Director of Solid Waste Management, Township of North Dundas, listed as Item 1 of Schedule "A", attached to this Approval;

2. EXTENSION OF EMERGENCY APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Condition 2.1 in Notice No. 6, dated July 10, 2015, a temporary approval is hereby granted for the continued landfilling operation at the Boyne Road Landfill Site, lasting until January 31, 2017, to alleviate the emergency situation for waste management existing in the local Township, which has resulted from overfilling at the Site, as determined from the theoretical capacity estimate for the Site;

all in accordance with the following documentation and subject to the terms and conditions herein:

DOCUMENTATION

The following items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A482101:

1. Letter dated October 15, 2015 from Doug Froats, Director of Solid Waste Management, Township of North Dundas to Dickson Odame-Osafo, Ministry of the Environment and Climate Change, with attachment titled "Ontario Ministry of Natural Resources and Forestry Land Use Permit, No. LUP1735-1000641", dated October 14, 2015
2. Environmental Compliance Approval Application dated January 19, 2016, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
3. Report entitled "Addendum #2 To The Design and Operations Plan", Application for Extension of Emergency ECA, Boyne Road Landfill, Township of North Dundas, dated January, 2016, prepared by Golder Associates Ltd.
4. Letter dated December 15, 2015 from Melissa I. Bunn and Paul A. Smolkin of Golder Associates Ltd. to Terri Forrester, Cornwall Area Office, Ministry of the Environment and Climate Change, Re: Response to Groundwater Review Comments on 2014 Monitoring Report For The Boyne Road Waste Disposal Site, Township of North Dundas.

For the purposes of this Environmental Compliance Approval and the terms and conditions specified herein, the following definitions apply:

DEFINITIONS

Definitions (j) and (k) in Notice 6, dated July 10, 2015, are hereby revoked and replaced with new Definitions (j) and (k) as follows:

- (j) **"Site "** means the entire waste disposal site described as the **8.1 hectare (20 acres) Landfilling area** within a total Waste Disposal Site area of **22.23 hectares (54.89 acres)**, including the **Buffer Lands 1 to 3; and additional 22.04 hectare (54.45 acres) Contaminant Attenuation Zone subject to Indenture**, and **additional 49.21 hectare (121.51 acres) Contaminant Attenuation Zone**, subject to **Land Use Permit** issued by the Ministry of Natural Resources and Forestry. The **Buffer (Zones 1 to 3) Lands** are described as

follows:

- (i) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 2 on Plan 8R-3142 dated July 22, 1991;
 - (ii) **Buffer Zone 2** - A 7.2 hectare (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 1 on Plan 8R-4441, dated January 7, 2002;
 - (iii) **Buffer Zone 3** - A 4.29 hectare (10.59 acres) parcel of land south of Buffer Zone 2, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 7 on Plan 8R-5197, dated June 15, 2011.
- (k) **"CAZ"** means **Contaminant Attenuation Zone**, being lands assembled for the purposes of expanding the Compliance Boundary for contaminant attenuation, and includes the following lands:
- (i) **CAZ 1** - A **22.04** hectare (54.45 acres) parcel of land to the south and west of the landfill site, subject to **Indenture**, owned by Blair Hutchinson, shown on Figure 2, contained in Item 4 of Schedule "A", attached to Notice No. 6 dated July 10, 2015, located within Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.
 - (ii) **CAZ 2** - A **49.21** hectare Crown land to the north of the Site, subject to **Land Use Permit**, issued by the Ministry of Natural Resources and Forestry, described as Part Lot 8, Concession 7, Township of Winchester, County of Dundas, on Plan 8R-225, deposited on July 19, 1974, shown on Figure 2 contained in Item 4 of Schedule "A", attached to Notice No. 6 dated July 10, 2015.

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

CERTIFICATE OF REQUIREMENT

- 1.15 The Owner shall maintain at all time, a valid **Land Use Permit**, issued by the Ontario Ministry of Natural Resources and Forestry, to permit the continued use as CAZ, of the Property described as Part Lot 8 Concession 7, Plan 8R-225, deposited July 19, 1974, until such time as the subject property is no longer required for contaminant attenuation, as approved in writing by the Director.
- 1.16 By January 31, 2017, the *Township* shall submit to the *Director* for approval, copied to the *District Manager*, an application with supporting documentation, to add to the Landfill Site, that portion of Boyne Road allowance across the northern side of the Site, for the purposes of expanding the

Compliance Boundary for contaminant attenuation to achieve Site compliance with Guideline B-7.

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING

Condition 2.1 in Notice No. 6, dated July 10, 2015, is hereby revoked and replaced by new Condition 2.1 as follows:

- 2.1 The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2017, to alleviate the emergency situation for waste management existing in the *Township*, resulting from overfilling at the *Site*. No waste shall be landfilled at the *Site* after January 31, 2017 without the approval of the *Director*.

5.0 ENVIRONMENTAL CONTROL AND MONITORING

Condition 5.1 in Notice No. 6, dated July 10, 2015, is hereby revoked and replaced by new Condition 5.1 as follows:

- 5.1 Subject to the installation and inclusion of additional overburden and bedrock monitoring wells to the north of the site, as determined in consultation with the District Manager, to delineate leachate impacts on groundwater, in the existing regular monitoring program for groundwater quality monitoring, the *Township* shall carry out monitoring programs for groundwater/leachate and surface water, as summarized in Tables 3 and 4, respectively, in Item 2 of Schedule "A", attached to Notice No. 6 dated July 10, 2015, and as per Item 4 in Documentation in this Approval, and/or as per written instructions of the *District Manager*, through the review of the Annual Monitoring Reports, and any related OWRA requirements.

REASONS

The reason(s) for this amendment to the Certificate of Approval is (are) as follows:

1. The reasons for Condition 1.15 and 1.16 are to ensure that sufficient land is available for contaminant attenuation, and to ensure that future developments and/or uses of the properties do not compromise or interfere with the functioning of their use as CAZ, or with the exercise of any of the rights provided in the CAZ Agreements.
2. The reasons for **Condition 2.1** are to allow temporary operation of landfilling to alleviate the emergency situation for waste management in the *Township* resulting from overfilling at the *Site*, and to develop long-term waste management plan.
3. The reasons for **Condition 5.1** are 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 action can be taken.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4,

1989, as subsequently amended.

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

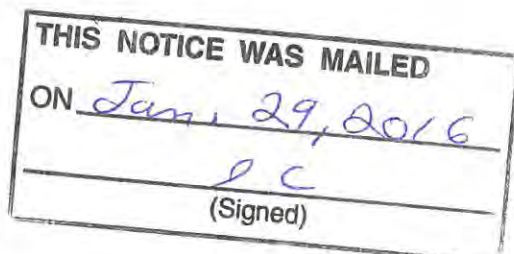
AND

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 28th day of January, 2016



Mansoor Mahmood, P.Eng.

Director

appointed for the purposes of Part II.1 of the

Environmental Protection Act

DO/

c: Area Manager, MOECC Cornwall

c: District Manager, MOECC Ottawa

Yannick Marcerou, Golder Associates Ltd. ✓



AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 8

Issue Date: January 30, 2017

The Corporation of the Township of North Dundas
636 St. Lawrence Street
Post Office Box, No. 489
North Dundas, Ontario
K0C 2K0

Site Location: Boyne Road Landfill

12620 Boyne Rd

Lot 8, Concession 6

Township of North Dundas, United Counties of Stormont, Dundas and Glengarry

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as subsequently amended for the use and operation of an 8.1 hectare (20 acres) landfilling area with additional 14.13 hectares (34.89 acres) lands for use as Buffer and 22.04 hectares (54.45 acres) Contaminant Attenuation Zone, as follows:

EXTENSION OF APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Condition 2.1 in Notice No. 7, dated January 28, 2016, a temporary approval is hereby granted for the continued landfilling operation at the Boyne Road Landfill Site, lasting until January 31, 2018, subject to the availability of a contingency plan to alleviate any emergency situation for waste management in the local Township, during the period of pursuing/implementing the long-term waste management plan;

all in accordance with the following documentation and subject to the terms and conditions herein:

DOCUMENTATION

The following items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A482101:

1. Letter dated December 19, 2016 from Yannick Marcerou and Paul Smolkin of Golder Associates Ltd. on behalf of the Township of North Dundas to the Director, Ministry of the Environment and Climate Change, Re: Application for Extension of Emergency ECA No. A482101.

2. Environmental Compliance Approval Application dated December 19, 2016, signed by Jo-Anne McCaslin, Clerk on behalf of Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.

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

CONTINUED USE OF THE SITE FOR LANDFILLING

Condition 2.1 in **Notice No. 7**, dated January 28, 2016, is hereby revoked and replaced by new Condition 2.1 as follows:

2.1 The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2018, subject to the availability of a contingency plan to alleviate any emergency situation for waste management in the local Township, while exploring alternative options for waste management in the *Township* or pursuing/implementing the long-term waste management plan. No waste shall be landfilled at the *Site* after January 31, 2018 without the approval of the *Director*.

Condition 2.3 in Notice #5 dated June 8, 2015 is hereby revoked and replaced with new Condition 2.3 as follows:

2.3 (a) By March 1, 2017, the *Township* shall submit to the satisfaction of the *District Manager*, a contingency plan for the management of the waste for the affected users of the *Site*.

(b) In the event a Provincial Officer of the Ministry or the *Township* determines that continued landfilling at the *Site* will result in adverse impact on the natural environment or the health and safety of people, the *Township* shall cease landfilling at the *Site* forthwith, and implement the contingency plan referred to in Condition 2.3(a) above.

REASONS

The reason(s) for this amendment to the Certificate of Approval is (are) as follows:

1. The reason for **Condition 2.1** is to allow continued operation of landfilling at the *Site* while the *Township* explores an alternative option for long-term waste management to alleviate the emergency situation for the affected users of the *Site*.
2. The reason for **Condition 2.3** is that a contingency plan will alleviate the emergency situation for the affected users of the *Site* while allowing the *Township* to develop and implement a long-term waste management plan.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989, as subsequently amended.

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 30th day of January, 2017

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

DO /

c: Area Manager, MOECC Cornwall

c: District Manager, MOECC Ottawa

Yannick Marcerou and Paul Smolkin, Golder Associates Ltd., The Corporation of the Township of North Dundas

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 9

Issue Date: January 31, 2018

The Corporation of the Township of North Dundas
Post Office Box, No. 489
Winchester, Ontario
K0C 2K0

Site Location: Boyne Road Landfill
12620 Boyne Road
Lot 8, Concession 6
North Dundas Township, United Counties of Stormont, Dundas and Glengarry
K0C 2K0

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as subsequently amended for the use and operation of an 8.10 hectare (20.00 acre) landfilling area with 89.03 hectares (220.00 acres) of lands, including a 1.42 hectare (3.51 acre) strip of Boyne Road allowance, for use as Buffer, and additional 71.25 hectares (176.06 acres) Contaminant Attenuation Zone, as follows:

For ease of reference purposes, this Notice replaces Notice No. 7 issued January 28, 2016 and Preamble 4 to Notice Nos. 5 and 6 issued respectively June 8, 2015 and July 10, 2015

1. ADDITION OF BUFFER/CONTAMINANT ATTENUATION LANDS AND ROAD ALLOWANCE TO THE SITE

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the revision of the total Site area from **8.10 hectares (20.00 acres)** to **97.13 hectares (240.01 acres)**, by adding **89.03 hectares (220.00 acres)** parcels of lands for use as **Buffer**, and additional **71.25 hectares (176.06 acres) Contaminant Attenuation Zone**, subject to **Easements**. The original approved 8.10 hectares (20.00 acres) designated as "waste fill area" remains unchanged. The additional **Buffer and/or Contaminant Attenuation lands** are described in a report dated January 2015 and in a letter dated January 5, 2018, both prepared by Golder Associates Ltd., respectively listed as Item 4 of Schedule "A" in Notice #6 dated July 10, 2015 and Item 2 of Schedule "A" attached to this *Notice*, as defined in the definitions listed in this Approval:

BUFFER ZONES ARE:

Buffer Zone 1 - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-3142 dated July 22, 1991, as Part 2, Lot 8, Concession 6, Winchester, Township of North Dundas;

Buffer Zone 2 - A 7.20 hectare (17.80 acre) parcel of land that extends 150 metres south of Buffer Zone 1, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-4441 dated January 7, 2002, as Part 1, part of Lot 8, Concession 6, Winchester, Township of North Dundas;

Buffer Zone 3 - A 4.29 hectare (10.59 acres) parcel of land south of Buffer Zone 2 above, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-5197 dated June 15, 2011, as Part 7, Lot 8, Concession 6, Winchester, Township of North Dundas;

Buffer Zone 4 - A 73.48 hectare (181.57 acre) parcel of land located north of Boyne Road, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-5560, dated December 20, 2016, referenced as Part 1, Part of Lots 8 and 9, Concession 7, Winchester, Township of North Dundas; and

Buffer Zone 5 - 20 metre wide strip (1.42 hectares or 3.51 acres) of Boyne Road allowance across the northern side of the landfill site between Concessions 6 and 7, shown on Plan 8R-5560, dated December 20, 2016, as Part 2, Part of Lots 8 and 9, Concession 7, Winchester, Township of North Dundas.

CONTAMINANT ATTENUATION ZONES (CAZ) TO THE SITE ARE:

Contaminant Attenuation Zone (CAZ) 1 - Land Use Permit: A 49.21 hectare (121.6 acres)

Contaminant Attenuation Zone 1 (CAZ 1) to the north of the Site, subject to easement by **Land Use Permit**. This additional **Contaminant Attenuation** land, controlled by the Ministry of Natural Resources and Forestry, is described as part Lot 8, Concession 7, on Plan 8R-225, Winchester, Township of North Dundas, deposited on July 19, 1974, included in a report dated January 2015, prepared by Golder Associates Ltd., listed as Item 4 of Schedule "A" in Notice No. 6 dated July 10, 2015,

Whereas the rights of access and easement on CAZ 1, for the purposes of groundwater contaminant attenuation, has been secured by the Township of North Dundas per the following document:

Ontario Ministry of Natural Resources and Forestry Land Use Permit, No. LUP1735-1000698, dated August 28, 2017, and expiring August 31, 2018, attached to Item 2 of Schedule "A" attached to this Notice;

Contaminant Attenuation Zone 2 - A 22.04 hectare (54.45 acre) parcel of land to the south and west of the landfill site, as shown on Figure 2, contained in Item 4 of Schedule "A", in Notice No. 6 dated July 10, 2015, owned by Blair Hutchinson, located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6, inclusive on Plan 8R-5197 dated June 15, 2011,

Whereas the rights of access and easement on CAZ 2 above, for the purposes of groundwater contaminant attenuation, has been secured by the Corporation of the Township of North Dundas as per the following document:

Indenture (Easement Agreement) made October 1, 2011 and signed on October 24, 2011, in respect of the property defined by PIN # 66149-0055 (Parts 1 to 6 inclusive, Lot 7, Concession 6), listed as Item 5 in Schedule "A", in Notice No. 6 dated July 10, 2015.

2. EXTENSION OF APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Condition 2.1 in Notice No. 8, dated January 30, 2017, a temporary approval is hereby granted for continued landfilling operation at the Boyne Road Landfill Site, lasting until January 31, 2019, subject to the continued availability of a contingency plan, to alleviate any emergency situation for waste management in the local Township, during the period of pursuing long-term waste management plan;

all in accordance with the following documentation and subject to the terms and conditions listed herein:

DOCUMENTATION

The following items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A482101:

1. Environmental Compliance Approval Application dated January 5, 2018, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
2. Letter dated January 5, 2018, from Yannick J. Marcerou and Paul Smolkin, of Golder Associates Ltd, to the Director, Client Services and Permissions Branch, Ministry of the Environment and Climate Change, Re: 2018 Application for Extension of Emergency ECA No. A482101.
3. Letter dated January 24, 2017, from Yannick J. Marcerou and Paul Smolkin, of Golder Associates Ltd, on behalf of the Corporation of the Township of North Dundas, to the Director, Environmental Services and Permissions Branch, Ministry of the Environment and Climate Change, Re: Contingency Plan For Waste Management in the Township of North Dundas.
4. Report entitled "Addendum #2 To The Design and Operations Plan", Application for

Extension of Emergency ECA, Boyne Road Landfill, Township of North Dundas, dated January 2016, prepared by Golder Associates Ltd.

5. Letter dated December 15, 2015 from Melissa I. Bunn and Paul A. Smolkin of Golder Associates Ltd. to Terri Forrester, Cornwall Area Office, Ministry of the Environment and Climate Change, Re: Response to Groundwater Review Comments on 2014 Monitoring Report For The Boyne Road Waste Disposal Site, Township of North Dundas.

For the purposes of this Environmental Compliance Approval and the terms and conditions specified herein, the following definitions apply:

DEFINITIONS

Definitions (j) and (k) in Notice 6, dated July 10, 2015, are hereby revoked and replaced with new Definitions (j) and (k) as follows:

- (j) "**Site** " means the entire waste disposal site described as the **8.10 hectare (20.00 acre)** landfilling area within a total Waste Disposal Site area of **97.13 (8.1 + 89.03) hectares (240.01 acres)**, with **Buffer Zones 1 to 5**, including **Boyne Road Allowance**, additional **49.21 hectare (121.60 acre) Contaminant Attenuation Zone 1**, subject to **Land Use Permit** issued by the Ministry of Natural Resources and Forestry, and additional **22.04 hectare (54.45 acre) Contaminant Attenuation Zone 2**, subject to **Indenture (Easement Agreement)**, The original approved 8.10 hectares (20.00 acres) designated as "waste fill area", remains unchanged.
- (i) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 2 on Plan 8R-3142 dated July 22, 1991;
- (ii) **Buffer Zone 2** - A 7.20 hectare (17.80 acre) parcel of land that extends 150 metres south of Buffer Zone 1, located at Lot 8, Concession 6, Winchester, Township of North Dundas, shown as Part 1 on Plan 8R-4441, dated January 7, 2002;
- (iii) **Buffer Zone 3** - A 4.29 hectare (10.59 acre) parcel of land south of Buffer Zone 2, located at Lot 8, Concession 6, Winchester, Township of North Dundas, shown as Part 7 on Plan 8R-5197, dated June 15, 2011;
- (iv) **Buffer Zone 4** - A 73.48 hectare (181.57 acre) parcel of land located north of Boyne Road, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-5560, dated December 20, 2016, referenced as Part 1, Part of Lots 8 and 9, Concession 7, Winchester, Township of North Dundas; and
- (v) **Buffer Zone 5** - 20 metre wide strip (1.42 hectares or 3.51 acres) of Boyne Road

allowance across the northern side of the landfill site between Concessions 6 and 7, shown on Plan 8R-5560, dated December 20, 2016, as Part 2, Part of Lots 8 and 9, Concession 7, Winchester, Township of North Dundas.

- (k) **"CAZ"** means **Contaminant Attenuation Zone**, being lands assembled for the purposes of expanding the Compliance Boundary for contaminant attenuation, and includes the following lands:
- (i) **CAZ 1** - A **49.21** hectare (121.60 acre) Crown land to the north of the Site, subject to **Land Use Permit**, issued by the Ministry of Natural Resources and Forestry, described as Part Lot 8, Concession 7, on Plan 8R-225, deposited on July 19, 1974, Winchester, Township of North Dundas, also shown on Figure 2 contained in Item 4 of Schedule "A", attached to Notice No. 6 dated July 10, 2015.
 - (ii) **CAZ 2** - A **22.04** hectare (54.45 acre) parcel of land to the south and west of the landfill site, subject to **Indenture**, owned by Blair Hutchinson, shown on Figure 2, contained in Item 4 of Schedule "A", attached to Notice No. 6 dated July 10, 2015, located within Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.

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

1.0 CERTIFICATE OF REQUIREMENT

- 1.15 The Owner shall maintain at all time, a valid **Land Use Permit**, issued by the Ontario Ministry of Natural Resources and Forestry, to permit its continued use as CAZ 1, until such time as the subject property is no longer required for contaminant attenuation, as approved in writing by the Director.

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING OPERATION

Condition 2.1 in **Notice No. 8**, dated January 30, 2017, is hereby revoked and replaced by new Condition 2.1 as follows:

- 2.1 The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2019, subject to the continued availability of a contingency plan, as described in Item 3 in Schedule "A" attached to this Approval, as instructed by the local District Manager. No waste shall be landfilled at the *Site* after January 31, 2019 without the approval of the *Director*.

5.0 ENVIRONMENTAL CONTROL AND MONITORING

Condition 5.1 in **Notice No. 6**, dated July 10, 2015, is hereby revoked and replaced by new Condition 5.1 as follows:

- 5.1 The *Township* shall carry out monitoring programs for groundwater/leachate and surface water, as summarized in Tables 3 and 4, respectively, in Item 2 of Schedule "A", attached to Notice No. 6 dated July 10, 2015, and as per Item 4 in Documentation in this Approval, and/or as per written instructions of the *District Manager*, through the review of the Annual Monitoring Reports, and any related OWRA requirements.

REASONS

The reason(s) for this amendment to the Approval is (are) as follows:

1. The reasons for **Condition 1.15** are to ensure that sufficient land is available for contaminant attenuation, and to ensure that future developments and/or uses of the properties do not compromise or interfere with the functioning of their use as CAZ, or with the exercise of any of the rights provided in the CAZ Agreements.
2. The reason for **Condition 2.1** is to allow continued operation of landfilling at the Site while the Township continues with the process to gain approval for expansion of the site or explores an alternative option for long-term waste management to alleviate the emergency situation for the affected users of the *Site*.
3. The reasons for **Condition 5.1** are 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 action can be taken.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989, as amended.

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:

- a. 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;
- b. 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:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;

5. The name of the Director, and;
6. 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

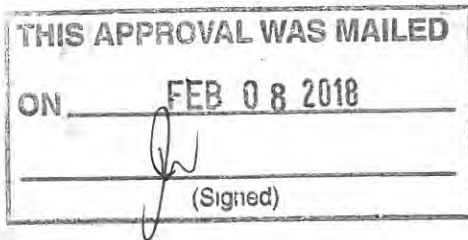
AND

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 31st day of January, 2018



Dale Gable, P.Eng.

Director

appointed for the purposes of Part II.1 of the
Environmental Protection Act

DO/

c: Area Manager, MOECC Cornwall

c: District Manager, MOECC Ottawa

Doug Froats, The Corporation of the Township of North Dundas

Yannick Marcerou and Paul Smolkin, Golder Associates Ltd.

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 10

Issue Date: January 30, 2019

The Corporation of the Township of North Dundas
636 St. Lawrence Street
Post Office Box No. 489
Winchester, Ontario
K0C 2K0

Site Location: Boyne Road Landfill
12620 Boyne Road
Lot 8, Concession 6
North Dundas Township, United Counties of Stormont, Dundas and Glengarry
K0C 2K0

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989 for an 8.10 hectare (20.00 acre) landfilling area with 89.03 hectares (220.00 acres) of lands, including a 1.42 hectare (3.51 acre) strip of Boyne Road allowance, for use as Buffer, and additional 71.25 hectares (176.06 acres) Contaminant Attenuation Zone , as follows:

EXTENSION OF APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Condition 2.1 in Notice No. 9, dated January 31, 2018, a temporary approval is hereby granted for continued landfilling operation at the Boyne Road Landfill Site, lasting until January 31, 2020, subject to the continued availability of a contingency plan, to alleviate any emergency situation for waste management in the local Township, during the period of pursuing long-term waste management plan;

all in accordance with the following documentation and subject to the terms and conditions listed herein:

DOCUMENTATION

The following item is hereby added to Schedule "A" and forms part of the Environmental Compliance Approval No. A482101:

1. Bound Letter dated December 17, 2018 from Yannick Marcerou and Paul Smolkin of Golder

Associates Ltd. on behalf of the Township of North Dundas, to the Director, Ministry of the Environment, Conservation and Parks, Re: 2019 Application for Extension of Emergency ECA No. A482101, with the following relevant attachments:

Attachment 4 - Ontario Ministry of Natural Resources and Forestry "Land Use Permit", No. LUP1736-2, dated August 27, 2018, Re: Permit effective date September 1, 2018, Permit Termination date August 31, 2019.

Attachment 6 - Environmental Compliance Approval Application dated December 17, 2018, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas, (MECP Reference No. 2057-B7ML2L).

TERMS AND CONDITIONS

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

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING

Condition 2.1 in **Notice No. 9**, dated January 31, 2018, is hereby revoked and replaced by new Condition 2.1 as follows:

- 2.1 (a) The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2020, subject to the availability of a contingency plan to alleviate any emergency situation for waste management in the local Township, while exploring alternative options for waste management in the *Township* or pursuing/implementing the long-term waste management plan. No waste shall be landfilled at the *Site* after January 31, 2020 without the approval of the *Director*.
- (b) Landfilling operation under this approval shall be limited to preparation and deposition of waste in the areas designated as phases 2 and 3 on Figure 2 (titled "Waste deposition Phasing Plan During The Emergency Period"), attached to Item 1 of Schedule "A", attached to this Certificate.

5.0 ENVIRONMENTAL CONTROL AND MONITORING

Condition 5.1 in **Notice No. 6**, dated July 10, 2015, is hereby amended by adding the following new Condition 5.1(b) as follows:

- 5.1 (a) The Township shall carry out monitoring programs for groundwater/leachate and surface water, as summarized in Tables 3 and 4, respectively, in Item 2 of Schedule "A", attached to Notice No. 6 dated July 10, 2015, and as per Item 4 in Documentation in this Approval, and/or as per written instructions of the *District Manager*, through the review of the Annual Monitoring Reports, and any related OWRA requirements.

- (b) Within six (6) months from the date of this approval, the Township shall carry out investigation into the source of elevated Total Suspended Solids (TSS) historically identified at downstream surface water monitoring stations, SW2 and SW3 of the Site. Where an assessment confirms the source to be related to the Boyne Road Landfill Site, the Township shall, in consultation with the District Manager, develop appropriate mitigation measures and implementation schedule to address any consequential environmental impact.

REASONS

The reason(s) for this amendment to the Approval is (are) as follows:

1. The reason for **Condition 2.1** is to allow continued operation of landfilling at the Site while the Township continues with the process to gain approval for expansion of the site or explores an alternative option for long-term waste management to alleviate the emergency situation for the affected users of the Site.
3. The reasons for **Condition 5.1** are 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 action can be taken.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989, as subsequently amended.

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:

- a. 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;
- b. 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:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. 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

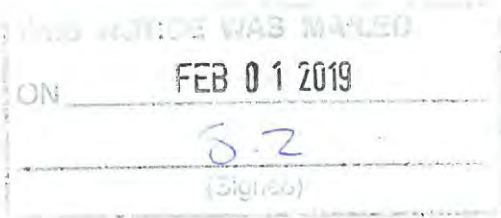
AND

The Director appointed for the purposes of Part II.1 of
the Environmental Protection Act
Ministry of the Environment, Conservation and Parks
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 30th day of January, 2019



Mohsen Keyvani, P.Eng.

Director

appointed for the purposes of Part II.1 of the
Environmental Protection Act

DO/

c: Area Manager, MECP Cornwall

c: District Manager, MECP Ottawa

Yannick Marcerou P. Eng. and Paul Smolkin P. Eng., Golder Associates Ltd.

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 11

Issue Date: January 14, 2020

The Corporation of the Township of North Dundas
636 St. Lawrence St
Post Office Box No. 489
Winchester, Ontario
K0C 2K0

Site Location: Boyne Road Landfill
12620 Boyne Road
Lot 8, Concession 6
North Dundas Township, United Counties of Stormont, Dundas and Glengarry
K0C 2K0

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as amended for an 8.10 hectare (20.00 acre) landfilling area with 89.03 hectares (220.00 acres) of lands, including a 1.42 hectare (3.51 acre) strip of Boyne Road allowance, for use as Buffer, and additional 71.25 hectares (176.06 acres) Contaminant Attenuation Zone , as follows:

Condition 2.1 in Notice No. 10, dated January 30, 2019 is hereby revoked and replaced with the following:

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING

- 2.1 (a) The Township may continue landfilling operations at the Boyne Road Landfill Site until a waste elevation of 87.75 metres above mean sea level, and as described in the 2013 Design and Operations Plan, is attained. No waste shall be landfilled above the final waste elevation.
- (b) Landfilling operation under this approval shall be limited to preparation and deposition of waste in the areas designated as phases 1 through 4 on Figure 2 (titled "Waste deposition Phasing Plan for Remaining Approved Airspace"), attached as Item 1 in Schedule "A", of this amendment.

Schedule "A" forms part of this Environmental Compliance Approval

1. Application for amendment to Environmental Compliance Approval No. A482101. Report titled "Environmental Compliance Approval Application, Administrative Amendment for the Boyne Road Landfill, Township of North Dundas, Ontario". Prepared by Golder Associates, September 2019 with the following attachments:

Attachment A - Description of Proposed Amendment;

Attachment B - Zoning Map;

Attachment C - Land Use Permit;

Attachment D - ECA Number A482101 Notice No. 10; and

Attachment E - Neighbours Notification Letter.

The reason for this amendment to the Approval is as follows:

1. The reason for Condition 2.1 is to allow continued operation of landfilling as described in the 2013 Design and Operations Plan while the Township continues with the process to gain approval for expansion of the site or explores an alternative option for long-term waste management to alleviate the emergency situation for the affected users of the Site.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989

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:

- a. 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;
- b. 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:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;

5. The name of the Director, and;
6. 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, Conservation and Parks
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 14th day of January, 2020



Mohsen Keyvani, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

CF/

c: Area Manager, MECP Cornwall
c: District Manager, MECP Ottawa
Yannick Marcerou, Paul Smolkin, Golder Associates Ltd.

29938B

This Indenture

made in duplicate this 29th day of January
one thousand nine hundred and seventy-seven

In Pursuance of the Statute in Force at the time of the making of this

Indenture

THE CORPORATION OF THE TOWNSHIP OF WINCHESTER,

Morewood, Ontario.

THE CORPORATION OF THE VILLAGE OF WINCHESTER,

Winchester, Ontario.

hereinafter called the Grantor of the FIRST PART
the said CORPORATION OF THE TOWNSHIP OF WINCHESTER,

Morewood, Ontario, and

THE CORPORATION OF THE VILLAGE OF WINCHESTER,
Winchester, Ontario, and

THE CORPORATION OF THE VILLAGE OF CHESTERTVILLE
Chesterville, Ontario.

hereinafter called the Grantee of the SECOND PART.

WHEREAS the Grantors hereto are the owners of a sanitary land fill site which is now used jointly by the Corporation of the Township of Winchester and the Corporation of the Village of Winchester and the Corporation of the Village of Chesterville and it is desirable that the title to the said land fill site be vested equally in the three said Municipal Corporations.

Witnesseth that in consideration of

ONE HUNDRED & SIXTY SIX 66/100 (\$166.66)----- dollar of
lawful money of Canada now paid by the said grantee to the said grantor (the receipt
whereof is hereby by it acknowledged) the said grantor DO GRANT
unto the said grantee in fee simple

ALL and Singular that certain parcel or tract of land and premises, situate, lying and
being in the TOWNSHIP OF WINCHESTER, in the COUNTY OF DUNDAS and
being composed of that part of the NORTH half of lot number EIGHT
(8) in the SIXTH (6th) Concession of the said Township more
particularly described as follows:-

COMMENCING at a point in the NORTH headline of said lot number
EIGHT (8), which is distant measured EASTERLY along said NORTH
headline from the NORTH WEST corner of said lot, ONE HUNDRED
feet (100');
Thence EASTERLY along the NORTH headline of said lot, a distance
of ~~(EIGHTY (80) rods, or)~~ THIRTEEN HUNDRED & TWENTY feet (1320')
to a point;

Thence SOUTHERLY in a straight line drawn parallel to the WEST
side line of said lot, a distance of ~~(FORTY (40) rods, or)~~ SIX
HUNDRED & SIXTY feet (660') to a point;

Thence WESTERLY in a straight line drawn parallel to the NORTH
head line of said lot, a distance of ~~(EIGHTY (80) rods, or)~~
THIRTEEN HUNDRED & TWENTY feet (1320') to a point;

THENCE NORTHERLY in a straight line drawn parallel to the WEST
side line of said lot, a distance of ~~(FORTY (40) rods, or)~~ SIX
HUNDRED & SIXTY feet (660') to the point of commencement.

TO HAVE AND TO HOLD unto the said grantees its heirs and assigns to and for its and their sole and only use forever,

SUBJECT NEVERTHELESS to the reservations, limitations, provisos and conditions expressed in the original grant thereof from the Crown.

AND SUBJECT ALSO to the conditions contained in conveyance to the Grantors herein registered as No. 7413B.

The said grantors COVENANT with the said grantee THAT it has the right to convey the said lands to the said grantee notwithstanding any act of the said grantor

AND that the said grantees shall have quiet possession of the said lands free from all encumbrances.

AND the said grantors COVENANT with the said grantee that it will execute such further assurances of the said lands as may be requisite.

AND the said grantors COVENANT with the said grantee that it has done no act to encumber the said lands.

AND the said grantors RELEASE to the said grantees ALL its claims upon the said lands.

~~IN WITNESS WHEREOF~~

~~the said grantors have caused their Corporate Seals to be affixed and attested by the hands of their proper officers~~

IN WITNESS WHEREOF the Grantors have caused their Corporate Seals to be affixed and attested by the hands of their proper officers

IN WITNESS WHEREOF the said grantors have caused their hands and seals

Signed, Sealed and Subscribed
IN THE PRESENCE OF

CORPORATION OF THE TOWNSHIP OF WINCHESTER by

William L. Lint Reeve

John M. H. H. H. Clerk

CORPORATION OF THE VILLAGE OF WINCHESTER by

John M. H. H. Reeve

Raymond W. D. D. Clerk

IN THE MATTER OF SUBSECTION 3 OF SECTION 8 OF
THE LAND SPECULATION TAX ACT, 1974

Affidavit

I, **GLENN MacGREGOR,**
(print name)

Clerk of the Township of Winchester

(print address)

MAKE OATH AND SAY THAT:

1. I verify believe that the disposition of designated land evidenced in the attached instrument or writing is exempt from the tax imposed by subsection 1 of section 8 of the above Act by virtue of the disposition being: **conveyance by Municipality to Municipality.**

delete the nature of disposition

as provided for by section 4, clause 1, subclause of the above Act.

delete this paragraph if inapplicable

~~2. I am authorized in writing by the transferor making the disposition referred to in paragraph 1 hereof to make this affidavit. Since the acquisition of the interest of the transferor in the designated land that is referred to in paragraph 1 hereof and that is being disposed of to the transferee named in the attached instrument or writing, no disposition with respect to such designated land has occurred prior to the disposition to the said transferee.~~

delete this paragraph if inapplicable

3. I am authorized in writing by the transferor making the disposition referred to in paragraph 1 hereof to make this affidavit. Since the acquisition of the interest of the transferor in the designated land that is referred to in paragraph 1 hereof and that is being disposed of to the transferee named in the attached instrument or writing, no disposition with respect to such designated land has occurred prior to the disposition to the said transferee.

Sworn before me at the Village

of **Chesterville**

in the **County**

of **Simcoe**

this **12th**

day of **February** 1977

Chubson
A Commissioner, etc.

Glenn MacGregor

1.
if show
in the

I am a subscribing witness to the attached instrument and I was present and saw it executed
at _____ by _____

"Now Postnote | verily believe that each person whose signature I witnessed is the party of the same name referred to in the instrument.

SWORN before me at the

the day of the

* Where a party is unable to read the instrument or where a party signs by making his mark or so inscribes otherwise and "after the instrument has been read to him and he appeared fully to understand it". Where associated under a power of attorney, instrument "capable of operation to determine the terms of sale"; and for each other subscribers "I truly believe that the person whose signature I witnessed was authorized to execute the instrument as attorney for [signer]".

THE LAND TRANSFER TAX ACT, 1974 - AFFIDAVIT OF VALUE OF THE CONSIDERATION

Received from
Jan. 1, 1970

Primary
the patient
in the
interview)

IN THE MATTER OF THE CONVEYANCE ~~made~~

by: THE CORPORATION OF THE TOWNSHIP OF WINCHESTER & THE CORPORATION
OF THE VILLAGE OF WINCHESTER
to: THE CORPORATION OF THE TOWNSHIP OF WINCHESTER & THE CORPORATION
OF THE VILLAGE OF WINCHESTER & THE CORPORATION OF THE VILLAGE OF
on the 20th day of January 1977 CHESTERSVILLE
I, GLENN MCCORMICK
of the Township of Winchester
in the County of Dundas

MAKE OATH AND SAY THAT:

[illegible]

- | | | |
|--|------------------|--|
| 1. I am, Clerk of the Grantor Corporation of the Township of Winchester named in the within for assigned conveyance. | | |
| 2. I have a personal knowledge of the facts stated in this affidavit. | | |
| 3. (1) The total consideration for this transaction has been allocated as follows: | | |
| (a) Land, buildings, fixtures and goodwill | \$ 156.66 | |
| (b) Chattels — items of movable personal property — see note) | \$ 0.00 | |
| TOTAL CONSIDERATION | \$ 156.66 | |
| (2) The true consideration for the transfer or conveyance for Land Transfer Tax purposes is as follows: | | |
| (a) Monies paid in cash | \$ 156.66 | |
| (b) Property transferred in exchange (Detail below) | \$ 0.00 | |
| (c) Securities transferred in the value of (Detail below) | \$ 0.00 | |
| (d) Balance of existing encumbrances with interest owing at date of transfer | \$ 0.00 | |
| (e) Monies secured by mortgage under this transaction | \$ 0.00 | |
| (f) Loans, legacies, annuities and maintenance charges to which transfer is subject | \$ 0.00 | |
| (g) Other (Detail below) | \$ 0.00 | |
| TOTAL CONSIDERATION (should agree with 2(1)(a) above) | \$ 156.66 | |

4. If consideration is nominal, is the transfer for natural love and affection?

5. If so, what is the relationship between Greater and Grantee?

6. Other remarks and explanations, if necessary:

SWORN before me at the Village
of _____
in the _____ County
this 12th day of February 18 77

Wm. H. Hays

Э. КОММУНИКАЦИЯ

NOTE TO PARAGRAPH 3-101: Change: Noted value may be payable on the sale of the above of some shares in little order and/or in respect under the provisions of The Income Tax Act (R.S.C. 1952) C48 as amended. For the purpose of this affidavit, assets shown only the value of CHAMBER, the total value of which is the splitting of the above assets \$20,000. This does not constitute a purchase from the persons of CHAMBER but the persons of CHAMBER have sold the property as part of this transaction. When CHAMBER has purchased as part of this transaction, with value of less than \$20,000, the complete tax should be paid by the purchaser to the Treasurer of Ontario and credited to the Minister of Revenue.

Encl
Blank 72

AFFIDAVIT AS TO AGE AND MARITAL STATUS

I WE
of the
in the
make oath and say: When executed the attached instrument,

* If otherwise
see before me

I WE at least eighteen years old.

State not
recognizable
above.

I WE married, divorced, widower.

was my wife - husband.

We were married to each other.

We held the land as Joint Tenants - Trustees - Partnership Property.

Before of
Judge, etc.

(SEVERALLY) SWORN before me at the

this day of 19

A COMMISSIONER FOR THE PROVISIONS ACT

* Where affidavit made by attorney or solicitor: "When I executed the attached instrument by attorney for (name), before was presented before
if verified, name of attorney, and when before executed the same of attorney, by the last obtained the title of secretary".

299388
Dated January 29th 1977

CORPORATION OF THE TOWNSHIP OF
WINCHESTER
and
CORPORATION OF THE VILLAGE OF
WINCHESTER
-JO-
CORPORATION OF THE TOWNSHIP OF
WINCHESTER
CORPORATION OF THE VILLAGE OF
WINCHESTER
CORPORATION OF THE VILLAGE OF
CHESHAMVILLE

Bed of Land
SITUATE
in the Township
of Winchester

Winchester and District, Eastern, Toronto

APPROVED BY ME.

ADDRESS OF PROPERTY.

CASE & CASE
BARRISTERS AND SOLICITORS
WINCHESTER, ONTARIO
M5C 1H2

PROPERTY OF LAND
REGISTRY OFFICE

No. 299388
Registry Division of Records (No. 12)
I CERTIFY that this instrument is registered as of
11⁵⁹ AM FEB 16 1977 to the
Registry Office
at Scarborough,
Ontario.

A. M. Fisher
REGISTRAR

11/11

THIS SPACE IS TO BE RESERVED FOR CERTIFICATE OF REGISTRATION

REGISTRATION FEE	10.00
LAND TRANSFER TAX	1.50
RETAIL SALES TAX	NIL

Transfer/Deed of Land

Form 1 - Land Registration System Act, 1994

A

73068

<p>73068</p> <p>RECORD FILED</p> <p>CERTIFICATE OF REGISTRATION</p> <p>CERTIFICATE OF OWNERSHIP</p> <p>MAR 04 1992 11:26 AM</p> <p>REGIONS NO. 1/10 2</p> <p>REGISTRATION</p> <p>Notary</p> <p>Notary Signature</p> <p>Notary Seal</p> <p>Notary Commission</p> <p>Notary Address</p> <p>Notary City</p> <p>Notary State</p> <p>Notary Zip</p> <p>Notary Phone</p> <p>Notary Fax</p> <p>Notary Email</p> <p>Notary Website</p> <p>Notary Other</p>		<p>(1) Registry <input checked="" type="checkbox"/> Land Title <input type="checkbox"/> (2) Page 1 of 3 pages</p> <p>(3) Property Description</p> <p>Part of Lot 8, Concession 5, Township of Winchester County of Ontario being Part 2 on Reference Plan SR-3142</p> <p>(4) Consideration</p> <p>CASH \$ 1.00</p> <p>(5) Conveyance This is a: <input type="checkbox"/> Property <input type="checkbox"/> Priority <input type="checkbox"/> Conveyance</p>	
<p>(6) The Transferor hereby declares that the land is the property of the Transferor and that the Transferor is of legal age and of sound mind and that the Transferor is not a minor, an infant, a person under a disability, or a person who is not a resident of Ontario.</p> <p>(7) The Transferor hereby declares that the land is the property of the Transferor and that the Transferor is of legal age and of sound mind and that the Transferor is not a minor, an infant, a person under a disability, or a person who is not a resident of Ontario.</p> <p>(8) The Transferor hereby declares that the land is the property of the Transferor and that the Transferor is of legal age and of sound mind and that the Transferor is not a minor, an infant, a person under a disability, or a person who is not a resident of Ontario.</p>		<p>(9) Signature of Transferor(s) I hereby consent to this transaction</p> <p>Signature: <i>Paul Stephen Helmer</i> Date of Signature: 1992.03.20</p> <p>Signature: <i>George Richard Helmer</i> Date of Signature: 1992.03.20</p> <p>as joint tenants</p>	
<p>(10) Signature of Witness(es) I hereby consent to this transaction</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(11) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(12) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(13) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(14) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(15) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(16) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(17) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(18) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(19) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(20) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(21) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(22) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(23) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(24) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(25) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(26) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(27) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(28) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(29) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(30) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(31) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(32) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(33) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(34) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(35) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(36) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(37) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(38) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(39) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(40) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(41) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(42) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(43) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(44) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(45) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(46) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(47) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(48) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(49) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(50) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(51) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(52) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(53) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(54) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(55) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(56) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(57) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(58) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(59) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(60) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(61) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(62) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(63) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(64) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(65) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(66) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(67) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(68) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(69) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(70) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(71) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(72) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(73) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(74) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(75) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(76) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(77) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(78) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(79) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(80) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(81) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(82) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(83) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(84) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(85) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(86) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(87) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(88) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(89) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(90) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(91) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(92) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(93) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(94) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(95) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(96) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(97) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(98) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(99) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	
<p>(100) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>		<p>(101) Signature of Registrar</p> <p>Signature: _____ Date of Signature: _____</p>	

McGraw-Hill, Limited
Form 1/1991 (1/91)

April, 1991

Additional Property Identification and Other Information

RECITALS

WHEREAS by Instrument No. 72189 George Richard Helmer and Paul Stephen Helmer conveyed the lands in Box 3 to Township of Winchester.

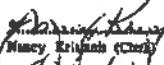

AND WHEREAS the said lands should have been conveyed to The Corporation of the Township of Winchester and The Corporation of the Village of Chesterville, being the sole owners of the abutting waste disposal site.

AND WHEREAS The Corporation of the Township of Winchester has agreed to transfer its interest to The Corporation of the Township of Winchester and The Corporation of the Village of Chesterville. Further, Paul Stephen Helmer and George Richard Helmer have agreed to join in the conveyance to correct ownership.

RESERVATION

The transferors, George Richard Helmer and Paul Stephen Helmer reserve the right to use Part 2 on Reference Plan SR-3142 for drainage purposes for their farm.

ADDITIONAL PARTIES - TRANSFEROR

Name(s)	Signature	Date of Signature YY/ MM/ DD
THE CORPORATION OF THE TOWNSHIP OF WINCHESTER TO WHOMSELF	 Nancy Krizanich (Clerk)	1992 02 28
	 Dennis Commins (Mayor)	1992 02 28

We have authority to
bind the Corporation

Page 3
Affidavit of Residence and of Value of the Consideration
 Form 1 - Land Transfer Tax Act

IN THE MATTER OF THE CONVEYANCE OF Part of Lot 6, Concession 6,
 Township of Winchester, County of Dundas being Part 2 on Reference Plan SR-3142

BY (and in the presence of) **PAUL STEPHEN HELMER and GEORGE RICHARD HELMER**

TO (and in the presence of) **THE CORPORATION OF THE TOWNSHIP OF WINCHESTER and
 THE CORPORATION OF THE VILLAGE OF CHESTERSVILLE**
 LESLIE ANNE AULT

MAKE OATH AND SAY THAT:

- I am (and each of us) the owner of the land described in the foregoing paragraphs and declare as respects the same: (see Section 6)
 - that I am not a tenant in common or joint tenant with any other person in the land described in the foregoing paragraphs;
 - that I am not a tenant in common or joint tenant with any other person in the land described in the foregoing paragraphs;
 - that I am not a tenant in common or joint tenant with any other person in the land described in the foregoing paragraphs;
- The Corporation of the Township of Winchester and the Corporation of the Village of Chestersville are the owners of the land described in the foregoing paragraphs and declare as respects the same: (see Section 6)
 - that they are not a tenant in common or joint tenant with any other person in the land described in the foregoing paragraphs;
 - that they are not a tenant in common or joint tenant with any other person in the land described in the foregoing paragraphs;
 - that they are not a tenant in common or joint tenant with any other person in the land described in the foregoing paragraphs;

- I have not and do not intend to convey the land described in the foregoing paragraphs to any other person, except as provided in the foregoing paragraphs, and I have not and do not intend to convey the land described in the foregoing paragraphs to any other person, except as provided in the foregoing paragraphs.

- I have not and do not intend to convey the land described in the foregoing paragraphs to any other person, except as provided in the foregoing paragraphs, and I have not and do not intend to convey the land described in the foregoing paragraphs to any other person, except as provided in the foregoing paragraphs.

- I have not and do not intend to convey the land described in the foregoing paragraphs to any other person, except as provided in the foregoing paragraphs, and I have not and do not intend to convey the land described in the foregoing paragraphs to any other person, except as provided in the foregoing paragraphs.

4. THE TOTAL CONSIDERATION FOR THE TRANSACTION IS ALLOCATED AS FOLLOWS:

(a) Interest paid or to be paid in cash	\$ 1.00
(b) Mortgage, if any, paid or to be paid in cash	\$ nil
(c) Other cash consideration	\$ nil
(d) Property transferred to mortgagee	\$ nil
(e) Property transferred to the value of the land	\$ nil
(f) Sales, leases, mortgages and other charges on which transfer is subject	\$ nil
(g) Other valuable consideration subject to land transfer tax	\$ nil
(h) VALUE OF LAND, BUILDING, FURNITURE AND GOODWILL SUBJECT TO LAND TRANSFER TAX (Total of (a) to (g))	\$ 1.00
(i) VALUE OF ALL CHATTELS (Total of (a) to (g))	\$ nil
(j) TOTAL CONSIDERATION	\$ 1.00

- If consideration is received, describe the relationship between transferee and the transferor and state purpose of transaction. (see Section 6)
- If the consideration is received, is the land subject to any encumbrance?
- Other remarks and explanations, if necessary

Subscribed and sworn to at the Village of Winchester
 in the County of Dundas
 this 20 day of February 1992
Paul Stephen Helmer
 Paul Stephen Helmer, a Commissioner, etc.,
 of the Corporation of the Township of Winchester, County of Dundas,
 for the Township of Winchester, County of Dundas, and for the Corporation of the Village of Chestersville, County of Dundas.

Property Information Record

CORRECTING and QUIT CLAIM DEED

A. Owner's name of property: **R.R. 43, Winchester**

B. (1) Address of property being conveyed or released: **Ontario, K0C 2K0**

(2) Assessment File No. of property: **05 16 05 155 00000**

C. Mailing address (for future notices of Assessment under the Assessment Act for property being conveyed or released): **R.R. 43, Winchester, Ontario**

D. (1) Registration number for land conveyed or released: **72189**

(2) Legal description of property conveyed: Same as in D.R. above. Yes ☒ No ☐ Not known ☐

E. Name(s) and address(es) of each transferor's solicitor: **McInnis, McKewen & Ault, Barristers and Solicitors, 522 St. Lawrence Street, Winchester, Ontario, K0C 2K0**

School Tax Exemption (Voluntary Exemption) See Form for explanation

(1) Are all individual taxpayers Roman Catholic? Yes ☐ No ☐

(2) If Yes, do all individual taxpayers wish to be in French Catholic Separate School Jurisdiction? Yes ☐ No ☐

(3) Do all individual taxpayers wish to be in French Language Education? Yes ☐ No ☐

(4) If Yes, do all individual taxpayers wish to support the French Language School Board (where applicable)? Yes ☐ No ☐

NOTE: As to (4) and (5) the land being transferred will be assigned to the French Public School Board or French Catholic Separate School or French Catholic Separate School as indicated in (4) and (5).

AULT & AULT
LAW OFFICE
BARRISTERS, SOLICITORS and NOTARIES PUBLIC

STEPHEN F. AULT
LESLIE AULT

522 St. Lawrence Street
Winchester, Ontario
K0C 2K0

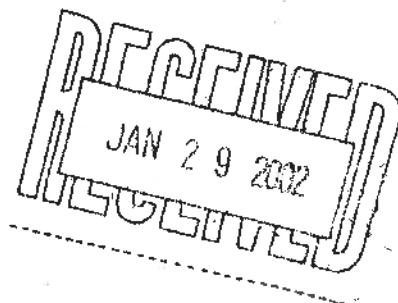
Phone: (613) 774-2670
Fax No.: (613) 774-2266
eMail Address: sault@aultlaw.ca

January 23rd, 2002

The Corporation of the Township
of North Dundas
547 St. Lawrence Street
Winchester, Ontario
K0C 2K0

Attention: Mr. Howard Smith

Dear Howard:



RE: Township of North Dundas purchase from Helmer

The above noted purchase has now been completed. We enclose the duplicate registered copy of the Transfer/Deed your files.

Mr. Remillard, the solicitor for the Helmers, will be registering the drainage agreement on title. When we receive a copy of the registered agreement, we will forward a copy to you for your files.

Yours very truly,

AULT & AULT


Stephen F. Ault

SFA/ch
Encls.

Carolyn Hedge, Legal Assistant
eMail Address: chedge@aultlaw.ca

FOR OFFICE USE ONLY

0102663

CERTIFICATE OF REGISTRATION
CERTIFICAT D'ENREGISTREMENT
DUNDAS (3) MORRISBURG

02 JAN 23 PM 2 47

Carly Valler
LAND REGISTRAR

(1) Registry ☒

Land Titles ☐

(2) Page 1 of 2 pages

(3) Property Identifier(s)

Block

Property

Additional:
See
Schedule ☐

(4) Consideration

FORTY FOUR THOUSAND FIVE HUNDRED

Dollars \$ 44,500.00

(5) Description

This is a: Property

Division ☐

Property

Consolidation ☐

Part Lot 8, Concession 6
formerly Township of Winchester
now Township of North Dundas
County of Dundas
being Part 1 on Reference Plan 8R-4441

New Property Identifier

Additional:
See
Schedule ☐

Executions

Additional:
See
Schedule ☐

(6) This Document Contains

(a) Redescription
New Easement
Plan/Sketch ☐

(b) Schedule for:

Description ☐

Additional Parties ☐

Other ☐

(7) Interest/Estate Transferred
Fee Simple

(8) Transferor(s) The transferor hereby transfers the land to the transferee and certifies that the transferor is at least eighteen years old and that

Paul Stephen Helmer - I am not a spouse. George Richard Helmer - The property transferred is not ordinarily occupied by me and my spouse, who is not separated from me, as our family residence.

Name(s)

HELMER, Paul Stephen

Signature(s)

Paul Helmer
Richard Helmer

Date of Signature

Y M D
2002 01 20

HELMER, George Richard

2002 01 20

as Joint Tenants

(9) Spouse(s) of Transferor(s) I hereby consent to this transaction

Name(s)

Signature(s)

Date of Signature

Y M D

(10) Transferor(s) Address for Service

13755 County Road 13, Chesterville, Ontario K0C 1H0

(11) Transferee(s)

THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS

Date of Birth

Y M D

(12) Transferee(s) Address for Service

547 St. Lawrence Street, Winchester, Ontario, K0C 2K0

(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, this transfer does not contravene section 50 of the Planning Act.

Paul Stephen Helmer

Date of Signature

Y M D
2002 01 20

George Richard Helmer

Date of Signature

Y M D
2002 01 20

Solicitor for Transferor(s) I have explained the effect of section 50 of the Planning Act to the transferor and I have made inquiries of the transferor to determine that this transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, this transfer does not contravene that section. I am an Ontario solicitor in good standing.

Name and Address of Solicitor
Peter J. Remillard
13 Ralph Street, P.O. Box 700
Chesterville, Ontario, K0C 1H0

Signature

Date of Signature

Y M D
2002 01 20

(14) Solicitor for Transferee(s) I have investigated the transferor(s) title to this land and to abutting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 50 (22) (c) (ii) of the Planning Act and that to the best of my knowledge and belief this transfer does not contravene section 50 of the Planning Act. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing.

PIN:

Name of Transferee(s):

Con't.
on
Schedule ☐

THE CORPORATION OF THE
TOWNSHIP OF NORTH DUNDAS

Con't.
on
Schedule ☐

Name and Address of Solicitor

LESLIE AULT
WINCHESTER, ON
K0C 2K0

Date of Signature

Y M D
2002 01 23

(15) Assessment Roll Number of Property

Cty. Mun. Map Sub. Par.

Not Assigned

(16) Municipal Address of Property

Not Assigned

(17) Document Prepared by:

Peter J. Remillard
Cass, Grenkie
13 Ralph Street
P.O. Box 700
Chesterville, Ontario
K0C 1H0

Fees and Tax

Registration Fee	60.
Land Transfer Tax	222.50
Total	282.50

IN THE MATTER OF THE CONVEYANCE OF (insert brief description of land)
Part of Lot 8, Concession 6, geographic Township of Winchester, now Township of North Dundas, County of Dundas, being Part 1 on Plan 8R-4441.
BY (print names of all transferors in full) Paul Stephen Helmer and George Richard Helmer
TO (see instruction 1 and print names of all transferees in full) The Corporation of the Township of North Dundas
I, (see instruction 2 and print name(s) in full) Stephen F. Ault

MAKE OATH AND SAY THAT:

1. I am (place a clear mark within the square opposite that one of the following paragraphs that describes the capacity of the deponent(s)): (see instruction 2)

☐ (a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed;

☐ (b) A trustee named in the above-described conveyance to whom the land is being conveyed;

☐ (c) A transferee named in the above-described conveyance;

☒ (d) The authorized agent or solicitor acting in this transaction for (insert name(s) of principals)
The Corporation of the Township of North Dundas

☐ described in paragraph(s) (a), (b), (c) above; (strike out references to inapplicable paragraphs)

☐ (e) The President, Vice-President, Manager, Secretary, Director, or Treasurer authorized to act for (insert name(s) of corporation(s))

☐ described in paragraph(s) (a), (b), (c) above; (strike out references to inapplicable paragraphs)

☐ (f) A transferee described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable) and am making this affidavit on my own behalf and on behalf of (insert name of spouse) who is my spouse described in paragraph () (insert only one of paragraph (a), (b) or (c) above, as applicable) and as such, I have personal knowledge of the facts herein deposed to.

2. (To be completed where the value of the consideration for the conveyance exceeds \$400,000).
I have read and considered the definition of "single family residence" set out in clause 1 (1) (ja) of the Act. The land conveyed in the above-described conveyance

☐ contains at least one and not more than two single family residences.

☐ does not contain a single family residence.

☐ contains more than two single family residences. (see instruction 3)

Note: Clause 2 (1) (d) imposes an additional tax at the rate of one-half of one per cent upon the value of consideration in excess of \$400,000 where the conveyance contains at least one and not more than two single family residences.

3. I have read and considered the definitions of "non-resident corporation" and "non-resident person" set out respectively in clauses 1 (1) (f) and (g) of the Act and each of the following persons to whom or in trust for whom the land is being conveyed in the above-described conveyance is a "non-resident corporation" or a "non-resident person" as set out in the Act. (see instructions 4 and 5)
None

4. THE TOTAL CONSIDERATION FOR THIS TRANSACTION IS ALLOCATED AS FOLLOWS:			
(a) Monies paid or to be paid in cash	\$	44,500.00	
(b) Mortgages (i) Assumed (show principal and interest to be credited against purchase price)	\$	nil	
(b) Mortgages (ii) Given back to vendor	\$	nil	
(c) Property transferred in exchange (detail below)	\$	nil	
(d) Securities transferred to the value of (detail below)	\$	nil	
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	\$	nil	
(f) Other valuable consideration subject to land transfer tax (detail below)	\$	nil	
(g) VALUE OF LAND, BUILDING, FIXTURES AND GOODWILL SUBJECT TO LAND TRANSFER TAX (Total of (a) to (f))	\$	44,500.00	\$ 44,500.00
(h) VALUE OF ALL CHATTELS - items of tangible personal property (Retail Sales Tax is payable on the value of all chattels unless exempt under the provisions of the "Retail Sales Tax Act", R.S.O. 1980, c.454, as amended)	\$	nil	
(i) Other consideration for transaction not included in (g) or (h) above	\$	nil	
(j) TOTAL CONSIDERATION	\$	44,500.00	

All Blanks Must Be Filled In. Insert "Nil" Where Applicable

5. If consideration is nominal, describe relationship between transferor and transferee and state purpose of conveyance. (see instruction 6)

6. If the consideration is nominal, is the land subject to any encumbrance?

7. Other remarks and explanations, if necessary.

Sworn before me at the Township of North Dundas in the County of Dundas this 22nd day of January, 2002

Carolyn Marie Hedge, a Commissioner, etc., United Counties of Stormont, Dundas & Glengarry, for Ault & Ault, Barristers and Solicitors. Expires November 20, 2004.

Stephen F. Ault

A Commissioner for taking Affidavits, etc.

Property Information Record	For Land Registry Office Use Only
A. Describe nature of instrument: Transfer/Deed of Land	Registration No.
B. (i) Address of property being conveyed (if available) vacant land	
(ii) Assessment Roll No. (if available) not assigned	
C. Mailing address(es) for future Notices of Assessment under the Assessment Act for property being conveyed (see instruction) 7547 St. Lawrence Street, Winchester, Ontario, K0C 2K0	Registration Date
D. (i) Registration number for last conveyance of property being conveyed (if available) 69481	Land Registry Office No.
(ii) Legal description of property conveyed: Same as in D.(i) above. Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not known <input type="checkbox"/>	
E. Name(s) and address(es) of each transferee's solicitor Stephen F. Ault, 522 St. Lawrence Street, Winchester, Ontario, K0C 2K0	

School Tax Support (Voluntary Election) See reverse for explanation

(a) Are all individual transferees Roman Catholic? Yes ☐ No ☐

(b) If Yes, do all individual transferees wish to be Roman Catholic Separate School Supporters? Yes ☐ No ☐

(c) Do all individual transferees have French Language Education Rights? Yes ☐ No ☐

(d) If Yes, do all individual transferees wish to support the French Language School Board (where established)? Yes ☐ No ☐

NOTE: As to (c) and (d) the land being transferred will be assigned to the French Public School Board or Sector unless otherwise directed in (a) and (b).



Document General

De Process Software Ltd. - (416) 322-8111

File 111701801

D

0102749 GENERAL OF REGISTRATION CENTRE OF DOCUMENTS 12-12-01 10 3 08	(1) Registry <input checked="" type="checkbox"/> Land Title <input type="checkbox"/> (2) Page 1 of 15 pages 14
	(3) Property Identification: Block Property Additional See Schedule <input type="checkbox"/>
	(4) Nature of Document Title Drainage Agreement
	(5) Consideration Dollars \$
	(6) Description Part Lot 8, Concession 6 Formerly Township of Winchester now Township of North Dundas County of Dundas being Part 1 on Reference Plan BR-4441
New Property Markers	Additional See Schedule <input type="checkbox"/>
Easements	Additional See Schedule <input type="checkbox"/>
(7) This Document Contains:	(a) Description: New Easement <input type="checkbox"/> New Easement <input type="checkbox"/> (b) Schedule for: Description <input type="checkbox"/> Additional Parties <input type="checkbox"/> Other <input checked="" type="checkbox"/>

(8) This Document provides as follows:
See Schedule for Title Drainage Agreement.

Confirmed on Schedule ☒

(9) This Document relates to instrument number(s)

(10) Party(ies) (Set out Status or Interest) Name(s)	Signature(s)	Date of Signature Y M D
THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS	<i>[Signature]</i>	2002 01 23
by its solicitor Stephen F. Ault	Per: Name: Title:	
I hereby authorize to bind the Corporation.		

(11) Address for Service: **c/o Stephen Ault, Ault & Ault
523 St. Lawrence Street, Winchester, Ontario K0C 2K0**

(12) Party(ies) (Set out Status or Interest) Name(s)	Signature(s)	Date of Signature Y M D
HELANDER, Paul Stephen	<i>[Signature]</i>	2002 01 23
HELANDER, George Richard	<i>[Signature]</i>	2002 01 23
as Joint Tenants		

(13) Address for Service: **13735 County Road 13, Chesterville, Ontario K0C 1H0**

(14) Municipality Address of Property Not Assigned	(15) Document Prepared by: Peter J. Randlford Cass, Gienke 13 Ralph Street P.O. Box 700 Chesterville, Ontario K0C 1H0	Fees and Tax Registration Fee: 60. Total: 60.
--	---	--

Document prepared using The Recorder

THIS MUTUAL DRAINAGE AGREEMENT made effective this day of January, 2002 pursuant to the Drainage Act RSO 1990, ch. D. 17, s.2 and all amendments thereto.

BETWEEN

The Corporation of the Township of North Dundas

(hereinafter called the Transferor)
OF THE FIRST PART

and

Paul Stephen Holmer and George Richard Holmer

(hereinafter called the Transferee)
OF THE SECOND PART

Recitals:

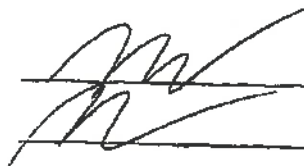
1. The Transferor owns the lands described in Schedule "A" attached hereto hereinafter called the Servient Tenement.
2. The Transferor owns Part Lot 2, Concession 6, formerly Township of Winchester, now Township of North Dundas, County of Dundas and being Part 1 on Reference Plan 2R-4441 hereinafter called the Dominant Tenement.
3. The Transferee has installed, at their sole cost, tile drainage works in the Transferor's property which flows into an existing ditch on such land to properly drain their property and both parties wish to set out their respective rights and obligations with respect to the same (collectively called the drainage works).
4. The Transferor has passed By-Law #1-01 authorizing the Reeve and Clerk to execute this Agreement on its behalf.

NOW THEREFORE in consideration of the sum of \$1.00 and other valuable consideration, the Parties hereby agree to enter into this Drainage Agreement pursuant to the Drainage Act RSO 1990, Ch.D. 17, s.2 and more particularly:

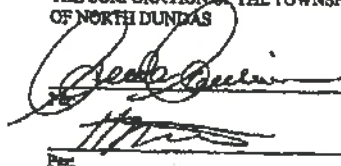
1. The Transferor hereby transfers, grants and conveys to the Transferee, their successors, heirs, administrators and assigns, the right, privilege and easement in perpetuity:
 - (a) To connect, maintain, open, inspect, repair and keep in good condition, from time to time, all existing tile drainage pipes which are necessary to properly drain the Transferee's lands including all appurtenances which are necessary or incidental thereto. Where any maintenance or repair work is required to the existing tile drainage connection, the Transferee shall have the right to enter the said lands and perform the necessary work. The Transferee shall not change the location of any existing tile drainage connections without the written consent of the Transferor.
 - (b) To keep the said lands clear of all brush, trees and other obstructions of any nature whatsoever as may be necessary to the exercise and for the enjoyment of the rights and easements herein set forth.
 - (c) To permit the servants, agents, contractors and workmen of and other persons duly authorized by the Transferee at all times and from time to time, to pass and repair with all plant machinery, material, vehicles and equipment as may be necessary along the said lands for all purposes necessary or incidental to the exercise and for the enjoyment of the rights and easements herein set forth.

2. Upon completion of any replacement, maintenance, inspection or repair work for the drainage works, the Transferee shall fill in all excavations in the said lands and, as far as practicable, they shall restore the surface thereof to the same condition as that in which it was found prior to the commencement of the drainage work and shall be responsible to compensate the Transferor for any damage.
3. The Transferor agrees to not cause any pollutant to be placed into the said tile drainage works which would cause injury to the Transferee's lands, crops or other property.
4. Subject to the following, it is hereby acknowledged and agreed that the cost of construction, improvement and maintenance of the drainage works is to be borne solely by the Transferee.
5. This Drainage Agreement will be filed with the Township of North Dundas, pursuant to the Tile Drainage Act, RSO 1990, Ch.D. 17, s.2(2).
6. The cost of installing the drainage works was paid entirely by the Transferor.
7. The Transferor further covenants and agrees that it shall install and maintain, at its sole expense:
- (a) a page wire fence around the entire perimeter of the property described on Page 3.
 - (b) dig and maintain at their sole cost, a ditch around the said property. The said ditch to be connected to the existing ditches around the adjoining farm site and be of the same size and nature.
- It is agreed that the above covenants shall survive closing. The work shall be completed before the land is used by the Transferor as a landfill site.
8. It is agreed that once the new ditch is installed by the Transferor that the Transferee shall have the right and easement to continue draining their lands into this new ditch and the costs associated with any work necessary to connect the Transferee's tile drain into the new ditch will be paid for entirely by the Transferor.
9. The burden and benefit of this Transfer shall run with all the aforementioned lands and shall extend to and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

SIGNED, SEALED AND WITNESSED



THE CORPORATION OF THE TOWNSHIP
OF NORTH DUNDAS



Per:

We have authority to bind the Corporation.

Paul Stephen Helmer

George Richard Helmer

- 4.
2. Upon completion of any replacement, maintenance, inspection or repair work for the drainage works, the Transferee shall fill in all excavations in the said lands and, as far as practicable, they shall restore the surface thereof to the same condition as that in which it was found prior to the commencement of the drainage work and shall be responsible to compensate the Transferor for any damage.
 3. The Transferor agrees to not cause any pollutant to be placed into the said tile drainage works which would cause injury to the Transferee's lands, crops or other property.
 4. Subject to the following, it is hereby acknowledged and agreed that the cost of construction, improvement and maintenance of the drainage works is to be borne solely by the Transferees.
 5. This Drainage Agreement will be filed with the Township of North Dundas, pursuant to the Tile Drainage Act, RSO 1990, Ch.D. 17, s.2(2).
 6. The cost of installing the drainage works was paid entirely by the Transferee.
 7. The Transferor further covenants and agrees that it shall install and maintain, at its sole expense:
 - (a) a page wire fence around the entire perimeter of the property described on Page 3.
 - (b) dig and maintain at their sole cost, a ditch around the said property. The said ditch to be connected to the existing ditches around the abutting dump site and be of the same size and nature.
- It is agreed that the above covenants shall survive closing. The work shall be completed before the land is used by the Transferor as a landfill site.
8. It is agreed that once the new ditch is installed by the Transferor that the Transferee shall have the right and easement to continue draining their lands into this new ditch and the costs associated with any work necessary to connect the Transferee's tile drain into the new ditch will be paid for entirely by the Transferor.
 9. The burden and benefit of this Transfer shall run with all the aforementioned lands and shall extend to and be binding upon the parties hereto and their respective heirs, executors, administrators, successors and assigns.

SIGNED, SEALED AND WITNESSED

THE CORPORATION OF THE TOWNSHIP
OF NORTH DUNDAS

For:

Per:

We have authority to bind the Corporation.

Paul Stephen Helmer

George Richard Helmer

SCHEDULE "A"

Property Owned by Paul Stephen Heister and George Richard Heister

Lot 8, Concession 6, formerly Township of Winchester, now Township of North Dundas, County of Dundas save and except the following:

Part of the North Half of Lot 8, Concession 6, formerly Township of Winchester, now Township of North Dundas, County of Dundas and being more particularly described as follows:

COMMENCING at a point in the north headline of Lot 8, which is distance measured easterly along said north headline from the northwest corner of said Lot, 100 feet;

THENCE easterly along the north headline of said Lot, a distance of 80 rods or 1320 feet to a point;

THENCE southerly in a straight line drawn parallel to the west side line of said Lot, a distance of 40 rods or 660 feet to a point;

THENCE westerly in a straight line drawn parallel to the north headline of said Lot, a distance of 80 rods or 1320 feet to a point;

THENCE northerly in a straight line drawn parallel to the west side line of said Lot, a distance of 40 rods or 660 feet to the point of commencement as described in Instrument No. 7413B.

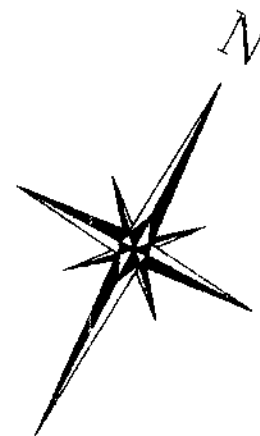
Lot 8, Concession 6, formerly Township of Winchester, now Township of North Dundas, County of Dundas and being Part 2 on Reference Plan 8R-3142 and Part 1 on Reference Plan 8R-4441.

PLAN OF SURVEY OF
PART LOT 8
CONCESSION 6
 GEOGRAPHIC TOWNSHIP OF WINCHESTER
 NOW IN THE TOWNSHIP OF NORTH DUNDAS
 COUNTY OF DUNDAS

SCALE: 1" = 200'
 2002
 W. J. JOHNSTON, O.L.S.



IMPERIAL DISTANCES SHOWN ON THIS PLAN
 ARE IN FEET AND CAN BE CONVERTED TO
 METRES BY MULTIPLYING BY 0.3048



I REQUIRE THIS PLAN TO
 BE DEPOSITED UNDER
 "THE REGISTRY ACT"

JANUARY 7th 2002

W. Johnston
 J. JOHNSTON
 ONTARIO LAND SURVEYOR
 WINCHESTER, ONTARIO

PLAN 8R-4441

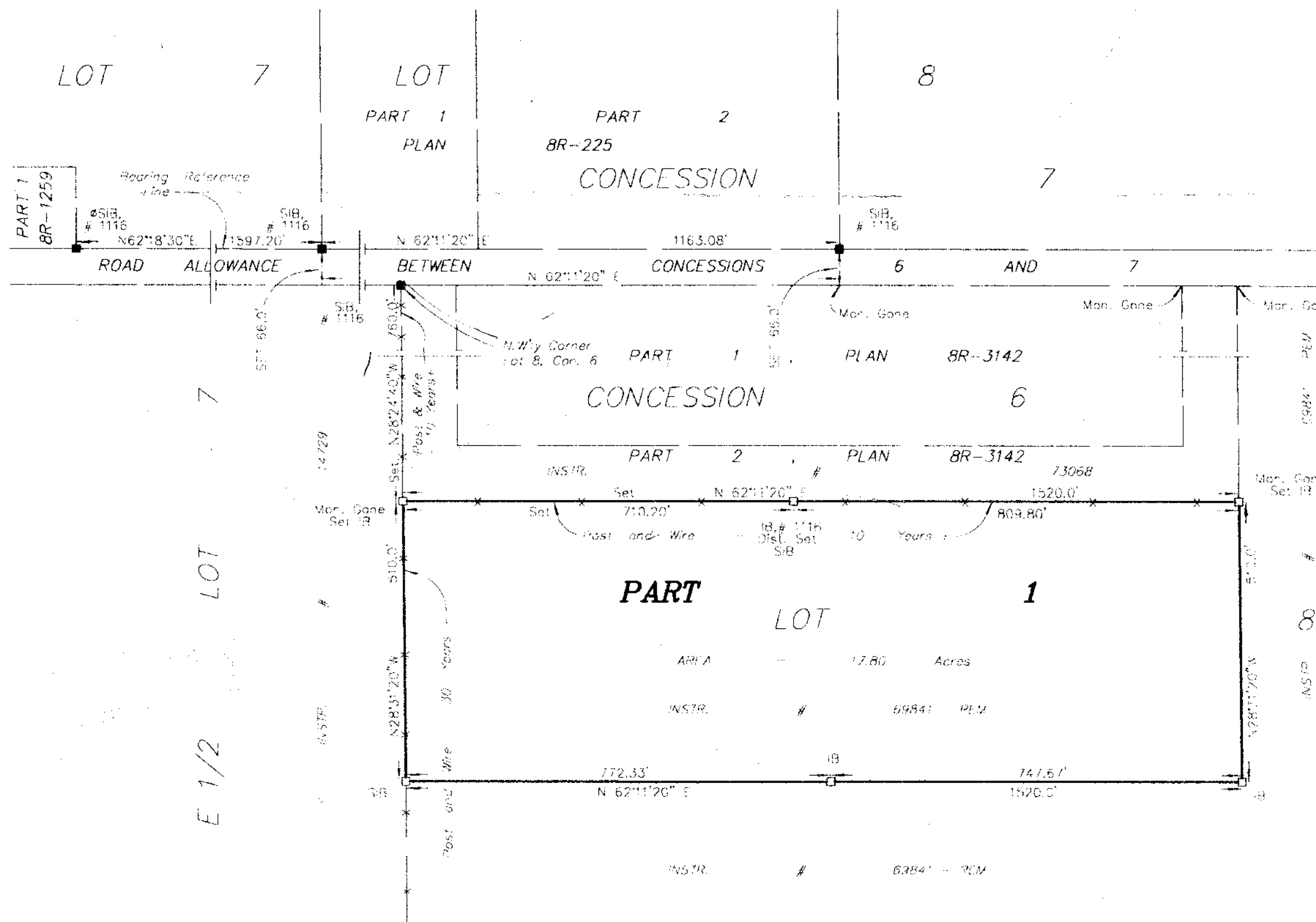
RECEIVED AND DEPOSITED

JANUARY 7, 2002

Diane Fontaine
 D.P.
 LAND REGISTRAR FOR THE
 REGISTRY DIVISION OF
 DUNDAS # 8

SCHEDULE OF PART

PART	LOT	CON.	AREA	INSTR. #
1	PL 8	6	17.80 Acs.	69481-REM



SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND
 IN ACCORDANCE WITH "THE SURVEYS ACT", "THE
 SURVEYORS ACT", "THE REGISTRY ACT" AND THE
 REGULATIONS MADE UNDER THEM.

2. THE SURVEY WAS COMPLETED ON THE
 4th DAY OF JAN. 2002

W. Johnston
 DATED: W. J. JOHNSTON
 ONTARIO LAND SURVEYOR
 WINCHESTER, ONTARIO.

NOTES...

ROUND STANDARD IRON BARS 1" Diam. x 4' SHOWN..... SIB
 ROUND IRON BARS 5/8" Diam. x 2' SHOWN..... IB
 STANDARD IRON BARS 1" x 4' SHOWN..... SIB
 IRON BARS 5/8" x 2' SHOWN..... IB
 "WIT." DENOTES WITNESS
 ■ DENOTES EVIDENCE FOUND
 □ DENOTES PLANTED
 FENCES SHOWN THUS X X X
 SET DENOTES SET PER PLAN 8R 3142.

BEARING REFERENCE..

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO
 THE NORTHERLY LIMIT OF THE CONCESSION ROAD ALLOW-
 ANCE, ACCORDING TO PLAN 8R 3142, BETWEEN MONUMENTS
 FOUND, THE BEARING BEING N 62° 18' 30" E.

FROM THE OFFICE OF
W. J. JOHNSTON SURVEYING LTD.
 ONTARIO LAND SURVEYORS
 WINCHESTER, ONTARIO



Ontario ServiceOntario

LAND
REGISTRY
OFFICE #8

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

66149-0457 (LT)

PAGE 1 OF 2
PREPARED FOR Carolyn
ON 2016/12/15 AT 11:02:30

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: PT LT 8 CON 6 WINCHESTER PT 1 & 2, SR3142 & PT 1, SR4441, S/T DR73068; TOGETHER WITH AN EASEMENT OVER PT 1, 2, 3, 4, 5 & 6 SR5197 AS IN D09C69;
TOWNSHIP OF NORTH DUNDAS

PROPERTY REMARKS:

ESTATE/QUALIFIER:

FEE SIMPLE
LT CONVERSION QUALIFIED

REMARKS:

FIRST CONVERSION FROM BOOK

PIN CREATION DATE:

2009/04/20

OWNERS' NAMES

THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS
THE CORPORATION OF THE TOWNSHIP OF WINCHESTER
THE CORPORATION OF THE VILLAGE OF CHESTERTVILLE
CORPORATION OF THE VILLAGE OF WINCHESTER

CAPACITY SHARE

ROWN
ROWN
ROWN
ROWN

REG. NO.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	COPY / CHG
** PRINTOUT INCLUDES ALL DOCUMENT TYPES (DELETED INSTRUMENTS NOT INCLUDED) **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES						
AND ESCHEATS OR FORFEITURE TO THE CROWN.						
THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
CONVENTION.						
ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 2009/04/20 **						
DRB29938	1977/02/16	TRANSFER	\$166		CORPORATION OF THE TOWNSHIP OF WINCHESTER CORPORATION OF THE VILLAGE OF WINCHESTER CORPORATION OF THE VILLAGE OF CHESTERTVILLE	C
DR42197	1981/10/14	CERTIFICATE				C
SR3142	1991/07/22	PLAN REFERENCE				C
DR73068	1992/03/04	TRANSFER	\$1		THE CORPORATION OF THE TOWNSHIP OF WINCHESTER THE CORPORATION OF THE VILLAGE OF CHESTERTVILLE	C
SR4441	2002/01/07	PLAN REFERENCE				C
DR102663	2002/01/23	TRANSFER	\$44,500		THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.



Ontario ServiceOntario

LAND
REGISTRY
OFFICE #8

PARCEL REGISTER (ABBREVIATED) FOR PROPERTY IDENTIFIER

66149-0057 (LT)

PAGE 2 OF 2
PREPARED FOR Carolyn1
ON 2014/12/15 AT 11:02:30

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

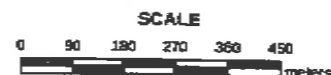
REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
DRI02744	2002/01/31	AGREEMENT			TOWNSHIP OF NORTH DUNDAS	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.



ServiceOntario

PRINTED ON 15 DEC, 2014 AT 11:04:24
FOR CAROLYN1



PROPERTY INDEX MAP DUNDAS(No. 08)

LEGEND

FREEDHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PTN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE
PROPERTY INFORMATION AS THIS MAP MAY
NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND
DOCUMENTS RECORDED IN THE LAND
REGISTRATION SYSTEM AND HAS BEEN PREPARED
FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE
RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT
REFERENCE PLANS ARE NOT ILLUSTRATED



The applicant(s) hereby applies to the Land Registrar.

yyyy mm dd

Page 1 of 2

Properties

PIN 66152 - 0399 LT Interest/Estate Fee Simple ☒ Split
Description PT LT 8 & 9, CON 7 WINCHESTER PT 1 ON 8R5560; NORTH DUNDAS
Address BOYNE ROAD
 WINCHESTER

Consideration

Consideration \$ 0.00

Transferor(s)

The transferor(s) hereby transfers the land to the transferee(s).

Name THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS
Address for Service 636 St. Lawrence Street
 P.O. Box 489
 Winchester, ON
 K0C 2K0

This document is not authorized under Power of Attorney by this party.
This document is being authorized by a municipal corporation Eric Duncan,, Mayor and Angela Rutley, CAO.

Transferee(s)	Capacity	Share
---------------	----------	-------

Name	THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS	Registered Owner
Address for Service	636 St. Lawrence Street P.O. Box 489 WINCHESTER, ON K0C 2K0	

Statements

The land is being acquired or disposed of by the Crown in Right of Ontario or the Crown in Right of Canada, including any Crown corporation, or any agency, board or commission of the Crown; or a municipal corporation.

Signed By

Stephen Fraser Ault	Box 428, 522 St. Lawrence St. Winchester K0C 2K0	acting for Transferor(s)	Signed	2017 01 17
Tel 613-774-2670				
Fax 613-774-2266				

I have the authority to sign and register the document on behalf of all parties to the document.

Stephen Fraser Ault	Box 428, 522 St. Lawrence St. Winchester K0C 2K0	acting for Transferee(s)	Signed	2017 01 17
Tel 613-774-2670				
Fax 613-774-2266				

I have the authority to sign and register the document on behalf of all parties to the document.

The applicant(s) hereby applies to the Land Registrar.

Submitted By

AULT & AULT	Box 428, 522 St. Lawrence St. Winchester K0C 2K0	2017 01 17
Tel 613-774-2670		
Fax 613-774-2266		

Fees/Taxes/Payment

Statutory Registration Fee	\$63.35
Provincial Land Transfer Tax	\$0.00
Total Paid	\$63.35

LAND TRANSFER TAX STATEMENTS

In the matter of the conveyance of: 66152 - 0399 PT LT 8 & 9, CON 7 WINCHESTER PT 1 ON 8R5560; NORTH DUNDAS

BY: THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS
TO: THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS Registered Owner % (all PINs)

1. ERIC DUNCAN, MAYOR AND AANGELA RUTLEY, CAO

I am

- ☐ (a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed;
- ☐ (b) A trustee named in the above-described conveyance to whom the land is being conveyed;
- ☐ (c) A transferee named in the above-described conveyance;
- ☒ (d) The authorized agent or solicitor acting in this transaction for THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS described in paragraph(s) (c) above.
- ☐ (e) The President, Vice-President, Manager, Secretary, Director, or Treasurer authorized to act for _____ described in paragraph(s) () above.
- ☐ (f) A transferee described in paragraph () and am making these statements on my own behalf and on behalf of _____ who is my spouse described in paragraph () and as such, I have personal knowledge of the facts herein deposed to.

3. The total consideration for this transaction is allocated as follows:

(a) Monies paid or to be paid in cash	0.00
(b) Mortgages (i) assumed (show principal and interest to be credited against purchase price)	0.00
(ii) Given Back to Vendor	0.00
(c) Property transferred in exchange (detail below)	0.00
(d) Fair market value of the land(s)	0.00
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	0.00
(f) Other valuable consideration subject to land transfer tax (detail below)	0.00
(g) Value of land, building, fixtures and goodwill subject to land transfer tax (total of (a) to (f))	0.00
(h) VALUE OF ALL CHATTELS - items of tangible personal property	0.00
(i) Other considerations for transaction not included in (g) or (h) above	0.00
(j) Total consideration	0.00

4.

Explanation for nominal considerations:

g) Transfer to a municipality pursuant to subdivision or development agreement, condominium approval or other municipal purposes: establish landfill buffer zone

5. The land is not subject to an encumbrance

PROPERTY Information Record

A. Nature of Instrument: Transfer
LRO 8 Registration No. DU23697 Date: 2017/01/17

B. Property(s): PIN 66152 - 0399 Address BOYNE ROAD Assessment -
WINCHESTER Roll No

C. Address for Service: 636 St. Lawrence Street
P.O. Box 489
WINCHESTER, ON
K0C 2K0

D. (i) Last Conveyance(s): PIN 66152 - 0399 Registration No. DR64331
(ii) Legal Description for Property Conveyed : Same as in last conveyance? Yes ☐ No ☒ Not known ☐

E. Tax Statements Prepared By: Stephen Fraser Ault
Box 428, 522 St. Lawrence
St.
Winchester K0C 2K0

The applicant(s) hereby applies to the Land Registrar.

Properties

PIN 66152 - 0292 LT Interest/Estate Fee Simple ☒ Split
Description PT RDAL BTN CON 6 AND CON 7 WINCHESTER PT 2 ON 8R-5560; AKA BOYNE RD;
 NORTH DUNDAS
Address BOYNE ROAD
 WINCHESTER

Consideration

Consideration \$ 0.00

Transferor(s)

The transferor(s) hereby transfers the land to the transferee(s).

Name THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS
Address for Service 636 St. Lawrence Street
 P.O. Box 489
 Winchester, ON
 K0C 2K0

This document is not authorized under Power of Attorney by this party.
This document is being authorized by a municipal corporation Eric Duncan, Mayor and Angela Rutley, CAO.

Transferee(s)	Capacity	Share
---------------	----------	-------

Name	THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS	Registered Owner
Address for Service	636 St. Lawrence Street P.O. Box 489 Winchester,, ON K0C 2K0	

Statements

The land is being acquired or disposed of by the Crown in Right of Ontario or the Crown in Right of Canada, including any Crown corporation, or any agency, board or commission of the Crown; or a municipal corporation.

Signed By

Stephen Fraser Ault	Box 428, 522 St. Lawrence St. Winchester K0C 2K0	acting for Transferor(s)	Signed	2017 01 17
Tel 613-774-2670				
Fax 613-774-2266				

I have the authority to sign and register the document on behalf of all parties to the document.

Stephen Fraser Ault	Box 428, 522 St. Lawrence St. Winchester K0C 2K0	acting for Transferee(s)	Signed	2017 01 17
Tel 613-774-2670				
Fax 613-774-2266				

I have the authority to sign and register the document on behalf of all parties to the document.

The applicant(s) hereby applies to the Land Registrar.

Submitted By

AULT & AULT

Box 428, 522 St. Lawrence St.
Winchester
K0C 2K0

2017 01 17

Tel 613-774-2670

Fax 613-774-2266

Fees/Taxes/Payment

Statutory Registration Fee \$63.35

Provincial Land Transfer Tax \$0.00

Total Paid \$63.35

LAND TRANSFER TAX STATEMENTS

In the matter of the conveyance of: 66152 - 0292 PT RDAL BTN CON 6 AND CON 7 WINCHESTER PT 2 ON 8R-5560; AKA BOYNE RD; NORTH DUNDAS

BY: THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS
TO: THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS Registered Owner %(all PINs)

1. ERIC DUNCAN, MAYOR AND ANGELA RUTLEY, CAO

I am

- ☐ (a) A person in trust for whom the land conveyed in the above-described conveyance is being conveyed;
- ☐ (b) A trustee named in the above-described conveyance to whom the land is being conveyed;
- ☐ (c) A transferee named in the above-described conveyance;
- ☒ (d) The authorized agent or solicitor acting in this transaction for THE CORPORATION OF THE TOWNSHIP OF NORTH DUNDAS described in paragraph(s) (c) above.
- ☐ (e) The President, Vice-President, Manager, Secretary, Director, or Treasurer authorized to act for _____ described in paragraph(s) () above.
- ☐ (f) A transferee described in paragraph () and am making these statements on my own behalf and on behalf of _____ who is my spouse described in paragraph () and as such, I have personal knowledge of the facts herein deposed to.

3. The total consideration for this transaction is allocated as follows:

(a) Monies paid or to be paid in cash	0.00
(b) Mortgages (i) assumed (show principal and interest to be credited against purchase price)	0.00
(ii) Given Back to Vendor	0.00
(c) Property transferred in exchange (detail below)	0.00
(d) Fair market value of the land(s)	0.00
(e) Liens, legacies, annuities and maintenance charges to which transfer is subject	0.00
(f) Other valuable consideration subject to land transfer tax (detail below)	0.00
(g) Value of land, building, fixtures and goodwill subject to land transfer tax (total of (a) to (f))	0.00
(h) VALUE OF ALL CHATTELS - items of tangible personal property	0.00
(i) Other considerations for transaction not included in (g) or (h) above	0.00
(j) Total consideration	0.00

4.

Explanation for nominal considerations:

g) Transfer to a municipality pursuant to subdivision or development agreement, condominium approval or other municipal purposes: establish landfill buffer zone

5. The land is not subject to an encumbrance

PROPERTY Information Record

A. Nature of Instrument: Transfer
LRO 8 Registration No. DU23698 Date: 2017/01/17

B. Property(s): PIN 66152 - 0292 Address BOYNE ROAD Assessment -
WINCHESTER Roll No

C. Address for Service: 636 St. Lawrence Street
P.O. Box 489
Winchester,, ON
K0C 2K0

D. (i) Last Conveyance(s): PIN 66152 - 0292 Registration No. DR98304
(ii) Legal Description for Property Conveyed : Same as in last conveyance? Yes ☐ No ☒ Not known ☐

E. Tax Statements Prepared By: Stephen Fraser Ault
Box 428, 522 St. Lawrence
St.
Winchester K0C 2K0

PLAN OF SURVEY OF
PART LOT 8
CONCESSION 6
 GEOGRAPHIC TOWNSHIP OF WINCHESTER
 NOW TOWNSHIP OF NORTH DUNDAS
 COUNTY OF DUNDAS
 SCALE : 1" = 200'
 2016
 WILLIAM J. WEBSTER, O.L.S.

FEET
 0 100 200 400 600

IMPERIAL : DISTANCES AND COORDINATES SHOWN
 ON THIS PLAN ARE IN FEET AND CAN BE CONVERTED
 TO METRES BY MULTIPLYING BY 0.3048.



PLAN 8R-5539

RECEIVED AND DEPOSITED

August 3, 2016

Dale Vivians

REPRESENTATIVE FOR
 LAND REGISTRAR FOR THE
 LAND TITLES DIVISION OF
 DUNDAS No. 8

I REQUIRE THIS PLAN TO
 BE DEPOSITED UNDER
 THE LAND TITLES ACT

July 18, 2016

W. J. Webster

WILLIAM J. WEBSTER
 ONTARIO LAND SURVEYOR
 WINCHESTER, ONTARIO

SCHEDULE

PART	LOT	CON.	P.I.N.
1	PART OF 8	6	PART OF 66149-0497 (LT)

NOTE : PART 1 IS PART OF P.I.N. 66149-0497 (LT).

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
- THE SURVEY WAS COMPLETED ON THE 16th DAY OF JUNE 2016.

July 4/16 W. J. Webster

DATED WILLIAM J. WEBSTER
 ONTARIO LAND SURVEYOR
 WINCHESTER, ONTARIO.

NOTES.

ROUND STANDARD IRON BARS 1" Diam. x 4' SHOWN..... SIB
 ROUND IRON BARS 5/8" Diam. x 2' SHOWN..... SIB
 STANDARD IRON BARS 1" x 4' SHOWN..... SIB
 IRON BARS 5/8" x 2' SHOWN..... IB
 "WIT." DENOTES WITNESS
 ■ DENOTES EVIDENCE FOUND
 □ DENOTES PLANTED
 FENCES SHOWN THUS —X—X—X—X—
 Dist. DENOTES DISTURBED.
 Acc. DENOTES ACCEPTED.
 P & M DENOTES PLAN 8R-225 AND MEASURED.
 P1 & M DENOTES PLAN 8R-3142 AND MEASURED.
 P2 & M DENOTES PLAN 8R-5197 AND MEASURED.
 P3 & M DENOTES PLAN 8R-4441 AND MEASURED.
 ALL SURVEY MONUMENTS FOUND BEAR THE # 1116.

BEARING REFERENCE.

BEARINGS ARE UTM GRID, DERIVED FROM SIMULTANEOUS GPS OBSERVATIONS ON MONUMENTS A AND B, SHOWN HEREBON, HAVING A GRID BEARING OF N 62° 25' 00" E AND ARE REFERRED TO THE ONTARIO COORDINATE SYSTEM, UTM NAD83 (CSRS) ZONE 18.

NOTES.

DISTANCES ON THIS PLAN ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999601035.
 FOR BEARING COMPARISONS, A ROTATION OF 0°13'40" COUNTER-CLOCKWISE WAS APPLIED TO THE BEARINGS ON THIS PLAN.

OBSERVED REFERENCE POINTS (A) AND (B)

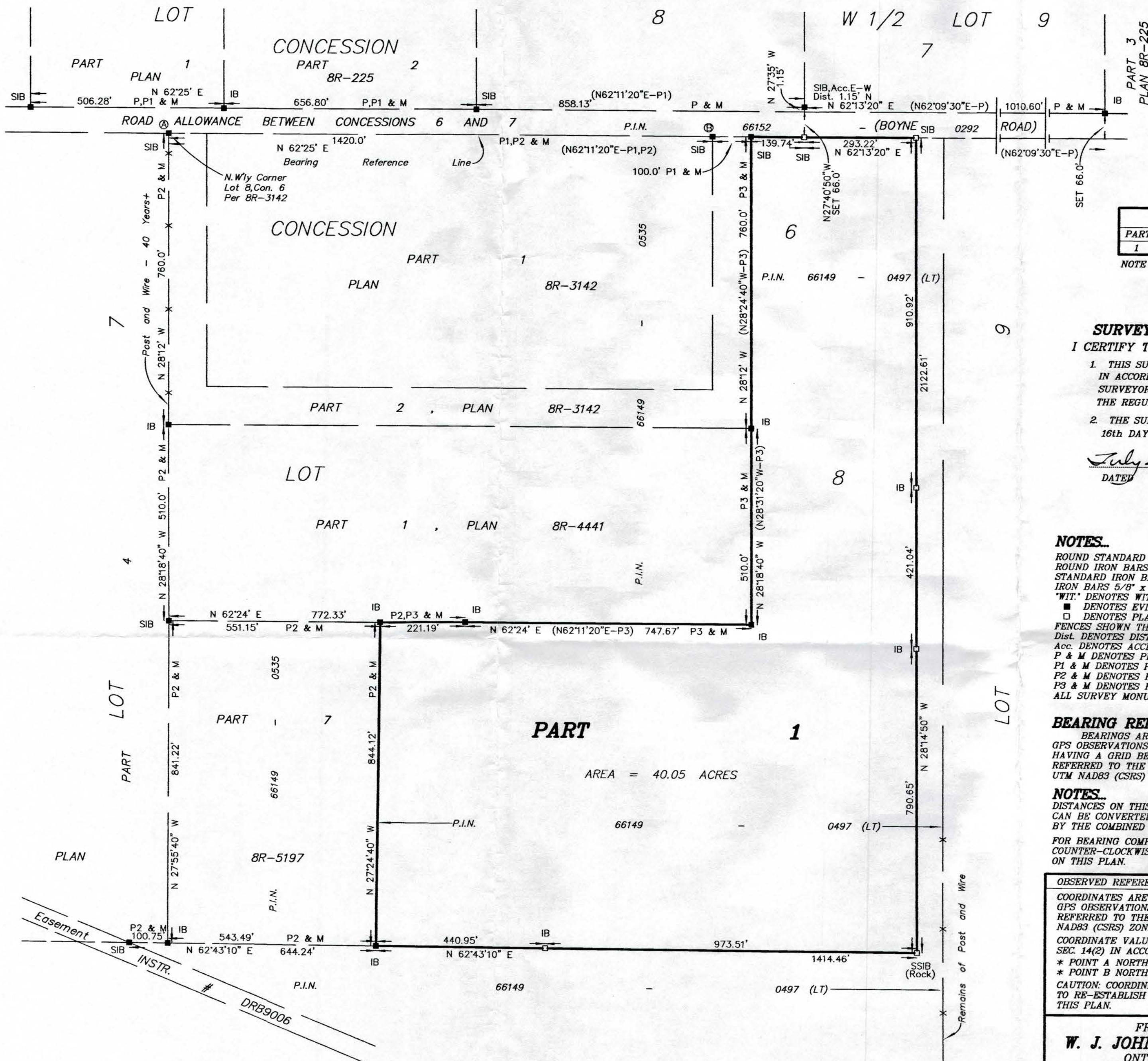
COORDINATES ARE IN IMPERIAL AND WERE DERIVED FROM GPS OBSERVATIONS USING THE CAN-NET NETWORK AND REFERRED TO THE ONTARIO COORDINATE SYSTEM, UTM NAD83 (CSRS) ZONE 18 (1997.0).

COORDINATE VALUES ARE TO URBAN ACCURACY PER SEC. 14(2) IN ACCORDANCE WITH OREG 216/10.

* POINT A NORTHING 16386118.96 EASTING 1556720.43
 * POINT B NORTHING 16386776.46 EASTING 1557978.26

CAUTION: COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

FROM THE OFFICE OF
W. J. JOHNSTON SURVEYING LTD.
 ONTARIO LAND SURVEYORS
 WINCHESTER, ONTARIO



PLAN OF SURVEY OF
PART LOTS 8 AND 9
CONCESSION 7 AND
PART ROAD ALLOWANCE BETWEEN
CONCESSIONS 6 AND 7
 GEOGRAPHIC TOWNSHIP OF WINCHESTER
 NOW TOWNSHIP OF NORTH DUNDAS
 COUNTY OF DUNDAS
 SCALE : 1" = 300'
 2016
 WILLIAM J. WEBSTER, O.L.S.

FEET
 0 150 300 600 900

IMPERIAL : DISTANCES AND COORDINATES SHOWN
 ON THIS PLAN ARE IN FEET AND CAN BE CONVERTED
 TO METRES BY MULTIPLYING BY 0.3048.

SCHEDULE			
PART	LOT	CON.	P.I.N.
1	PART OF 8 & 9	7	PART OF 66152-0399 (LT)
2	PART OF ROAD ALLOWANCE BETWEEN CONCESSIONS 6 & 7		PART OF 66152-0292 (LT)

NOTE : PART 1 IS PART OF P.I.N. 66152-0399 (LT).
 PART 2 IS PART OF P.I.N. 66152-0292 (LT).

PLAN 8R-5560

RECEIVED AND DEPOSITED

December 20th 2016

B. MacMaster

REPRESENTATIVE FOR
 LAND REGISTRAR FOR THE
 LAND TITLES DIVISION OF
 DUNDAS No. 8

I REQUIRE THIS PLAN TO
 BE DEPOSITED UNDER
 "THE LAND TITLES ACT"

Dec. 16 2016

W. J. Webster

WILLIAM J. WEBSTER
 ONTARIO LAND SURVEYOR
 WINCHESTER, ONTARIO



SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
- THE SURVEY WAS COMPLETED ON THE 9th DAY OF DECEMBER 2016.

DATED *Dec. 16/16*
 WILLIAM J. WEBSTER
 ONTARIO LAND SURVEYOR
 WINCHESTER, ONTARIO

NOTES.

ROUND STANDARD IRON BARS 1" Diam x 4' SHOWN..... #SIB
 ROUND IRON BARS 5/8" Diam x 2' SHOWN..... #IB
 STANDARD IRON BARS 1" x 4' SHOWN..... SIB
 IRON BARS 5/8" x 2' SHOWN..... IB
 "WIT" DENOTES WITNESS
 ■ DENOTES EVIDENCE FOUND
 □ DENOTES PLANTED
 FENCES SHOWN THUS —X—X—X—X—
 Dist. DENOTES DISTURBED
 Acc. DENOTES ACCEPTED
 meas'd DENOTES MEASURED
 P & M DENOTES PLAN 8R-5197 AND MEASURED
 P1 & M DENOTES PLAN 8R-5197 AND MEASURED
 P2 & M DENOTES PLAN 8R-5548 AND MEASURED
 D & S DENOTES DEED DR47034 AND SET
 D & M DENOTES DEED DR47034 AND MEASURED
 ALL SURVEY MONUMENTS BEAR THE # 1116.

BEARING REFERENCE.

BEARINGS ARE UTM GRID, DERIVED FROM SIMULTANEOUS GPS OBSERVATIONS ON MONUMENTS A AND B, SHOWN HEREON, HAVING A GRID BEARING OF N 62° 25' 00" E AND ARE REFERRED TO THE ONTARIO COORDINATE SYSTEM, UTM NAD83 (CSRS) ZONE 18.

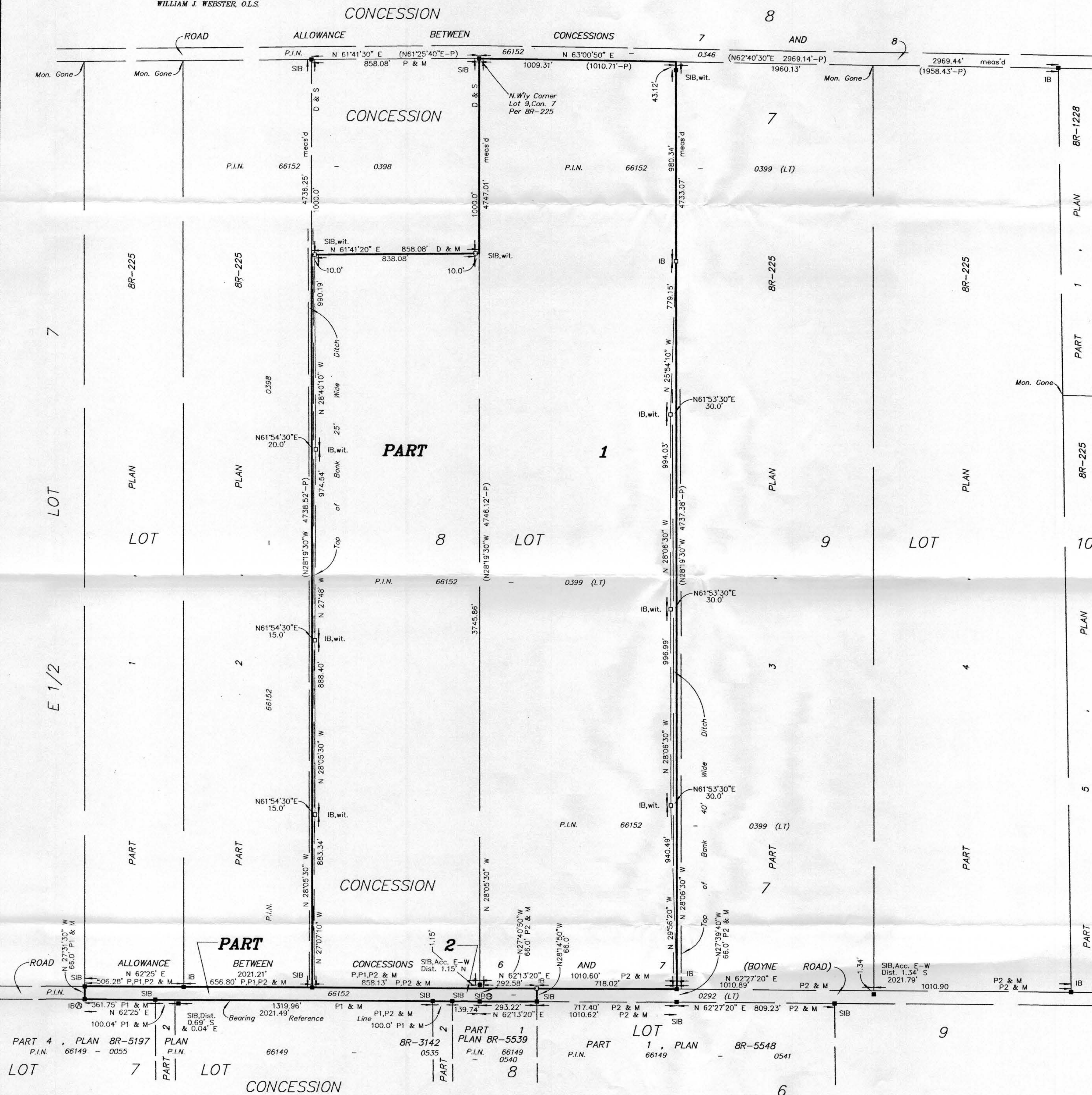
NOTES.

DISTANCES ON THIS PLAN ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.9999601035.
 FOR BEARING COMPARISONS, A ROTATION OF 0°14'00" COUNTER-CLOCKWISE WAS APPLIED TO THE BEARINGS ON THIS PLAN.

OBSERVED REFERENCE POINTS (A) AND (B)

COORDINATES ARE IN IMPERIAL AND WERE DERIVED FROM GPS OBSERVATIONS USING THE CAN-NET NETWORK AND REFERRED TO THE ONTARIO COORDINATE SYSTEM, UTM NAD83 (CSRS) ZONE 18 (1997.0).
 COORDINATE VALUES ARE TO URBAN ACCURACY PER SEC. 14(2) IN ACCORDANCE WITH OREG 216/10.
 * POINT A NORTHING 16385951.59 EASTING 1556399.83
 * POINT B NORTHING 16386887.40 EASTING 1556190.62
 CAUTION: COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

FROM THE OFFICE OF
W. J. JOHNSTON SURVEYING LTD.
 ONTARIO LAND SURVEYORS
 WINCHESTER, ONTARIO



EASEMENT AGREEMENT

THIS AGREEMENT IS made as of the 1st day of October, 2011

BETWEEN:

BLAIR HUTCHINSON

- and -

("Hutchinson ")

THE TOWNSHIP OF NORTH DUNDAS

("the Township")

WHEREAS:

1. Blair Hutchinson owns and farms the lands located at Part of Lots 7 & 8 , Concession 6, Geographic Township of Winchester, Township of North Dundas, County of Dundas, more particularly described as Parts 1, 2, 3, 4, 5 & 6 on Reference Plan 8R5197 (the "Hutchinson Lands").
2. The Township operates a waste disposal site and owns the lands and premises located at 12620 Boyne Road at west half of Lot 8, Concession 6, Geographic Township of Winchester, Township of North Dundas, County of Dundas (the "Township Landfill Lands").
3. Certain contaminants from the Township Landfill Lands have migrated from these sites onto the "Hutchinson Lands".
4. The Township wishes to obtain an easement from Hutchinson to use the Hutchinson Lands as a Contaminant Attenuation Zone for the Township Landfill Lands.

NOW, THEREFORE, in consideration of the sum of \$136,125 paid by the Township to Hutchinson and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, Hutchinson and the Township hereby agree as follows:

Definitions

1. "Contaminant Attenuation Zone" hereinafter has the meaning assigned in the Ministry of Environment document titled "Procedure B-7-1, Determination of Contaminant Limits and Attenuation Zones" ("Guideline B-7-1") as amended. Without limiting the foregoing definition, for the purposes of this Easement Agreement, the right to use the Hutchinson Lands as a Contaminant Attenuation Zone includes the right to discharge contaminants from the Township Landfill Lands to the Hutchinson Lands and the right to use the groundwater in, under and within the Hutchinson Lands for the purpose of contaminant attenuation.

Consideration

2. The township shall pay Hutchinson the sum of \$2,500 per acre for 54.45 acres (which the parties agree is the total land are subject to the Easement) for a total consideration of \$136,125.
3. The Township shall pay the sum of \$136,125 in 5 annual instalments of \$27,225. The first instalment shall be paid on execution of this Easement Agreement and the Grant of Easement attached hereto. The following 4 instalments shall be paid on August 1 each year.

Easement

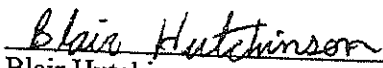
4. Hutchinson grants and transfers to the Township an easement in perpetuity in, over, along, under and upon the Hutchinson Lands for the purposes of a Contaminant Attenuation Zone for the Township Landfill Lands. This easement is for the benefit of the Township Landfill Lands and will permit the Township to discharge contaminants from the Township Landfill Lands to the Hutchinson Lands and the right to use the groundwater in, under and within the Hutchinson Lands for the purpose of contaminant attenuation.
5. As part of this easement, Hutchinson will permit the Township and its representatives, consultants, agents, contractors or subcontractors to access the Hutchinson Lands for the purpose of conducting soil and groundwater monitoring (the "Monitoring").
6. As part of this easement, Hutchinson will permit the Township and its representatives, consultants, agents, contractors or subcontractors to construct, install, repair, replace and maintain any equipment required to test, monitor or intercept contaminants and carry out remedial works as required in, on and under the Hutchinson Lands for the purpose of managing and operating the Township Landfill Lands or for dealing with contaminants which have migrated to the Hutchinson Lands from the Township Landfill Lands (the "Remedial Works");
7. Hutchinson will act reasonably in avoiding damage to or interference with the Monitoring or Remedial Works;
8. Hutchinson will not permit anyone else, to use the Adjacent Property Lands in any manner whatsoever that would interfere with the functioning and use of the Hutchinson Lands as a Contaminant Attenuation Zone for the Township Landfill Lands and use of the Hutchinson Lands by the Township as a Contaminant Attenuation Zone except as may be required by an order issued by the Ministry of the Environment or otherwise required by law;
9. Hutchinson and the Township agree to register the Easement appended as Appendix "A" to this Easement Agreement against title to the Hutchinson Lands.
10. The Township shall indemnify Hutchinson from and against any and all claims, damages, actions, causes of action, losses, damages, expenses, judgements, orders, notices, responsibilities or liabilities (collectively referred to as "Claims") that Hutchinson may suffer or incur arising from or as a result of the Township's or its representatives', consultants',

agents', contractors' or subcontractors' access to and use of the Hutchinson Lands including for the purposes of installation and maintenance of the Monitoring or Remedial Works except for Claims that arise from or as a result of the Township's violation of this Agreement.

General

11. The Township acknowledges and agrees that Hutchinson may and will be continuing to crop the Hutchinson lands.
12. Neither part shall construct a building as defined in the *Building Code Act 1992*, S.O. 1992, c. 23 and the Building Code on the Hutchinson Lands.
13. This Easement Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein and shall survive indefinitely.
14. This Easement Agreement constitutes the entire agreement between Hutchinson and the Township with respect to the subject matter hereof and cancels and supersedes any prior understandings, undertakings, terms, conditions and agreements, whether oral, express, or implied between Hutchinson and the Township with respect hereto.
15. This Easement Agreement shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, successors and assigns.


DATED: October 11, 2011

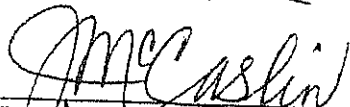

Blair Hutchinson

DATED: October 24, 2011

TOWNSHIP OF NORTH DUNDAS

By:


Eric Duncan, Mayor


Joanne McCaslin, Clerk

Appendix "A"

CONTAMINANT ATTENUATION ZONE EASEMENT

Hutchinson (the "Transferor") hereby transfers to the Township of North Dundas ("the Transferee") an easement in perpetuity (the "Easement") in, on and over the lands of the Transferor described in Appendix "B" attached hereto (the "Easement Lands") for the purposes of permitting the discharge on to the Easement Lands of contaminants emanating from the lands of the Transferee described in Appendix "B" attached hereto (the "Township Landfill Lands") including, without limitation, the right to use the groundwater in, on and under the Easement Lands for the purpose of contaminant attenuation. The Easement shall be upon and subject to the following terms and conditions:

1. The Transferee and its representatives, consultants, agents, contractors or subcontractors shall have access to the Easement Lands for the purpose of conducting soil and groundwater monitoring (the "Monitoring").
2. The Transferee and its representatives, consultants, agents, contractors or subcontractors shall be entitled to construct, install, repair, replace and maintain any equipment required to test, monitor or intercept contaminants and carry out remedial works as required in, on and under the Easement Lands for the purpose of managing and operating the Township Landfill Lands (the "Remedial Works").
3. The Transferor will act reasonably in avoiding damage to or interference with the Monitoring or Remedial Works.
4. The Transferor will not, and will not permit anyone else, to use the Easement Lands in any manner whatsoever that would interfere with the functioning and use of the Easement Lands for the purposes set forth herein including as a Contaminant Attenuation Zone.
5. The Transferor and the Transferee acknowledge and agree that any contaminants that may have migrated or may migrate to the Easement Lands from the Township Landfill Lands or from the landfill lands owned by the Transferor adjacent to the Easement Lands are separate and different and this Easement Agreement in no way makes either the Transferor and the Transferee in any way liable for the other party's contaminants on the Easement Lands or elsewhere.
6. This Easement Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein and shall survive indefinitely.
7. The Easement shall run with and enure to the benefit of the Township Landfill Lands and be binding upon the parties hereto and their respective successors and assigns, including successors in title from time to time of the Easement Lands.

Appendix "B"

DESCRIPTION OF LANDS

SERVIENT TENEMENT LANDS (Easement Lands):

Part Lot 7, Con 6, Winchester, Parts 1, 2, 3, 4, 5, & 6 on 8R5197, s/t DRB9006; WN17461 & WN17460; North Dundas, being part of PIN 66149-0055.

DOMINANT TENEMENT LANDS (Township Landfill Lands):

Part Lot 8, Con 6, Winchester, Parts 1 & 2 on 8R3142, Part 1 on 8R4441 and Part 7 on 8R5197; North Dundas, being all of PIN 66149-0057

ESTIMATE OF MONIES TO CLOSE

RE: Hutchinson Easement

DISBURSEMENTS INCURRED AS AGENT (Not Subject to GST):

Paid to Register Easement	\$ 71.30	
Paid to Register Parcel Consolidation	\$ 71.30	
Paid for Land Transfer Tax	<u>\$1,086.35</u>	\$1,228.95

BALANCE DUE ON CLOSING +\$27,225.00

PLUS FEES AND DISBURSEMENTS +\$ 1,228.95

TOTAL AMOUNT DUE AND OWING
FROM CLIENT TO CLOSE:

\$28,453.95 payable to "dult + dult
in Trust"

***PLEASE NOTE THAT THE COST FOR DISBURSEMENTS MIGHT
VARY AS THEY ARE APPROXIMATE ESTIMATES ONLY ***

Charged to ak 1-5-4020-8020
in year 2011

28 453.95
108 900
\$137,353.95

FEET

0 100 200 400 600

IMPERIAL : DISTANCES SHOWN ON THIS PLAN ARE IN FEET AND CAN BE CONVERTED TO METRES BY MULTIPLYING BY 0.3048

SCHEDULE OF PARTS			
PART	PART OF LOT	CON.	PART OF P.I.N.
1	7	6	66149-0065 (17)
2	7	6	66149-0065 (17)
3	7	6	66149-0065 (17)
4	7	6	66149-0065 (17)
5	7	6	66149-0065 (17)
6	7	6	66149-0065 (17)
7	8	6	66149-0066 (17)

NOTE : PARTS 1, 2, 3, 4, 5 AND 6 ARE PART OF
P.I.N. 06149-0066 (LT).
PART 7 IS PART OF P.I.N. 06149-0066 (LT).
PARTS 2 AND 5 ARE SUBJECT TO AN EASEMENT
AS DESCRIBED IN INSTR # DRB0006

I REQUIRE THIS PLAN TO
BE DEPOSITED UNDER
'THE LAND TITLES ACT'

June 13 2011

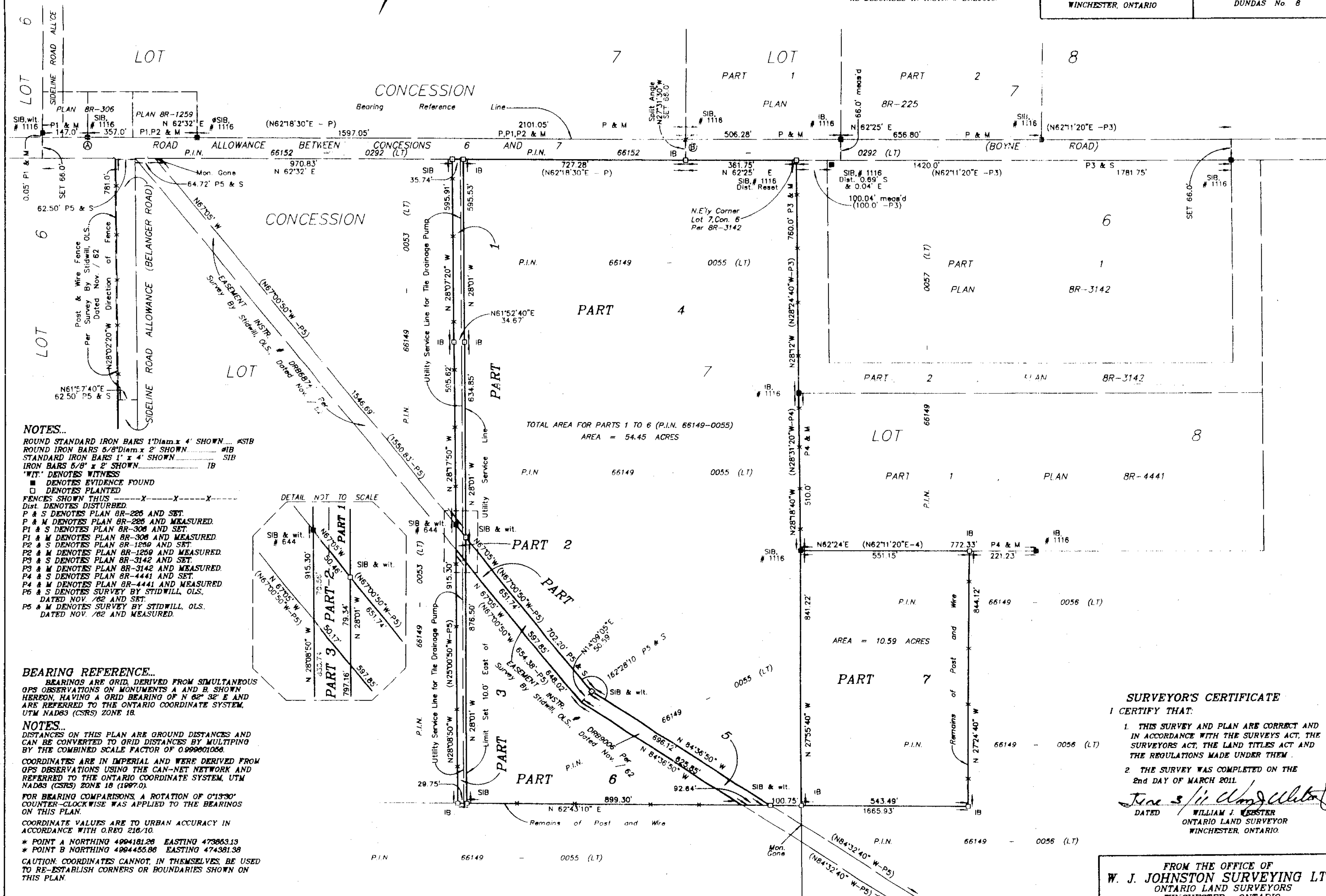
Handwritten signature: C. J. H. H. H. H.

WILLIAM J. WEBSTER
ONTARIO LAND SURVEYOR
WINCHESTER, ONTARIO

RECEIVED AND DEPOSITED

June 15, 2011

Julie M. Landriault
Dep.
LAND REGISTRAR FOR THE
LAND TITLES DIVISION OF
DUNDAS No. 8



SURVEYOR'S CERTIFICATE
I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.

2. THE SURVEY WAS COMPLETED ON THE
End DAY OF MARCH 2011. /

June 3/11 *Wm J. Webster*
 DATED WILLIAM J. WEBSTER

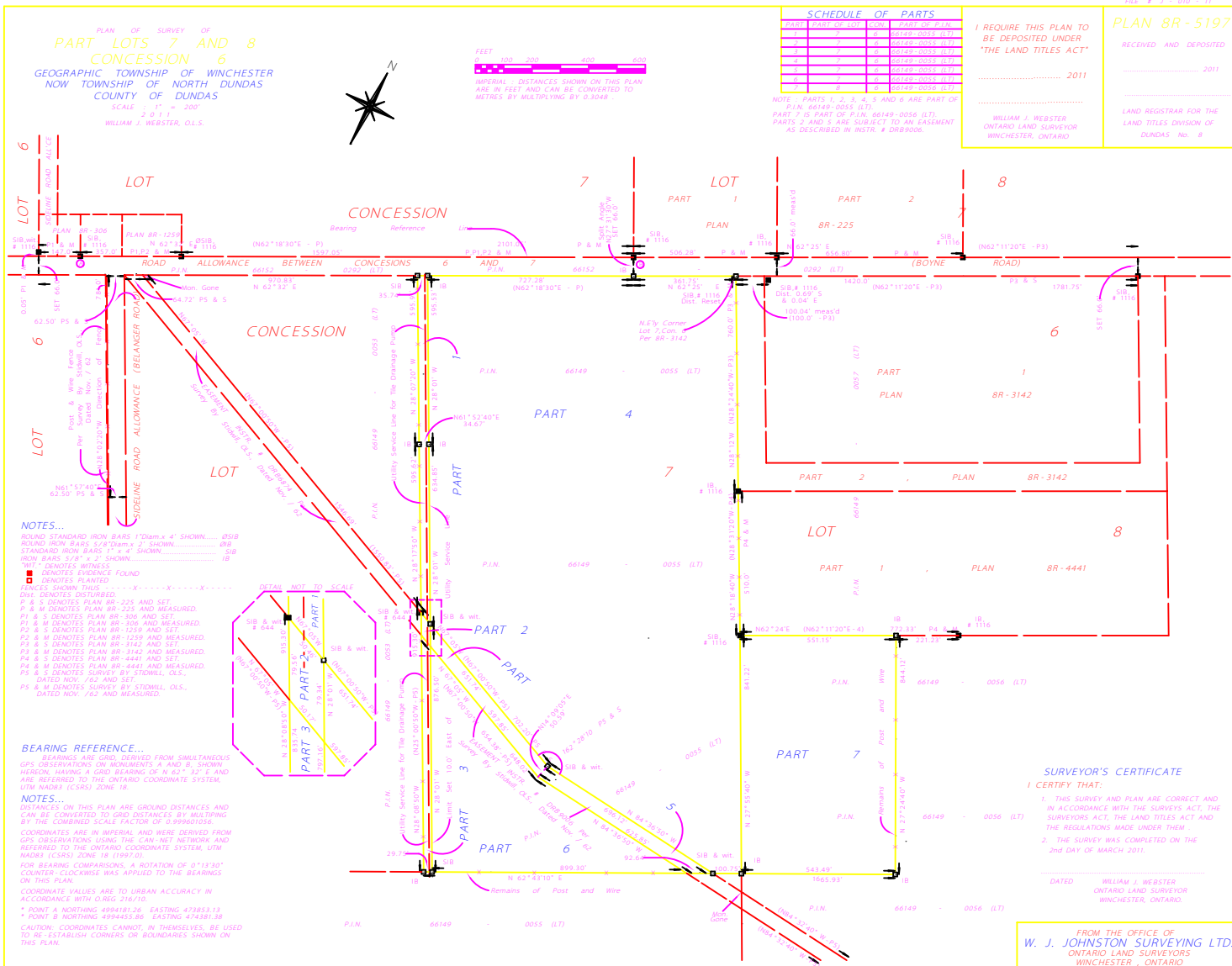
FROM THE OFFICE OF
W. J. JOHNSTON SURVEYING LTD.
ONTARIO LAND SURVEYORS
WINCHESTER, ONTARIO

IMPERIAL : DISTANCES SHOWN ON THIS PLAN ARE IN FEET AND CAN BE CONVERTED TO METRES BY MULTIPLYING BY 0.3048 .

SCHEDULE OF PARTS				
PART	PART OF LOT	CON.	PART OF P.I.N.	
1	7	6	66149-0055 (LT)	
2	7	6	66149-0055 (LT)	
3	7	6	66149-0055 (LT)	
4	7	6	66149-0055 (LT)	
5	7	6	66149-0055 (LT)	
6	7	6	66149-0055 (LT)	
7	8	6	66149-0056 (LT)	

NOTE : PARTS 1, 2, 3, 4, 5 AND 6 ARE PART OF P.I.N. 66149-0055 (LT).
 PART 7 IS PART OF P.I.N. 66149-0056 (LT).
 PARTS 2 AND 5 ARE SUBJECT TO AN EASEMENT AS DESCRIBED IN INSTR. # DR89006.

LAND REGISTRAR FOR THE
LAND TITLES DIVISION OF
DUNDAS No. 8



This Land Use Permit is issued by Her Majesty the Queen in right of Ontario, as represented by the Minister of Natural Resources and Forestry under the authority of Public Lands Act and its regulations, and is subject to the limitations and provisions thereof, and to the terms and conditions set forth herein.

PERMITTEE

This Land Use Permit is issued to: Township of North Dundas

Post Office Address of Permittee:
636 St. Lawrence St PO Box 489
Winchester, ON
K0C 2K0
CANADA

Phone Number of the Permittee:

Email Address of Permittee:

PURPOSE

This Land Use Permit authorizes the holder for:
Waste Disposal Site
Other

LOCATION OF LAND

This Land Use Permit applies to the following location(s):
Lot 8, Con 7, Township of North Dundas
Area: 49.21 HA
ARN:

As per sketch and description which is attached hereto. A copy of this sketch and description is on file with the Ministry and available for inspection at any time during normal business hours. If there is any inconsistency between the two sketches and descriptions, the sketch and description on file with the Ministry shall prevail.

PERMIT EFFECTIVE DATE: September 1, 2023 PERMIT EXPIRY DATE: August 31, 2024

Summary of Fees


Fee Type	Fee	HST	Total
Initial Administration Fee	176.81	22.99	199.80
Annual Administration Fee	0.00	0.00	0.00
Lands Fee	881.23	114.56	995.79
Annual Fee (includes Annual Admin Fee and Lands Fee as applicable)	881.23	114.56	995.79
Total Amount Due on Issuance (includes Initial Admin Fee, Annual Admin Fee and Lands Fee as applicable)	1058.04	137.55	1195.59

This Land Use Permit is subject to additional restrictions as set out in the conditions attached.

The issuance of this Land Use Permit does not relieve the Permittee from the responsibility of acquiring any other approvals as may be required by law nor does it relieve the Permittee from any other legal requirements, whether under the Public Lands Act and its regulations or otherwise.

This Land Use Permit is not valid until payment of the Total Amount Due on Issuance outlined above has been received by the Ontario Shared Services.

Ministry Approval

Issued by: Tammy Watson	Signature: 	Date Signed: August 17 2023
----------------------------	---	--------------------------------

Conditions Attached: Yes

Number of Schedules:

This Land Use Permit is subject to the following conditions:

Standard Conditions

It is agreed by the parties that:

1. This Land Use Permit gives the Permittee the non-exclusive right to occupy the described lands only. The described lands may be used only for the permitted purpose specified in this Land Use Permit and no other purpose.
2. The Permittee shall at all times comply with all applicable laws, regulations, by-laws, government orders and directions in its use of the described lands.
3. The Permittee shall be solely responsible for obtaining any other necessary permits, licenses and approvals relating to the use of the described lands by the Permittee.
4. The Permittee may not affix any building, structure, or works on the described lands (including posting any signs or notices), nor make any alteration, renovation, enlargement, reconstruction or other improvement to the described lands without the written approval of the Ministry, except as otherwise expressly permitted in this Land Use Permit.
5. The Permittee shall maintain the described lands in a clean, sanitary and safe condition, in accordance with any applicable legislation, regulations, by-laws, government orders and directions. Without limiting the generality of the foregoing, the Permittee is an occupier for the purposes of the Occupier's Liability Act and Trespass to Property Act, and shall take such care as in all circumstances is reasonable to see that persons entering on the described lands, and the property brought on the described lands by these persons, are reasonably safe while on the described lands.
6. The Permittee shall not allow waste, garbage or other objectionable material to collect on the described lands.
7. The Permittee shall not bring any hazardous substances or other contaminants onto the described lands without the approval of the Ministry. The Ministry may impose conditions on any such approval. In the event that the described lands are contaminated by any act or omission of the Permittee or its invitees, the Permittee shall undertake all necessary remediation of the described lands to contain and remove such contamination, at its sole cost and expense. If the Permittee fails to undertake such remediation or to diligently complete such remediation, the Ministry may undertake such remediation on the Permittee's behalf, at the expense of the Permittee.
8. The Permittee shall deliver to the Ministry a completed occupier's self-reporting form with accompanying photographs from time to time on request of the Ministry, depicting the then-current state of the described lands.
9. The Ministry may inspect the described lands from time to time for the purpose of ascertaining compliance with Sections 4, 5, 6 and 7 of this Land Use Permit. The Ministry may issue a notice of repair and maintenance to the Permittee. The Permittee shall immediately undertake all repairs and maintenance outlined in such notice. If the Permittee fails to undertake such repairs and maintenance or to diligently complete such repairs and maintenance, the Ministry may undertake such repairs and maintenance on the Permittee's behalf, at the expense of the Permittee.
10. Access to the described lands, and quality of that access, is strictly the responsibility of the Permittee.
11. If the term of this Land Use Permit is longer than one year, the Permittee will pay the fee shown in this Land Use Permit (which is subject to change if so indicated), concurrently with the signing and delivery of this Land Use Permit by the Permittee to the Ministry and thereafter by no later than each anniversary of the commencement of the term. If the fee is indicated as a one-time fee, the Permittee shall pay the fee shown in this Land Use Permit concurrently with signing and delivery of this Land Use Permit by the Permittee to the Ministry.
12. The Permittee shall be responsible for prompt payment of all real property and other taxes that may be levied against the described lands and the Permittee's use thereof (including payments that may be made by the Crown in lieu of such taxes).
13. The Permittee shall be responsible for all utilities consumed by the Permittee on the described lands and shall pay the cost of such utilities to the Ministry or directly to the applicable utility company, as the Ministry may direct.
14. The Permittee shall indemnify, defend, save and keep harmless the Crown, its officers, employees, elected officials, servants and agents from and against any and all claims, demands, suits, actions, damages, losses, costs or expenses arising out of any injury to persons (including death) and loss or damage to property, which may be or be alleged to be caused by or suffered as a result of or in any manner associated with: (a) the exercise of any right or privilege granted to the Permittee by this Land Use Permit; and (b) any act or omission of the Permittee or its invitees while on the described lands.
15. The Permittee shall keep a copy of this permit available at all times while on the described lands and shall produce it on demand to any Ministry official.
16. This Land Use Permit may not be assigned or transferred, mortgaged or pledged. If the Permittee is a corporation, the Permittee may not undergo any change of control. Sublicenses or other sharing of occupancy is prohibited. The Permittee shall notify the Ministry prior to any proposed sale or transfer of the improvements installed or made on or behalf of the Permittee on the described lands and the sale or transfer of such improvements shall not entitle the purchaser or transferee to an assignment of this Land Use Permit or the

issuance of a new land use permit.

17. This Land Use Permit and all rights of the Permittee shall automatically terminate on the earlier of:

- (a) the stated expiry date;
- (b) the death, bankruptcy or insolvency of the Permittee;
- (c) if the Permittee is a corporation, on the winding up or dissolution of the Permittee.

The Permittee shall not be entitled to a refund of any fees paid by the Permittee in such circumstances.

18. Without limiting the Ministry's other rights in the Land Use Permit or at law, the Ministry may terminate the Land Use Permit upon 15 days' notice to the Permittee (or such longer period as may be provided by the Ministry in its sole discretion), where:

- (a) the Permittee has failed to comply with any of the terms and conditions of this Permit and such failure is not rectified within the notice period provided by the Ministry; or
- (b) the Ministry considers it to be in the public interest to do so;

provided that where there are less than 15 days remaining in the term of the Land Use Permit, then the Ministry may terminate the Land Use Permit immediately on notice to the Permittee. The Permittee shall not be entitled to a refund of any fees paid by the Permittee in the circumstances described in Section 18(a), but shall be entitled to a proportionate refund in the circumstances described in Section 18(b).

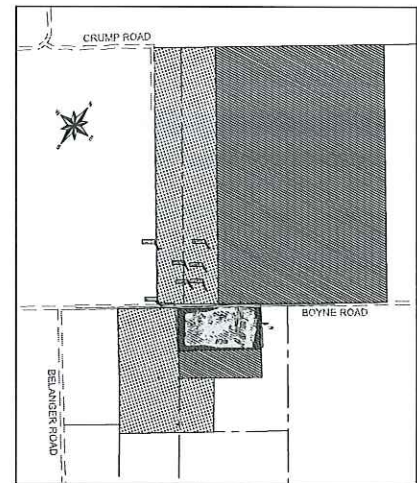
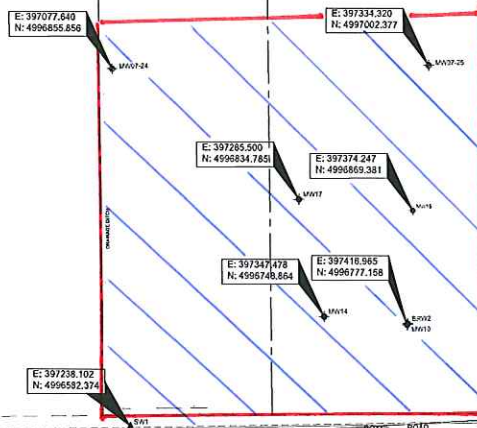
19. Upon termination of this Land Use Permit or prior to expiry of this Land Use Permit if the Permittee will be granted no further right to occupy the lands in question, the Permittee shall remove all improvements, property or other assets belonging to or installed by or on behalf of the Permittee on the described lands (including any signs or notices posted by the Permittee), at its sole cost and expense. The Permittee shall leave the described lands in a clean and safe condition, restored to its original state prior to the use of the described lands by the Permittee. The Permittee shall also promptly deliver to the Ministry a completed occupier's self-reporting form and accompanying photographs of the described lands evidencing the completion of such obligations. Any improvements, property or assets remaining on the described lands following expiry or termination of the Land Use Permit may be disposed of by the Ministry at the expense of the Permittee or, at the option of the Ministry, may be retained by the Ministry as the property of the Crown without compensation to the Permittee. If the Permittee fails to leave the described lands in a clean and safe condition, restored to its original state, the Ministry may undertake such work as is necessary to restore the lands to the required condition, at the cost and expense of the Permittee.

20. The Permittee acknowledges and agrees that:

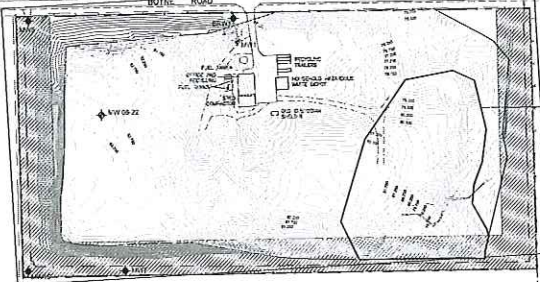
- (a) upon expiry or earlier termination of the Land Use Permit, the decision to issue a new permit is at the sole discretion of the Ministry, and the Permittee has no right to, nor reasonable expectation for, the issuance of a new permit based on prior use of the described lands;
- (b) the successive issuance of any permit or permits for the use of the described lands will not create any future rights or interests whatsoever in the land;
- (c) the making of any improvements to or on the described lands (whether or not permitted by the Ministry) will not confer upon the Permittee any right to use the described lands other than within the terms of this permit, nor will it give the Permittee any right to an expectation of future permits;
- (d) there are no other representations, warranties or conditions between the Crown and the Permittee, for the use of the described lands or that the described lands are fit for the Permittee's intended or permitted purpose;
- (e) this Land Use Permit does not convey any right, title or interest in the described lands and is a Land Use Permit only;
- (f) this Land Use Permit does not convey any right, title or interest in any trees standing, growing or being on the described lands, or in any minerals, sand, gravel or similar materials, in, on, or under the described lands. Use of any such materials, unless specifically authorized herein, must have separate written authorization from a Ministry Official.

21. The Permittee's obligations set forth in Sections 4, 5, 6, 7, 9, 11, 12, 13, 14 and 19 shall survive the expiry or earlier termination of the Land Use Permit.

22. This Permit is a record for the purposes of (and is subject to) the provisions of the Freedom of Information and Protection of Privacy Act.



OVERALL SITE PLAN
SCALE: 1:12,500



LEGEND

- ◆ APPROXIMATE BOREHOLE LOCATION IN PLAN, CURRENT INVESTIGATION BY GOLDBERG ASSOCIATES LTD.
- ◆ APPROXIMATE BOREHOLE LOCATION IN PLAN, PREVIOUS INVESTIGATION BY OTHERS
- ▲ APPROXIMATE SURFACE WATER SAMPLE LOCATION IN PLAN, PREVIOUS INVESTIGATION BY OTHERS
- APPROXIMATE CURRENT BOUNDARY OF LANDFILL SITE
- APPROXIMATE BOUNDARY OF CURRENT CONTAMINANT ATTENUATION ZONE
- ▨ APPROXIMATE LOCATION OF BUFFER ZONE
- APPROXIMATE LOCATION OF PERIMETER DRAIN
- FENCE
- GROUND SURFACE CONTOUR (m), JUNE 4, 2008 AND DECEMBER 2009
- ▨ APPROXIMATE BOUNDARIES OF PROPERTIES/EASEMENTS THE TOWNSHIP INTENDS TO ACQUIRE
- ▨ APPROXIMATE BOUNDARY OF PROPERTY CURRENTLY OWNED BY THE TOWNSHIP

REFERENCE

BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.

NOTE:

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING GOLDBERG ASSOCIATES LTD. REPORT No. 06-1122-127 Phase 07-6501
PROJECT IS IN GEO COORDINATE MTM NAD83.

DRAFT



FIGURE 2

PROJECT No.	06-1122-127
FILE No.	061122-127-02.dwg
DATE	15/09/2009
DESIGN	J.E.M.
CHECK	J.E.M.
APPROVED	J.E.M.

SITE PLAN

BOYNE ROAD LANDFILL
TOWNSHIP OF
NORTH DUNDAS

REV	DATE	DESCRIPTION	BY	CHK	APP
1	Feb. 2010	S.R. 2009 LANDFILL GROUNDWATER UPDATE	A.B.D.	M.W.C.	
2	Mar. 2009	J.L.R.F. 2008 LANDFILL GROUNDWATER UPDATE	J.E.M.	M.L.R.F.	P.A.S.
3	Dec. 2008	REVISION DESCRIPTION	CADD	CHK	RVP



APPENDIX B

MECP Correspondence



Boyne Road Waste Disposal Site
LOT:8, CONCESSION:7, GEOTOWNSHIP:WINCHESTER,
NORTH DUNDAS, ON,

Inspection Report

System Number: 5507-5XRPZN

Entity: THE CORPORATION OF THE
TOWNSHIP OF NORTH DUNDAS

Inspection Start Date: 09/22/2022

Inspection End Date: 12/29/2022

Inspected By: Erin League

Badge #: 1956



(signature)

NON-COMPLIANCE/NON-CONFORMANCE ITEMS

The following item(s) have been identified as non-compliance/non-conformance, based on a "No" response captured for a legislative or best management practice (BMP) question (s), respectively.

Question Group: Operations

Question ID	OOL 30	Question Type	Legislative
Question: At the time of inspection, there are no indications of inadequate waste management (no visible leachate seeping, no waste deposited illegally outside the landfill boundary, etc)?			
Legislative Requirement	EPA 27 (1);		
Observation/Corrective Action(s)			
Component Assessed: LANDFILL No There is a small area within the landfill that has some old soybean waste. This small area requires additional attention as the waste breaks down continually and can cause seeping. A long-term strategy to deal with this area is necessary, rather than responding as needed. By no later than March 31, 2023, the township shall provide a written workplan that outlines appropriate action that will be taken to address the issue long-term.			

INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

Ministry Program: WASTE | **Regulated Activity:** Landfills

Component Assessed: LANDFILL

Question ID	OOL 1	Question Type	Legislative
Question: Does the Open landfill site have an Environmental Compliance Approval (ECA)?			
Legislative Requirement	EPA 27 (1);		
Observation Yes The Site is approved under Environmental Compliance Approval (ECA) A482101. There are several notices associated with the ECA with additional terms and conditions for the Site's operation, most recently Notice No. 11, issued January 14, 2020, to accommodate continued landfilling operations.			

Question ID	OOL 2	Question Type	Legislative
Question: Are access roads and on-site roads provided so that vehicles hauling waste to and on the site may travel readily on any day under all normal weather conditions?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (1);		
Observation Yes At the time of the inspection, the access road and on-site roads were clear and readily available for users. There were no obstructions or road construction that made them unavailable for use.			

Question ID	OOL 3	Question Type	Legislative
Question: Is site access limited to times when an attendant is on duty?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (2);		
Observation Yes The Site is only accessed when the site attendant unlocks the front gate during operating hours and is on duty. During non-operating hours, the Site is secured with a			

perimeter fence and gated access point.

Question ID	OOL 4	Question Type	Legislative
Question: Does the site only receive waste from within its approved service area?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (2);		
Observation Yes At the time of the inspection, Township staff confirmed that solid non-hazardous waste from the Township of North Dundas is disposed of within the landfill. The ECA states "the landfill site may serve the areas of the Township of Winchester, the Village of Winchester and the Village of Chesterville." Since the issuance of the ECA, the Township was formed in 1998 by the amalgamation of the former Townships of Winchester and Mountain, as well as the Villages of Winchester and Chesterville. This includes curbside pickup and independent residents visiting the landfill. Visitors are requested to provide confirmation of residency within the municipality. Notice No. 2 of the ECA (October 1995) adds conditions 10 and 11 to the ECA for the operation of a municipal waste recycling facility (transfer/processing station) that services the Township of Winchester; the Village of Winchester; the Village of Chesterville; the United Counties of Stormont, Dundas and Glengarry; Grenville County; the Township of Russell and the Township of Osgoode.			

Question ID	OOL 5	Question Type	Information
Question: Is the landfill required to take and test monitoring well samples to determine the quality of the ground water?			
Legislative Requirement	Not Applicable		
Observation Yes Condition 6 of the ECA (December 1989) states the Township shall submit for approval a detailed program for monitoring surface and groundwater including leachate movement, to the Director, by November 30, 1990. Notice No. 6 to the ECA (July 2015) introduces the addition of more specific environmental control and monitoring conditions. Condition 5.2 states that the Township shall ensure by means of a water monitoring program, that the Site shall be in compliance with the Ministry's Reasonable Use Guideline (Guideline B-7) for groundwater, and the Provincial Water Quality Objectives (PWQO) for surface water.			

Question ID	OOL 7	Question Type	Legislative
Question:			
Is the ministry satisfied with the groundwater monitoring program at the site?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (7);		
Observation			
<p>Yes Monitoring reports are submitted annually to the ministry for review, as per Condition 7 of Notice No. 6 (July 2015) of the ECA. The 2021 annual monitoring report was not sent to TSS for detailed review, however the Site is currently going through the Environmental Assessment (EA) Study process and as such, submitted a Draft EA report for ministry review in May 2022.</p> <p>The Draft EA was reviewed by Technical Support Section (TSS) Groundwater Unit with reference to the comments on the Terms of Reference provided by Shawn Trimper and dated September 5, 2019. The TSS review is detailed in Appendix A of this Inspection Report.</p> <p>Overall, the TSS reviewer does not have any objections to the expansion of the landfill and agrees that the impact assessment on the expansion is acceptable. However, there are comments specific to further assessment and appropriate monitoring and contingency plans being required to protect municipal drinking water supplies and regionally significant aquifers.</p> <p>Comments related to the EA are coordinated with the EA Project Officer and have been provided to the Township of North Dundas for appropriate review and response, as per EA processes.</p>			

Question ID	OOL 8	Question Type	Legislative
Question: Are the montoring wells maintained as required?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (7);		
Observation Yes At the time of the inspection, Township staff confirmed that the retained consultants access the monitoring wells as needed and if there are any issues or damages they will notify the Township to address appropriately.			

Question ID	OOL 12	Question Type	Information
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Question:	
Is the landfill required to manage landfill gas generated at the site?	
Legislative Requirement	Not Applicable
Observation	
<p>No The ECA does not require the collection, treatment and/or disposal of methane gas at the Site. However, there is a methane monitor within the recycling transfer/processing building. The monitor is serviced regularly and repaired and/or replaced as needed by Armstrong Monitoring located in Ottawa, ON.</p> <p>Gas meter measurements are taken by the consultant retained by the Township to carry out the technical components of the ECA (i.e., monitoring and reporting). Details are provided in the annual monitoring reports.</p>	

Question ID	OOL 15	Question Type	Legislative
Question:			
Is proper equipment available for the compaction of waste and applying cover material?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (9);		
Observation			
Yes The Township has a new piece of equipment (2020 Caterpillar) to compact waste and apply cover material, and is kept at the Site to be readily available.			

Question ID	OOL 17	Question Type	Legislative
Question:			
Are all disposal operations at the site adequately and continually supervised?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (12);		
Observation			
Yes Site attendants are present at the landfill during operating hours to assist residents visiting the landfill. Customers drive their vehicles to the designated waste drop off area and site attendants help unload the waste into this area to be later placed within the active waste footprint. This practice ensures that only employees of the landfill have access to the waste footprint and reduces traffic.			

Question ID	OOL 18	Question Type	Legislative
Question:			

Is the waste being compacted adequately?	
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (13);
Observation	
<p>Yes At the time of the inspection, Township staff confirmed that waste is compacted daily with their waste compactor equipment. At the time of the inspection, there weren't any indications that waste was not being compacted adequately. Specifically, the landfill has approximately one (1) year of its capacity and therefore adequate waste compaction is required to ensure there's no waste of space within the active footprint. Adequate compacting is also required to ensure the landfill can significantly limit mounding issues in the future.</p>	

Question ID	OOL 19	Question Type	Legislative
Question:			
Is the waste being covered at a reasonable frequency?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (13);		
Observation			
<p>Yes At the time of the inspection, Township staff confirmed that daily cover is applied as needed at the active waste footprint. The inspecting officer did notice that avian pests are present at the Site and the working face was large. To help reduce avian pests (i.e., gulls), sufficient daily cover to the active waste area should help reduce the amount of potential food sources to the pests.</p> <p>Condition 2 of the ECA (December 1989) requires waste to be deposited in an orderly manner in the fill area. All waste shall be compacted and covered with 15 centimeters of cover material on the exposed surfaces of the lifts when they reach a maximum of 2 meters in height by 10 meters in width or every two weeks, whichever comes first.</p> <p>The township mentioned that they are currently trying to use agricultural waste at the landfill for cover. Documentation of these operations is suggested to monitor whether it is acceptable or not (i.e., does it attract more pests, impact local surface water and/or leachate?) It is suggested that a description of cover operations is included in the annual monitoring reports.</p>			

Question ID	OOL 20	Question Type	Legislative
Question:			
Are procedures established to control rodents or other animals and insects at the site?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (14);		

Observation
<p>Yes The Township retains the services of EnviroGuard to attend the Site monthly. This is a pest control company and visits the Site to put control devices in place as needed.</p> <p>Condition 7 of the ECA (December 1989) states that a proper rodent control program shall be implemented by having bait set near the exposed waste at all times.</p>

Question ID	OOL 21	Question Type	Legislative
Question: Have procedures been implemented and maintained to ensure the prevention of accidents at the site?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (15);		
Observation Yes The Township has signage that guides traffic and has a procedure that allows residents to visit the landfill without having to access the waste footprint. This reduces traffic within the landfill.			

Question ID	OOL 22	Question Type	Legislative
Question: Is site access restricted by use of a gate, fence, or physical barrier when the site is not operating?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (16);		
Observation Yes The Site has restricted access by use of a fence and gate. The access gate is closed and locked when the Site isn't open for the public to visit. The Site's operating hours are posted at the entrance near the gate to notify visitors of operating hours.			

Question ID	OOL 23	Question Type	Legislative
Question: Is the waste disposal area adequately screened from public view?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (17);		
Observation Yes The landfill footprint is surrounded with mature tree lines and forest.			

Question ID	OOL 24	Question Type	Information
Question: Has any part of the fill area reached its limit of fill?			
Legislative Requirement		Not Applicable	
Observation Yes The 2015 Design and Operations Report was reviewed by the Ministry's Environmental Access and Permissions Branch (EAPB) and confirmed that the Site has exceeded its approved capacity. Since 2016, emergency notices have been issued under the ECA for continued landfilling until the Township of North Dundas can provide a long-term waste management strategy. Currently, instead of an expiry date, as issued in previous notices, the landfill can fill to 87.75 meters above mean sea level, as described in the 2013 Design and Operations Plan. This should provide the landfill with space until 2024.			

Question ID	OOL 25	Question Type	Legislative
Question: No waste has been disposed beyond the limit of the fill area			
Legislative Requirement	EPA 27 (1);		
Observation Yes At the time of the inspection, Township staff confirmed that waste flags are not in place within the active waste footprint, however they constructed a berm along the active waste face that measures to the maximum waste elevation as per Notice No. 11 (January 2020) of the ECA. This berm is used as a guide to ensure that waste is placed below to remain in compliance with the listed elevation in the ECA.			

Question ID	OOL 26	Question Type	Legislative
Question: Have abatement measures been put in place to address the fill area exceedence?			
Legislative Requirement	EPA 27 (1);		
Observation Yes As mentioned, there have been several notices issued under the ECA for the emergency continued use of landfilling at the Site. Notice No. 11 (January 2020) was			

issued with a maximum elevation instead of a compliance date. The Township is currently going through the EA process for future expansion.

Question ID	OOL 27	Question Type	Legislative
Question: Was final/interim cover applied to the fill area?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (18);		
Observation Yes The Township has interim cover in place at the west / south-west area of the waste footprint. Final contours and elevations are required prior to final cover placement. Details regarding the Site's cover operations should be included in the annual monitoring reports.			

Question ID	OOL 28	Question Type	Legislative
Question: Is the final/interim cover inspected at regular intervals that are adequate?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (18);		
Observation Yes The area with interim cover is inspected regularly but not daily. At the time of the inspection, it appeared that the area with interim cover was in sufficient condition and inspections seem to be conducted at a reasonable frequency.			

Question ID	OOL 30	Question Type	Legislative
Question: At the time of inspection, there are no indications of inadequate waste management (no visible leachate seeping, no waste deposited illegally outside the landfill boundary, etc)?			
Legislative Requirement	EPA 27 (1);		
Observation No There is a small area within the landfill that has some old soybean waste. This small area requires additional attention as the waste breaks down continually and can cause seeping. A long-term strategy to deal with this area is necessary, rather than responding as needed. By no later than March 31, 2023, the township shall provide a written workplan that outlines appropriate action that will be taken to address the issue long-term.			

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Question ID	OOL 29	Question Type	Legislative
Question: Have necessary actions been taken to maintain the integrity and continuity of the final/interim cover material?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (18);		
Observation Yes The Township receives cover material for the landfill from Badger Excavation as well as excess soils from local construction projects. The Township also receives farm waste from local grain facilities and are part of a working group with the United Counties of Stormont, Dundas and Glengarry (SDG) to help manage agricultural waste in the community. This is used as alternative interim cover.			

Question ID	OOL 31	Question Type	Legislative
Question: Is scavenging being prevented?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (19);		
Observation Yes During non-operating hours, the landfill is considered closed, and access is prohibited. Any scavenging that may occur is done illegally while the Site is closed. To help prevent scavenging, buildings are closed and locked (i.e., recyclables, electronic waste).			

Question ID	OOL 32	Question Type	Information
Question: Has a closure plan been submitted to the MECP?			
Legislative Requirement	Not Applicable		
Observation No The Township of North Dundas is currently undergoing the Environmental Assessment (EA) process to expand the landfill and extend its lifespan. The Township shall note for the future that, two (2) years prior to the anticipated end date of the landfill, a Closure Plan shall be submitted to the ministry for review and comment before implementation of landfill closure.			

Question ID	OOL 34	Question Type	Legislative
Question: Has an annual operations report been submitted?			
Legislative Requirement	EPA 27 (1);		
Observation Yes Condition 7 of Notice No. 6 to the ECA requires an annual report by March 31 of each year. The annual report shall be prepared by a qualified professional engineer or geoscientist, covering the results of the Site operations, inspection/maintenance, and monitoring of the Site. Please refer to Condition 7.1 and 7.1(a) to 7.1(g) for the specific details that need to be included in the annual report. The 2021 annual monitoring report was submitted on March 31, 2022 as per the ECA.			

Question ID	OOL 35	Question Type	Legislative
Question: Is the ministry satisfied with the annual report submitted?			
Legislative Requirement	EPA 27 (1);		
Observation Yes The 2021 annual monitoring report was not submitted to Technical Support Section (TSS) for review. The last formal technical review was the 2020 annual monitoring report in 2021. Currently, the Site is going through the EA process which requires formal technical review.			

Question ID	OOL 37	Question Type	Information
Question: Is there an ECA condition requiring financial assurance?			
Legislative Requirement	Not Applicable		
Observation			
No			

Question ID	OOL 40	Question Type	Legislative
Question: Does the landfill have a procedure in place to address complaints?			

Legislative Requirement	EPA 27 (1);
Observation	
Yes The Township of North Dundas has a complaints procedure that allows residents to contact them about the landfill, as well as garbage and recycling services, and other services and programs offered by the municipality.	

Question ID	OOL 41	Question Type	Legislative
Question: Has the landfill operator addressed complaints to the satisfaction of the ministry?			
Legislative Requirement	EPA 27 (1);		
Observation			
Yes			

Question ID	OOL 42	Question Type	Legislative
Question: Is the landfill only accepting the types of waste that they are approved to receive?			
Legislative Requirement	EPA 27 (1);		
Observation Yes The landfill is approved to deposit domestic, commercial, and industrial solid non-hazardous waste. The Site is approved to receive hazardous waste, municipal recycling waste, appliances (i.e., "white goods") as well as operate a Waste Electrical and Electronic Equipment (WEEE) program. Waste that comes to the Site is inspected by attendants of the landfill to ensure it can be accepted and/or disposed of in the landfill, or diverted to other waste storage areas. At the time of the inspection, Township staff confirmed that the landfill mainly receives residential solid non-hazardous waste, as well as agricultural. No commercial or industrial solid non-hazardous is currently received at the landfill.			

Question ID	OOL 43	Question Type	Legislative
Question: Does the landfill have a waste refusal procedure in place to manage waste that arrives at the site that the site is not approved the accept?			
Legislative Requirement	EPA 27 (1);		

Observation
Yes Should landfill customers arrive with unapproved waste types, landfill attendants will turn them away and give directions to other local landfills that may accept the waste. Waste that is refused is not documented by site attendants.

Question ID	OOL 44	Question Type	Legislative
Question: is the waste refusal procedure being followed?			
Legislative Requirement	EPA 27 (1);		
Observation			
Yes			

Question ID	OOL 45	Question Type	Legislative
Question: Has the Certificate of Requirement been registered on Title?			
Legislative Requirement	EPA 27 (1);		
Observation			
Yes			

Question ID	949100	Question Type	Legislative
Question: Were the inspection questions sufficient to address other identified non-compliance items?			
Legislative Requirement	Not Applicable		
Observation			

Question ID	OOL 6	Question Type	Legislative
Question: Are monitoring well samples taken and tested to determine the quality of the groundwater?			
Legislative Requirement	EPA 27 (1); EPA R.R.O. 1990, Reg. 347 11 (7);		

Observation

Yes Groundwater monitoring wells form part of the monitoring program at the Site and therefore samples are collected from monitoring wells to determine the quality of groundwater. Sampling of groundwater quality at the Site is conducted twice annually and reported annually and includes the analysis of general chemistry, metals, and volatile organic compounds.

In addition to the current ECA and its monitoring and reporting conditions for groundwater impacts, the Site is also undergoing the Environmental Assessment (EA) process and submitted a study for review and comment. The EA is for a proposed expansion of the Boyne Road Landfill to provide an additional 25 years of capacity and provide waste management to the Township of North Dundas.

Appendix A

**Technical Support Section Memorandum, dated June 20, 2022 and authored by
Thomas Guo, Hydrogeologist**

**Ministry of the
Environment,
Conservation and Parks**
Eastern Region
1259 Gardiners Road, Unit 3
Kingston ON K7P 3J6
Phone: 613.549.4000
or 1.800.267.0974

**Ministère de l'Environnement,
de la Protection de la nature
et des Parcs**
Région de l'Est
1259, rue Gardiners, unité 3
Kingston (Ontario) K7P 3J6
Tél: 613 549-4000
ou 1 800 267-0974



MEMORANDUM

June 20, 2022

TO: Erin League
Sr. Environmental Officer
Cornwall Area Office
Eastern Region

FROM: Thomas Guo
Hydrogeologist
Technical Support Section
Eastern Region

RE: Environmental Assessment (EA)
The Township of North Dundas Waste Management Plan
United Counties of Stormont, Dundas and Glengarry, ON

I have reviewed the following documents:

- “Environmental Assessment of the Township of North Dundas Waste Management Plan, Notice of Draft Environmental Assessment Study Report”, jointly issued by the Township of North Dundas and Golder, and dated May 27, 2022;
- “Volume 1 – Environmental Assessment of the Township of North Dundas Waste Management Plan”, prepared by Golder and dated May 2022, which contains EA Study Report;
- “Volume 2 – Appendices, Environmental Assessment of the Township of North Dundas Waste Management Plan”, prepared by Golder and dated May 2022, which includes following appendices:
 - Appendix A – Approved Terms of Reference
 - Appendix B – Air Quality and Odour
 - Appendix C – Noise
 - Appendix D – Geology, Hydrogeology, and Geotechnical
 - Appendix E – Surface Water
 - Appendix F – Biology
 - Appendix G – Cultural Heritage
 - Appendix H – Traffic;
- “Volume 3 – Supporting Documents, Environmental Assessment of the Township of North Dundas Waste Management Plan”, prepared by Golder and dated May 2022, which contains:
 - Appendix I – New Landfill Site Selection Assessment
 - Appendix J – Waste Diversion Study

- “Volume 4 – Record of Consultation, Environmental Assessment of the Township of North Dundas Waste Management Plan”, prepared by Golder and dated May 2022

With reference to the comments on the Terms of Reference provided by Shawn Trimper and dated September 5, 2019, I provide the following comments for your consideration from groundwater perspective.

Background

The Township is seeking to accommodate disposal of waste corresponding to the consumption of approximately 417,700 m³ of waste landfill disposal from 2023 to 2048, as its existing Boyne Road Landfill is currently at capacity. The EA Study evaluated long-term solid waste management options to achieve this objective and has identified increased diversion and expansion of the existing Boyne Road Landfill as the preferred alternative.

The Boyne Road Waste Disposal Site (WDS) has been in operation since 1965 and is the only operational WDS in the Township of North Dundas. The site receives all residential and some of the industrial, commercial and institutional waste generated in the Township. The site is approved for the operation of an 8.1 hectare fill area within a total site area of approximately 97.13 hectares by Environmental Compliance Approval (ECA) No. A482101 and has an approved volumetric capacity of 395,000 m³. During 2014, it was recognised that the site was in an overfill situation and at the end of 2014 the volume of waste in place was estimated to be approximately 533,780 m³, representing an overfill of approximately 139,000 m³. Since this time annual extensions have been approved through the ECA which are intended to allow the site to continue to operate until a suitable waste management strategy can be determined and implemented.

In addition to the landfill property, the Township has acquired groundwater easements, referred to as Contamination Attenuation Zones (CAZs). The existing landfill site is a natural attenuation landfill, without an engineered bottom liner and leachate collection system.

Approved Terms of Reference (TOR)

The approved TOR provides the framework for the completion of EA, which evaluates the waste management alternatives and determines a preferred option for the management of waste generated within the township over the next 25 years. Those waste management alternatives to be considered are:

- site closure and exportation of waste;
- expansion of the existing site;
- develop a new waste disposal site at an other location;
- alternative waste management technologies (i.e. energy from waste);
- enhanced waste diversion; and,
- do nothing (a required benchmark of the EA process)

Once a preferred waste management alternative is identified alternative methods (i.e. alternative methods and configurations with respect to the selected alternative) are to be identified and assessed. The TOR provides high-level commitments to be completed and provided in the EA Report. The workplans related to the commitments will be provided to relevant agencies and parties throughout the process of planning and completing the commitments.

Site Settings of Boyne Road WDS

The Boyne Road Landfill is located on Lot 8, Concession VI in the former Township of Winchester, along the south side of Boyne Road about 2 km east of the Village of Winchester, which is approximately mid-way between the two main population centres within the Township – the Villages of Winchester and Chesterville.

The surface water Site-vicinity Study Area is located in a rural agricultural area of flat to undulating farmland. Drainage in this area is via a network of constructed municipal drains, primarily the Volks Municipal Drain and the Quart Municipal Drain (historically known as the Irving-Quart Drain or Irving Drain). The area directly east and south of the existing landfill mound is forested with a shallow groundwater level.

Geology

The geology at Boyne Road WDS is determined to be:

- A topsoil/peat unit (between 0 and 2 m in thickness);
- A silt/clay unit at surface or underlying topsoil/peat where present (generally between 0 and 3 m in thickness);
- A silty sand/sandy silt till (between 0.9 and 6.0 m in thickness); and
- Bedrock, consisting of limestone (interbedded with shale), has been encountered at between 1.4 and 11.6 mbgs.

Hydrogeology

The physical hydrogeology is determined to be:

- Overburden aquifer
 - The glacial till has a higher hydraulic conductivity than the marine clays; it is perhaps only capable of providing adequate well yields for an individual water supply in very localized areas;
 - The groundwater flow direction is expected to be north, toward the East Castor River;
 - The geometric mean of hydraulic conductivity is 3×10^{-4} cm/s;
 - The horizontal hydraulic gradient is typically measured at approximately 0.005 m/m; and
 - The average linear groundwater velocity in the vicinity of the waste mound is estimated to be about 1 m/yr. and has ranged between 0.9 and 45 m/yr. (as measured between 2007 and 2020) but is typically within the range of 1 – 4 m/yr.

- Bedrock aquifer
 - Bedrock aquifers occurs along and through fractures and bedding plane features (secondary porosity). The contact zone between the upper weathered bedrock surface and the overburden materials (basal till) has an enhanced permeability and thus has a higher hydraulic conductivity than the lower, more massive bedrock;
 - The bedrock aquifers are considered mostly to be confined/semi-confined;
 - Groundwater flow directions in the bedrock have been observed to vary historically - to the south in the area immediately south of the landfill site; and to the north, further south of the landfill site;
 - Horizontal gradients in the bedrock have historically been weak and variable in direction; and
 - The hydraulic conductivity in bedrock aquifer ranges from $1 - 3 \times 10^{-5}$ cm/s.

Groundwater Quality and Leachate Indicators

Monitoring wells MW13 and BR07-26 in Boyne Road WDS have been established as representative of background water quality in the overburden and the bedrock, respectively. Monitoring well MW06-22 and the replacement well MW06-22R are screened in the silty sand unit immediately below the waste mound and have been used as indicators of leachate strength at the landfill site.

Based on a comparison of background groundwater quality, leachate quality and mobility of the leachate parameters, leachate indicator parameters (LIPs) for the landfill site are alkalinity, aluminum, ammonia, barium, biological oxygen demand (BOD), boron, chloride, cobalt, conductivity, dissolved organic carbon (DOC), hardness, iron, manganese, phenols, potassium, sodium, and total dissolved solids (TDS).

The 2020 Monitoring Results

Sampling of groundwater quality at the Boyne Road Landfill site is conducted twice annually and reported annually and includes the analysis of general chemistry, metals, and volatile organic compounds.

The summary of the 2020 groundwater assessment is as follows:

- To the west of the landfill site, landfill leachate impacts have been delineated, with monitoring well MW07-23 interpreted to be potentially impacted leachate;
- To the south of the landfill site, landfill leachate impacts have been delineated with MW06-20 interpreted to be potentially impacted and BRW15-3 interpreted to be not impacted by landfill leachate;
- To the north of the landfill site, landfill leachate impacts have been delineated. Monitoring wells at the northern extent of the monitoring network have been interpreted to not be impacted by landfill leachate (MW07-24, MW16-1A, MW16-1B, MW16-3A, MW16-3B and MW16-3C);
- Concentrations of leachate indicator parameters at each monitoring location have been generally consistent for the last several years with the exception of increasing trends in the concentrations of several parameters at MW1, MW5, MW16, BRW1-B, and BRW2, all of which are located on the landfill Site Study Area or within the buffer/CAZ in areas relatively close to the waste footprint; and,

- Within locations monitored in the bedrock there is limited leachate impact except at BRW2 and BRW3, which are located within 100 m of the waste footprint and are interpreted to be impacted by landfill leachate.

Golder states that the existing landfill is in compliance with the Reasonable Use Guideline B-7 (RUG) based on current assessment of the groundwater program.

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Sampling Results

As requested by Mr. Trimper, Groundwater samples were collected for the analysis of PFAS compounds in August 2021. Groundwater samples were obtained at five locations: MW06-22R, MW07-23, MW06-20, MW07-25, and MW4. These locations were selected to characterize PFAS quality in the source leachate (MW06-22R), in the vicinity of the snow storage facility (MW4), and to check for the presence of downgradient PFAS in the north, west, and south directions from the waste footprint (MW07-25, MW07-23 and MW06-20, respectively).

Multiple PFAS compounds were detected in leachate quality well MW06-22R. The sum of the select PFAS compound concentrations in this sample is 1423.8 ng/L. No PFAS compounds were detected in the samples collected at MW4 and MW06-20. Trace PFAS compounds were detected at MW07-23 and MW07-25; the groundwater samples from these locations had a summation of select PFAS compound concentrations of 0.45 ng/L and 20.62 ng/L, respectively.

With the exception of the leachate quality well, all locations reported sums of select PFAS compound concentrations below the MECP suggested drinking water value of 70 ng/L. This indicates that, where present, PFAS compounds are in the groundwater in the immediate vicinity of the waste mound and not migrating in downgradient directions on-site or off-site at concentrations of potential concern to off-site groundwater users.

Groundwater Supply and Source Water Protection

The North Dundas Drinking Water System (System) supplies treated water to Winchester and Chesterville. The System derives its water supply from three communal wells completed in bedrock within and to the west of Winchester (Winchester Wells No. 1, 5 and 6), and two well fields completed in overburden sediments, comprised of three communal wells (Winchester Wells No. 7a, 7b, and 7c) and two communal wells (Chesterville Wells No. 5 and 6).

The Boyne Road Landfill exists within the existing WHPA-D of the Chesterville wellfield with a vulnerability score of 4. The current Source Protection Plan (SNC and RRC, 2016a) for the Chesterville wellfield indicates that the provincial policies concerning waste only apply to WHPAs A and B and portions of WHPA-C for which the vulnerability score is 8 or higher.

Golder concludes that the Boyne Road WDS is not interpreted to be having an impact on the Winchester, Chesterville, or nearby residential wells due to its location within the geological setting, the local hydrogeology and its remote location from residents.

Impact Assessment of the Preferred Undertaking – Boyne Road WDS Expansion

In order to assess the impacts to groundwater, Golder chose chloride and boron as the conservative and mobile leachate indicators.

One-dimensional contaminant transport calculations were completed to provide an assessment of contaminant transport based on the available data for the existing landfill.

Based on the calculation, chloride and boron concentrations are expected to meet RUG limits at 700 m downgradient from the fill area (for the northward and southward groundwater flow pathways) for the proposed landfill expansion. As such, to achieve compliance with the RUG limits in future, it will be necessary for the Township in future to obtain control over an additional 400 m of groundwater travel distance towards the south as CAZ through either property acquisition or groundwater easement below this land area.

It is anticipated that chloride concentrations in the leachate beneath the landfill expansion will be below the RUG limits at approximately year of 2070 or 22 years post closure.

Groundwater Monitoring Program

For the proposed landfill expansion, the continued objectives of the groundwater monitoring program are to monitor the quality of leachate and groundwater to determine the extent and degree of leachate effects on groundwater quality and assess site compliance with the RUG.

Golder proposed the following groundwater monitoring:

- Existing monitoring wells MW7, MW12, BRW3, MW15-1 and 15-2 are within or immediately adjacent to the proposed expansion. These monitoring wells will need to be decommissioned.
- Monitoring Locations: MW1, MW4, MW5, MW9, MW13, MW14, MW16, MW17, MW18, MW19, BRW1-A, BRW1-B, BRW1-C, BRW2, MW06-20, MW06-21, MW06-22R, MW07-23, MW07-24, MW07-25, BRW07-26, BRW15-3, BRW16-1A, MW16-1B, MW16-2, BRW16-3A, MW16-3B, MW16-3C, BRW22-A, MW22-B
- Monitoring Frequency: Spring, Late Summer
- Field Measured Parameters: groundwater levels at all accessible monitoring wells, temperature, conductivity, pH
- Analytical Parameters: potassium, boron, iron, manganese, barium, aluminum, cadmium, chromium, cobalt, lead, zinc, TDS, alkalinity, sulphate, sodium, nitrate, chloride, BOD, DOC, ammonia, dissolved reactive phosphorous (DRP), phenols, hardness (calculated from laboratory calcium and magnesium analysis), copper, nickel; VOCs (at MW06-22R, MW1, MW4, MW5, and MW16 only)

Groundwater Contingency Measures

Should the ongoing groundwater monitoring program at any of the Compliance Evaluation Monitoring Wells define the existence of, or potential for, unacceptable impacts on groundwater quality beyond the CAZ boundaries, the Township will prepare and present a mitigation plan for the approval of the MECP Director and/or the District Manager. Contingency actions to be taken by the Township to prevent or remediate the off-property impacts could consist of:

- Delineation of the extent of the leachate impact on groundwater, and acquisition of additional CAZ land to bring the site into compliance with the RUG;
- Gaining control over the contaminated groundwater to bring the site into compliance; and,

- Developing and implementing groundwater control/treatment measures (for example, a groundwater interceptor trench in overburden or purge wells in bedrock) to bring the site into compliance with the RUG.

Conclusions and Recommendations

- The EA was completed as per the approved TOR;
- I have no objections to the Preferred Undertaking – Boyne Road WDS Expansion;
- The impact assessment on Boyne Road WDS Expansion is acceptable;
- The site specific data indicate that leachate is not migrating toward the municipal wells, the risk posed to the municipal wells appears to be low; however, as mentioned by Mr. Trimper, further assessment and appropriate monitoring and contingency plans are required to ensure that municipal water supplies and regionally significant aquifers are not at risk;
- The groundwater monitoring program is acceptable. However, this program may be adjusted based on the annual monitoring results and the requirements to protect regionally significant aquifers. Additional monitoring wells are required if the new CAZ is established;
- As recommended by Mr. Trimper, the RUG assessments of relevant emerging contaminants associated with landfill leachate should be considered as part of the assessment. One such group of compounds is per- and poly-fluoroalkyl substances (PFAS). PFAS are environmentally persistent compounds that are routinely identified in municipal landfill leachates and pose a potential risk to the environment and human health and are also ideal tracers of landfill leachate;
- The groundwater contingency measures are acceptable. However, the corresponding trigger mechanism should be developed in the following annual report; and
- Reasonable Use Guideline B-7 (RUG) applies to Boyne Road WDS. An annual monitoring report should be prepared by a qualified person (P. Eng or P. Geo) to assess the compliance with the RUG. The report should be submitted to MECP for review.



Thomas Guo, M. Eng, P. Geo.
TG/

cc: Beth Gilbert, Surface Water Specialist
Jordan Hughes, Project Officer, Environment Assessment Branch
Jon Orpana, Regional Environmental Planner, Environment Assessment Branch
File No.: GW ST ND 03 06 C4 (Boyne Road WDS - ECA No. A482101)
TG/ECHO# 1-98117790

ec: Victor Castro, Water Resources Supervisor
Christina Klein, Technical Support Section Manager



MEETING SUMMARY

MECP Pre-Application Consultation Meeting ECA Applications for the Boyne Road Landfill Expansion Township of North Dundas, Ontario

Monday, June 19, 2023
10:30 a.m. – 12:00 p.m.
Teams Meeting

Attendees: Beth Gilbert, Surface Water Specialist, MECP Technical Support Section (TSS) Surface Water Unit, Beth.Gilbert@ontario.ca
Thomas Guo, Hydrogeologist, MECP TSS Ground Water Unit, Thomas.Guo@ontario.ca
Mohsen Keyvani, Manager, MECP Environmental Permissions Branch, Waste Approvals, Mohsen.Keyvani@ontario.ca
Rick Li, Senior Waste Engineer, MECP Environmental Permissions Branch, Waste Approvals, Rick.Li@ontario.ca
Aziz Ahmed, Manager, MECP Environmental Permissions Branch, Municipal Water and Wastewater, Aziz.Ahmed@ontario.ca
Fariha Pannu, Manager, MECP Environmental Permissions Branch, Industrial Wastewater, Fariha.Pannu@ontario.ca
Danielle Ward, Interim Director of Environmental Services, Drainage Superintendent, Township of North Dundas, dward@northdundas.com
Paul Smolkin, Senior Geo-environmental Engineer, WSP, Paul.Smolkin@wsp.com
Yannick Marcerou, Environmental Engineer, WSP, Yannick.Marcerou@wsp.com

Regrets: Erin Legue, Senior Environmental Officer, MECP Cornwall Area Office, Erin.Legue@ontario.ca
Jordan Hughes, Project Officer, MECP EA Services, EA Branch, Jordan.Hughes@ontario.ca

ACTION ITEMS SUMMARY

Item	Action Items Description	Responsibility
1.	WSP will look for past recommendation from Dale Gable to complete a leachate plume modelling for the expansion, as mentioned by Beth Gilbert of the MECP TSS. If the recommendation is confirmed, the adequacy of the leachate plume modelling completed and reported in the EA will be discussed with the TSS ahead of the submission of the ECA application package.	WSP
2.	A meeting will be set up through Erin Legue with the MECP reviewers from the TSS to summarize and address their technical recommendations or questions so they can be addressed/included in the ECA amendment application documentation.	WSP
3.	MECP EA Branch to confirm when they expect to release their review of the Final EA for comment and, for overall planning purposes, all going well, when the Township could reasonably expect that EA approval might be issued.	Jordan Hughes
4.	WSP to prepare summary of this pre-application meeting and circulate in draft to participants.	WSP



MEETING SUMMARY

MEETING SUMMARY

Agenda Items	
1.	<p>Introductions:</p> <p>MECP, Township and WSP representatives introduced themselves and their roles in the ECA approvals process.</p> <p>MECP TSS surface water and groundwater reviewers reviewed the technical aspects of the proposed expansion during the EA process. Beth Gilbert (surface water reviewer) indicated that the ECA application should address some of the technical concerns raised during the EA, including the differentiation between impacts on surface water quality from leachate generated by the landfill from those associated with road salt generated by the snow dump facility located across Boyne Road on the landfill buffer property. Thomas GUO (groundwater reviewer) indicated that he had no specific concerns from a groundwater perspective, noting that the required hydrogeological information needs to be provided in the ECA application package.</p> <p>Erin Legue (MECP Environmental Officer, Cornwall Area Office) and Jordan Hughes (Project Officer, EA Branch) had scheduling conflicts. Scott Wei (MECP Wastewater Engineer, Industrial Wastewater Team, Permissions Branch) declined to attend since representatives from the Municipal Water and Wastewater Team of Permissions Branch were already attending the meeting.</p>
2.	<p>Landfill Expansion Background & EA Approval Status:</p> <p>WSP provided some background about the site's historical over-capacity situation and the decision by the Township to pursue permitting for a landfill expansion with an individual EA. WSP described the proposed landfill expansion preliminary design (combination of mainly horizontal and minor vertical expansion areas, addition of landfill site buffer land to the east/southeast and Contaminant Attenuation Zone or CAZ to add to the site to the south).</p> <p>WSP indicated that the MECP EA Branch is currently preparing their review of the EA, which is expected may be released for public comment in the next month or so. If that is the case, EA approval expected to be received in early 2024. Jordan Hughes will need to be consulted to confirm.</p>
3.	<p>ECA Application Approach for Expansion:</p> <p>WSP indicated that two ECA applications were determined to be required:</p> <ul style="list-style-type: none">i) Part 5 EPA, ECA (Waste) amendment to ECA No. A482101ii) OWRA ECA (new) for the stormwater management (SWM) system <p>WSP confirmed that two ECA application packages would be submitted for review by the waste and wastewater teams at Permissions Branch.</p>

Agenda Items	
4.	<p>Confirm ECA Applications Approach & Supporting Document Requirements:</p> <ol style="list-style-type: none"> 1. WSP proposed the submission of ECA applications for technical review <u>prior to</u> receiving EA Approval. Mohsen Keyvani (Waste Approvals) confirmed that in view of the limited remaining site capacity the Township could submit ECA applications ahead of receiving EA approval and MECP will commence their review; however, the Township is taking on the risk that the final EA approval requires a design revision related to one or both ECA applications. He also clarified that Permissions Branch would not take a decision on the ECAs until EA approval is issued for the landfill expansion. 2. ECA (Waste) Amendment application and detailed design for first part of expansion (preparation and submission of an updated Design and Operations Plan, including a complaint response protocol and a phasing plan; confirm with TSS that submission of a new hydrogeology report is not required, since the hydrogeology associated with this site has been reviewed during the EA process). 3. New OWRA ECA application (preparation and submission of a SWM System Design Report and ECA-level design drawings for the SWM system and for the Volks Drain modifications). <p>Fariha Pannu (Industrial Water and Wastewater) asked WSP to clarify if the expansion is intended to have a liner and leachate collection system or continue to be operated as a natural attenuation site. WSP confirmed that the site is a natural attenuation site with leachate effects on groundwater attenuated within the property and CAZ boundaries. The site-setting allows for continued operations as a natural attenuation site for its expansion while achieving compliance with the MECP Reasonable Use Guideline at the boundaries (it is an acceptable design approach in Ontario).</p> <p>Thomas Guo (groundwater reviewer) confirmed that the proposed design would not pose a problem to TSS with regard to groundwater impacts. Although the submission would not require the preparation and review of a new hydrogeological report, it should still include the hydrogeological aspects presented in the EA, along with the rationale for the additional CAZ proposed for the expansion.</p>



MEETING SUMMARY

Agenda Items

MECP Technical Support Review:

MECP Permissions Branch requires Technical Support (hydrogeology and surface water) review and concurrence on the related portions of the applications, i.e., monitoring programs, trigger mechanisms, contingency measures, to be completed prior to submission of the ECA applications. Since the overall approach has been reviewed as part of EA process, WSP had proposed that Technical Support review be carried out concurrent with (not in advance of) the ECA applications.

Beth Gilbert indicated that a past recommendation from Dale Gable required leachate plume modelling to be completed. WSP representatives could not confirm it and indicated that they will review past comments to try to find this specific recommendation (see Action Item 1). She also raised the question of interactions between impacted groundwater and surface water in Volks Drain (located north of Boyne Road).

WSP confirmed that a groundwater impact assessment (including a groundwater flow model to assess compliance with the Reasonable Use Guideline and to determine CAZ required for the expansion) was completed, discussed and provided in the EA. The modelling showed impacted groundwater migrating north of the site; monitoring has shown some interaction at times with surface water in Volks Drain. These interactions are intended to be addressed with the isolation of surface water from groundwater in the section of the Volks Drain across the waste footprint (via the installation of a culvert or a lined ditch). Comments from South Nation Conservation pertained to the leachate plume and they have been addressed to their satisfaction.

5. Mohsen Keyvani (Waste Approvals) clarified that all interactions with TSS need to be addressed and resolved ahead of the submission of the ECA amendment application and conditions formulated by TSS need to be addressed or acknowledged in the application. The proposed expansion design review cannot start before concurrence from TSS is received. He also indicated that Permissions Branch would prioritize the review of the application if delays related to TSS interactions lead to limited remaining site life (the Township can request a prioritization in the application cover letter).

WSP clarified with TSS that the basis for discussion does not have to be the final version of the Design and Operation Report. TSS concerns could be addressed via direct communication (see Action Item 2).

Beth Gilbert listed some of the technical aspects raised in her memorandum dated July 4, 2022 and past comments from TSS groundwater reviewer Shawn Tripper about potential interactions of groundwater with fill material at the bottom of the horizontal expansion as well as in the perimeter ditch. A survey south of the site was recommended to be completed to evaluate potential interactions between surface water runoff and the proposed expansion waste footprint. PFAS monitoring in surface water was also recommended. She also asked if appropriate approvals were in place for the snow dump located across the road (potentially OWRA approval).

WSP indicated that the comments in the July 4, 2022 memorandum were responded to in the EA; a meeting will be set up in the coming weeks with the TSS to further discuss these comments.

Post-Meeting Note: WSP and the Township note that approvals pertaining to the operation of the snow dump are not part of the scope of these ECA applications and are a separate matter for the Township and Permissions Branch.

Agenda Items	
6.	<p>Consultation & Notification Requirements:</p> <ol style="list-style-type: none"> 1. This meeting is intended to be the pre-application consultation meeting for the EPA process. 2. Confirmation that the ECA amendment applications will not need to be posted on the Environmental Registry of Ontario (ERO). Mohsen Keyvani and Rick Li (Waste Approvals) confirmed that no ERO posting is required for municipalities and it was noted that an ERO posting was part of the extensive public consultation process completed during the EA. 3. Notification letters regarding the ECA applications for the expansion are intended to be provided by the Township to the neighbouring property owners as well as the Indigenous Communities with whom the Township consulted during the EA. The neighbours and FN should be directed to submit any comments or concerns to Mohsen Keyvani (MECP) as is standard procedure. 4. An ECA consultation summary is to be submitted with the ECA applications.
7.	<p>Estimated Remaining Capacity:</p> <ol style="list-style-type: none"> 1. Limited remaining capacity is available at the Site (1.5 to 2 years of landfilling from May 2023 at the current rate) based on the 2013 D&O design geometry approved in the ECA. 2. In some areas of the current footprint, waste elevations slightly exceed the current approved geometry while still being within the proposed design of the landfill expansion. 3. Discussed the possible need for an application to amend the site's ECA to allow continued landfilling during the EPA approvals process. Would the MECP be agreeable to allow continued landfilling operations by the Township within the currently approved footprint in a way such that 1) operations do not impact the additional expansion capacity approval requested for the 25-year planning period considered in the EA and 2) fill capacity used during the EPA approval process be deducted from the expansion design to be submitted for review and approval (to not exceed the total expanded landfill capacity considered in the EA)? <p>Mohsen Keyvani (Waste Approvals) indicated that the MECP will accommodate the Township with a specific approval if it is determined that the length of the ECA application process and required period to prepare the site for expansion could exceed the remaining approved site life. It was proposed to re-evaluate the estimated remaining length of the approval process when the site reaches less than 6 months of remaining capacity. The MECP did not express concerns with the possibility to authorize continued landfilling operations to service the Township residents while it pursues permits to expand the site.</p>



MEETING SUMMARY

Agenda Items	
8.	<p>Proposed Schedule:</p> <ol style="list-style-type: none">1. The Township expects to need to construct the initial portion of the horizontal expansion in the latter half of 2024, in the absence of an interim approval to continue landfilling by raising an area of the existing approved landfill footprint.2. The Township proposes to submit the ECA Application packages to the MECP Permissions Branch in the fall of 2023 (tentatively October) with ECA approvals (including review and approval of detailed design) to be in place by the middle of 2024 to be able to tender the work associated with the initial part of the horizontal landfill expansion for construction in the latter part of 2024. The rationale for obtaining approvals by mid-2024 is to be able to tender and initiate construction of the facilities (including the base pad) required for the horizontal expansion before the Township can no longer operate within the current footprint. <p>Rick Li (Waste Approvals) asked if the site was in compliance with the Reasonable Use Guideline (groundwater) and surface water requirements. WSP confirmed that the site was currently operating in compliance with the MECP Reasonable Use Guideline and, at times, there were effects on surface water in Volks Drain that will be addressed in the design of the expansion to be proposed for approval.</p> <p>Mohsen Keyvani (Waste Approvals) reiterated that the Township was taking a risk by submitting ECA approvals ahead of receiving EA approval since the application may have to be revised. However, the MECP offered to support the Township with the necessary amendments to be issued to allow continued landfilling operations if such delays are encountered. WSP noted that, based on the comments received during the EA, significant changes to the expansion design are not anticipated.</p>



MEETING SUMMARY

MECP Technical Support Section Pre-Application Consultation Meeting

ECA Applications for the Boyne Road Landfill Expansion
Township of North Dundas, Ontario

Thursday, June 29, 2023
10:00 a.m. – 11:00 a.m.
Teams Meeting

Attendees: Beth Gilbert, Surface Water Specialist, MECP Technical Support Section (TSS) Surface Water Unit, Beth.Gilbert@ontario.ca
Thomas Guo, Hydrogeologist, MECP TSS Ground Water Unit, Thomas.Guo@ontario.ca
Erin Legue, Senior Environmental Officer, MECP Cornwall Area Office, Erin.Legue@ontario.ca
Danielle Ward, Interim Director of Environmental Services, Drainage Superintendent, Township of North Dundas, dward@northdundas.com
Paul Smolkin, Senior Geo-environmental Engineer, WSP, Paul.Smolkin@wsp.com
Yannick Marcerou, Environmental Engineer, WSP, Yannick.Marcerou@wsp.com

ACTION ITEMS SUMMARY

Item	Action Items Description	Responsibility
1.	Determine if the existing groundwater model presented in the EA is capable of completing the assessment related to potential effects of leachate-impacted groundwater seepage on surface water quality in the Volks Drain. Advise MECP of the findings.	WSP
2.	Preparation and submission of document package in August 2023 for MECP TSS review.	WSP
3.	Review of submission with the objective of reaching concurrence such that ECA applications can be submitted to Permissions Branch in October 2023.	MECP TSS



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1.	<p>Introductions:</p> <p>MECP, Township and WSP representatives introduced themselves and their roles in the ECA approvals process.</p> <p>This meeting fulfills Action Item 2 of the MECP Pre-application Meeting of June 19, 2023 where Permissions Branch requires TSS concurrence with the relevant aspects of the ECA applications to first be obtained and provided with the ECA application submission.</p>
2.	<p>Groundwater TSS Requirements</p> <p>i.) It was agreed that PFAS analysis in selected groundwater monitors would not be part of the regular annual groundwater monitoring program, but would be used, if increasing parameter trends or RUG trigger exceedances occur in future, as a tool to identify/differentiate groundwater impacts associated with landfill leachate from other possible sources. This will be described in the trigger mechanism in the updated D&O report for the expansion.</p> <p>ii.) It was agreed that the updated D&O report for the expansion would include a summary of the geology and hydrogeology; current status of site with respect to RUG compliance; results of modelling to assess RUG compliance and CAZ requirements associated with the expansion; estimated contaminating lifespan; groundwater monitoring, leachate indicator parameters for the site, trigger mechanism and contingency plan. Much of this will be taken directly from the EA documents.</p>

3.	<p>Surface Water TSS Requirements</p> <p>The discussion followed the comments on the EA made by the TSS surface water reviewer that were not fully resolved but are proposed to be resolved as part of the ECA application process. Each of the comments are provided below, together with the approach discussed for how these will be addressed in the documentation submitted to TSS for review, and once concurrence is reached subsequently in the ECA applications.</p> <ul style="list-style-type: none"> <p>Comment #2:</p> <p><i>The reviewer does not support the contingency plan to recirculate stormwater through the waste mound on a temporary basis. There is a high groundwater table in the area requiring imported fill to achieve minimum separation between the expansion area and the groundwater table. The site is a naturally attenuating unlined site with no leachate treatment or collection system. Re-circulating stormwater into the mound would be expected to produce additional leachate and subsequently additional impact on surface water quality. Additionally, the waste mound is not to be regarded as a treatment zone.</i></p> <p>Approach – it was proposed by WSP that temporary recirculation of stormwater through the waste mound could be done in the western portion of the existing landfill or in an area of the expanded footprint, distant from the SWM pond to avoid potential short-circuiting back into the SWM pond. Implementation of this short term contingency is not expected to have a measurable affect on leachate generation or on groundwater or surface water quality. It is proposed to discuss this proposed contingency with a Waste Engineer at Permissions Branch and TSS (groundwater and surface water) during the preparation of the documentation in support of the ECA applications. If acceptable, this contingency will be included in the documentation; if this is not an acceptable contingency approach, it will not be included. If temporary recirculation is a contingency approach acceptable to MECP (along with pumping out the pond and hauling the water off-site to the Township’s sewage lagoons), additional clarification and rationale to that provided in the EA will be proposed in the surface water contingency plan section of the D&O report.</p> <p>Comment #6:</p> <p><i>The response addressed the concern about routing stormwater runoff from off-site sources that flow onto the property around (not through) the waste mound by providing a commitment in Section 18 of the EA while noting this will be further assessed in the ECA-level and final design steps.</i></p> <p>Approach – the ECA-level design of stormwater management for the expansion will utilize the recently completed topographic mapping to assess surface drainage in the area adjacent to the expansion (including from off-site) and, if required, design the grading in the areas around the expansion such that runoff is directed away from the landfill footprint.</p>
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- Comment #12:

Several design details have been provided at the EA stage in relation to base elevations of proposed perimeter ditches, the proposed stormwater management pond (SWMP), and SWMP outlet elevation along with proposed perimeter ditch fill material. These design details will undergo technical and engineering review at the ECA stage to ensure potentially leachate impacted groundwater will not interact with the proposed stormwater management features for the site (proposed perimeter ditches and SMWP).

Approach – as described in the EA, the proposed toe ditch around the expansion area will be positioned on the bottom portion of the finished landfill sideslope; in this way it can convey surface runoff from the cover to the SWM pond and avoid potential collection of leachate-impacted groundwater (which would be possible at this site because of the high groundwater table if conventional toe ditches were provided below grade around the footprint). The preliminary design elevations for the SWMP pond were also determined to avoid potential interaction with leachate-impacted groundwater. This will be further considered and the proposed design shown on the ECA-level SWM design submission.

The design will also describe the management and direction of runoff from the landfill sideslopes during the operational phase, prior to final soil cover placement.

- Comment #14:

Since at least 2017, the annual reports have been comparing the trigger concentrations based on both a 75th percentile and an Upper Tolerance Limit statistic. The Upper Tolerance Limit trigger concentration appears to be less conservative in comparison to a 75th percentile approach.

Approach – This will be analysed as part of updating the trigger mechanism for the proposed expansion. The MECP note that they preferred to use the more conservative approach. Only one method of trigger evaluation will be proposed.

- Comment #15:

In Section 9.3.3 (Surface Water Quality) it is indicated that an UTL calculation using background surface water quality data at SW1 is used to evaluate if Policy 2 conditions exist. This should also indicate that annual monitoring reports also use a 75th percentile statistic to characterize background surface water quality data and evaluate impacts. It would be useful at the ECA pre-submission consultation stage to identify whether the two statistical methods result in differing Policy Status and/or increased risk to the environment.

Approach – this will be analysed as part of preparing the updated surface water monitoring and trigger mechanism for the proposed expansion and the effects of alternative methods of background quality determination on Policy Status of parameters of interest presented for MECP review.

- Comment #16:

The EA acknowledges that a detailed report will be required to demonstrate the proposed design will comply with O.Reg 232/98 during the ECA application process. Furthermore, at the ECA stage there will be a requirement to document that the proposed design will be able to meet surface water quality management goals in the receiver under the expansion scenario.

Approach – It was described by WSP that the design of the proposed expansion includes separation of surface water conveyance in the section of Volks Drain opposite the north side of the landfill from the potential seepage/discharge of leachate-impacted groundwater. This would be done by either a culvert or lined ditch. As such, assessment of landfill performance in terms of surface water impacts is expected to be limited to discharge from the SWMP to the Volks Drain, which will be subject to a SWMP monitoring program set out in the OWRA ECA. This will be described in the documentation in support of the ECA applications.

In addition, Beth asked if the groundwater model used to assess RUG compliance requirements for the expansion for boron and chloride as presented in the EA can be used to model the advance of the groundwater plume and changes in parameter concentrations over time so an assessment could be made of the groundwater plume in the area of the Volks Drain in the event that the proposed modifications to the Drain are not as effective as designed and leachate-impacted groundwater enters the Volks Drain. WSP staff on the call were not aware if the model had this capability but will find out; it was noted that to construct a new calibrated model to carry out this assessment would be expensive and time consuming, noting that if the above were to occur the potential effects on surface water quality in the Drain would depend on many factors including the seepage rate of leachate-impacted groundwater to the Drain, the quality of this groundwater and the quantity of flow in the Drain. MECF stated that they did not expect a new model to be developed to try to address this comment.

- Comment #17:

The lack of PFAS monitoring in the existing surface water monitoring program is a concern. PFAS compounds are commonly found in landfill leachates and are a good tool to distinguish between landfill leachate impacts and non-landfill sources. There are nearby sources of common leachate indicator parameters (e.g., road salting, snow storage facility, and agricultural operations). The reviewer does not support deferring PFAS monitoring in the surface water receiver until after the planned improvements in Volks Municipal Drain have taken place and have not demonstrated the expected improvement in surface water quality within the drain. Baseline concentrations of PFAS compounds in Volks Municipal Drain on the north side of Boyne Road will be needed to evaluate existing impacts on surface water quality and will also be useful to track any expected improvements in surface water quality in future because of planned improvements to Volks Municipal Drain. Without baseline PFAS concentrations in Volks Municipal Drain, it is unlikely that improvements could be detected in surface water quality and/or attributed to



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the landfill and/or distinguished from other sources. This can be addressed during the next annual report review and/or during a future ECA application.

Approach – it was agreed that PFAS could be used to differentiate surface water quality effects due to landfill leachate effects from other possible sources, i.e., agricultural, road salt runoff, snow disposal site. It was agreed that to provide a baseline for future comparison, PFAS analysis would be done for samples obtained from SW1, SW2 and SW3 for spring, summer and fall prior to constructing the modifications in Volks Drain, and then would be repeated again following the construction. PFAS analysis in surface water would be considered in future if needed to differentiate between potential sources of surface water quality impact. This will be described in the surface water monitoring program and trigger mechanism in the supporting documents for the expansion.

As requested by Beth, it was also agreed that during monitoring events the runoff/flow patterns from the snow disposal site relative to the Volks Drain surface water sampling stations would be observed and documented, and included in the annual report.

The TSS surface water reviewer also provided an additional comment after the meeting as follows:

It appears as though anthropogenic drainage features in the vicinity of the proposed expansion area had the effect of preventing flooding ('in part') historically. It remains unclear in reading the draft EA a) which area of land contributed to the possible historical flooding and b) if removal of the tile drains from the field to the south of the proposed expansion area would affect determination of the high groundwater table and/or depth of surface water in the natural wetland area where the expansion is proposed. Could additional information be provided on how these uncertainties can be addressed.

Proposed Approach / Response– The reason(s) for historical flooding in the area to be occupied by the proposed expansion is not known; however, the natural environment surveys completed for the EA concluded that the area of the proposed expansion had not experienced flooding in recent years. The flat lying topography on and in the area of the landfill site, together with limited drainage features, results in high groundwater levels. Considering the moderate hydraulic conductivity of the glacial till soils that underlie the site area, which are sometimes overlain by lower permeability silty clay soil, it is doubtful that removal of the tile drains from the fields south of the landfill site, if that were to occur sometime in future, would have a sufficient radius of influence in these soil conditions to cause the groundwater table to rise above the quite high level that currently exists and has existed for the approximately 30 years of groundwater monitoring at the site. Further work to address this comment is not proposed.

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4.	<p>Confirm Submission Requirements for TSS Review</p> <p>WSP will prepare a document package for TSS review, covering the overall groundwater and surface water aspects of the proposed expansion and including the specific items discussed in the meeting and described above. The document package will be based on the proposed expansion design presented in the EA, which is not expected to change much as a result of EA conditions of approval or as the design is advanced to the ECA level of detail. The submission to TSS will acknowledge that the proposed groundwater and surface water aspects are based on this design and if there are subsequent changes to the expansion design that affect the groundwater and surface water aspects presented, they will be reflected in the D&O plan submitted in support of the ECA applications.</p> <p>As part of the landfill expansion design, it is proposed to modify the section of Volks Drain opposite the landfill to prevent potential impacts of leachate-impacted groundwater on surface water quality in the Drain. The document to be prepared will also describe possible investigations to assess and determine the reason(s) the proposed modifications are not performing as expected; the need for such assessment would depend on the ongoing surface water monitoring program. Once the reason(s) are determined, the proposed approach to repair would be discussed with and approved by MECP.</p>
5.	<p>Proposed Schedule:</p> <p>WSP proposes to submit the above package to TSS for review in August 2023. Concurrence with TSS needs to be reached so that the ECA amendment applications can be submitted to Permissions Branch, which is to occur in the fall of 2023 (tentatively October) for ECAs to be issued by mid-2024.</p>

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MEMORANDUM

October 27, 2023

TO: Erin Legue
Sr. Environmental Officer
Cornwall Area Office
Eastern Region

FROM: Thomas Guo
Hydrogeologist
Technical Support Section
Eastern Region

RE: Groundwater and Surface Water Components of Landfill Design & Operations
Boyne Road Landfill Expansion
The Township of North Dundas
United Counties of Stormont, Dundas and Glengarry, ON

Environmental Compliance Approval No. A482101

I have reviewed the report entitled "Groundwater and Surface Water Components of Landfill Design & Operations, Boyne Road Landfill Expansion, Township of North Dundas, ON", prepared by WSP and dated August 2023 with Ref. 23594638.

The report is to present what will essentially be the groundwater and surface water components / section of the updated Design & Operations (D&O) report for the Boyne Road Landfill expansion when it is submitted in support of the ECA amendment application.

I offer the following comments for your consideration from groundwater perspective.

Background

The Environment Assessment (EA) for the Boyne Road Waste Disposal Site (WDS) expansion has been approved by MECP.

The current WDS has been in operation since 1965 and is the only operational WDS in the Township of North Dundas. The WDS operated under ECA No. A482101.

The site receives all residential and some of the industrial, commercial and institutional waste generated in the Township. The site is approved for the operation of an 8.1 hectare fill area within a total site area of approximately 97.13 hectares and has an approved volumetric capacity of 395,000 m³. During 2014, it was recognised that the site was in an overfill situation and at the end of 2014 the volume of waste in place was estimated to be approximately 533,780 m³, representing an overfill of approximately 139,000 m³.

In addition to the landfill property, the Township has acquired groundwater easements, referred to as Contamination Attenuation Zones (CAZs). The existing landfill site is a natural attenuation landfill, without an engineered bottom liner and leachate collection system.

Site Settings of Boyne Road WDS

The Boyne Road Landfill is located on Lot 8, Concession VI in the former Township of Winchester, along the south side of Boyne Road about 2 km east of the Village of Winchester, which is approximately mid-way between the two main population centres within the Township – the Villages of Winchester and Chesterville.

The surface water Site-vicinity Study Area is located in a rural agricultural area of flat to undulating farmland. Drainage in this area is via a network of constructed municipal drains, primarily the Volks Municipal Drain and the Quart Municipal Drain (historically known as the Irving-Quart Drain or Irving Drain). The area directly east and south of the existing landfill mound is forested with a shallow groundwater level.

Proposed WDS Expansion

For the proposed expansion, the vertical expansion above the approved top water contours is limited to the southern half of the current footprint, trying it with the horizontal expansion to the south where the majority of the additional disposal airspace will be achieved.

The horizontal expansion adds additional 3.8 ha of footprint, for a total landfill footprint 11.9 ha. The total expanded landfill capacity including the additional 417,700 m³ beyond 2023 provided by the expansion is 1,060,750 m³.

The landfill site property is currently 97.13 ha. It is proposed to add 16.21 ha of Township-owned property to the east and southeast to the landfill property, resulting in a proposed total WDS area of 113.3 ha.

Geology

The geology at Boyne Road WDS is determined to be:

- A topsoil/peat unit (between 0 and 2 m in thickness);
- A silt/clay unit at surface or underlying topsoil/peat where present (generally between 0 and 3 m in thickness);
- A silty sand/sandy silt till (between 0.9 and 6.0 m in thickness); and
- Bedrock, consisting of limestone (interbedded with shale), has been encountered at between 1.4 and 11.6 mbgs.

Hydrogeology

The physical hydrogeology is determined to be:

- Overburden aquifer
 - The glacial till has a higher hydraulic conductivity than the marine clays; it is perhaps only capable of providing adequate well yields for an individual water supply in very localized areas;
 - The groundwater flow direction is expected to be north, toward the East Castor River;

- The geometric mean of hydraulic conductivity is 3×10^{-4} cm/s;
- The horizontal hydraulic gradient is typically measured at approximately 0.005 m/m; and
- The average linear groundwater velocity in the vicinity of the waste mound is estimated to be about 1 m/yr. and has ranged between 0.9 and 45 m/yr. (as measured between 2007 and 2020) but is typically within the range of 1 – 4 m/yr.
- Bedrock aquifer
 - Bedrock aquifers occurs along and through fractures and bedding plane features (secondary porosity). The contact zone between the upper weathered bedrock surface and the overburden materials (basal till) has an enhanced permeability and thus has a higher hydraulic conductivity than the lower, more massive bedrock;
 - The bedrock aquifers are considered mostly to be confined/semi-confined;
 - Groundwater flow directions in the bedrock have been observed to vary historically - to the south in the area immediately south of the landfill site; and to the north, further south of the landfill site;
 - Horizontal gradients in the bedrock have historically been weak and variable in direction; and
 - The hydraulic conductivity in bedrock aquifer ranges from $1 - 3 \times 10^{-5}$ cm/s.

Groundwater Quality Assessment

Monitoring wells MW13 and BR07-26 in Boyne Road WDS have been established as representative of background water quality in the overburden and the bedrock, respectively. Monitoring well MW06-22 and the replacement well MW06-22R are screened in the silty sand unit immediately below the waste mound and have been used as indicators of leachate strength at the landfill site.

Based on a comparison of background groundwater quality, leachate quality and mobility of the leachate parameters, leachate indicator parameters (LIPs) for the landfill site are alkalinity, aluminum, ammonia, barium, biological oxygen demand (BOD), boron, chloride, cobalt, conductivity, dissolved organic carbon (DOC), hardness, iron, manganese, phenols, potassium, sodium, and total dissolved solids (TDS).

The existing landfill is assessed to be in compliance with the Reasonable Use Guideline B-7 (RUG) based on current the groundwater program.

Assessment of Potential Effects of Landfill Expansion on Groundwater Resources

WSP used two conservative and mobile leachate indicators – chloride and boron for site to model the contaminant transportation in the site.

The modelling predicts that it will be necessary for the Township in future to obtain control over an additional 400 m of groundwater travel distance towards the south as CAZ through either property acquisition or groundwater easement below this land area so as to achieve the compliance with the RUG.

Groundwater Monitoring Program

For the proposed landfill expansion, the continued objectives of the groundwater monitoring program are to monitor the quality of leachate and groundwater to determine the extent and degree of leachate effects on groundwater quality and assess site compliance with the RUG.

WSP proposed the following groundwater monitoring:

- Existing monitoring wells MW7, MW12, BRW3, MW15-1 and 15-2 are within or immediately adjacent to the proposed expansion. These monitoring wells will need to be decommissioned.
- Monitoring Locations: MW1, MW4, MW5, MW9, MW13, MW14, MW16, MW17, MW18, MW19, BRW1-A, BRW1-B, BRW1-C, BRW2, MW06-20, MW06-21, MW06-22R, MW07-23, MW07-24, MW07-25, BRW07-26, BRW15-3, BRW16-1A, MW16-1B, MW16-2, BRW16-3A, MW16-3B, MW16-3C, BRW22-A, MW22-B;
- Monitoring Frequency: Spring, Late Summer;
- Field Measured Parameters: groundwater levels at all accessible monitoring wells, temperature, conductivity, pH; and
- Analytical Parameters: potassium, boron, iron, manganese, barium, aluminum, cadmium, chromium, cobalt, lead, zinc, TDS, alkalinity, sulphate, sodium, nitrate, chloride, BOD, DOC, ammonia, dissolved reactive phosphorous (DRP), phenols, hardness (calculated from laboratory calcium and magnesium analysis), copper, nickel; VOCs (at MW06-22R, MW1, MW4, MW5, and MW16 only).

Groundwater Trigger Mechanism

WSP proposed the following Compliance Evaluation Parameters (CEPs) for the site:

- Barium, boron, chloride, DOC, iron, manganese, sodium and TDS.

As chloride, sodium, TDS and manganese may come from multi-sources, WSP proposed to differentiate CEPs into key and secondary groupings:

- Key CEPs: barium, boron, chloride, and sodium; and
- Secondary CEPs: alkalinity, DOC, iron, manganese, and TDS.

The Compliance Evaluation Monitoring Wells (CEMWs) for the site are the monitoring wells located closest to the downgradient property/CAZ boundaries as follows:

- Northern property boundary: MW07-24, BRW16-16-1A, MW16-1B, BRW16-3A, MW16-3B and MW16-3C;
- Western property boundary: MW07-23;
- Eastern boundary MW13 and BR07-26; and
- Southern property boundary: MW06-20, BRW15-3, BRW22-A and MW22-B.

WSP proposed that the Trigger concentration be the RUG limits calculated in accordance with Guideline B-7-1.

WSP proposed that the Contingency Plan be implemented when a Trigger Concentration at a CEMW has been exceeded during two consecutive monitoring sessions for two CEPs, provided that at least one of the CEPs is a Key CEP (i.e. barium, boron, chloride or sodium).

In order to determine whether implementation of an additional investigation program and/or the Contingency Plans is warranted, WSP proposed that a three-step be initiated:

Step 1

Assess whether or not non-compliance with the applicable Trigger Concentration is likely due to migration of the landfill leachate plume as a whole or whether it is partially or wholly explicable by other factors. This will be achieved by considering trends in parameter concentration at all relevant monitoring locations.

Step 2

Discuss the results of Step 1 among the Township and the MECO District Manager to decide whether implementation of an additional investigation program and/or the Contingency Plan s warranted.

Step 3

If the conclusion of Step 2 is affirmative, then the additional investigation program and/or the Contingency Plan would be formulated and would be implemented.

If triggered and considered an appropriated action, the additional investigation program could include PFAS analysis in selected groundwater monitors as a tool to identify / differentiated groundwater impacts associated with landfill leachate from other possible sources.

Groundwater Contingency Plan

According to the RUG, the owner of a waste disposal site is responsible for preventing unacceptable off-property groundwater impacts. WSP states that the 3 actions be proposed as a Contingency Plan in the event that the trigger mechanism has been exceeded at these monitoring wells;

- CEMWs BRW16-1A, MW16-1B, BRW16-3A, MW16-3B and MW16-3C are approximately 360 m upgradient of the closest downgradient boundaries of the CAZ or landfill property (to the north),
- The same is applicable for MW22-B and BRW22-A, which is located about 250 m upgradient of the closest downgradient property boundary and about 650 m upgradient of the additional CAZ to be added to the south, and for MW06-20 and BRW15-3 that are located about 400 m upgradient of the additional CAZ to be added to the south:

The 3 actions are:

- Installation of additional monitoring well(s) towards and /or at the closest downgradient boundary to the exceeding CEMW;
- Modification of the trigger mechanism to include the additional CEMW location(s); and
- Modification of the trigger mechanism to replace the exceeding CEMW with the additional monitoring well(s).

Should the ongoing groundwater monitoring program at any of the CEMWs define the existence of, or potential for, unacceptable impacts on groundwater quality beyond the CAZ boundaries, the Township will prepare and present a mitigation plan for the

approval of the MECP Director and/or the District Manager. Contingency actions to be taken by the Township to prevent or remediate the off-property impacts could consist of:

- Delineation of the extent of the leachate impact on groundwater, and acquisition of, or obtain a groundwater easement for, additional CAZ land to bring the site into compliance with the RUG; and
- Developing and implementing groundwater control/treatment measures (for example, a groundwater interceptor trench in overburden or purge wells in bedrock) to bring the site into compliance with the RUG.

Discussion

1. Trigger Concentration

RUG specifies the allowable concentrations of contaminants at the property boundaries. Once the concentrations of contaminants exceed the RUG limits, the site is in non-compliance status, which is not allowed. As such, the Trigger Concentration proposed by WSP is not acceptable. The Trigger Concentration should be 75% of the calculated RUG limits.

2. Compliance Evaluation Monitoring Wells (CEMWs) Subjection to the 3 Actions

I have checked each CEWS location that WSP proposed to be subjection to the 3 actions and found that:

- Monitoring wells BRW16-1A and MW16-1B are located close to the western property boundary;
- Monitoring wells MW06-20 and BRW15-3 are located near southern property boundary. The CAZ WSP mentioned to be added to the south of these two monitoring wells is to be acquired by the township in future.

As such, these 4 CEWMs should not be subjection to the 3 actions and directly be used as CEMWs for the trigger mechanism.

Conclusions and Recommendations

- The proposed groundwater monitoring program is acceptable. However, this program may be adjusted based on the annual monitoring results and the requirements to protect regionally significant aquifers. Additional monitoring wells are required if the new CAZ is established;
- The trigger mechanism is acceptable provided:
 - The Trigger Concentration should be 75% of the calculated RUG limits for the Compliance Evaluation Parameters (CEPs);
 - Compliance Evaluation Monitoring Wells (CEWMs) BRW16-1A, MW16-1B, MW06-20 and BRW15-3 should not be subjection to the 3 actions in the Contingency Plan and directly be used as CEMWs for the trigger mechanism.
- The contingency Plan is acceptable; and
- The model used by WSP predicts that it will be necessary for the Township in future to obtain control over an additional 400 m of groundwater travel distance towards the south as CAZ through either property acquisition or groundwater easement below this land area so as to achieve the compliance with the RUG.



Thomas Guo, M. Eng, P. Geo.

TG/

cc: Beth Gilbert, Surface Water Specialist
File No.: GW ST ND 03 06 C4 (Boyne Road WDS - ECA No. A482101)
TG/ECHO# 1-236875447

ec: Victor Castro, Water Resources Supervisor
Christina Klein, Technical Support Section Manager

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Oct 30, 2023

TO: E. Legue
Senior Environmental Officer, Cornwall Area Office

FROM: B. Gilbert
Surface Water Specialist, Technical Support Section

RE: Boyne Road Waste Disposal Site
Lot 8, Concession 4, Former Township of Winchester
Township of North Dundas, United Counties of Stormont, Dundas and
Glengarry
Environmental Compliance Approval (ECA) No. A482101

As requested by you I have reviewed the following document:

1. Groundwater and Surface Water Components of Landfill Design and Operations, Boyne Road Landfill Expansion, Township of North Dundas, ON. Prepared by WSP Canada Inc. and dated August 2023.

My last correspondence to you on this site is dated July 4, 2022, relating to the Draft Environmental Assessment (EA). I participated in a teleconference on June 19, 2023, relating to pre-submission consultation for a Part V EPA (Environmental Protection Act) application to amend the ECA for the waste disposal site and an Ontario Water Resources Act (OWRA) application for a new stormwater management system for the site. A follow-up teleconference was held on June 24, 2023, to discuss the technical components that would be presented for review during the pre-submission consultation (PSC) process for the ECA and OWRA approvals.

I have reviewed the groundwater comments on the above noted report dated October 27, 2023.

Report Summary

WSP reports the following information pertinent to the approvals process and surface water aspects of the waste disposal site expansion proposal. This summary is followed by my comments.

- The purpose of the report is to present what be the groundwater and surface water components of the updated Design & Operations (D&O) report for the

Boyne Road LF expansion when it is submitted in support of the waste ECA amendment application.

- The report is being submitted for review by TSS groundwater and surface water, to obtain their concurrence prior to submission of the Waste ECA amendment application that is scheduled to take place in October 2023.
- It is acknowledged that the proposed groundwater and surface water aspects are based on the proposed EA expansion design. If there are subsequent changes to the expansion design that affect the groundwater and surface water aspects presented, they will be reflected in the D&O plan submitted in support of the ECA applications.

Stormwater Management:

- Drainage in the area adjacent to the expansion will be directed away from / around (not towards or through) the proposed expansion area base pad.
- The ECA-level design of stormwater management for the expansion will utilize the spring 2023 topographic mapping to assess surface drainage in the area adjacent to the expansion (including from off-site) and, if required, design the grading in the areas around the expansion such that runoff is directed away from the landfill footprint. The details will be provided in the ECA-level site design as part of ECA application documentation.
- The design will also describe the management and direction of runoff from the landfill side slopes during the operational phase, prior to final soil cover placement.
- Surface drainage from potentially contaminated areas, i.e., originating from active landfilling areas, will be contained locally within berms and will discharge into the waste. Surface drainage from non-contaminated areas such as road areas and areas with interim or final landfill cover will be conveyed to the SWM pond via the internal drainage ditches.
- During the continuing operations phase of the expanded landfill and post-closure, stormwater from the landfill will be collected by existing and proposed grass-lined ditches and will be directed to the stormwater management wetland.
- The proposed outlet structure for the pond has a sluice gate to allow emergency closure to assist in spill / leachate containment activities, if needed.

Surface Water Protection:

- As described in the EA, it is also proposed as a component of the expansion design to modify the Volks Drain opposite the landfill site frontage to isolate and convey surface water past the landfill and prevent potential seepage of leachate-impacted groundwater into the surface water in the ditch.
- Two options were considered for modification to this section of Volks Drain: a culvert and a geosynthetic lined ditch.
- It has been decided by the Township to proceed with the lined ditch option. The ECA-level design of this modification to the Volks Drain will be presented in the D&O report to be submitted in support of the ECA applications.
- The lined ditch option would consist of a low permeability liner system (60 mil linear low-density polyethylene (LLDPE) geomembrane liner) in the base and sides of the ditch to reduce the likelihood of potentially leachate-impacted groundwater seepage entering the Drain and also maintain fish passage and access to upstream habitats. The liner will be protected above and below using geotextile cushion fabrics and be covered with a layer of coarse clear crushed stone.

Background Surface Water Quality:

- An assessment of whether SW1 and/or SW4 are considered likely to have been impacted by landfill leachate was previously carried out and reported in the 2022 annual monitoring report. Radial flow from the fill area has been inferred from historical groundwater elevations, with primary groundwater flow components to the north and south, and weaker components to the west.
- Radial flow from the fill area would require approximately 240 years to reach surface water station SW4 or approximately 90 years to reach SW1. As such, it is reasonable to infer that SW4 and SW1 are not expected to be under the influence of radial groundwater flow from the fill area, and so the surface water quality at these locations is not affected by landfill leachate.
- Background surface water quality in the Volks Drain was assessed using both the UTL (Upper Tolerance Limit) and 75th percentile of the available data at SW1.
- Except for phenols, where the background values calculated by both methods are essentially the same, the values calculated using UTL are consistently higher than those calculated using the 75th percentile approach, by a factor of about 4 to 6 times.
- For the leachate indicator parameters with Provincial Water Quality Objective (PWQO) or Canadian Water Quality Guideline (CWQG), the use of the UTL to establish background parameter concentrations results in chloride, cobalt and

iron being Policy 2 parameters. The parameters dissolved oxygen, nitrate, total phosphorus and phenols may also be considered Policy 2.

- The use of the 75th percentile to establish background parameter concentrations results in only iron being a Policy 2 parameter. The parameters dissolved oxygen, nitrate, and total phosphorus may also be considered Policy 2.
- There are more exceedances of the assessment criteria using the 75th percentile approach. Although the use of the 75th percentile value as background is more conservative, it is noted that neither approach resulted in non-compliance with the existing Surface Water Trigger mechanism, which requires exceedance of the assessment criteria during three consecutive sampling sessions.
- The ongoing annual surface water monitoring program indicates that there are periodic impacts on surface water quality in the Volks Drain from the landfill leachate, either due to landfill site runoff or the seepage of leachate-impacted groundwater into the Volks Drain. The intent of the proposed modifications to the Volks Drain as part of the expanded landfill design is to eliminate the potential for leachate-impacted groundwater to the surface water in the Drain, which should result in fewer parameter concentration exceedances of background values along the section of Volks Drain opposite the landfill site.
- It is proposed to use the 75th percentile in calculating the background concentration and applying the assessment criteria for the expanded landfill.

Proposed Surface Water Monitoring Program:

- There are currently four surface water monitoring stations located within the drainage ditch (Volks Drain) along the north side of Boyne Road (on the opposite side of the road from the disposal area). SW1 and SW4 are located upstream of the landfill site, SW2 is located opposite the disposal area, and SW3 is located downstream of the landfill site. These sampling locations are proposed to continue for the expansion.
- A new sampling station, SW5, will be established at the end of the lined ditch section of the Volks Drain, which will be upstream from where the stormwater wetland discharges through a culvert under Boyne Road into Volks Drain.
- The proposed surface water monitoring program is summarized below:

Monitoring Locations: SW1, SW2, SW3, SW4, SW5 (shown on Figure 4-2)

Monitoring Frequency: Spring, Late Summer, Late Fall

Field Measured Parameters: temperature, conductivity, pH, dissolved oxygen, approximate flow rate.

Field Observations at Sampling Locations: natural environment conditions, i.e., vegetation, algae growth, litter/debris.

Laboratory Analytical Parameters: boron, iron (total and dissolved), manganese, barium, aluminum, cadmium, chromium, cobalt, lead, zinc, alkalinity, nitrate, nitrite, chloride, BOD, ammonia, total phosphorous, phenols, potassium, copper, nickel, sodium, sulfate, TDS, total suspended solids, chemical oxygen demand, DOC, total Kjeldahl nitrogen, hardness (calculated from laboratory calcium and magnesium analysis), unionized ammonia (calculated from ammonia and field temperature analysis).

- During monitoring events the runoff/flow patterns from the snow disposal site relative to the Volks Drain surface water sampling stations would be observed and documented; this information would be included in the annual monitoring report.
- In addition to the above parameters, Per- and polyfluoroalkyl substances (PFAS) could possibly be used in future to differentiate surface water quality effects due to landfill leachate effects from other possible sources, i.e., agricultural, road salt runoff, snow disposal site. To provide a baseline for future comparison, PFAS analysis would be done for samples obtained from SW1, SW2 and SW3 for spring, summer and fall prior to constructing the modifications in Volks Drain, and would be repeated following the completion of the modifications. PFAS analysis in surface water would be considered in future if needed to differentiate between potential sources of surface water quality impact.

Proposed Stormwater Monitoring Program:

- It is proposed for the expansion that a sampling location (SW6, refer to Figure 4-2) be added at the outfall for the stormwater management pond, and it be sampled four times per year after significant rainfall events, once in spring and fall and two other sampling events. The samples collected will be analyzed for the same field measured parameters and laboratory parameters as listed above for surface water.

Proposed Surface Water Trigger Mechanism:

Landfill Site:

- The 75th percentile values will be updated as additional background data is collected as part of the annual monitoring program. These limits will be used as background concentrations for comparison in the evaluation of Trigger Concentrations.

- *Compliance Evaluation Parameters* are leachate indicator parameters for which there are established PWQO: unionized ammonia, phenols, boron, cobalt and iron; or CWQG: chloride and boron.
- *Compliance Evaluation Locations* within the drainage ditch are: SW2 and SW5 (located opposite the disposal area) and SW3 (located downstream of the area of potential leachate or other site effects).
- The *Surface Water Trigger Concentration* is the PWQO or CWQG if a Policy 1 parameter and the Assessment Criteria if a Policy 2 parameter where that value is defined by the background concentration measured at SW1 during the same monitoring event, and the 75th percentile of historical background concentrations (as reported since 2001) at SW1.
- The *Contingency Plan* shall be implemented when a *Trigger Concentration* at a single *Compliance Evaluation Location* has been exceeded during three consecutive monitoring sessions.
- Any observed trigger of the *Contingency Plan* will be verified by re-sampling for the parameter(s) of concern within one month of the original sampling session at which non-compliance with the trigger was initially measured. If the exceedance is not confirmed by the follow-up sample (Confirmatory Monitoring Session), then the initial exceedance will be considered anomalous and will be discounted. Historical trends in surface water quality at the trigger location shall also be used to assess whether or not monitoring results are anomalous.
- Concurrent with the Confirmatory Monitoring Session will be the initiation of a three-step process for the purpose of determining whether implementation of an additional investigation program and/or the *Contingency Plan* is warranted.

Step 1: Assess whether the exceedance of the *Trigger Concentration* is likely due to the discharge of leachate-impacted groundwater into the Volks Drain or whether it is partially or wholly explicable by other factors. This will be achieved by re-sampling surface water locations SW1, SW2, SW5 and SW3 in the Volks Drain within 60 days of the exceedance of the *Trigger Concentration*. If the trigger is confirmed, the process will proceed to Step 2.

Step 2: Representatives of the Township and the MECP District Manager will discuss the results of Step 1 and Step 2 to decide whether implementation of an additional investigation program and/or the contingency plan is warranted.

Step 3: If the conclusion of Step 2 is affirmative, then the additional investigation program and/or the contingency plan would be implemented.

If triggered and considered an appropriate action, the additional investigation program could include PFAS analysis at selected surface water stations as a tool to identify/differentiate surface water impacts associated with landfill leachate from other possible sources.

Stormwater Pond:

- WSP expects that the Sewage Works ECA issued for the stormwater management wetland will have an effluent objective for total suspended solids; it is proposed that the limit be 25 mg/L.
- Total suspended solids will be the key trigger parameter used to assess performance of the pond.
- Monitoring results at SW6 will also be used to assess whether leachate impacts on pond discharge water quality are suspected. The proposed effluent objective parameters for assessment of leachate impact are unionized ammonia, boron and chloride, with proposed effluent objective concentrations at the PWQO or CWQG (0.02, 1.5 and 120 mg/L, respectively).
- If the monitoring at trigger location SW6 indicates that this total suspended solids objective is exceeded, or if leachate impacts are suspected based on the monitoring results and the Assessment Criteria are exceeded, a re-sampling of the pond discharge will be carried out within one month of the original sampling session at which non-compliance with the trigger or suspicion of leachate impact was initially reported. If the exceedance/suspicion is not confirmed by the follow-up sample, then the initial exceedance/suspicion will be considered anomalous and will be discounted. Historical trends in total suspended solids concentrations and overall water quality at the trigger location shall also be used to assess whether monitoring results are anomalous.
- If the total suspended solids exceedance or leachate impacts is confirmed, the contingency plan will be implemented.

Contingency Plans:

- WSP discussed the proposed surface water contingency plan of temporarily recirculating leachate-impacted surface water in the stormwater management pond into the landfill with a Waste Engineer at Permissions Branch. As a result of this discussion, temporary re-circulation of leachate-impacted surface water has not been carried forward as a contingency measure in the report.

Volks Drain Protection:

- If the modifications to Volks Drain (lined ditch) are not performing as designed, then an investigation program would be prepared to determine the reasons. The

investigation program might include: a liner leak detection survey, sectional monitoring of water quality along the lined ditch to try to delineate the section of ditch containing a defect, etc. Once determined, appropriate mitigation measures would be designed and implemented.

Stormwater Pond:

- The valve on the stormwater management pond will be open during normal site operations. Results of the stormwater pond discharge quality sampling will be compared to the effluent objectives.
- In the event of an exceedance of a trigger, additional stormwater sampling and analysis would be conducted at the wetland pond to confirm the result. If the second sample results in an exceedance, then the stormwater management pond would be operated in batch discharge mode with the gate valve closed.
- During batch discharge mode operation, surface sampling would occur prior to the discharge of any surface water from the pond. When the concentration for each effluent objective parameter is less than the corresponding effluent objective concentration, the surface water would be released to the downstream receiver (Volks Drain). If the impounded stormwater quality does not meet these concentrations, it would be pumped into a tanker and hauled to the municipality's sewage lagoons.
- If it was determined that leachate-impacted water was adversely affecting the stormwater pond quality, an investigation would be carried out to determine the mechanism by which this was occurring, and appropriate mitigation measures would be developed and implemented.

Comments:

I have reviewed the surface water monitoring program, trigger mechanisms and contingency plans. With respect to stormwater management, I have not reviewed the detailed design for the SMW system. The general intent of the design is to ensure that any off-site stormwater flows do not enter the mound. Once available, the detailed design should be reviewed to confirm off-site flows are managed to prevent stormwater from entering the mound.

PFAS analysis would be completed at SW1, SW2, and SW3 prior to implementation of the modifications in Volks Drain and would be repeated again following completion of the modifications. This is acceptable; however, it would be reasonable to use SW5 at the outlet of the lined ditch in addition to SW3 for assessing success of the modifications to Volks Drain. The disadvantage of only using SW3 is that there could potentially be PFAS contribution between the end of the ditch liner and SW3 (downstream of the snow disposal facility). Adding SW5 could help eliminate this as a possibility.

The surface water trigger concentration is defined by both the 75th percentile and the background measurement at SW1 during the same monitoring event. There should only be one concentration that defines the trigger parameter concentration. In practice, the background concentration for the same monitoring event provides context for any exceedance of a 75th percentile derived from the historical background data set.

With respect to the stormwater pond and suspected leachate impacts on pond discharge water, PFAS analysis at SW6 would help confirm whether leachate impact is occurring. Background PFAS information would be available on PFAS concentrations from the before and after monitoring events along Volks Drain. It would be useful if the re-sampling event at SW-6 considers PFAS analysis along with background surface water PFAS concentrations.

During monitoring events the runoff/flow patterns from the snow disposal site relative to the Volks Drain surface water sampling stations would be observed and documented and included in the annual report. This could be included in the list of field observations to be made during surface water sampling events should the EA be approved, and an ECA issued.

Reviewer's Recommendations:

- 1) I have reviewed the proposed surface water monitoring program, surface water trigger mechanisms and surface water contingency plans. With respect to stormwater management, I have not reviewed the detailed design for the SMW system as this is not available. The general intent of the design is to ensure that any off-site stormwater flows do not enter the mound. This is agreeable in principle. Once available, the detailed design should be reviewed to confirm off-site flows are managed to prevent stormwater from entering the mound.
- 2) The proposed surface water monitoring program would be generally acceptable provided that PFAS analysis be undertaken at SW5 (outlet of lined ditch) following implementation of the modifications to Volks Municipal drain in addition to the other proposed locations.
- 3) The trigger mechanism for the landfill would be acceptable provided that there is only one concentration value that defines each of the trigger parameter concentrations for the surface water monitoring program associated with the landfill. I suggest this be the 75th percentile. The upstream surface water concentration at SW1 would presumably be used for context in assessing/confirming the likelihood of a potential anomalous nature of the trigger.
- 4) The trigger mechanism for the stormwater pond would be acceptable provided that the confirmatory re-sampling event at SW-6 considers PFAS analysis.

- 5) The surface water contingency plan would be acceptable provided that it recognizes that on-going monitoring specific to the implemented contingency would be needed to gauge success of the chosen mitigation measure. This should be incorporated into the contingency plans for the surface water component.
- 6) Should the outcome of the EA require a re-design of the proposed landfill, these surface water related comments on the aspects of the D&O plan should be re-evaluated.

Should the EA for site expansion be approved, provided the above noted comments are incorporated into the D&O plan for the proposed expanded site, I would be satisfied with the components of the D&O plan relative to surface water monitoring concerns (i.e., monitoring programs, trigger mechanisms and contingencies)

I trust this satisfies your request for a surface water review. If you have any questions regarding these comments or require anything further, please do not hesitate to contact me.

“Original Signed by”

B. Gilbert, M.Sc.
BG/bg

ec: C. Klein, Technical Support Section Manager
V. Castro, Water Resources Unit Supervisor
T. Forrester, Cornwall Area Supervisor
T. Guo, Regional Hydrogeologist

c: File SW ST ND 03 06 C4 (Boyne Road Landfill Site)
File SW 13 06 07 02 BL (Black Creek, South Nation River Basin)
BG ECHO# 1-236875490

Response to MECP Comments on Groundwater and Surface Water Components of Landfill Design & Operations, Boyne Road Landfill Expansion, Township of North Dundas. Report dated August 2023.		
MECP Comments from Thomas Guo, Hydrogeologist, Technical Support Section (memo dated October 27, 2023)		
Comment #	MECP Comment	WSP Response
1	The proposed groundwater monitoring program is acceptable. However, this program may be adjusted based on the annual monitoring results and the requirements to protect regionally significant aquifers. Additional monitoring wells are required if the new CAZ is established.	It is agreed that the annual monitoring program may be adjusted in future based on the results. The timing for installation of new monitoring wells in the future CAZ lands to the south, if required, will be based on the results of the ongoing groundwater monitoring program, as per the trigger mechanism.
2	<p>The trigger mechanism is acceptable provided:</p> <ol style="list-style-type: none"> The Trigger Concentration should be 75% of the calculated RUG limits for the Compliance Evaluation Parameters (CEPs); Compliance Evaluation Monitoring Wells (CEWMs) BRW16-1A, MW16-1B, MW06-20 and BRW15-3 should not be subjected to the 3 actions in the Contingency Plan and directly be used as CEMWs for the trigger mechanism. 	<ol style="list-style-type: none"> It is acknowledged that 75% of the RUPO concentrations are often used as trigger concentrations for landfill sites so that actions are triggered well in advance of the landfill site going out of compliance with the Reasonable Use Guideline. Use of 75% of the RUPO concentrations was assessed when the August 2023 report was prepared, with the findings as follows: <ul style="list-style-type: none"> At background monitoring wells MW13 and BR07-26, the secondary CEPs DOC, Fe, Mn and TDS consistently exceed 75% of their RUPO concentrations. This demonstrates that these parameters have naturally elevated concentrations in the groundwater in the setting of the Boyne Road landfill. At proposed Compliance Evaluation Monitoring Locations MW07-24, BRW16-1A, MW16-1B, MW16-3B and MW16-3C, MW07-23, MW06-20 and BRW15-3 some or all of the Secondary CEPs also consistently or often exceed 75% of the RUPO concentrations. This occurs in the absence of the Key CEPs being elevated or exceeding 75% of their RUPO concentrations. At monitoring pair BRW16-1A and MW16-1B, barium often exceeds 75% of RUPO, again in the absence of the other Key CEPs being elevated or exceeding 75% of their RUPO concentrations. <p>As such, if 75% of the RUPO concentrations was used as the trigger concentration at the Boyne Road landfill, the concentrations of the secondary CEPs (and barium at one monitoring nest location) at all of the Compliance Evaluation Monitoring locations would be expected to trigger actions following every monitoring session, even though these monitors are interpreted to not be leachate-impacted or have only minor leachate impacts based on the Key CEPs.</p>

		<p>At this site, the closest groundwater user is some 700 m west of the landfill site; as such there are no nearby groundwater users. Individual water supplies in this general area are obtained from zones at depth within the bedrock, not from the glacial till layer that is the primary migration pathway for leachate-impacted groundwater from the site. Also, the arrival and advancement of the leachate-impacted groundwater plume at a Compliance Monitoring Location will be progressive and there will be a gradually increasing trend in Leachate Indicator Parameters over time, which will provide ample warning of possible non-compliance before the landfill site actually goes out of RUG compliance. Lastly, the most likely contingency measure to be taken, if and when required, is for the Township to extend the CAZ boundaries and thereby take control of the use of groundwater beneath lands where the groundwater is unacceptably affected by landfill leachate. This demonstrates that the actual consequences on groundwater users of the site (as defined by the proposed landfill property and CAZ) going out of compliance with the RUG are negligible.</p> <p>For these reasons, for this site it was, and continues to be proposed that the trigger concentrations shall be the Reasonable Use Performance Objectives for the Compliance Evaluation Parameters.</p> <p>b) It is agreed that monitors BRW16-1A and MW 16-1B are located close to the west limit of the CAZ, but they are far from the northern limit of the CAZ. In terms of the western limit of the CAZ, it is agreeable that these be considered CEMPs for purposes of the trigger mechanism. This will be changed in the groundwater trigger mechanism section of the Design & Operations report to be submitted in support of the ECA amendment application.</p> <p>MW06-20 and BRW15-3 are close to the current southern landfill property limit; however, they will be well within the groundwater compliance boundary when the 400 m CAZ is added to the south. It is in anticipation of the additional CAZ land that they were included in the group of monitoring wells to which the three actions in the contingency plan apply. It is noted that the Township intends to pursue an agreement with the landowner on this additional CAZ to the south once EA approval is received. Under current conditions, MW06-20 and BRW15-3 can be considered CEMPs for purposes of the trigger</p>
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		mechanism; however, once an agreement on the additional CAZ is in place, they will become monitors to which the three actions in the contingency plan will apply. For purposes of the ECA amendment application, where an agreement on the CAZ land to the south is not yet in place, it is agreeable to treat these two monitors as CEMPs for purposes of the trigger mechanism. This will be changed in the groundwater trigger mechanism section of the Design & Operations report to be submitted in support of the ECA amendment application.
3	The Contingency Plan is acceptable.	Acknowledged
4	The model used by WSP predicts that it will be necessary for the Township in future to obtain control over an additional 400 m of groundwater travel distance towards the south as CAZ through either property acquisition or groundwater easement below this land area so as to achieve the compliance with the RUG.	Agreed. As per the response to Comment 2 above, the Township intends to pursue an agreement with the landowner on this additional CAZ to the south once EA approval is received.
MECP Comments from Beth Gilbert, Surface Water Specialist, Technical Support Section (memo dated October 30, 2023)		
1	I have reviewed the proposed surface water monitoring program, surface water trigger mechanisms and surface water contingency plans. With respect to stormwater management, I have not reviewed the detailed design for the SMW system as this is not available. The general intent of the design is to ensure that any off-site stormwater flows do not enter the mound. This is agreeable in principle. Once available, the detailed design should be reviewed to confirm off-site flows are managed to prevent stormwater from entering the mound.	Acknowledged.
2	The proposed surface water monitoring program would be generally acceptable provided that PFAS analysis be undertaken at SW5 (outlet of lined ditch) following implementation of the modifications to Volks Municipal drain in addition to the other proposed locations.	It is agreeable to add PFAS analysis to assess baseline PFAS conditions at SW5 after the modifications to the Volks Drain are completed. This will be changed in the surface water monitoring program section of the Design & Operations report to be submitted in support of the ECA amendment application.
3	The trigger mechanism for the landfill would be acceptable provided that there is only one concentration value that defines each of the trigger parameter concentrations for the surface water monitoring program associated with the landfill. I suggest this be the 75 th percentile. The upstream surface water concentration at SW1 would presumably be used for context in assessing/confirming the likelihood of a potential anomalous nature of the trigger.	<p>It is agreed that the upstream surface water quality at SW1 will be useful in assessing a triggering at a downstream location (such as SW2, SW5, SW3). However, the use of both the 75th percentile and the concentration at SW1 during the same sampling event was intended for Policy 2 parameters only. It is agreeable to use the 75th percentile approach as per the MECP comment and consider the concentrations at background station SW1 when interpreting the results, with the wording proposed to be modified as shown below in the trigger mechanism section of the Design & Operations report to be submitted in support of the ECA amendment application:</p> <ul style="list-style-type: none"> ▪ The <i>Surface Water Trigger Concentration</i> is as follows: 1) for a Policy 1 parameter, the PWQO or CWQG;

		<p>2) for a Policy 2 parameter, the 75th percentile of historical background concentrations (as reported since 2001) at SW1.</p> <p>[...]</p> <p>Any observed trigger of the <i>Contingency Plan</i> will be verified by re-sampling for the parameter(s) of concern within one month of the original sampling session at which non-compliance with the trigger was initially measured. If the exceedance is not confirmed by the follow-up sample (<i>Confirmatory Monitoring Session</i>), then the initial exceedance will be considered anomalous and will be discounted. Historical trends in surface water quality at the trigger location shall also be used to assess whether or not monitoring results are anomalous. If the background concentration measured at SW1 during one (or more) of the three consecutive sessions also exceeded <i>Trigger Concentrations</i> reported the same day, the corresponding exceedance(s) would be dismissed as anomalous in nature (or associated with upstream background water quality), discounting the <i>Trigger Concentration</i> exceedances in question and no <i>Confirmatory Monitoring Session</i> would be required at this stage for this location and parameter.</p>
4	The trigger mechanism for the stormwater pond would be acceptable provided that the confirmatory re-sampling event at SW-6 considers PFAS analysis.	It is agreeable to add PFAS analysis at SW6 to the trigger mechanism for the stormwater pond in that section of the Design & Operations report to be submitted in support of the ECA amendment application.
5	The surface water contingency plan would be acceptable provided that it recognizes that on-going monitoring specific to the implemented contingency would be needed to gauge success of the chosen mitigation measure. This should be incorporated into the contingency plans for the surface water component.	It is agreeable to add this requirement to the surface water contingency plan section of the Design & Operations report to be submitted in support of the ECA amendment application.
6	Should the outcome of the EA require a re-design of the proposed landfill, these surface water related comments on the aspects of the D&O plan should be reevaluated. Should the EA for site expansion be approved, provided the above noted comments are incorporated into the D&O plan for the proposed expanded site, I would be satisfied with the components of the D&O plan relative to surface water monitoring concerns (i.e., monitoring programs, trigger mechanisms and contingencies).	Acknowledged.

Marcerou, Yannick

From: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Sent: July 25, 2024 1:58 PM
To: Marcerou, Yannick
Cc: Danielle Ward; Smolkin, Paul; Wilson, Rebecca
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Hi Yannick:

My apologies, this fell off my plate:

MECP TSS Surface Water Specialist Beth Gilbert confirmed that the response provided by WSP dated Tuesday, June 11, 2024 is reasonable and addresses the concern raised for the trigger mechanism with regards to Policy 2 parameters.

MECP TSS Groundwater Specialist Thomas Guo confirmed that the responses provided by WSP are acceptable from a groundwater perspective and no further comments are necessary.

Again, apologies for the delay, and thank you for reaching out. Any comments/questions/concerns, please let me know.

Thank you,

Erin Legue

Environmental Compliance Officer | Badge no. 1956 | Cornwall Area Office | Eastern Region
Ministry of the Environment Conservation and Parks | Government of Ontario
(613) 866-0961 | erin.legue@ontario.ca

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Cornwall ON K6H 3P1



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Are you reporting a pollution incident or environmental concern? Please use the ministry's [online pollution reporting tool](#) or for more urgent matters contact the Pollution Hotline at 1(866) 663-8477.

From: Marcerou, Yannick <yannick.marcrou@wsp.com>
Sent: Thursday, July 25, 2024 1:36 PM
To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>; Wilson, Rebecca <Rebecca.Wilson1@wsp.com>
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Hi Erin,

We were wondering if you had received any response from the MECP TSS reviewers for Boyne Rd LF Expansion.

Have a good afternoon!

Regards,



Yannick Marcerou

Environmental/Waste Engineer
M.Eng., P.Eng.

D+ 1 613-576-2560
M+ 1 613-700-9932

From: Marcerou, Yannick

Sent: Monday, June 17, 2024 11:46 AM

To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>

Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>; Wilson, Rebecca <Rebecca.Wilson1@wsp.com>

Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Hi Erin,

You will find below WSP's responses to each reviewer. We are available to discuss this further during a call if it could help settle this faster and obtain District concurrence to proceed with the application.

Have a good day!



Yannick Marcerou

Environmental/Waste Engineer
M.Eng., P.Eng.

D+ 1 613-576-2560
M+ 1 613-700-9932

From: Legue, Erin (MECP) <Erin.Legue@ontario.ca>

Sent: Tuesday, June 11, 2024 10:49 AM

To: Marcerou, Yannick <yannick.marcerou@wsp.com>

Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>

Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Hi Yannick:

I've received the following responses from TSS – please note that their comments weren't provided in a technical memorandum and are being copied/pasted below and are in *italic*.

Groundwater TSS comments – Thomas Guo

I have reviewed the responses from WSP dated December 1, 2023 with the subject of “Response to MECP Comments on Groundwater and Surface Water Components of Landfill Design & Operations, Boyne Road Landfill Expansion, Township of North Dundas. Report dated August 2023”. WSP disagreed and responded to my following comments:

The trigger mechanism is acceptable provided: a) The Trigger Concentration should be 75% of the calculated RUG limits for the Compliance Evaluation Parameters (CEPs); b) Compliance Evaluation Monitoring Wells (CEWMs) BRW16-1A, MW16-1B, MW06-20 and BRW15-3 should not be subjected to the 3 actions in the Contingency Plan and directly be used as CEMWs for the trigger mechanism.

- 1. For Item a). WSP insisted on that the Trigger concentration be the calculated RUG limits given that several CEPs are elevated in the background monitoring wells. The problematic CEPs make it difficult to determine if the site is in compliance with the RUG. As mentioned in TOR for expanding the site, PFAS may be used to determine the compliance. So, I offer the following for Item a):*
 - PFAS sampling is triggered when a Secondary CEP plus a Key CEP exceed the 75% of their calculated RUG limits for two consecutive sampling events at any CEMW location to determine if the impacts are landfill related.*
- 2. For Item b). I keep my comments unchanged as the township has not purchased the land south of the site. Once the land is purchased the new monitoring wells should replace monitoring wells MW06-20 and BRW15-3,*

Should you have any questions, please let me know.

WSP RESPONSE:

1. It is our understanding from the response that MECP have agreed that it is appropriate to use the calculated RUPO limits as the trigger concentrations at the CEMW locations for the Boyne Road Landfill site. It is agreeable to incorporate the PFAS sampling, as offered by the MECP reviewer, into Step 1 of the trigger mechanism; the **proposed wording modifications** to Step 1 would be as follows:

The three-step process will be as follows:

Step 1

Assess whether or not non-compliance with the applicable *Trigger Concentration* is likely due to migration of the landfill leachate plume as a whole or whether it is partially or wholly explicable by other factors. This will be achieved by considering trends in parameter concentrations at all relevant monitoring locations. **In addition, if a Secondary CEP and a Key CEP exceed 75% of their calculated RUPO limits and the exceeding parameters have both increased in concentration for two consecutive sampling events at any CEMW location, groundwater sampling at the CEMW location and analysis for PFAS will be carried out to further identify/differentiate groundwater impacts associated with landfill leachate from other possible sources.**

2. As per our December 2023 response on comment b), we are in agreement on this matter.

Surface Water TSS comments – Beth Gilbert

I have reviewed the responses from WSP dated December 1, 2023 with the subject of “Response to MECP Comments on Groundwater and Surface Water Components of Landfill Design & Operations,

Boyne Road Landfill Expansion, Township of North Dundas. Report dated August 2023". WSP agreed or acknowledged item #1, #2, #4, and #5.

With respect to the trigger mechanism (Item #3), the WSP response (below in black) would be acceptable with the following modification (in red strike out) to ensure there is only one concentration value (75th percentile) that defines the trigger parameter concentrations:

"It is agreed that the upstream surface water quality at SW1 will be useful in assessing a triggering at a downstream location (such as SW2, SW5, SW3). However, the use of both the 75th percentile and the concentration at SW1 during the same sampling event was intended for Policy 2 parameters only. It is agreeable to use the 75th percentile approach as per the MECP comment and consider the concentrations at background station SW1 when interpreting the results, with the wording proposed to be modified as shown below in the trigger mechanism section of the Design & Operations report to be submitted in support of the ECA amendment application:

▪ The Surface Water Trigger Concentration is as follows:

- 1) for a Policy 1 parameter, the PWQO or CWQG;
- 2) for a Policy 2 parameter, the 75th percentile of historical background concentrations (as reported since 2001) at SW1.

[...]

Any observed trigger of the Contingency Plan will be verified by re-sampling for the parameter(s) of concern within one month of the original sampling session at which non-compliance with the trigger was initially measured. If the exceedance is not confirmed by the follow-up sample (Confirmatory Monitoring Session), then the initial exceedance will be considered anomalous and will be discounted. Historical trends in surface water quality at the trigger location shall also be used to assess whether or not monitoring results are anomalous. ~~If the background concentration measured at SW1 during one (or more) of the three consecutive sessions also exceeded Trigger Concentrations reported the same day, the corresponding exceedance(s) would be dismissed as anomalous in nature (or associated with upstream background water quality), discounting the Trigger Concentration exceedances in question and no Confirmatory Monitoring Session would be required at this stage for this location and parameter. "~~

Rationale: Any concentration for Policy 2 parameters (nitrate, phosphorus or iron) that are elevated at SW1 beyond the historical 75th percentile during a routine monitoring event could be used as rationale to not do confirmatory sampling and discount any downstream exceedances of the trigger concentration in a given monitoring session, making the trigger concentration value null and void.

For example, there could be a minor exceedance of an existing 75th percentile trigger concentration at SW1 (background), and a corresponding 10x exceedance at the downstream locations, and no confirmatory sampling would be needed in that scenario. I would hesitate to accept the trigger mechanism with the last sentence included.

Should you have any questions, please let me know.

WSP RESPONSE:

The MECP reviewer presents a reasonable argument for wanting to delete the wording that was proposed, i.e., it is a scenario that might occur, noting that we had not considered it when we previously proposed the wording. We are in general agreement with what the reviewer has proposed, although we feel that consideration of the surface water quality at SW1 on the day of sampling should be incorporated into the mechanism. Our **proposed modification** to the wording is shown below:

Any observed trigger of the Contingency Plan will be verified by re-sampling for the parameter(s) of concern within one month of the original sampling session at which non-compliance with the trigger was initially measured. If the exceedance is not confirmed by the follow-up sample (Confirmatory Monitoring Session), then the initial exceedance will be considered anomalous and will be discounted. Historical trends in surface water quality at the trigger location, **together with the measured concentration of the parameter(s) of concern at SW1 reported the same day**, shall also be used to assess whether or not monitoring results are anomalous.

Should you wish to meet with TSS to discuss/address these comments, please let me know.

Thank you for your patience,

Erin

From: Marcerou, Yannick <yannick.marcerou@wsp.com>
Sent: Wednesday, May 1, 2024 2:58 PM
To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

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Hi Erin,

Were you able to get an update from the TSS team?

Thanks!

Have a good afternoon.



Yannick Marcerou
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From: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Sent: Thursday, April 4, 2024 5:00 PM
To: Marcerou, Yannick <yannick.marcerou@wsp.com>
Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Hi Yannick,

I've reached out for an update and will get back to you when I hear.

Thanks!

Erin

From: Marcerou, Yannick <yannick.marcerou@wsp.com>

Sent: April 2, 2024 2:43 PM

To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>

Cc: Marcerou, Yannick <yannick.marcerou@wsp.com>; Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>

Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

CAUTION -- EXTERNAL E-MAIL - **Do not click links or open attachments unless you recognize the sender.**

Hi Erin,

Did you happen to hear back from TSS about our response to their comments? We sent our response on Dec 8 and we were hoping to have their concurrence to proceed with the application by now.

Have a good day!



Yannick Marcerou

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From: Marcerou, Yannick <yannick.marcerou@wsp.com>

Sent: Wednesday, January 31, 2024 2:28 PM

To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>

Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

You're welcome. Hopefully our responses are well received, and we could get written concurrence soon.

Have a good afternoon!



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From: Legue, Erin (MECP) <Erin.Legue@ontario.ca>

Sent: Wednesday, January 31, 2024 2:24 PM

To: Marcerou, Yannick <yannick.marcerou@wsp.com>

Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Oh perfect – I've been going through my landfill TSS comments and thought I hadn't sent these out. Thanks Yannick!!!

Erin

From: Marcerou, Yannick <yannick.marcerou@wsp.com>
Sent: January 31, 2024 2:21 PM
To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

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Hi Erin,

You had sent us those comments on Nov 8, 2023 and we responded to them on Dec 8, 2023 (we forwarded our response to Terri Forrester to be circulated to the two reviewers). See attached.

Please let us know if there is anything else we should do.

Thanks!

Have a good afternoon.



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From: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Sent: Wednesday, January 31, 2024 2:16 PM
To: Marcerou, Yannick <yannick.marcerou@wsp.com>
Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Hi Yannick:

Please see attached comments re: the D&O Plan for the Boyne Road WDS. I'm so sorry for how late these got out.

Erin

From: Marcerou, Yannick <yannick.marcerou@wsp.com>
Sent: January 12, 2024 11:33 AM
To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Cc: Forrester, Terri (She/Her) (MECP) <Terri.Forrester@ontario.ca>; Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>; Mesmous, Khawla (MECP) <Khawla.Mesmous@ontario.ca>

Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

CAUTION -- EXTERNAL E-MAIL - **Do not click links or open attachments unless you recognize the sender.**

Hi Erin,

Happy New Year!

We were wondering if the TSS reviewers had a chance to go through our responses to their comments and potentially provide concurrence with our application.

Have a good day!



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From: Forrester, Terri (She/Her) (MECP) <Terri.Forrester@ontario.ca>
Sent: Monday, December 11, 2023 10:09 AM
To: Marcerou, Yannick <yannick.marcerou@wsp.com>
Cc: Legue, Erin (MECP) <Erin.Legue@ontario.ca>; Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>; Mesmous, Khawla (MECP) <Khawla.Mesmous@ontario.ca>
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Thank you Yannick. I will have someone forward this response to the appropriate staff in our technical support section.

Thank you

Terri

Terri-Lee Forrester
Cornwall Area Office Supervisor (A)
Ministry of the Environment, Conservation and Parks
113 Amelia Street, Cornwall, ON, K6H 3P1
Terri.forrester@ontario.ca
Direct number 613-930-3599
Spills Action Centre 1-800-268-6060

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From: Marcerou, Yannick <yannick.marcerou@wsp.com>
Sent: December 8, 2023 4:07 PM
To: Forrester, Terri (She/Her) (MECP) <Terri.Forrester@ontario.ca>
Cc: Legue, Erin (MECP) <Erin.Legue@ontario.ca>; Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>

Subject: FW: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

CAUTION -- EXTERNAL E-MAIL - **Do not click links or open attachments unless you recognize the sender.**

Hi Terri,

As per Erin's out-of-office notification, I am forwarding you our responses to TSS comments for Boyne Rd Landfill Expansion (Township of North Dundas). Would you mind circulating the table to the respective reviewers so they can evaluate them.

Thank you in advance!

Have a good weekend.



Yannick Marcerou
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From: Marcerou, Yannick

Sent: Friday, December 8, 2023 4:03 PM

To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>

Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>; 23594638 North Dundas Boyne LF Expansion EPA <170799@golder.com>

Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

Hi Erin,

Attached are our responses to the comments provided by the TSS groundwater and surface water reviewers. We are in agreement with the majority of the comments provided and will accordingly update the text in the Design & Operations report to be submitted in support of the ECA amendment application for the Boyne Road Landfill expansion. We would like to draw your attention to our responses to MECP groundwater comment 2a and surface water comment 3, which are intended to fully address these comments. We would appreciate if MECP can provide written concurrence via return email so that it can be submitted as part of the ECA amendment application package and satisfy Permissions Branch that this step in the application process has been successfully completed.

Thank you in advance!

Have a good weekend.



Yannick Marcerou
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M+ 1 613-700-9932

From: Legue, Erin (MECP) <Erin.Legue@ontario.ca>

Sent: Wednesday, November 8, 2023 11:50 AM

To: Marcerou, Yannick <yannick.marcerou@wsp.com>

Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>; 23594638 North Dundas Boyne LF Expansion EPA <170799@golder.com>
Subject: RE: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

EXTERNAL EMAIL

Hi Yannick,

Please see attached TSS comments. Should you have any questions and/or concerns, please do not hesitate.

Erin

From: Marcerou, Yannick <yannick.marcerou@wsp.com>
Sent: August 22, 2023 5:48 PM
To: Legue, Erin (MECP) <Erin.Legue@ontario.ca>
Cc: Danielle Ward <dward@northdundas.com>; Smolkin, Paul <paul.smolkin@wsp.com>; 23594638 North Dundas Boyne LF Expansion EPA <170799@golder.com>
Subject: [23594638] Twp of North Dundas Boyne Road LF Expansion ECA Application - MECP TSS Review of GW and SW Components

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Erin,

You will find attached our report with the groundwater and surface water components of the Landfill Design and Operations for the Township of North Dundas' Boyne Road Landfill Expansion. It is our understanding that you will share it with the reviewers from the MECP Technical Support Section assigned to this project.

As per Action Item 3 of our summary of the June 29, 2023 meeting with the MECP Technical Support Section, our objective is to receive their concurrence in time to submit the application to Permissions Branch in October 2023.

Please do not hesitate to contact us if you have any questions or comments.

Regards,



Yannick Marcerou

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APPENDIX C

Record of Borehole Logs

LIST OF ABBREVIATIONS

The abbreviations commonly employed on Records of Boreholes, on figures, and in the text of the report are as follows:

I. SAMPLE TYPE		III. SOIL DESCRIPTION			
AS	Auger sample	(a)	Cohesionless Soils		
BS	Block sample				
CS	Chunk sample				
DO or DP	Seamless open-ended, driven or pushed tube samplers				
DS	Denison type sample				
FS	Foil sample				
RC	Rock core				
SC	Soil core				
SS	Split spoon sampler				
ST	Slotted tube				
TO	Thin-walled, open				
TP	Thin-walled, piston				
WS	Wash sample				
DT	Dual tube sample				
DD	Diamond drilling				
II. PENETRATION RESISTANCE		(b)	Cohesive Soils		
Standard Penetration Resistance (SPT), N:			C _u or S _u		
The number of blows by a 63.5 kg. (140 lb.) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split spoon sampler for a distance of 300 mm (12 in.).			Consistency		
Dynamic Cone Penetration Resistance (DCPT); N _d :			kPa		
The number of blows by a 63.5 kg (140 lb.) hammer dropped 760 mm (30 in.) to drive an uncased 50 mm (2 in.) diameter, 60 ⁰ cone attached to “A” size drill rods for a distance of 300 mm (12 in.).			Psf		
PH: Sampler advanced by hydraulic pressure			Very soft 0 to 12 0 to 250		
PM: Sampler advanced by manual pressure			Soft 12 to 25 250 to 500		
WH: Sampler advanced by static weight of hammer			Firm 25 to 50 500 to 1,000		
WR: Sampler advanced by weight of sampler and rod			Stiff 50 to 100 1,000 to 2,000		
Cone Penetration Test (CPT):			Very stiff 100 to 200 2,000 to 4,000		
An electronic cone penetrometer with a 60 ⁰ conical tip and a projected end area of 10 cm ² pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q _t), porewater pressure (u) and friction along a sleeve are recorded electronically at 25 mm penetration intervals.			Hard Over 200 Over 4,000		
			IV. SOIL TESTS		
			w	Water content	
			w _p or PL	Plastic limited	
		w _l or LL	Liquid limit		
		C	Consolidaiton (oedometer) test		
		CHEM	Chemical analysis (refer to text)		
		CID	Consolidated isotropically drained triaxial test ¹		
		CIU	Consolidated isotropically undrained triaxial test with porewater pressure measurement ¹		
		D _R	Relative density		
		DS	Direct shear test		
		G _s	Specific gravity		
		M	Sieve analysis for particle size		
		MH	Combined sieve and hydrometer (H) analysis		
		MPC	Modified Proctor compaction test		
		SPC	Standard Proctor compaction test		
		OC	Organic content test		
		SO ₄	Concentration of water-soluble sulphates		
		UC	Unconfined compression test		
		UU	Unconsolidated undrained triaxial test		
		V	Field vane test (LV-laboratory vane test)		
		γ	Unit weight		

Note: ¹ Tests which are anisotropically consolidated prior shear are shown as CAD, CAU.

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	3.1416
$\ln x$	natural logarithm of x
$\log_{10} x$ or $\log x$	logarithm of x to base 10
g	acceleration due to gravity
t	time
FOS	factor of safety
V	volume
W	weight

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta \sigma'$
ϵ	linear strain
ϵ_v	volumetric strain
η	coefficient of viscosity
ν	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma - u$)
σ'_{vo}	initial vertical effective overburden stress
$\sigma_1 \sigma_2 \sigma_3$	principal stresses (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1 + \sigma_2 + \sigma_3) / 3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight)*
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma' = \gamma - \gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s / \rho_w$) formerly (G_s)
e	void ratio
n	porosity
S	degree of saturation
*	Density symbol is ρ . Unit weight symbol is γ where $\gamma = \rho g$ (i.e. mass density multiplied by acceleration due to gravity)

(a) Index Properties (continued)

w	water content
w_L or LL	liquid limit
w_p or PL	plastic limit
I_p or PI	plasticity Index $= (w_L - w_p)$
w_s	shrinkage limit
I_L	liquidity index $= (w - w_p) / I_p$
I_c	consistency index $= (w_L - w) / I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index $= (e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (overconsolidated range)
C_s	swelling index
C_α	coefficient of secondary consolidation
m_v	coefficient of volume change
c_v	coefficient of consolidation (vertical direction)
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation stress
OCR	overconsolidation ratio $= \sigma'_p / \sigma'_{vo}$

(d) Shear Strength

τ_p or τ_r	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction $= \tan \delta$
c'	effective cohesion
c_u or s_u	undrained shear strength ($\phi = 0$ analysis)
p	mean total stress $(\sigma_1 + \sigma_3) / 2$
p'	mean effective stress $(\sigma'_1 + \sigma'_3) / 2$
q	$(\sigma_1 - \sigma_3) / 2$ or $(\sigma'_1 - \sigma'_3) / 2$
q_u	compressive strength $(\sigma_1 - \sigma_3)$
S_t	sensitivity

Notes:

$$^1 \tau = c' + \sigma' \tan \phi'$$

$$^2 \text{ shear strength} = (\text{compressive strength}) / 2$$

LITHOLOGICAL AND GEOTECHNICAL ROCK DESCRIPTION TERMINOLOGY

WEATHERING STATE

Fresh: no visible sign of rock material weathering

Faintly Weathered: weathering limited to the surface of major discontinuities.

Slightly weathered: penetrative weathering developed on open discontinuity surfaces but only slight weathering of rock material.

Moderately weathered: weathering extends throughout the rock mass but the rock material is not friable

Highly weathered: weathering extends throughout rock mass and the rock material is partly friable.

Completely weathered: rock is wholly decomposed and in a friable condition but the rock texture and structure are preserved.

BEDDING THICKNESS

<u>Description</u>	<u>Bedding Plane Spacing</u>
Very Thickly Bedded	> 2 m
Thickly Bedded	0.6 m to 2m
Medium Bedded	0.2 m to 0.6 m
Thinly Bedded	60 mm to 0.2 m
Very Thinly Bedded	20 mm to 60 mm
Laminated	6 mm to 20 mm
Thinly Laminated	< 6 mm

JOINT OR FOLIATION SPACING

<u>Description</u>	<u>Spacing</u>
Very Wide	> 3 m
Wide	1 – 3 m
Moderately Close	0.3 – 1 m
Close	50 – 300 mm
Very Close	< 50 mm

GRAIN SIZE

<u>Term</u>	<u>Size*</u>
Very Coarse Grained	> 60 mm
Coarse Grained	2 – 60 mm
Medium Grained	60 microns – 2mm
Fine Grained	2 – 60 microns
Very Fine Grained	< 2 microns

Note: *Grains > 60 microns diameter are visible to the naked eye.

CORE CONDITION

Total Core Recovery

The percentage of solid drill core recovered regardless of quality or length, measured relative to the length of the total core run.

Solid Core Recovery (SCR)

The percentage of solid drill core, regardless of length, recovered at full diameter, measured relative to the length of the total core run.

Rock Quality Designation (RQD)

The percentage of solid drill core, greater than 100 mm length, recovered at full diameter, measured relative to the length of the total core run. RQD varies from 0% for completely broken core 100% for core in solid sticks.

DISCONTINUITY DATA

Fracture Index

A count of the number of discontinuities (physical separations) in the rock core, including naturally occurring fractures but not including mechanically induced breaks caused by drilling.

Dip with Respect to (W.R.T.) Core Axis

The angle of the discontinuity relative to the axis (length) of the core. In a vertical borehole a discontinuity with a 90° angle is horizontal.

Description and Notes

An abbreviated description of the discontinuities, whether naturally occurring separations such as fractures, bedding planes and foliation ground or shattered core and mechanically separated bedding or foliation surfaces. Additional information concerning the nature information concerning the nature of fracture surfaces and infillings are also noted.

Abbreviations

BD -	Bedding	PY -	Pyrite
FO -	Foliation/Schistosity	Ca -	Calcite
CL -	Clean	PO -	Polished
SH -	Shear Plane/Zone	K -	Slickensided
VN -	Vein	SM -	Smooth
FLT -	Fault	RO -	Ridged/Rough
CO -	Contact	ST -	Stepped
JN -	Joint	PL -	Planar
FR -	Fracture	IR -	Irregular
MB -	Mechanical Break	UN -	Undulating
BR -	Broken Rock	CU -	Curved
BL -	Blast Induced	TCA -	To Core Axis
Il -	Parallel To	STR -	Stress Induced
OR -	Orthogonal		

PROJECT: 14-1125-0007/Boyne Road Landfill




RECORD OF BOREHOLE: MW06-22R

SHEET 1 OF 1

LOCATION: N 4994479.6; E 474643.5 (UTM NAD83 Zone 18T)

BORING DATE: May 1, 2014

DATUM: Geodetic

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m										
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ⊙		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0		GROUND SURFACE		82.96													
	Power Auger 200 mm Diam. (Hollow Stem)	Waste (FILL)		0.00													
2																	
4																	
6																	
8																	
10																	
			Grey brown SILTY CLAY		71.99 10.97												
12																	
			End of Borehole		70.16 12.80												
14																	
16																	
18																	
20																	

DEPTH SCALE

1 : 100



LOGGED: MIB

CHECKED: YJM

MIS-BHS 001 1411250007.GPJ GAL-MIS.GDT 11/07/14 JIM

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: MW07-23

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 4, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa	nat V. + rem V. ⊕	Q - ● U - ○		Wp	W			Wi	
		GROUND SURFACE		74.97				20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0	Power Auger 200mm diam. (Hollow Stem)	TOPSOIL		0.00													
		Very stiff grey brown SILTY CLAY (Weathered Crust)		74.76													
				0.21													
1		Brown SILTY CLAY, trace gravel		73.90	1	50 DO	20										
				1.07													
		Dense brown to grey sandy SILT, some grey clay, occasional sand seam (GLACIAL TILL)		73.35	2	50 DO	35										
2				1.62													
					3	50 DO	39										
3					4	50 DO	32										
					71.25												
4		End of Borehole (Auger Refusal)		3.72													
5																	
6																	
7																	
8																	
9																	
10																	

Bentonite Seal

Silica Sand

32mm Diam. PVC
#10 Slot Screen

WL in screen at
Elev. 72.56m on
Sept. 25, 2007

Bentonite Seal

Silica Sand

32mm Diam. PVC
#10 Slot ScreenWL in screen at
Elev. 72.56m on
Sept. 25, 2007

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLRP

MIS-BHS 001 061122127-3.GPJ GAL-MISS GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: MW07-24

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 4, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION										
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT													
								20		40		60				80		10 ⁻⁶		10 ⁻⁵		10 ⁻⁴		10 ⁻³	
								20		40		60				80		20		40		60		80	
0		GROUND SURFACE		75.32																					
	Power Auger 200mm Diam. (Hollow Stem)	Dark brown PEAT		0.00																					
				74.77																					
		Grey brown SILTY CLAY (Weathered Crush)		0.55																					
1				74.25	1	50 DO	13																		
		Compact grey brown CLAYEY SILT, trace gravel		1.07																					
2				73.40	2	50 DO	13																		
		Brown grey SANDY SILT, some gravel, occasional cobbles		1.83																					
3				72.93	4	50 DO	44																		
		End of Borehole (Auger Refusal)		3.29																					
4																									
5																									
6																									
7																									
8																									
9																									
10																									

Bentonite Seal

Native Backfill

Bentonite Seal

Salica Sand

38mm Diam. PVC #10 Slot Screen

WL in screen at Elev. 73.49m on Sept. 25, 2007

Bentonite Seal

Native Backfill

Bentonite Seal

Silica Sand

38mm Diam. PVC
#10 Slot ScreenWL in screen at
Elev. 73.49m on
Sept. 25, 2007

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: MLF

MIS-BHS 001 061122127-3 GPJ GAL-MISS GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: MW07-25

SHEET 1 OF 1



LOCATION: See Site Plan

BORING DATE: September 5, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								RESISTANCE, BLOWS/0.3m				k, cm/s					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵			10 ⁻⁴	10 ⁻³
						SHEAR STRENGTH Cu, kPa		nat V. + rem V. ⊕		Q - ● U - ○		WATER CONTENT PERCENT Wp ——— W ——— WI					
						20 40 60 80		20 40 60 80		20 40 60 80							
0		GROUND SURFACE		74.13													
		Dark brown PEAT		0.00													
				73.58 0.55													
		Grey brown SILTY CLAY (Weathered Crush)															
1																	
2					1	50 DO	8										
				71.45 2.68	2	50 DO	17										
		Compact to dense brown grey SANDY SILT, some gravel & clay, trace cobbles (GLACIAL TILL)															
3					3	50 DO	22										
4					4	50 DO	14										
					5	50 DO	06										
5																	
6																	
				67.88 6.25	6	50 DO											
		End of Borehole (Auger Refusal)															
7																	
8																	
9																	
10																	

Power Auger
200mm Diam. (Hollow Stem)

<

Bentonite Seal

Native Backfill

Bentonite Seal

Silica Sand

38mm Diam. PVC
#10 Slot ScreenWL in screen at
Elev. 72.71m on
Sept. 25, 2007

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: *HLRF*

MIS-BHS 001 061122127-3.GPJ GAL-MISS.GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: BR07-26

SHEET 1 OF 1

LOCATION:

BORING DATE: September 7, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION			
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT							
								Cu, kPa		nat V, + rem V, ⊕		Q - ● U - ○		Wp					
								20	40	60	80	20	40	60			80		
0	Power Auger 200mm Diam. (Hollow Stem)	Ground Surface		74.67															
		Dark brown PEAT		0.00															
1																			
		Very stiff grey brown SILTY CLAY (Weathered Crush)		73.63 1.04															
2					1	50 DO	5												
					2	50 DO	3												
3				71.62 3.05															
		Stiff grey SILTY CLAY			3	50 DO	1												
4				70.71 3.96															
		Grey SANDY SILT, some gravel, occasional cobbles (GLACIAL TILL)			4	50 DO	DO												
5				69.82 4.85															
		Slightly weathered grey LIMESTONE BEDROCK, with shale interbedded, and thin mud seam			5	NQ RC		100	98	66									
6	Rotary Drill HQ Core																		
					6	NQ RC		98	83	60									
7																			
					7	NQ RC		100	90	71									
8				67.14 7.53															
		Fresh grey LIMESTONE BEDROCK, with shale interbed																	
9																			
					8	NQ RC		100	97	75									
9				65.53															
		End of Borehole		9.14															
10																			

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLCRF

BOREHOLE 061122127-3 GPJ HYDROGEO GDT 3/25/08

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: BRW1

SHEET 1 OF 3

LOCATION: See Site Plan

BORING DATE: September 7, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵		
0		GROUND SURFACE		75.54											
		(Note: Stratigraphy from BRW-1, June 1992) SILTY CLAY		0.00											
1															
2		Glacial Till		73.54											
				2.00											
3															
4															
5															
6															
7															
		Linestone Bedrock		68.14											
				7.40											
8															
9															
10															
		CONTINUED NEXT PAGE													

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: H.L.F.

MIS-BHS 001 06-1122127-3.GPJ GAL-MISS GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: BRW1

SHEET 2 OF 3

LOCATION: See Site Plan

BORING DATE: September 7, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k_v cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER TYPE	BLOWS/0.3m	20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴		
		--- CONTINUED FROM PREVIOUS PAGE ---													
10		Limestone Bedrock													
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
		CONTINUED NEXT PAGE													

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLRF

MIS-BHS 001 061122127-3.GPJ GAL-MISS.GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: BRW1

SHEET 3 OF 3

LOCATION: See Site Plan

BORING DATE: September 7, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH		WATER CONTENT PERCENT					
								Cu, kPa	nat V. + rem V. ⊕	Q - ● U - ○	Wp	W	Wi		
20		--- CONTINUED FROM PREVIOUS PAGE ---													
21		Limestone Bedrock													
22															
23															
24															
25		End of Hole		50.54 25.00											
26															
27															
28															
29															
30															

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLRF

MIS-BHS 001 061122127-3.GPJ GAL-MISS.GDT 3/25/08 MLF

PROJECT: 06-1122-127-6200

RECORD OF MONITORING WELL: MW 06-20

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: Nov. 23, 2006

DATUM:

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV.	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
				DEPTH (m)				Cu, kPa	nat V.	rem V.	+ ⊕	- ⊖	Wp			W	Wi
		GROUND SURFACE		75.64				20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0	Power Auger 200mm Diam (Hollow Stem)	TOPSOIL		0.00													
				75.40													
		Very stiff grey brown SILTY CLAY (Weathered Crust)		0.24													
1																	
					74.18												
		Compact grey SANDY SILT, some gravel, trace clay, occasional silty sand and silt seam or layer (GLACIAL TILL)		1.46													
2					1	50 DO	21										
3																	
					2	50 DO	28										
4																	
				71.37													
		End of Borehole Auger Refusal		4.27													
5																	
6																	
7																	
8																	
9																	
10																	

Protective casing
set in Bentonite
Seal38mm Diam PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: H.L.R.F.

MIS-BHS 001: 061122127-6200.GPJ GAL-MISS GDT 3/25/08

PROJECT: 06-1122-127-6200

RECORD OF MONITORING WELL: MW 06-22

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: Nov. 23, 2006

DATUM:

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵			10 ⁻⁴	10 ⁻³
		</															

Protective casing
set in Bentonite
Seal

Caved Material

Silica Sand

38mm Diam PVC
#10 Slot Screen

Bentonite Seal

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: *HLRF*

MIS-BHS 001 061122127-6200 GPJ GAL-MISS GDT 3/25/08

PROJECT: 1416664-6000

RECORD OF BOREHOLE: 15-1

SHEET 1 OF 1




LOCATION: See Site Plan

BORING DATE: July 23, 2015

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm


PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m											
								SHEAR STRENGTH				WATER CONTENT PERCENT						
								Cu, kPa		nat V. + rem V.		Q - U		Wp				W
							20	40	60	80								
0	Power Auger 200 mm Diam. (Hollow Stem)	GROUND SURFACE		74.40														
		TOPSOIL		0.00														
		(CL/ML) CLAYEY SILT, low to medium plasticity; brown; cohesive, w>PL, very stiff		0.35	1	AS	-											
1		(ML) sandy SILT, some low plasticity fines, some gravel, subrounded; grey brown (GLACIAL TILL); wet, compact		0.91														
		End of Borehole Auger Refusal		72.72	2	SS	>50											
2				1.68														
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Bentonite Seal

Silica Sand

50 mm Diam. PVC #10 Slot Screen



Bentonite Seal

Silica Sand

50 mm Diam. PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-BHS 001 1416664-6000.GPJ GAL-MIS.GDT 12/14/15 JM

PROJECT: 1416664-6000

RECORD OF BOREHOLE: 15-2

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: July 23, 2015

DATUM: Geodetic

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m										
								SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + Q - rem V. ⊕ U - ○		Wp		W			
							20	40	60	80		10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		

Bentonite Seal

Silica Sand

50 mm Diam. PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-BHS 001 1416664-6000.GPJ GAL-MIS.GDT 12/14/15 JM

PROJECT: 1416664-6000





RECORD OF BOREHOLE: 15-3

SHEET 1 OF 2

LOCATION: See Site Plan

BORING DATE: July 21, 2015

DATUM: Geodetic

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m										
								SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + Q - rem V. ⊕ U - ●		10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³				Wp — W — Wl	
							20	40	60	80		20	40	60	80		
0	Power Auger 200 mm Diam. (Hollow Stem)	GROUND SURFACE		75.41													
		TOPSOIL		0.00													
		(CI/CH) SILTY CLAY, trace sand; grey brown, fissured (WEATHERED CRUST); cohesive, w~PL, very stiff		75.16													
				0.25													
1																	
		GLACIAL TILL		73.89													
				1.52													
2																	
3																	
4		Fresh, grey LIMESTONE		71.45													
				3.96													
		Borehole continued on RECORD OF DRILLHOLE 15-3		4.09													
5																	
6																	
7																	
8																	
9																	
10																	

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-BHS 001 1416664-6000.GPJ GAL-MIS.GDT 12/14/15 JM

PROJECT: 1416664-6000

RECORD OF DRILLHOLE: 15-3

SHEET 2 OF 2

LOCATION: See Site Plan

DRILLING DATE: July 21, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 55

DRILLING CONTRACTOR: Downing Drilling

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	COLOUR % RETURN	JN - Joint FLT - Fault SHR - Shear VN - Vein CJ - Conjugate				BD - Bedding FO - Foliation CO - Contact OR - Orthogonal CL - Cleavage				PL - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular				PO - Polished K - Slickensided SM - Smooth Ro - Rough MB - Mechanical Break				BR - Broken Rock NOTE: For additional abbreviations refer to list of abbreviations & symbols.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
							RECOVERY		R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA				HYDRAULIC CONDUCTIVITY				Dipmtr Point Load Index (MPa)	RMC -Q AVG.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
							TOTAL CORE %	SOLID CORE %			TYPE AND SURFACE DESCRIPTION	Ucon	Jr	Ja	10 cm	20 cm	30 cm	40 cm			50 cm	60 cm	70 cm	80 cm	90 cm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Bentonite Seal

Silica Sand

32 mm Diam. PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-RCK 004 1416664-6000.GPJ GAL-MISS.GDT 12/14/15 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-1

SHEET 1 OF 2

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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								20	40	60	80	nat V. rem V.	+ ⊕	Q - U -	● ○			10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF DRILLHOLE: 16-1

SHEET 2 OF 2

LOCATION: See Site Plan

DRILLING DATE: December 8, 2016

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME

DRILLING CONTRACTOR: Downing Drilling

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	FLUSH	COLOUR % RETURN	JN - Joint FLT - Fault SHR- Shear VN - Vein CJ - Conjugate BD- Bedding FO- Foliation CO- Contact OR- Orthogonal CL - Cleavage PL - Planar CU- Curved UN- Undulating ST - Stepped IR - Irregular PO- Polished K - Slickensided SM- Smooth Ro - Rough MB- Mechanical Break BR - Broken Rock NOTE: For additional abbreviations refer to list of abbreviations & symbols.										DISCONTINUITY DATA				HYDRAULIC CONDUCTIVITY K, cm/sec		Diametral Point Load Index (MPa)	RMC -Q' AVG.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
								RECOVERY		R.Q.D. %	FRACT. INDEX PER 0.25 m	B Angle	DIP w.r.t. CORE AXIS	TYPE AND SURFACE DESCRIPTION	Joon	Jr	Ja	10'	10'	10'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
								TOTAL CORE %	SOLID CORE %																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-RCK 004 1650505-8000.GPJ GAL-MISS GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-2

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	RESISTANCE, BLOWS/0.3m				k, cm/s						
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ●		WATER CONTENT PERCENT						
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			
0		GROUND SURFACE		74.72														
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, trace organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1											
1					2	SS	1											
2		(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown; cohesive, very stiff	3	SS	1													
			4	SS	5													
3																		
			5	SS	2													
4																		
5																		
6																		
		(ML) sandy SILT, some gravel; grey (GLACIAL TILL); non-cohesive, wet, compact		68.62	9	SS	22											
				6.10														
7	End of Borehole Auger Refusal			68.01														
			6.71															
8																		
9																		
10																		

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-3

SHEET 1 OF 3

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	RESISTANCE, BLOWS/0.3m				k, cm/s						
								SHEAR STRENGTH Cu, kPa		nat V. + Q - ● rem V. ⊕ U - ○		WATER CONTENT PERCENT						
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			
								20	40	60	80	20	40	60	80			
0		GROUND SURFACE		75.05														
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, some organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1											
1			2	SS	WH												Bentonite Seal	
					73.53													
		(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown (WEATHERED CRUST); cohesive, very stiff		1.52	3	SS	1											Silica Sand
2			4	SS	4												32 mm Diam. PVC #10 Slot Screen 'C'	
					72.00													
		(CL/MC) CLAYEY SILT to SILTY CLAY; grey; cohesive, stiff		3.05	5	SS	WH											Silica Sand
3						6	SS	WH										
4						7	SS	WH										
5						8	SS	WH										Bentonite Seal
6						9	SS	1										
7					10	SS	9											
		(SP) gravelly SAND, some silt; reddish grey; non-cohesive, wet, loose		67.73														
8				7.32	11	SS	3										Silica Sand	
					12	SS	9										32 mm Diam. PVC #10 Slot Screen 'B'	
9																		
		(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense		65.88														
				9.17	13	SS	22										Silica Sand	
10					14	SS	28										Bentonite Seal	
		CONTINUED NEXT PAGE																

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-3

SHEET 2 OF 3

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	SHEAR STRENGTH Cu, kPa		nat V. + Q - ● rem V. ⊕ U - ○		WATER CONTENT PERCENT Wp — W — Wi				
								20	40	60	80	10 ⁻⁶	10 ⁻⁵			10 ⁻⁴
10	Power Auger	(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense		14	SS	28										
11	Wash Boring NW Casing			15	SS	64										
				16	SS	>50										
12		Borehole continued on RECORD OF DRILLHOLE 16-3		63.47 11.58												
13																
14																
15																
16																
17																
18																
19																
20																

Bentonite Seal

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF DRILLHOLE: 16-3

SHEET 3 OF 3

LOCATION: See Site Plan

DRILLING DATE: December 8, 2016

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME

DRILLING CONTRACTOR: Downing Drilling

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	FLUSH	RECOVERY	R.Q.D. %	FRACT. INDEX PER 0.25 m	B Angle	DIP w.r.t. CORE AXIS	DISCONTINUITY DATA TYPE AND SURFACE DESCRIPTION	Joon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		63.47															
	VB	Slightly weathered to weathered, highly fractured, grey LIMESTONE, with shale interbedded		11.58	1	20													Bentonite Seal
12	NM																		Silica Sand
					2	20													
13	Rotary Drill																		32 mm Diam. PVC #10 Slot Screen 'A'
	NQ Core																		
					3	20													Silica Sand
14		End of Drillhole		61.05															
				14.00															
15																			
16																			
17																			
18																			
19																			
20																			
21																			

DEPTH SCALE

1 : 50

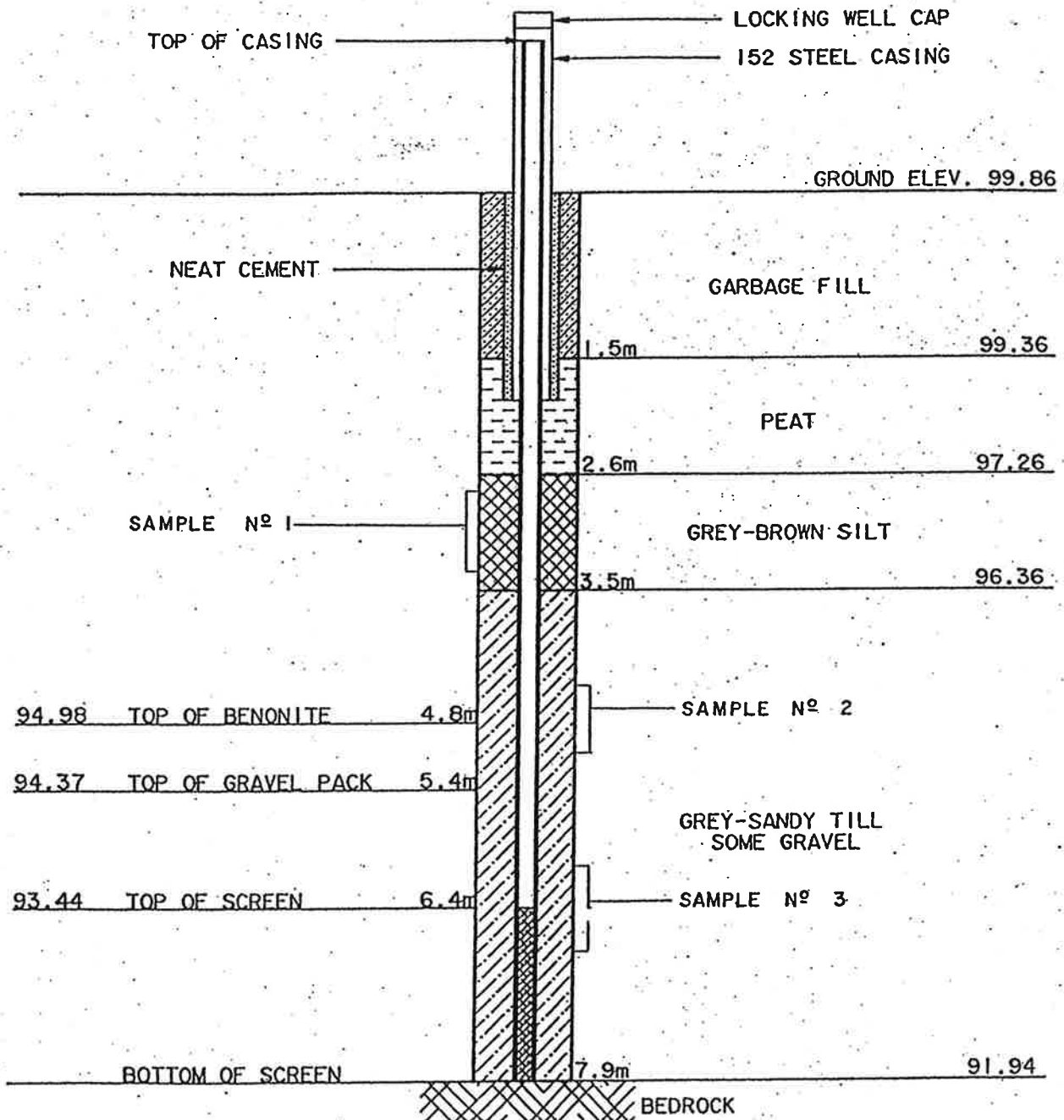


LOGGED: JD

CHECKED: MIB

MIS-RCK 004 1650505-8000.GPJ GAL-MISS.GDT 03/23/17 JM

MONITORING WELL #1 BOREHOLE LOG



OLIVER MANGIONE McCALLA
 & ASSOCIATES LIMITED

Consulting Engineers

Napier, Ontario

DATE:
 MARCH, 1991

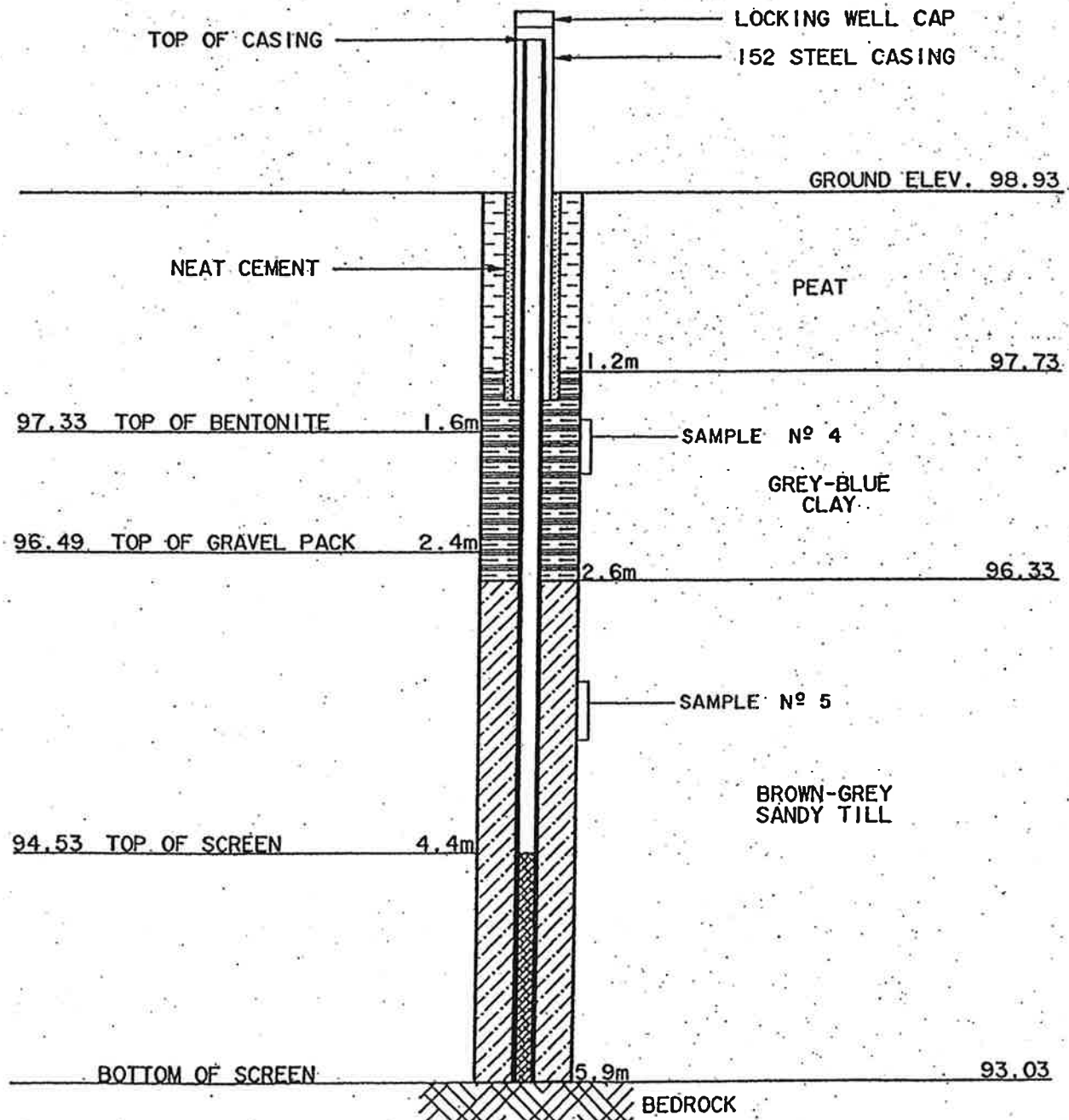
CLIENT:
 TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
 90-7848

SCALE:
 N.T.S.

TITLE:
 MONITORING WELL INSTALLATION

MONITORING WELL #2 BOREHOLE LOG

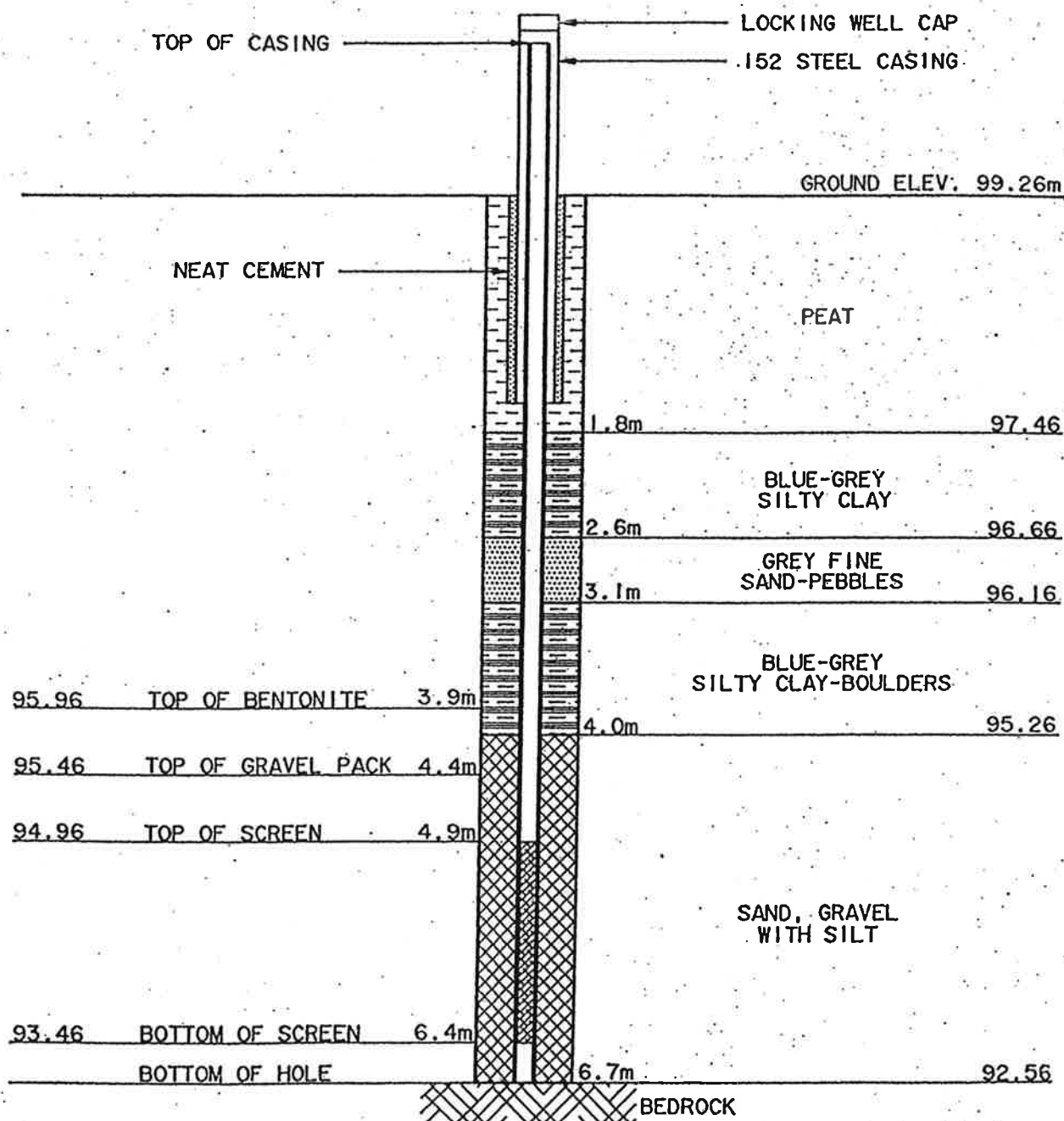


OLIVER MANGIONE McCALLA
& ASSOCIATES LIMITED
 Consulting Engineers

Nepean, Ontario

DATE: MARCH, 1991	CLIENT: TOWNSHIP OF WINCHESTER LANDFILL	DRAWING NO. 90-7848
SCALE: N.T.S.	TITLE: MONITORING WELL INSTALLATION	

MONITORING WELL #3 BOREHOLE LOG



OLIVER MANGIONE McCALLA
 & ASSOCIATES LIMITED

Consulting Engineers

Nepean, Ontario

DATE:
 MARCH, 1991

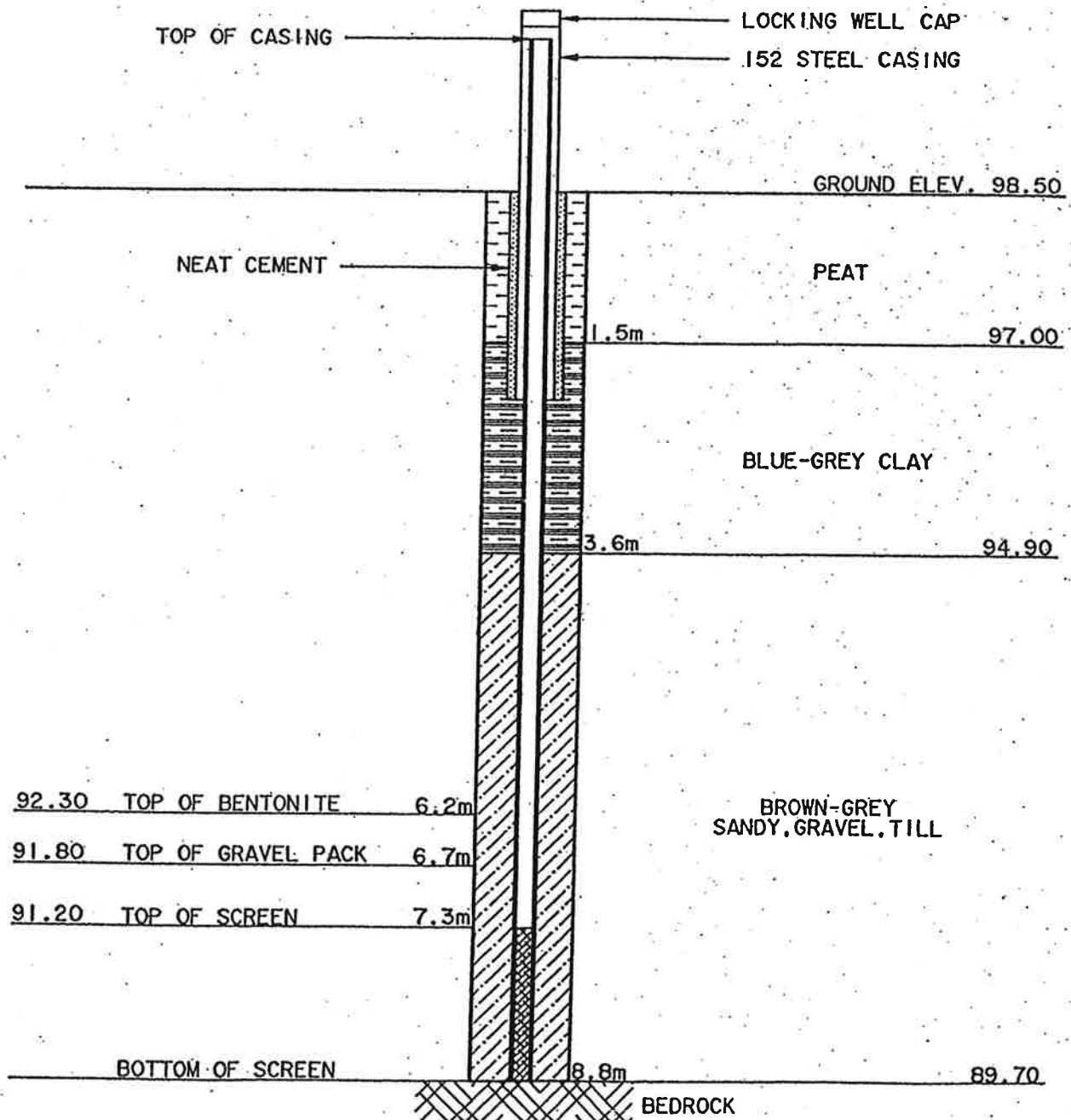
CLIENT:
 TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
 90-7848

SCALE:
 N.T.S.

TITLE:
 MONITORING WELL INSTALLATION

MONITORING WELL #4 BOREHOLE LOG



OLIVER MANGIONE McCALLA
& ASSOCIATES LIMITED

Consulting Engineers

Nepean, Ontario

DATE:
MARCH, 1991

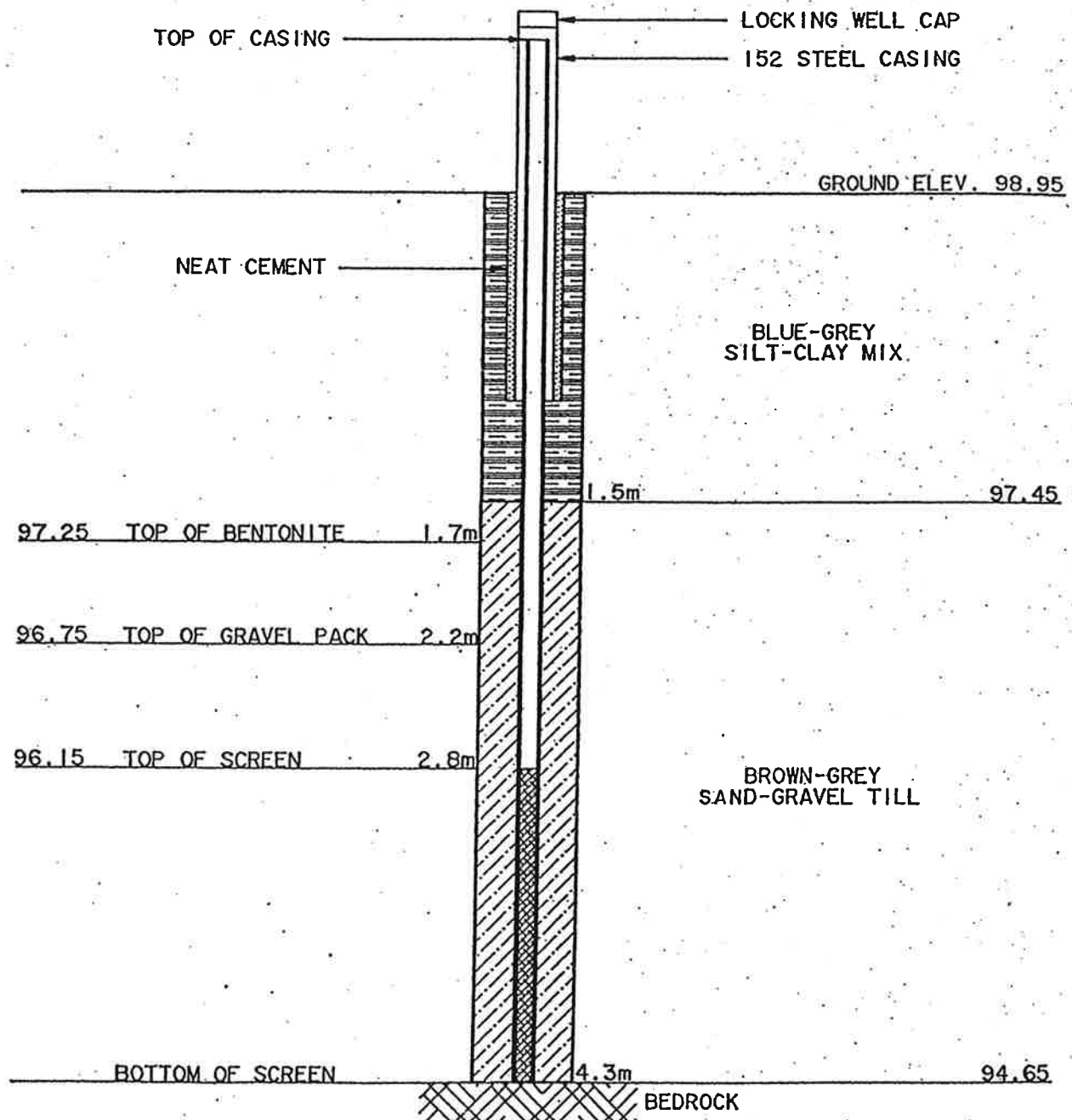
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TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

SCALE:
N.T.S.

TITLE:
MONITORING WELL INSTALLATION

MONITORING WELL #5 BOREHOLE LOG



OLIVER MANGIONE McCALLA
& ASSOCIATES LIMITED
 Consulting Engineers

Nepean, Ontario

DATE:
 MARCH, 1991

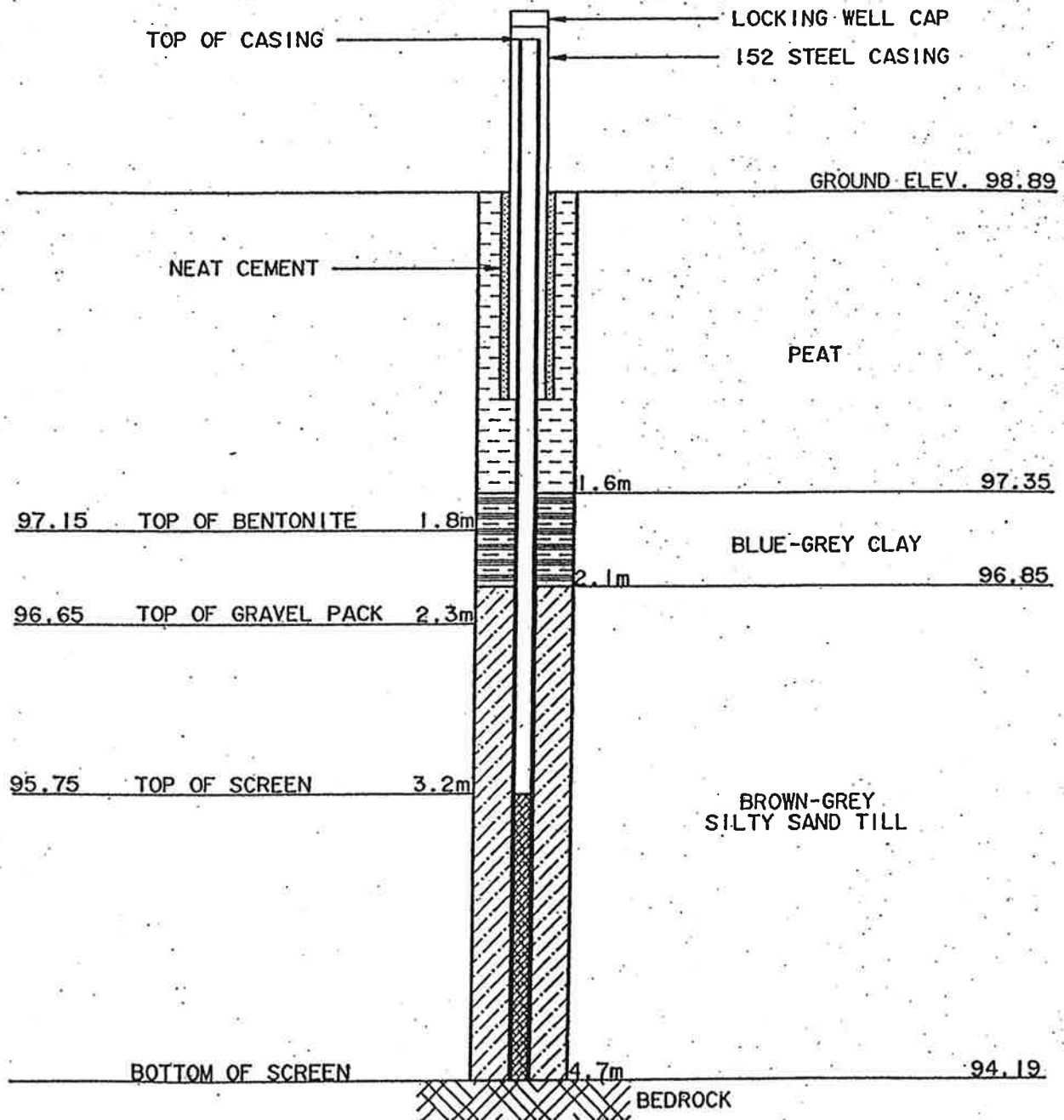
CLIENT:
TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

SCALE:
 N.T.S.

TITLE:
MONITORING WELL INSTALLATION

MONITORING WELL #6 BOREHOLE LOG



OLIVER MANGIONE McCALLA

& ASSOCIATES LIMITED

Consulting Engineers

Napier, Ontario

DATE:
MARCH, 1991

CLIENT:
TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

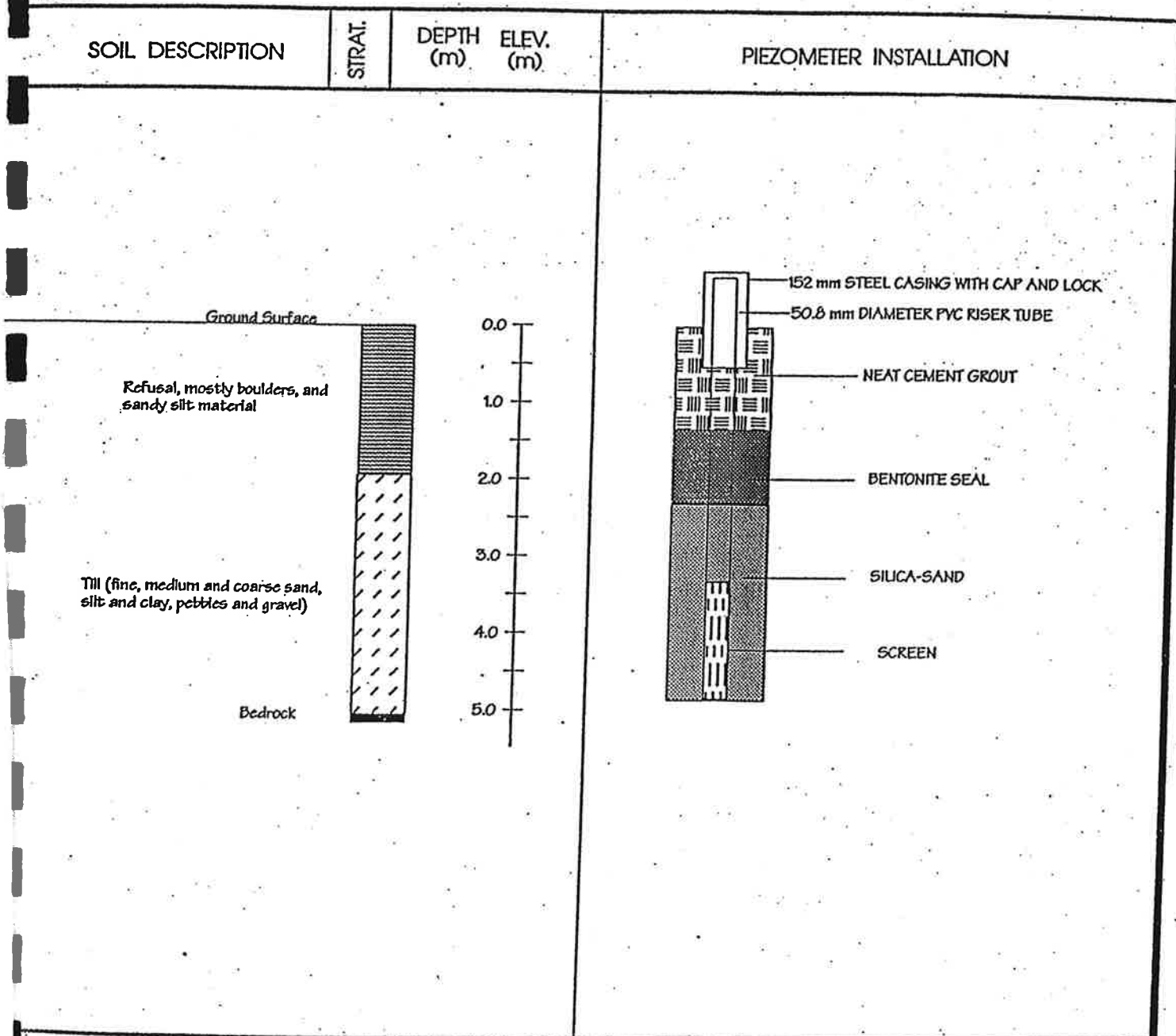
SCALE:
N.T.S.

TITLE:
MONITORING WELL INSTALLATION

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION WINCHESTER TOWNSHIP LANDFILL SITE

MONITORING WELL NUMBER: MW 7
DRILL TYPE: CME 55 HOLLOW STEM AUGER
DRILLER: MARATHON

LOCATION: CONCESSION VII, LOT 8
DATE: JUNE 9, 1992



**L. S. THOMPSON &
ASSOCIATES LTD.**

CONSULTING ENGINEERS

ROSEMOUNT AVE. CORNWALL K6J 3E5

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

DRAWN MHM

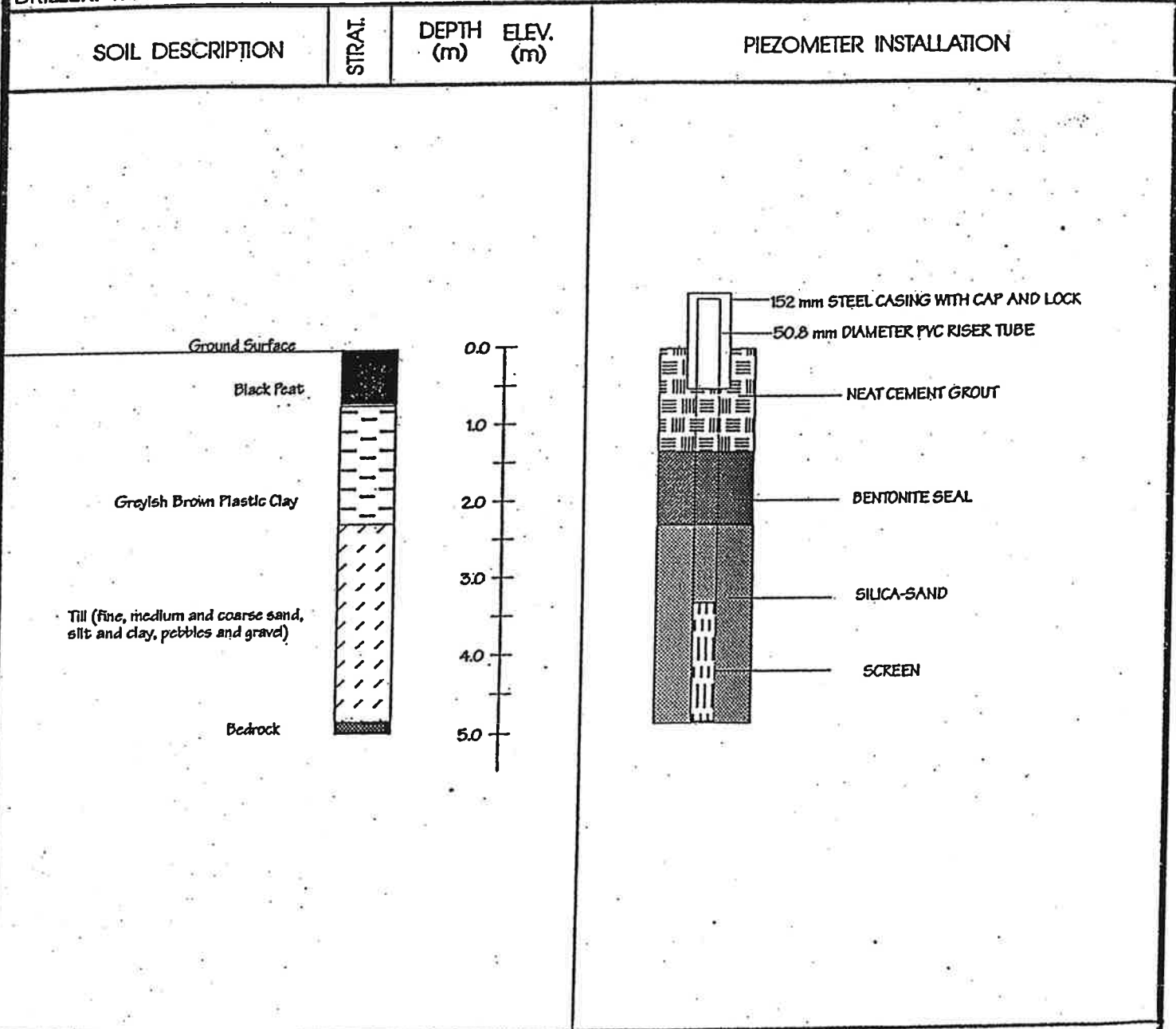
JOB No. 92094

FIGURE:

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION **WINCHESTER TOWNSHIP LANDFILL SITE**

MONITORING WELL NUMBER: MW 8
 DRILL TYPE: CME 55 HOLLOW STEM AUGER
 DRILLER: MARATHON

LOCATION: CONCESSION VII, LOT 8
 DATE: JUNE 9, 1992



**M. S. THOMPSON &
 ASSOCIATES LTD.**

CONSULTING ENGINEERS

1345 ROSEMOUNT AVE. CORNWALL X6J 3E5

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

DRAWN MHM

JOB No. 92094

FIGURE:

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION WINCHESTER TOWNSHIP LANDFILL SITE

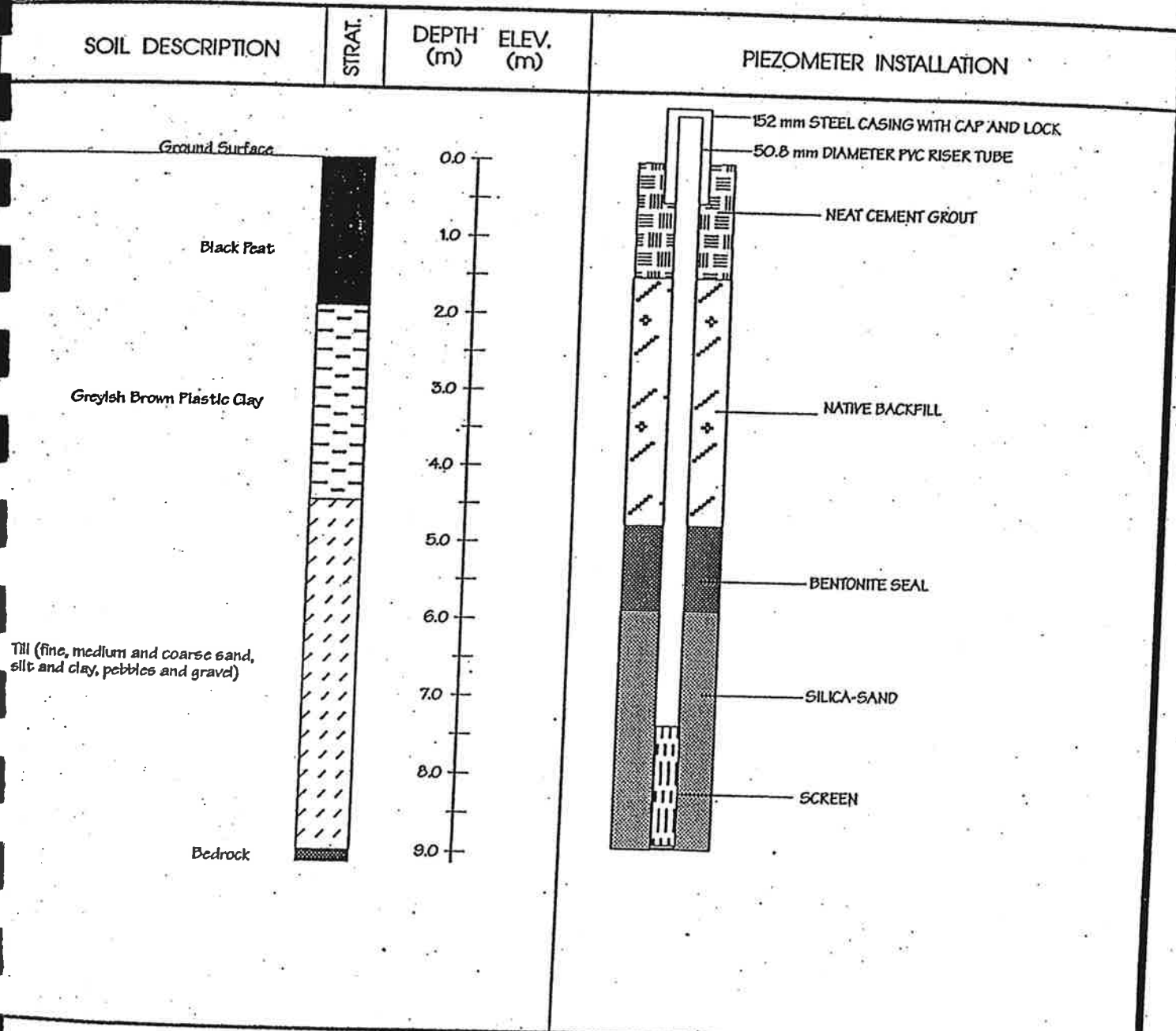
MONITORING WELL NUMBER: MW 9

LOCATION: CONCESSION VII, LOT 8

DRILL TYPE: CME 55 HOLLOW STEM AUGER

DATE: JUNE 9, 1992

DRILLER: MARATHON



**M. S. THOMPSON &
ASSOCIATES LTD.**

CONSULTING ENGINEERS

ROSEMOUNT AVE. CORNWALL X6J 3E5

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

DRAWN MHM

JOB No. 92094

FIGURE:

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION

WINCHESTER TOWNSHIP LANDFILL SITE

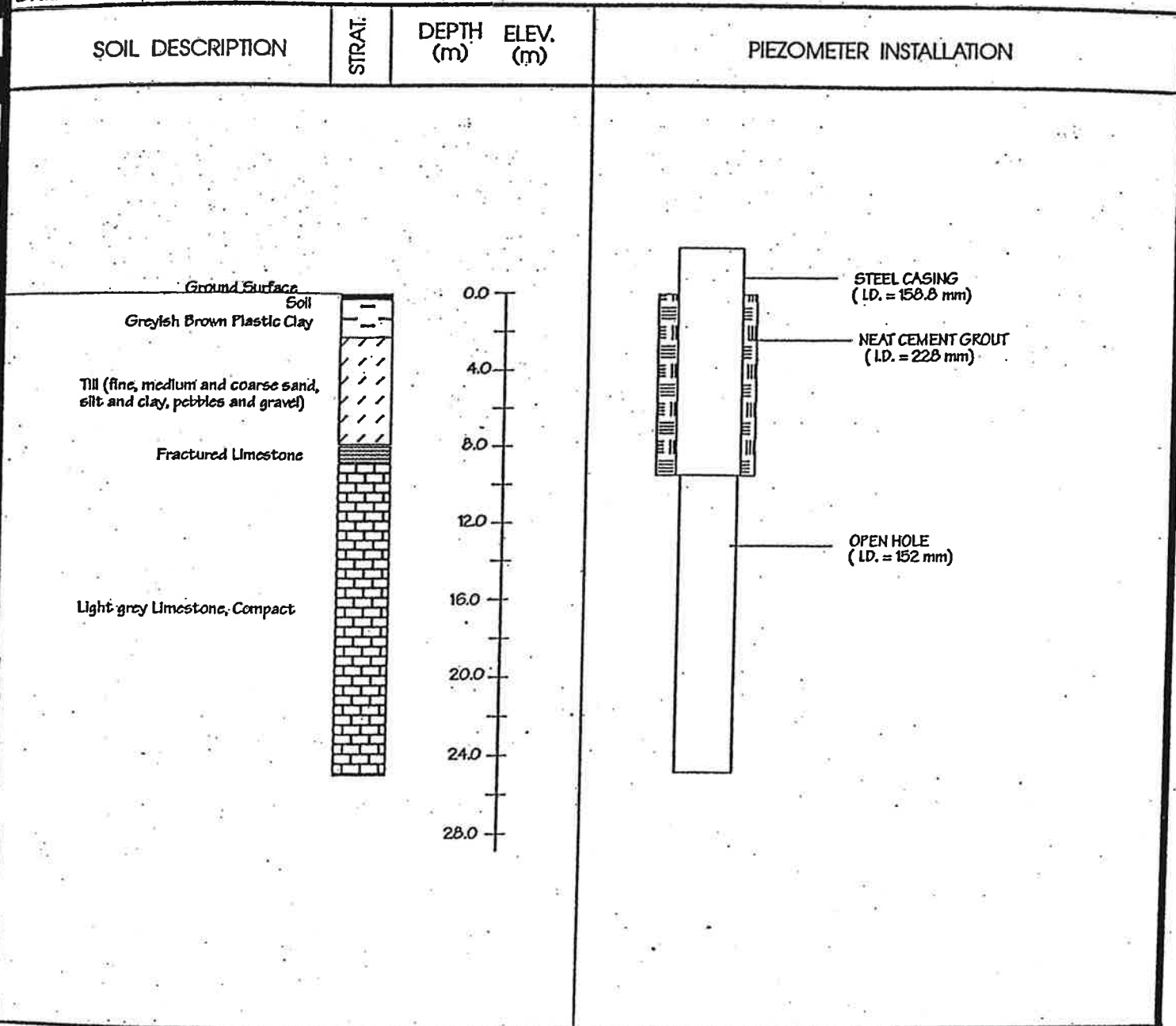
MONITORING BEDROCK WELL: BRW-1

LOCATION: CONCESSION VII, LOT 8

DRILL TYPE: CME 55 HOLLOW STEM AUGER

DATE: JUNE 10, 1992

DRILLER: MARATHON



M. S. THOMPSON & ASSOCIATES LTD.

CONSULTING ENGINEERS

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

DRAWN MHM

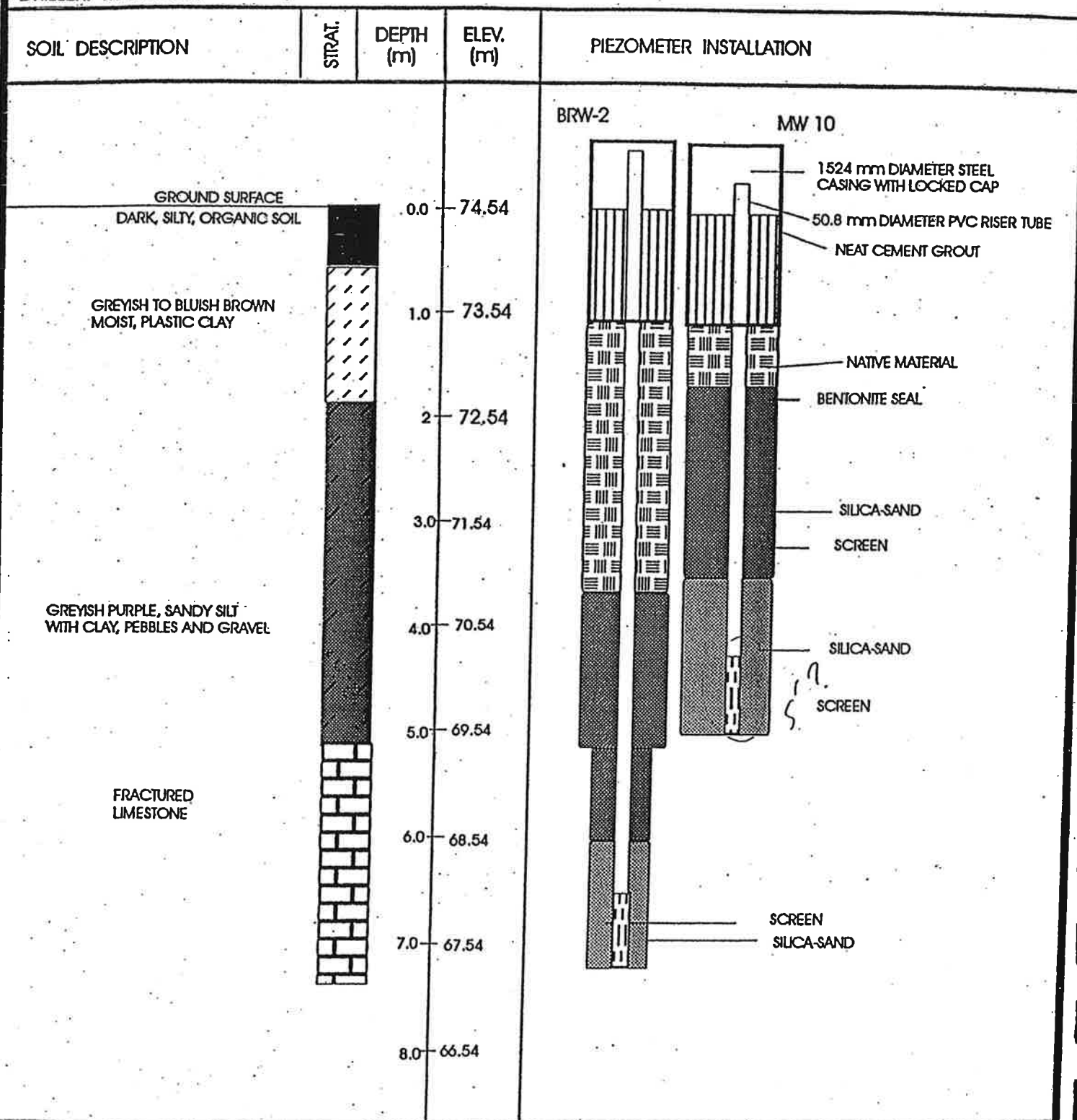
JOB No. 92094

FIGURE:

1345 ROSEMOUNT AVE. CORNWALL K6J 3E5

MONITORING WELL NUMBER: MW10 & BRW-2
 DRILL TYPE: CME 55 HOLLOW STEM AUGER
 DRILLER: MARATHON

LOCATION: WINCHESTER TOWNSHIP
 WASTE DISPOSAL SITE
 DATE: JULY 1993



M. S. THOMPSON &
 ASSOCIATES LTD.

CONSULTING ENGINEERS

1345 ROSEMOUNT AVE, CORNWALL K6J 3E5

FIGURE TITLE

SOIL PROFILE AND
 PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP
 WASTE DISPOSAL SITE

DATE MARCH 1993

SCALE AS SHOWN

DRAWN MHM

JOB No. 92094

Project No: MC12684A

Log of MW 16

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0		Ground Surface	0						
1		TOPSOIL Topsoil.		AU 1					
2			-0.76						
3		CLAYEY SILT Medium grey, moist, soft, fractured clayey silt with traces of sand till.		SS 2					
4									
5				SS 3					
6									
7			-2.3						
8		SILTY SAND Medium brown to grey, moist to saturated, silty sand with some coarse gravel till.		SS 4					
9									
10				SS 5					
11									
12									
13				SS 6					
14									
15			-4.6						
16		End of Borehole							
17									
18									
19									
20									

Drill Method: Hollow Stem Auger

Drill Date: September 26, 2002

Hole Size: 0.15 metres

Trow Consulting Engineers Ltd.

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Datum:

Checked by: B.Coons

Sheet: 1 of 1

Project No: MC12684A

Log of MW 17

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0		Ground Surface	0						
0.3		TOPSOIL	-0.3						
1		Topsoil.		AU 1					
2									
3				SS 2					
4									
5		SILTY GRAVELLY SAND							
6		Medium brown, dry, hard, silty gravelly sand till.		AU 3					
7									
8									
9									
10			-3						
11				SS 4					
12		SILTY GRAVELLY SAND							
13		Medium grey, wet, hard, silty gravelly sand till.		AU 5					
14									
15			-4.6						
16		End of Borehole							
17									
18									
19									
20									

Drill Method: Hollow Stem Auger

Trow Consulting Engineers Ltd.

Datum:

Drill Date: September 26, 2002

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Checked by: B.Coons

Hole Size: 0.15 metres

Sheet: 1 of 1

Project No: MC12684A

Log of MW 18

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0 ft m		Ground Surface	0						
1		TOPSOIL Topsoil.	-0.3	AU 1					
2		SILTY CLAY Medium brown, moist, silty fractured clay.	-1.2	SS 2					
3									
4									
5									
6									
7		SILTY SAND Medium brown, dry, silty sand with some gravel till.		SS 3					
8									
9									
10									
11		SILTY SANDY GRAVEL Medium grey, wet, silty sandy gravel till. Refusal at 11 feet.	-3	SS 4					
12			-3.4	SS 5					
13		End of Borehole							
14									
15									
16									
17									
18									
19									
20									

Drill Method: Hollow Stem Auger

Drill Date: September 26, 2002

Hole Size: 0.15 metres

Trow Consulting Engineers Ltd.

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Datum:

Checked by: B.Coons

Sheet: 1 of 1

Project No: MC12684A

Log of MW 19

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0		Ground Surface	0						
0		TOPSOIL							
1		Topsoil.	-0.3						
2				AU 1					
3									
4				SS 2					
5		SILTY CLAY							
6		Medium brown, dry, har,							
7		silty clay with some gravel		AU 3					
8		till.							
9									
10				AU 4					
11									
12									
13		SILTY SAND	-3						
14		Medium grey, dry, hard,							
15		silty sand with some gravel		SS 5					
16		till.	-3.4						
17		Refusal at 11'2".							
18									
19									
20		End of Borehole							

Drill Method: Hollow Stem Auger

Trow Consulting Engineers Ltd.

Datum:

Drill Date: September 26, 2002

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Checked by: B.Coons

Hole Size: 0.15 metres

Sheet: 1 of 1

APPENDIX D

Geotechnical Assessment

TECHNICAL MEMORANDUM

DATE January 28, 2022

Project No. 1648253

TO Trish Edmond, P.Eng.
Golder Associates Ltd.

FROM Bridgit Bocage, P.Eng.
William Cavers, P.Eng.

EMAIL Bridgit_Bocage@golder.com
William_Cavers@golder.com

INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN, BOYNE ROAD LANDFILL EXPANSION - GEOTECHNICAL ASSESSMENT

This memorandum provides the results of the geotechnical assessment carried out considering the updated landfilling configuration for the proposed expansion of the Boyne Road Landfill site.

1.0 PROJECT DETAILS

The Boyne Road Landfill site is located on Boyne Road just east of Belanger Road in the Township of North Dundas, Ontario.

It is understood that the proposed expansion consists primarily of horizontal expansion on the south side of the existing footprint. The horizontal expansion adds an additional 3.8 hectares of footprint for a total landfill footprint of 11.9 hectares. The total expanded landfill capacity for waste, including the daily cover, will be about 1,060,750 m³. The maximum elevation of the top of waste will be at about elevation 90.5 masl; a 0.75 thick final soil cover will be placed above the waste. This is approximately 15 m above the average ground surface elevation in the vicinity of the landfill expansion and approximately 2.5 m higher than the existing approved landfill.

The geometry of the proposed landfill side slopes are proposed to be 4H:1V or flatter and landfill top area slopes no steeper than 20H:1V.

An approximately 1 m thick pad of imported permeable fill material will be placed above the existing ground surface as a base layer for the waste disposal.

2.0 BOREHOLE INVESTIGATIONS

Several borehole investigations have been carried out at the site. Previous work included investigations carried out by Golder in 2006, 2007, 2014 to 2016, and geotechnical investigations carried out in 1991 by Olivier Mangione McCalla and Associates Ltd., in 1992 and 1993 by M.S. Thompson Associates Ltd., and in 2002 by Trow Associates Inc. The relevant boreholes within the footprint of the expansion are shown on the attached Site Plan

(Figure 2 - Site Plan from Golder Report titled, “2020 Groundwater and Subsurface Water Monitoring Program and Operations Monitoring, Boyce Road Landfill, Project No. 20139489”). The relevant borehole logs are appended following the text of this memorandum.

3.0 SLOPE STABILITY ASSESSMENT

In general, six main components are typically involved in assessing the stability of a slope:

- 1) The geometry of the slope;
- 2) The geology of the slope (i.e., the composition of the various soil layers within the slope and their depth, thickness, and orientation);
- 3) The groundwater conditions (the groundwater levels and the hydraulic gradient/flow conditions);
- 4) The strength parameters for the soils and waste;
- 5) The unit weights (i.e., densities) of the soils and waste within the slope; and,
- 6) External loading (i.e., surcharge, seismic forces).

Two overall cross-sections (denoted as A-A' and B-B') were used for analysis. The critical side of each cross section was modelled, resulting in consideration of a total of two analysis sections. The sections were developed based on the proposed new fill placement plans and considered the existing ground surface profile along with the overlying proposed fill surface.

The stability of the waste pile and side slopes was evaluated using the SLOPE/W computer program. The Morgenstern Price method, which satisfies both moment and force equilibrium, was used to compute a factor of safety. The factor of safety is defined as the ratio of the magnitude of the forces tending to resist failure to the magnitude of the forces tending to cause failure.

Theoretically, a slope with a factor of safety of less than 1.0 will undergo movement and one with a factor of safety of 1.0 or greater will not undergo movement. For analyses of the stability of slopes under static loading conditions, a factor of safety of greater than about 1.3 can be considered acceptable for this project and reflects inherent uncertainties related to waste material and subsurface variabilities, geometric imprecision, strain incompatibilities, and other risk factors.

The seismic loads imposed on a slope are modelled in a simplified manner by applying a horizontal “pseudo static” force to the soil mass. The “pseudo-static” force, F_s , is calculated as:

$$F_s = k_s \times M$$

Where: k_s = horizontal seismic coefficient; and,
 M = mass of soil contained within the failure surface.

A minimum factor of safety of 1.1 is recommended under seismic loading conditions.

The seismic slope stability evaluations were carried out assuming that the design earthquake would correspond to an event with a 2% probability of occurrence in 50 years (i.e., the 2,475-year design earthquake). Based on the methodology outlined in CHBDC (2014) and NBCC (2015), the Site Class was determined using representative average values of N_{60} . The average shear wave velocity in the upper 30 m at the site was calculated to be about 600 m/s, which corresponds to a Site Class C. The ground surface PGA is about 0.36 g. Therefore, a k_h value of 0.18 g, equal to one-half the ground surface PGA, was used in the slope stability analyses.

3.1 Material Properties

The subsurface stratigraphy was inferred from subsurface information obtained previously by Golder and others.

The key material properties required to complete a stability analysis are the unit weight and shear strength of the materials. The shear strength of soil or waste is conventionally described using a Mohr-Coulomb criterion. This criterion describes the shear strength of a soil in terms of cohesive and frictional components. The magnitude of the frictional component depends on the stress acting perpendicular to the potential failure plane. From this criterion, the strength of a soil to resist shear stress (i.e., to resist sliding) is described by:

$$\tau = c' + \sigma' \tan \phi'$$

τ = Strength of the soil;

c' = Effective cohesion of the soil;

σ' = Effective normal stress (i.e., stress acting perpendicular to the shear plane);

and,

ϕ' = Effective internal friction angle.

The groundwater level was set at the bottom of the landfill base layer in the slope stability analyses.

The material parameters adopted for the analysis are summarized in the table below. The unit weights of the soils and waste were estimated from our experience with similar materials. The value of the unit weight of the waste fill was 13 kN/m³.

The strength parameters assigned to the soils were based on the results of the in-situ testing. The undrained shear strength of the clay soils, where encountered, was estimated based on the N-values shown on the borehole records since shear strength values were not obtained in any of the boreholes within the landfill footprint. The ranges provided below represent a summary of the values used in the analyses. The drained parameters for the clay were based on the work carried out by Lefebvre (1981) studying the strength characteristics of the clay in this region and their influence on slope stability.

Material	Bulk Unit Weight (kN/m ³)	Drained Parameters		Undrained Parameters
		Effective Cohesion (kPa)	Effective Internal Friction Angle (°)	Cohesion (kPa)
Cover Layer	19	0	32	N/A
Waste Fill	13	0	32	N/A
Topsoil or Peat	11.5	0	10	N/A
Silty Clay (firm to stiff)	16	7.4	28.7	50
Glacial Till	21	0	35	N/A
Landfill Base Layer	20.5	0	35	N/A

3.2 Slope Stability Analysis Results

Two overall cross sections (identified as A-A' and B-B') were analyzed. The locations of the cross-sections are shown on attached Figure 12-2 (Site Plan of Proposed Expansion taken from Section 12.0 of the EASR). The stability results are graphically shown on the attached Figures 1 to 6.

The following table indicates the global factors of safety obtained for both static and dynamic analyses for the proposed expanded landfill configuration as shown in Figure 12-3 dated November 2021.

Section	Global Factor of Safety		
	Static Drained	Static Undrained	Seismic
A-A' West	1.9	1.8	1.1
B-B' South	2.7	2.6	1.5

The results of the stability assessment carried out based on the November 2021 fill plan, indicate that the factor of safety against deep-seated static instability of the analyzed sections is greater than 1.5; the proposed expansion configuration is therefore considered acceptable for static conditions.

The results of the seismic slope stability analyses carried out using a simple "pseudo-static" model where a horizontal force is applied to the failure mass to represent the seismic loading, indicate that the factor of safety against deep-seated instability would be 1.1, or greater, for all sections.

3.3 Settlement

Based on the existing subsurface conditions within the footprint of the landfill expansion, it is anticipated that settlements due to waste fill placement will be minimal. It should also be noted that there is no landfill infrastructure beneath the existing landfill that could be adversely affected by compression of subgrade soils under the weight of the waste.

4.0 CLOSURE

We trust this memorandum contains sufficient information for your present requirements.

Yours truly,

GOLDER ASSOCIATES LTD.

Bridgit Bocage, P.Eng.
Geotechnical Engineer

William Cavers, P.Eng.
Senior Geotechnical Engineer

BB/WC/PAS/hdw

[https://golderassociates.sharepoint.com/sites/117046/project files/6 deliverables/3 geotechnical/slope stability memo/1648253-tm-rev0-boyne rd landfill slope stability-2022 01 20.docx](https://golderassociates.sharepoint.com/sites/117046/project%20files/6%20deliverables/3%20geotechnical/slope%20stability%20memo/1648253-tm-rev0-boyne%20rd%20landfill%20slope%20stability-2022%2001%2020.docx)

Attachments:

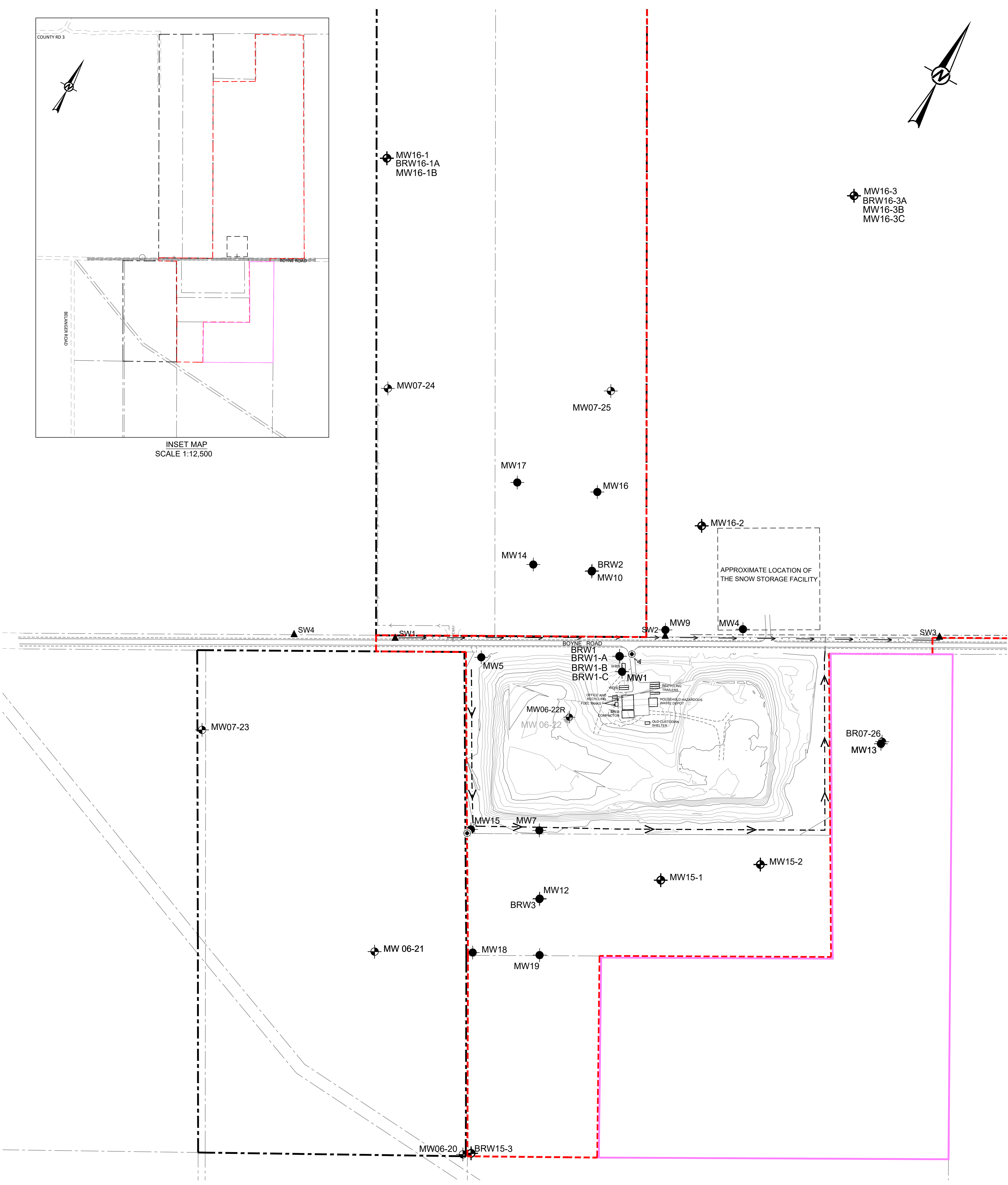
- Figure 2 – Site Plan from Golder Report titled, “2020 Groundwater and Subsurface Water Monitoring Program and Operations Monitoring, Boyce Road Landfill, Project No. 20139489”
- Figure 12-2 – Site Plan of Proposed Expansion taken from Section 12.0 of the EASR
- Figure 12-3 – Cross-Sections of Proposed Expansion taken from Section 12.0 of the EASR
- Record of Borehole Sheets
- Figures 1 to 6 – SLOPE/W Output Sections

References:

- Bray, J.D., Zekkos, D., Kavazanjian Jr., E., Athanasopoulos, G.A., Riemer, M.F. (2009). “Shear Strength of Municipal Solid Waste.” *Journal of Geotechnical and Geoenvironmental Engineering*, 135(6), 709-722.
- Lefebvre, G. (1981). “Fourth Canadian Geotechnical Colloquium: Strength and slope stability in Canadian soft clay deposits.” *Canadian Geotechnical Journal*, 18(3), 420-442.

ATTACHMENTS - FIGURES

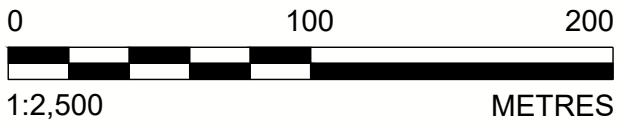
- Figure 2 – Site Plan
- Figure 12-2 – Site Plan of
Proposed Expansion
- Figure 12-3 – Cross-Sections of Proposed
Expansion



- LEGEND**
- DESTROYED MONITORING WELL NO LONGER IN USE
- APPROXIMATE BOREHOLE LOCATION IN PLAN,
ESTABLISHED BY GOLDER ASSOCIATES LTD.
- APPROXIMATE BOREHOLE LOCATION IN PLAN,
ESTABLISHED BY OTHERS
- APPROXIMATE SURFACE WATER SAMPLING
LOCATION IN PLAN
- GEO-REFERENCING POINTS
- GROUND SURFACE CONTOURS (M), BASED ON RESULTS OF THE SURVEYS
CONDUCTED IN 2008, 2010, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 AND 2020
- APPROXIMATE PROPERTY BOUNDARY
OF LANDFILL SITE
- APPROXIMATE BOUNDARY OF CONTAMINANT
ATTENUATION ZONE
- ADDITIONAL LAND OWNED BY TOWNSHIP
- APPROXIMATE LOCATION OF PERIMETER DITCH AND INFERRED
FLOW DIRECTION
- INFERRED FLOW DIRECTION IN THE DRAINAGE DITCH ALONG
BOYNE ROAD

- NOTES**
1. ALL LOCATIONS ARE APPROXIMATE

- REFERENCE**
1. BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
2. 2008 AND 2010 SURVEYS COMPLETED BY STANTEC CONSULTING LTD.
3. MAY 2012, JULY 2013, NOVEMBER 2014, DECEMBER 2015, NOVEMBER 2016, DECEMBER 2017, DECEMBER 2018 AND NOVEMBER 2019, APRIL 2020 AND DECEMBER 2020 SURVEYS COMPLETED BY GOLDER ASSOCIATES LTD.
4. COORDINATE SYSTEM: MTM ZONE 9 NAD83



CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT



YYYY-MM-DD	2021-01-07
PREPARED	ABD
DESIGN	RM
REVIEW	PS
APPROVED	PAS

PROJECT
2020 GROUNDWATER AND SURFACE WATER
MONITORING PROGRAM AND OPERATIONS MONITORING
BOYNE ROAD LANDFILL

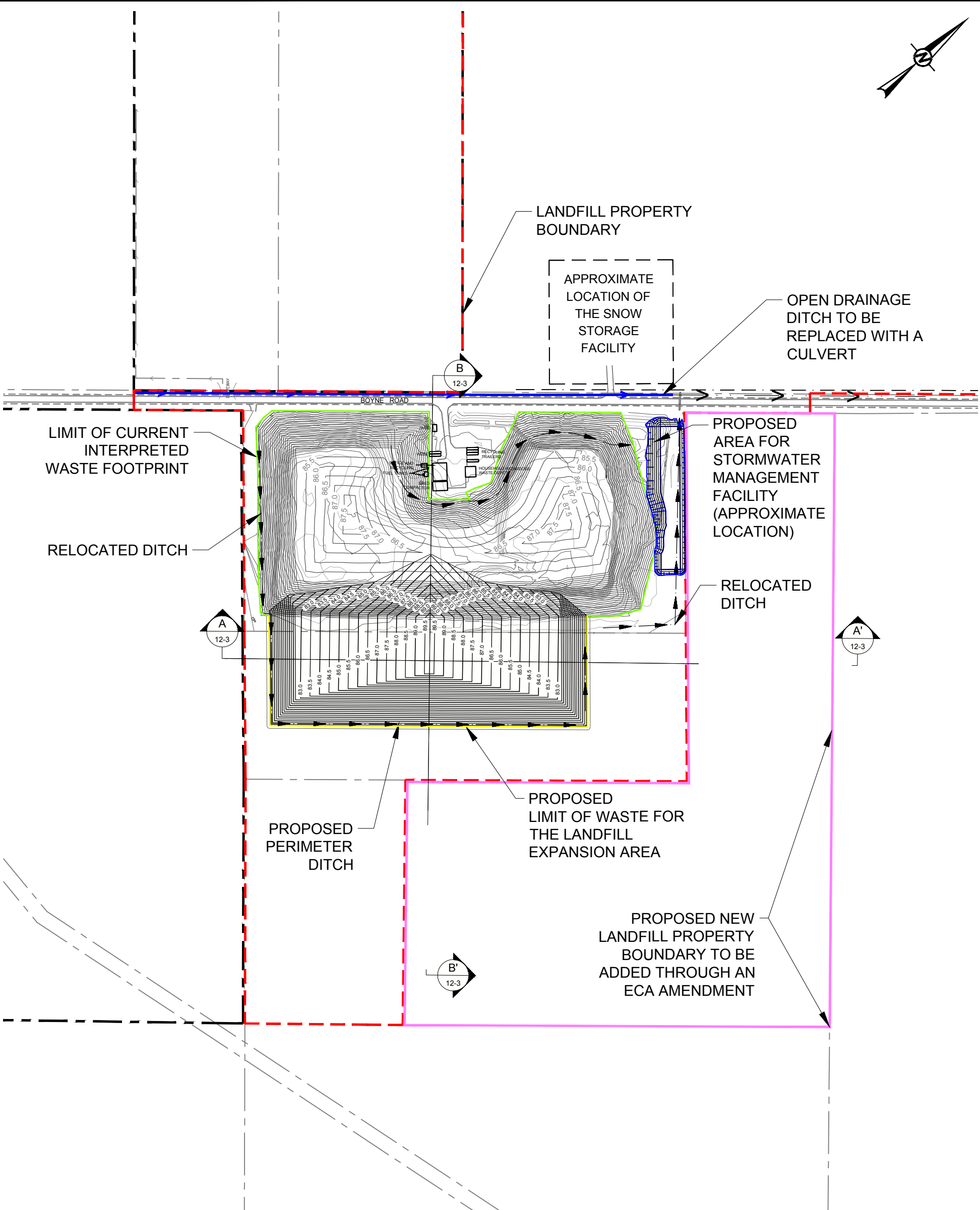
TITLE
SITE PLAN

PROJECT No.
20139489

CONTROL
0004

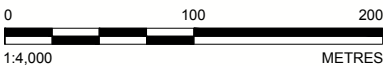
Rev.
A

FIGURE
2



- LEGEND**
- 85.0 — GROUND SURFACE CONTOURS (MASL), BASED ON RESULTS OF THE SURVEYS CONDUCTED IN 2008, 2010, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 AND 2020
 - 89.5 — PROPOSED EXPANSION TOP OF WASTE ELEVATION CONTOURS (MASL)
 - — APPROXIMATE PROPERTY BOUNDARY OF LANDFILL SITE
 - — APPROXIMATE BOUNDARY OF EXISTING CONTAMINANT ATTENUATION ZONE EASEMENT LANDS
 - — PROPOSED PERIMETER DITCH
 - — EXISTING ROADSIDE DITCH TO BE REPLACED WITH A CULVERT (APPROXIMATE LOCATION)
 - — PROPOSED NEW LANDFILL PROPERTY BOUNDARY TO BE ADDED THROUGH AN ECA AMENDMENT

- REFERENCE(S)**
- BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
 - 2008 AND 2010 SURVEYS COMPLETED BY STANTEC CONSULTING LTD.
 - MAY 2012, JULY 2013, NOVEMBER 2014, DECEMBER 2015, NOVEMBER 2016, DECEMBER 2017, DECEMBER 2018 AND NOVEMBER 2019, APRIL 2020 AND DECEMBER 2020 SURVEYS COMPLETED BY GOLDER ASSOCIATES LTD.
 - COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28



CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT	YYYY-MM-DD	2021-11-16
	DESIGNED	YJM
	PREPARED	ABD
	REVIEWED	PLE
	APPROVED	PAS

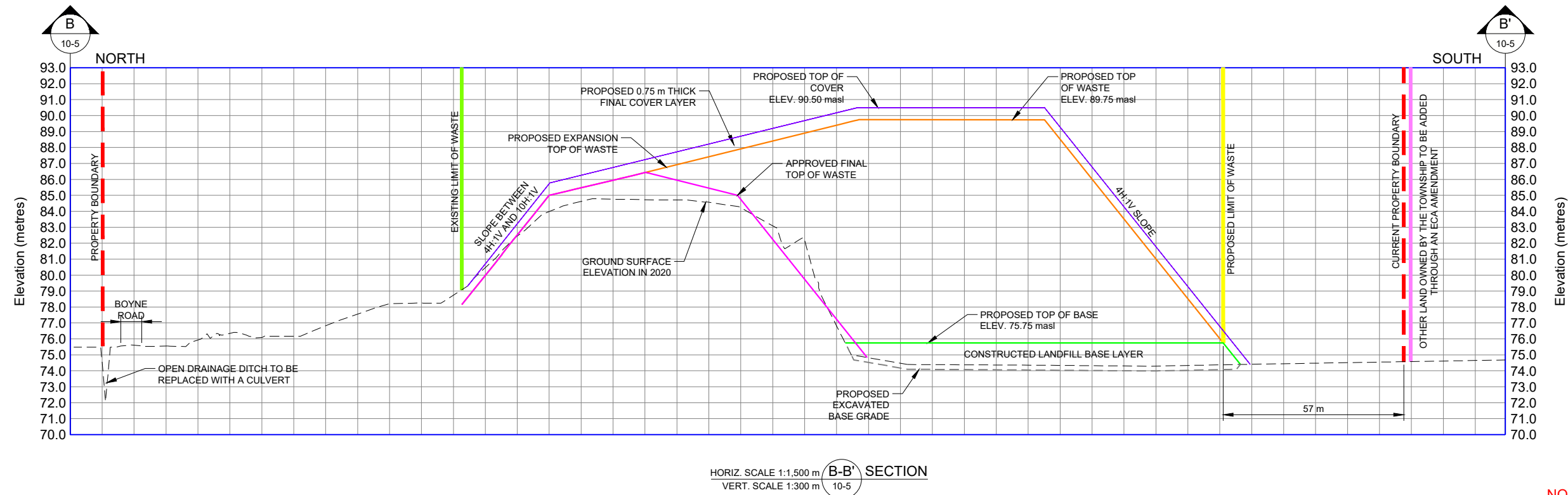
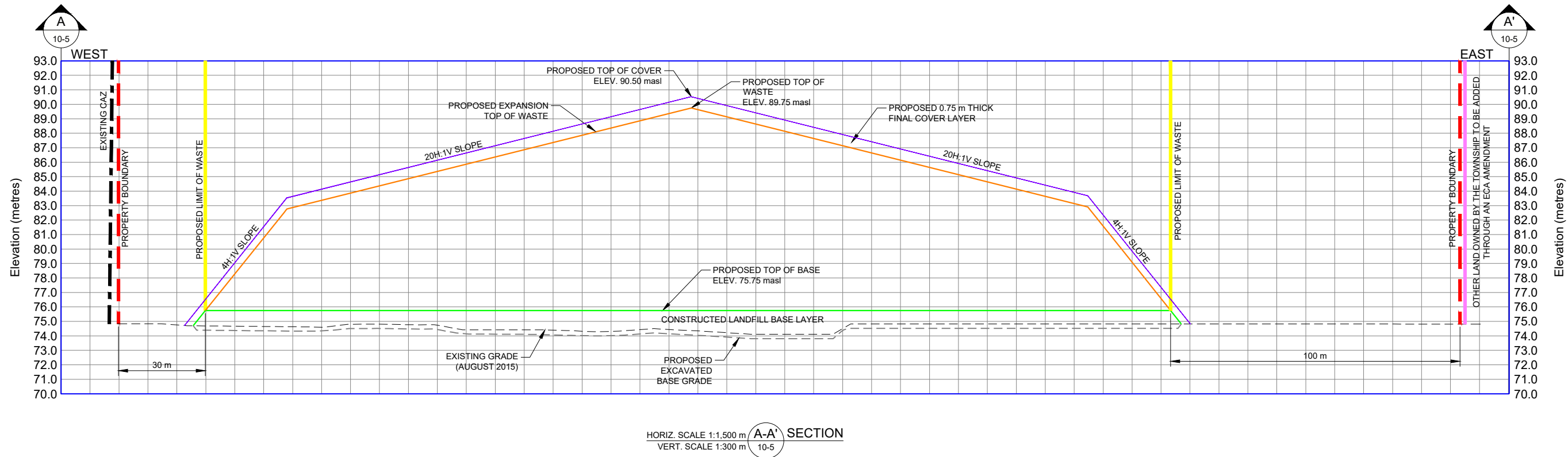


PROJECT
INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN

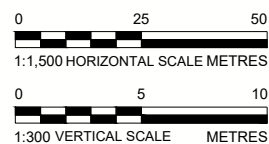
TITLE
SITE PLAN OF PROPOSED EXPANSION

PROJECT NO.	PHASE/TASK	REV.	FIGURE
1648253	2.0\2.2.0.	0	12-2

NOT FOR CONSTRUCTION
DRAFT



NOT FOR CONSTRUCTION
DRAFT



CLIENT
TOWNSHIP OF NORTH DUNDAS

CONSULTANT



YYYY-MM-DD	2021-11-16
DESIGNED	YJM
PREPARED	ABD
REVIEWED	PLE
APPROVED	PAS

PROJECT
INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE
TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN

TITLE
CROSS-SECTIONS OF PROPOSED EXPANSION

PROJECT NO.	PHASE/TASK	REV.	FIGURE
1648253	2.0/2.2.0.	0	12-3

ATTACHMENTS

- **Record of Borehole Sheets**

LIST OF ABBREVIATIONS

The abbreviations commonly employed on Records of Boreholes, on figures, and in the text of the report are as follows:

I. SAMPLE TYPE

AS	Auger sample
BS	Block sample
CS	Chunk sample
DO or DP	Seamless open-ended, driven or pushed tube samplers
DS	Denison type sample
FS	Foil sample
RC	Rock core
SC	Soil core
SS	Split spoon sampler
ST	Slotted tube
TO	Thin-walled, open
TP	Thin-walled, piston
WS	Wash sample
DT	Dual tube sample
DD	Diamond drilling

II. PENETRATION RESISTANCE

Standard Penetration Resistance (SPT), N:

The number of blows by a 63.5 kg. (140 lb.) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split spoon sampler for a distance of 300 mm (12 in.).

Dynamic Cone Penetration Resistance (DCPT); N_d :

The number of blows by a 63.5 kg (140 lb.) hammer dropped 760 mm (30 in.) to drive an uncased 50 mm (2 in.) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

PH: Sampler advanced by hydraulic pressure

PM: Sampler advanced by manual pressure

WH: Sampler advanced by static weight of hammer

WR: Sampler advanced by weight of sampler and rod

Cone Penetration Test (CPT):

An electronic cone penetrometer with a 60° conical tip and a projected end area of 10 cm² pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q_t), porewater pressure (u) and friction along a sleeve are recorded electronically at 25 mm penetration intervals.

III. SOIL DESCRIPTION

(a) Cohesionless Soils

Density Index (Relative Density)	N Blows/300 mm Or Blows/ft.
Very loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very dense	over 50

(b) Cohesive Soils C_u or S_u

Consistency	kPa	Psf
Very soft	0 to 12	0 to 250
Soft	12 to 25	250 to 500
Firm	25 to 50	500 to 1,000
Stiff	50 to 100	1,000 to 2,000
Very stiff	100 to 200	2,000 to 4,000
Hard	Over 200	Over 4,000

IV. SOIL TESTS

w	Water content
w_p or PL	Plastic limited
w_l or LL	Liquid limit
C	Consolidation (oedometer) test
CHEM	Chemical analysis (refer to text)
CID	Consolidated isotropically drained triaxial test ¹
CIU	Consolidated isotropically undrained triaxial test with porewater pressure measurement ¹
D_R	Relative density
DS	Direct shear test
Gs	Specific gravity
M	Sieve analysis for particle size
MH	Combined sieve and hydrometer (H) analysis
MPC	Modified Proctor compaction test
SPC	Standard Proctor compaction test
OC	Organic content test
SO ₄	Concentration of water-soluble sulphates
UC	Unconfined compression test
UU	Unconsolidated undrained triaxial test
V	Field vane test (LV-laboratory vane test)
γ	Unit weight

Note: ¹ Tests which are anisotropically consolidated prior shear are shown as CAD, CAU.

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	3.1416
$\ln x$	natural logarithm of x
$\log_{10} x$ or $\log x$	logarithm of x to base 10
g	acceleration due to gravity
t	time
FOS	factor of safety
V	volume
W	weight

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta \sigma'$
ϵ	linear strain
ϵ_v	volumetric strain
η	coefficient of viscosity
ν	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma - u$)
σ'_{vo}	initial vertical effective overburden stress
$\sigma_1 \sigma_2 \sigma_3$	principal stresses (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1 + \sigma_2 + \sigma_3) / 3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight)*
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma' = \gamma - \gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s / \rho_w$) formerly (G_s)
e	void ratio
n	porosity
S	degree of saturation
*	Density symbol is ρ . Unit weight symbol is γ where $\gamma = \rho g$ (i.e. mass density multiplied by acceleration due to gravity)

(a) Index Properties (continued)

w	water content
w_l or LL	liquid limit
w_p or PL	plastic limit
I_p or PI	plasticity Index $= (w_l - w_p)$
w_s	shrinkage limit
I_L	liquidity index $= (w - w_p) / I_p$
I_c	consistency index $= (w_l - w) / I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index $= (e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (overconsolidated range)
C_s	swelling index
C_α	coefficient of secondary consolidation
m_v	coefficient of volume change
c_v	coefficient of consolidation (vertical direction)
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation stress
OCR	overconsolidation ratio $= \sigma'_p / \sigma'_{vo}$

(d) Shear Strength

τ_p or τ_r	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction $= \tan \delta$
c'	effective cohesion
c_u or s_u	undrained shear strength ($\phi = 0$ analysis)
p	mean total stress $(\sigma_1 + \sigma_3) / 2$
p'	mean effective stress $(\sigma'_1 + \sigma'_3) / 2$
q	$(\sigma_1 - \sigma_3) / 2$ or $(\sigma'_1 - \sigma'_3) / 2$
q_u	compressive strength $(\sigma_1 - \sigma_3)$
S_t	sensitivity

Notes:

$$^1 \tau = c' + \sigma' \tan \phi'$$

$$^2 \text{ shear strength} = (\text{compressive strength}) / 2$$

LITHOLOGICAL AND GEOTECHNICAL ROCK DESCRIPTION TERMINOLOGY

WEATHERING STATE

Fresh: no visible sign of rock material weathering

Faintly Weathered: weathering limited to the surface of major discontinuities.

Slightly weathered: penetrative weathering developed on open discontinuity surfaces but only slight weathering of rock material.

Moderately weathered: weathering extends throughout the rock mass but the rock material is not friable

Highly weathered: weathering extends throughout rock mass and the rock material is partly friable.

Completely weathered: rock is wholly decomposed and in a friable condition but the rock texture and structure are preserved.

BEDDING THICKNESS

<u>Description</u>	<u>Bedding Plane Spacing</u>
Very Thickly Bedded	> 2 m
Thickly Bedded	0.6 m to 2m
Medium Bedded	0.2 m to 0.6 m
Thinly Bedded	60 mm to 0.2 m
Very Thinly Bedded	20 mm to 60 mm
Laminated	6 mm to 20 mm
Thinly Laminated	< 6 mm

JOINT OR FOLIATION SPACING

<u>Description</u>	<u>Spacing</u>
Very Wide	> 3 m
Wide	1 – 3 m
Moderately Close	0.3 – 1 m
Close	50 – 300 mm
Very Close	< 50 mm

GRAIN SIZE

<u>Term</u>	<u>Size*</u>
Very Coarse Grained	> 60 mm
Coarse Grained	2 – 60 mm
Medium Grained	60 microns – 2mm
Fine Grained	2 – 60 microns
Very Fine Grained	< 2 microns

Note: *Grains > 60 microns diameter are visible to the naked eye.

CORE CONDITION

Total Core Recovery

The percentage of solid drill core recovered regardless of quality or length, measured relative to the length of the total core run.

Solid Core Recovery (SCR)

The percentage of solid drill core, regardless of length, recovered at full diameter, measured relative to the length of the total core run.

Rock Quality Designation (RQD)

The percentage of solid drill core, greater than 100 mm length, recovered at full diameter, measured relative to the length of the total core run. RQD varies from 0% for completely broken core 100% for core in solid sticks.

DISCONTINUITY DATA

Fracture Index

A count of the number of discontinuities (physical separations) in the rock core, including naturally occurring fractures but not including mechanically induced breaks caused by drilling.

Dip with Respect to (W.R.T.) Core Axis

The angle of the discontinuity relative to the axis (length) of the core. In a vertical borehole a discontinuity with a 90° angle is horizontal.

Description and Notes

An abbreviated description of the discontinuities, whether naturally occurring separations such as fractures, bedding planes and foliation ground or shattered core and mechanically separated bedding or foliation surfaces. Additional information concerning the nature information concerning the nature of fracture surfaces and infillings are also noted.

Abbreviations

BD -	Bedding	PY -	Pyrite
FO -	Foliation/Schistosity	Ca -	Calcite
CL -	Clean	PO -	Polished
SH -	Shear Plane/Zone	K -	Slickensided
VN -	Vein	SM -	Smooth
FLT -	Fault	RO -	Ridged/Rough
CO -	Contact	ST -	Stepped
JN -	Joint	PL -	Planar
FR -	Fracture	IR -	Irregular
MB -	Mechanical Break	UN -	Undulating
BR -	Broken Rock	CU -	Curved
BL -	Blast Induced	TCA -	To Core Axis
II -	Parallel To	STR -	Stress Induced
OR -	Orthogonal		

PROJECT: 14-1125-0007/Boyne Road Landfill




RECORD OF BOREHOLE: MW06-22R

SHEET 1 OF 1

LOCATION: N 4994479.6; E 474643.5 (UTM NAD83 Zone 18T)

BORING DATE: May 1, 2014

DATUM: Geodetic

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m												
								SHEAR STRENGTH Cu, kPa		nat V. + rem V. ⊕		Q - ● U - ○		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			Wp	W
0		GROUND SURFACE		82.96															
	Power Auger 200 mm Diam. (Hollow Stem)	Waste (FILL)		0.00															
2																			
4																			
6																			
8																			
10																			
		Grey brown SILTY CLAY		71.99 10.97															
12																			
		End of Borehole		70.16 12.80															
14																			
16																			
18																			
20																			

DEPTH SCALE

1 : 100



LOGGED: MIB

CHECKED: YJM

MIS-BHS 001 1411250007.GPJ GAL-MIS.GDT 11/07/14 JM

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: MW07-23

SHEET 1 OF 1





LOCATION: See Site Plan

BORING DATE: September 4, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION									
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT													
								20		40		60		80			10 ⁻⁶		10 ⁻⁵		10 ⁻⁴		10 ⁻³		
								SHEAR STRENGTH Cu, kPa		nat V. rem V		+ ⊕		Q - ● U - ○			Wp		W		Wi				
								20	40	60	80	20	40	60	80										
0	Power Auger 200mm diam. (Hollow Stem)	GROUND SURFACE		74.97																					
		TOPSOIL		0.00																					
		Very stiff grey brown SILTY CLAY (Weathered Crust)		74.76																					
				0.21																					
1																									
		Brown SILTY CLAY, trace gravel		73.90	1	50 DO	20																		
				1.07																					
				73.35																					
			Dense brown to grey sandy SILT, some grey clay, occasional sand seam (GLACIAL TILL)		1.62	2	50 DO	35																	
2																									
3																									
4		End of Borehole (Auger Refusal)		71.25																					
				3.72																					
5																									
6																									
7																									
8																									
9																									
10																									

Bentonite Seal

Silica Sand

32mm Diam. PVC
#10 Slot Screen

WL in screen at
Elev 72.56m on
Sept 25, 2007

Bentonite Seal

Silica Sand

32mm Diam. PVC
#10 Slot ScreenWL in screen at
Elev 72.56m on
Sept 25, 2007

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLRP

MIS-BHS 001 061122127-3 GPJ GAL-MISS GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: MW07-24

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 4, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION			
		DESCRIPTION	STRATA PLOT	ELEV DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH		nat V. \pm rem V. \oplus	Q - \bullet U - \circ	WATER CONTENT PERCENT							
								Cu, kPa				Wp	W	WI					
								20	40	60	80								
0	Power Auger 200mm Diam. (Hollow Stem)	GROUND SURFACE		75.32															
		Dark brown PEAT		0.00															
				74.77															
		Grey brown SILTY CLAY (Weathered Crush)		0.55															
1			74.25																
		Compact grey brown CLAYEY SILT, trace gravel		1.07	1	50 DO	13												
2			73.40																
		Brown grey SANDY SILT, some gravel, occasional cobbles		1.83	2	50 DO	13												
					</														

Bentonite Seal

Native Backfill

Bentonite Seal

Silica Sand

38mm Diam PVC
#10 Slot ScreenWL in screen at
Elev. 73.49m on
Sept. 25, 2007

DEPTH SCALE

1:50



LOGGED: D.J.S.

CHECKED: HLF

MIS-BHS 001 061122127-3 GPJ GAL-MISS GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: MW07-25

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: September 5, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								nat V + Q -				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³					
								Cu, kPa rem V. ⊕ U - ○				Wp — W — WI					
				20 40 60 80					20 40 60 80								
0		GROUND SURFACE		74.13													
		Dark brown PEAT		0.00													
				73.58													
		Grey brown SILTY CLAY (Weathered Crush)		0.55													
1																	
2					1	50 DO	8										
				71.45	2	50 DO	17										
		Compact to dense brown grey SANDY SILT, some gravel & clay, trace cobbles (GLACIAL TILL)		2.00													
3																	
					3	50 DO	22										
4																	
					4	50 DO	14										
5																	
					5	50 DO	00										
6																	
				67.88	6	50 DO											
		End of Borehole (Auger Refusal)		6.25													
7																	
8																	
9																	
10																	

Power Auger
200mm Diam. (Hollow Stem)

Bentonite Seal

Native Backfill

Bentonite Seal

Silica Sand

38mm Diam. PVC #10 Slot Screen

WL in screen at Elev 72.71m on Sept. 25, 2007

WL in screen at Elev 72.71m on Sept 25, 2007

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLRF

MIS-BHS 001 061122127-3.GPJ GAL-MISS.GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: BRW1

SHEET 2 OF 3

LOCATION: See Site Plan

BORING DATE: September 7, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		nat V. + Q - ● rem V. ⊕ U - ○		WATER CONTENT PERCENT Wp ———— W ———— WI					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴			10 ⁻³
10		--- CONTINUED FROM PREVIOUS PAGE ---															
		Limestone Bedrock															
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
		CONTINUED NEXT PAGE															

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLRF

MIS-BHS 001 061122127-3 GP J GAL-MISS.GDT 3/25/08 MLF

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: BRW1

SHEET 3 OF 3

LOCATION: See Site Plan

BORING DATE: September 7, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵		
20		--- CONTINUED FROM PREVIOUS PAGE ---													
21		Limestone Bedrock													
22															
23															
24															
25		End of Hole				60.04 26.00									
26															
27															
28															
29															
30															

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: *HLRF*

MIS-BHS 001 061122127-3 GPJ GAL-MISS GDT 3/25/08 MLF

PROJECT: 06-1122-127-6200

RECORD OF MONITORING WELL: MW 06-20

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: Nov. 23, 2006

DATUM:

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION										
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT													
								20		40		60				80		10 ⁻⁶		10 ⁻⁵		10 ⁻⁴		10 ⁻³	
								SHEAR STRENGTH Cu, kPa		nat V. + rem V. ⊕		Q - ● U - ○				Wp		W		WI					
0		GROUND SURFACE		75.64																					
		TOPSOIL		0.00																					
				75.40																					
		Very stiff grey brown SILTY CLAY (Weathered Crust)		0.24																					
				74.16																					
		Compact grey SANDY SILT, some gravel, trace clay, occasional silty sand and silt seam or layer (GLACIAL TILL)		1.46																					
2	Power Auger 250mm Diam (Hollow Stem)				1	50 DO	21																		
					2	50 DO	28																		
4				71.37																					
		End of Borehole Auger Refusal		4.27																					
5																									
6																									
7																									
8																									
9																									
10																									

Protective casing
set in Bentonite
Seal38mm Diam PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: H.L.R.F.

MIS-BHS 001 061122127-6200.GPJ GAL-MISS GDT 3/25/08

PROJECT: 1416664-6000

RECORD OF BOREHOLE: 15-1

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: July 23, 2015

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION								
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT													
								20		40		60		80				10 ⁻⁶		10 ⁻⁵		10 ⁻⁴		10 ⁻³	
								20		40		60		80				Wp		W		Wi			
0	Power Auger 200 mm Diam. (Hollow Stem)	GROUND SURFACE		74.40																					
		TOPSOIL		0.00																					
		(CL/ML) CLAYEY SILT, low to medium plasticity; brown; cohesive, w>PL, very stiff		74.05 0.35	1	AS	-																		
1		(ML) sandy SILT, some low plasticity fines, some gravel, subrounded; grey brown (GLACIAL TILL); wet, compact		73.49 0.91																					
		End of Borehole Auger Refusal		72.72 1.68	2	SS	>50																		
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

Bentonite Seal

Silica Sand

50 mm Diam. PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-BHS 001 1416664-6000.GPJ GAL-MIS.GDT 12/14/15 JM

PROJECT: 1416664-6000



RECORD OF BOREHOLE: 15-2

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: July 23, 2015

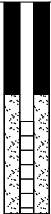
DATUM: Geodetic

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m										
								SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕		Q - ● U - ○		10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³			
							20	40	60	80	20	40	60	80			
0	Power Auger 200 mm Diam. (Hollow Stem)	GROUND SURFACE		74.68													
		TOPSOIL		0.00 74.47													
		(CL/ML) CLAYEY SILT, trace gravel and low plasticity fines; grey brown; cohesive, w~PL, very stiff		0.21													
1					1	AS	-										
		End of Borehole Auger Refusal		73.28 1.40													
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Bentonite Seal

Silica Sand

50 mm Diam. PVC
#10 Slot Screen



Bentonite Seal

Silica Sand

50 mm Diam. PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-BHS 001 1416664-6000.GPJ GAL-MIS.GDT 12/14/15 JM

PROJECT: 1416664-6000







































RECORD OF BOREHOLE: 15-3

SHEET 1 OF 2

LOCATION: See Site Plan

BORING DATE: July 21, 2015

DATUM: Geodetic

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m										
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ●		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴			10 ⁻³
0		GROUND SURFACE		75.41													
	Power Auger 200 mm Diam. (Hollow Stem)	TOPSOIL		0.00													
		(CI/CH) SILTY CLAY, trace sand; grey brown, fissured (WEATHERED CRUST); cohesive, w~PL, very stiff		75.16													
				0.25													
1																	
																	
		GLACIAL TILL		73.89													
2				1.52													
																	
3																	
																	
4																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-BHS 001 1416664-6000.GPJ GAL-MIS.GDT 12/14/15 JM

PROJECT: 1416664-6000

RECORD OF DRILLHOLE: 15-3

SHEET 2 OF 2

LOCATION: See Site Plan

DRILLING DATE: July 21, 2015

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 55

DRILLING CONTRACTOR: Downing Drilling

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	FLUSH	RECOVERY TOTAL CORE %	SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	B Angle	DIP w.r.t. CORE AXIS	DISCONTINUITY DATA TYPE AND SURFACE DESCRIPTION	Joon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q AVG.	
		BEDROCK SURFACE		71.32																
		Fresh, grey LIMESTONE		4.09	1	100														
5		- Lost core from 4.87 m to 5.03 m			2	90														
6		- Lost core from 5.49 m to 5.53 m																		
6		- Lost core from 5.69 m to 5.74 m			3	90														
7		- Lost core from 6.96 m to 7.01 m																		
8		End of Drillhole		67.33	4	90														
				8.08																
9																				
10																				
11																				
12																				
13																				
14																				

Bentonite Seal

Silica Sand

32 mm Diam. PVC
#10 Slot Screen

DEPTH SCALE

1 : 50



LOGGED: PAH

CHECKED: MIB

MIS-RCK 004 1416664-6000.GPJ GAL-MISS.GDT 12/14/15 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-1

SHEET 1 OF 2





LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m										
								SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
												Wp ——— W ——— WI					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0		GROUND SURFACE		74.71													
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, some organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1										
1																	
		(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown (WEATHERED CRUST); cohesive, very stiff		73.41 1.30	2	SS	5										
2																	
		(CL/MC) CLAYEY SILT to SILTY CLAY; trace gravel; grey; cohesive, very stiff		72.60 2.11													
3																	
					3	SS	4										
4																	
5		(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense		69.99 4.72	4	SS	2										
6					5	SS	>50										
7		Borehole continued on RECORD OF DRILLHOLE 16-1		67.93 6.78													
8																	
9																	
10																	

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

SHEET 2 OF 2

DATUM: Geodetic

DRILLING CONTRACTOR: Downing Drilling

CHECKED: MIB

MIS-RCK 004 1650505-8000.GPJ GAL-MISS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-2

SHEET 1 OF 1

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	RESISTANCE, BLOWS/0.3m				k, cm/s						
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ●		WATER CONTENT PERCENT						
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			
0		GROUND SURFACE		74.72														
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, trace organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1											
1					2	SS	1											
2		(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown; cohesive, very stiff		72.89	3	SS	1											
					4	SS	5											
3																		
4																		
5																		
6																		
6																		
		(ML) sandy SILT, some gravel; grey (GLACIAL TILL); non-cohesive, wet, compact		68.62	9	SS	22											
				6.10														
7		End of Borehole Auger Refusal		68.01														
				6.71														
8																		
9																		
10																		

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-3

SHEET 1 OF 3

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	20 40 60 80				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³						
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ●		WATER CONTENT PERCENT						
								20 40 60 80		Wp —————○ W————— WI								
0		GROUND SURFACE		75.05														
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, some organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1											
1				2	SS	WH												Bentonite Seal
					73.53													
		(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown (WEATHERED CRUST); cohesive, very stiff		1.52	3	SS	1										Silica Sand	
2				4	SS	4											32 mm Diam. PVC #10 Slot Screen 'C'	
					72.00													
		(CL/MC) CLAYEY SILT to SILTY CLAY; grey; cohesive, stiff		3.05	5	SS	WH										Silica Sand	
4				6	SS	WH												
						7	SS	WH										
5						8	SS	WH									Bentonite Seal	
						9	SS	1										
7					10	SS	9											
	(SP) gravelly SAND, some silt; reddish grey; non-cohesive, wet, loose		67.73															
8			11	SS	3												Silica Sand	
					12	SS	9									32 mm Diam. PVC #10 Slot Screen 'B'		
9																		
	(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense		65.88															
			13	SS	22												Silica Sand	
10					14	SS	28									Bentonite Seal		
		CONTINUED NEXT PAGE																

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-3

SHEET 2 OF 3

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	SHEAR STRENGTH Cu, kPa		nat V. + Q - ● rem V. ⊕ U - ○		WATER CONTENT PERCENT Wp — W — Wi				
								20	40	60	80	10 ⁻⁶	10 ⁻⁵			10 ⁻⁴
10	Power Auger	(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense		14	SS	28										
11	Wash Boring NW Casing			15	SS	64										
				16	SS	>50										
12		Borehole continued on RECORD OF DRILLHOLE 16-3		63.47 11.58												
13																
14																
15																
16																
17																
18																
19																
20																

Bentonite Seal

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF DRILLHOLE: 16-3

SHEET 3 OF 3

LOCATION: See Site Plan

DRILLING DATE: December 8, 2016

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME

DRILLING CONTRACTOR: Downing Drilling

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	FLUSH	RECOVERY	R.Q.D. %	FRACT. INDEX PER 0.25 m	B Angle	DIP w.r.t. CORE AXIS	TYPE AND SURFACE DESCRIPTION	Joon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		63.47															
	WB NM	Slightly weathered to weathered, highly fractured, grey LIMESTONE, with shale interbedded		11.58	1	20													Bentonite Seal
12																			Silica Sand
	Rotary Drill NQ Core				2	20													32 mm Diam. PVC #10 Slot Screen 'A'
13																			
					3	20													Silica Sand
14		End of Drillhole		61.05 14.00															
15																			
16																			
17																			
18																			
19																			
20																			
21																			

DEPTH SCALE

1 : 50

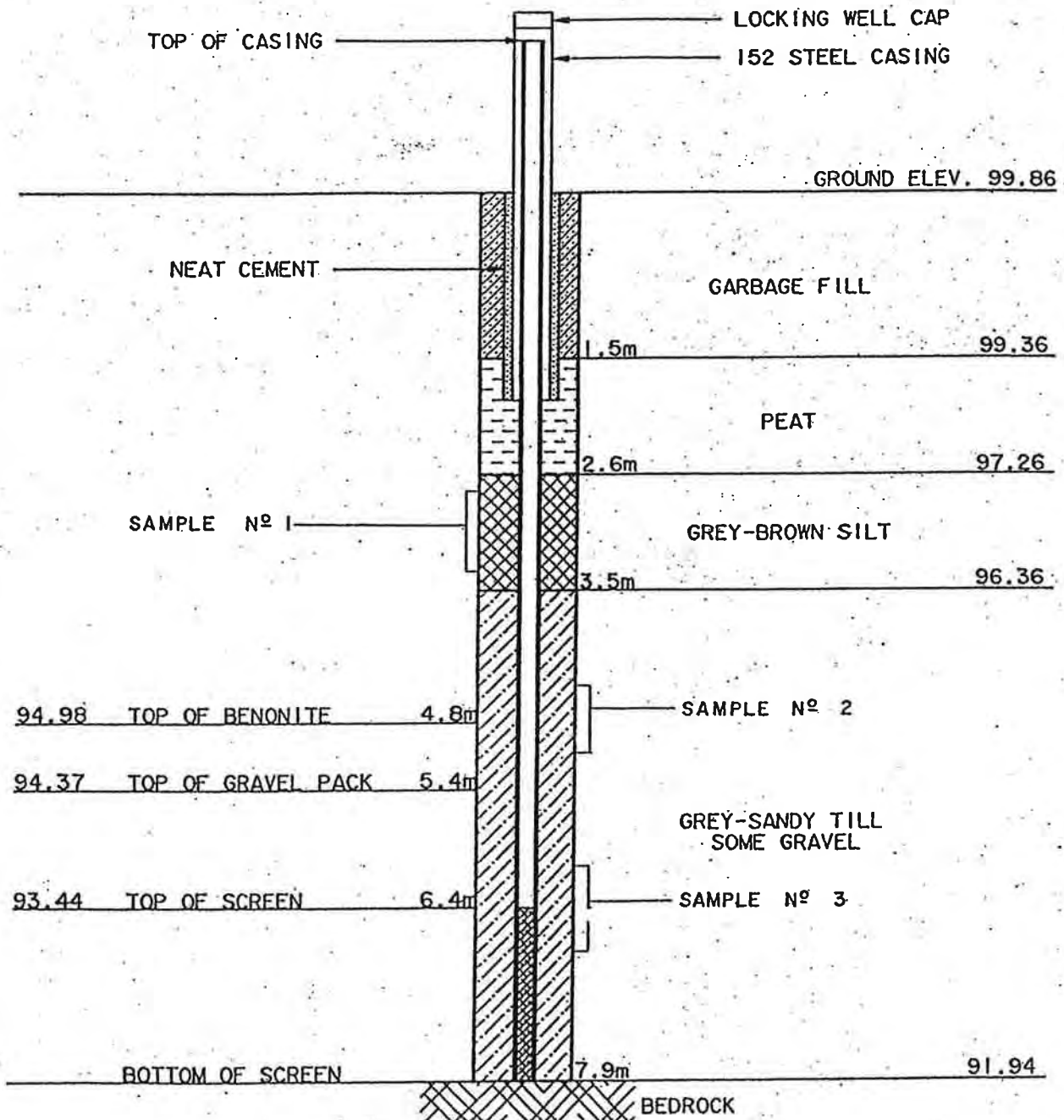


LOGGED: JD

CHECKED: MIB

MIS-RCK 004 1650505-8000.GPJ GAL-MISS GDT 03/23/17 JM

MONITORING WELL #1 BOREHOLE LOG



OLIVER MANGIONE McCALLA
& ASSOCIATES LIMITED

Consulting Engineers

Napier, Ontario

DATE:
MARCH, 1991

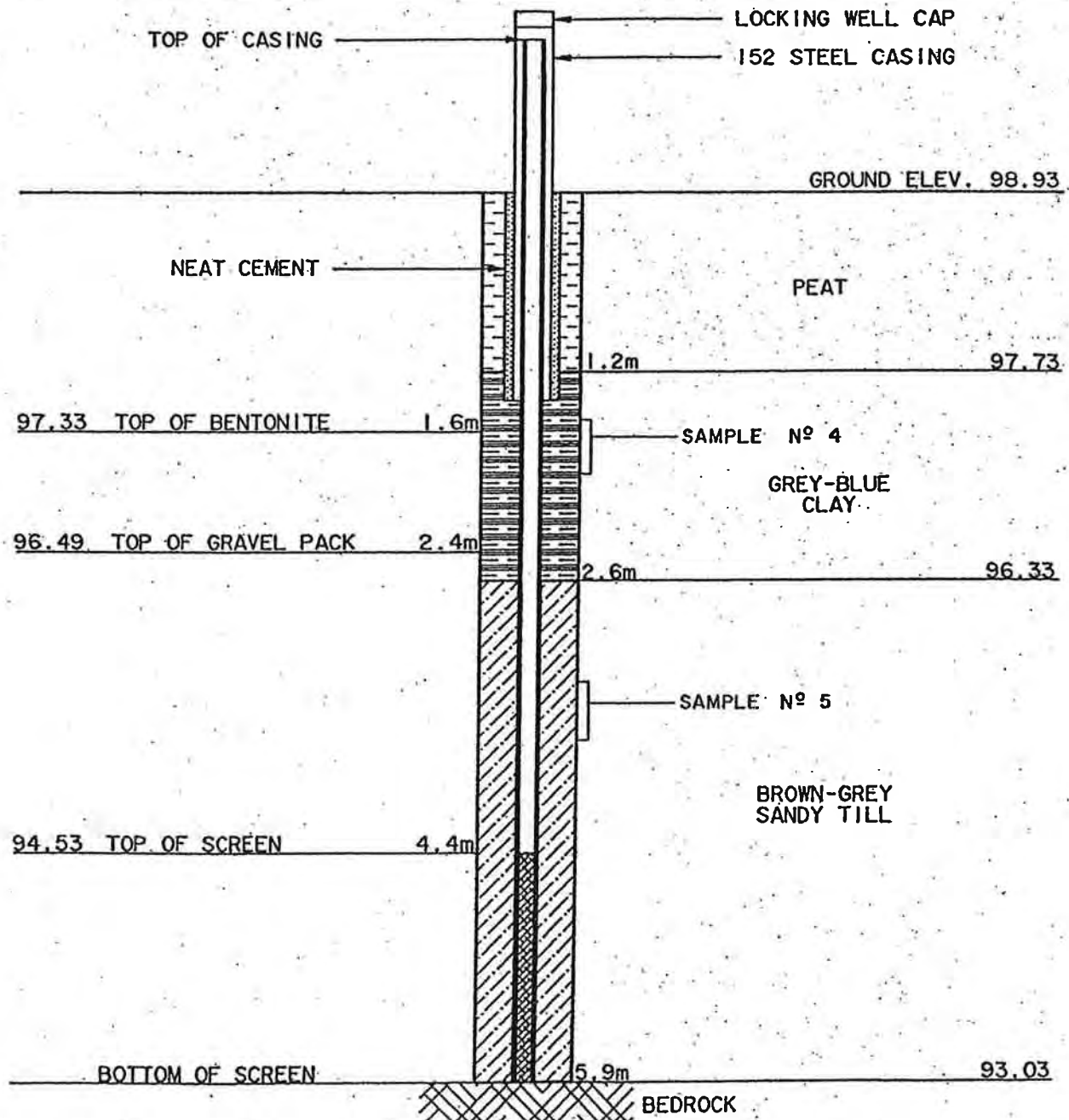
CLIENT:
TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

SCALE:
N.T.S.

TITLE:
MONITORING WELL INSTALLATION

MONITORING WELL #2 BOREHOLE LOG

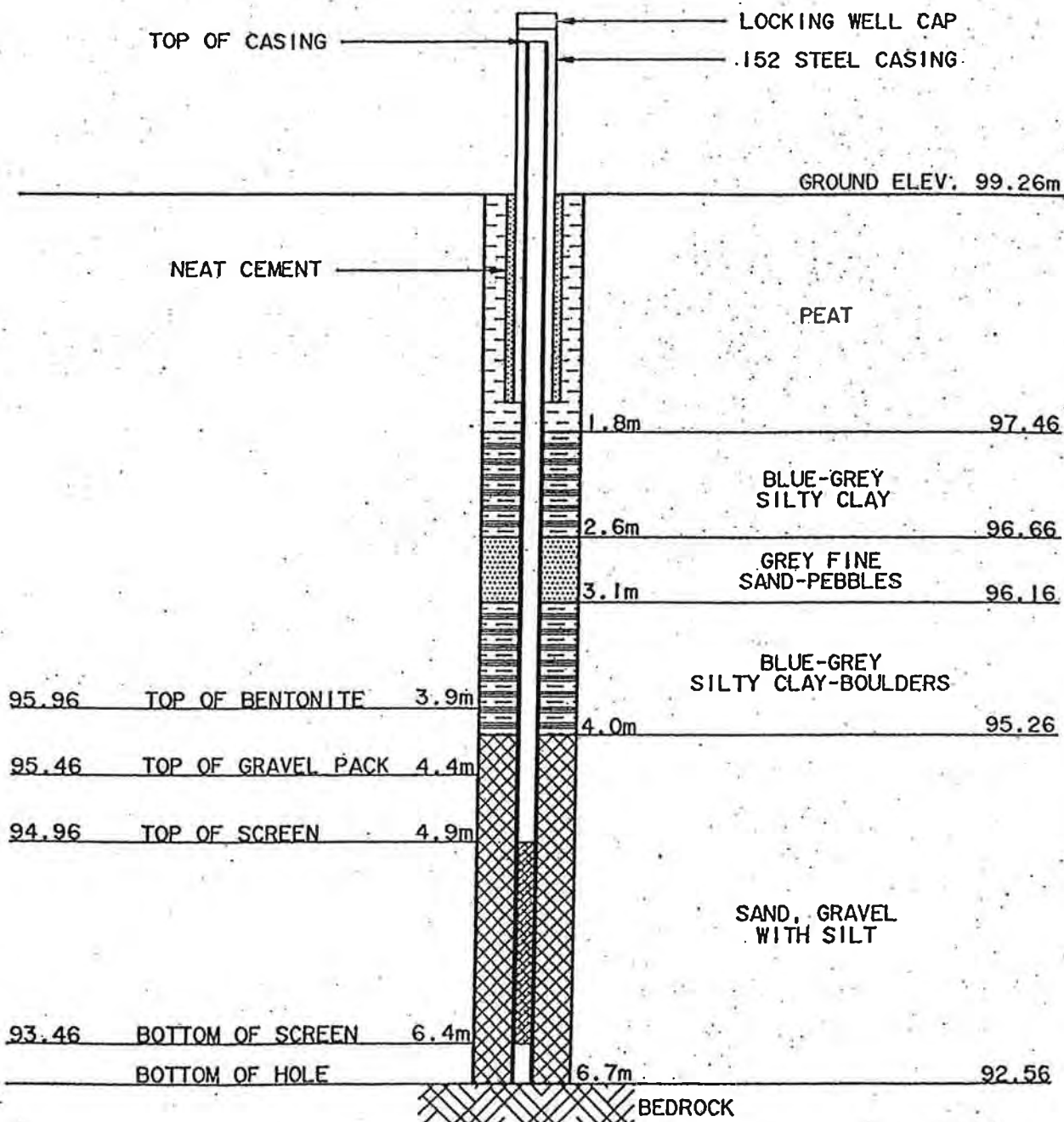


OLIVER MANGIONE McCALLA
 & ASSOCIATES LIMITED
 Consulting Engineers

Nepean, Ontario

DATE: MARCH, 1991	CLIENT: TOWNSHIP OF WINCHESTER LANDFILL	DRAWING NO. 90-7848
SCALE: N.T.S.	TITLE: MONITORING WELL INSTALLATION	

MONITORING WELL #3 BOREHOLE LOG



OLIVER MANGIONE McCALLA
 & ASSOCIATES LIMITED

Consulting Engineers

Nepean, Ontario

DATE:
MARCH, 1991

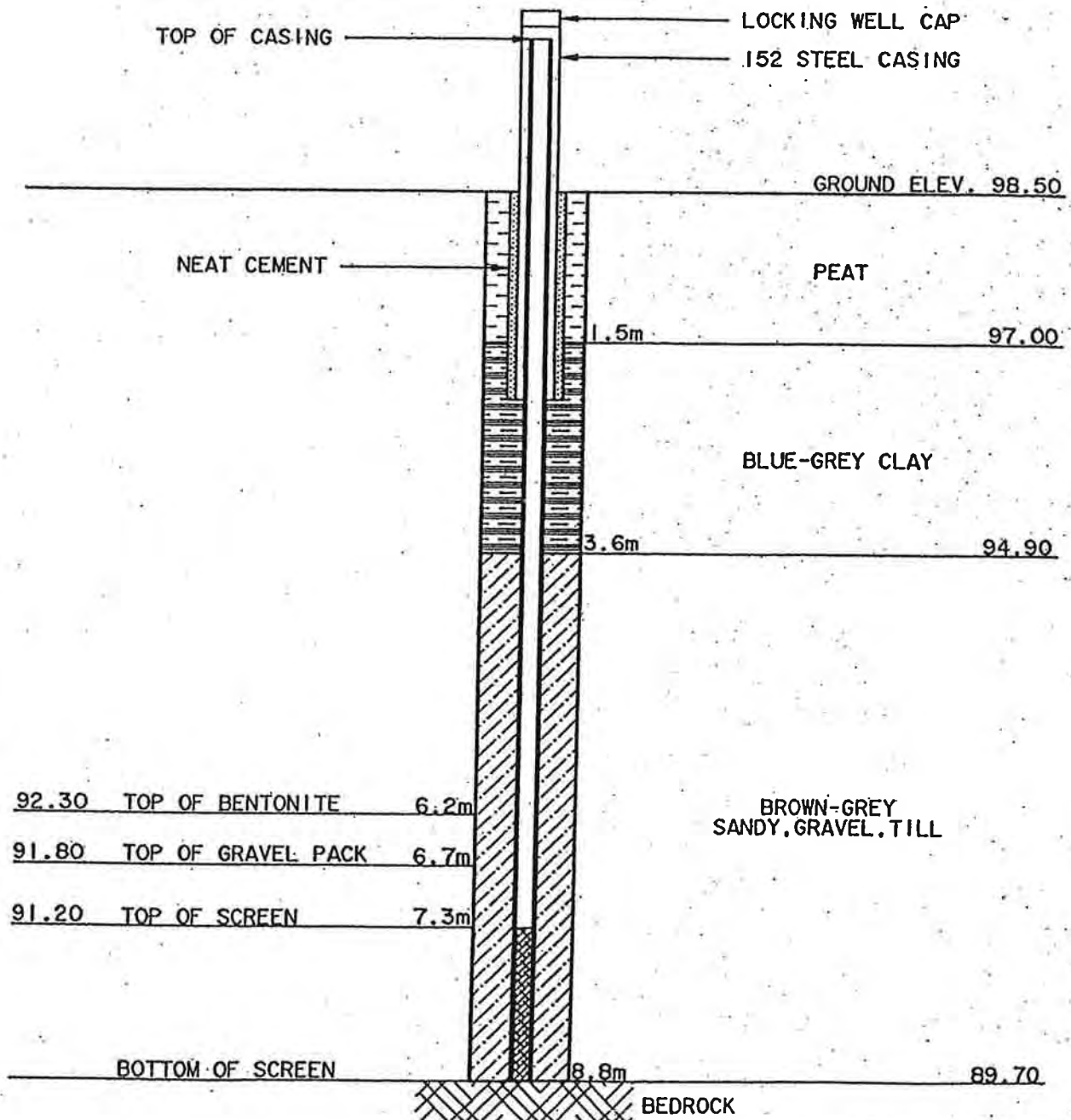
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TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

SCALE:
N.T.S.

TITLE:
MONITORING WELL INSTALLATION

MONITORING WELL #4 BOREHOLE LOG



OLIVER MANGIONE McCALLA
& ASSOCIATES LIMITED

Consulting Engineers

Nepean, Ontario

DATE:
MARCH, 1991

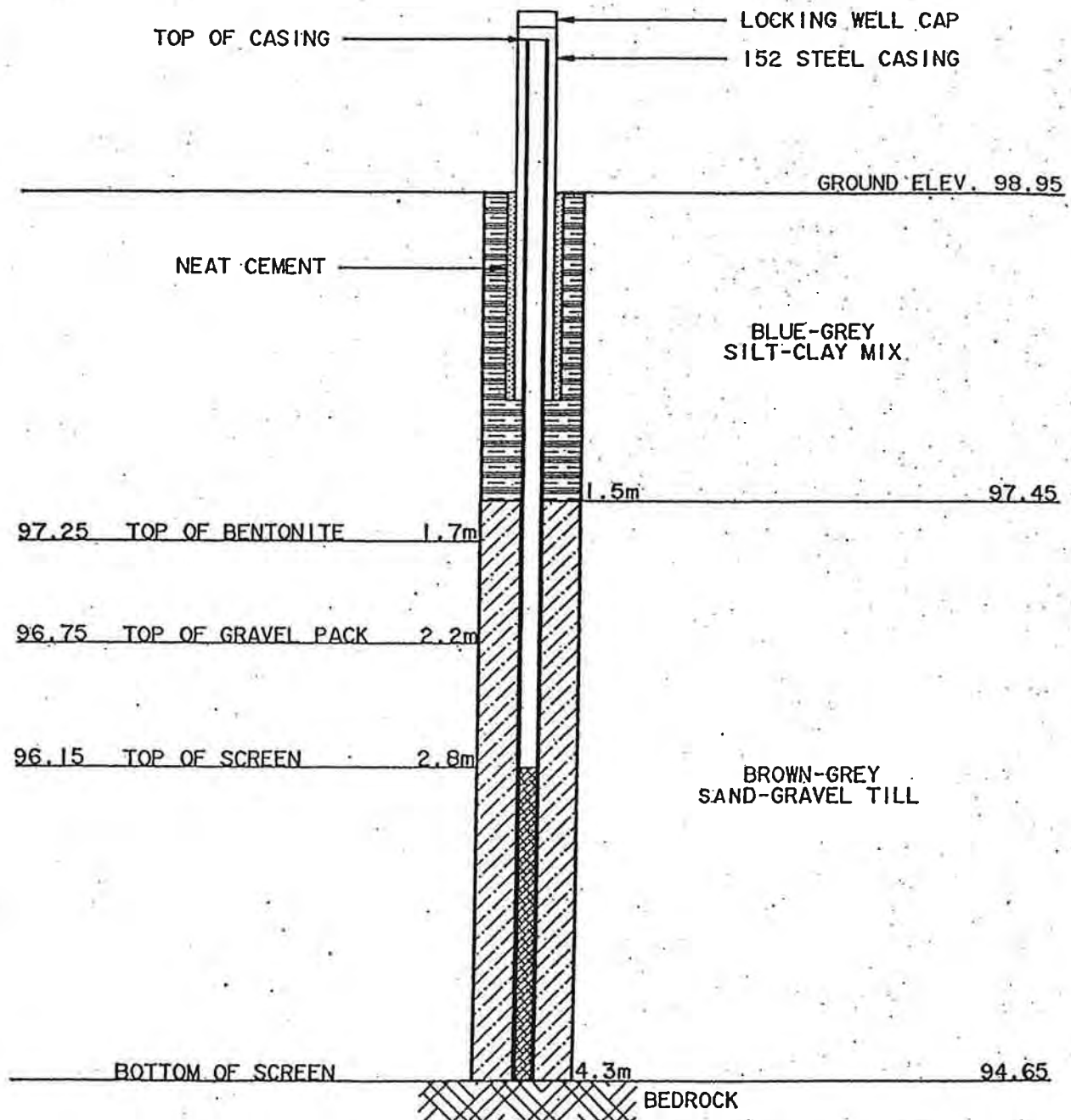
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TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

SCALE:
N.T.S.

TITLE:
MONITORING WELL INSTALLATION

MONITORING WELL #5 BOREHOLE LOG



OLIVER MANGIONE McCALLA
& ASSOCIATES LIMITED
 Consulting Engineers

Nepean, Ontario

DATE:
 MARCH, 1991

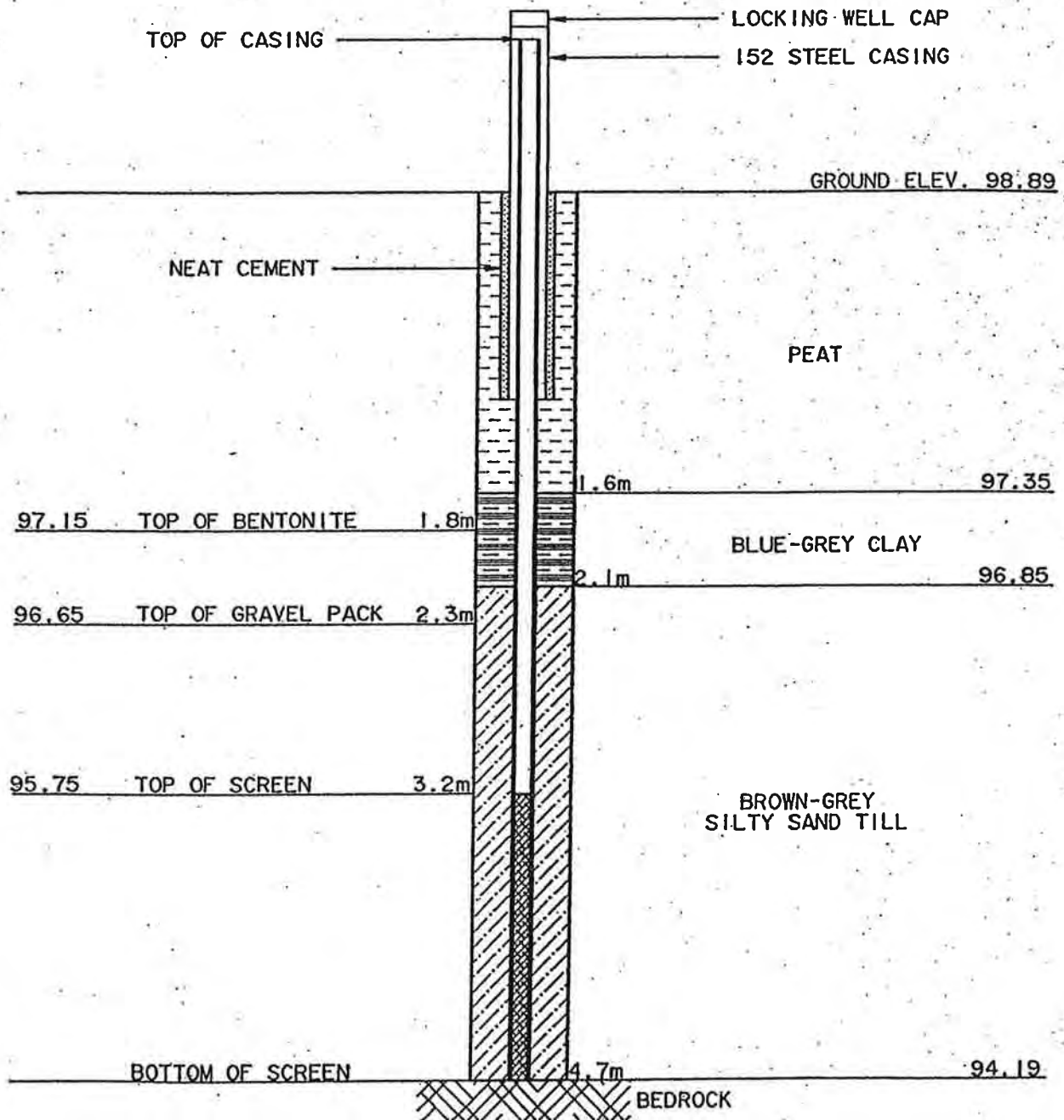
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TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

SCALE:
 N.T.S.

TITLE:
MONITORING WELL INSTALLATION

MONITORING WELL #6 BOREHOLE LOG



OLIVER MANGIONE McCALLA

& ASSOCIATES LIMITED

Consulting Engineers

Nepean, Ontario

DATE:
MARCH, 1991

CLIENT:
TOWNSHIP OF WINCHESTER LANDFILL

DRAWING NO.
90-7848

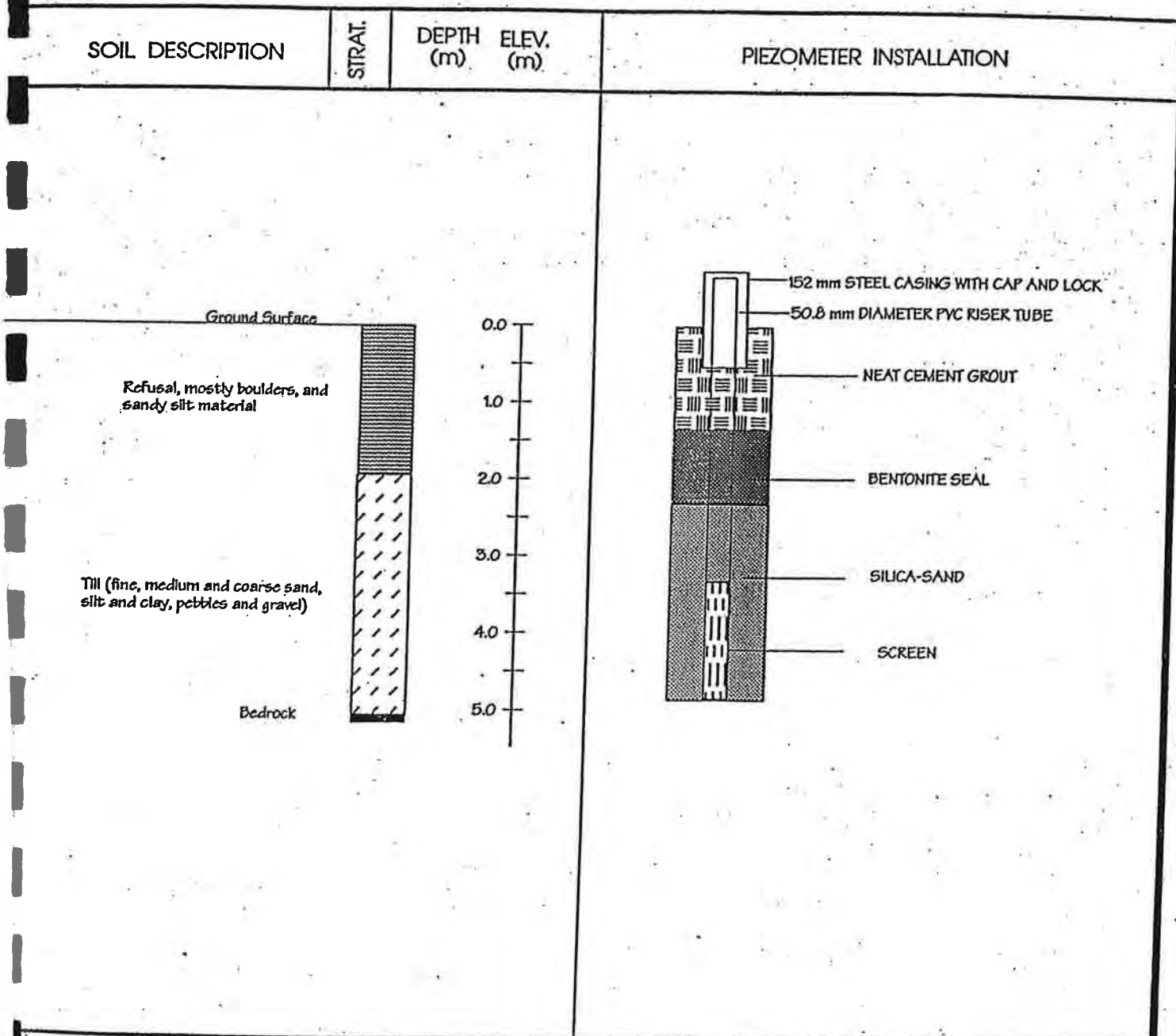
SCALE:
N.T.S.

TITLE:
MONITORING WELL INSTALLATION

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION WINCHESTER TOWNSHIP LANDFILL SITE

MONITORING WELL NUMBER: MW 7
DRILL TYPE: CME 55 HOLLOW STEM AUGER
DRILLER: MARATHON

LOCATION: CONCESSION VII, LOT 8
DATE: JUNE 9, 1992



**L. S. THOMPSON &
ASSOCIATES LTD.**

CONSULTING ENGINEERS

ROSEMOUNT AVE. CORNWALL K6J 3E5

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

DRAWN MHM

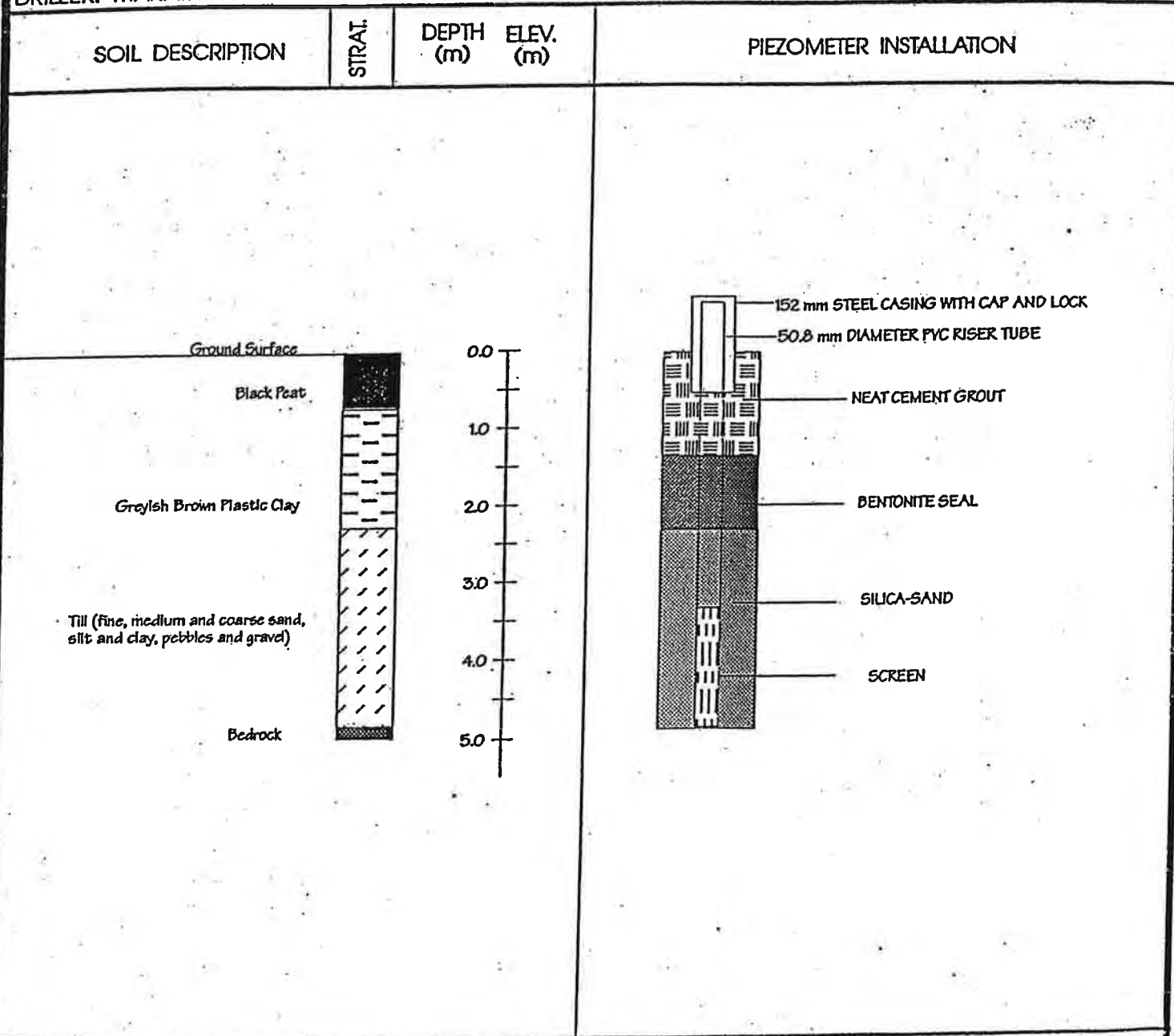
JOB No. 92094

FIGURE:

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION WINCHESTER TOWNSHIP LANDFILL SITE

MONITORING WELL NUMBER: MW 8
 DRILL TYPE: CME 55 HOLLOW STEM AUGER
 DRILLER: MARATHON

LOCATION: CONCESSION VII, LOT 8
 DATE: JUNE 9, 1992



**M. S. THOMPSON &
ASSOCIATES LTD.**

CONSULTING ENGINEERS

1345 ROSEMOUNT AVE. CORNWALL X6J 3E5

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

DRAWN MHM

JOB No. 92094

FIGURE:

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION WINCHESTER TOWNSHIP LANDFILL SITE

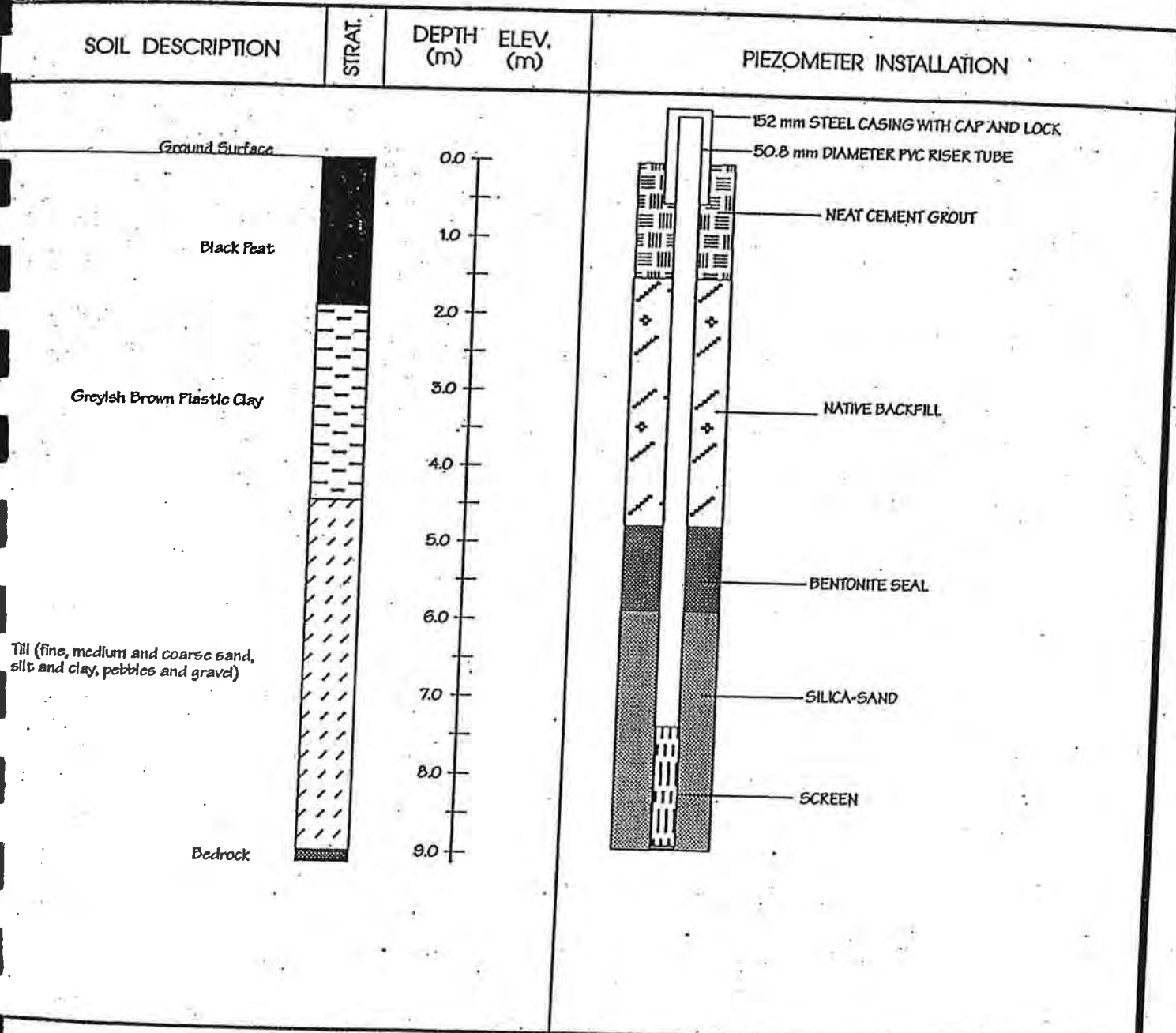
MONITORING WELL NUMBER: MW 9

LOCATION: CONCESSION VII, LOT 8

DRILL TYPE: CME 55 HOLLOW STEM AUGER

DATE: JUNE 9, 1992

DRILLER: MARATHON



**M. S. THOMPSON &
ASSOCIATES LTD.**

CONSULTING ENGINEERS

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

DRAWN MHM

JOB No. 92094

FIGURE:

ROSEMOUNT AVE. CORNWALL X6J 3E5

STRATIGRAPHIC DESCRIPTION AND OVER-BURDEN MONITORING WELL INSTALLATION

WINCHESTER TOWNSHIP LANDFILL SITE

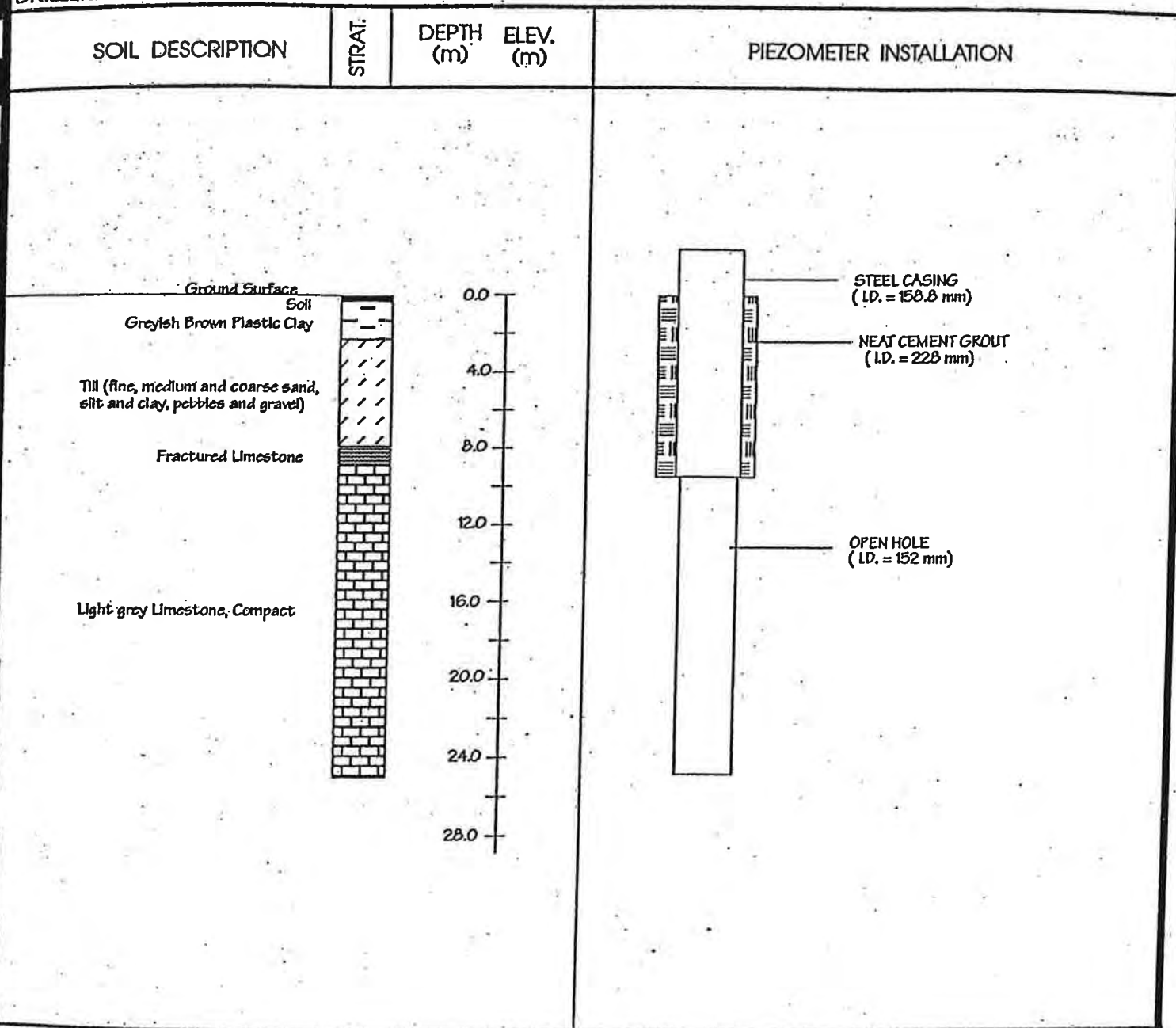
MONITORING BEDROCK WELL: BRW-1

LOCATION: CONCESSION VII, LOT 8

DRILL TYPE: CME 55 HOLLOW STEM AUGER

DATE: JUNE 10, 1992

DRILLER: MARATHON



M. S. THOMPSON & ASSOCIATES LTD.

CONSULTING ENGINEERS

1345 ROSEMOUNT AVE. CORNWALL K6J 3E5

FIGURE TITLE

SOIL PROFILE AND PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP LANDFILL SITE

DATE JUNE 1992

SCALE AS SHOWN

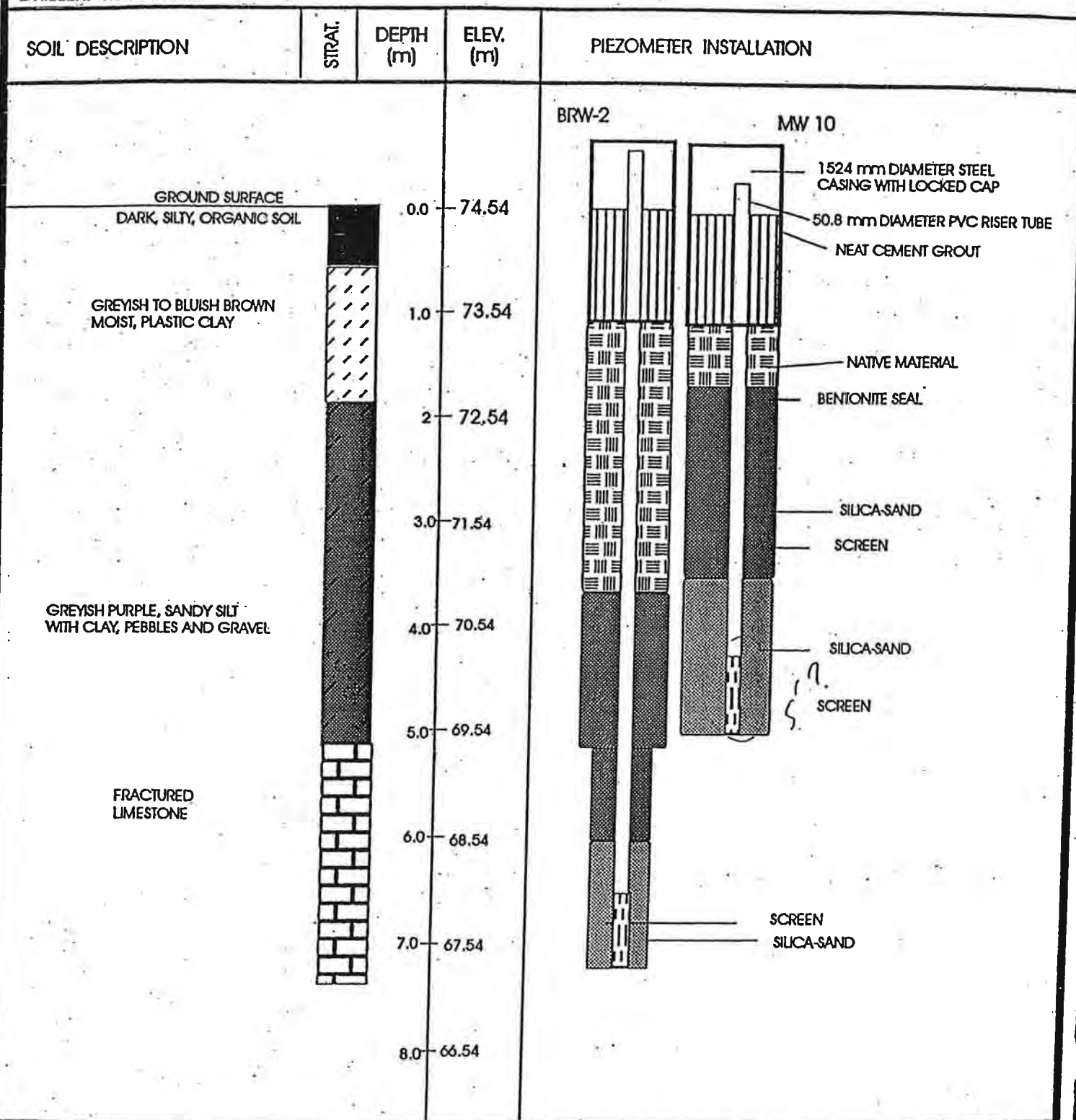
DRAWN MHM

JOB No. 92094

FIGURE:

MONITORING WELL NUMBER: MW10 & BRW-2
 DRILL TYPE: CME 55 HOLLOW STEM AUGER
 DRILLER: MARATHON

LOCATION: WINCHESTER TOWNSHIP
 WASTE DISPOSAL SITE
 DATE: JULY 1993



M. S. THOMPSON &
 ASSOCIATES LTD.

CONSULTING ENGINEERS

1345 ROSEMOUNT AVE, CORNWALL K6J 3E5

FIGURE TITLE

SOIL PROFILE AND
 PIEZOMETER CONSTRUCTION

JOB

WINCHESTER TOWNSHIP
 WASTE DISPOSAL SITE

DATE MARCH 1993

SCALE AS SHOWN

DRAWN MHM

JOB No. 92094

Project No: MC12684A

Log of MW 16

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0		Ground Surface	0						
1		TOPSOIL Topsoil.		AU 1					
2			-0.76						
3		CLAYEY SILT Medium grey, moist, soft, fractured clayey silt with traces of sand till.		SS 2					
4									
5									
6		SILTY SAND Medium brown to grey, moist to saturated, silty sand with some coarse gravel till.	-2.3	SS 3					
7									
8									
9				SS 4					
10									
11				SS 5					
12									
13		End of Borehole	-4.6						
14				SS 6					
15									
16									
17									
18									
19									
20									

Drill Method: Hollow Stem Auger

Drill Date: September 26, 2002

Hole Size: 0.15 metres

Trow Consulting Engineers Ltd.

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Datum:

Checked by: B.Coons

Sheet: 1 of 1

Project No: MC12684A

Log of MW 17

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0 m		Ground Surface	0						
0.3		TOPSOIL							
1		Topsoil.	-0.3	AU 1					
2		SILTY GRAVELLY SAND Medium brown, dry, hard, silty gravelly sand till.		SS 2					
3									
4				AU 3					
5		SILTY GRAVELLY SAND Medium grey, wet, hard, silty gravelly sand till.	-3						
6				SS 4					
7									
8				AU 5					
9									
10									
11			-4.6						
12									
13									
14		End of Borehole							
15									
16									
17									
18									
19									
20									

Drill Method: Hollow Stem Auger

Trow Consulting Engineers Ltd.

Datum:

Drill Date: September 26, 2002

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Checked by: B.Coons

Hole Size: 0.15 metres

Sheet 1 of 1

Project No: MC12684A

Log of MW 18

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0 ft m		Ground Surface	0						
1		TOPSOIL Topsoil.	-0.3	AU 1					
2		SILTY CLAY Medium brown, moist, silty fractured clay.	-1.2	SS 2					
3									
4									
5									
6									
7		SILTY SAND Medium brown, dry, silty sand with some gravel till.		SS 3					
8									
9									
10									
11		SILTY SANDY GRAVEL Medium grey, wet, silty sandy gravel till. Refusal at 11 feet.	-3	SS 4					
12			-3.4	SS 5					
13		End of Borehole							
14									
15									
16									
17									
18									
19									
20									

Drill Method: Hollow Stem Auger

Trow Consulting Engineers Ltd.

Datum:

Drill Date: September 26, 2002

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Checked by: B.Coons

Hole Size: 0.15 metres

Sheet: 1 of 1

Project No: MC12684A

Log of MW 19

Project: North Dundas Landfill - Boyne Rd.

Client: Township of North Dundas

Location: Winchester, ON

Logged by: Matt Prince



SUBSURFACE PROFILE				SAMPLE			Volatile Organic Compounds ppmv 25 75 125 175	Well Data	Lab Analysis
Depth	Symbol	Description	Elev.	Number	Type	Recovery			
0 ft m		Ground Surface	0						
1		TOPSOIL Topsoil.	-0.3						
2		SILTY CLAY Medium brown, dry, har, silty clay with some gravel till.		AU 1					
3									
4				SS 2					
5									
6		SILTY SAND Medium grey, dry, hard, silty sand with some gravel till. Refusal at 11'2".		AU 3					
7									
8				AU 4					
9									
10		End of Borehole							
11				SS 5					
12									
13									
14									
15									
16									
17									
18									
19									
20									

Drill Method: Hollow Stem Auger

Trow Consulting Engineers Ltd.

Datum:

Drill Date: September 26, 2002

154 Colonnade Road South
Nepean, Ontario K2E 7J5

Checked by: B.Coons

Hole Size: 0.15 metres

Sheet: 1 of 1

ATTACHMENTS – SLOPE/W OUTPUT SECTIONS

- **Figures 1 to 6**

Title: 1648253 - Boyne Road Landfill
 File Name: Section A-A' West Drained.gsz
 Description: Section AA' - West Side Slope Drained Analysis
 Method: Morgenstern-Price

Color	Name	Model	Unit Weight (kN/m³)	Cohesion (kPa)	Phi (°)
	Base Layer	Mohr-Coulomb	20.5	0	35
	Bedrock	Bedrock (Impenetrable)			
	Cover Layer	Mohr-Coulomb	19	0	32
	Glacial Till	Mohr-Coulomb	21	0	35
	Silty Clay (stiff to very stiff)	Mohr-Coulomb	16	7.4	28.7
	Topsoil/Peat	Mohr-Coulomb	11.5	0	10
	Waste Fill	Mohr-Coulomb	13	0	32

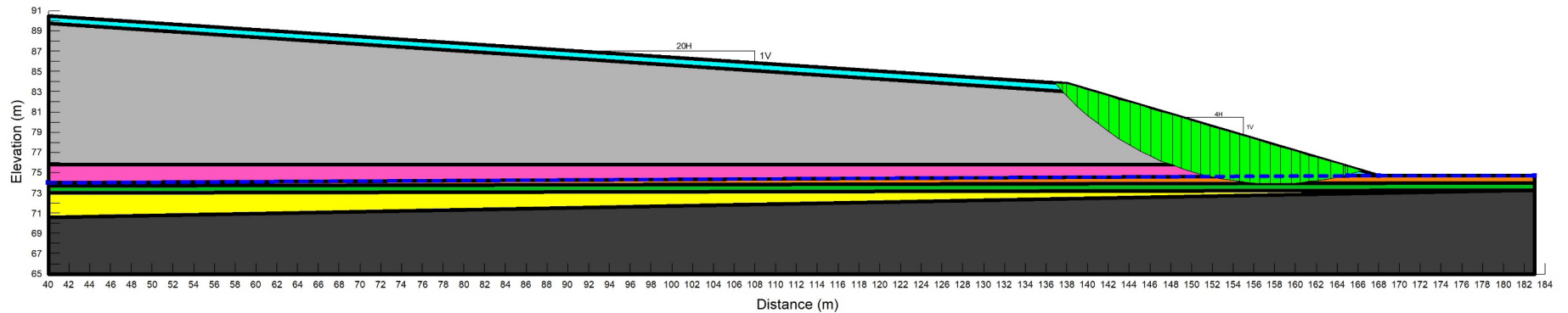


FIGURE 1

PROJECT No.	1648253
FILE No.	1648253
REV. 0	SCALE: AS SHOWN
DESIGN	BB
CADD	2022-01-28
CHECK	WC
REVIEW	2022-01-28

SECTION A-A' (WEST)
 STABILITY ANALYSES
 STATIC DRAINED CONDITION

INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF
 NORTH DUNDAS WASTE MANAGEMENT PLAN
 SLOPE STABILITY ASSESSMENT



Title: 1648253 - Boyne Road Landfill
 File Name: Section A-A' West Undrained.gsz
 Description: Section AA' - West Side Slope Undrained Analysis
 Method: Morgenstern-Price

Color	Name	Model	Unit Weight (kN/m³)	Cohesion (kPa)	Cohesion' (kPa)	Phi' (°)
	Base Layer	Mohr-Coulomb	20.5		0	35
	Bedrock	Bedrock (Impenetrable)				
	Cover Layer	Mohr-Coulomb	19		0	32
	Glacial Till	Mohr-Coulomb	21		0	35
	Silty Clay (stiff to very stiff)	Undrained (Phi=0)	16	50		
	Topsoil/Peat	Mohr-Coulomb	11.5		0	10
	Waste Fill	Mohr-Coulomb	13		0	32

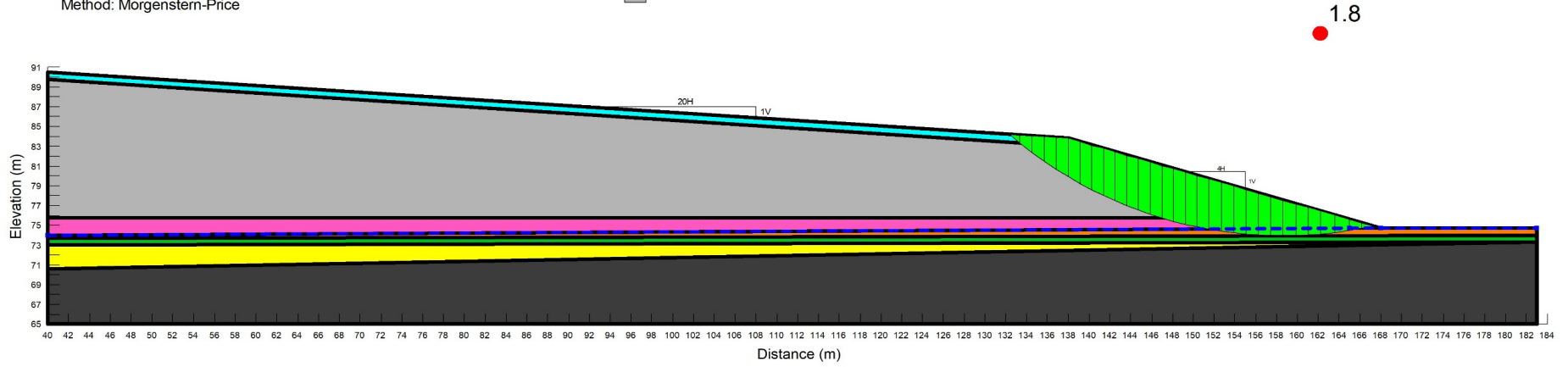


FIGURE 2

PROJECT No.	1648276
FILE No.	1648276
REV. Q	SCALE: AS SHOWN
DESIGN	BB
CADD	2022-01-28
CHECK	WC
REVIEW	2022-01-28

SECTION A-A' (WEST)
 STABILITY ANALYSES
 STATIC UNDRAINED CONDITION

PROJECT
 INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF
 NORTH DUNDAS WASTE MANAGEMENT PLAN
 SLOPE STABILITY ASSESSMENT



Title: 1648253 - Boyne Road Landfill
 File Name: Section A-A' West Seismic.gsz
 Description: Section AA' - West Side Slope Seismic Analysis
 Method: Morgenstern-Price

Color	Name	Model	Unit Weight (kN/m³)	Cohesion (kPa)	Cohesion' (kPa)	Phi' (°)
	Base Layer	Mohr-Coulomb	20.5		0	35
	Bedrock	Bedrock (Impenetrable)				
	Cover Layer	Mohr-Coulomb	19		0	32
	Glacial Till	Mohr-Coulomb	21		0	35
	Silty Clay (stiff to very stiff)	Undrained (Phi=0)	16	50		
	Topsoil/Peat	Mohr-Coulomb	11.5		0	10
	Waste Fill	Mohr-Coulomb	13		0	32

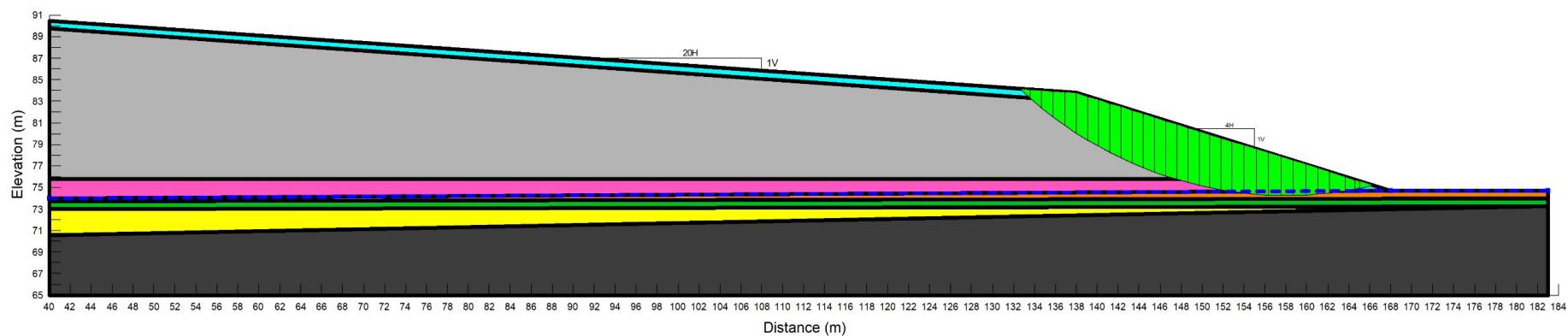


FIGURE 3

PROJECT No.	1648253
FILE No.	1648253
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DESIGN	BB 2022-01-28
CADD	
CHECK	WC 2022-01-28
REVIEW	

TITLE

**SECTION A-A' (WEST)
 STABILITY ANALYSES
 SEISMIC CONDITION**

PROJECT

**INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF
 NORTH DUNDAS WASTE MANAGEMENT PLAN
 SLOPE STABILITY ASSESSMENT**



GOLDER
MEMBER OF WSP

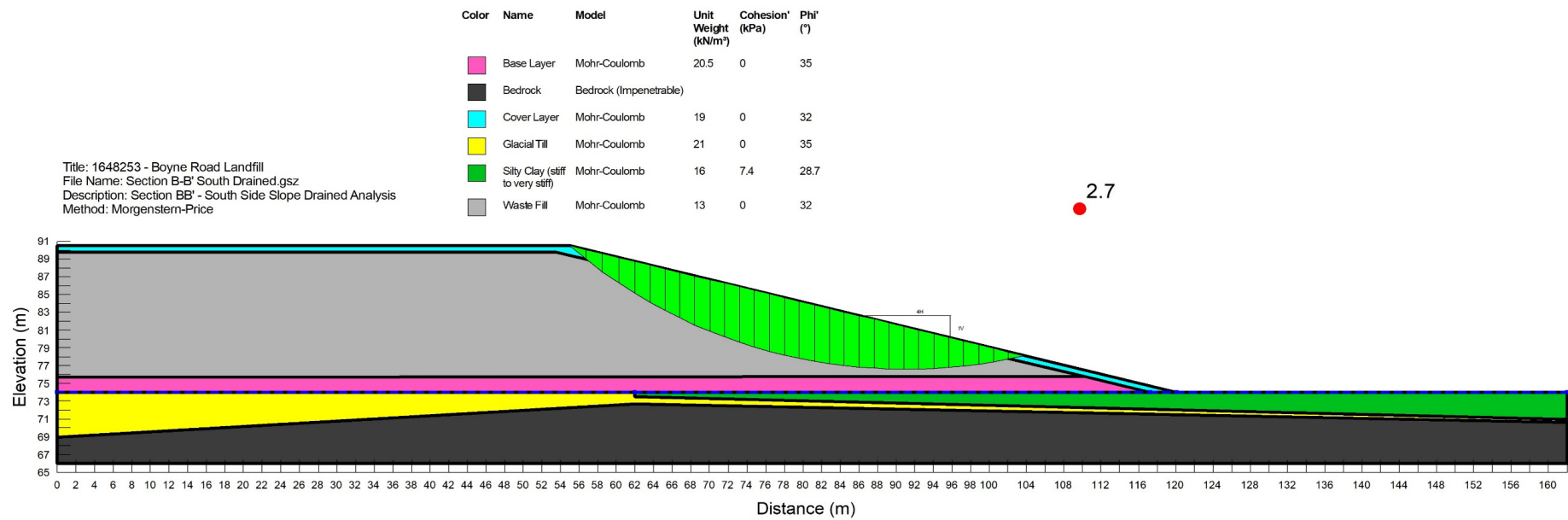


FIGURE 4

PROJECT No.	1648253
FILE No.	1648253
REV. 0	SCALE: AS SHOWN
DESIGN	BB
CADD	2022-01-28
CHECK	WC
REVIEW	2022-01-28

TITLE	SECTION B-B' (SOUTH) STABILITY ANALYSES STATIC DRAINED CONDITION
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PROJECT	INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN SLOPE STABILITY ASSESSMENT
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GOLDER
 MEMBER OF WSP

Title: 1648253 - Boyne Road Landfill
 File Name: Section B-B' South Undrained.gsz
 Description: Section BB' - South Side Slope Undrained Analysis
 Method: Morgenstern-Price

Color	Name	Model	Unit Weight (kN/m³)	Cohesion (kPa)	Cohesion' (kPa)	Phi' (°)
■	Base Layer	Mohr-Coulomb	20.5	0	0	35
■	Bedrock	Bedrock (Impenetrable)				
■	Cover Layer	Mohr-Coulomb	19	0	0	32
■	Glacial Till	Mohr-Coulomb	21	0	0	35
■	Silty Clay (stiff to very stiff)	Undrained (Phi=0)	16	50		
■	Waste Fill	Mohr-Coulomb	13	0	0	32

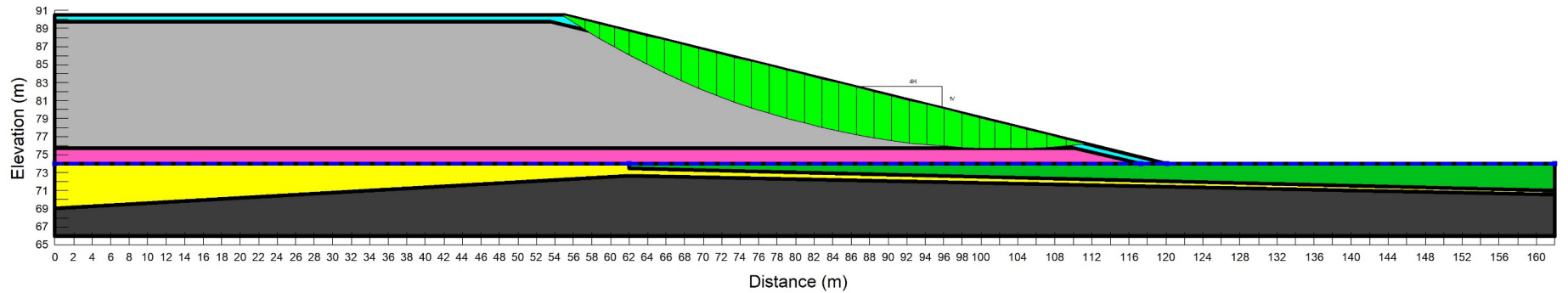


FIGURE 5

PROJECT No.	1648253
FILE No.	1648253
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DESIGN	BB
CADD	2022-01-28
CHECK	WC
REVIEW	2022-01-28

SECTION B-B' (SOUTH)
 STABILITY ANALYSES
 STATIC UNDRAINED CONDITION

PROJECT

INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF
 NORTH DUNDAS WASTE MANAGEMENT PLAN
 SLOPE STABILITY ASSESSMENT



Title: 1648253 - Boyne Road Landfill
 File Name: Section B-B' South Seismic.gsz
 Description: Section BB' - South Side Slope Seismic Analysis
 Method: Morgenstern-Price

Color	Name	Model	Unit Weight (kN/m³)	Cohesion (kPa)	Phi (°)
	Base Layer	Mohr-Coulomb	20.5	0	35
	Bedrock	Bedrock (Impenetrable)			
	Cover Layer	Mohr-Coulomb	19	0	32
	Glacial Till	Mohr-Coulomb	21	0	35
	Silty Clay (stiff to very stiff)	Mohr-Coulomb	16	7.4	28.7
	Waste Fill	Mohr-Coulomb	13	0	32

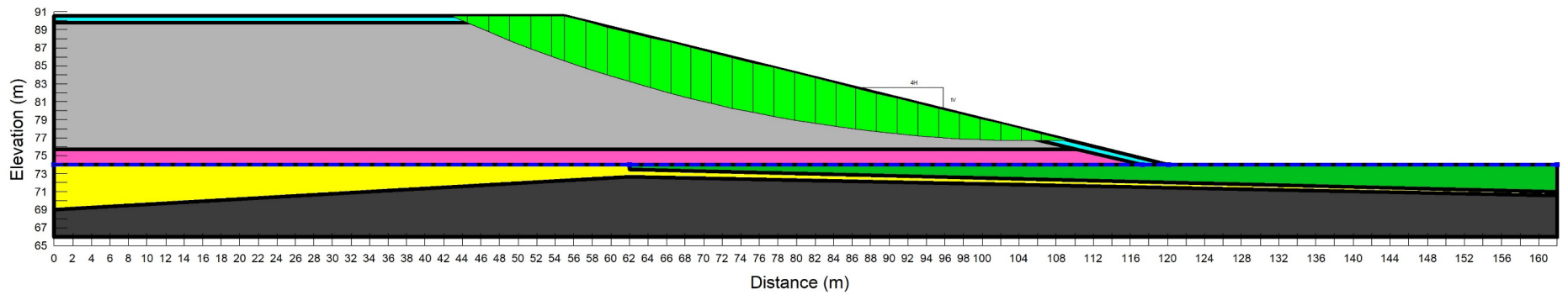


FIGURE 6

PROJECT No.	1648253
FILE No.	1648253
REV. 0	SCALE: AS SHOWN
DESIGN	BB
CADD	2022-01-28
CHECK	WC
REVIEW	2022-01-28

SECTION B-B' (SOUTH)
 STABILITY ANALYSES
 SEISMIC CONDITION

PROJECT

INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF
 NORTH DUNDAS WASTE MANAGEMENT PLAN
 SLOPE STABILITY ASSESSMENT



APPENDIX E

Stormwater Management Report



REPORT

Stormwater Management Report

Boyne Road Landfill Expansion

Township of North Dundas

Submitted to:

Township of North Dundas

Township of North Dundas
636 St. Lawrence Street
P.O. Box 489
Winchester, Ontario
K0C 2K0

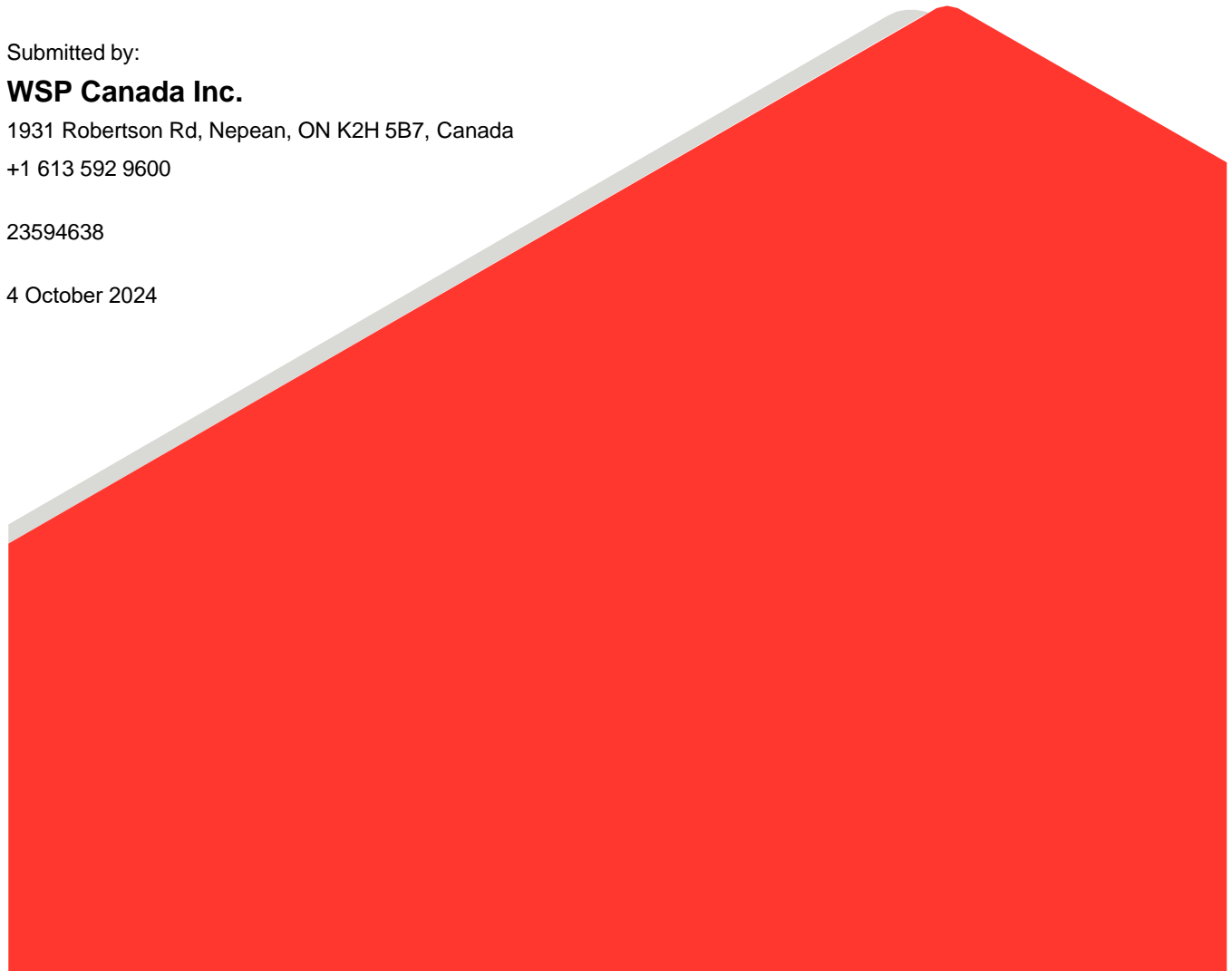
Submitted by:

WSP Canada Inc.

1931 Robertson Rd, Nepean, ON K2H 5B7, Canada
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23594638

4 October 2024



Distribution List

- 1 copy Ministry of the Environment Permissions Branch
- 1 copy Ministry of the Environment (Cornwall Office)
- 2 copies Township of North Dundas
- 2 copies WSP Canada Inc.

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1.0 INTRODUCTION

The Township of North Dundas is proposing an expansion of the Boyne Road Landfill Site located at 12620 Boyne Road, near Winchester, Ontario (the Site). WSP Canada Inc. (WSP) was retained by the Township of North Dundas (the Township) to prepare this Stormwater Management (SWM) Report as a supporting document to the Environmental Compliance Approval (ECA) application for Industrial Sewage Works to the Ministry of Environment Conservation and Parks (MECP).

The Site, located along Boyne Road approximately 1.5 kilometres east of the Village of Winchester, was established on Lot 8, Concession VI in the former Township of Winchester, Ontario. The location of the Site is indicated on Figure C-001. Note that for the purposes of the discussion contained herein, Boyne Road is considered to be oriented in an east-west direction.

The Site is licensed for the disposal of domestic, commercial, and industrial solid non-hazardous waste. The approved area of the existing Site (fill area) is 8.1 hectares. The Site has been operating as a licensed landfill facility since 1965. The Site currently operates under Environmental Compliance Approval (ECA) No. A482101 issued on December 4, 1989. Subsequent ECA Amendments and Notices have been issued to accept municipal waste from the Township, to accept waste electronic and electrical equipment (WEEE), to modify the Contaminant Attenuation Zone and to include additional lands within the limits of the landfill property. The current ECA and amending notices are included in Appendix A.

As part of the ECA approvals for the expansion, it is proposed to increase the size of the landfill property by adding an additional parcel of Township-owned land to the south and east of the current property limits. As described in this report, the proposed stormwater management wetland pond is to be located within this added property.

2.0 SITE DESCRIPTION

2.1 Topography and Drainage

The Site is located within the South Nation River watershed and overlaps the Upper South Nation, Middle South Nation, and Castor River subwatersheds (SNC, 2018), all within the regulatory jurisdiction of South Nation Conservation. The overall regional drainage is towards the northeast, with the majority of the Township surface water runoff towards branches of the South Nation River and the northern portion towards the South and East Castor Rivers, which in turn discharge to the South Nation River further to the northeast. Drainage of this largely rural agricultural area is via a network of constructed municipal drains, which have a low Department of Fisheries and Oceans (DFO) drain classification as related to aquatic habitat.

The Site is located in a rural agricultural area of flat to undulating farmland. Drainage in this area is via a network of constructed municipal drains, primarily the Volks Municipal Drain and the Irving-Quart Municipal Drain (historically known as the Irving-Quart Drain or Irving Drain). The area directly east and south of the existing landfill mound is forested with the groundwater level at shallow depth below ground surface.

Drainage along the northern extents of the landfill mound is directed towards the Boyne Road ditch along the south side of the road. This includes the operations area of the landfill, which is centrally located along the north of the current disposal area. The remainder of the landfill drains to a constructed drainage ditch (perimeter drain) that was constructed along the west, south, and east boundaries of the approved disposal area of the landfill site.

(fill area) in 1991, as indicated on Figure C-002 (Pre-Development Drainage Area Plan). Surface water runoff from the fill area drains into this perimeter drain, which then discharges to the south roadside ditch along Boyne Road. The roadside ditch flows east and then is directed north, under Boyne Road via a culvert located near the northeast corner of the landfill. The roadside ditch along the north side of Boyne Road is part of the Volks Municipal Drain and flows east and discharges into Black Creek, approximately 1.5 km east of the landfill Site. Black Creek is a tributary of the East Castor River.

The upstream extent of the Irving-Quart Municipal Drain is located southwest of the fill area, outside of the landfill site property, and within the landfill site's contaminant attenuation zone to the west. The Irving-Quart Drain adjacent to the landfill has been historically observed as dry and does not connect to the drainage course that connects to the existing perimeter drain around the landfill fill area.

2.2 Geology and Hydrogeology

Based on subsurface conditions encountered during borehole drilling programs completed at the Site, overburden in the area consists of the following:

- A topsoil or peat unit ranging from 0 to 2 metres in thickness. This unit is generally thickest to the north of Boyne Road.
- A silt/clay unit at surface or underlying the topsoil/peat where present. This unit generally ranges from 0 to 3 metres in thickness. However, the thickness of this unit appears to increase to the north and east of the Site, with a maximum thickness of 5.8 metres encountered at BH16-3.
- A silty sand/sandy silt till unit was encountered wherever boreholes were advanced through the base of the silt/clay unit. This unit ranges from 0.9 to 6.0 metres in thickness.

Bedrock, consisting of limestone (interbedded with shale), has been encountered at between 1.4 and 11.6 metres below ground surface (mbgs). The greatest depth to bedrock was encountered at BH16-3, located to the northeast of the Site about mid-way through the Township-owned lands north of Boyne Road. The shallowest bedrock observed is to the south of the existing fill area at MW15-1 and MW15-2, where auger refusal was encountered at 1.7 mbgs and 1.4 mbgs, respectively.

Borehole logs relevant to design of the SWM system components are provided in Appendix B. These borehole locations are shown on Figure C-004.

2.3 Surface Water Monitoring

There are four surface water monitoring stations located within the drainage ditch along the north side of Boyne Road according to the approved monitoring program. SW1 and SW4 are located upstream of the Site, SW2 is located opposite the disposal area, and SW3 is located downstream of the Site. The fourth surface water monitoring station, SW4, has been established upstream of SW1 since 2018 but is not required by the Site's ECA. The locations of these four surface water monitoring stations are indicated on Figure C-003.

Surface water quality is regularly sampled in the Volks Drain as part of the Boyne Road Landfill Site monitoring program, with similar surface water programs having been completed at the landfill site since 1992.

3.0 PROPOSED STORMWATER MANAGEMENT

3.1 Design Criteria

In addition to design of the SWMt system as required by O.Reg. 232/98, a stormwater management report for waste processing sites is required for sites that include provisions for the outdoor storage of waste or discharge from inside of the building to the outside. Since the outdoor storage of waste occurs at the Site, the Site is therefore subject to the SWM reporting requirements of a waste processing site as outlined in the *MECP Guide for Applying for an Environmental Compliance Approval* (December 2012) (the Guide).

A SWM report is used to assess the potential off-site impacts. According to the Guide, at a minimum, the plan must include a detailed plan of stormwater management, including:

- A description of the nature of the interaction of the waste with rainwater, which should include considerations of volumes of stormwater runoff and storage.
- Surface elevations indicating the direction of drainage and a description of all discharge locations.
- Impact prevention and monitoring plans, if required.

Design of the SWM facility will meet the following design criteria where possible:

- Match post-expansion outlet flows to corresponding pre-expansion flows for the 1:5 year through the 1:100 year return period design storm.
- Provide Enhanced Level Protection (80% TSS removal) as defined by the MECP SWM Planning and Design Manual (MECP, 2003).
- Surface drainage from potentially contaminated areas, i.e., originating from active landfilling areas, will be contained locally within berms and will discharge into the waste and eventually into the leachate management system (or in this case of a natural attenuation landfill design, into the leachate-impacted groundwater on-Site). Surface drainage from non-contaminated areas such as road areas and areas with interim or final landfill cover will be conveyed to the SWM pond via the internal drainage ditches.
- Ditches will be sized to convey the 1:100 year return period design storm and culverts sized to convey a 1:25 year return period design storm as per O.Reg. 232/98.

In addition, as part of the surface water assessment to consider potential climate change effects during the Environmental Assessment that concluded with expansion of the Boyne Road Landfill site, consideration was given to the 1:100 year design storm intensity-duration-frequency values plus 20%. This approach has been carried into the design of the SWM system.

3.2 Methodology

Runoff scenarios for the proposed expansion under the range of storm events were assessed with U.S. Environmental Protection Agency (EPA) Storm Water Management Model (SWMM) for the 1:2, 1:5, 1:25, 1:50 and 1:100 year return period design storms provided in the City of Ottawa Sewer Design Manual (City of Ottawa, 2012), as well as the 1:100 year plus 20%, with a SCS Type II 24-hour design storm to determine storage requirements and a 4-hour Chicago distribution to size conveyance ditches and culverts. IDF curves were obtained from the City of Ottawa Sewer Manual, which are derived from the Ottawa Macdonald-Cartier

International Airport Environment Canada Station. To achieve the design objectives and criteria described above, the proposed SWM wetland pond is described below.

The Soil Conservation Services (SCS) Curve Number (CN) method was employed to estimate runoff. Pre-expansion and post-expansion conditions used the CN values shown in the following Table 1, which were weighted based on surface type. The pre-expansion drainage areas are shown on Figure C-02 (Pre-Development Drainage Area Plan). The post-development drainage areas for the proposed expansion are shown on Figure C-003 (Post-Development Drainage Area Plan). The CN values and Depression Storage (DStore) values used for the model were weighted based on surface type as shown in the following Table 1.

Table 1: Model Inputs

Surface Type	CN	Imperv	DStore Perv (mm)	Dstore Imperv (mm)
Building/Asphalt/ Concrete/Pond	98	1	--	1
Gravel/Recycled Asphalt	89	0.6	5	1
Landscaped/Landfill top area	81	0	5	--
Landfill Sideslopes	83	0	5	--

A summary of model inputs is provided in Appendix C.

3.3 Quality Control

A stormwater management wetland pond is proposed to be located in the northeast corner of the Site adjacent to the landfill.

The proposed extended detention wetland pond outlet structure provides a greater than 48-hour draw-down time for runoff produced by a 25-mm rainfall event with a 4-hour duration modified Chicago distribution. The time period included in the draw-down noted has been limited to the period when flow through the pond orifice in the model is greater than or equal to 0.2 L/s. The pond hydrograph is provided in Appendix D. The proposed outlet structure includes a 100 mm diameter orifice at elevation 73.50 metres above sea level (masl). The outlet pipe from the wetland pond to the outlet structure is designed as a submerged reverse sloped pipe to promote separation/floating of oils or other floatable material (if any), providing potential for spilled material to be recovered prior to an off-Site release occurring. The proposed outlet structure for the pond has a sluice gate to allow emergency closure to assist in spill / leachate containment activities, if needed. A 1.4 m wide trapezoidal outlet with 3 horizontal to 1 vertical side slopes and a bottom elevation of 74.10 masl is proposed to provide discharge control for larger storm events, including the 1:5 year through 1:100 year return period and climate change storm event, which were confirmed to flow without flooding to the existing ditch and culvert.

Table 3.2 of the MECP Manual (MECP, 2003) provides storage volume design requirements based on specific site imperviousness levels to achieve required TSS removal objectives. Table 3.2 indicates that for a wetland pond the minimum storage volume should be based on 80 m³/ha, for 80% TSS removal at an impervious level of 35%. The site has a drainage area of approximately 14.22 ha post-expansion, of which 2.14 ha will continue to be conveyed directly to the existing Boyne Road municipal ditch. For the remaining drainage area of 12.08 ha, this results in a minimum total required wetland pond volume of 966.4 m³. Of this, 40 m³/ha is allowable as extended detention. Therefore, 483.2 m³, at minimum, is required for the permanent pool detention volume. A permanent pool volume of 694 m³ is provided in the proposed wetland pond at the normal water level depth of 0.3 m in the

main wetland pond and 1.0 m in the forebay, which exceeds the required permanent pool volume. An additional 354 m³ of extended detention storage is provided for the 25 mm design storm 4-hour duration with a modified Chicago storm distribution and 1,565 m³ for the 1:2 year return period 24-hour duration SCS Type II distribution storm using a 100 mm diameter orifice.

Table 2 provides the design values for the wetland pond and compares these values to the minimum or preferred criteria as per Table 4.7 of the MECP Manual:

Table 2: Proposed Wetland Pond - MECP Design Criteria

Design Element	Design Value	Comparison to MECP Criteria
Drainage Area	12.08 ha to SWM Pond 2.14 ha uncontrolled	Meets preferred criteria (> 10 ha)
Treatment Volume	Permanent Pool – 694 m ³ Active Storage (for 25mm event) – 354 m ³ Active Storage (for 1:2 year event) – 1,565 m ³	Permanent Pool Meets Minimum Criteria. Active Storage does not meet minimum criteria, but the combined storage volume exceeds the minimum criteria – a minimum sized orifice was used.
Active Storage Detention Time	Greater than 48-hours	Meets Preferred Criteria (>24 hrs)
Forebay	1 m total depth. Less than 20% of permanent pool area.	Meets criteria: minimum depth 1 m and less than 20% of permanent pool area.
Length-to-Width Ratio	Overall – 4.7:1	Exceeds Minimum Criteria (3:1)
Permanent Pool Depth	Permanent pool depth 300 mm	Meets Criteria (depth 150 mm – 300 mm)
Active Storage Depth	The 1:10 year return period design storm is 0.72 m above the permanent pool	Meets Minimum Criteria (<1.0 m for up to 1:10 year return period design storm)
Side Slopes	4H:1V	Does not meet Minimum Criteria of 5H:1V for 3 m above and below permanent pool due to space limitations. The landfill site has controlled access.
Inlet	Ditch	N/A
Outlet	450 mm diameter outlet pipe at 1.0% slope 100 mm orifice for quality control outlet 1.4 m wide trapezoidal weir for quantity control outlet Sluice gate provided	Meets Minimum Criteria
Maintenance Access	No maintenance drawdown pipe provided. Access for backhoes or dredging equipment provided.	Meets Minimum Criteria
Buffer	Not provided	Does not meet Minimum Criteria of 7.5 m above maximum water quality/erosion control water level due to space constraints. Landfill site with restricted access.

The following calculations summarize the design requirements of the forebay as per Section 4.6.2 of the MECP Manual:

Minimum Forebay Settling Length

$$Dist = \sqrt{\frac{rQ_p}{V_s}}$$

Where: Dist = forebay length (m)
 r = length-to-width ratio
 Q_p = peak flow rate from the pond during design quality event (25 mm storm event) (m³/s)
 V_s = settling velocity (m/s)

$$Dist = \sqrt{\frac{(2.2)(0.007)}{0.003}}$$

$$Dist = 2.3 \text{ m}$$

Minimum Dispersion Length

$$Dist = \frac{8Q}{dV_f}$$

Where: Dist = length of dispersion (m)
 Q = inlet pipe capacity (10 year storm event) (m³/s)
 d = depth of permanent pool in the forebay (m)
 V_f = desired velocity in the forebay (m/s)

$$Dist = \frac{8(0.252)}{(1.0)(0.5)}$$

$$Dist = 4.0 \text{ m}$$

The proposed forebay length is 24.0 metres at the normal water level and is therefore greater than the required lengths for settling and dispersion.

Minimum Forebay Bottom Width

$$Width = \frac{Dist}{8}$$

Where: Dist = greater value of minimum forebay length or length of dispersion (m)

Width = minimum forebay bottom width (m)

$$Width = \frac{4.0}{8}$$

$$Width = 0.5 \text{ m}$$

The proposed bottom width is 2.4 metres and is therefore greater than the required width.

13.3.2 Quantity Control

A comparison of pre-expansion to the proposed post-expansion Site discharge rates is provided in Table 3 for the 25 mm and 1:2 year through the 1:100 year return period design storm events. The pond storage and peak flow rates were assessed using the 24-hour duration SCS Type II distribution, which resulted in the largest storage requirements and resulting peak flows while the 25 mm design storm used a 4-hour modified Chicago storm distribution. In addition, a 20% increase has been applied to the 1:100 year return period IDF values to stress test potential impacts of climate change. Details of the model input and outputs are provided in Appendix C.

Table 3: Pre-Expansion and Post-Expansion Storage and Peak Flows

Return Period	Pre-Expansion Peak Flow (L/s)	Post-Expansion Controlled Peak Flow (L/s)	Active Storage Volume (m3)	Depth above Perm. Pool (m)	Elevation (masl)
25mm 4-hr	46	24	354	0.13	73.63
2-yr	177	164	1,565	0.54	74.04
5-yr	532	271	1,980	0.66	74.16
10-yr	827	389	2,167	0.72	74.22
25-yr	1,235	656	2,431	0.79	74.29
50-yr	1,580	901	2,649	0.85	74.35
100-yr	1,935	1,200	2,895	0.92	74.42
100-yr + 20%	2,728	1,957	3,457	1.06	74.56

3.4 Proposed Stormwater Management System

Surface water runoff from the expanded landfill mound is proposed to be collected and conveyed by ditches constructed on the lower sideslopes of the mound and have been sized to convey the 1:100 year return period design storm. These perimeter ditches will be constructed with a berm with 3H:1V sideslopes on either side and a minimum depth of 0.75 m. The ditch is positioned above the toe of the landfill sideslope to be able to provide suitable slope to the wetland pond and to avoid leachate-impacted groundwater entering the ditch. Similarly, on the north side of the existing landfill mound, a ditch will be constructed in the lower sideslope to maximize the area of the landfill surface water runoff that can be conveyed to the wetland pond. Along the west side of the landfill an access road will be constructed to provide access for the filling of the landfill expansion cells to the south of the existing landfill. This access road will include a roadside ditch on the west side, which will convey surface water runoff from the access road north across Boyne Road via a new culvert and to Volks Municipal Drain.

A raised berm will be constructed adjacent to the south side of the landfill expansion to prevent surface water from the south flowing toward the landfill mound expansion and thereby prevent the creation of additional leachate-impacted water. Instead, this surface water will drain via the existing Municipal Drain at the southwest corner of the Site. The existing ditch that currently traverses east-west across the expansion area will be filled.

The proposed ditch immediately upstream of the proposed wetland pond will be constructed at grade with a raised berm on the south side to prevent surface water from the south, outside of the landfill mound area, from entering.

The proposed wetland pond is as described in Section 3.3 and includes a 1.0 m depth forebay and a wetland pond configuration designed in accordance with the MECP Design Manual. A low flow channel is provided in the main pond. The elevation of the pond has been set to be below the peat layer of subsoil within the clay layer. Berms will be constructed from native clay material to prevent intrusion of groundwater or escape of surface water captured in the wetland pond.

The proposed stormwater management system for the Site is shown in Figures C-003 through C-006.

3.5 Proposed Liner Installation in Volks Municipal Drain

It is proposed as a component of the expansion design to modify the Volks Municipal Drain roadside ditch along the north side of Boyne Road opposite the landfill site frontage. The length of ditch to be modified is shown on Figure C-007 and C-008 and is approximately 590 metres in length. This modification would isolate and convey surface water past the landfill site from upstream (west) to downstream (east) and prevent potential seepage of leachate-impacted groundwater into the surface water in the ditch. The leachate-impacted groundwater would continue northward as groundwater flow into the landfill buffer zone located north of Boyne Road and the approved CAZ easement.

The lined ditch option would consist of a low permeability liner system (60 mil linear low-density polyethylene (LLDPE) geomembrane liner) in the base and sides of the ditch to reduce the likelihood of potentially leachate-impacted groundwater seepage entering the Drain. This would also maintain fish passage and access to upstream habitats. The liner will be protected above and below using geotextile cushion fabrics and be covered with a layer of Granular B Type II.

3.6 Surface Water Conveyance

During the continuing operations phase of the expanded landfill and post-closure, it is proposed that stormwater from the landfill will be collected by existing and proposed grass-lined ditches and will be directed to a stormwater management wetland pond located at the northeast corner of the landfill. The stormwater wetland pond will be located within an existing partially filled, partially low area adjacent to the landfill. The depth of the excavation will be limited to the existing grades of the existing perimeter ditch in the area, to limit the possibility of interception of groundwater potentially impacted by leachate. The stormwater run-off from the wetland will discharge via an existing 900 mm culvert into the roadside ditch on the north side of Boyne Road (which is the Volks Municipal Drain). The proposed culvert at the west end of the site and the existing culvert located at the east end of the site across Boyne Road have been confirmed to convey the 1:25 year return period storm event with a 3-hour duration and modified Chicago distribution.

The on-site ditches have been designed to convey the peak runoff rate from the 1:100 year storm event. A 3-hour modified Chicago distribution design storm was used to assess the surface water runoff from the contributing drainage areas for each ditch. The Post-Expansion drainage areas for each ditch are shown on Figure C-003. The detailed calculations for the ditch sizing are provided in Appendix E.

Table 4: Culvert Sizing for 1:25 Year Return Period Design Storm

Culvert	Maximum Flow (m ³ /s)	Diameter (m)	Percent Full	Depth of Flow (m)
West	0.183	0.60	36%	0.25
East	0.210	0.90	10%	0.19

Table 5: Swale Sizing for 1:100 Year Return Period Design Storm

	A (ha)	100 yr Flow (m ³ /s)	n	Slope (m/m)	Bottom Width (m)	Side Slope (m)	Side Slope (m)	Depth of Flow (m)
Area 205 Swale	1.290	0.2800	0.035	0.003	0.00	4	3	0.40
Area 205 / 206 Swale	4.040	0.7300	0.035	0.003	0.00	4	3	0.56
Area 205 / 206 / 207 Swale	6.740	1.1800	0.035	0.003	0.00	4	3	0.68
Area 205 / 206 / 207 / 208 Swale	8.910	1.6300	0.035	0.005	1.00	3	3	0.59
Area 205C / 205D Swale	1.400	0.2600	0.035	0.005	0.50	3	3	0.30
Area 202 / 203 Swale	2.140	0.4900	0.035	0.005	0.00	4	3	0.45

4.0 MONITORING AND CONTINGENCY

4.1 Surface Water Quality Monitoring

There is no existing stormwater management infrastructure at the site. It is proposed for the expansion that a sampling location (SW6, refer to Drawing C-004) be added at the outfall for the stormwater management pond, and it be sampled four times per year after significant rainfall events, once in spring and fall and two other sampling events. The samples collected will be analyzed for the same field measured parameters and laboratory parameters as listed above for surface water.

There are currently four surface water monitoring stations located within the drainage ditch (Volks Drain) along the north side of Boyne Road (on the opposite side of the road from the disposal area). SW1 and SW4 are located upstream of the landfill site, SW2 is located opposite the disposal area, and SW3 is located downstream of the landfill site. The locations of the four existing surface water monitoring stations are indicated on Drawing C-004. These sampling locations are proposed to continue for the expansion. In addition, a new sampling station, SW5, will be established at the end of the lined ditch section of the Volks Drain, which will be upstream from where the stormwater wetland discharges through a culvert under Boyne Road into Volks Drain. The approximate location of SW5 is shown on Drawing C-004. The proposed surface water monitoring program is summarized below.

Monitoring Locations: SW1, SW2, SW3, SW4, SW5 – refer to Drawing C-004.

Monitoring Frequency: Spring, Late Summer, Late Fall

Field Measured Parameters: temperature, conductivity, pH, dissolved oxygen, approximate flow rate

Field Observations at Sampling Locations: natural environment conditions, i.e., vegetation, algae growth, litter/debris

Laboratory Analytical Parameters: boron, iron (total and dissolved), manganese, barium, aluminum, cadmium, chromium, cobalt, lead, zinc, alkalinity, nitrate, nitrite, chloride, BOD, ammonia, total phosphorous, phenols, potassium, copper, nickel, sodium, sulfate, TDS, total suspended solids, chemical oxygen demand, DOC, total Kjeldahl nitrogen, hardness (calculated from laboratory calcium and magnesium analysis), unionized ammonia (calculated from ammonia and field temperature analysis)

In addition to the above parameters, PFAS could possibly be used in future to differentiate surface water quality effects due to landfill leachate effects from other possible sources, i.e., agricultural, road salt runoff, snow disposal site. To provide a baseline for future comparison, PFAS analysis would be done for samples obtained from SW1, SW2 and SW3 for spring, summer and fall prior to constructing the modifications in Volks Drain, and then would be repeated again following the completion of the modifications. PFAS analysis in surface water would be considered in future if needed to differentiate between potential sources of surface water quality impact.

During monitoring events the runoff/flow patterns from the snow disposal site relative to the Volks Drain surface water sampling stations would be observed and documented; this information would be included in the annual monitoring report.

4.2 Stormwater Trigger Mechanism

It is expected that the Sewage Works ECA issued for the stormwater management wetland will have an effluent objective for total suspended solids; it is proposed that the limit be 25 mg/L, as is typically applied to these types of control structures. Total suspended solids will be the key trigger parameter used to assess performance of the pond.

The monitoring results at SW6 will also be used to assess whether leachate impacts on pond discharge water quality are suspected. The proposed effluent objective parameters for assessment of leachate impact are unionized ammonia, boron and chloride, with proposed effluent objective concentrations at the Provincial Water Quality Objectives (PWQO) or Canadian Water Quality Guidelines (CWQG) (0.02, 1.5 and 120 mg/L, respectively).

If the ongoing monitoring program at trigger location SW6 indicates that this total suspended solids objective is exceeded, or if leachate impacts are suspected based on the monitoring results and the Assessment Criteria are exceeded, a re-sampling of the pond discharge will be carried out within one month of the original sampling session at which non-compliance with the trigger or suspicion of leachate impact was initially reported. If the exceedance/suspicion is not confirmed by the follow-up sample, then the initial exceedance/suspicion will be considered anomalous and will be discounted. Historical trends in total suspended solids concentrations and overall water quality at the trigger location shall also be used to assess whether or not monitoring results are anomalous.

If the total suspended solids exceedance or leachate impacts is confirmed, the contingency plan will be implemented.

4.3 Surface Water Contingency Plan

During normal site operations, the valve on the stormwater management pond will be open. The results of the stormwater pond discharge quality sampling will be compared to the effluent objectives.

As described in Section 4.2, in the event of an exceedance of a trigger, additional stormwater sampling and analysis would be conducted at the wetland pond to confirm the result. If the second sample results in an exceedance, then the stormwater management pond would be operated in batch discharge mode with the gate valve closed.

During batch discharge mode operation, surface water sampling would occur prior to the discharge of any surface water from the pond. When the concentration for each effluent objective parameter is less than the corresponding effluent objective concentration, the surface water would be released to the downstream receiver (Volks Drain). If the impounded stormwater quality does not meet these concentrations, it would be pumped into a tanker and hauled to the municipality's sewage lagoons.

In the event that it was determined that leachate-impacted water was adversely affecting the stormwater pond quality, an investigation would be carried out to determine the mechanism by which this was occurring and appropriate mitigation measures developed and implemented.

5.0 LIMITATIONS AND USE OF REPORT

This report was prepared for the exclusive use of the Township of North Dundas; it is understood that this report is intended for submission to the MECP. The report, which specifically includes all tables, figures and appendices, is based on data and information collected by WSP Canada Inc. and is based solely on the conditions of the properties at the time of the work, supplemented by historical information and data obtained by WSP Canada Inc. as described in this report.

The assessment of environmental conditions and possible hazards at this site has been made using the results of physical measurements and chemical analyses of groundwater and surface water from a number of locations. The Site conditions between sampling locations have been inferred based on conditions observed at borehole and monitoring well locations. Subsurface conditions may vary from these sampled locations.

The services performed, as described in this report, were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. WSP Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, WSP Canada Inc. should be requested to re-evaluate the conclusions of this report, and to provide amendments as required. The groundwater monitors installed during the course of this investigation or previous investigations by WSP Canada Inc. have been left in place. These groundwater monitors are the property of the Township of North Dundas and not WSP Canada Inc.

Electronic media is susceptible to modification, deterioration and incompatibility. In the event that data or reports provided by WSP Canada Inc. are distributed and/or electronically posted, WSP Canada Inc. does not warrant, guarantee, or make any representations regarding the use of, or results in terms of correctness, accuracy, reliability or current conditions. No express or implied warranty or fitness for a particular use is made. Any use of the electronic information will be at the sole risk of the party making use of this information.

Signature Page

We trust this report meets your current needs. If you have any questions regarding this report, please contact the undersigned.

WSP Canada Inc.

A blue ink signature of Matt Knowles, consisting of a stylized 'M' and 'K'.

Matt Knowles, P.Eng., PMP
Senior Civil/Environmental Engineer

A blue ink signature of Douglas V. Kerr, written in a cursive style.

Douglas V. Kerr, P.Eng.
Principal Civil Engineer

MHK/DVK/PAS/ld

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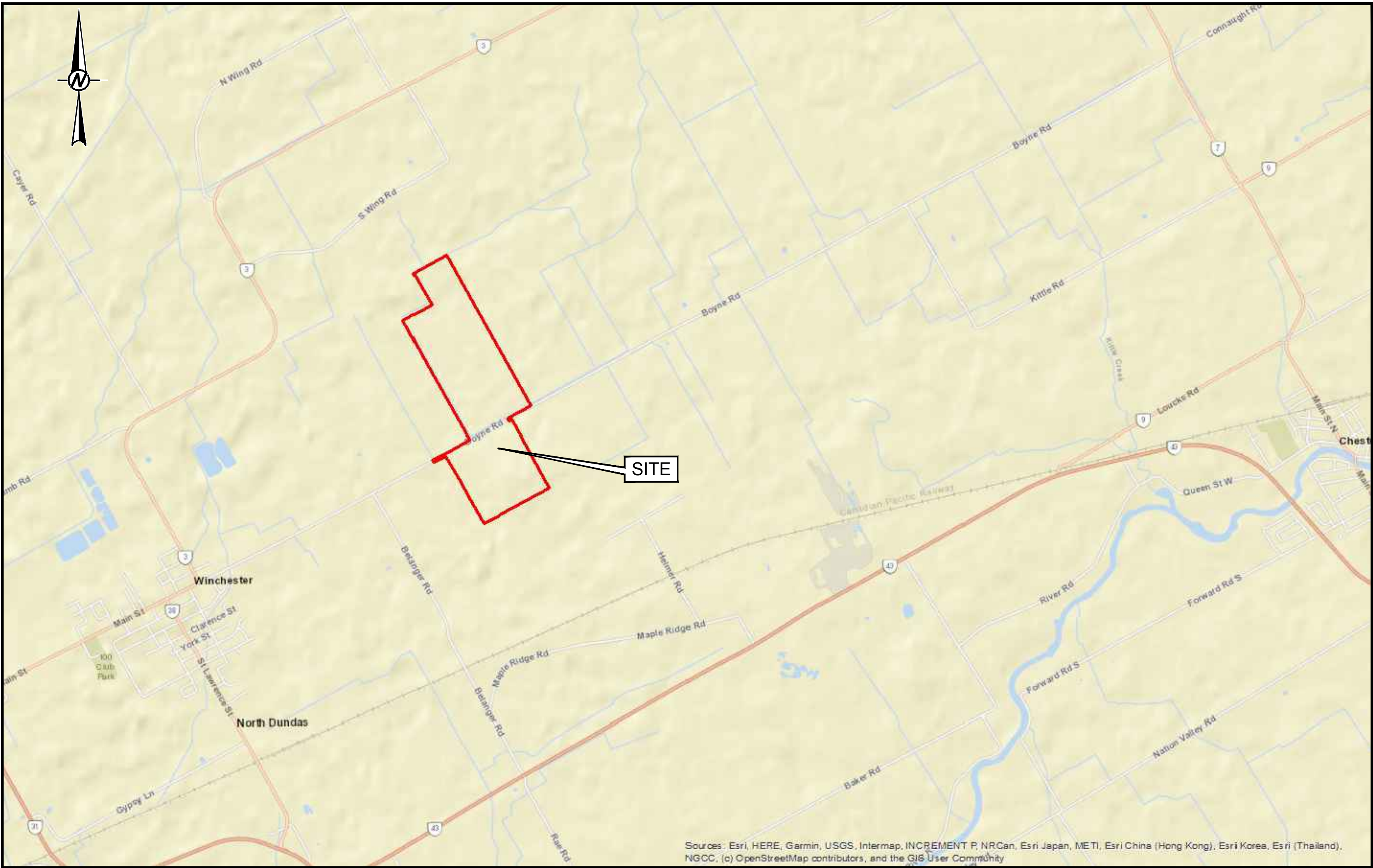
Ontario Regulation, 2022. Regulation 324: General – Waste Management.

Revised Regulations of Ontario, 1990. Regulation 347: General – Waste Management.

FIGURES

TOWNSHIP OF NORTH DUNDAS

BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN



Sheet List Table	
Sheet Number	Sheet Title
C-001	PROJECT COVER PAGE
C-002	PRE-DEVELOPMENT DRAINAGE AREA PLAN
C-003	POST-DEVELOPMENT DRAINAGE AREA PLAN
C-004	PROPOSED STORMWATER MANAGEMENT PLAN
C-005	STORMWATER POND PLAN AND SECTIONS
C-006	STORMWATER MANAGEMENT POND DETAILS
C-007	VOLKS DRAIN DITCH LINING CHAINAGE 0+000 TO 0+300
C-008	VOLKS DRAIN DITCH LINING CHAINAGE 0+300 TO 0+588

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REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

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CANADA

PROJECT
BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN

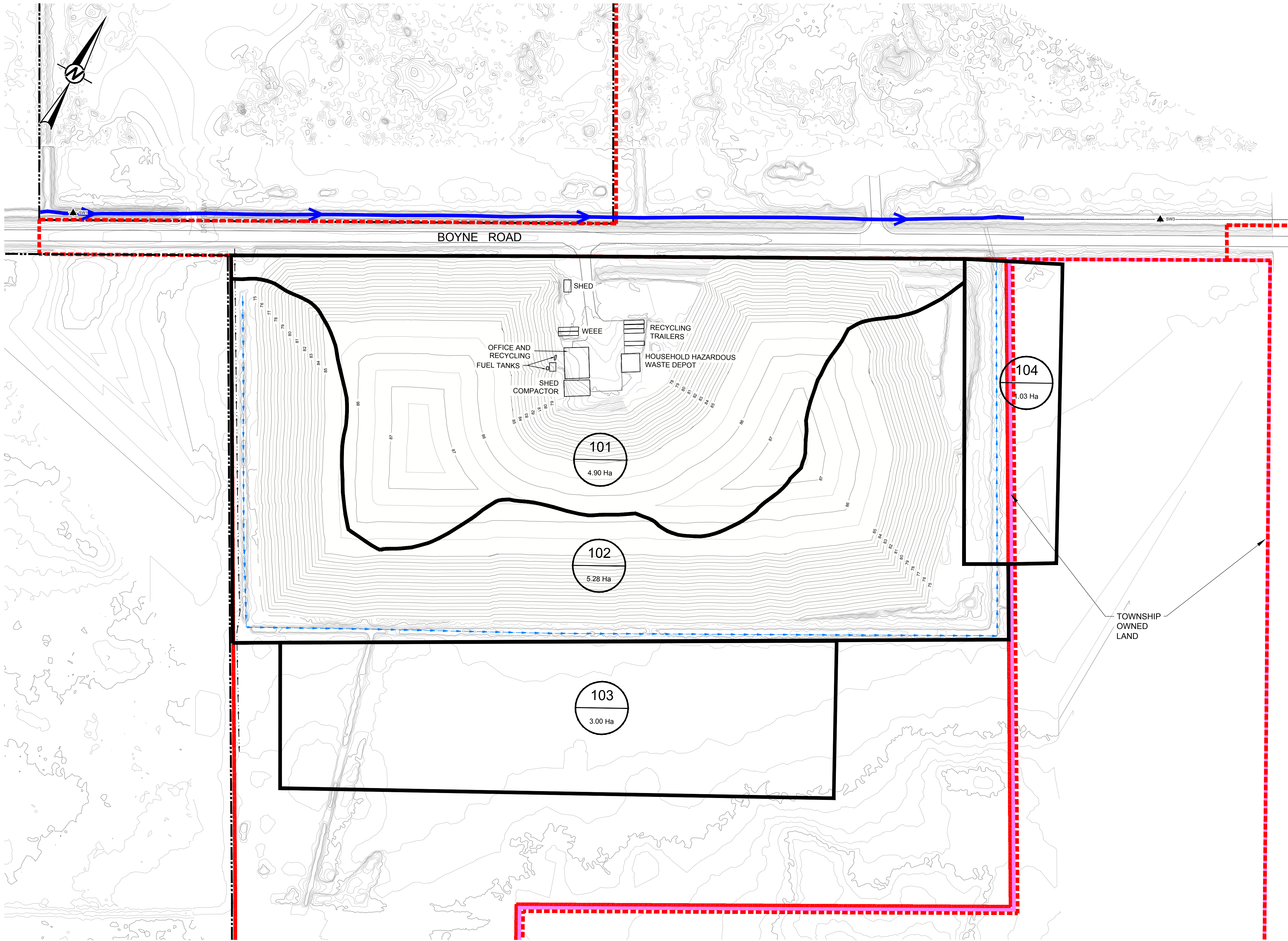
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PROJECT COVER PAGE

PROJECT NO.	CONTROL	REV.	of	FIGURE
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LEGEND

- 85.0 GROUND SURFACE CONTOURS (MASL), 2023 LIDAR TOPOGRAPHY, (MAY 5, 2023)
- APPROXIMATE LOCATION OF EXISTING PERIMETER DITCH AND INFERRED FLOW DIRECTION
- PROPOSED PROPERTY BOUNDARY OF LANDFILL SITE
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA I.D. No.
- AREA (Ha)

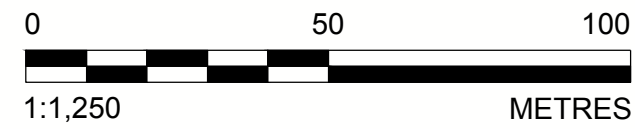
NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE.

REFERENCE(S)

1. BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
2. TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. MAY 5, 2023.
3. COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28.

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0	2024-09-25	ISSUED FOR ECA PERMIT	MHK	MLF	DVK	PAS
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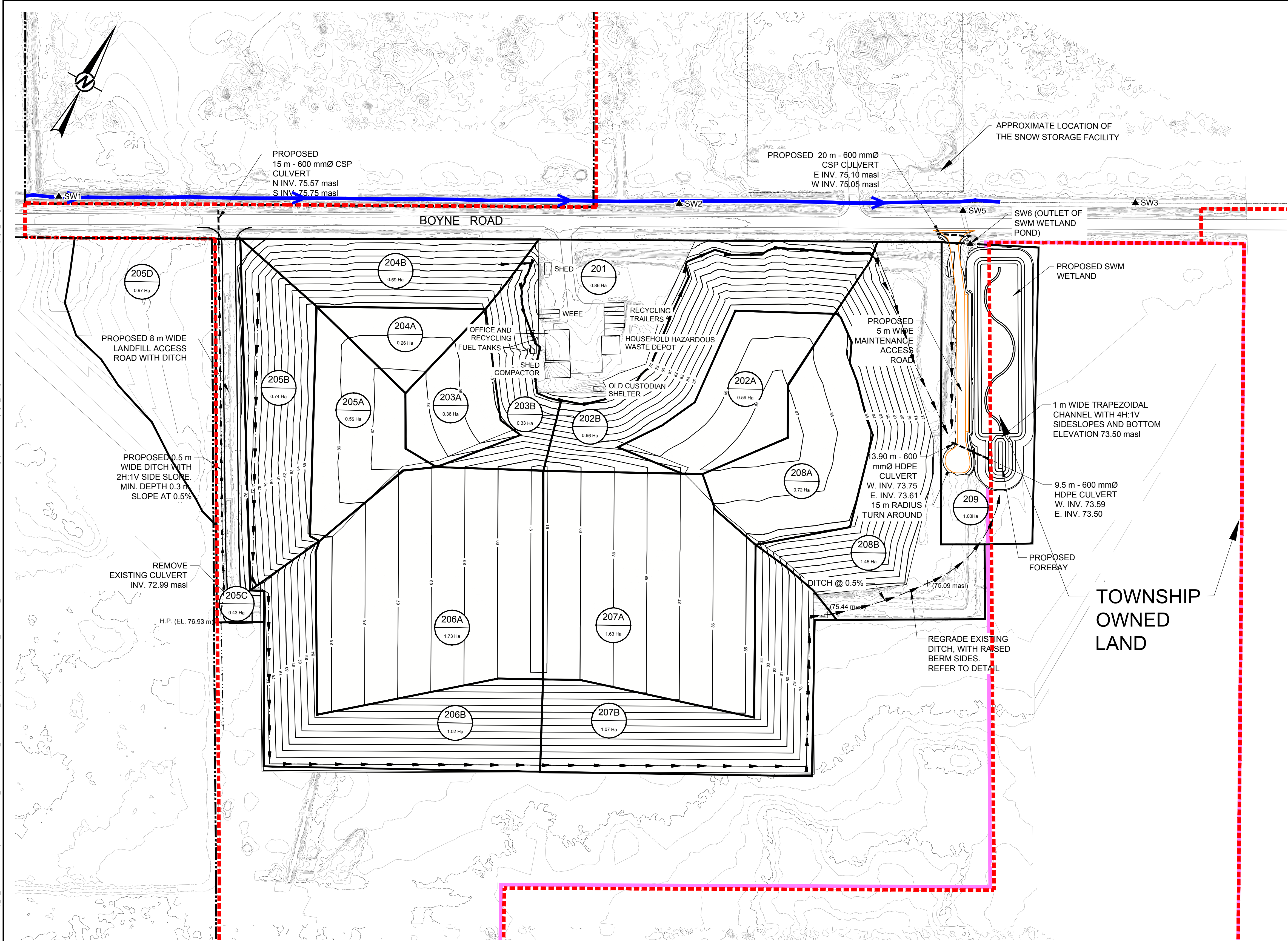
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BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN

TITLE
PRE-DEVELOPMENT DRAINAGE AREA PLAN

PROJECT NO.	CONTROL	REV.	of	FIGURE
23594638	0007	0		C-002

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LEGEND

85.0GROUND SURFACE CONTOURS (MASL), 2023 LIDAR TOPOGRAPHY, (MAY 5, 2023)

PROPOSED PROPERTY BOUNDARY OF LANDFILL SITE

APPROXIMATE BOUNDARY OF EXISTING CONTAMINANT ATTENUATION ZONE EASEMENT LANDS

APPROXIMATE LOCATION OF VOLK DRAIN IMPROVEMENTS DITCH AND INFERRED FLOW DIRECTION

DRAINAGE AREA BOUNDARY

209DRAINAGE AREA I.D. No.

0.96 HaAREA (Ha)

APPROXIMATE SURFACE WATER SAMPLING LOCATION

PROPOSED DITCH

798081PROPOSED EXPANSION TOP OF WASTE ELEVATION CONTOURS

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE.

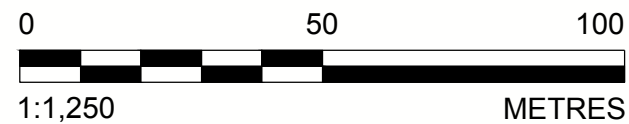
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2. TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. MAY 5, 2023.

3. COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28.

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0	2024-09-25	ISSUED FOR ECA PERMIT	MHK	MLF	DVK	PAS
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

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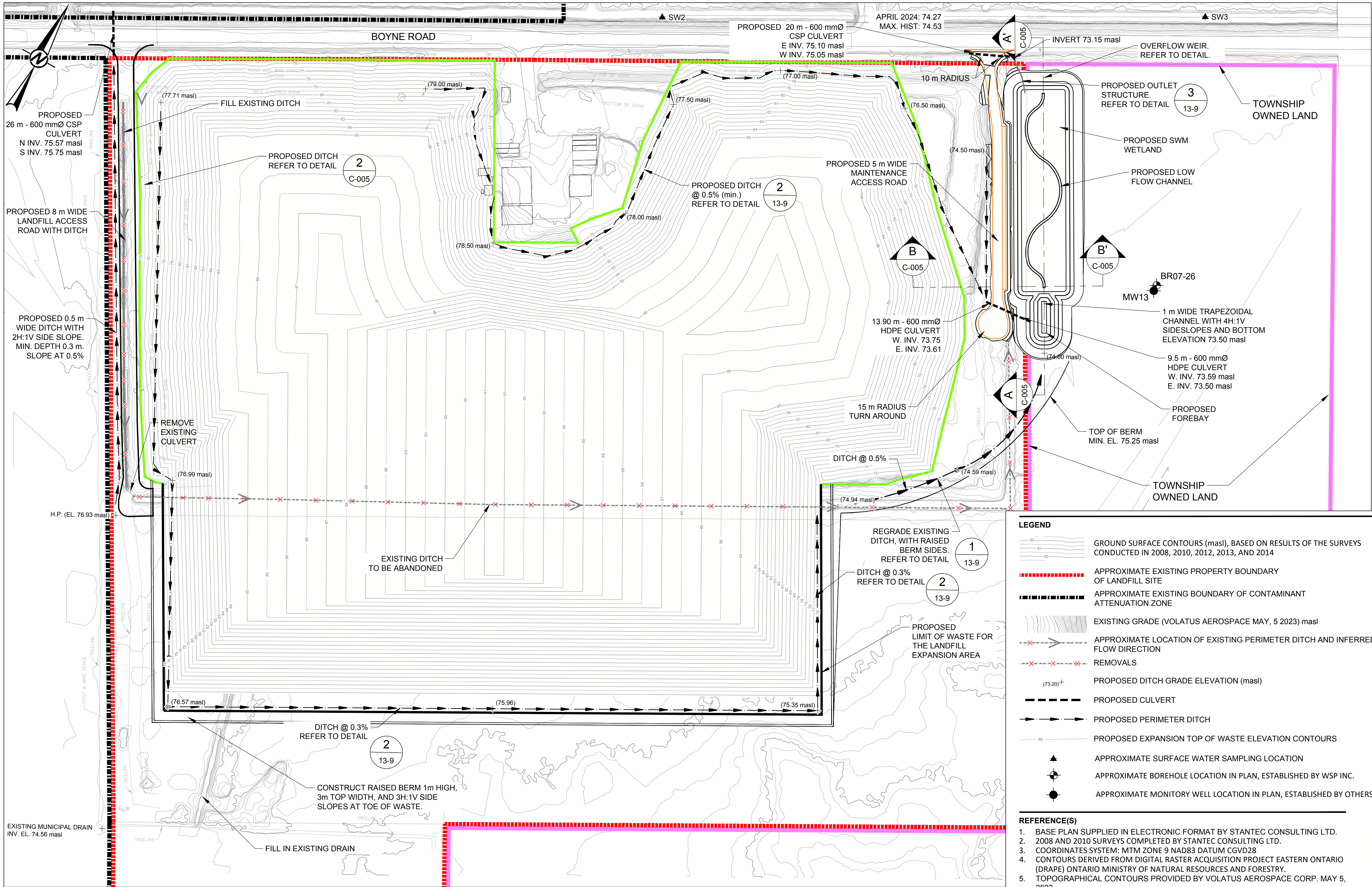
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BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN

TITLE
POST-DEVELOPMENT DRAINAGE AREA PLAN

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23594638	0007	0		C-003

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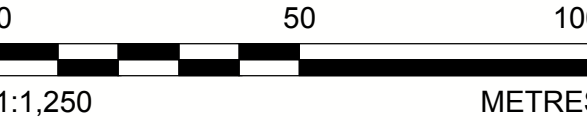
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- GROUND SURFACE CONTOURS (masl), BASED ON RESULTS OF THE SURVEYS CONDUCTED IN 2008, 2010, 2012, 2013, AND 2014
- APPROXIMATE EXISTING PROPERTY BOUNDARY OF LANDFILL SITE
- APPROXIMATE EXISTING BOUNDARY OF CONTAMINANT ATTENUATION ZONE
- EXISTING GRADE (VOLATUS AEROSPACE MAY, 5 2023) masl
- APPROXIMATE LOCATION OF EXISTING PERIMETER DITCH AND INFERRED FLOW DIRECTION
- REMOVALS
- PROPOSED DITCH GRADE ELEVATION (masl)
- PROPOSED CULVERT
- PROPOSED PERIMETER DITCH
- PROPOSED EXPANSION TOP OF WASTE ELEVATION CONTOURS
- APPROXIMATE SURFACE WATER SAMPLING LOCATION
- APPROXIMATE BOREHOLE LOCATION IN PLAN, ESTABLISHED BY WSP INC.
- APPROXIMATE MONITORY WELL LOCATION IN PLAN, ESTABLISHED BY OTHERS

REFERENCE(S)

- BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.
- 2008 AND 2010 SURVEYS COMPLETED BY STANTEC CONSULTING LTD.
- COORDINATES SYSTEM: MTM ZONE 9 NAD83 DATUM CGVD28
- CONTOURS DERIVED FROM DIGITAL RASTER ACQUISITION PROJECT EASTERN ONTARIO (DRAPE) ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY.
- TOPOGRAPHICAL CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. MAY 5, 2023

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PROJECT
BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN

TITLE
PROPOSED STORMWATER MANAGEMENT PLAN

PROJECT NO. 23594638 CONTROL 0007 REV. 0 of FIGURE C-004

0	2024-09-25	ISSUED FOR ECA PERMIT	MHK	MLF	DVK	PAS
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

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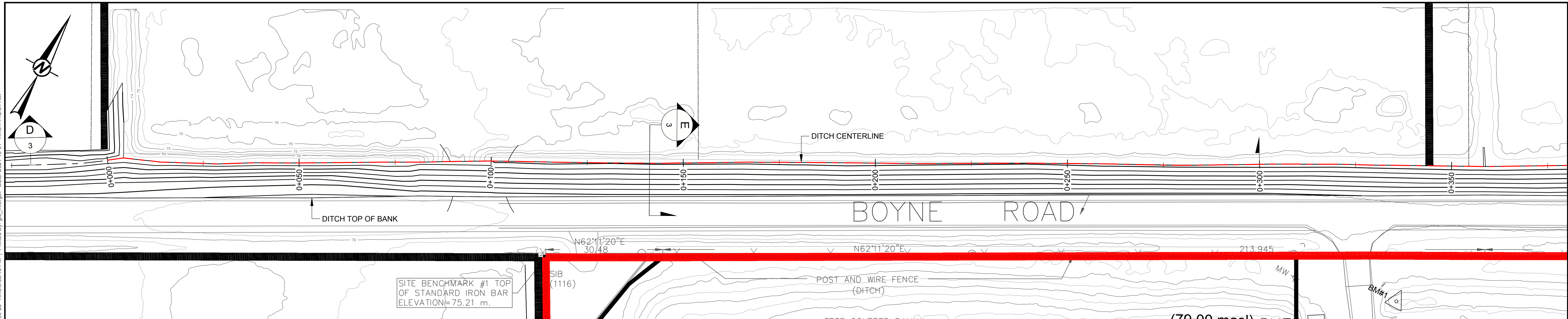
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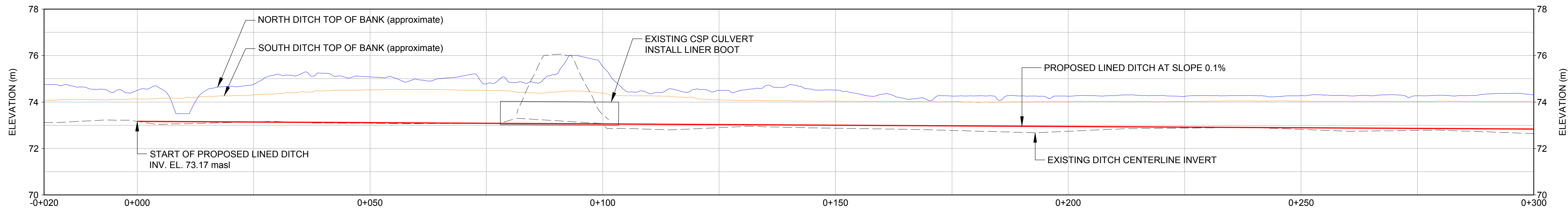
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BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN

TITLE
STORMWATER POND PLAN AND SECTIONS

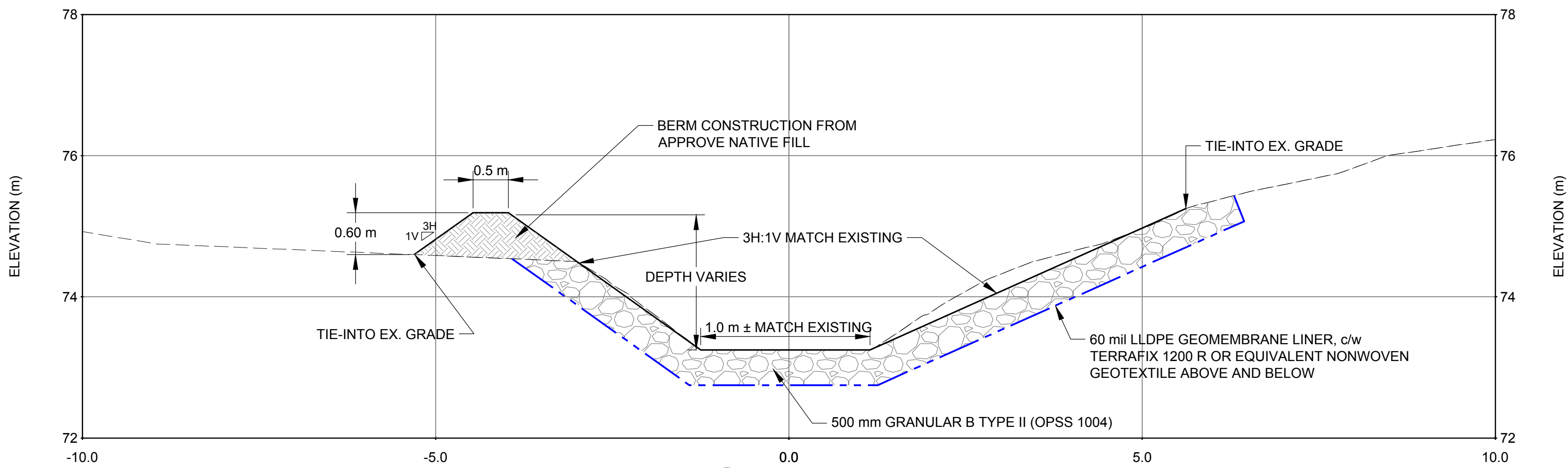
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DITCH PLAN VIEW 0+000 - 0+300
SCALE 1:500 m

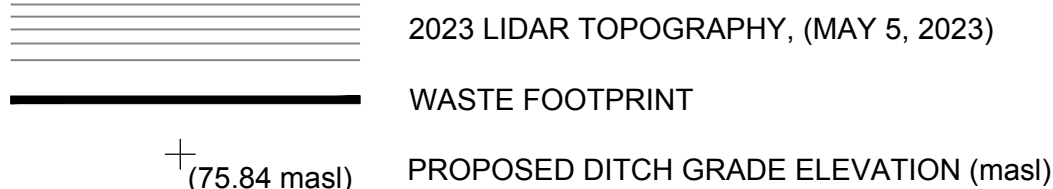


HORI. SCALE 1:500 m (D) DITCH PLAN VIEW 0+000 - 0+300
 VERT. SCALE 1:100 m (3)



SCALE 1:50 m E DITCH CROSS-SECTION

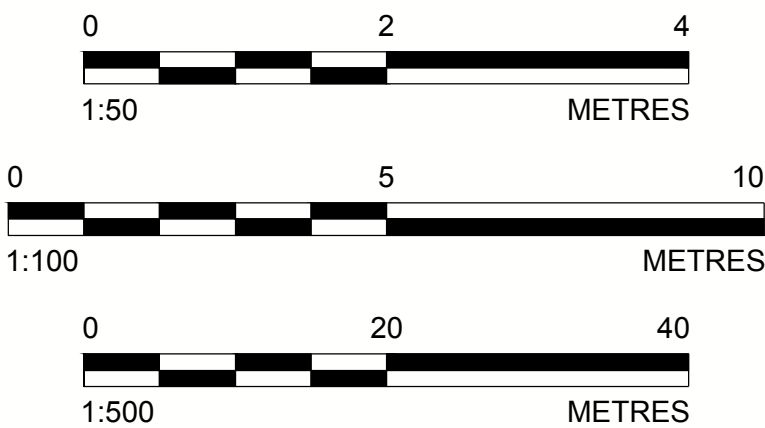
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REFERENCE(S)

1. TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. MAY 5, 2023.
2. DRAINAGE DITCH SURVEY POINTS, COLLECTED JUNE 5, 2023.

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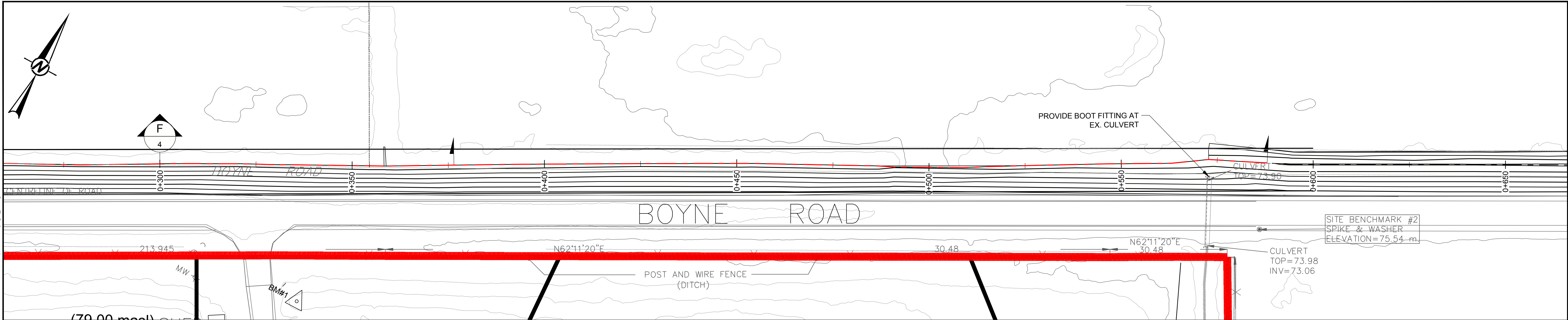
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BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN

TITLE
VOLKS DRAIN DITCH LINING CHAINAGE 0+000 TO 0+300

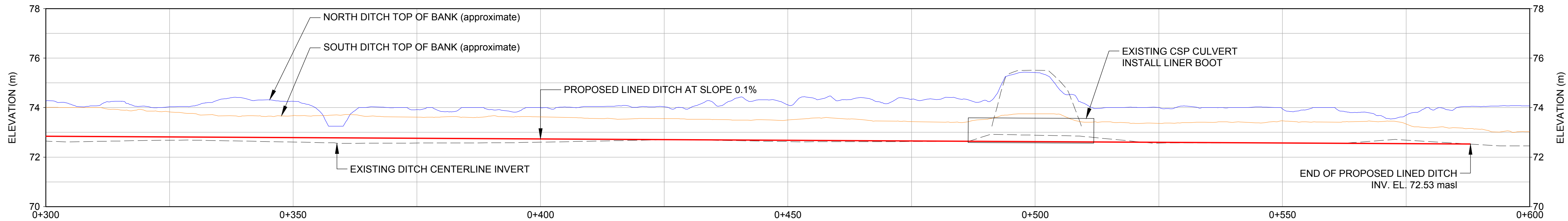
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DITCH PLAN VIEW 0+300 - 0+588
SCALE 1:500 m



SCALE 1:500 m
VERT. SCALE 1:100 m
DITCH CENTERLINE PROFILE 0+300 TO 0+588

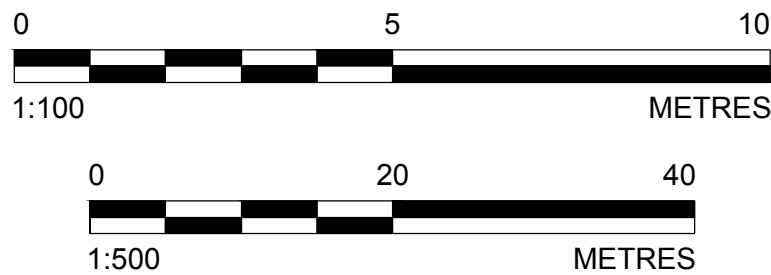
LEGEND

- 2023 LIDAR TOPOGRAPHY, (MAY 5, 2023)
- WASTE FOOTPRINT
- PROPOSED DITCH GRADE ELEVATION (masl)
- PROPOSED SITE DITCH

REFERENCE(S)

- TOPOGRAPHIC CONTOURS PROVIDED BY VOLATUS AEROSPACE CORP. MAY 5, 2023.
- DRAINAGE DITCH SURVEY POINTS, COLLECTED JUNE 5, 2023.

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CONSULTANT



WSP CANADA INC.
1931 ROBERTSON ROAD
OTTAWA, ONTARIO
CANADA

PROJECT
BOYNE ROAD LANDFILL EXPANSION
STORMWATER MANAGEMENT SYSTEM DESIGN

TITLE
VOLKS DRAIN DITCH LINING CHAINAGE 0+300 TO 0+588

PROJECT NO. 23594638 CONTROL 0007 REV. 0 of 0 FIGURE C-008

0	2024-09-25	ISSUED FOR ECA PERMIT	MHK	MLF	DVK	PAS
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

APPENDIX A

Existing ECA's



Ministry of the Environment
Ministère de l'Environnement

Provisional Certificate of Approval for a
Waste Disposal Site

Certificat provisoire d'autorisation du
lieu d'élimination des déchets

THIS IS A TRUE COPY OF THE
ORIGINAL CERTIFICATE MAILED

ON Dec 12/89

Provisional Certificate of Approval No. A 452101
Certificat provisoire d'autorisation no

Page 1 of 2
page de 2

(Signed)
Under the Environmental Protection Act and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Aux termes de la Loi sur la protection de l'environnement et des règlements y afférents et sous réserve des restrictions qui s'y appliquent, ce Certificat provisoire d'autorisation est délivré à:

The Corporation of the
Township of Winchester
R.R. #4
Winchester, Ontario
K0C 2K0

for the use and operation of a 3.1 hectare (20 acres) landfilling site

all in accordance with the following plans and specifications:

1. Application and Supporting Information

Located: N.1/4 Lot 8, Concession 6
Township of Winchester
County of Dundas

which includes the use of the site only for the disposal of the following categories of waste (NOTE: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval) domestic, commercial, non-hazardous solid industrial, and non-hazardous solid (limited to miscellaneous debris from agriculture)

and subject to the following conditions:

1. No operation shall be carried out at the site after sixty days from this condition becoming enforceable unless this Certificate including the reasons for this condition has been registered by the applicant as an instrument in the appropriate Land Registry Office against title to the site and a duplicate registered copy thereof has been returned by the applicant to the Director.
2. Wastes are to be deposited in an orderly manner in the fill area. All waste shall be compacted and covered with 15 cm of cover material on the exposed surfaces of the lifts when they reach a maximum of 2 m in height by 10 m in width or every two weeks, whichever occurs first.
3. The burning of all wastes shall be discontinued immediately.
4. A suitable design report with plans and specifications detailing site development including operation, closure, and schedules shall be submitted for approval by the Township to the Director of Approvals Branch, 250 Davisville Avenue, 3rd Floor Toronto, Ontario M4S 1R2 (the "Director"), by November 30, 1990. The design report shall detail measures for progressive closure and rehabilitation of the site to a natural passive state. The design report shall be implemented forthwith upon written notice of the Director, as amended in writing by the Director.

4th

December

89

Dated this
date of

day of
year of

19

[Signature]
Director, Section 38
Environmental Protection Act
Directeur, Section 38

DEC 8 89 FRI 15 24 04 08 89 11 13



Ontario

Ministry
of the
EnvironmentPROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE

The following conditions are additional to the conditions shown on Provisional Certificate
of Approval Number A 482101 dated December 4, 1989

5. A report outlining the hydrogeology of the site, the extent of the leachate plume, and the potential for future movement of leachate off-site shall be submitted by the Township, to the Director, by November 30, 1990. The hydrogeology report must be prepared by a competent hydrogeologist.
6. The Township shall submit for approval a detailed program for monitoring surface and groundwater including leachate movement, to the Director, by November 30, 1990.
7. A proper rodent control program shall be implemented by having bait set near the exposed waste at all times.
8. Provisional Certificate of Approval No. A 482101 dated October 30, 1989 is revoked and replaced by this Provisional Certificate of Approval No. A 482101 dated November 30, 1989.

Ministry
of the
Environment

Ontario

NOTICE

TO:

The Corporation of the
Township of Winchester
R.R. #4
Winchester, Ontario
K0C 2K0

1. A reason for the condition requiring registration of the Certificate is that Section 46 of The Environmental Protection Act, 1971 prohibits any use being made of the lands after they cease to be used for waste disposal purposes within a period of twenty-five years from the year in which such land ceased to be used unless the approval of the Minister for the proposed use has been given. The purpose of this prohibition is to protect future occupants of the site and the environment from any hazards which might occur as a result of waste being disposed of on the site. This prohibition and potential hazard should be drawn to the attention of future owners and occupants by the Certificate being registered on title.
2. The reason for the imposition of condition 2 is to ensure that the development of this landfilling site will be in orderly and systematic manner. The use and operation of the site without such a condition may create a nuisance.
3. The reason for the imposition of condition 3 is that smoke from burning waste has created offensive odours and the continued practice of burning waste at the site may create a nuisance or cause a hazard to the health and safety of any person.
4. The reason for condition 4 is to ensure that an orderly and systematic development of the site is conducted in accordance with the provisions of the Environmental Protection Act. A closure plan is to ensure that the site is closed in a satisfactory manner and maintained and monitored after closure. Operation of the site without such a condition may create a nuisance and would not be in the public interest.
5. The reason for condition 5 is that a hydrogeological study is an integral part of the use and operation of a landfill site. It is necessary to ensure that sufficient pollutant attenuation is taking place on site and contaminants are not migrating off site at an unacceptable level. The use and operation of the site without these conditions may create a nuisance or result in a hazard to the health and safety of any person.
6. The reason for condition 6 is that a monitoring program is an integral part of the use and operation of a waste disposal site. Should monitoring show a significant impact on or off site, corrective measures may be required. The operation of the site without the monitoring program may create a hazard to the health and safety of any person and would not be in the public interest.

- 2 -

7. The reason for condition 8 is to ensure that the rodent population will not result in a hazard to the health and safety of any person or the natural environment.
8. The reason for condition 8 is to clarify that the site is to be used and operated pursuant to the Provisional Certificate of Approval dated November 30, 1989.

You may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 122a of the Environmental Protection Act, R.S.O. 1980, c. 141, as amended, provides that the Notice requiring the hearing shall state the portions of each term or condition in the approval in respect of which the hearing is required and the grounds on which you intend to rely at the hearing.

This Notice should be served upon:

The Secretary
Environmental Appeal Board
112 St. Clair Ave. West
Suite 502
Toronto, Ontario M4V 1N3.

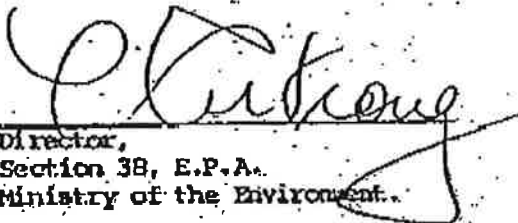
AND

The Director
Section 38, E.P.A.
Ministry of the Environment
250 Davisville Ave.
Toronto, Ontario M4S 1H2

Dated at Toronto this 4th day of December, 1989.

THIS IS A TRUE COPY OF THE
ORIGINAL NOTICE MAILED

ON Dec 12/89
8


Director,
Section 38, E.P.A.
Ministry of the Environment.



Ministry of
Environment
and Energy

Ministère de
l'Environnement
et de l'Énergie

250 Davisville Avenue
Toronto ON M4S 1H2

250, avenue Davisville
Toronto ON M4S 1H2

APPROVALS BRANCH

3rd Floor

Tel: (416) 440-3544

Fax: (416) 440-6973

September 5, 1995

David Sloane
Waste Coordinator
The Corporation of the Township of Winchester
R.R.#1 Winchester,
K0C 2K0

Dear Mr. Sloaner,

RE: Provisional Certificate of Approval No. A482101

Please find attached a Notice amending the Certificate of Approval dated December 4, 1989.

This Notice has been issued to allow the Township of Winchester landfill site to accept waste from the Village of Chesterville.

The amendment is supported by Regulation 299/94 which amends Regulation 347 under the Environmental Protection Act and a certified copy of the deed naming the Township of Winchester, the Village of Winchester and the Village of Chesterville as co-owners of the landfill property since 1977.

If you have any questions, please feel free to contact Sara Darker at (416) 440-3575.

Sincerely,

A. Dominski, P. Eng., Supervisor
Waste Unit

SD/es

cc: B. Ward, Eastern Region
B. Helliar, Cornwall District Office
N. Krisjanis, Township of Winchester





Ministry of
Environment
and Energy

Ministère de
l'Environnement
et de l'Énergie

NOTICE
Page 1 of 2

TO: The Corporation of the Township of Winchester
R.R. #4 Winchester, Ontario
K0C 2K0

You are hereby notified that Provisional Certificate of Approval No. A 482101 dated December 4, 1989 is amended as follows:

Condition 8 is amended as follows:

8. Provisional Certificate of Approval No. A 482101 dated October 30, 1989 is revoked and replaced by this Provisional Certificate of Approval No. A 482101 dated December 4, 1989.

Condition 9 is added as follows:

9. The landfill site may serve the areas of the Township of Winchester, the Village of Winchester, and the Village of Chesterville.

REASONS

1. The reason for amending condition 8 is to correct the date of the Provisional Certificate of Approval referenced.
2. The reason for adding condition 9 is to clearly identify the municipalities who have co-owned the site since 1977 and who therefore may use the site according to Ontario Regulation 299/94.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990 c. E-19, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. *The portions of the approval or each term or condition in the 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.*



Ministry of
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and Energy

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et de l'Énergie

NOTICE
Page 2 of 2

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, you may, by written notice served upon me, the Environmental Appeal Board and the Environmental Commissioner, Environmental Bill of Rights, S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the approval or each term or condition in the 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.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

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

This Notice must be served upon:

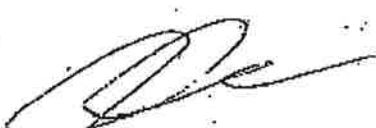
The Secretary,
Environmental Appeal Board,
112 St. Clair Avenue West,
Suite 502,
Toronto, Ontario,
M4V 1N3

The Environmental Commissioner,
1075 Bay Street,
Suite 605
6th Floor
Toronto, Ontario
M5S 2W5

The Director,
Section 39, Environmental Protection Act,
Ministry of the Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario,
M4S 1H2

This instrument is subject to Section 38 of the Environmental Bill of Rights, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.

DATED AT TORONTO this 5th day of September, 1995.


A. Dominski, P. Eng.
Director
Section 39
Environmental Protection Act



Ministry of
Environment
and Energy

Ministère de
l'Environnement
et de l'Énergie

250 Davisville Avenue
Toronto ON M4S 1H2

250, avenue Davisville
Toronto ON M4S 1H2

APPROVALS BRANCH

3rd Floor

Tel: (416) 440-3544

Fax: (416) 440-6973

October 2, 1995

David Sloane
Waste Coordinator
The Corporation of the Township of Winchester
R.R.#4 Winchester,
K0C 2K0

Dear Mr. Sloane:

RE: Provisional Certificate of Approval No. A482101

Please find attached a Notice amending the Certificate of Approval dated December 4, 1989.

This Notice has been issued to allow the Township of Winchester to operate a municipal waste recycling facility at the Township of Winchester Landfill Site.

If you have any questions, please feel free to contact Robert Bruce at (416) 440-3575.

Sincerely,

A. Dominski, P. Eng., Supervisor
Waste Unit

SD/es
Enclosure

cc: B. Ward - Eastern Region
B. Helliard - Cornwall District Office
Paul Scalco - Waste Reduction Branch
N. Krisjanis - Township of Winchester
D. Phippen - M.S. Thompson and Associates





Ontario

Ministry of
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Page 1 of 2

TO: The Corporation of the Township of Winchester
R.R. #4
Winchester, Ontario
K0C 2K0

You are hereby notified that Provisional Certificate of Approval No. A 482101 dated December 4, 1989 is amended as follows:

Conditions 10 and 11 are added as follows:

Municipal Waste Recycling Facility (Transfer/Processing Station)

10. Except as otherwise provided by Regulation 101/94, the municipal waste recycling site shall be operated and maintained in accordance with:
 - a) Application for Approval of a Waste Disposal Site dated June 27, 1995 and signed by David Sloane of the Township of Winchester.
 - b) Letter to Mr. Bob Helliard of the Ministry of Environment and Energy from Dale Phippen of M.S. Thompson and Associates Ltd. dated June 28, 1995 regarding the municipal waste recycling facility located at the municipal landfill.
 - c) Report entitled "The Township of Winchester Municipal Waste Recycling Facility" dated July 1994 (updated July 1995) by M.S. Thompson and Associates Ltd.
11. The municipal waste recycling site may collect, process and transfer blue box waste from the Township of Winchester; the Village of Winchester; the Village of Chesterville; the United Counties of Stormont, Dundas and Glengarry; Grenville County; the Township of Russell; and the Township of Osgoode.

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

1. The reason for adding Condition 10 is to allow the operation of a municipal waste recycling facility in accordance with the Environmental Protection Act at the Township of Winchester landfill site.
2. The reason for adding condition 11 is to identify the approved service area of the municipal waste recycling facility only. Otherwise, the service area for the Township of Winchester landfill site is limited to the Township of Winchester, the Village of Winchester and the Village of Chesterville.



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In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, you may by written notice served upon me, the Environmental Appeal Board and the Environmental Commissioner, Environmental Bill of Rights, S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. The portions of the approval or each term or condition in the 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.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

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

This Notice must be served upon:


The Secretary,
Environmental Appeal Board,
112 St. Clair Avenue West,
Suite 502,
Toronto, Ontario,
M4V 1N3

The Environmental Commissioner,
1075 Bay Street,
Suite 605
6th Floor
Toronto, Ontario
M5S 2W5

The Director,
Section 39, Environmental Protection Act,
Ministry of the Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario,
M4S 1H2

This instrument is subject to Section 38 of the Environmental Bill of Rights, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.

DATED AT TORONTO this 2nd day of October, 1995


 A. Dominski, P. Eng.
 Director
 Section 39
 Environmental Protection Act



1.0645

250; Avenue Davisville
Toronto ON M4S 1H2

5 AM

cc: Brian Ward, Eastern Region
Jeff Columbus, Cornwall District Office

Ministry of
Environment
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Page 1 of 6

TO: The Corporation of the Township of Winchester
R.R. #4
Winchester, Ontario
K2E 7J5

You are hereby notified that Provisional Certificate of Approval No. A 482101 dated December 4, 1989 and all subsequent Notices of Amendment are hereby amended to include the approval of the establishment and operation of facilities for the acceptance, storage, packaging, and bulking of household hazardous waste and subsequent transfer of hazardous waste codes 145, 148, 213, 221, 241, 242, 252, 261, 263, 269, and 331, as described in the document entitled "Ministry of the Environment New Ontario Waste Classes" January 1986, in accordance with the following plans and specifications:

- i. The application for a Waste Disposal Site dated September 10, 1996 and the supporting information as provided in the document entitled "Boyne Road Landfill Site and Recycling Facility Household Hazardous Waste Transfer Facility Design and Operation Report", prepared by Oliver, Mangione, McCalla & Associates Ltd., dated July 1996.
- ii. The letter dated July 25, 1996 from Brenda L. Burrows-Rabb, Oliver, Mangione, McCalla & Associates Ltd. to Wilfred Ng, MOEE Approvals Branch.

In addition, the following conditions are added:

6. (a) The Household Hazardous Waste Transfer Facility shall be operated in accordance with the application for a Waste Disposal Site (Transfer) submitted September 10, 1996 and supporting information as provided in the document entitled "Boyne Road Landfill Site and Recycling Facility Household Hazardous Waste Transfer Facility Design and Operation Report", prepared by Oliver, Mangione, McCalla & Associates Ltd., dated July 1996.
- (b) The letter dated July 25, 1996 from Brenda L. Burrows-Rabb, Oliver, Mangione, McCalla & Associates Ltd. to Wilfred Ng, MOEE Approvals Branch.
7. (a) The Township shall ensure that the wastes are stored in a safe and secure manner; that the operation of this facility does not interfere with any other activities associated with this site; and that the wastes are properly handled, packaged or contained so as not to pose any threat to the general public, site personnel and the environment.



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- (b) No storage facilities other than those approved under this Certificate shall be used and fixed storage facilities shall not be moved, replaced or altered.
 - (c) Notwithstanding Condition 7 (a), all storage buildings and tanks shall be clearly marked indicating the type and nature of the hazardous waste stored. All points of access to the transfer storage facilities shall be posted to warn that the area contains hazardous materials. Smoking restrictions shall be adhered to and non-smoking signs posted as required by regulation.
 - (d) All storage buildings shall be properly ventilated and shall be constructed in compliance with fire regulations and municipal by-laws and approvals and in accordance with Ministry of Labour guidelines.
 - (e) All hazardous waste storage tanks and buildings shall be maintained under lock and key and access to these facilities shall be limited to trained site personnel.
 - (f) All storage facilities shall be inspected daily during operating hours by site personnel trained in contingency measures and all inspections shall be recorded and these records shall be maintained by the Township for a period of three years.
8. (a) No PCB's shall be accepted at this site. Oil and oil-based paints which have been manufactured prior to 1972; or whose manufacturing date cannot be determined, may contain PCBs and shall be handled in the manner prescribed:
- (i) The oil and oil-based paints shall not be mixed (bulked) with other paints prior to testing. Paints which are lab-packed are not considered to be mixed under this Certificate.
 - (ii) The oil and oil-based paints shall be tested for PCB content and shall be handled in the manner outlined in subcondition (a)(iii) if found to contain PCB.



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(iii) If the oil and oil-based paints are found to have PCBs at or above levels identified in subcondition (a)(iv), it shall be forthwith reported to the MOEE District Manager and shall be managed in accordance with Regulation 362/92 and stored or removed from the site to an approved PCB storage site, in accordance with written instructions from the District Manager.

(iv) The oil and oil-based paints shall not be distributed for reuse if they have any measurable PCB content. The oil and oil-based paint is considered to be a PCB waste, if measured levels are equal to or greater than 50 parts per million.

(b) Except as specified in subcondition (a)(iv), paints collected at the site may be returned or sold to the general public for reuse provided all transactions are recorded by invoice. Information on the type and volume of paint returned to the public through this site shall be recorded in the report specified in Condition 9.

9. (a) The Township shall establish a monthly summary of waste received at the site which shall include, but not necessarily be limited to, the documentation of waste types and quantities, source of generation, and ultimate disposal sites; and document of spills and upsets and environmental and other problems encountered in operating this site.

(b) Wastes that are collected and stored shall be in amounts which can be safely handled on the site. In the event that larger amounts are received than anticipated, the Township shall have extra drums and lab-packed containers available on the premises for the storage of the additional waste collected. When site capacity is reached, arrangements for the removal of waste from the site shall be made as soon as possible, but in any event, within five (5) working days. Records shall be maintained each time the capacity is exceeded and submitted in the report specified in subcondition (c).

(c) The information collected under subcondition (a) and (b) shall be submitted in a report to the District Manager on or before the first day of December during each year of operation.



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10. The Township shall ensure that only site personnel who are trained are on duty at all times during the operation of the site.
11. (a) Prior to commencing operations on the site, the Township shall have prepared an operation manual for use by site personnel which shall contain, but not necessarily be limited to the following:
 - (i) an outline of the responsibilities of site personnel;
 - (ii) personnel training protocols;
 - (iii) proper receiving and recording procedures (including recording procedures of wastes which are refused at the site);
 - (iv) paint waste identification, analysis information and separating procedures;
 - (v) proper storage, handling, sorting and shipping procedures;
 - (vi) contingency procedures to be followed by personnel in the event of spills, fire or other emergencies.
- (b) On commencing the Household Hazardous Waste Collection Program, a copy of the manual shall be placed in a central location on the site and this manual shall be accessible to all site personnel during operating hours.
12. The Township shall ensure that adequate fire fighting and contingency spill cleanup equipment is available at the site and that on-site supervisors are familiar with the use of such equipment and its location(s) on the site.
13. The local police and fire departments shall be informed of this site and this Certificate and shall be notified in writing of operating hours and any changes to scheduled operating hours prior to the changes being made.
14. Any spills shall be forthwith reported directly to the Ministry of Environment and Energy Spills Action Centre (1-800-268-6060) and shall be cleaned up immediately. A record of all spills and upsets, cleanup and corrective action shall be maintained and submitted in the report specified under Condition 9 (c).



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15. Except as specified under Conditions 8(a)(iii) and (b), all waste collected shall be transported from the site by an approved waste management system and disposed of at landfill, transfer and processing sites certified to accept these types of wastes.

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

1. Condition 6 is included to ensure that this site is operated in accordance with the application and supporting information submitted by the Township, and not in a manner which the Director has not been asked to consider.
2. Conditions 7 and 8 are included to ensure that this site is used only to collect and handle approved waste from approved site users; and that the waste is stored in a secure and safe manner.
3. Condition 9 is to provide the Township and the Ministry of Environment and Energy with an assessment of the Household Hazardous Waste Collection Program.
4. Condition 10 and 11 is to ensure that the Household Hazardous Waste Collection Program is conducted in an organized manner by adequately trained persons to ensure the safety of the general public, site personnel and the environment.
5. Condition 12 is to ensure that any emergency which may occur on site can be dealt with as expeditiously as possible.
6. Condition 13 is to ensure the police and/or fire department personnel are adequately prepared for and are able to assist with the operation of the site and Household Hazardous Waste Collection Program day should an emergency arise.
7. Condition 14 is to ensure that all spills are reported and properly cleaned up.
8. Condition 15 is to ensure that all waste is transported and disposed of in an environmentally acceptable manner in accordance with legislation governing the handling of waste material.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990 c. E-19, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, as amended provides that the Notice requiring a hearing shall state:

1. *The portions of the approval or each term or condition in the 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.*



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et de l'Énergie

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In addition to these legal requirements the Notice should also include:

3. *The name of the appellant;*
4. *The address of the appellant;*
5. *The Certificate of Approval number;*
6. *The date of the Certificate of Approval;*
7. *The name of the Director;*
8. *The municipality within which the waste disposal site is located;*

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

This Notice must be served upon:

The Secretary,
Environmental Appeal Board,
112 St. Clair Avenue West,
Suite 502,
Toronto, Ontario,
M4V 1N3.

AND

The Director,
Section 39, Environmental Protection Act,
Ministry of Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario,
M4S 1H2

DATED AT TORONTO this 18th day of September, 1996.

A. Dominski, P. Eng.
Director
Section 39
Environmental Protection Act

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 5

Issue Date: June 8, 2015

The Corporation of the Township of North Dundas
636 St. Lawrence St
Post Office Box, No. 489
North Dundas, Ontario
K0C 2K0

Site Location: Boyne Road Landfill
12620 Boyne Road
Lot 8, Concession 6
Township of North Dundas, United Counties of Stormont, Dundas and Glengarry

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as subsequently amended for the use and operation of an 8.1 hectare (20 acres) landfilling area with additional 14.13 hectare (34.89 acres) lands for use as Buffer and 22.04 hectares (54.42 acres) Contaminant Attenuation Zone , as follows:

1. EMERGENCY APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Section 20.2 (1) of the Environmental Protection Act, a temporary approval lasting until January 31, 2016, is hereby granted for the continued landfilling operation at the Boyne Road Landfill Site, to alleviate the emergency situation for waste management in the local Township resulting from overfilling at the Site , as determined from the theoretical capacity estimate for the Site ;

2. ESTABLISHMENT AND OPERATION OF WEEE PROGRAM

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the establishment and operation of Waste Electrical and Electronic Equipment (WEEE) program at the Boyne Road Landfill Site, for the collection, temporary storage and transfer of WEEE;

3. RECEIPT OF NEW WASTE CLASSES AT THE HHW DEPOT

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the acceptance, storage, packing and/or bulking and subsequent transfer of additional hazardous waste codes **146T, 147I and 212L**, at the Household Hazardous Waste Depot;

4. ADDITION OF BUFFER/CONTAMINANT ATTENUATION LANDS

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the revision of the total site area from **8.1 hectares (20 acres)** to **22.23 hectares (54.89 acres)**, by adding parcels of lands for **use as Buffer, and additional 22.04 hectares (54.42 acres) Contaminant Attenuation Zone subject to Easement**. The waste fill area of 8.1 hectares (20 acres) remains unchanged. The additional **Buffer and/or Contaminant Attenuation** lands are described in a report dated January, 2015, prepared by Golder Associates Ltd., Item 4 of Schedule "A" attached to this *ECA* , as follows:

- (a) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-3142 dated July 22, 1991, as Part 2, Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (b) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-4441 dated January 7, 2002, as Part 1, part of Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (c) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-5197 dated June 15, 2011, as Part 7, Lot 8, Concession 6, Township of Winchester, County of Dundas; and
- (d) **Contaminant Attenuation Zone** - A 22.04 hectares (54.45 acres) parcel of land to the south and west of the landfill as shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , includes that property owned by Blair Hutchinson, located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive on Plan 8R-5197 dated June 15, 2011.

Whereas the rights of access and easement on the property listed under (d) above, for the purposes of groundwater contaminant attenuation has been secured by the Corporation of the Township of North Dundas as per the following document:

- (i) *Indenture* (Easement Agreement) made October 1, 2011 and signed on October 24, 2011, in respect of the property defined by PIN # 66149-0055 (Parts 1 to 6 inclusive, Lot 7, Concession 6), listed as Item 5 in Schedule "A", attached to this *ECA* .

all in accordance with the following documentation and subject to the terms and conditions listed herein:

DOCUMENTATION

The following items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A482101:

1. Environmental Compliance Approval Application dated May 14, 2013, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
2. Report entitled "Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated May 2013, prepared by Golder Associates Ltd..
3. Letter dated January 29, 2015, from Yannick J. Marcerou and Paul A. Smolkin of Golder Associates Ltd. to the *Director* , Environmental Approvals Access and Service Integration Branch, Ministry of the Environment and Climate Change, with attached Environmental Compliance Approval Application dated January 29, 2015, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
4. Report entitled "Addendum To The Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated January, 2015, prepared by Golder Associates Ltd.
5. *Indenture* (Easement Agreement) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas in respect of lands located at Part of Lot 7, Concession 6, Township of Winchester, Township of North Dundas, County of Dundas, being part of the property defined by PIN # 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.

For the purposes of this Environmental Compliance Approval and the terms and conditions specified herein, the following definitions apply:

DEFINITIONS

- (a) **"Approval"** or **"Certificate"** or **"ECA"** means this entire Environmental Compliance Approval No. A482101, issued in accordance with Section 20.3 of Part II.1 of the *Environmental Protection Act* (EPA) , and includes any schedules to it, the application and the supporting documentation listed in Schedule "A";
- (b) **"Township"** means The Corporation of the Township of North Dundas, and includes its successors and assigns;
- (c) **"Director "** means any *Ministry* employee appointed in writing by the Minister of the Environment and Climate Change pursuant to Section 5 of the EPA as a Director for the purposes of Part II.1 of the EPA;
- (d) **"District Manager "** means the District Manager of the local district office of the Ministry of the Environment and Climate Change in which the Site is geographically located or his/her representative;

- (e) **"EPA "** means *Environmental Protection Act* , R.S.O. 1990, c. E. 19, as amended;
- (f) **"Ministry"** means the Ontario Ministry of the Environment and Climate Change
- (g) **"Owner"** or **"Operator"** means any person that is responsible for the establishment or operation of the *Site* approved by this *Certificate* , and includes The Corporation of the Township of North Dundas, its successors and assigns;
- (h) **"OWRA"** means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended;
- (i) **"Regional Director "** means the Regional Director of the local Regional Office of the Ministry of the Environment and Climate Change in which the Site is located.
- (j) **"Site "** means the entire waste disposal site described as the **8.1 hectares (20 acres) Landfilling area** within a total Waste Disposal Site area of **22.23 hectares (54.89 acres)**, including the Buffer lands; **and additional 22.04 hectares (54.42 acres) Contaminant Attenuation Zone subject to Easement**. The **Buffer (Zones 1 to 3) lands** are described as follows:
 - (i) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 2 on Plan 8R-3142 dated July 22, 1991;
 - (ii) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 1 on Plan 8R-4441 dated January 7, 2002;
 - (iii) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 7 on Plan 8R-5197 dated June 15, 2011.
- (k) **"CAZ"** means **Contaminant Attenuation Zone** being, the **22.04 hectares (54.42 acres)** of other lands to the south and west of the landfill site, owned by Blair Hutchinson, shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , assembled for the purposes of expanding the Compliance Boundary for contaminant attenuation, and includes that property located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.
- (l) **"Indenture"** refers to **Contaminant Attenuation Zone Easement Agreement(s)** made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas.
- (m) **"WEEE"** refers to Waste Electrical and Electronic Equipment, and includes computers, printers, scanners, monitors, radios, stereos, televisions, VCR's, DVD players and telephones.

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

TERMS AND CONDITIONS

1.0 GENERAL PROVISIONS

Compliance

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

Interpretation

- 1.2 Where there is a conflict between a provision of any document, including the application, referred to in this *Certificate*, and the conditions of this *Certificate*, the conditions in this *Certificate* shall take precedence.
- 1.3 Where there is a conflict between the application and a provision in any documents 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.
- 1.4 Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

Other Legal Obligations

- 1.5 The issuance of, and compliance with, this *Certificate* 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* to furnish any further information related to compliance with this *Certificate* ;

Adverse Effect

- 1.6 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.

- 1.7 Despite an *Owner* , or any other person fulfilling any obligations imposed by this *Certificate*, the person remains responsible for any contravention of any other condition of this *Certificate* 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.
- 1.8 No portion of this *Site* shall be transferred or encumbered unless the *Director* is notified in advance and sufficient financial assurance, as applicable, is deposited with the *Ministry* to ensure that these conditions will be carried out. In the event of any change in ownership of the works, other than change to a successor municipality, the *Owner* shall notify the successor of and provide the successor with a copy of this *Certificate* , and the *Owner* shall provide a copy of the notification to the *District Manager* and the *Director*.

Inspections

- 1.9 No person shall hinder or obstruct a Ministry's authorized representative(s), upon presentation of credentials, from carrying out any and all inspections authorized by the *OWRA* , or the *EPA* , of any place to which this *Certificate* 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 *Certificate* are kept;
 - (b) to have access to, inspect, and copy any records required to be kept by the conditions of this *Certificate* ;
 - (c) to inspect the *Site*, related equipment and appurtenances;
 - (d) to inspect the practices, procedures, or monitoring/maintenance required by the conditions of this *Certificate* ; and
 - (e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Certificate* or the *EPA* , or the *OWRA* or any applicable legislation.

Information and Record Retention

- 1.10 Any information requested, by the *Ministry* , concerning the *Site*, under this *Certificate* , including but not limited to any records required to be kept by this *Certificate* shall be provided to the *Ministry* , upon request, in a timely manner. Records shall be retained for the contaminating life span of the *Site* except for as otherwise authorized in writing by the *Director*.
- 1.11 The receipt of any information by the *Ministry* or the failure of the *Ministry* to prosecute any person or to require any person to take any action, under this *Certificate* or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
- (a) an approval, waiver, or justification by the *Ministry* of any act or omission of any person that contravenes any term or condition of this *Certificate* or any statute, regulation or other legal requirement; or
 - (b) acceptance by the *Ministry*, of the information's completeness or accuracy.

- 1.12 Any information relating to this *ECA* and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, C. F-31.

Certificate of Requirement

- 1.13 Pursuant to Section 197 of the *EPA*, no person having an interest in the *Site* shall deal in any way with the *Site* without first giving a copy of this *Certificate* to each person acquiring an interest in the *Site* as a result of the dealing.
- 1.14 The *Owner* shall:
- (a) within sixty (60) calendar days from the date of issuance of this *Certificate*, submit to the *Director* for his/her signature:
 - (i) plans of survey of the Buffer Zones 1, 2, 3 and the *CAZ*, prepared, signed and sealed by a licensed Ontario Land Surveyor;
 - (ii) proof of ownership, as appropriate;
 - (iii) legal abstract of the properties in (i) above;
 - (iv) copy of the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement(s) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, listed as Item 5 of Schedule "A", attached to this *ECA*; and,
 - (v) a completed Certificate of Requirement, and its supporting documents, containing a registerable description of the Buffer Zones 1, 2, and 3, and a completed Certificate of Requirement for the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in accordance with Form 4 of Regulation 688 under Land Registration Reform Act, R.R.O. 1990c. L.4, as amended.
 - (vi) Section 8 of Form 4, above, shall be completed in accordance with the wording in Schedule "B" of this *Approval*.
 - (b) within fifteen (15) calendar days of receiving the Certificate of Requirement signed/authorized by the *Director*, the *Owner* shall:
 - (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the Buffer Zones 1, 2, and 3; and
 - (ii) submit to the *Director*, copy to the *District Manager*, a written verification that the Certificate of Requirement has been duly registered on title to the Buffer Zones 1, 2, and 3.
 - (c) within fifteen (15) calendar days of receiving the Certificate of Requirement signed/authorized by the *Director*, the *Owner* shall:

- (i) register the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in the appropriate Land Registry Office on title to the *CAZ* lands; and,
 - (ii) submit to the *Director* , copy to the *District Manager* , proof of registration of the entire *Indenture* on the title to the *CAZ* lands.
- (d) The *Township* shall not amend, or remove, or consent to the removal of the *Indenture* , or the removal of the *CAZ* from title of the property without the prior approval of the *Director* .

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING

- 2.1 The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2016, to alleviate the emergency situation for waste management in the *Township* resulting from overfilling at the *Site* . No waste shall be landfilled at the *Site* after January 31, 2016 without the approval of the *Director* .
- 2.2 Except as provided by the conditions in this *ECA* and applicable Legislation, landfilling operation at the *Site*, as provided in Condition 2.1 above, shall be in accordance with Item 2 of Schedule "A", as amended by Item 4 of Schedule "A", attached to this *Approval* .
- 2.3 By August 31, 2015, the *Township* shall submit to the *District Manager* , a plan for the long-term management of the waste for the affected users of the *Site* .
- 2.4 Where it is not proposed to continue landfilling operation at the *Site* beyond January 31, 2016, the *Township* shall submit for the approval of the *Director* , with copy to the *District Manager* , a detailed Closure Plan, to permanently close the *Site* for landfilling operations, post-closure inspections and maintenance, monitoring and reporting, and the end-use for the *Site* . The Closure Plan shall be submitted by November 1, 2015, and shall include, at least the following:
- (a) A plan showing site appearance after closure;
 - (b) A description of the proposed end-use of the *Site* ;
 - (c) Descriptions of the procedures for the closure of the *Site* , including:
 - (i) Advance notification of the public of the landfill closure;
 - (ii) Posting of a sign at the *Site* entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
 - (iii) Completion, inspection and maintenance of the final cover and landscaping;
 - (iv) Site security;
 - (v) Removal of unnecessary landfill-related structures, buildings and facilities; and,
 - (vi) Final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;

- (d) Descriptions of the procedures for post-closure care of the *Site* , including:
 - (i) Operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas (if any);
 - (ii) Record keeping and reporting; and,
 - (iii) Complaint contact and response procedures;
- (e) An assessment of the adequacy of and need to implement the contingency plans for leachate and landfill gas; and
- (f) An updated estimate of the contaminating life span of the *Site* , based on the results of the monitoring programs to date.

3.0 WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) FACILITY

- 3.1 The operation of the *WEEE* facility at the *Site* shall be limited to the collection, storage and transfer of *WEEE* that are accepted under the *WEEE* Program Plan as approved by the *Ministry* and administered by the Ontario Electronic Stewardship (OES) and includes the following items, as listed in letter dated January 29, 2015, included in Appendix "B" of Item 4 in Schedule "A", attached to this :
 - (i) Desktop, portable and personal hand-held computers;
 - (ii) Display devices (including monitors and televisions);
 - (iii) Computer peripherals (mice, keyboards, external hard drives, floppy-disk drives, optical drives and modems);
 - (iv) Printing, copying and Multi-function devices (including printers, photocopiers, scanners, fax machines and typewriters)
 - (v) Telephones and telephone answering machines, cellular devices, and pagers;
 - (iv) Image, audio and video devices (tape, disk, digital audio and video players and recorders radios, receivers, speakers, turntables, digital frames, cameras, equalizers, amplifiers, and video projectors).
- 3.2 The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed two (2) tonnes on each operating day, with a maximum accumulated storage on-site not to exceed five (5) tonnes at any time. The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed fifty-two (52) tonnes per year.
- 3.3 The *Township* may increase the type and quantity of *WEEE* materials managed at the *WEEE* facility as Ontario Electronic Stewardship (OES) programs are brought forward to increase the diversion of *WEEE* designated materials (Schedules 1 through 7, O. Reg.393/04), subject to the availability of storage capacity and prior written approval of the *District Manager* .
- 3.4 The *WEEE* shall be stored in two (2) lockable 30-cubic yard roll-off enclosed containers placed in a secure manner at the *Site* , such that unauthorized persons cannot enter these Facilities without supervision.

3.5 The *Township* shall ensure that the *WEEE* is operated in a safe and secure manner, such that all items are properly handled, packaged and stored so as not to pose any threat to the general public, site personnel and the natural environment.

3.6 The *Township* shall maintain separate records for all wastes received at all on-site Waste Management Facilities. The records shall include the documentation of waste types and quantities received, source of generation, ultimate disposal sites, and the documentation of any spills and/or upsets, and environmental and/or any other problems encountered in operating the *Site* .

3.7 The *Township* shall ensure that an up-to-date operations manual is maintained at the *Site* for use by site personnel during the operating lives of all on-site Waste Management Facilities. The operations manual shall contain as a minimum, the following information:

- (a) outline of the responsibilities of site personnel;
- (b) personnel training protocol;
- (c) proper receiving and recording procedures, including recording procedures for wastes which are refused at the *Site* ;
- (d) identification of all wastes and procedures for bulking/separation;
- (e) proper storage, handling, sorting and shipping procedures;
- (f) contingency procedures to be followed by personnel in the event of spill, fire and any other emergencies.

3.8 The *Township* shall ensure that a copy of the up-to-date operations manual for the operations of all on-site Waste Management Facilities, is submitted to the *District Manager* for his/her information.

3.9 The *Township* shall ensure that the storage facilities for the operations of all on-site Waste Management Facilities meet the local fire regulations and the storage capacities for the respective structures and/or containers.

3.10 All wastes generated at the on-site Waste Management Facilities shall be managed and disposed of in accordance with the *EPA* and Ontario Regulation 347, as amended.

4.0 **INSPECTION AND MAINTENANCE**

4.1 The *Township* shall conduct regular inspections of the *Site* , including the active waste tipping area, all on-site Waste Management Facilities and associated equipment, buildings/shacks, final cover, security fencing and barriers, to ensure that all are maintained in good working order and secure at all times and to ensure that no off-site impacts such as vermin, vectors, odour, dust, and litter, result from the operations of the *Site* and Waste Management Facilities, to cause any nuisance or adverse

effect on the environment.

- 4.2 If any inspection indicates that there is an area of ponding or zero slope in the final soil capped area, and/or any deficiencies detected during these regular inspections, the *Township* shall take all steps necessary to provide positive drainage and rehabilitate the final soil cap, and/or any deficiencies detected as soon as practically possible.
- 4.3 A written record of the inspections shall be maintained at the *Site* , and shall include the following:
- (a) name and signature of trained personnel conducting the inspection;
 - (b) date and time of the inspection;
 - (c) list of equipment and Facilities inspected and all deficiencies and/or any nuisance impacts observed;
 - (d) a detailed description of any maintenance/repairs carried out and/or remedial action taken in order to control the nuisance;
 - (e) date and time of maintenance/repair activity; and,
 - (f) recommendations for remedial action and any preventative measures taken to prevent future reoccurrences.

5.0 ENVIRONMENTAL CONTROL AND MONITORING

- 5.1 Subject to the inclusion of monitoring well, MW7 in the existing regular monitoring program for groundwater quality monitoring, the *Township* shall carry out monitoring programs for groundwater/leachate and surface water, as summarized in Tables 3 and 4, respectively, in Item 2 of Schedule "A", attached to this Approval, and as per written instructions of the *District Manager* , through the review of the Annual Monitoring Reports, and any related OWRA requirements.
- 5.2 By December 31, 2015, the *Township* shall submit to the *Director* for approval, copied to the *District Manager* , a Land Use Permit obtained from the Ministry of Natural Resources and Forestry, permitting the use of the Crown lands to the north of the *Site* as contaminant attenuation zone, to bring the *Site* in compliance with Guideline B-7. Failing the acquisition of a Land Use Permit, as noted in this condition, the *Township* shall submit for the approval of the *Director* , copy to the *District Manager* , a proposed plan to bring the *Site* into compliance with Guideline B-7.
- 5.3 The *Township* shall ensure by means of a water monitoring program, that the *Site* shall be in compliance with the *Ministry's* Reasonable Use Guideline (Guideline B-7) for groundwater, and the Provincial Water Quality Objectives (PWQO) for surface water.
- 5.4 Where groundwater interacts with surface water/wetland and test results confirm non-compliance with the Provincial Water Quality Objectives, an assessment of the potential impact of the discharging groundwater quality on the receiving surface water/wetland, along with mitigation action, as necessary, shall be carried out.
- 5.5 A recommendation to change the monitoring programs under this *Approval* , including reporting frequency, may be made in the Annual Monitoring Report, based on the results to date, and may be

implemented, subject to the prior written concurrence of the *District Manager* .

- 5.6 Any groundwater/leachate monitoring well or landfill gas probe, included in the monitoring program that gets damaged or in any way made inoperable for sampling, shall be assessed, repaired, replaced or decommissioned, as the case may be, by the *Township* .

Surface Water Management

- 5.7 The *Township* shall ensure that approval is obtained under Section 53 (sewage works) of OWRA, for any future surface water management works, including stormwater management ponds, if any, prior to construction and/or use.

Landfill Gas Monitoring

- 5.8 The *Township* shall ensure that all buildings and structures existing at the *Site* or to be built on-*Site* which at times are occupied by people, or contains electrical equipment, or a potential source of ignition, are situated, constructed and monitored in a manner which minimizes the potential for explosive hazards due to landfill gas.

6.0 TRIGGER MECHANISM AND CONTINGENCY PLANS

- 6.1 The *Township* shall follow the trigger mechanism for groundwater/leachate and surface water, as described in Section 6.0 in Item 2 of Schedule "A", attached to this *Approval* , and as per written recommendations of the *District Manager* , through the review of the Annual Monitoring Reports.
- 6.2 Notwithstanding Condition 6.1 above, the *Township* shall employ 75th percentile of PWQO at the background station, as trigger concentration for all trigger parameters.
- 6.3 In the event of a confirmed exceedance of the site-specific trigger level relating to groundwater/leachate, or surface water impacts due to leachate, the Township shall immediately notify the *District Manager* , and an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the *Township* in accordance with the trigger mechanisms and associated contingency plans, as described in Section 6.2 and 6.4 in Item 2 of Schedule "A", attached to this *Approval* .
- 6.4 A recommendation to change the site-specific trigger mechanism for leachate impacts to the groundwater and/or surface, under this *Approval* , may be made in the Annual Monitoring Report, based on the results to date, and may be implemented, subject to the prior written concurrence of the *District Manager*.

7.0 ANNUAL REPORT

- 7.1 **By March 31, of each year**, the *Township* shall submit to the *District Manager* , an Annual Monitoring Report, prepared by a qualified professional engineer or geoscientist, covering the results of the *Site* operations, inspection/maintenance and monitoring of the *Site* . The Annual

Monitoring Report shall cover the preceding calendar year, and shall include, as a minimum, the following:

- (a) an updated drawing(s) indicating all leachate, groundwater, surface water and landfill gas monitoring locations, including off-site monitoring wells, if any;
- (b) tables outlining monitoring locations, analytical parameters of sampled water and frequency of sampling;
- (c) the results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs;
- (d) an assessment of the adequacy of and need to implement contingency measures for groundwater/leachate and surface water;
- (e) an assessment of the water quality with respect to the Ontario Reasonable Use Guidelines (Guideline B-7) and/or the Provincial Water Quality Objectives;
- (f) the status of compliance with all conditions of the *Approval* , including the operation, inspection, maintenance, monitoring and reporting requirements for all waste management activities at the *Site* ; and,
- (g) recommendations with respect to any proposed changes in the inspection/maintenance and monitoring of the landfill site and/or the reporting frequency.

REASONS

The reason(s) for this amendment to the Approval is (are) as follows:

1. The reason for **Conditions 1.1 to 1.7** and **1.10 to 1.12** is to clarify the legal rights and responsibilities of the *Township*.
2. The reasons for **Condition 1.8** are to restrict potential transfer or encumbrance of the *Site* without the approval of the *Director* and to ensure that any transfer or encumbrance can be made only on the basis that it will not endanger compliance with this *Certificate* .
4. The reason for **Condition 1.9** is to ensure that appropriate *Ministry* staff have ready access to the *Site* for inspection of facilities, equipment, practices and operations required by the conditions in this *Certificate* . This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the *EPA* and *OWRA* .
5. The reason for **Conditions 1.13** and **1.14** is to ensure 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.
6. The reasons for **Conditions 2.1** and **2.3** are to allow temporary operation of landfilling to alleviate

emergency situation for waste management in the *Township* resulting from overfilling at the *Site*, and to develop long-term waste management plan.

7. The reason for **Conditions 2.2, 3.1 to 3.4, 5.5 and 6.4** is to ensure the *Site* is designed, developed, operated or closed, 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.
8. The reasons for **Conditions 2.4** are to ensure that waste disposal ceases at the *Site* having reached its capacity, and to ensure that *Site* closure is completed in an aesthetically pleasing manner, to provide long-term protection of the natural environment.
9. The reason for **Conditions 3.5, 3.7 to 3.10, 4.1 and 4.2** is to ensure the *Site* is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.
10. The reasons for **Conditions 3.6 and 4.3** are to provide for the proper assessment of effectiveness and efficiency of the *Site* performance, its effect or relationship to any nuisance or environmental impacts, and the occurrence and prompt response to any public concerns. Record keeping is necessary to determine compliance with this *Approval*, the *EPA* and its regulations.
11. The reasons for **Conditions 5.1 to 5.9** are 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 action can be taken.
12. The reasons for **Condition 6.1 to 6.3** are to ensure that the *Township* follows a plan with an organized set of procedures for identifying and responding to unexpected but possible problems at the *Site*. A remedial action / contingency plan is necessary to ensure protection of the natural environment and public health and safety.
13. The reasons for **Condition 7.1** are to ensure that regular review of *Site* operations and monitoring data is documented and any possible improvements to the *Site* operations or monitoring programs are identified. An annual report is an important tool used in reviewing *Site* activities and for determining conformance of this *Certificate*, the *EPA* and its regulations.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989, as amended.

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

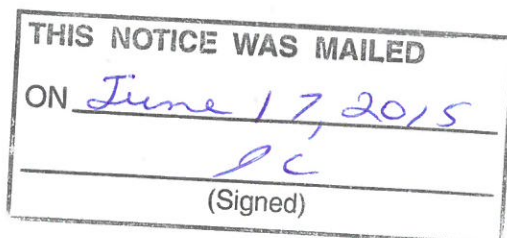
AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment and
Climate Change
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

* 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) 314-3717 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 8th day of June, 2015



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

DO/

- c: Area Manager, MOECC Cornwall
c: District Manager, MOECC Ottawa
Paul Smolkin/Yannick Marcerou, Golder Associates Ltd.

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A482101

Notice No. 6

Issue Date: July 10, 2015

The Corporation of the Township of North Dundas
636 St. Lawrence St P.O. Box 489, Winchester
North Dundas, Ontario
K0C 2K0

Site Location: Boyne Road Landfill
Lot 8, Concession 4
North Dundas Township, United Counties of Stormont, Dundas and Glengarry

You are hereby notified that I have amended Approval No. A482101 issued on December 4, 1989, as subsequently amended for the use and operation of an 8.1 hectare (20 acres) landfilling area with additional 14.13 hectare (34.89 acres) lands for use as Buffer and 22.04 hectares (54.42 acres) Contaminant Attenuation Zone , as follows:

1. EMERGENCY APPROVAL FOR CONTINUED LANDFILLING

Pursuant to Section 20.2 (1) of the Environmental Protection Act, a temporary approval lasting until January 31, 2016, is hereby granted for the continued landfilling operation at the Boyne Road Landfill Site, to alleviate the emergency situation for waste management in the local Township resulting from overfilling at the *Site* , as determined from the theoretical capacity estimate for the *Site* ;

2. ESTABLISHMENT AND OPERATION OF WEEE PROGRAM

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the establishment and operation of Waste Electrical and Electronic Equipment (WEEE) program at the Boyne Road Landfill Site, for the collection, temporary storage and transfer of WEEE;

3. RECEIPT OF NEW WASTE CLASSES AT THE HHW DEPOT

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the acceptance, storage, packing and/or bulking and subsequent transfer of additional hazardous waste codes **146T, 147I and 212L**, at the Household Hazardous Waste Depot;

4. ADDITION OF BUFFER/CONTAMINANT ATTENUATION LANDS

Pursuant to Section 20.2 (1) of the Environmental Protection Act, approval is hereby granted for the revision of the total site area from **8.1 hectares (20 acres)** to **22.23 hectares (54.89 acres)**, by adding parcels of lands for **use as Buffer, and additional 22.04 hectares (54.42 acres)**

Contaminant Attenuation Zone subject to Easement. The waste fill area of 8.1 hectares (20 acres) remains unchanged. The additional **Buffer and/or Contaminant Attenuation** lands are described in a report dated January, 2015, prepared by Golder Associates Ltd., Item 4 of Schedule "A" attached to this *ECA* , as follows:

- (a) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-3142 dated July 22, 1991, as Part 2, Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (b) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-4441 dated January 7, 2002, as Part 1, part of Lot 8, Concession 6, Township of Winchester, County of Dundas;
- (c) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, owned by the Corporation of the Township of North Dundas, shown on Plan 8R-5197 dated June 15, 2011, as Part 7, Lot 8, Concession 6, Township of Winchester, County of Dundas; and
- (d) **Contaminant Attenuation Zone** - A 22.04 hectares (54.45 acres) parcel of land to the south and west of the landfill as shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , includes that property owned by Blair Hutchinson, located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive on Plan 8R-5197 dated June 15, 2011.

Whereas the rights of access and easement on the property listed under (d) above, for the purposes of groundwater contaminant attenuation has been secured by the Corporation of the Township of North Dundas as per the following document:

- (i) *Indenture* (Easement Agreement) made October 1, 2011 and signed on October 24, 2011, in respect of the property defined by PIN # 66149-0055 (Parts 1 to 6 inclusive, Lot 7, Concession 6), listed as Item 5 in Schedule "A", attached to this *ECA* .

all in accordance with the following documentation and subject to the terms and conditions listed herein:

DOCUMENTATION

The following items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A482101:

1. Environmental Compliance Approval Application dated May 14, 2013, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
2. Report entitled "Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated May 2013, prepared by Golder Associates Ltd..
3. Letter dated January 29, 2015, from Yannick J. Marcerou and Paul A. Smolkin of Golder Associates Ltd. to the *Director*, Environmental Approvals Access and Service Integration Branch, Ministry of the Environment and Climate Change, with attached Environmental Compliance Approval Application dated January 29, 2015, signed by Angela Rutley, Chief Administrative Officer, the Corporation of the Township of North Dundas.
4. Report entitled "Addendum To The Design and Operations Plan", Boyne Road Landfill, Township of North Dundas, dated January, 2015, prepared by Golder Associates Ltd.
5. *Indenture* (Easement Agreement) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas in respect of lands located at Part of Lot 7, Concession 6, Township of Winchester, Township of North Dundas, County of Dundas, being part of the property defined by PIN # 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.

For the purposes of this Environmental Compliance Approval and the terms and conditions specified herein, the following definitions apply:

DEFINITIONS

- (a) **"Approval"** or **"Certificate"** or **"ECA"** means this entire Environmental Compliance Approval No. A482101, issued in accordance with Section 20.3 of Part II.1 of the *Environmental Protection Act* (EPA), and includes any schedules to it, the application and the supporting documentation listed in Schedule "A";
- (b) **"Township"** means The Corporation of the Township of North Dundas, and includes its successors and assigns;
- (c) **"Director"** means any *Ministry* employee appointed in writing by the Minister of the Environment and Climate Change pursuant to Section 5 of the EPA as a Director for the purposes of Part II.1 of the EPA;
- (d) **"District Manager"** means the District Manager of the local district office of the Ministry of the Environment and Climate Change in which the Site is geographically located or his/her

representative;

- (e) "**EPA** " means *Environmental Protection Act* , R.S.O. 1990, c. E. 19, as amended;
- (f) "**Ministry**" means the Ontario Ministry of the Environment and Climate Change
- (g) "**Owner**" or "**Operator**" means any person that is responsible for the establishment or operation of the *Site* approved by this *Certificate* , and includes The Corporation of the Township of North Dundas, its successors and assigns;
- (h) "**OWRA**" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended;
- (i) "**Regional Director** " means the Regional Director of the local Regional Office of the Ministry of the Environment and Climate Change in which the Site is located.
- (j) "**Site** " means the entire waste disposal site described as the **8.1 hectares (20 acres)** Landfilling area within a total Waste Disposal Site area of **22.23 hectares (54.89 acres)**, including the Buffer lands; and **additional 22.04 hectares (54.42 acres) Contaminant Attenuation Zone subject to Easement**. The **Buffer (Zones 1 to 3) lands** are described as follows:
 - (i) **Buffer Zone 1** - 30 metre wide Buffer Zone (2.64 hectares or 6.52 acres) surrounding the waste fill area on the east, west and south, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 2 on Plan 8R-3142 dated July 22, 1991;
 - (ii) **Buffer Zone 2** - A 7.2 hectares (17.8 acres) parcel of land that extends 150 metres south of Buffer Zone 1, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 1 on Plan 8R-4441 dated January 7, 2002;
 - (iii) **Buffer Zone 3** - A 4.29 hectares (10.59 acres) parcel of land south of Buffer Zone 2, located at Lot 8, Concession 6, Township of Winchester, County of Dundas, shown as Part 7 on Plan 8R-5197 dated June 15, 2011.
- (k) "**CAZ**" means **Contaminant Attenuation Zone** being, the **22.04 hectares (54.42 acres)** of other lands to the south and west of the landfill site, owned by Blair Hutchinson, shown on Figure 2, contained in Item 4 of Schedule "A", attached to this *Certificate* , assembled for the purposes of expanding the Compliance Boundary for contaminant attenuation, and includes that property located at Lot 7, Concession 6, Township of North Dundas, County of Dundas, being part of PIN 66149-0055, more particularly described as Parts 1 to 6 inclusive, on Reference Plan 8R-5197 dated June 15, 2011.
- (l) "**Indenture**" refers to **Contaminant Attenuation Zone Easement Agreement(s)** made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas.

- (m) "**WEEE**" refers to Waste Electrical and Electronic Equipment, and includes computers, printers, scanners, monitors, radios, stereos, televisions, VCR's, DVD players and telephones.

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

TERMS AND CONDITIONS

1.0 GENERAL PROVISIONS

Compliance

- 1.1 (a) **This Notice replaces Notice No. 5, issued on June 8, 2015.**
- (b) The *Owner* shall ensure compliance with all the conditions of this *Certificate* and shall ensure that any person authorized to carry out work on any aspect of the *Site* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

Interpretation

- 1.2 Where there is a conflict between a provision of any document, including the application, referred to in this *Certificate*, and the conditions of this *Certificate*, the conditions in this *Certificate* shall take precedence.
- 1.3 Where there is a conflict between the application and a provision in any documents 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.
- 1.4 Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

Other Legal Obligations

- 1.5 The issuance of, and compliance with, this *Certificate* 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* to furnish any further information related to compliance with this *Certificate* ;

Adverse Effect

- 1.6 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.
- 1.7 Despite an *Owner* , or any other person fulfilling any obligations imposed by this *Certificate*, the person remains responsible for any contravention of any other condition of this *Certificate* 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.
- 1.8 No portion of this *Site* shall be transferred or encumbered unless the *Director* is notified in advance and sufficient financial assurance, as applicable, is deposited with the *Ministry* to ensure that these conditions will be carried out. In the event of any change in ownership of the works, other than change to a successor municipality, the *Owner* shall notify the successor of and provide the successor with a copy of this *Certificate* , and the *Owner* shall provide a copy of the notification to the *District Manager* and the *Director*.

Inspections

- 1.9 No person shall hinder or obstruct a Ministry's authorized representative(s), upon presentation of credentials, from carrying out any and all inspections authorized by the *OWRA* , or the *EPA* , of any place to which this *Certificate* 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 *Certificate* are kept;
 - (b) to have access to, inspect, and copy any records required to be kept by the conditions of this *Certificate* ;
 - (c) to inspect the *Site*, related equipment and appurtenances;
 - (d) to inspect the practices, procedures, or monitoring/maintenance required by the conditions of this *Certificate* ; and
 - (e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Certificate* or the *EPA* , or the *OWRA* or any applicable legislation.

Information and Record Retention

- 1.10 Any information requested, by the *Ministry* , concerning the *Site*, under this *Certificate* , including but not limited to any records required to be kept by this *Certificate* shall be provided to the *Ministry* , upon request, in a timely manner. Records shall be retained for the contaminating life span of the *Site* except for as otherwise authorized in writing by the *Director*.
- 1.11 The receipt of any information by the *Ministry* or the failure of the *Ministry* to prosecute any person or to require any person to take any action, under this *Certificate* or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
 - (a) an approval, waiver, or justification by the *Ministry* of any act or omission of any person that

contravenes any term or condition of this *Certificate* or any statute, regulation or other legal requirement; or

(b) acceptance by the *Ministry*, of the information's completeness or accuracy.

1.12 Any information relating to this *ECA* and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, C. F-31.

Certificate of Requirement

1.13 Pursuant to Section 197 of the *EPA*, no person having an interest in the *Site* shall deal in any way with the *Site* without first giving a copy of this *Certificate* to each person acquiring an interest in the *Site* as a result of the dealing.

1.14 The *Owner* shall:

(a) within sixty (60) calendar days from the date of issuance of this *Certificate*, submit to the *Director* for his/her signature:

- (i) plans of survey of the Buffer Zones 1, 2, 3 and the CAZ, prepared, signed and sealed by a licensed Ontario Land Surveyor;
- (ii) proof of ownership, as appropriate;
- (iii) legal abstract of the properties in (i) above;
- (iv) copy of the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement(s) made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, listed as Item 5 of Schedule "A", attached to this *ECA*; and,
- (v) a completed Certificate of Requirement, and its supporting documents, containing a registerable description of the Buffer Zones 1, 2, and 3, and a completed Certificate of Requirement for the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in accordance with Form 4 of Regulation 688 under Land Registration Reform Act, R.R.O. 1990c. L.4, as amended.
- (vi) Section 8 of Form 4, above, shall be completed in accordance with the wording in Schedule "B" of this *Approval*.

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

- (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the Buffer Zones 1, 2, and 3; and
- (ii) submit to the *Director*, copy to the *District Manager*, a written verification that the Certificate of Requirement has been duly registered on title to the Buffer Zones 1, 2, and

3.

- (c) within fifteen (15) calendar days of receiving the Certificate of Requirement signed/authorized by the *Director* , the *Owner* shall:
 - (i) register the entire *Indenture* referred to as the Contaminant Attenuation Zone Easement Agreement made on October 1, 2011 and signed on October 24, 2011, between Blair Hutchinson and the Township of North Dundas, in the appropriate Land Registry Office on title to the CAZ lands; and,
 - (ii) submit to the *Director* , copy to the *District Manager* , proof of registration of the entire *Indenture* on the title to the CAZ lands.
- (d) The *Township* shall not amend, or remove, or consent to the removal of the *Indenture* , or the removal of the CAZ from title of the property without the prior approval of the *Director* .

2.0 CONTINUED USE OF THE SITE FOR LANDFILLING

- 2.1 The *Township* may continue landfilling operation at the Boyne Road Landfill Site until January 31, 2016, to alleviate the emergency situation for waste management in the *Township* resulting from overfilling at the *Site* . No waste shall be landfilled at the *Site* after January 31, 2016 without the approval of the *Director* .
- 2.2 Except as provided by the conditions in this *ECA* and applicable Legislation, landfilling operation at the *Site*, as provided in Condition 2.1 above, shall be in accordance with Item 2 of Schedule "A", as amended by Item 4 of Schedule "A", attached to this *Approval* .
- 2.3 By August 31, 2015, the *Township* shall submit to the *District Manager* , a plan for the long-term management of the waste for the affected users of the *Site* .
- 2.4 (1) Where it is not proposed to continue landfilling operation at the *Site* beyond January 31, 2016, the *Township* shall submit for the approval of the *Director* , with copy to the *District Manager* , a detailed Closure Plan, to permanently close the *Site* for landfilling operations, post-closure inspections and maintenance, monitoring and reporting, and the end-use for the *Site* . The Closure Plan shall be submitted by January 1, 2016, and shall include, at least the following:
 - (a) A plan showing site appearance after closure;
 - (b) A description of the proposed end-use of the *Site* ;
 - (c) Descriptions of the procedures for the closure of the *Site* , including:
 - (i) Advance notification of the public of the landfill closure;
 - (ii) Posting of a sign at the *Site* entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
 - (iii) Completion, inspection and maintenance of the final cover and landscaping;

- (iv) Site security;
 - (v) Removal of unnecessary landfill-related structures, buildings and facilities; and,
 - (vi) Final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
- (d) Descriptions of the procedures for post-closure care of the *Site* , including:
- (i) Operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas (if any);
 - (ii) Record keeping and reporting; and,
 - (iii) Complaint contact and response procedures;
- (e) An assessment of the adequacy of and need to implement the contingency plans for leachate and landfill gas; and
- (f) An updated estimate of the contaminating life span of the *Site* , based on the results of the monitoring programs to date.
- (2) Upon the site ceasing accepting waste, the Owner shall place 300 mm of interim clayey cover until an approved Closure Plan has been approved into the ECA.

3.0 WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) FACILITY

- 3.1 The operation of the *WEEE* facility at the *Site* shall be limited to the collection, storage and transfer of *WEEE* that are accepted under the *WEEE* Program Plan as approved by the *Ministry* and administered by the Ontario Electronic Stewardship (OES) and includes the following items, as listed in letter dated January 29, 2015, included in Appendix "B" of Item 4 in Schedule "A", attached to this :
- (i) Desktop, portable and personal hand-held computers;
 - (ii) Display devices (including monitors and televisions);
 - (iii) Computer peripherals (mice, keyboards, external hard drives, floppy-disk drives, optical drives and modems);
 - (iv) Printing, copying and Multi-function devices (including printers, photocopiers, scanners, fax machines and typewriters)
 - (v) Telephones and telephone answering machines, cellular devices, and pagers;
 - (iv) Image, audio and video devices (tape, disk, digital audio and video players and recorders radios, receivers, speakers, turntables, digital frames, cameras, equalizers, amplifiers, and video projectors).
- 3.2 The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed two (2) tonnes on each operating day, with a maximum accumulated storage on-site not to exceed five (5) tonnes at any time. The maximum quantity of *WEEE* received at the *WEEE* facility shall not exceed fifty-two (52) tonnes per year.

- 3.3 The *Township* may increase the type and quantity of *WEEE* materials managed at the *WEEE* facility as Ontario Electronic Stewardship (OES) programs are brought forward to increase the diversion of *WEEE* designated materials (Schedules 1 through 7, O. Reg.393/04), subject to the availability of storage capacity and prior written approval of the *District Manager* .
- 3.4 The *WEEE* shall be stored in two (2) lockable 30-cubic yard roll-off enclosed containers placed in a secure manner at the *Site* , such that unauthorized persons cannot enter these Facilities without supervision.
- 3.5 The *Township* shall ensure that the *WEEE* is operated in a safe and secure manner, such that all items are properly handled, packaged and stored so as not to pose any threat to the general public, site personnel and the natural environment.
- 3.6 The *Township* shall maintain separate records for all wastes received at all on-site Waste Management Facilities. The records shall include the documentation of waste types and quantities received, source of generation, ultimate disposal sites, and the documentation of any spills and/or upsets, and environmental and/or any other problems encountered in operating the *Site* .
- 3.7 The *Township* shall ensure that an up-to-date operations manual is maintained at the *Site* for use by site personnel during the operating lives of all on-site Waste Management Facilities. The operations manual shall contain as a minimum, the following information:
- (a) outline of the responsibilities of site personnel;
 - (b) personnel training protocol;
 - (c) proper receiving and recording procedures, including recording procedures for wastes which are refused at the *Site* ;
 - (d) identification of all wastes and procedures for bulking/separation;
 - (e) proper storage, handling, sorting and shipping procedures;
 - (f) contingency procedures to be followed by personnel in the event of spill, fire and any other emergencies.
- 3.8 The *Township* shall ensure that a copy of the up-to-date operations manual for the operations of all on-site Waste Management Facilities, is submitted to the *District Manager* for his/her information.
- 3.9 The *Township* shall ensure that the storage facilities for the operations of all on-site Waste Management Facilities meet the local fire regulations and the storage capacities for the respective structures and/or containers.
- 3.10 All wastes generated at the on-site Waste Management Facilities shall be managed and disposed of in accordance with the *EPA* and Ontario Regulation 347, as amended.

4.0 INSPECTION AND MAINTENANCE

- 4.1 The *Township* shall conduct regular inspections of the *Site* , including the active waste tipping area, all on-site Waste Management Facilities and associated equipment, buildings/shacks, final cover, security fencing and barriers, to ensure that all are maintained in good working order and secure at all times and to ensure that no off-site impacts such as vermin, vectors, odour, dust, and litter, result from the operations of the *Site* and Waste Management Facilities, to cause any nuisance or adverse effect on the environment.
- 4.2 If any inspection indicates that there is an area of ponding or zero slope in the final soil capped area, and/or any deficiencies detected during these regular inspections, the *Township* shall take all steps necessary to provide positive drainage and rehabilitate the final soil cap, and/or any deficiencies detected as soon as practically possible.
- 4.3 A written record of the inspections shall be maintained at the *Site* , and shall include the following:
- (a) name and signature of trained personnel conducting the inspection;
 - (b) date and time of the inspection;
 - (c) list of equipment and Facilities inspected and all deficiencies and/or any nuisance impacts observed;
 - (d) a detailed description of any maintenance/repairs carried out and/or remedial action taken in order to control the nuisance;
 - (e) date and time of maintenance/repair activity; and,
 - (f) recommendations for remedial action and any preventative measures taken to prevent future reoccurrences.

5.0 ENVIRONMENTAL CONTROL AND MONITORING

- 5.1 Subject to the inclusion of monitoring well, MW7 in the existing regular monitoring program for groundwater quality monitoring, the *Township* shall carry out monitoring programs for groundwater/leachate and surface water, as summarized in Tables 3 and 4, respectively, in Item 2 of Schedule "A", attached to this Approval, and as per written instructions of the *District Manager* , through the review of the Annual Monitoring Reports, and any related OWRA requirements.
- 5.2 By December 31, 2015, the *Township* shall submit to the *Director* for approval, copied to the *District Manager* , a Land Use Permit obtained from the Ministry of Natural Resources and Forestry, permitting the use of the Crown lands to the north of the *Site* as contaminant attenuation zone, to bring the *Site* in compliance with Guideline B-7. Failing the acquisition of a Land Use Permit, as noted in this condition, the *Township* shall submit for the approval of the *Director* , copy to the *District Manager* , a proposed plan to bring the *Site* into compliance with Guideline B-7.
- 5.3 The *Township* shall ensure by means of a water monitoring program, that the *Site* shall be in compliance with the *Ministry's* Reasonable Use Guideline (Guideline B-7) for groundwater, and the Provincial Water Quality Objectives (PWQO) for surface water.

- 5.4 Where groundwater interacts with surface water/wetland and test results confirm non-compliance with the Provincial Water Quality Objectives, an assessment of the potential impact of the discharging groundwater quality on the receiving surface water/wetland, along with mitigation action, as necessary, shall be carried out.
- 5.5 A recommendation to change the monitoring programs under this *Approval* , including reporting frequency, may be made in the Annual Monitoring Report, based on the results to date, and may be implemented, subject to the prior written concurrence of the *District Manager* .
- 5.6 Any groundwater/leachate monitoring well or landfill gas probe, included in the monitoring program that gets damaged or in any way made inoperable for sampling, shall be assessed, repaired, replaced or decommissioned, as the case may be, by the *Township* .

Surface Water Management

- 5.7 The *Township* shall ensure that approval is obtained under Section 53 (sewage works) of OWRA, for any future surface water management works, including stormwater management ponds, if any, prior to construction and/or use.

Landfill Gas Monitoring

- 5.8 The *Township* shall ensure that all buildings and structures existing at the *Site* or to be built on-*Site* which at times are occupied by people, or contains electrical equipment, or a potential source of ignition, are situated, constructed and monitored in a manner which minimizes the potential for explosive hazards due to landfill gas.

6.0 TRIGGER MECHANISM AND CONTINGENCY PLANS

- 6.1 The *Township* shall follow the trigger mechanism for groundwater/leachate and surface water, as described in Section 6.0 in Item 2 of Schedule "A", attached to this *Approval* , and as per written recommendations of the *District Manager* , through the review of the Annual Monitoring Reports.
- 6.2 Notwithstanding Condition 6.1 above, the *Township* shall employ 75th percentile of PWQO at the background station, as trigger concentration for all trigger parameters.
- 6.3 In the event of a confirmed exceedance of the site-specific trigger level relating to groundwater/leachate, or surface water impacts due to leachate, the Township shall immediately notify the *District Manager* , and an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the *Township* in accordance with the trigger mechanisms and associated contingency plans, as described in Section 6.2 and 6.4 in Item 2 of Schedule "A", attached to this *Approval* .
- 6.4 A recommendation to change the site-specific trigger mechanism for leachate impacts to the groundwater and/or surface, under this *Approval* , may be made in the Annual Monitoring Report,

based on the results to date, and may be implemented, subject to the prior written concurrence of the *District Manager*.

7.0 ANNUAL REPORT

7.1 **By March 31, of each year**, the *Township* shall submit to the *District Manager*, an Annual Monitoring Report, prepared by a qualified professional engineer or geoscientist, covering the results of the *Site* operations, inspection/maintenance and monitoring of the *Site*. The Annual Monitoring Report shall cover the preceding calendar year, and shall include, as a minimum, the following:

- (a) an updated drawing(s) indicating all leachate, groundwater, surface water and landfill gas monitoring locations, including off-site monitoring wells, if any;
- (b) tables outlining monitoring locations, analytical parameters of sampled water and frequency of sampling;
- (c) the results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs;
- (d) an assessment of the adequacy of and need to implement contingency measures for groundwater/leachate and surface water;
- (e) an assessment of the water quality with respect to the Ontario Reasonable Use Guidelines (Guideline B-7) and/or the Provincial Water Quality Objectives;
- (f) the status of compliance with all conditions of the *Approval*, including the operation, inspection, maintenance, monitoring and reporting requirements for all waste management activities at the *Site*; and,
- (g) recommendations with respect to any proposed changes in the inspection/maintenance and monitoring of the landfill site and/or the reporting frequency.

REASONS

The reason(s) for this amendment to the *Approval* is (are) as follows:

1. The reason for **Conditions 1.1 to 1.7** and **1.10 to 1.12** is to clarify the legal rights and responsibilities of the *Township*.
2. The reasons for **Condition 1.8** are to restrict potential transfer or encumbrance of the *Site* without the approval of the *Director* and to ensure that any transfer or encumbrance can be made only on the basis that it will not endanger compliance with this *Certificate*.

4. The reason for **Condition 1.9** is to ensure that appropriate *Ministry* staff have ready access to the *Site* for inspection of facilities, equipment, practices and operations required by the conditions in this *Certificate*. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the *EPA* and *OWRA*.
5. The reason for **Conditions 1.13** and **1.14** is to ensure 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.
6. The reasons for **Conditions 2.1** and **2.3** are to allow temporary operation of landfilling to alleviate emergency situation for waste management in the *Township* resulting from overfilling at the *Site*, and to develop long-term waste management plan.
7. The reason for **Conditions 2.2, 3.1 to 3.4, 5.5** and **6.4** is to ensure the *Site* is designed, developed, operated or closed, 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.
8. The reasons for **Conditions 2.4** are to ensure that waste disposal ceases at the *Site* having reached its capacity, and to ensure that *Site* closure is completed in an aesthetically pleasing manner, to minimize infiltration to reduce leachate generation prior to final cover installation, and to provide long-term protection of the natural environment.
9. The reason for **Conditions 3.5, 3.7 to 3.10, 4.1** and **4.2** is to ensure the *Site* is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.
10. The reasons for **Conditions 3.6** and **4.3** are to provide for the proper assessment of effectiveness and efficiency of the *Site* performance, its effect or relationship to any nuisance or environmental impacts, and the occurrence and prompt response to any public concerns. Record keeping is necessary to determine compliance with this *Approval*, the *EPA* and its regulations.
11. The reasons for **Conditions 5.1 to 5.9** are 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 action can be taken.
12. The reasons for **Condition 6.1 to 6.3** are to ensure that the *Township* follows a plan with an organized set of procedures for identifying and responding to unexpected but possible problems at the *Site*. A remedial action / contingency plan is necessary to ensure protection of the natural environment and public health and safety.
13. The reasons for **Condition 7.1** are to ensure that regular review of *Site* operations and monitoring data is documented and any possible improvements to the *Site* operations or monitoring programs are identified. An annual report is an important tool used in reviewing *Site* activities and for determining conformance of this *Certificate*, the *EPA* and its regulations.

This Notice shall constitute part of the approval issued under Approval No. A482101 dated December 4, 1989, as amended.

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

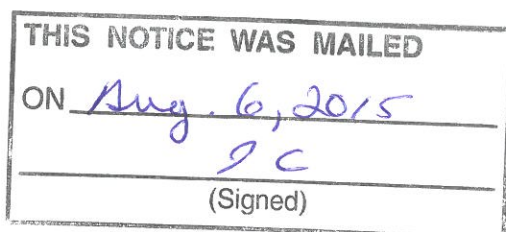
AND

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) 314-3717 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 July, 2015



Dale Gable, P.Eng.

Director

appointed for the purposes of Part II.1 of the

Environmental Protection Act

DO/

- c: Area Manager, MOECC Cornwall
- c: District Manager, MOECC Ottawa
- Melissa Bunn, Golder Associates Ltd. ✓



Department of Energy and Resources Management
Waste Management Branch

017/030
DEPT. OF ENERGY AND
RESOURCES MANAGEMENT
ONTARIO

AUG 3 1971

WASTE MANAGEMENT
DIVISION

APPLICATION FOR A CERTIFICATE OF APPROVAL
FOR A WASTE DISPOSAL SITE

TO: THE DEPARTMENT OF ENERGY AND RESOURCES MANAGEMENT
880 Bay Street.
Toronto, Ontario

To be submitted through Regional
Waste Management Engineer

- (1) Under the Waste Management Act, 1970 and the regulations, this applica-
tion is made by Township of Winchester
Morewood, Ontario

Owner of Facility

Address

- (2) for the Renewal of a Certificate of Approval for a
~~1970~~

Delete item inapplicable

Landfilling

Site

North Part Lot Eight, Concession Six

Type of Disposal

- (3) located

Full particulars of Location

- (4) A Certificate of Approval No. 482101 for this
Provisional Certificate
site was issued June 4 19 71

Delete item inapplicable

- (5) No change in use, operation, or ownership of the site has occurred since
the date of the original application.

Dated this 28th day of July 19 71

William MacKinnon, Clerk
Signature of Applicant

- (6) The following changes in use, operation or ownership (have occurred
since the date of the original application) (are proposed)

Delete item inapplicable

If necessary, provide additional
details on separate sheets and attach
to application.

Continued on Attached Sheets ☐

- (7) The site will be operated in accordance with The Waste Management Act,
1970 and the regulations by

Name of Operator

Address

The required supporting information to the application is appended hereto.

- (8) Notice of this application has been published in the
.....and
.....19..... and a copy of the notice is attached.

- (9) A certificate that the site does not contravene any of the by-laws of the

To be completed if applicant is a

**SUPPORTING INFORMATION
TO AN
APPLICATION FOR APPROVAL
OF A
LANDFILL DISPOSAL SITE**

1. Wastes to be Disposed of Comprise

Domestic	75%
Commercial	25%
Industrial Waste	%
Hauled Liquid Industrial Waste	%
Agricultural Waste	%
Hazardous Waste	%
Hauled Sewage	%
*Other	%
	100%

*Describe

Total: 5 Tons/Day

Population Served: 5,000

Distance to Nearest Watercourse	1000 Ft.
Distance to Source of Potable Water	5000 Ft.
Distance to Dwelling	5000 Ft.
Distance to Public Road	100 Ft.
Distance to Cemetery	3 mi. Ft.

Total Area of Site	20 Acres
Anticipated Life	18 Years

General Description of Site

situated in bush and swamp area

2. Origin and Composition of Principal Component Waste (other than domestic and commercial)

4. Maximum Depth of Excavation Below Surface	10
Maximum Height of Fill Above Surface	6
Type(s) of Material Encountered From Surface	

muck	10
clay	20

Depth of Water Table Below Surface	10
on July 27, 1971	(De

5. Proposed Future Land Use

returned to bush

6. Operating Equipment

bulldozer rented when required

Hours of Operation: 20 hours per month

7. The Following Documents are Attached**FOR DEPARTMENTAL USE****8. Authorities Consulted:**

Health Unit	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
O.W.R.C.	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
A.M.B.	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
Municipality	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec
Conservation Authority	<input type="checkbox"/> Objection	<input type="checkbox"/> No Objec

Other

Read with Care
Form 40
Towns and Cities, Limited, Toronto

RECEIVED IN REGISTRATION
ENERGY

This Indenture

made in duplicate the 29th day of January 2003
one thousand nine hundred and seventy-seven
in Pursuance of the Short Statute of Conveyances Act:
Between

THE CORPORATION OF THE TOWNSHIP OF WINCHESTER,
Morewood, Ontario.

THE CORPORATION OF THE VILLAGE OF WINCHESTER,
Winchester, Ontario.

hereinafter called the Grantor of the FIRST PART
the said CORPORATION OF THE TOWNSHIP OF WINCHESTER,
Morewood, Ontario, and
THE said CORPORATION OF THE VILLAGE OF WINCHESTER,
Winchester, Ontario, and
THE CORPORATION OF THE VILLAGE OF CHESTERTVILLE
Chesterville, Ontario. hereinafter called the Grantor of the SECOND PART

WHEREAS the Grantors hereto are the owners of a sanitary land fill site which is now used jointly by the Corporation of the Township of Winchester and the Corporation of the Village of Winchester and the Corporation of the Village of Chesterville and it is desirable that the title to the said land fill site be vested equally in the three said Municipal Corporations.

Wendy Kingston Clerk
CERTIFIED TRUE COPY

Witnesseth that in consideration of

ONE THOUSAND & SIXTY SIX 66/100 (\$166.66) dollar of lawful money of Canada now paid by the said grantee to the said grantor (the receipt whereof is hereby by it acknowledged) XK the said grantor DO ES GRANT unto the said grantee in fee simple

All and Singular that certain parcel or tract of land and premises, situate, lying and being in the TOWNSHIP of WINCHESTER, in the COUNTY of DUNDAS and being composed of that part of the NORTH half of lot number EIGHT (8) in the SIXTH (6th) Concession of the said Township more particularly described as follows:-

COMMENCING at a point in the NORTH heading of said lot number EIGHT (8), which is distant measured EASTERLY along said NORTH heading from the NORTH WEST corner of said lot, ONE HUNDRED feet (100');

Thence EASTERLY along the NORTH heading of said lot, a distance of EIGHTY (80) rods, or THIRTEEN HUNDRED & TWENTY feet (1320') to a point;

Thence SOUTHERLY in a straight line drawn parallel to the WEST side line of said lot, a distance of FORTY (40) rods or SIX HUNDRED & SIXTY feet (660') to a point;

Thence WESTERLY in a straight line drawn parallel to the NORTH head line of said lot, a distance of EIGHTY (80) rods, or THIRTEEN HUNDRED & TWENTY feet (1320') to a point;

THENCE NORTHERLY in a straight line drawn parallel to the WEST side line of said lot, a distance of FORTY (40) rods or SIX HUNDRED & SIXTY feet (660') to the point of commencement.

IN THE MATTER OF SUBSECTION 3 OF SECTION 5 OF
THE LAND SPECULATION TAX ACT, 1974

Affidavit

I, GLENN MacGREGOR, Clerk of the Township of Winchester
(Print name)
(Print address)

MAKE OATH AND SAY THAT:

1. I verily believe that the disposition of designated land evidenced in the attached instrument or writing is exempt from the tax imposed by subsection 1 of section 2 of the above Act by virtue of the disposition being conveyance by Municipality to Municipality.

as provided for by section 4, clause 1, subclause of the above Act.

~~Since the disposition of my designated land is being made to the designated land that is referred to in paragraph 1 hereof and that is being disposed of to the transferee named in the attached instrument or writing, no disposition with respect to such designated land has occurred prior to the disposition to the said transferee.~~

2. I am authorized in writing by the transferor making the disposition referred to in paragraph 1 hereof to make this affidavit.
Since the acquisition of the interest of the transferor in the designated land that is referred to in paragraph 1 hereof and that is being disposed of to the transferee named in the attached instrument or writing, no disposition with respect to such designated land has occurred prior to the disposition to the said transferee.

Sworn before me at the Village

of Chesterville

In the County

of Mundas

this 12th

day of February 1977

Glenn MacGregor
A Commissioner, etc.

AFFIDAVIT OF SUBSCRIBING WITNESS

I, _____
of the _____
in the _____

make oath and say:

I am a subscribing witness to the attached instrument and I was present and saw it executed at _____ by _____

I further

I verify believe that each person whose signature I witnessed in the party of the same name referred to in the instrument.

SWORN before me at the _____

this _____ day of _____ 1977

A COMMISSIONER FOR THE PROVINCE OF ONTARIO, ETC.

"Where a party is unable to read the instrument or where a party signs by making his mark or by some other means, after the instrument has been read to him and he appears fully to understand it, I have caused under a power of attorney (name of attorney) to be signed for (name of party) and for each other party. I fully believe that the person whose signature I witnessed was authorized to execute the instrument as attorney for (name)."

THE LAND TRANSFER TAX ACT, 1974 - AFFIDAVIT OF VALUE OF THE CONSIDERATION

Sworn to
Jan. 1/77

Subscribed
by the
conveyance

IN THE MATTER OF THE CONVEYANCE made

by: THE CORPORATION OF THE TOWNSHIP OF WINCHESTER & THE CORPORATION OF THE VILLAGE OF WINCHESTER

to: THE CORPORATION OF THE TOWNSHIP OF WINCHESTER & THE CORPORATION OF THE VILLAGE OF WINCHESTER & THE CORPORATION OF THE VILLAGE OF

on the 29th day of January 1977 CHESTERVILLE

I, GLENN MACGHEE

of the Township of Winchester

in the County of Dundas

MAKE OATH AND SAY THAT:

1. I am Clerk of the Grantor Corporation of the Township of Winchester named in the within (or annexed) conveyance.

2. I have a personal knowledge of the facts stated in this affidavit.

3. (1) The total consideration for this transaction has been allocated as follows:

(a) Land, buildings, fixtures and goodwill	\$ 166.66
(b) Chattels -- (items of tangible personal property -- (see note))	nil
TOTAL CONSIDERATION	\$ 166.66

(2) The true consideration for the transfer or conveyance for Land Transfer Tax purposes is as follows:

(a) Monies paid in cash	\$ 166.66
(b) Property transferred in exchange (Detail below)	nil
(c) Securities transferred in the value of (Detail below)	nil
(d) Balances of existing encumbrances with interest owing at date of transfer	nil
(e) Monies secured by mortgage under this transaction	nil
(f) Liens, legacies, annuities and incumbrances charges to which transfer is subject	nil
(g) Other (Detail below)	nil
TOTAL CONSIDERATION (should agree with 3(1) (a) above)	\$ 166.66

4. If consideration is not paid, is the transfer for natural love and affection?

5. If so, what is the relationship between Grantor and Grantee?

6. Other remarks and explanations, if necessary.

SWORN before me at the Village _____

of _____
in the _____

County of Dundas
this 12th day of February 1977

A COMMISSIONER FOR THE PROVINCE OF ONTARIO, ETC.

NOTE TO PARAGRAPH 3(1)(b): Grantee Detail value too to register on the notation of items shown in 3(1)(b) unless otherwise exempted under the provisions of The Land Transfer Tax Act R.S.O. 1970 c.110 or exempted. For the purpose of this amount insert above only the value of chattels, the total value of which is the notation of the department exceeds \$100.00. This does not constitute a purchase from the payment of Land Transfer Tax on any tangible personal property as part of this transaction. Where chattels are purchased as part of this transaction, with value of less than \$100.00, the applicable tax should be paid by the purchaser to the Treasurer of Ontario and recorded in the Minister of Revenue.

AFFIDAVIT AS TO AGE AND MARITAL STATUS

I/WE

of the

in the

book/s and says:

When

executed the attached instrument,

* If married,
see declaration

I/WE

at least eighteen years old,

If the not
happily
divorced

I was

married / divorced / widowed,

was my wife / husband.

We were married to each other,

We held the land as Joint Tenants / Trustees / Partnership Property.

Hailed or
Covers, etc.

(SEVERALLY) SWORN before me at the

This

day of

19

A Commissioner for Ontario AFFIDAVIT, ETC.

* Where required, make by affidavit, indicating when I executed the attached instrument as attorney for (insert, before was married status, if married, name of spouse), and when before, indicated the place of signing, before had attached the use of signature.

1977
29th
1977

CORPORATION OF THE TOWNSHIP OF
WINCHESTER

and

CORPORATION OF THE VILLAGES OF
WINCHESTER

TO—
CORPORATION OF THE TOWNSHIP OF
WINCHESTER

CORPORATION OF THE VILLAGES OF
WINCHESTER

CORPORATION OF THE VILLAGES OF
CRESTVIEW

Deed of Land

SITUATE

in the Township
of Winchester

Division and other Land, Towns

ASSURANCE ROLL No.

ADDRESS OF PROPERTY

CASS & CASS
LANDTAKERS AND SURVEYORS
WINCHESTER, ONTARIO
R2C 1A5

No. 299388
Registry Division of Dundas (No. 2)
I CERTIFY that this instrument is registered as of
11 58 A.M.
Registry Office
at Morrisburg,
Ontario.

FEB 16 1977 in the

A. M. F. L. L. L.
NOTARY

1977

PAID
LAND REGISTRY OFFICE NO. 8

REGISTRATION FEE	10.00
LAND TRANSFER TAX	1.50
RETAIL SALES TAX	Nil

APPENDIX B

BH Information

LIST OF ABBREVIATIONS

The abbreviations commonly employed on Records of Boreholes, on figures, and in the text of the report are as follows:

I. SAMPLE TYPE		III. SOIL DESCRIPTION		
AS	Auger sample	(a)	Cohesionless Soils	
BS	Block sample			
CS	Chunk sample			
DO or DP	Seamless open-ended, driven or pushed tube samplers			
DS	Denison type sample			
FS	Foil sample			
RC	Rock core			
SC	Soil core			
SS	Split spoon sampler			
ST	Slotted tube			
TO	Thin-walled, open			
TP	Thin-walled, piston			
WS	Wash sample			
DT	Dual tube sample			
DD	Diamond drilling			
II. PENETRATION RESISTANCE			(b)	Cohesive Soils
Standard Penetration Resistance (SPT), N:		C _u or S _u		
The number of blows by a 63.5 kg. (140 lb.) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split spoon sampler for a distance of 300 mm (12 in.).		Consistency		
Dynamic Cone Penetration Resistance (DCPT); N _d :				
The number of blows by a 63.5 kg (140 lb.) hammer dropped 760 mm (30 in.) to drive an uncased 50 mm (2 in.) diameter, 60 ⁰ cone attached to “A” size drill rods for a distance of 300 mm (12 in.).				
PH: Sampler advanced by hydraulic pressure				
PM: Sampler advanced by manual pressure				
WH: Sampler advanced by static weight of hammer				
WR: Sampler advanced by weight of sampler and rod				
Cone Penetration Test (CPT):				
An electronic cone penetrometer with a 60 ⁰ conical tip and a projected end area of 10 cm ² pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q _t), porewater pressure (u) and friction along a sleeve are recorded electronically at 25 mm penetration intervals.				

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	3.1416
$\ln x$	natural logarithm of x
$\log_{10} x$ or $\log x$	logarithm of x to base 10
g	acceleration due to gravity
t	time
FOS	factor of safety
V	volume
W	weight

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta \sigma'$
ϵ	linear strain
ϵ_v	volumetric strain
η	coefficient of viscosity
ν	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma - u$)
σ'_{vo}	initial vertical effective overburden stress
$\sigma_1 \sigma_2 \sigma_3$	principal stresses (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1 + \sigma_2 + \sigma_3) / 3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight)*
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma' = \gamma - \gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s / \rho_w$) formerly (G_s)
e	void ratio
n	porosity
S	degree of saturation
*	Density symbol is ρ . Unit weight symbol is γ where $\gamma = \rho g$ (i.e. mass density multiplied by acceleration due to gravity)

(a) Index Properties (continued)

w	water content
w_L or LL	liquid limit
w_p or PL	plastic limit
I_p or PI	plasticity Index $= (w_L - w_p)$
w_s	shrinkage limit
I_L	liquidity index $= (w - w_p) / I_p$
I_c	consistency index $= (w_L - w) / I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index $= (e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (overconsolidated range)
C_s	swelling index
C_α	coefficient of secondary consolidation
m_v	coefficient of volume change
c_v	coefficient of consolidation (vertical direction)
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation stress
OCR	overconsolidation ratio $= \sigma'_p / \sigma'_{vo}$

(d) Shear Strength

τ_p or τ_r	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction $= \tan \delta$
c'	effective cohesion
c_u or s_u	undrained shear strength ($\phi = 0$ analysis)
p	mean total stress $(\sigma_1 + \sigma_3) / 2$
p'	mean effective stress $(\sigma'_1 + \sigma'_3) / 2$
q	$(\sigma_1 - \sigma_3) / 2$ or $(\sigma'_1 - \sigma'_3) / 2$
q_u	compressive strength $(\sigma_1 - \sigma_3)$
S_t	sensitivity

Notes:

$$^1 \tau = c' + \sigma' \tan \phi'$$

$$^2 \text{ shear strength} = (\text{compressive strength}) / 2$$

PROJECT: 06-1122-127-3

RECORD OF BOREHOLE: BR07-26

SHEET 1 OF 1

LOCATION:

BORING DATE: September 7, 2007

DATUM: Local

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	PIEZOMETER OR STANDPIPE INSTALLATION				
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT							
								Cu, kPa	nat V _u	+ rem V _u	⊕ U _u	W _p	W			W _L			
								20	40	60	80			10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
								20	40	60	80			20	40	60	80		
0	Power Auger 200mm Diam. (Hollow Stem)	Ground Surface		74.67															
		Dark brown PEAT		0.00															
1				73.63															
		Very stiff grey brown SILTY CLAY (Weathered Crush)		1.04															
2					1	50 DO	5												
3					2	50 DO	3												
4																			
		Stiff grey SILTY CLAY		71.62															
				3.05															
					3	50 DO	1												
5																			
		Grey SANDY SILT, some gravel, occasional cobbles (GLACIAL TILL)		70.71															
				3.96															
					4	50 DO	DO												
				69.82															
6				4.85															
		Slightly weathered grey LIMESTONE BEDROCK, with shale interbedded, and thin mud seam			5	NQ RC		100	98	66									
7																			
					6	NQ RC		98	83	60									
8																			
					7	NQ RC		100	90	71									
		Fresh grey LIMESTONE BEDROCK , with shale interbed		67.14															
				7.53															
9																			
					8	NQ RC		100	97	75									
10																			

DEPTH SCALE

1 : 50



LOGGED: D.J.S.

CHECKED: HLRP

BOREHOLE 061122127-3 GPJ HYDROGEO GDT 3/25/08

PROJECT: 1650505

RECORD OF BOREHOLE: 16-1

SHEET 1 OF 2





LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m											
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ⊙		WATER CONTENT PERCENT						
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			Wp
								20	40	60	80	20	40	60	80			
0		GROUND SURFACE		74.71														
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, some organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1											
1																		
		(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown (WEATHERED CRUST); cohesive, very stiff		73.41 1.30														
2			(CL/MC) CLAYEY SILT to SILTY CLAY; trace gravel; grey; cohesive, very stiff		72.60 2.11	2	SS	5										
3																		
4																		
5		(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense		69.99 4.72	4	SS	2											
6																		
7		Borehole continued on RECORD OF DRILLHOLE 16-1		67.93 6.78	5	SS	>50											
8																		
9																		
10																		

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF DRILLHOLE: 16-1

SHEET 2 OF 2

LOCATION: See Site Plan

DRILLING DATE: December 8, 2016

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME

DRILLING CONTRACTOR: Downing Drilling

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV.		RUN No.	FLUSH	COLOUR % RETURN	JN - Joint FLT - Fault SHR- Shear VN - Vein CJ - Conjugate				BD- Bedding FO- Foliation CO- Contact OR- Orthogonal CL - Cleavage				PL - Planar CU- Curved UN- Undulating ST - Stepped IR - Irregular				PO- Polished K - Slickensided SM- Smooth Ro - Rough MB- Mechanical Break				BR - Broken Rock NOTE: For additional abbreviations refer to list of abbreviations & symbols.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
				DEPTH (m)					RECOVERY	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA				HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
												TOTAL CORE %	SOLID CORE %	B Angle	DIP w.r.t. CORE AXIS				TYPE AND SURFACE DESCRIPTION	Joon	Jr	Ja																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
7	Rotary Drill NQ Core	BEDROCK SURFACE		67.93																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													</

Bentonite Seal

32 mm Diam. PVC
#10 Slot Screen 'A'

Cave

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-RCK 004 1650505-8000.GPJ GAL-MISS GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-2

SHEET 1 OF 1




LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	RESISTANCE, BLOWS/0.3m				k, cm/s						
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ●		WATER CONTENT PERCENT						
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			
0		GROUND SURFACE		74.72														
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, trace organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1											
1					2	SS	1											
2		(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown; cohesive, very stiff		72.89	3	SS	1											
					4	SS	5											
3																		
					5	SS	2											
4																		
5																		
6																		
	End of Borehole Auger Refusal			68.62	9	SS	22											
7					68.01	6.71												
8																		
9																		
10																		

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-3

SHEET 1 OF 3

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m											
								SHEAR STRENGTH Cu, kPa		nat V. + Q - ● rem V. ⊕ U - ○		WATER CONTENT PERCENT						
								20	40	60	80	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³			Wp
								20	40	60	80	20	40	60	80			
0		GROUND SURFACE		75.05														
	Power Auger 200 mm Diam. (Hollow Stem)	(PT) sandy SILT, some organics; dark brown (PEAT); non-cohesive, moist, very loose		0.00	1	SS	1											
1			2	SS	WH												Bentonite Seal	
2			(CL/MC) CLAYEY SILT to SILTY CLAY, trace gravel; grey brown (WEATHERED CRUST); cohesive, very stiff		73.53	3	SS	1										Silica Sand
					1.52													
						4	SS	4										32 mm Diam. PVC #10 Slot Screen 'C'
3			(CL/MC) CLAYEY SILT to SILTY CLAY; grey; cohesive, stiff		72.00													
					3.05	5	SS	WH										
4						6	SS	WH										Silica Sand
5					7	SS	WH											
6					8	SS	WH										Bentonite Seal	
7					9	SS	1											
8		(SP) gravelly SAND, some silt; reddish grey; non-cohesive, wet, loose		67.73	11	SS	3										Silica Sand	
				7.32														
					12	SS	9										32 mm Diam. PVC #10 Slot Screen 'B'	
9		(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense																
				65.88	13	SS	22											
				9.17														
10					14	SS	28										Bentonite Seal	
		CONTINUED NEXT PAGE																

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF BOREHOLE: 16-3

SHEET 2 OF 3

LOCATION: See Site Plan

BORING DATE: December 8, 2016

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.30m	20406080				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³					
								SHEAR STRENGTH Cu, kPa		nat V. + Q - rem V. ⊕ U - ●		WATER CONTENT PERCENT					
								20406080				Wp — W — WI					
10	Power Auger	(ML) sandy SILT, some gravel, trace clay; grey (GLACIAL TILL); non-cohesive, wet, compact to very dense															
11	Wash Boring NW Casing			14	SS	28											
				15	SS	64											
				16	SS	>50											
12		Borehole continued on RECORD OF DRILLHOLE 16-3		63.47 11.58													
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Bentonite Seal

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-BHS 001 1650505-8000.GPJ GAL-MIS.GDT 03/23/17 JM

PROJECT: 1650505

RECORD OF DRILLHOLE: 16-3

SHEET 3 OF 3

LOCATION: See Site Plan

DRILLING DATE: December 8, 2016

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME

DRILLING CONTRACTOR: Downing Drilling

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	FLUSH	RECOVERY TOTAL CORE %	SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	B Angle	DIP w.r.t. CORE AXIS	DISCONTINUITY DATA TYPE AND SURFACE DESCRIPTION	Joon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	
		BEDROCK SURFACE		63.47																
	WB	Slightly weathered to weathered, highly fractured, grey LIMESTONE, with shale interbedded		11.58	1	20														
12	NM																			
					2	20														
13	Rotary Drill																			
	NQ Core																			
					3	20														
14		End of Drillhole		61.05																
				14.00																
15																				
16																				
17																				
18																				
19																				
20																				
21																				

Bentonite Seal
Silica Sand32 mm Diam. PVC
#10 Slot Screen 'A'

Silica Sand

DEPTH SCALE

1 : 50



LOGGED: JD

CHECKED: MIB

MIS-RCK 004 1650505-8000.GPJ GAL-MISS.GDT 03/23/17 JM

APPENDIX C

Model Inputs

Appendix C-1
23594638 Boyne Landfill ECA
SWMM Inputs: Subcatchments
























Surface Type	CN	C	Imperv	IA (mm)
Building/Asphalt/ Concrete/Pond	98	0.95	1	1.5
Gravel/Recycled Asphalt	89	0.8	0.6	3
Landscaped/Landfill top area	81	0.25	0	3
Landfill side slopes	83	0.35	0	1.5

Subcatchment	Area (ha)	Width (m)	Slope (%)	% Impervious	Manning's N- Impervious	Manning's N-Pervious	Depression Storage Impervious (mm)	Depression Storage Pervious (mm)	Infiltration Curve Number	Curve Number	Drying Time
101	4.9	363	2	0	0.015	0.25	1	5	Curve Number	74	7
102	5.28	875.9	2	0	0.015	0.25	1	5	Curve Number	74	7
103	3	415	2	0	0.015	0.25	1	5	Curve Number	74	7
104	1.03	225	2	0	0.015	0.25	1	5	Curve Number	74	7
Predevelopment Totals	14.21										
201	0.86	317.14	12.7	13.8	0.015	0.25	1	5	Curve Number	87	7
204A	0.26	330.98	5	0	0.015	0.25	1	5	Curve Number	81	7
204B	0.59		25	0	0.015	0.25	1	5	Curve Number	83	7
205C	0.43	233	2	0	0.015	0.25	1	5	Curve Number	85	7
Development Uncontrolled Totals	2.14										
202A	0.59	319.86	5	0	0.015	0.25	1	5	Curve Number	81	7
202B	0.86		25	0	0.015	0.25	1	5	Curve Number	83	7
203A	0.36	354.3	5	0	0.015	0.25	1	5	Curve Number	81	7
203B	0.33		25	0	0.015	0.25	1	5	Curve Number	83	7
205A	0.55	50	5	0	0.015	0.25	1	5	Curve Number	81	7
205B	0.74		25	0	0.015	0.25	1	5	Curve Number	83	7
206A	1.73		5	0	0.015	0.25	1	5	Curve Number	81	7
206B	1.02		25	0	0.015	0.25	1	5	Curve Number	83	7
207A	1.63		5	0	0.015	0.25	1	5	Curve Number	81	7
207B	1.07		25	0	0.015	0.25	1	5	Curve Number	83	7
208A	0.72		5	0	0.015	0.25	1	5	Curve Number	81	7
208B	1.45		25	0	0.015	0.25	1	5	Curve Number	83	7
209	1.03		2	0	0.015	0.25	1	5	Curve Number	89	7
Development Controlled Totals	12.08										
205D	0.97		2	30%	0.15	0.25	1	5	Curve Number	81	7
Off-Site Totals	0.97										

Appendix C-2
23594638 Boyne Landfill ECA
SWMM Inputs: Storage

Area 12.08 ha
% Imperv 35%
Total Storage (min) 966.4 m3
Perm Pool (min) 483.2 m3
Extended Detention (m) 483.2 m3

Depth (m)	Elevation (masl)	Incremental Area (m2)	Total Area (m2)	Incremental Volume (m3)	Total Volume (m3)	Active Volume (m3)	Notes
0	72.5	46	46	0	0		
0.1	72.6	16	62	2	2		
0.2	72.7	17	79	5	7		
0.3	72.8	18	97	7	14		
0.4	72.9	112	209	9	23		
0.5	73	91	300	14	37		
0.6	73.1	93	393	25	62		
0.7	73.2	1833	2226	34	96		
0.8	73.3	119	2345	130	226		
0.9	73.4	121	2466	228	454		
0	73.5	127	2593	240	694	0	NWL
0.1	73.6	121	2714	253	947	253	
0.2	73.7	122	2836	265	1212	518	
0.3	73.8	122	2958	277	1489	795	
0.4	73.9	123	3081	289	1778	1084	
0.5	74	124	3205	302	2080	1386	
0.6	74.1	124	3329	314	2394	1700	
0.7	74.2	125	3454	326	2720	2026	
0.8	74.3	126	3580	339	3059	2365	
0.9	74.4	126	3706	351	3410	2716	
1	74.5	127	3833	364	3774	3080	
1.1	74.6	127	3960	377	4151	3457	
1.2	74.7	128	4088	389	4540	3846	
1.3	74.8	128	4216	402	4942	4248	

CUT FILL TABLE			
RANGE	RANGE AREA	COLOR	VOLUME
0.00 TO 0.10	128		402
0.10 TO 0.20	127		389
0.20 TO 0.30	127		377
0.30 TO 0.40	126		364
0.40 TO 0.50	126		351
0.50 TO 0.60	125		339
0.60 TO 0.70	124		326
0.70 TO 0.80	124		314
0.80 TO 0.90	123		302
0.90 TO 1.00	122		289
1.00 TO 1.10	122		277
1.10 TO 1.20	121		265
1.20 TO 1.30	127		253
1.30 TO 1.40	121		240
1.40 TO 1.50	119		228
1.50 TO 1.60	1833		130
1.60 TO 1.70	93		34
1.70 TO 1.80	91		25
1.80 TO 1.90	112		14
1.90 TO 2.00	18		9
2.00 TO 2.10	17		7
2.10 TO 2.20	16		5
2.20 TO 2.30	46		2

Appendix C-3
 23594638 Boyne Landfill ECA
 SWMM Inputs: SCS Type II Design Storms

	Return Period	2	5	10	25	50	100	100+20%
Total 24-hr Rainfall (mm)		48	62.4	72	84	93.6	103.2	123.84
Time	Time							
min	hr:min	mm/hr	mm/hr	mm/hr	mm/hr	mm/hr	mm/hr	mm/hr
0	0:00	0.53	0.69	0.79	0.92	1.03	1.14	1.36
15	0:15	0.53	0.69	0.79	0.92	1.03	1.14	1.36
30	0:30	0.53	0.69	0.79	0.92	1.03	1.14	1.36
45	0:45	0.53	0.69	0.79	0.92	1.03	1.14	1.36
60	1:00	0.53	0.69	0.79	0.92	1.03	1.14	1.36
75	1:15	0.53	0.69	0.79	0.92	1.03	1.14	1.36
90	1:30	0.53	0.69	0.79	0.92	1.03	1.14	1.36
105	1:45	0.53	0.69	0.79	0.92	1.03	1.14	1.36
120	2:00	0.62	0.81	0.94	1.09	1.22	1.34	1.61
135	2:15	0.62	0.81	0.94	1.09	1.22	1.34	1.61
150	2:30	0.62	0.81	0.94	1.09	1.22	1.34	1.61
165	2:45	0.62	0.81	0.94	1.09	1.22	1.34	1.61
180	3:00	0.62	0.81	0.94	1.09	1.22	1.34	1.61
195	3:15	0.62	0.81	0.94	1.09	1.22	1.34	1.61
210	3:30	0.62	0.81	0.94	1.09	1.22	1.34	1.61
225	3:45	0.62	0.81	0.94	1.09	1.22	1.34	1.61
240	4:00	0.77	1.00	1.15	1.34	1.50	1.65	1.98
255	4:15	0.77	1.00	1.15	1.34	1.50	1.65	1.98
270	4:30	0.77	1.00	1.15	1.34	1.50	1.65	1.98
285	4:45	0.77	1.00	1.15	1.34	1.50	1.65	1.98
300	5:00	0.77	1.00	1.15	1.34	1.50	1.65	1.98
315	5:15	0.77	1.00	1.15	1.34	1.50	1.65	1.98
330	5:30	0.77	1.00	1.15	1.34	1.50	1.65	1.98
345	5:45	0.77	1.00	1.15	1.34	1.50	1.65	1.98
360	6:00	0.96	1.25	1.44	1.68	1.87	2.06	2.48
375	6:15	0.96	1.25	1.44	1.68	1.87	2.06	2.48
390	6:30	0.96	1.25	1.44	1.68	1.87	2.06	2.48
405	6:45	0.96	1.25	1.44	1.68	1.87	2.06	2.48
420	7:00	0.96	1.25	1.44	1.68	1.87	2.06	2.48
435	7:15	0.96	1.25	1.44	1.68	1.87	2.06	2.48
450	7:30	0.96	1.25	1.44	1.68	1.87	2.06	2.48
465	7:45	0.96	1.25	1.44	1.68	1.87	2.06	2.48
480	8:00	1.30	1.68	1.94	2.27	2.53	2.79	3.34
495	8:15	1.30	1.68	1.94	2.27	2.53	2.79	3.34
510	8:30	1.30	1.68	1.94	2.27	2.53	2.79	3.34

525	8:45	1.30	1.68	1.94	2.27	2.53	2.79	3.34
540	9:00	1.54	2.00	2.30	2.69	3.00	3.30	3.96
555	9:15	1.54	2.00	2.30	2.69	3.00	3.30	3.96
570	9:30	1.73	2.25	2.59	3.02	3.37	3.72	4.46
585	9:45	1.73	2.25	2.59	3.02	3.37	3.72	4.46
600	10:00	2.21	2.87	3.31	3.86	4.31	4.75	5.70
615	10:15	2.21	2.87	3.31	3.86	4.31	4.75	5.70
630	10:30	2.98	3.87	4.46	5.21	5.80	6.40	7.68
645	10:45	2.98	3.87	4.46	5.21	5.80	6.40	7.68
660	11:00	4.61	5.99	6.91	8.06	8.99	9.91	11.89
675	11:15	4.61	5.99	6.91	8.06	8.99	9.91	11.89
690	11:30	19.97	25.96	29.95	34.94	38.94	42.93	51.52
705	11:45	52.99	68.89	79.49	92.74	103.33	113.93	136.72
720	12:00	6.91	8.99	10.37	12.10	13.48	14.86	17.83
735	12:15	6.91	8.99	10.37	12.10	13.48	14.86	17.83
750	12:30	3.55	4.62	5.33	6.22	6.93	7.64	9.16
765	12:45	3.55	4.62	5.33	6.22	6.93	7.64	9.16
780	13:00	0.67	0.87	1.01	1.18	1.31	1.44	1.73
795	13:15	0.67	0.87	1.01	1.18	1.31	1.44	1.73
810	13:30	3.94	5.12	5.90	6.89	7.68	8.46	10.15
825	13:45	3.94	5.12	5.90	6.89	7.68	8.46	10.15
840	14:00	1.44	1.87	2.16	2.52	2.81	3.10	3.72
855	14:15	1.44	1.87	2.16	2.52	2.81	3.10	3.72
870	14:30	1.44	1.87	2.16	2.52	2.81	3.10	3.72
885	14:45	1.44	1.87	2.16	2.52	2.81	3.10	3.72
900	15:00	1.44	1.87	2.16	2.52	2.81	3.10	3.72
915	15:15	1.44	1.87	2.16	2.52	2.81	3.10	3.72
930	15:30	1.44	1.87	2.16	2.52	2.81	3.10	3.72
945	15:45	1.44	1.87	2.16	2.52	2.81	3.10	3.72
960	16:00	0.86	1.12	1.30	1.51	1.68	1.86	2.23
975	16:15	0.86	1.12	1.30	1.51	1.68	1.86	2.23
990	16:30	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1005	16:45	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1020	17:00	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1035	17:15	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1050	17:30	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1065	17:45	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1080	18:00	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1095	18:15	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1110	18:30	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1125	18:45	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1140	19:00	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1155	19:15	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1170	19:30	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1185	19:45	0.86	1.12	1.30	1.51	1.68	1.86	2.23
1200	20:00	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1215	20:15	0.58	0.75	0.86	1.01	1.12	1.24	1.49

1230	20:30	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1245	20:45	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1260	21:00	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1275	21:15	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1290	21:30	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1305	21:45	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1320	22:00	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1335	22:15	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1350	22:30	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1365	22:45	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1380	23:00	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1395	23:15	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1410	23:30	0.58	0.75	0.86	1.01	1.12	1.24	1.49
1425	23:45	0.58	0.75	0.86	1.01	1.12	1.24	1.49

SCS Type II distribution

Source: City of Ottawa Sewer Design Guidelines 2012 (for 1:100 year return period, other storms have been extrapolated from MacDonald Cartier Airport IDF curve in City of Ottawa Design Guideline 2012)

Appendix C-4
 23594638 Boyne Landfill ECA
 SWMM Inputs: SCS Type II Design Storms

	Time	Time	2	5	10	25	50	100	100+20%
Units	Min	Hr:Min	mm/hr	mm/hr	mm/hr	mm/hr	mm/hr	mm/hr	mm/hr
Total Volume (mm)			31.88	42.54	49.53	58.26	64.85	71.68	86.01
	0	0:00	2.69	3.59	4.18	4.92	5.47	6.05	7.26
	10	0:10	3.35	4.47	5.21	6.13	6.82	7.54	9.05
	20	0:20	4.52	6.04	7.03	8.27	9.20	10.17	12.20
	30	0:30	7.11	9.48	11.04	12.99	14.46	15.98	19.18
	40	0:40	18.13	24.19	28.17	33.13	36.88	40.76	48.91
	50	0:50	79.42	105.98	123.40	145.14	161.54	178.56	214.27
	60	1:00	24.04	32.07	37.35	43.93	48.89	54.04	64.85
	70	1:10	12.15	16.21	18.87	22.20	24.71	27.31	32.77
	80	1:20	8.11	10.82	12.60	14.82	16.49	18.23	21.88
	90	1:30	6.11	8.15	9.49	11.16	12.42	13.73	16.48
	100	1:40	4.91	6.56	7.64	8.98	10.00	11.05	13.26
	110	1:50	4.13	5.51	6.41	7.54	8.40	9.28	11.14
	120	2:00	3.57	4.76	5.54	6.52	7.26	8.02	9.62
	130	2:10	3.15	4.20	4.89	5.75	6.41	7.08	8.50
	140	2:20	2.82	3.76	4.38	5.15	5.74	6.34	7.61
	150	2:30	2.56	3.42	3.98	4.68	5.21	5.76	6.91
	160	2:40	2.35	3.13	3.65	4.29	4.78	5.28	6.34
	170	2:50	2.17	2.90	3.37	3.97	4.41	4.88	5.86
	180	3:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

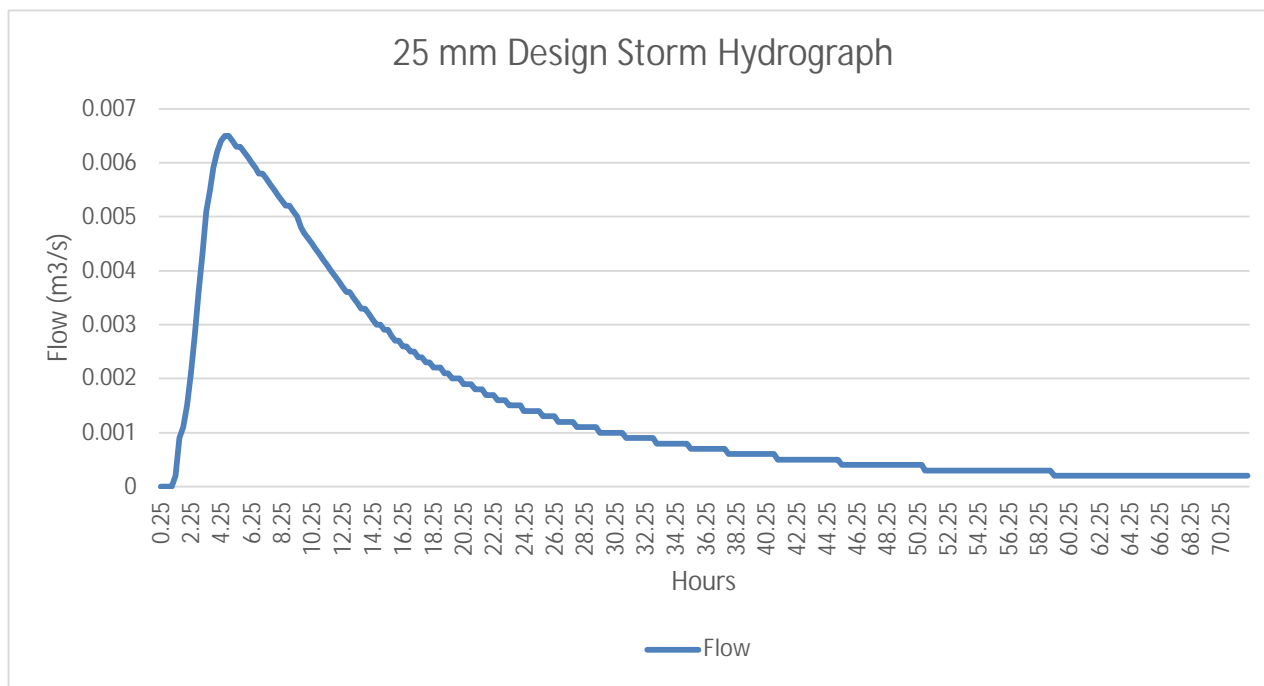
Chicago 3 hour storm

Source: City of Ottawa Sewer Design Guidelines 2012 (for 1:100 year return period, other storms have been extrapolated from MacDonald Cartier Airport IDF curve in City of Ottawa Design Guideline 2012)

APPENDIX D

Hydrographs

Appendix D
23594638 Boyne Landfill ECA
SWMM Outputs: Pond Hydrograph for 25 mm Design Storm



APPENDIX E

Calculations

Appendix E
23594638 Boyne Landfill ECA
Ditch Sizing

Location	Drainage Area		Ditch Characteristics					Check					
	A	Q	Manning's	Slope	Bottom	Side	Side	From	Depth of	Cross-	Wetted	From	Actual
	ha	100yr (model) m ³ /s	Roughness Coefficient n	S m/m	Width m	Slope Left X:1	Slope Right X:1	Manning's Equation (Q)n/(v S)	m	Sectional Area m ²	Perimeter m	Manning's Equation A ^{5/3} /P ^{2/3}	Velocity m/s
Area 205 Swale	1.290	0.2800	0.035	0.003	0.00	4	3	0.179	0.40	0.560	2.914	0.186	0.50
Area 205 / 206 Swale	4.040	0.7300	0.035	0.003	0.00	4	3	0.466	0.56	1.098	4.080	0.457	0.67
Area 205 / 206 / 207 Swale	6.740	1.1800	0.035	0.003	0.00	4	3	0.754	0.68	1.618	4.954	0.768	0.73
Area 205 / 206 / 207 / 208 Swale	8.910	1.6300	0.035	0.005	1.00	3	3	0.807	0.59	1.634	4.731	0.805	1.00
Area 205 C / D Swale	1.400	0.2600	0.035	0.005	0.50	3	3	0.129	0.30	0.420	2.397	0.132	0.62
Area 202 / 203 Swale	2.140	0.4900	0.035	0.005	0.00	4	3	0.243	0.45	0.709	3.278	0.255	0.69

Manipulation of Manning's Equation:

$$Q = (AR^{2/3} \sqrt{S}) / n$$

where: $R = A/P$

(Cross-Sectional Area/Wetted Perimeter)

Therefore:

$$Qn / (\sqrt{S}) = A^{5/3} / P^{2/3}$$



APPENDIX F

POLLUTE Source Concentration Models

POLLUTEv7

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Boyne Source Boron

THE VARIABLE VELOCITY AND/OR CONCENTRATION OPTION HAS BEEN USED
NOTE THAT THE ACCURACY OF THE CALCULATIONS WITH THIS OPTION WILL DEPEND
ON THE NUMBER OF SUBLAYERS USED

Layer Properties

Layer	Thickness	Number of Sublayers	Coefficient of Hydrodynamic Dispersion	Matrix Porosity	Distribution Coefficient	Dry Density
Till	4.4 m	200	0.019 m ² /a	0.35	0 mL/g	1.9 g/cm ³

Boundary Conditions

Finite Mass Top Boundary

Fixed Outflow Bottom Boundary

Landfill Length = 202 m

Landfill Width = 1 m

Base Thickness = 3 m

Base Porosity = 0.35

VARIATION IN PROPERTIES WITH TIME:

TIME PERIODS WITH THE SAME SOURCE AND VELOCITY

Period	Start Time	No. of Steps	Time Step	Source Conc	Rate of Change	Height of Leachate	Volume Collected
1	0 year	15	5 year	5 mg/L	0	10000000 m	0 m/a
2	75 year	100	5 year	5 mg/L	0	2.54 m	0 m/a

Period	Start Time	End Time	Darcy Velocity	Dispersivity	Base Velocity
1	0 year	75 year	0.33 m/a	0.1 m	23.5 m/a
2	75 year	575 year	0.33 m/a	0.1 m	23.5 m/a

Laplace Transform Parameters

TAU = 7 N = 20 SIG = 0 RNU = 2

Calculated Concentrations at Selected Times and Depths

Time year	Depth m	Concentration mg/L
5	0.000E+00	5.000E+00
10	0.000E+00	5.000E+00
15	0.000E+00	5.000E+00
20	0.000E+00	5.000E+00
25	0.000E+00	5.000E+00
30	0.000E+00	5.000E+00
35	0.000E+00	5.000E+00
40	0.000E+00	5.000E+00
45	0.000E+00	5.000E+00
50	0.000E+00	5.000E+00
55	0.000E+00	5.000E+00
60	0.000E+00	5.000E+00
65	0.000E+00	5.000E+00
70	0.000E+00	5.000E+00
75	0.000E+00	5.000E+00

Time year	Depth m	Concentration mg/L
80	0.000E+00	2.639E+00
85	0.000E+00	1.393E+00
90	0.000E+00	7.354E-01
95	0.000E+00	3.882E-01
100	0.000E+00	2.049E-01
105	0.000E+00	1.082E-01
110	0.000E+00	5.711E-02
115	0.000E+00	3.015E-02
120	0.000E+00	1.591E-02
125	0.000E+00	8.401E-03
130	0.000E+00	4.435E-03
135	0.000E+00	2.341E-03
140	0.000E+00	1.236E-03
145	0.000E+00	6.525E-04
150	0.000E+00	3.444E-04
155	0.000E+00	1.818E-04
160	0.000E+00	9.599E-05
165	0.000E+00	5.067E-05
170	0.000E+00	2.675E-05
175	0.000E+00	1.412E-05
180	0.000E+00	7.454E-06
185	0.000E+00	3.935E-06

Time year	Depth m	Concentration mg/L
190	0.000E+00	2.077E-06
195	0.000E+00	1.097E-06
200	0.000E+00	5.790E-07
205	0.000E+00	3.057E-07
210	0.000E+00	1.614E-07
215	0.000E+00	8.524E-08
220	0.000E+00	4.503E-08
225	0.000E+00	2.381E-08
230	0.000E+00	1.260E-08
235	0.000E+00	6.689E-09
240	0.000E+00	3.566E-09
245	0.000E+00	1.918E-09
250	0.000E+00	1.048E-09
255	0.000E+00	5.883E-10
260	0.000E+00	3.457E-10
265	0.000E+00	2.176E-10
270	0.000E+00	1.499E-10
275	0.000E+00	1.141E-10
280	0.000E+00	9.514E-11
285	0.000E+00	8.504E-11
290	0.000E+00	7.965E-11
295	0.000E+00	7.671E-11

Time year	Depth m	Concentration mg/L
300	0.000E+00	7.508E-11
305	0.000E+00	7.413E-11
310	0.000E+00	7.353E-11
315	0.000E+00	7.311E-11
320	0.000E+00	7.279E-11
325	0.000E+00	7.252E-11
330	0.000E+00	7.225E-11
335	0.000E+00	7.201E-11
340	0.000E+00	7.176E-11
345	0.000E+00	7.152E-11
350	0.000E+00	7.126E-11
355	0.000E+00	7.100E-11
360	0.000E+00	7.074E-11
365	0.000E+00	7.047E-11
370	0.000E+00	7.020E-11
375	0.000E+00	6.992E-11
380	0.000E+00	6.964E-11
385	0.000E+00	6.935E-11
390	0.000E+00	6.906E-11
395	0.000E+00	6.876E-11
400	0.000E+00	6.846E-11
405	0.000E+00	6.816E-11

Time year	Depth m	Concentration mg/L
410	0.000E+00	6.786E-11
415	0.000E+00	6.755E-11
420	0.000E+00	6.724E-11
425	0.000E+00	6.693E-11
430	0.000E+00	6.662E-11
435	0.000E+00	6.629E-11
440	0.000E+00	6.598E-11
445	0.000E+00	6.566E-11
450	0.000E+00	6.534E-11
455	0.000E+00	6.501E-11
460	0.000E+00	6.469E-11
465	0.000E+00	6.436E-11
470	0.000E+00	6.404E-11
475	0.000E+00	6.371E-11
480	0.000E+00	6.338E-11
485	0.000E+00	6.305E-11
490	0.000E+00	6.273E-11
495	0.000E+00	6.240E-11
500	0.000E+00	6.206E-11
505	0.000E+00	6.174E-11
510	0.000E+00	6.141E-11
515	0.000E+00	6.108E-11

Time year	Depth m	Concentration mg/L
520	0.000E+00	6.076E-11
525	0.000E+00	6.043E-11
530	0.000E+00	6.010E-11
535	0.000E+00	5.978E-11
540	0.000E+00	5.945E-11
545	0.000E+00	5.913E-11
550	0.000E+00	5.881E-11
555	0.000E+00	5.848E-11
560	0.000E+00	5.816E-11
565	0.000E+00	5.784E-11
570	0.000E+00	5.753E-11
575	0.000E+00	5.720E-11

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POLLUTEv7

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Boyne Source Chloride

THE VARIABLE VELOCITY AND/OR CONCENTRATION OPTION HAS BEEN USED
NOTE THAT THE ACCURACY OF THE CALCULATIONS WITH THIS OPTION WILL DEPEND
ON THE NUMBER OF SUBLAYERS USED

Layer Properties

Layer	Thickness	Number of Sublayers	Coefficient of Hydrodynamic Dispersion	Matrix Porosity	Distribution Coefficient	Dry Density
Till	4.4 m	200	0.019 m ² /a	0.35	0 mL/g	1.9 g/cm ³

Boundary Conditions

Finite Mass Top Boundary

Fixed Outflow Bottom Boundary

Landfill Length = 202 m

Landfill Width = 1 m

Base Thickness = 3 m

Base Porosity = 0.35

VARIATION IN PROPERTIES WITH TIME:

TIME PERIODS WITH THE SAME SOURCE AND VELOCITY

Period	Start Time	No. of Steps	Time Step	Source Conc	Rate of Change	Height of Leachate	Volume Collected
1	0 year	15	5 year	1500 mg/L	0	10000000 m	0 m/a
2	75 year	100	5 year	1500 mg/L	0	2.54 m	0 m/a

Period	Start Time	End Time	Darcy Velocity	Dispersivity	Base Velocity
1	0 year	75 year	0.33 m/a	0.1 m	23.5 m/a
2	75 year	575 year	0.33 m/a	0.1 m	23.5 m/a

Laplace Transform Parameters

TAU = 7 N = 20 SIG = 0 RNU = 2

Calculated Concentrations at Selected Times and Depths

Time year	Depth m	Concentration mg/L
5	0.000E+00	1.500E+03
10	0.000E+00	1.500E+03
15	0.000E+00	1.500E+03
20	0.000E+00	1.500E+03
25	0.000E+00	1.500E+03
30	0.000E+00	1.500E+03
35	0.000E+00	1.500E+03
40	0.000E+00	1.500E+03
45	0.000E+00	1.500E+03
50	0.000E+00	1.500E+03
55	0.000E+00	1.500E+03
60	0.000E+00	1.500E+03
65	0.000E+00	1.500E+03
70	0.000E+00	1.500E+03
75	0.000E+00	1.500E+03

Time year	Depth m	Concentration mg/L
80	0.000E+00	7.916E+02
85	0.000E+00	4.179E+02
90	0.000E+00	2.206E+02
95	0.000E+00	1.165E+02
100	0.000E+00	6.148E+01
105	0.000E+00	3.245E+01
110	0.000E+00	1.713E+01
115	0.000E+00	9.044E+00
120	0.000E+00	4.774E+00
125	0.000E+00	2.520E+00
130	0.000E+00	1.331E+00
135	0.000E+00	7.024E-01
140	0.000E+00	3.708E-01
145	0.000E+00	1.957E-01
150	0.000E+00	1.033E-01
155	0.000E+00	5.455E-02
160	0.000E+00	2.880E-02
165	0.000E+00	1.520E-02
170	0.000E+00	8.025E-03
175	0.000E+00	4.236E-03
180	0.000E+00	2.236E-03

Time year	Depth m	Concentration mg/L
185	0.000E+00	1.181E-03
190	0.000E+00	6.232E-04
195	0.000E+00	3.290E-04
200	0.000E+00	1.737E-04
205	0.000E+00	9.170E-05
210	0.000E+00	4.842E-05
215	0.000E+00	2.557E-05
220	0.000E+00	1.351E-05
225	0.000E+00	7.142E-06
230	0.000E+00	3.781E-06
235	0.000E+00	2.007E-06
240	0.000E+00	1.070E-06
245	0.000E+00	5.754E-07
250	0.000E+00	3.143E-07
255	0.000E+00	1.765E-07
260	0.000E+00	1.037E-07
265	0.000E+00	6.527E-08
270	0.000E+00	4.497E-08
275	0.000E+00	3.423E-08
280	0.000E+00	2.854E-08
285	0.000E+00	2.552E-08

Time year	Depth m	Concentration mg/L
290	0.000E+00	2.389E-08
295	0.000E+00	2.302E-08
300	0.000E+00	2.252E-08
305	0.000E+00	2.224E-08
310	0.000E+00	2.206E-08
315	0.000E+00	2.193E-08
320	0.000E+00	2.184E-08
325	0.000E+00	2.175E-08
330	0.000E+00	2.168E-08
335	0.000E+00	2.160E-08
340	0.000E+00	2.153E-08
345	0.000E+00	2.145E-08
350	0.000E+00	2.138E-08
355	0.000E+00	2.130E-08
360	0.000E+00	2.122E-08
365	0.000E+00	2.114E-08
370	0.000E+00	2.106E-08
375	0.000E+00	2.098E-08
380	0.000E+00	2.089E-08
385	0.000E+00	2.080E-08
390	0.000E+00	2.072E-08

Time year	Depth m	Concentration mg/L
395	0.000E+00	2.063E-08
400	0.000E+00	2.054E-08
405	0.000E+00	2.045E-08
410	0.000E+00	2.036E-08
415	0.000E+00	2.027E-08
420	0.000E+00	2.017E-08
425	0.000E+00	2.008E-08
430	0.000E+00	1.998E-08
435	0.000E+00	1.989E-08
440	0.000E+00	1.979E-08
445	0.000E+00	1.970E-08
450	0.000E+00	1.960E-08
455	0.000E+00	1.950E-08
460	0.000E+00	1.941E-08
465	0.000E+00	1.931E-08
470	0.000E+00	1.921E-08
475	0.000E+00	1.911E-08
480	0.000E+00	1.901E-08
485	0.000E+00	1.892E-08
490	0.000E+00	1.882E-08
495	0.000E+00	1.872E-08

Time year	Depth m	Concentration mg/L
500	0.000E+00	1.862E-08
505	0.000E+00	1.852E-08
510	0.000E+00	1.842E-08
515	0.000E+00	1.832E-08
520	0.000E+00	1.823E-08
525	0.000E+00	1.813E-08
530	0.000E+00	1.803E-08
535	0.000E+00	1.793E-08
540	0.000E+00	1.784E-08
545	0.000E+00	1.774E-08
550	0.000E+00	1.764E-08
555	0.000E+00	1.754E-08
560	0.000E+00	1.745E-08
565	0.000E+00	1.735E-08
570	0.000E+00	1.726E-08
575	0.000E+00	1.716E-08

NOTICE

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APPENDIX G

Wildlife Observation Protocol



TECHNICAL MEMORANDUM

DATE 3 October 2024

Project No. CA-GLD-23594638

TO Danielle Ward
Township of North Dundas
636 St. Lawrence Street, Winchester, ON K0C 2K0

FROM Andrew Minielly

EMAIL andrew.minielly@wsp.com

WILDLIFE OBSERVATION PROTOCOL – BOYNE ROAD LANDFILL EXPANSION PROJECT, TOWNSHIP OF NORTH DUNDAS, ONTARIO

1.0 INTRODUCTION

The Boyne Road Landfill is located on Lot 8, Concession VI in the former Township of Winchester, along the south side of Boyne Road about 2 km east of the Village of Winchester. An Environmental Assessment (EA) (WSP Canada Inc. 2023) has been prepared that includes a detailed assessment of the potential environmental impacts of the landfill expansion. Mitigation measures and monitoring requirements identified in the EA are now commitments/conditions to be incorporated as part of the development and construction phase of the project. This memorandum has been prepared to outline the proposed approach to address Commitment N of the EA, specifically: *Prepare and implement a Wildlife Observation Protocol to outline the steps to take in the event of an encounter with wildlife, including SAR, during the construction stage. All on-site personnel should be trained on the contents of the protocol.*

2.0 WILDLIFE PROTECTION, ENCOUNTERS, SALVAGE AND RELOCATION

2.1 General Wildlife Protection and Safe Handling Protocol

On-site personnel should take precautions with respect to wildlife species during construction activities. Most wildlife species are afforded protection in Ontario under the *Fish and Wildlife Conservation Act* (FWCA) (Ontario 1997), the *Endangered Species Act* (ESA) (Ontario 2007), the federal *Species at Risk Act* (SARA) (Canada 2002) and/or the *Migratory Birds Convention Act* (MBCA) (Canada 1994).

On-site personnel should be trained to adhere to the following general guidance:

- Be aware of wildlife during construction activities.
- Do not feed any wildlife.
- Do not harass or harm wildlife species encountered.

2.2 Encounters with non-Species at Risk (SAR) Wildlife within the Construction Zone

The following outlines the appropriate non-SAR wildlife handling methods, including measures to be followed by site personnel throughout the duration of the construction period:

- Non-injured wildlife observed within the construction footprint are to be directed or transported (small wildlife) away from the construction activities into the nearest natural area (i.e., woodland, wetland, etc.). Any species handled is to be in accordance with the guidance provided in the Ministry of Natural Resources and Forestry's (MNRF) Species at Risk (SAR) Handling Manual (MNRF n.d.; **Attachment A**). Bats should not be handled in any event due to the potential risk to human health.
- A Qualified Biologist (see contact list in **Section 3.0**) should be contacted for additional guidance under the following circumstances:
 - It is unclear if the wildlife observed is a SAR.
 - If site personnel are unsure where to direct / transport wildlife that has entered the area of construction or if they do not feel comfortable transporting the wildlife.
 - If wildlife encountered (i.e., larger wildlife) do not move away from the construction zone, and construction activities are such that continuing construction in the area would result in harm to the animal. In this event, all activities are to stop until the Qualified Biologist has determined the appropriate next steps.
 - If an injured non-SAR wildlife specimen is found or accidentally harmed. The Qualified Biologist will determine if a wildlife custodian should be contacted to rehabilitate the injured wildlife and additional next steps. A list of authorized wildlife custodians, their locations and their specialties is available at <https://www.ontario.ca/page/find-wildlife-rehabilitator>.
 - When nesting turtles are observed within the area of construction. If nesting turtles are observed, activities within 20 m of the nesting site are to cease until the turtle has left the area on their own. Any turtle nests observed within the construction zone are to be protected with a 10 m buffer and a MNRF authorized local Wildlife Custodian contacted to come to the site and relocate the nest to a suitable location outside the construction zone or collect the nest for ex situ incubation under the Custodian's approved permit.
 - If wildlife is accidentally disturbed or exposed in the winter months during its hibernation period (e.g., snakes dislodged from hibernation).

In accordance with the ESA 2007, no threatened or endangered species can be handled or relocated without the proper approvals / permitting and authorization from the MNRF. See **Section 2.4** for further direction.

2.3 Encounters with Species at Risk (SAR)

If a SAR is observed within the construction zone, the individual is not to be handled unless it is in immediate danger, with the exception of SAR bats that should not be handled in any event due to risks to human health.

SAR most likely to be encountered on the site are bat SAR including Little Brown Myotis (*Myotis lucifugus*) and Eastern Small-footed Myotis (*Myotis leibii*). Species fact sheets to assist with identification of these bats are included in **Attachment B**.

If a SAR or possible SAR is found in the construction area, the protocol outlined below is to be followed:

- Stop work in the immediate vicinity of the observation. Should a Qualified Biologist not be on site, one is to be contacted immediately to determine next steps. Work is to not commence again in the immediate area of the observation until further instructed by the Qualified Biologist or the SAR has left the construction zone on its own accord.
- If the SAR does not leave the construction zone, the Qualified Biologist will determine an appropriate setback from the SAR that will be applied to allow the species to vacate the area naturally within a 24-hour period. The Qualified Biologist will determine if additional exclusionary fencing in the area is appropriate to prevent the SAR from re-entering the construction zone.
- If the SAR does not leave the construction zone after the 24-hour period, the Qualified Biologist will determine the appropriate next steps to have the SAR removed from the construction zone. All SAR are to be handled in accordance with the guidance provided in the MNRF's SAR Handling Manual (**Attachment A**) by a Qualified Biologist.
- If an injured threatened or endangered SAR is found or accidentally harmed within the construction zone, the MECP will be contacted immediately by the Qualified Biologist to determine requirements for compliance with the ESA.
- The Qualified Biologist will contact the MECP within 48 hours of any observation of any endangered and threatened species within the construction zone. In addition, the Qualified Biologist should submit the record to the Natural Heritage Information Center (NHIC) using the NHIC Rare Species Reporting form (available here: <https://engage.ontario.ca/en/natural-heritage-information-centre-nhic-observation-reporting-form>).
- It is not necessary to notify the MECP with observations of injured or non-injured Special Concern species or general wildlife sightings (deer, raccoon, etc.). Special Concern species most likely to be encountered on the site are Eastern Wood-peewee (*Contopus virens*), Wood Thrush (*Hylocichla mustelina*) and Monarch (*Danaus plexippus*). Species fact sheets are included in **Attachment B**.
- If a deceased wildlife SAR is found or accidentally killed, the specimen is to be preserved and the MECP contacted as soon as possible by the Qualified Biologist to determine if the specimen will be transported to them and if there are any additional requirements for compliance with the ESA. Deceased SAR are to only be handled by the Qualified Biologist and stored in accordance with the guidance provided in the MNRF's SAR Handling Manual.

2.4 Wildlife Salvage and Relocation During Construction

Wildlife salvage and relocation may be required where aquatic habitats (i.e., ponds) and similar environments are to be filled or removed during construction, or where watercourses will be realigned. The plan for wildlife salvage and relocation includes the following measures:

- Qualified Aquatic Biologists will conduct fish salvage and relocation, as required, under an approved licence issued by the MNRF. All fish salvages will be undertaken following the specific conditions outlined on the

approved licences including types of gear used and release locations, as well as completing and submitting all associated reporting requirements.

- Qualified Ecologists will conduct wildlife salvage and relocation, as required, under an approved licence issued by the MNRF and will complete and submit all associated reporting requirements.

3.0 CONTACT LIST

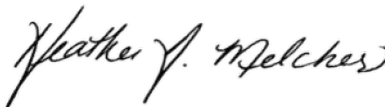
Name	Organization	Roll	Contact
Danielle Ward	Township of North Dundas	Interim Director of Environmental Services	1 (613) 774-2105 ext. 238
Ottawa District	Ministry of Environment, Conservation and Parks	MECP Biologist	1(613) 521-3450 (general inquiry)
Tamara Darwish	WSP - Ecology	Biologist	+1(416) 768-6870

Sincerely,

WSP Canada Inc.



Andrew Minielly, HBES
Terrestrial Ecologist



Heather Melcher, MSc
Director, Ecology - Ontario Earth and Environment

AM/HM/PAS/ld

Attachments: A – Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders
B – Species Fact Sheets

4.0 REFERENCES

Canada, Government of (Canada). (1994). *Migratory Birds Convention Act*. S.C. 1994, c. 22.

Canada, Government of (Canada). (2002). *Species at Risk Act*. S.C. 2002, c. 29.

Ministry of Natural Resources and Forestry (MNRF). (n.d.). Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders, Species Conservation Policy Branch. Peterborough, Ontario. 40 pp.

Ontario, Government of (Ontario). (2007). *Endangered Species Act*. S.O. 2007, c. 6.

Ontario, Government of (Ontario). (1997). *Fish and Wildlife Conservation Act*. S.O. 1997, c. 41.

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ATTACHMENT A

**Ontario Species at Risk Handling Manual:
For Endangered Species Act
Authorization Holders**

Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders

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5. Safe Handling of Birds

6. Reporting Species at Risk (SAR) Encounters

7. Handling and Transporting Dead Animals

8. Appendices

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II References

III Equipment and Materials Checklist

IV Species at Risk (SAR) Notification/Contact Schedule

V Species at Risk (SAR) Encounter Reporting Form

Introduction

Ontario's *Endangered Species Act, 2007* (ESA) protects endangered and threatened species and their habitats.

Ontario is home to over 30,000 species, about 200 of which are considered at risk. Roughly 40 per cent of the species at risk in Canada are found in Ontario.

Activities that would harm individual species at risk or their habitats are prohibited by the ESA, unless they are authorized under the act. Authorizations include permits, stewardship agreements and exemption agreements.

This manual is designed to provide guidance to those whose authorization under the ESA may require the capture, relocation, handling, and/or transport of species at risk.

Enclosed is both a DVD presentation and CD of this manual which are also available from your Ministry of Natural Resources (MNR) District Office.

For additional information and assistance with species identification, please consult MNR *Ontario Species at Risk Quick Reference Guide*, or email: esa.permits.agreements@ontario.ca.

Visit our website ontario.ca/speciesatrisk for more general information about all Ontario's species at risk.

1. Safe Handling of Turtles

1.1 Materials

a) The following materials are required for the handling, capture, temporary safe keeping and transport of turtles:

- » Large plastic bin and lid with air holes, a large bucket or a cloth/burlap bag. Ensure both sides of the container/bag and the lid are well marked with “live animal”. See section 1.5 to determine when it is appropriate to use a specific type of container.
- » Thick work gloves
- » Thermometer
- » SAR Notification/Contact Schedule
- » SAR Encounter Reporting Form
- » Broom or broom handle with small paint brush roller attached to end.

b) Equipment must be maintained on each job site.

1.2 Safety considerations

a) Generally, there is little risk associated with handling turtles. However, all turtles can scratch and bite, and work gloves should be worn to help avoid minor injuries.

b) Snapping, Spiny Softshell and Eastern Musk Turtles cannot completely retract into their shell and are more likely to bite in defence. These species should be handled more cautiously and as follows:

- I. **Always keep your hands as close to the back of the turtle’s shell as possible, and always behind the midpoint of the shell.** These species have a considerable reach above their shells. Snapping Turtles can reach the midpoint of the shell, and in some cases Spiny Softshell Turtles and Eastern Musk Turtles can almost reach the back of their shell.



II. Always maintain a safe distance between the front of the turtle and other people.

c) Snapping and Spiny Softshell Turtles have a powerful and painful bite that is likely to bruise and may break the skin. However, it will almost never break bone. The damage inflicted by a Snapping Turtle bite is greatly exaggerated (such as being able to bite a boat oar or golf club in half). Forcing a Snapping Turtle to bite hard implements may result in an injury to the turtle. Wearing gloves will significantly reduce the risk of injury from these turtles.

d) If bitten by a turtle, remain calm and allow the turtle to relax and let go on its own. Pulling away from the turtle may cause further injury to you or the turtle.

e) Always wash your hands after handling a turtle. Turtles (and many other animals, including humans) carry potentially harmful bacteria in their gut. Although it is possible to contract salmonella from handling turtles, there are few reported cases of contracting these bacteria from wild turtles. Cases of salmonella poisoning from turtles are almost always limited to pet turtles, since these captive turtles are forced to live in the same small space that they defecate in.

Turtles

1.3 Capture and handling of turtles

Safely handle, move or capture a turtle by following these steps:

- a) Always handle turtles carefully and slowly, yet firmly. Rough handling may cause injury or stress to the turtle and/or the developing eggs and may cause the turtle to be more defensive (increased biting and scratching).
- b) With the exception of very small individuals, always handle turtles with both hands. Turtles are good at freeing themselves with a bit of wiggling, kicking, clawing and biting, and a good grip is essential to ensure no harm comes to you or the turtle.
- c) Never pick up a turtle by the tail. This can dislocate bones throughout the tail and is extremely painful for the turtle. For larger, heavier turtles this may result in dislocation of bones in the spinal cord as well.
- d) Wear gloves when handling turtles to minimize risk from scratches and bites. If gloves are not available, handle turtles with clean hands that are free of insect repellent, antibacterial hand sanitizer, sunscreen, etc.
- e) **Painted, Map, Wood, Blanding's and Spotted Turtles:** Pick up these species using both of your hands, one on each side of the shell, between the front and back legs.



f) **Snapping Turtle:** Always wear gloves when handling a Snapping Turtle and always keep your hands behind the midpoint of the top or sides of the turtle's shell. To pick up a Snapping Turtle:

- I. Hold it by the back of the shell, placing your thumbs on the top of the shell and your fingers in the hind leg pockets (the space between the upper shell and the hind legs). Your hands will be at approximately 5 and 7 o'clock.



- II. Or use one hand to hold the base of the tail near the shell and slide your second hand under the turtle to support its weight. Lift the turtle using the hand underneath the turtle. Never pick up a turtle by the tail.



Turtles

- III. Or you can move it by guiding it into a pail or garbage can with a broom.



- IV. It is important to get a good, strong hold on the turtle's shell as the force that is exerted by the turtle snapping may result in an unexpected release. A good grip will ensure that both the turtle and the handler remain safe and uninjured.

g) **Eastern Musk Turtle:** Pick up Eastern Musk Turtles by the back of the shell. This turtle species can be held with one hand, as long as you ensure that you have a good grip.



h) **Spiny Softshell:** Always wear gloves when handling a Spiny Softshell, and always keep your hands well behind the midpoint of the top or sides of the turtle's shell. To pick up a Spiny Softshell turtle:

- I. Use both hands, one on each side of the shell, as close as possible to the back legs.



- II. Or place one hand under the turtle between its back legs (in the middle to balance its weight) and the other hand, also from behind, on the top of the turtle's shell (close to the back).

i) Turtles can be difficult to capture. If a turtle escapes or heads for cover, let it disperse on its own, ensuring it is safe from harm before allowing activities to continue. If continuing activities poses a threat to the turtle, postpone activities for up to 24 hours to allow the turtle to disperse. If it is not possible to leave the area for 24 hours, have a Qualified Member relocate the individual. Do not disturb any natural cover under which the turtle has retreated. If necessary, contact MNR for further direction using the SAR Notification/Contact Schedule.

Turtles

1.4 Moving turtles out of harm's way (distances under 50 metres)

- a) If it is necessary to move a turtle more than 50 metres, refer to section 1.6 on turtle relocation.
- b) Turtles should only be moved when they are in imminent, unavoidable danger.
- c) If possible, allow the turtle to move on its own by walking toward the turtle in the direction that you want it to move. This will not work for Snapping Turtles, as they often turn to face a potential threat head-on rather than running away. If the turtle does not move on its own, you may have to pick it up and move it (see section 1.3).
- d) When moving a turtle a short distance, such as across a road, move the turtle in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas, and if you put them back where they started they may simply turn around and start their journey again. If it is not clear which direction the turtle was headed, move the turtle to the closest suitable habitat that will not be disturbed. In this case, suitable habitat includes a water body or the vegetation/forest at the edge of the road allowance, disturbed area or clearing.
- e) If possible, release the turtle near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators, such as water or dense vegetation) to allow it to take cover. Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.

1.5 Temporary safe keeping and transportation of turtles

- a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe and at the right temperature.
- b) Always create air holes in the lid of a container prior to placing an animal in the container.
- c) If the turtle will be in captivity for **less than one hour**, place the turtle in a cloth or burlap bag, a large bucket or a large plastic bin with a lid that has adequate air holes. Cloth or mesh bags should not be used for snapping turtles as they can become tangled and strangle themselves. Always use large plastic bins or large buckets for snapping turtles.
- d) If the turtle will be in captivity for **more than one hour**, avoid the use of cloth or burlap bags. For adults, use a large plastic bin or bucket with a lid that has adequate air holes and a small amount of water (no more than an inch deep). Ensure that the turtle is not fully submerged, as it will drown if it cannot breathe. For hatchlings and juveniles, use an appropriately sized container with a lid that has air holes and line the bottom of the container with wet towels or paper towels. Never transport small juveniles or hatchlings in water.



- e) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 30°C or drops below 5°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this will cause the turtle to overheat and could be fatal.
- f) Never put more than one turtle in a container or bag at a time, especially in the case of Snapping Turtles. This will help to minimize stress and prevent injury to the turtles.
- g) Once the turtle is in the container or bag, ensure that the lid is secure or that the bag is tied tightly.
- h) **Never leave the container or bag unattended** in an unsecured location (e.g., side of road).
- i) If using a bag, ensure that it is in a secure location where it cannot fall if the turtle moves the bag. The movement of a turtle within a bag can easily cause the bag to fall off of a table.
- j) Do not offer the turtle any food. Turtles do not have to eat as often as mammals, and it is no problem for a turtle in temporary captivity to go a few days without food.
- k) Turtles should be checked periodically (every hour should suffice). Hatchlings are especially susceptible to dehydration and must be carefully monitored during transport.

1.6 Relocation of turtles

- a) A turtle should only be relocated if the destruction of its habitat is unavoidable or if it is not possible to release it at the capture location.
- b) Transport and release the turtle within one hour of capture in order to minimize stress on the animal.
- c) Turtles should not be relocated during their over-wintering season. This varies depending on the species and location, but is generally from October to May. If you are unsure whether you should relocate the turtle or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/Contact Schedule.
- d) If it is not possible to relocate the turtle due to the time of year (October to May) or other conditions, transport the turtle to a wildlife custodian per the SAR Notification/Contact Schedule.
- e) **Turtles should never be moved more than 250 metres** from the location where they were found. Only move a turtle as far as necessary to avoid potential harm to the turtle, and avoid moving turtles more than 125 metres unless absolutely necessary. If it is not possible to relocate the turtle within 250 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.
- f) If hatchlings are found and must be relocated, move them to the nearest permanent body of water. Never place hatchlings directly into water. Release the turtle at the shoreline of the appropriate habitat (see below). The turtle may or may not choose to enter the water; do not force it.

- g) Whenever possible, release the turtle in the same water body where it was found and in the same type of natural habitat as the capture site. To determine if the habitat is of the same type, consider the water depth, water current, substrate type (mud, rock, etc.) and vegetation type (cattails vs. lily pads vs. aquatic vegetation).
- h) If possible, release the turtle near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators, such as water or dense vegetation) to allow it to take cover. Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.
- i) To release the turtle, gently pick up the turtle (per section 1.3) from the container and set it down in the new location. To release a Snapping Turtle or Spiny Softshell Turtle, you may wish to tip the container on its side and allow the turtle to move out on its own. Allow the turtle to disperse on its own at this new location.

1.7 Injured turtles

- a) Use the methods outlined in section 1.3 to handle injured turtles whenever possible. If those methods are not applicable due to the turtle's injuries, use a shovel or other flat object to pick up the turtle. Ensure that any injured areas are supported.
- b) Place the turtle in a large plastic bin or large bucket with a lid that has air holes. Darkness helps to reduce stress to the turtle. Do not place anything else in the container with the turtle, including water or other turtles.
- c) Thoroughly wash your hands after handling injured turtles.
- d) Immediately transport the turtle to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

2. Safe Handling of Snakes

2.1 Materials

a) The following personal protective equipment should be worn when working with Massasauga rattlesnakes:

- » High-ankle hiking or rubber boots
- » Thick pants (jeans) or baggy pants
- » Leather work gloves

b) The following materials are required for the handling, capture, temporary safe keeping and transport of snakes:

- » Pail, large garbage can or bucket (1 metre deep) with air holes in the lid. Ensure both the side of the container and the lid are well marked “live animal” or “caution rattlesnake”.
- » A snake bag (for non-venomous species only). A snake bag must be cloth. (A pillowcase works well.) Plastic and non-breathable materials are not appropriate. Ensure the bag is well marked “live animal”.
- » Broom or broom handle with small paint brush roller holder attached to end. Never use “snake pinchers”.
- » Thermometer
- » SAR Notification/Contact Schedule
- » SAR Encounter Reporting Form

c) Equipment must be maintained on each job site.

2.2 Safety considerations

a) **The Massasauga is the only venomous snake in Ontario.**

The venom is an adaptation for hunting and is used to kill prey (primarily small rodents).

As a defence mechanism, Massasaugas may also bite when threatened, at which time they may or may not release venom. Camouflage, rattling and retreating are their primary defensive strategies, and they generally bite as a last resort.

Their maximum striking distance is about half of their body length. Generally, your safety zone is your height plus 50 centimetres away from the snake. (This accounts for the snake’s striking distance to you if you fall.)

A Massasauga bite is generally not deadly. Only two people have ever died from a Massasauga bite in Ontario. Neither person received medical attention, and both cases were almost 50 years ago.

If you are bitten by a Massasauga, remain calm and seek medical attention immediately. Do not apply a tourniquet or try to suck out the venom. Never try to capture the snake to take it to the hospital; if you were bitten by a venomous snake in Ontario, we know it was a Massasauga. Have someone else drive you safely.

b) **Never under any circumstances pick up a Massasauga rattlesnake.** Massasaugas occur in very specific regions of the province, and if you are well outside of those regions it should be safe to handle any native snake you find. If you are working within a region where Massasaugas may occur, never pick up a snake unless you are absolutely certain that it is not a Massasauga.

c) All other Ontario snakes are non-venomous and harmless. Despite being harmless, many of Ontario’s snakes will put on defensive displays to intimidate potential predators. These include:

Snakes

- I. Rearing up, hissing and striking.
- II. Eastern Hog-nosed Snakes will flatten out their necks like cobras, hiss loudly and pretend to strike (although their mouths remain closed).
- III. Eastern Foxsnakes, Milksnakes, Gray Ratsnakes and Eastern Hog-nosed Snakes sometimes vibrate their tails to imitate a rattlesnake. If their tails come into contact with rocks, dry leaves, or some other medium, they can produce a buzzing sound like that of a rattlesnake. Combined with their blotchy pattern, this mimicry is often very effective at fooling humans.

d) Holding the snake properly (see section 2.4) will significantly reduce stress to the snake and the likelihood that it will try to bite in self-defence.

2.3 Capture and handling of the Massasauga rattlesnake

Safely move a Massasauga by following these steps:

- a) Put on personal protective equipment (per section 2.1).
- b) Clear the area of unnecessary bystanders to lessen the stress on the animal.
- c) Determine your plan for capture to anticipate where the snake may move or retreat as well as any potential hazards you may encounter.
- d) If capturing injured snakes, avoid touching or manipulating injured areas.
- e) Tip the 1-metre-deep pail on its side.
- f) Use the broom to position the snake near the pail.
- g) Gently and slowly guide the snake into the pail, being careful not to push the snake too hard or lift it off the ground. Never pin a Massasauga or

use tools that constrict or pinch the snake. Quick, abrupt movements are threatening to the snake and may also cause it to make quick movements in an attempt to escape.



h) Be patient and gentle with the snake. Gravid (pregnant) females are carrying live young, and rough handling may cause damage to the developing snakes.

i) Once the snake is in the pail, slowly tip the pail upright and secure the lid.



j) Snakes can be difficult to capture. If a snake escapes or heads for cover, let it disperse on its own, ensuring it is safe from harm before allowing activities to continue. If allowing activities to continue is not safe for the snake, postpone activities for up

Snakes

to 24 hours to allow the snake to disperse. If it is not possible to leave the area for 24 hours, have a Qualified Member relocate the individual. Do not disturb any natural cover under which the snake has retreated. If necessary, contact MNR for further direction using the SAR Notification/Contact Schedule.

2.4 Capture and handling of non-venomous snakes

a) If you are uncomfortable handling large, non-venomous snakes with your hands, you can use the above method for capturing venomous snakes (section 2.3). However, it is much easier to capture most non-venomous snakes using your hands. Some of the smaller species, such as the Butler's Gartersnake, are almost impossible to capture with a stick and a pail.

b) If you elect to use thick gloves, be very careful not to squeeze the snake too hard, as you can crush internal organs and kill it. Do not use gloves to capture small snakes, as the risk of accidentally crushing them is too high.

c) Clear the area of unnecessary bystanders to lessen the stress on the animal.

d) Determine your plan for capture to anticipate where the snake may move or retreat and to anticipate any potential hazards you may encounter.

e) Never grab the snake behind the head or grip the snake tightly in order to restrain it. This may injure or scare the snake, cause it to struggle and encourage it to bite in self-defence.

f) Always support the snake's body with both hands and never pick up a snake only by the tail. Holding a snake only by the tail can result in dislocated bones or other serious injury to the snake.

g) To capture a large snake (more than 30 centimetres in length):

- I. Gently grab it by the back of the body to prevent it from getting away.



- II. Holding the snake by the back end while it is still on the ground, slide your other hand underneath the snake to support its weight and lift it up. Do not lift it off the ground by the tail.
- III. As soon as the snake is off the ground, continue to support its weight by keeping both hands under the snake, with one hand about a third of the way back and one hand about two thirds of the way back along the snake's body.



Snakes

- IV. As the snake tries to move forward, reposition the hand from the back of the snake to the front of the snake, and continue to rotate your hands between the front and back of the snake to allow it to continue to crawl through your hands. Calm and slow movements will help the snake relax and make it move more slowly.
 - V. Often a snake will stop moving once it no longer feels threatened. If the snake continues to move rapidly after a minute or so, you can try holding the back end of the snake more firmly to prevent it from continuing to move forward. Continue to support the unrestricted front half of the snake with your other hand.
- h) To capture a small snake (less than 30 centimetres in length):
- I. Grasp the snake gently but firmly with one or both hands. It may be necessary to gently restrain it against the ground with your hands initially to prevent it from escaping. Never use a stick, snake hook or any other object to pin a snake.



- II. Hold the back end of the snake in one hand and support the front of the snake with your fingers or your second hand. Allowing the snake's front end to remain free helps the snake remain calm.



- III. For very small snakes, hold the snake in the palm of your hand using your thumb or fingers to gently apply only enough pressure to prevent the snake from wiggling free.
- i) Snakes can be difficult to capture. If a snake escapes or heads for cover, let it disperse on its own, ensuring it is safe from harm before allowing activities to continue. If continuing activities poses a threat to the snake, postpone activities for up to 24 hours to allow the snake to disperse. If it is not possible to leave the area for 24 hours, have a Qualified Member relocate the individual. Do not disturb any natural cover under which the snake has retreated. If necessary, contact MNR for further direction using the SAR Notification/Contact Schedule.

2.5 Moving a snake out of harm's way (distances under 50 metres)

- a) If it is necessary to move a snake more than 50 metres, refer to section 2.7 on snake relocation.
- b) Snakes should only be moved when they are in imminent, unavoidable danger.
- c) If possible, allow the snake to move on its own by walking toward the snake in the direction that you want it to move. If the snake does not move on its own, you will have to pick it up and move it (see section 2.4). Unlike most snake species, Massasaugas may not

Snakes

move away when you walk toward them. Rather, they often adopt a defensive position (coiled), hold their ground and rattle (asking you to go the other way). To encourage a Massasauga to move away on its own, give it lots of space and observe it from a distance (ideally so the snake cannot see you).

d) When moving a snake out of harm's way, such as across a road, move the snake in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas, and if you put them back where they started they will simply turn around and start their journey again. If it is not clear which direction the snake was headed, move it to the closest habitat that will not be disturbed. In this case, suitable habitat includes a rock pile or other cover that the snake can retreat under, or the vegetation at the edge of the road allowance, disturbed area or clearing.

e) If possible, release the snake near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators: loose rocks, logs, rock crevices or dense vegetation) to allow it to take cover upon release. Do not release the snake in the open where it could be exposed to inclement weather, extreme sunlight or predators.

2.6 Temporary safe keeping and transportation of snakes

a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe and at the right temperature.

b) Always use a pail, large garbage can or bucket (at least 1 metre deep) with adequate air holes in the lid for Massasaugas. Ensure the lid is properly secured, and always create the air holes before putting the snake in the container.

c) If using a snake bag:

- I. **Make sure it is properly closed.** To close the snake bag, gather the material at the opening together in one hand and run your other hand down the bag to ensure that the snake is in the bottom. Twist the neck of the bag and tie it into a tight knot. Never rely on a drawstring, as snakes can wiggle out of tight holes. When tying a snake bag, make sure the snake remains in the bottom of the bag so it does not get tangled in the part you are tying.



- II. **Make sure it is in a secure location** where it cannot fall if the snake moves the bag. The movement of a snake within a bag can easily cause the bag to fall off of a table.
- III. If transporting the snake or holding it for a longer time (over an hour), the closed snake bag should be placed in a well-ventilated hard container (such as plastic tub) for added protection.

Snakes

d) It is extremely important to monitor the air temperature regularly in the container or around the snake bag to ensure it **never exceeds 30°C or drops below 5°C**. Never leave the container or snake bag in direct sunlight or in a closed vehicle parked in the sun, as this will cause the snake to overheat and could be fatal.

e) **Never leave the container or snake bag unattended** in an unsecured location (e.g., side of road).

f) Do not offer the snake any food. Snakes do not have to eat as often as mammals, and it is no problem for a snake in temporary captivity to go a few days without food.

2.7 Relocation of snakes

a) A snake should only be relocated if the destruction of its habitat is unavoidable or if it is not possible to release it at the capture location.

b) Snakes should not be relocated during their overwintering season. This varies depending on the species and location, but is generally from October to May. If you are unsure whether you should relocate the snake or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/Contact Schedule.

c) If it is not possible to relocate the snake due to the time of year (October to May) or other conditions, transport the snake to a wildlife custodian per the SAR Notification/Contact Schedule.

d) Transport and release the snake within one hour of capture in order to minimize stress on the animal.

e) **Snakes should never be moved more than 250 metres** from the location where they were found. Only move a snake as far as necessary to avoid potential

harm to the snake, and avoid moving snakes more than 125 metres unless absolutely necessary. If it is not possible to relocate the snake within 250 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.

f) Release the snake in the same type of natural habitat as the capture site. If this is not possible, contact MNR for further direction using the SAR Notification/Contact Schedule.

g) If possible, release the snake near a retreat site (somewhere the animal can seek shelter from the elements and avoid predators: loose rocks, logs, rock crevices or dense vegetation) to allow it to take cover upon release. Do not release the snake in the open where it could be exposed to inclement weather, extreme sunlight or predators.

h) To release the snake from a pail, gently tip the pail onto its side, remove the lid, back away from the pail and allow the snake to leave on its own. If necessary, use the broom to gently guide the snake out of the pail or gently tip the pail on an angle to slide the snake out of the pail.



Snakes

- i) To release a non-venomous snake from a bag, untie the bag, gently tip the bag by holding one of the bottom corners (make sure you are not holding the snake) and gently slide the snake onto the ground.



2.8 Injured snakes

- a) If dealing with an injured Massasauga, ensure compliance with all instructions and safety considerations provided in sections 2.1-2.3.
- b) If the methods of handling snakes that are outlined in section 2.3 or 2.4 are not applicable due to the snake's injuries, use a shovel or other flat object to pick up the snake. Ensure that any injured areas are supported.
- c) Place the snake in a large plastic bin or bucket with a lid that has air holes (the darkness helps to reduce stress to the snake). You can place newspaper in the container to provide cover for the snake and help to reduce its stress. Do not place anything else in the container with the snake or offer it any food.
- d) Thoroughly wash your hands after handling injured snakes.
- e) Immediately transport the snake to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

Snakes

3. Safe Handling Of The Five-lined Skink

3.1 Materials

- a) The following materials are required for the handling, capture, temporary safe keeping and transport of Five-lined Skinks:
- » Small plastic container with a lid that has air holes. Ensure the container and the lid are well marked “live animal”.
 - » Thermometer
 - » SAR Notification/Contact Schedule
 - » SAR Encounter Reporting Form
- b) Equipment must be maintained on each job site.

3.2 Capture and handling of Five-lined Skinks

- a) There is no risk associated with handling Five-lined Skinks. They may bite, but this will not cause any substantial injury – they have small mouths and tiny teeth.
- b) Safely handle, move or capture a Five-lined Skink by following these steps:
- I. Always handle Five-lined Skinks gently and slowly. Rough handling may cause injury or stress to the animal. Skinks can drop their tail as an anti-predator defence and may do so if they feel threatened, even if they are not being held by the tail.
 - II. **Never grab or pick up a Five-lined Skink by the tail.** This may cause the skink to drop its tail (even if you are being gentle) and can be detrimental to the survival of the animal.
 - III. Do not pick up Five-lined Skinks by the body; exerting too much pressure by accident can result in internal injury.

- IV. Capture a skink by cupping your hands over the skink while it is on the ground. (You have to be quick!)
- V. Carefully close your hand(s) around the skink to pick it up. Note that they can fit through small holes between your fingers.
- c) Always wash your hands after handling any wildlife.

3.3 Moving a Five-lined Skink out of harm's way (distances under 25 metres)

- a) If it is necessary to move a skink more than 25 metres, refer to section 3.5 on Five-lined Skink relocation.
- b) Five-lined Skinks should only be moved when they are in imminent, unavoidable danger.
- c) If possible, allow the skink to move on its own by walking toward the skink in the direction that you want it to move. Skinks are fast and tend to hide whenever possible. If the skink continues to seek shelter within the area where work is taking place, it will have to be picked up and moved (see section 3.5).
- d) When moving a skink out of harm's way, such as across a road, move the skink in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas, and if you put them back where they started they will simply turn around and start their journey again. If it is not clear which direction the skink was headed, move the skink to the closest suitable habitat that will not be disturbed. In this case, suitable habitat includes rocks or other cover objects that the skink can retreat under.

Five-lined Skink

e) If possible, release the Five-lined Skink near a retreat site, which is somewhere the animal can seek shelter from the elements and avoid predators (vegetation, rocks, logs or leaf litter). Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.

3.4 Temporary safe keeping and transportation of Five-lined Skinks

a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe, moist and at the right temperature.

b) Keep Five-lined Skinks in a small container with a lid that has air holes. Always create the air holes before putting the skink in the container.

c) Skinks can move very quickly and may try to escape before the lid is on the container. Be careful that the skink does not get crushed when you place the lid on the container.

d) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 30°C or drops below 5°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this will cause the animal to overheat and could be fatal.

f) **Never leave the container unattended** in an unsecured location (e.g., side of road).

3.5 Relocation of Five-lined Skinks

a) A Five-lined Skink should only be relocated if the destruction of its habitat is unavoidable or if it is not possible to release it at the capture location.

b) Transport and release the skink within one hour of capture in order to minimize stress on the animal.

c) Five-lined Skinks should not be relocated during their over-wintering season, which is generally from October to May. If you are unsure whether you should relocate the skink or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/Contact Schedule.

d) If it is not possible to relocate the skink due to the time of year (October to May) or other conditions, transport it to a wildlife custodian per the SAR Notification/Contact Schedule.

e) Five-lined Skinks should never be moved more than 100 metres from the location where they were found. Only move a skink as far as necessary to avoid potential harm to the skink, and avoid moving skinks more than 50 metres unless absolutely necessary. If it is not possible to relocate the animal within 100 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.

f) Always release Five-lined Skinks in the same type of natural habitat as the capture site.

g) If possible, release Five-lined Skinks near a retreat site, which is somewhere the animal can seek shelter from the elements and avoid predators (vegetation, rocks, logs or leaf litter). Do not release them in the open where they could be exposed to inclement weather, extreme sunlight or predators.

h) To release Five-lined Skinks, remove the lid and gently tip the container onto its side and allow the animal to leave on its own. If necessary, gently tip the container on an angle to slide the animal out.

Five-lined Skink

3.6 Injured Five-lined Skinks

- a) Use the methods outlined in section 3.2 to handle injured skinks whenever possible. If those methods are not applicable due to the skink's injuries, use a shovel or other thin, flat object to pick up the skink. Ensure that any injured areas are supported.
- b) Place the Five-lined Skink in a small container with a lid that has air holes. Always create the air holes before putting the skink in the container.
- c) Newspaper or paper towels may be added to the container to give the skink something to hide in. Do not place water, other skinks, food or anything else in the container with the skink.
- d) Thoroughly wash your hands after handling injured skinks.
- e) Immediately transport the skink to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

Five-lined Skink

4. Safe Handling of Amphibians

Important Note: Many amphibian species absorb oxygen through their skin as well as breathing with lungs; some species rely completely on their skin for respiration. If their skin dries out, they can suffocate. Therefore, careful handling of amphibians (especially salamanders) includes ensuring that their skin is kept moist.

4.1 Materials

a) The following materials are required for the handling, capture, temporary safe keeping and transport of amphibians:

- » A pail, bucket or large plastic bin with a lid that has air holes (for frogs). Ensure both the side of the container and the lid are well marked “live animal”.
- » Plastic kitchen-style container lined with paper towel (needs to be wet when used) with a lid that has air holes (for salamanders and toads). Ensure both the side of the container and the lid are well marked “live animal”.
- » Thermometer
- » SAR Notification/Contact Schedule
- » SAR Encounter Reporting Form
- » Net (optional)

b) Equipment must be acquired and maintained on each job site.

4.2 Capture and handling of salamanders, toads and frogs

Note: Eastern Newts have toxins in their skin and some salamanders may release a white, mildly toxic substance from their skin and tail. If ingested, these toxins may cause mild nausea. There is no risk associated with handling Ontario’s amphibians, provided you wash your hands afterwards. Toads will not give you warts.

Safely handle, move or capture a salamander, toad or frog by following these steps:

- a) Always make sure your hands are clean and free of insect repellent, antibacterial hand sanitizer, sunscreen, etc. Amphibians have very wet, porous skin through which they absorb oxygen and other compounds. Harmful chemicals (such as bug repellent) are quickly absorbed through an amphibian’s skin and can cause serious damage to the animal.
- b) If possible, wet your hands before picking up salamanders in order to avoid drying out their skin. Some species rely completely on their skin for respiration. If their skin dries out, they can suffocate and die. You can also ensure dampness is maintained by picking up some wet soil with the salamander.



- c) Keep handling times to a minimum as oil produced by human skin can easily clog amphibian pores, causing suffocation in some species.
- d) Always handle amphibians gently and slowly. Rough handling may cause injury or stress to the animal. Salamanders can drop their tail as an anti-predator defence, and may do so if they feel threatened (even if you are not holding them by the tail).

Amphibians

e) Never grab or pick up a salamander by the tail.

This may cause the salamander to drop its tail (even if you are being gentle) and can be detrimental to the survival of the animal.

f) Capture a **frog or toad** using a net or pick it up with your hands by:



- I. Cupping your hands over the frog or toad while it is on the ground. (You have to be quick!)
- II. Closing your hand(s) to create a “cage” around the animal and picking it up. Note that they are slippery and can fit through small holes between your fingers.
- III. If it is necessary to identify the species after picking it up, carefully allow it to partially crawl out of your hand between your thumb and forefinger and then gently tighten your grip around its back legs (near its waist), holding onto both back legs. Support its front legs with your other hand.



g) Pick up a **salamander or newt** by scooping it up in one or two hands and then closing your hands to create a “cage”. Note that these animals are slippery and can fit through small holes between your fingers.



h) Use a net, container or your hands to catch frog tadpoles or salamander larvae. A net is easiest.

Amphibians

4.3 Moving amphibians out of harm's way (distance under 25 metres)

- a) If it is necessary to move an amphibian more than 25 metres, refer to section 4.5 on amphibian relocation.
- b) Amphibians should only be moved when they are in imminent, unavoidable danger.
- c) Salamanders do not move large distances and will tend to hide whenever possible. If there is the need to move a salamander, you will have to pick it up and move it (refer to section 4.2).
- d) If possible, allow a frog and a toad to move on its own by walking toward it in the direction that you want it to move. If the frog or toad does not move on its own, you will have to pick it up and move it (see section 4.2).
- e) When moving an amphibian out of harm's way, such as across a road, move it in the direction that it was heading, regardless of what the habitat looks like. These animals often make intentional movements to specific areas and if you put them back where they started they will simply turn around and start their journey again. If it is not clear which direction the animal was headed, move it to the closest suitable habitat that will not be disturbed. Suitable habitat includes: any shoreline habitat in the case of frogs; leaf litter, rocks or logs in a vegetated/forested area that the animal can hide under in the case of salamanders; any cover, such as rocks or vegetation, in the case of toads.

4.4 Temporary safe keeping and transportation of amphibians

- a) You are responsible for this animal. Remember, once you have put it in a container, it depends on you to keep it safe, moist and at the right temperature.
- b) Make sure that all containers that will be housing amphibians are thoroughly washed and rinsed and do not contain any soap or chemical residue.
- c) Keep **frogs** in a pail, bucket or large plastic bin with a lid that has adequate air holes. Always create the air holes before putting the animal in the container. Fill the container with less than one inch of water. Frogs should never be fully submerged, or they will drown.
- d) Keep **toads** in a pail, bucket, large plastic bin or plastic kitchen-style container with a lid that has adequate air holes. Always create the air holes before putting the animal in the container. Line the bottom of the container with wet paper towels.



Amphibians

e) Keep **salamanders** in a plastic kitchen-style container with a lid that has adequate air holes. Line the bottom of the container with wet paper towels.



f) Keep **newts and mudpuppies** in a pail, bucket, large plastic bin or plastic kitchen-style container with a lid, and fill the container with water. Replace water twice daily to ensure proper aeration, as these animals breathe through gills (like fish).

g) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 25°C or drops below 5°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this will cause the animal to overheat and could be fatal.

h) **Never leave the container unattended** in an unsecured location (e.g., side of road).

4.5 Relocation of amphibians

a) Amphibians should only be relocated if the destruction of their habitat is unavoidable, or if it is not possible to release the animal at the capture location.

b) Transport and release it within one hour of capture in order to minimize stress on the animal.

c) Amphibians should not be relocated during their over-wintering season. This varies depending on the species and location, but is generally from October to May. If you are unsure whether you should relocate the animal or take it to a wildlife custodian, contact MNR for further direction using the SAR Notification/Contact Schedule.

d) If it is not possible to relocate the animal due to the time of year (October to May) or other conditions, transport it to a wildlife custodian per the SAR Notification/Contact Schedule.

e) **Amphibians should never be moved more than 100 metres** from the location where they were found. Only move the amphibian as far as necessary to avoid potential harm to the amphibian, and avoid moving amphibians more than 50 metres unless absolutely necessary. If it is not possible to relocate the animal within 100 metres of the capture location, contact MNR for further direction using the SAR Notification/Contact Schedule.

f) Release amphibians as close as possible to the capture site.

g) Always release frogs and larvae in the same water body where they were found, or in the same type of natural habitat as the capture site.

Amphibians

- h) Release salamanders and toads in the same type of natural habitat as the capture site.
- i) If possible, release frogs, toads and salamanders near a retreat site, which is somewhere the animal can seek shelter from the elements and avoid predators (vegetation, rocks, logs or leaf litter in the case of salamanders; water or vegetation in the case of frogs). Do not release them in the open where they could be exposed to inclement weather, extreme sunlight or predators.
- j) To release frogs, toads and salamanders, remove the lid and gently tip the container onto its side and allow the animal to leave on its own. If necessary, gently tip the container on an angle to slide the animal out of the container.

4.6 Injured amphibians

- a) Use the methods outlined in section 4.2 to handle injured amphibians whenever possible. If those methods are not applicable due to the animal's injuries, use a shovel or other thin, flat object to pick up the animal. Ensure that any injured areas are supported.
- b) Place the amphibian in a small container with a lid that has air holes and line the bottom of the container with wet paper towels. Always create the air holes before putting the animal in the container.
- c) Newspaper or paper towels may be added to the container to give the amphibian something to hide in. Do not place water, other animals, food or anything else in the container with the individual.
- d) Thoroughly wash your hands after handling injured amphibians.
- e) Immediately transport the injured animal to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase its chances of survival.

Amphibians

5. Safe Handling of Birds

The protocol for handling birds is based on the size of the birds you may encounter.

Small Birds: e.g., Loggerhead Shrike, Prothonotary Warbler, Whip-poor-will

Large Birds: e.g., King Rail, Least Bittern, Peregrine Falcon

5.1 Materials

a) The following materials are required for the handling, capture, temporary safe keeping and transport of birds:

- » Sturdy cardboard box or large plastic bin and lid with air holes. Ensure both sides of the box/container and the lid are well marked with “live animal”.
- » Sheet or blanket large enough to cover a large bird
- » Thick work gloves
- » Safety glasses
- » Thermometer
- » Digital camera (optional)
- » MNR Notification/Contact Schedule
- » SAR Encounter Reporting Form

b) Equipment must be acquired and maintained on each job site.

5.2 Safety considerations

a) Generally, there is little risk associated with handling birds. However, some species can scratch or bite, and work gloves should be worn to help avoid minor injuries. Safety glasses are recommended for larger birds, especially the Least Bittern.

b) Always wash your hands after handling a bird. In addition, cloths, blankets and containers used to hold or transport birds should be washed with soap and water after each use. Discard a cardboard box after using it to hold or transport a bird.

5.3 Capture and handling of birds

a) The first consideration is to determine if the bird needs handling. It may be that the bird is healthy and can fly away. To find out, approach the bird slowly and wave your arms to make it fly or move away. Ensure that the direction in which the bird will fly is clear and free of obstruction. If this occurs (i.e., bird flies away), there is no need to proceed further with trying to catch it. If it doesn't fly and instead crouches down or wobbles, indicating that it can't fly, then it may be injured or a young bird not yet capable of flight.

c) Determine if it is a small or large bird from the list above. If possible, take a picture of the bird so that it can be identified without having to reopen the container.

Birds



d) **Small birds:** Use your bare or gloved hands, or the cloth or blanket, if that is more appropriate. Place your hands or the cloth/blanket over the bird around its body and over its wings to keep it from escaping. Gently pick it up and place it in the cardboard box or the large plastic bin. If it attempts to escape, work it towards a corner and attempt capture again.

e) **Large birds:** Use gloves and safety goggles for protection. Take the cloth or blanket and throw it over the bird to keep it from escaping. Use both hands to clasp the body of the bird through the cloth and gently restrain it. Pick up the bird, including the cloth, and place it all in the cardboard box/plastic bin. Free the bird from the cloth, remove the cloth, and then place the cover on the box.

If the bird jabs or bites at you during capture, use your gloved hand to fend off the attacks. Ensure it does not get close to your eyes if you are not wearing glasses.

f) Always handle birds carefully and gently, yet firmly. Birds may at any time struggle in an attempt to escape.



g) Never pick up a bird by the legs alone. Always support the body by grasping it around the wings.



Birds

5.4 Moving and releasing young birds or recovered birds

a) If the bird is a young bird incapable of long flight, it may be that its parents are nearby. Check around the site where the bird was found for the parents. If you locate parents, the young bird should be moved to a nearby tree, bush or ledge where the parents can attend to it and feed it. The location should be close to the parents and removed from danger. Watch the bird for 15 minutes and see if a parent attends to it.



b) In other cases, the captured bird may recover in the container and begin struggling to escape. In this case, you may wish to try releasing it in a natural habitat near where it was found. Place it in a location where it has shelter from the elements and can avoid predators. Allow it to move into cover. Do not release it in the open where it could be exposed to inclement weather, extreme sunlight or predators.

5.5 Temporary safe keeping and transportation of birds

a) You are responsible for this bird. Remember, once you have put it in a container, it depends on you to keep it safe and at the right temperature.

b) Always create air holes in the sides or lid of the box or container prior to placing the bird in it.



c) Place the box in a sheltered environment, preferably in the dark or semi-dark. This will quiet the bird down and let it rest.

d) Contact one of the MNR staff indicated on the SAR Notification/Contact Schedule. Ask for instructions on how to care for the bird. Send a picture of the bird if necessary.

e) It is extremely important to monitor the air temperature regularly in the container to ensure it **never exceeds 30°C or drops below 15°C**. Never leave the container in direct sunlight or in a closed vehicle parked in the sun, as this could cause the bird to overheat and could be fatal.

- f) Never put more than one bird in a container at a time, especially raptors (Peregrine Falcon).
- g) Once the bird is in the container, ensure that the lid is secure.
- h) **Never leave the container unattended** in an unsecured location (e.g., side of road) or on the edge of a car seat.
- i) Do not offer the bird any food or water unless instructed to do so following consultation with MNR staff on the SAR Notification/Contact Schedule.
- j) Birds should be checked periodically (every hour should suffice). Young birds are especially susceptible to dehydration and must be carefully monitored during transport.

5.6 Evaluation and disposition of captured birds

- a) Contact the MNR staff person listed on the SAR Notification/Contact Schedule immediately. Inform him or her of the capture and holding of the bird and ask for advice on the next steps.
- b) It may be useful to take a picture of the bird for identification purposes. Send the photo to the MNR staff person or another person as requested.
- c) You may be asked by the staff person to take the bird to a wildlife custodian.

5.7 Injured birds

- a) If the bird is injured, immediately request and follow instructions given by the MNR staff person listed on the SAR Notification/Contact Schedule.
- b) If so instructed, immediately transport the bird to a veterinarian or wildlife custodian per the SAR Notification/Contact Schedule, in order to increase the chances of the bird's survival.

6. Reporting Species at Risk Encounters

a) Contact MNR to report the occurrence (including dead animals) within the period of time set out in the permit or agreement, or within 24 hours if not stipulated. Report injured animals to MNR immediately.

b) Complete and submit the SAR Encounter Reporting Form, which includes the following information:

- I. Name of Qualified Member
- II. Contact number of Qualified Member
- III. Date and time of the encounter
- IV. Detailed location of the encounter (with lat-long or UTM coordinates, if possible). To obtain coordinates without a GPS, zoom into the area using Google Maps, right click on the location and select “what’s here?” from the right-click menu. The coordinates (in decimal degrees) will be provided to you in the Google Maps search bar.
- V. Species encountered, with photo documentation, when possible. For assistance with species identification, see MNR’s *Ontario Species at Risk Quick Reference Guide*. Detailed species accounts can be found at **www.ontarionature.org/atlas** or the “Species Guides” at **www.torontozoo.com/AdoptAPond**.
- VI. Action taken

Risk Encounters

7. Handling and Transporting Dead Animals

Dead species at risk that are encountered should be reported to the MNR as soon as possible. It is possible that the Ministry will request that the individual be stored and/or transported to the MNR.

Many researchers are currently studying the genetics of wild populations in Ontario, and genetic materials extracted from dead animals can make a valuable contribution to this research.

Examining a dead animal may provide important information about the cause of death or threats affecting the population.

If the MNR asks to see the species at risk and it is not possible to transport it on the same day it was found, the specimen should be stored in a freezer.

7.1 Materials

a) The following materials must be used for the handling and transport of dead species at risk:



- I. A plastic resealable bag or plastic kitchen-style container with a tight lid with label “dead SAR for transport to MNR”

- II. Permanent, water-resistant marker for labelling the bag or container with additional information, such as the date and location
- III. Latex gloves or thick work gloves that can be washed
- IV. Cooler with cold ice packs, if possible
- V. SAR Notification/Contact Schedule
- VI. SAR Encounter Reporting Form

7.2 Safety Considerations

Always wear gloves or wash your hands after handling any dead animal. Turtles (and many other animals) carry potentially harmful bacteria in their gut. Handling dead, rotting animals may also expose you to bacteria that can make you sick.

Handle a dead *Massasauga* with extreme caution

- I. The snake’s venom is still a serious biohazard even after the snake is dead.
- II. Never handle a dead *Massasauga* with your hands. Use a broom or sticks to place it into a container with a secure lid (not a bag).
- III. Although unlikely, nerves can trigger the *Massasauga*’s bite reflex even after the snake is dead.
- IV. In some situations, it can be very difficult to confirm that a snake is dead. For example, extreme shock can make a snake appear dead for several minutes until it slowly regains its senses. Unless you can confirm that the *Massasauga* is dead, always treat it as though it is alive and never place any part of your body within its potential strike range (approximately half of the snake’s body length).

Dead Animals

7.3 Handling a dead animal

a) Always make sure that an animal is actually dead before handling or capturing it. In some situations, live animals can easily be mistaken for being dead:

- I. Extreme shock can make a reptile or amphibian motionless and appear dead for several minutes until it slowly regains its senses.
- II. Air temperature controls the metabolism, and therefore the activity level, of reptiles and amphibians. If an over-wintering snake or turtle is encountered, it will only be 4 or 5°C and may be so inactive that it will appear dead. Very cold animals in the spring or fall may also be very inactive and appear dead until closely examined.
- III. Eastern Hog-nosed Snakes sometimes play dead as a defensive strategy to deter predators. This display includes rolling onto their back with their mouth gaping open and tongue hanging out, regurgitating food or defecating and emitting a foul smell. It is very difficult to determine if this species is actually dead without manipulating the snake and carefully inspecting it. If you flip the snake onto its belly, it will often roll back over and continue to play dead.

7.4 Temporary storage of dead animals

a) Place the dead animal in a plastic resealable bag or container with a tight lid that will not leak. Always use a thick container with a secure lid for Massasauga rattlesnakes.

b) Do not place anything else in the container with the animal.

c) Label the container with “dead SAR for transport to MNR” as well as the date, location and name of the observer.

d) Place the bag or container in a freezer as soon as possible. If a freezer is not immediately available, place it in a cool place, preferably a cooler with ice packs.

e) If the animal cannot be delivered to MNR on the same day that it was found, place it in a freezer until it can be delivered to MNR.

8 Appendices

Appendix I - Definitions

Species at Risk (SAR) Notification/Contact

Schedule:

A contact list provided by the Ministry of Natural Resources District Office to be used when immediate guidance is required concerning species at risk (SAR) encounters. This list will include Ministry of Natural Resources staff as well as local veterinarians and wildlife custodians.

Species at Risk (SAR) Encounter Reporting Form:

A reporting form provided by Ministry of Natural Resources that must be completed any time that a species at risk (SAR) is encountered.

Qualified Member:

An individual who has received training by, in consultation with, or in a manner approved by Ministry of Natural Resources to capture, handle, move and relocate species at risk (SAR).

Appendices

Appendix II - References

Ontario Ministry of Natural Resources, Parry Sound and Sudbury District. *Draft Turtle and Snake Capture and Relocation Protocol For Hwy 69/400 ESA Authorization Requirements*.
Revised January 19, 2011.

Parks Canada. *The Eastern Massasauga Rattlesnake Stewardship Guide: A Resource and Field Guide for Living with Rattlesnakes in Ontario*, Parks Canada, pp 84.

Karch, Mandy. 2008. *Standard Turtle Handling Practices and Protocols*. Prepared for the Ontario Ministry of Natural Resources and the Ontario Multi-species Turtles At Risk Recovery Team. 2008.

Unless otherwise noted, all photographs are credited to Jason Mortlock.

Appendices

Appendix III - Equipment and Materials Checklist

The following materials must be acquired and maintained on each job site, and are required for the handling, capture, temporary safe keeping and transport of species at risk:

All Species (including for dead animals)

- ☐ Thermometer
- ☐ Plastic resealable bag or plastic kitchen-style container with a tight lid with label “dead SAR for transport to MNR”
- ☐ Permanent, water-resistant marker for labelling bag or container with additional information, such as the date and location
- ☐ Latex gloves or thick work gloves that can be washed
- ☐ SAR Notification/Contact Schedule (from MNR District Office – see Appendix IV)
- ☐ SAR Encounter Reporting Form (See Appendix V)

Additional Materials for Turtles

- ☐ Large plastic bin or bucket and lid with air holes, with both sides of the container and lid marked “live animal”
- ☐ Cloth/burlap bag with both sides marked “live animal”
- ☐ Broom or broom handle with small paint brush roller attached to end

Additional Materials for Snakes

- ☐ Pail, large garbage can or bucket with air holes in the lid, with side of the container and lid marked “live animal”
- ☐ A cloth snake bag (e.g., pillowcase) for non-venomous species only, marked “live animal”

For Massasaugas:

- ☐ Pail, large garbage can or bucket (1 metre deep) with air holes in the lid, with side of the container and lid marked “caution rattlesnake”
- ☐ Broom or broom handle with small paint brush roller holder attached to end

Additional Protective Gear to be Worn When Working in or near Massasauga Habitat

- ☐ High-ankle hiking or rubber boots
- ☐ Thick pants (jeans) or baggy pants
- ☐ Leather work gloves

Additional Material for Skinks

- ☐ Plastic kitchen-style container and lid with air holes, marked “live animal”

Additional Materials for Amphibians (Salamanders, Newts, Mudpuppies, Frogs, Toads)

- ☐ Pail, bucket or large plastic bin with a lid that has air holes (for frogs), both side of container and lid marked “live animal”
- ☐ Plastic kitchen-style container and lid with air holes, marked “live animal”
- ☐ Paper towels (to be moistened and put in plastic kitchen-style container)
- ☐ Net (optional)

Additional Materials for Birds

- ☐ Sturdy cardboard box or large plastic bin and lid with air holes, with both sides of box/container and lid marked “live animal”
- ☐ Sheet or blanket large enough to cover a large bird
- ☐ Safety glasses
- ☐ Digital camera (optional)

Appendices

Appendix IV - SAR Notification/Contact Schedule

Appendices

Appendix V - SAR Encounter Reporting Form

ATTACHMENT B

Species Fact Sheets

Eastern small-footed myotis *Myotis leibii*

Species at Risk status

Listed as **Endangered** under the Endangered Species Act

Habitat

- Roosts on the ground **under rocks**, in **rock crevices**, **talus slopes** and **rock piles**
- Occasionally inhabits buildings
- Hibernates in the entrances of **caves** or **abandoned mines**

Key for identification

Feet are only 7-8 mm long

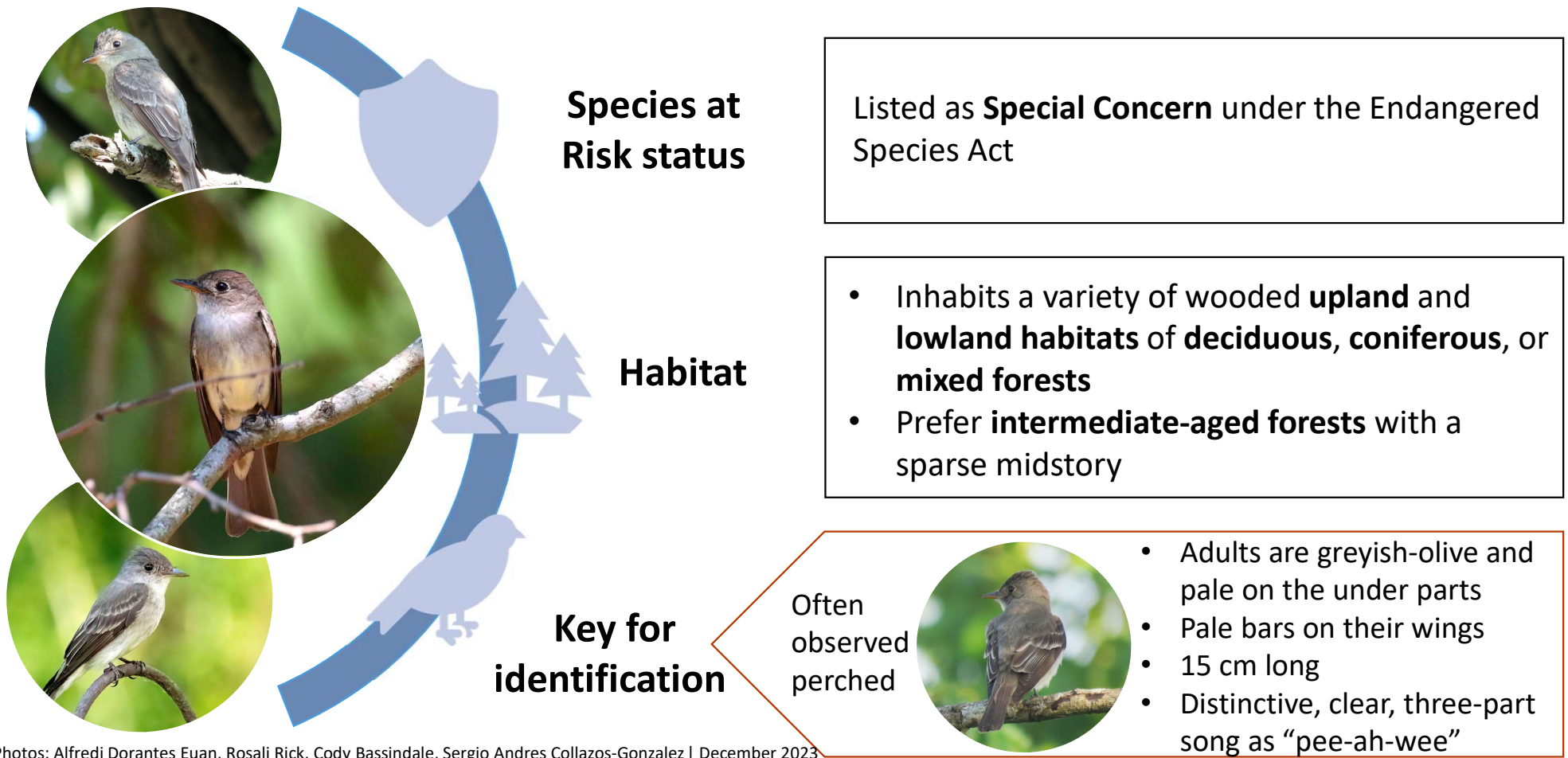
Fur has black roots and shiny light brown tips



- 8 cm long
- Wingspan of 21-25 cm
- Weighs 4-5 grams (about as much as a nickel)



Eastern wood-pewee *Contopus virens*



Photos: Alfredi Dorantes Euan, Rosali Rick, Cody Bassindale, Sergio Andres Collazos-Gonzalez | December 2023

Little brown myotis

Myotis lucifugus

Species at Risk status

Listed as **Endangered** under the Endangered Species Act

Habitat

- Roosts in **large dead canopy trees** in open habitat
- May form nursery colonies in the **attics of buildings** within 1 km of water
- Hibernates in **caves** or **abandoned mines**



Key for identification

tragus is long, thin and rounded at the tip

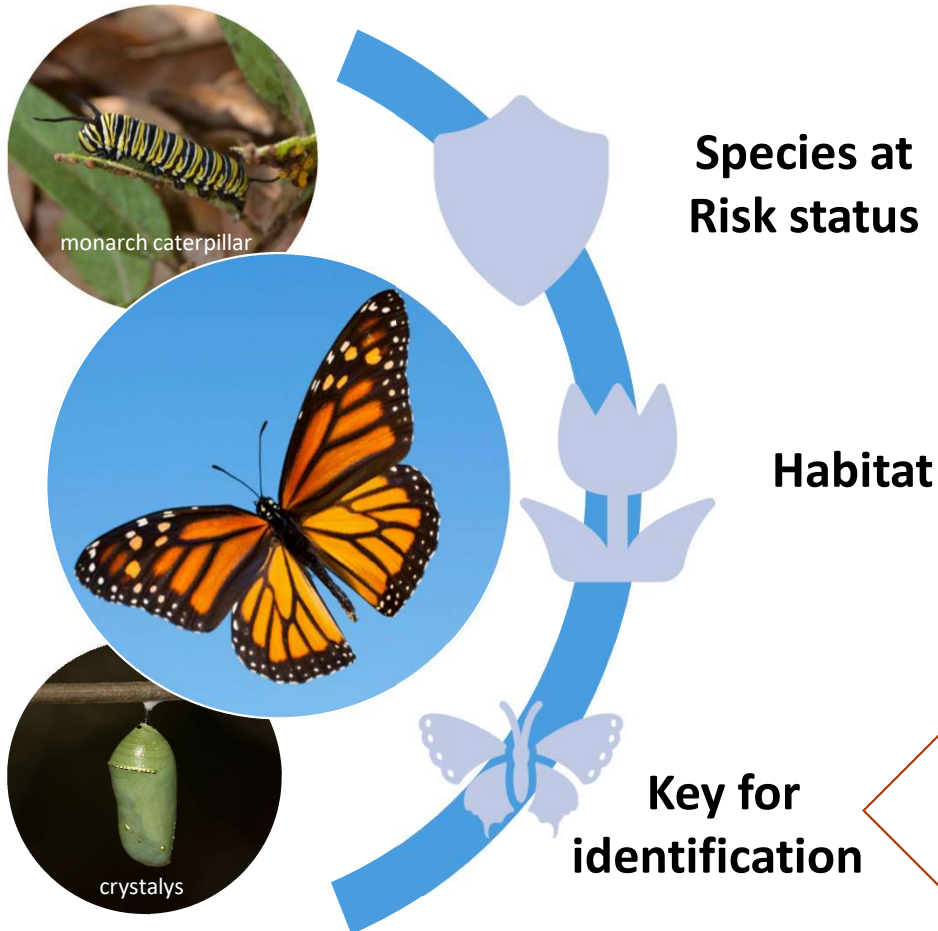


- Glossy brown fur
- 4-5 cm long
- Wingspan of 22-27 cm
- Weighs 4-11 grams (about as much as a Canadian loonie)



Monarch butterfly

Danaus plexippus



Listed as **Special Concern** under the Endangered Species Act

Found wherever there are **milkweed** plants for its caterpillars and **wildflowers** that supply a nectar source for adults



MONARCH vs VICEROY

Heavily spotted

- Large size
- Strong flier, glides



Hindwing has black cross-hand

- Smaller size
- Often found near wetlands

Wood thrush *Hylocichla mustelina*



Species at Risk status

Listed as **Special Concern** under the Endangered Species Act

Habitat

- Breeds in **moist, deciduous hardwood** or **mixed** stands
- Habitats are often previously **disturbed**, with a **dense deciduous undergrowth** with **tall trees**

Key for identification

Forages for food in leaf litter



- Rusty-brown on the upper parts with white under parts
- Large blackish spots on the breast and sides
- Medium-sized songbird
- 20 cm long

ATTACHMENT B

Species Fact Sheets

DRAFT

Eastern small-footed myotis *Myotis leibii*

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- Occasionally inhabits buildings
- Hibernates in the entrances of **caves** or **abandoned mines**

Key for identification

Feet are only 7-8 mm long

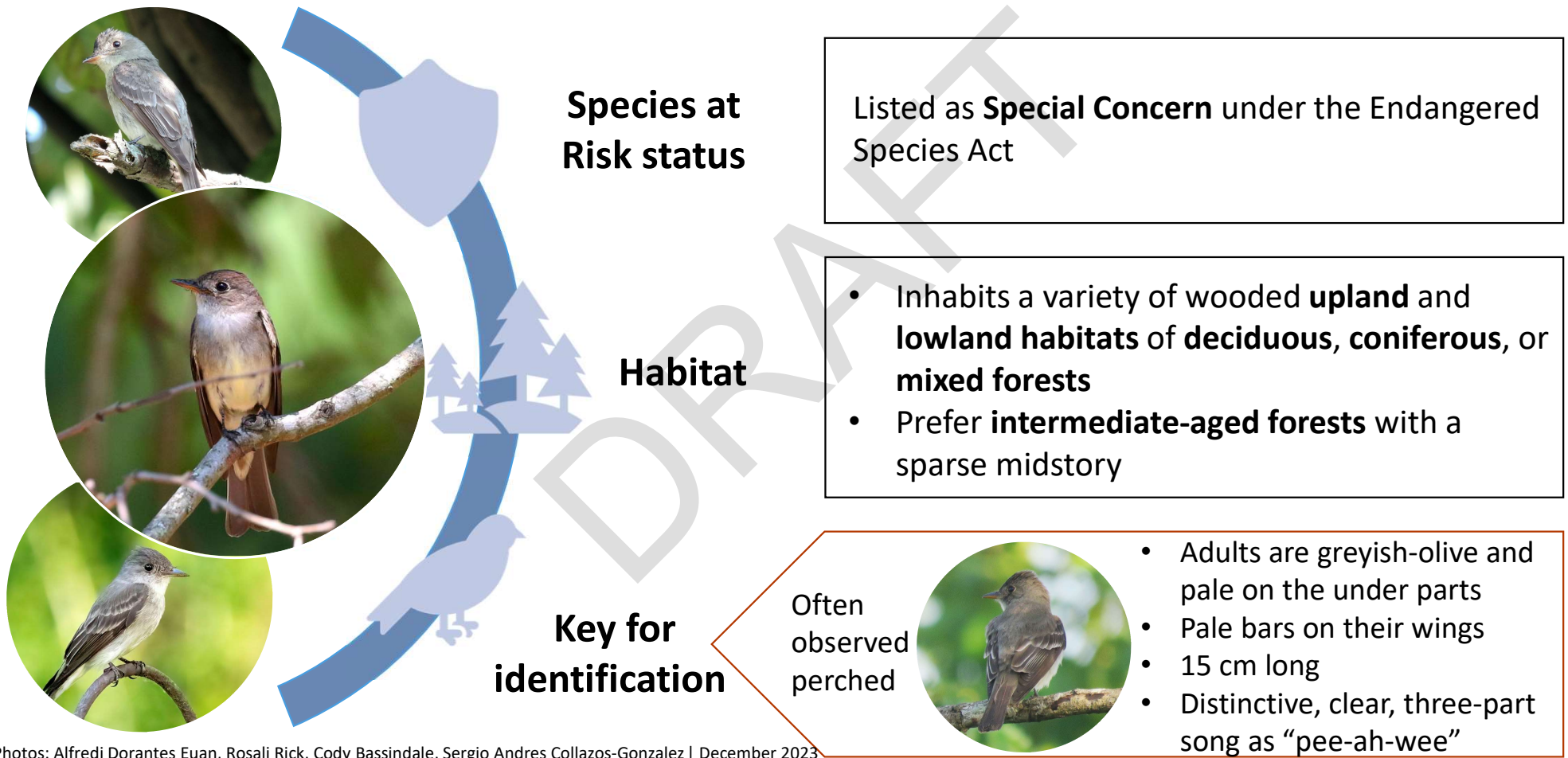
Fur has black roots and shiny light brown tips



- 8 cm long
- Wingspan of 21-25 cm
- Weighs 4-5 grams (about as much as a nickel)



Eastern wood-pewee *Contopus virens*



Photos: Alfredi Dorantes Euan, Rosali Rick, Cody Bassindale, Sergio Andres Collazos-Gonzalez | December 2023

Little brown myotis

Myotis lucifugus

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Key for identification

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- Glossy brown fur
- 4-5 cm long
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- Weighs 4-11 grams (about as much as a Canadian loonie)



Monarch butterfly

Danaus plexippus



Species at Risk status

Listed as **Special Concern** under the Endangered Species Act



Habitat

Found wherever there are **milkweed** plants for its caterpillars and **wildflowers** that supply a nectar source for adults



Key for identification

MONARCH vs VICEROY

Heavily spotted

- Large size
- Strong flier, glides



Hindwing has black cross-hand

- Smaller size
- Often found near wetlands



Wood thrush *Hylocichla mustelina*



Species at Risk status

Listed as **Special Concern** under the Endangered Species Act

Habitat

- Breeds in **moist, deciduous hardwood** or **mixed** stands
- Habitats are often previously **disturbed**, with a **dense deciduous undergrowth** with **tall trees**

Key for identification

Forages for food in leaf litter



- Rusty-brown on the upper parts with white under parts
- Large blackish spots on the breast and sides
- Medium-sized songbird
- 20 cm long



APPENDIX H

Site Inspection Form Template

Township of North Dundas
Boyne Road Landfill Monthly Inspection Form Template

Inspection Date:		Temperature:					
Inspection Time:		Wind Direction:					
Inspected By:		Sky Condition (i.e. sunny, cloudy):					
<p>During inspection each category should be filled in with one of the following: S = Satisfactory, NS = Not Satisfactory, NA = Not Applicable and actions to be taken/completed</p>							
I.	Access Roads	Indicators	Observations	S	NS	NA	Remedial Actions to be Taken
	Internal Roads	mud, ruts, puddles, dust emissions, obstructions, integrity, snow, sanding needed, erosion, litter					
	Drop-off Area	mud, ruts, puddles, dust emissions, obstructions, integrity, snow, sanding needed, erosion, litter					
	External Roads	mud tracking off-site, dust, illegal dumping of wastes at site entrance					
	Signage	visible, condition, requirement of additional signage, accuracy of information provided					
	Snow Removal and Ice	adequacy					
	Gates and Fences	condition					
II.	Attendant's Office	Indicators	Observations	S	NS	NA	Remedial Actions to be Taken
	Computer System	confirm with attendant that it is operating okay					
	Gas Detectors	confirm they are properly calibrated and maintained in working condition					
	Security	locks, doors, windows					
	Vectors and vermin	sightings, damages					
III.	Daily Operations	Indicators	Observations	S	NS	NA	Remedial Actions to be Taken
	Working Face	appropriate size, adequate and controlled access, adequate flagging and signage, scavaging, rodents, safety, traffic flow, dust, cracks, fissures					

Township of North Dundas
Boyne Road Landfill Monthly Inspection Form Template

	Equipment	condition, functioning mufflers, operating hours in compliance with ECA, contain working fire extinguishers					
	Spreading and Compaction	lifts thickness, equipment type, adequacy					
	Adequacy of Waste Cover	thickness, exposed litter, ponding water, properly covered when waste reaches 2 m in height by 10 m in width, or every two weeks, whichever occurs first. Cover material to be placed 1 time per month during the winter months (December through March). Minimum 300 mm of waste cover should be placed when landfilling is suspended by more than 2 months in non-winter months					
	Landfill Side Slopes	vegetative growth, leachate seeps, slumping soils (note location)					
	Final Cover	erosion, settlement, ponding of runoff, development of cracks or fissures, vegetation failure, sparse vegetation, evidence of gas venting					
	Landfill Staffing	staff on-Site (Attendant, Equipment Operator, etc.)					
	Odour	location, strength, description of odour					
	Vectors and Vermin	numbers, sightings, pest occurrences					
	Litter Control	litter in footprint or buffer areas					
	Stockpiles	condition					
	Garbage Bins	bin contains correct materials, no divertable items in bin, bin in good condition, bin serviced frequently enough, litter around bin					
	Metals Bin	bin contains correct materials, bin in good condition, bin serviced frequently enough, no items placed outside of bin					

Township of North Dundas
Boyne Road Landfill Monthly Inspection Form Template

	Waste Electrical and Electronic Equipment (WEEE) Bin	bin contains correct materials, bin in good condition, bin serviced frequently enough, no items placed outside of bin					
	Household Hazardous Waste Area	area contains correct materials, required signs in place, working locks, spills, spill cleanup equipment available					
	Other Diversion Drop Off Areas	areas contain correct materials, areas serviced frequently enough					
	Rubble Stockpile	area contains correct materials, area serviced frequently enough, material piled neatly					
	Wood and Brush Stockpile	area contains correct materials, area serviced frequently enough, is chipping required					
IV.	Stormwater Management	Indicators	Observations	S	NS	NA	Remedial Actions to be Taken
	Ditches	free flowing, obstructions, vegetation, appropriate sedimentation controls					
	Erosion of Landfill and SWM Pond	vegetative coverage, slumping soil (note location)					
	Sediment Management	sediment accumulation, need for straw bales or silt fencing					
	SWM Pond	blockage of the outlet structure, functioning sluice gate valve, sediment accumulation in bottom of pond (clean out once it is more than 150 or 200 mm)					
V.	Landscaping	Indicators	Observations	S	NS	NA	Remedial Actions to be Taken
	Vegetation Cover	grass mowing needed, obstructions by tree branches/dead trees					

APPENDIX I

Complaints Protocol

COMPLAINTS PROTOCOL – BOYNE ROAD LANDFILL SITE

The Township of North Dundas's (landfill owner) website features an online Public Complaint Resolution Policy Form that is applicable to all of the Township's operations and departments. The Township directs complaints regarding Boyne Road Landfill (Site) construction and operations to this form. Informal complaints made in person, by phone, letter, email, or fax are also logged by the Township and forwarded to the appropriate Department Head.

The on-line complaint form includes the following information:

- Name, telephone number, email address, and mailing address of complainant
- Date of complaint
- Details and circumstances of complaint
- Relevant attachments
- Suggestions for how the situation may be improved
- Additional information

The Township will then log the following information in the complaint report:

- Receipt of complaint
- Forwarding of complaint
- Letter acknowledging complaint
- Investigation of complaint and any corrective actions taken
- Final response letter to complainant

Upon notification of the complaint, the Township shall initiate appropriate steps to determine the source contributing to the complaint. The actions taken to resolve the situation will be documented in the Annual Report. Records of the complaint and corrective actions will be retained on-Site. The Township will make recommendations in the records for remedial measures, and managerial or operational changes that can be used to reasonably avoid re-occurrence of similar instances. The Township will provide a summary of the complaint received, the findings of the investigation of the complaint and corrective actions taken (if required) to the District Manager of the MECP Ottawa District Office.

Where the complaint relates to an incident or circumstance that is reportable to the Ministry of Environment, Conservation and Parks (MECP), it will be reported to the Spills Action Centre and/or the Ottawa District, Cornwall Area Office as applicable.

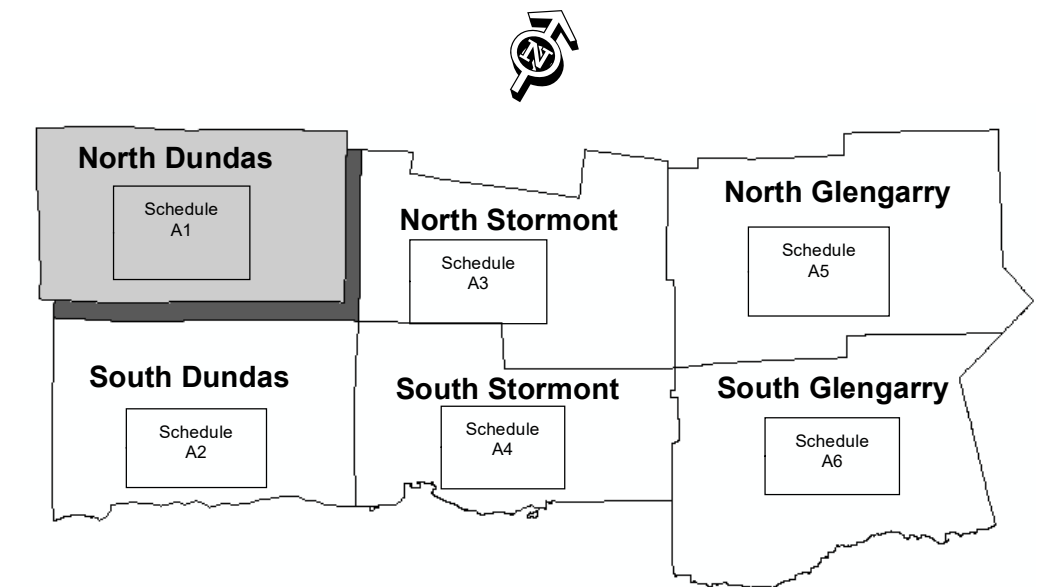


Attachment 3
Zoning Map



LAND USE SCHEDULE A1 Township of North Dundas

KEY PLAN



LEGEND

Boundaries (Land Use Designation)

- Urban Settlement Area
- Rural Settlement Area
- Urban Service Limit

Settlement Areas (Land Use Designation)

- Residential District
- Commercial District
- Employment District
- Rural District
- Airport District
- Salvage Yard District
- Special Land Use District (See Table 9.1.1 of the OP Text)

Natural Heritage Features & Areas (Land Use Designation)

- Provincially Significant Wetland (PSW)

Resource Lands (Land Use Designation)

- Agricultural Resource Lands
- Extractive Resource Lands (Mineral Aggregate Reserve)
- Extractive Resource Lands (Licensed Pit & Quarry)

Transportation and Infrastructure

- Provincial Highway
- County Road
- Township Road
- Road Allowance
- Rail Line
- Oil or Gas Pipeline
- Electric Power Transmission Line
- Township Boundary
- Water Ways
- Airport
- Communal Well
- Sewage Lagoon
- Hospital

MOECC Identified Closed Waste Site (Approximate Location):

- Closed Waste Site

1:50,000



Interim - In effect
Schedules as of September 2018

Boyne Road
Landfill

CITY OF OTTAWA

UNITED COUNTIES OF PRESCOTT & RUSSELL
TOWNSHIP OF RUSSELL

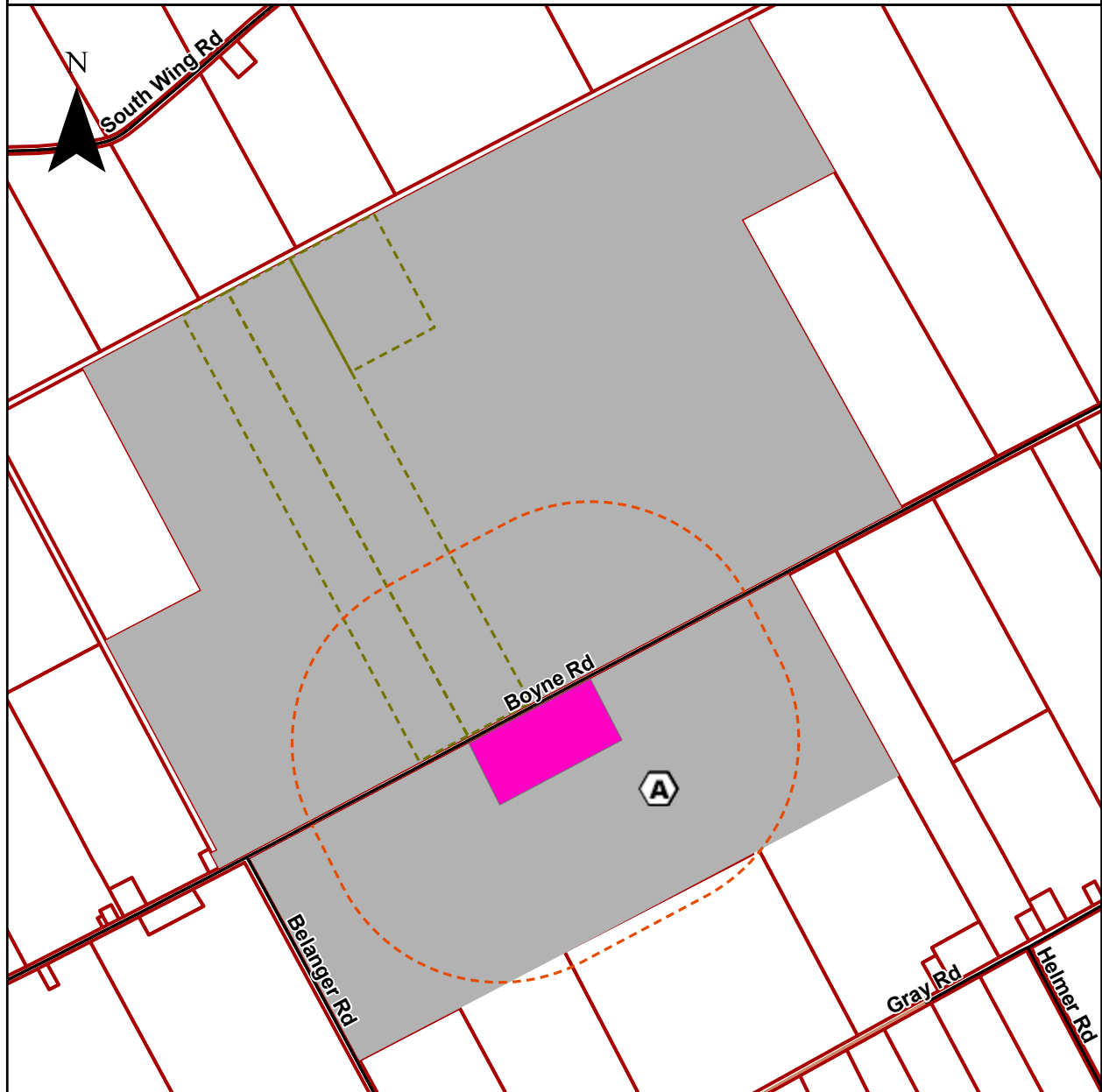
UNITED COUNTIES OF LEEDS & GRENVILLE
TOWNSHIP OF NORTH GRENVILLE

TOWNSHIP OF SOUTH DUNDAS
(SEE SCHEDULE A2)

TOWNSHIP OF NORTH STORMONT
(SEE SCHEDULE A3)

NOT TO SCALE

UNITED COUNTIES OF SD&G OFFICIAL PLAN SCHEDULE "A1" WASTE MANAGEMENT FACILITY



SDG Official Plan

Waste Facility



Active

Waste Influence Area

Waste

Crown Lands

Rural District

Agricultural Resource Lands

Attachment 4
Neighbour Notification

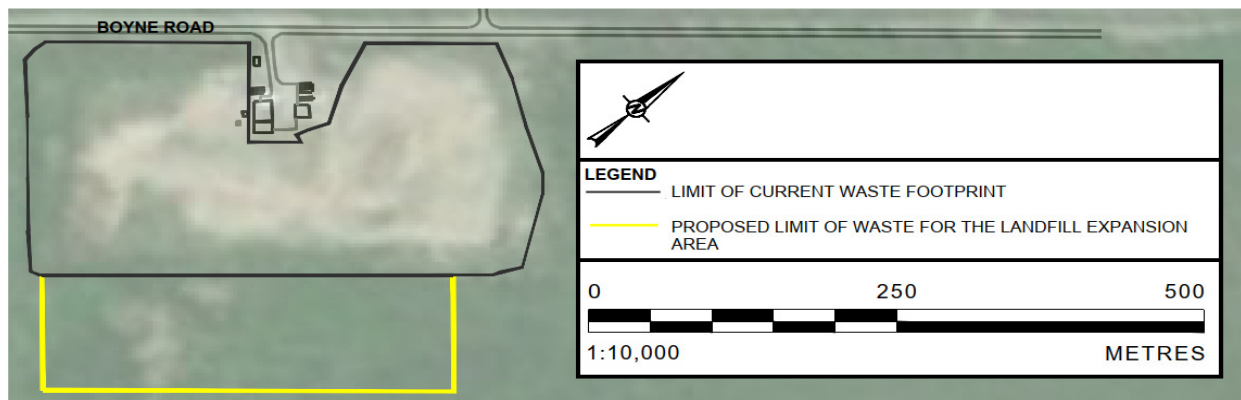


NOTICE OF APPLICATIONS TO THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS

This letter is to inform you that the Township of North Dundas is pursuing an amendment to the existing Environmental Compliance Approval (ECA) No. A482101 under Section 27 of the *Environmental Protection Act* (EPA) for the Boyne Road Landfill, 12620 Boyne Road, Township of North Dundas, Ontario. An application for approval of the proposed stormwater management system has also been submitted under Section 53 of the *Ontario Water Resources Act*.

The purpose of the amendment is to:

1. Expand the landfill horizontally to the south of the existing waste footprint, adding 3.8 hectares to the approved waste footprint, and vertically to provide sufficient capacity for disposal of residual (after diversion) waste to extend the landfill lifespan for a 25-year planning period.
2. Add additional buffer land to the landfill property east and southeast of the current waste footprint.
3. Provide a stormwater management system for the expanded landfill to control the quantity and quality of clean runoff water from the final cover. The proposed stormwater management system includes ditches, berms, culverts, and a wetland pond.
4. Provide improvements for the section of Volks Municipal Drain roadside ditch along the north side of Boyne Road opposite the landfill site frontage using a lined ditch design to isolate and convey surface water past the landfill site from upstream (west) to downstream (east).



This ECA application is on file for public consultation at the local Ministry of the Environment, Conservation and Parks Office in Cornwall.

Ministry of the Environment, Conservation and Parks – Cornwall Area Office
1st Floor, 113 Amelia Street
Cornwall, Ontario, K6H 3P1

If you have any questions regarding this application, please contact:

Danielle Ward
Director of Environmental Services
Township of North Dundas
636 St. Lawrence Street
P.O. Box 489
Winchester, Ontario, K0C 2K0
Phone: 613-774-2105

Written comments can be sent within 15 days of receipt of this Notice to:

Mohsen Keyvani, Director appointed for the purposes of Part II.1 of the EPA
Client Services and Permissions Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, Floor 1
Toronto, Ontario M4V 1P5

First Nations Distribution List for Notification Letter

TITLE	FIRST NAME	LAST NAME	ABORIGINAL GROUP / MEMBERSHIP	ADDRESS	CITY	PROVINCE	POSTAL CODE
			ALGONQUINS OF ONTARIO, CONSULTATION OFFICE	31 RIVERSIDE DRIVE, SUITE 101	PEMBROKE	ON	K8A 8R6
CHIEF	ABRAM	BENEDICT	MOHAWKS OF AKWESASNE	PO BOX 90	AKWESANE	QC	H0M 1A0
			MOHAWKS OF AKWESASNE	C/O PUROLATOR DEPOT, 725 BOUNDARY ROAD.	CORNWALL	ON	K6H 6K8
			MOHAWKS OF AKWESASNE	101 TEWESATENI ROAD	AKWESANE	ON	K6H 0G5
MR.	DOMINIC	STE-MARIE	HURON-WENDAT NATION	255 PLACE CHEF MICHEL LAVEAU	WENDAKE	QC	G0A 4V0

Neighbour Distribution List for Notification Letter

FIRST NAME	LAST NAME	ADDRESS	CITY	PROVINCE	POSTAL CODE
NORMAN JOHN	BACKES	12751 GRAY RD RR 3	CHESTERVILLE	ON	K0C1H0
HARVEY EDWARD JAMES & SHAROL	BOWMAN	12505 BOYNE RD RR 3	CHESTERVILLE	ON	K0C1H0
ERIC & MARIET	BRETELER	12934 BOYNE RD RR 3	CHESTERVILLE	ON	K0C1H0
MARC FRANCIS	CORMIER	12714 GRAY RD RR 3	CHESTERVILLE	ON	K0C1H0
DEREK JAMES & DANITA ANNE	HARPER	12491 BOYNE RD	WINCHESTER	ON	K0C2K0
WILLIAM THOMAS & CHERYL ANN	HARVEY	12721 GRAY RD RR 3	CHESTERVILLE	ON	K0C1H0
SHELLEY MARIE	HELMER	12791 GRAY RD	CHESTERVILLE	ON	K0C1H0
WILLIAM JOHN	HOLMES	12421 BOYNE RD RR 4	WINCHESTER	ON	K0C2K0
KAREN ANNE	HOLMES	12464 BOYNE RD RR 4	WINCHESTER	ON	K0C2K0
TYLER	HOY	10985 KERRS RIDGE ROAD	MOUNTAIN	ON	K0E1S0
BLAIR DERBY	HUTCHINSON	12545 MAPLE RIDGE RD	WINCHESTER	ON	K0C2K0
DONALD GORDON	IMRIE	12675 MAPLE RIDGE RD RR 4	WINCHESTER	ON	K0C2K0
ROBERT JOHN & BRENDA MARIE	JARVIS	12741 GRAY RD RR 3	CHESTERVILLE	ON	K0C1H0
THEODORE FRANCIS & BRENDA DIANE	MEAD	494 WINCHESTER VICTORIA ST PO BOX 843	WINCHESTER	ON	K0C2K0
KRYSTAL LYNN	MULLIGAN	12495 BOYNE RD	WINCHESTER	ON	K0C2K0
GORDON ARRINGTON & MARY ANN	STEWART	12440 COUNTY RD 3 RD RR 2	WINCHESTER	ON	K0C2K0
JOHN	TESSIER	12686 GRAY RD	CHESTERVILLE	ON	K0C1H0
JUDY & LEO ANGUS	TESSIER	12445 COUNTY RD 3 RD RR 2	WINCHESTER	ON	K0C2K0
STEPHANE ATHANASE & JOCELYNE	THURLER	12386 BOYNE RD RR 4	WINCHESTER	ON	K0C2K0
STEVEN	WHITE	12764 BOYNE RD RR 3	CHESTERVILLE	ON	K0C1H0
MICHAEL ROWLAND & MARIE MICHELLE LECLERC		273 500 RTE	RUSSELL	ON	K4R1E5
CAYER FARMS INC		12731 GRAY RD	CHESTERVILLE	ON	K0C1H0
MATHIJS THOMAS CHRISTIAN BRETELER & E & M BRETELER FARMS LTD		12934 BOYNE RD	CHESTERVILLE	ON	K0C1H0
MINISTRY NATURAL RESOURCES		C/O LAND MANAGEMENT SECTION 300 WATER ST PO BOX 7000 STN MAIN	PETERBOROUGH	ON	K9J8M5
MINISTRY NATURAL RESOURCES		C/O LAND MANAGEMENT SECTION 300 WATER ST PO BOX 7000 STN MAIN	PETERBOROUGH	ON	K9J8M5
JENNA LYNN PLOWMAN & CARTER ALEXANDER POULIN		12485 BOYNE RD	WINCHESTER	ON	K0C2K0
DERBYDALE FARMS INC		12545 MAPLE RIDGE RD	WINCHESTER	ON	K0C2K0
1737814 ONTARIO INC		2740 HARBISON RD	RICHMOND	ON	K0A2Z0
WOUTERS POULTRY FARM LTD		11082 VANCAMP RD RR 3	WINCHESTER	ON	K0C1H0

Attachment 5
MNR LUP



Thursday, August 29, 2024

KEKI-2024-PLA-00103-LUP-001

Township of North Dundas
636 St. Lawrence St PO Box 489
Winchester, ON
K0C 2K0
CANADA

Dear Permittee

Re: New Land Use Permit Keki-2024-PLA-00103-LUP-001

The Ministry Natural Resources and Forestry (the Ministry) is writing to inform you that a review has been completed for the issuance of a new Land Use Permit (LUP) located in WINCHESTER.

Attached to this email, you will find the new Land Use Permit (LUP). The Ministry is modernizing its LUP process to make application, issuance, and payment quicker and easier. This new process can be done entirely online. However, if you do not want to communicate by email, please reach out to the Ministry using the contact information below and request to communicate through regular mail.

Please carefully review the terms and conditions of the new LUP. Also carefully review the fee chart below which summarizes the amount you will be charged for the issuance of the new LUP.

To let the Ministry know whether or not you wish to validate this new LUP, **please 'Reply All' to this email within 30 days. Note that the attached permit will not be valid until the Ministry has received and processed the initial payment.** The process for making this initial payment is outlined below.

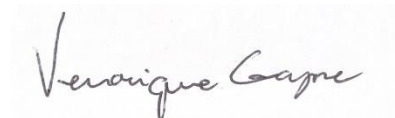
Once you have indicated that you would like to validate the new LUP you will receive an invoice from Ontario Shared Services by regular mail for the initial payment of the LUP. Please see the summary of the amount you will be charged below. The initial payment due for your LUP will be \$ 1629.16 and an administrative fee of \$ 183.51 is required for the first year. This amount includes the fee charged for the first year of occupation.

For every following year up until your new LUP expires, the annual fee will be the amount shown on the new LUP. You will receive a yearly invoice from Ontario Shared Services for this amount.

If you have any questions about the process, or the terms and conditions of your expiring or new LUP, please contact Aspen Zeppa at the Kemptville-Kingston District office at 613-302-5029 or aspen.zeppa@ontario.ca. If there are any changes to your personal information (e.g. billing address, name), please notify this District office.

In order for us to serve you better, please call ahead to make an appointment.

Sincerely,



Ministry of Natural Resources
Resources Clerk
Tel: 613-302-4370
Veronique.gagne@ontario.ca

Encl.

Summary of Fees:

Fee Type	Fee	HST	Total
Initial Administration Fee	183.51	23.86	207.37
Annual Administration Fee	0.00	0.00	0.00
Lands Fee	1629.16	211.79	1840.95
Annual Fee (includes Annual Admin Fee and Lands Fee as applicable)	1629.16	211.79	1840.95
Total Amount Due on Issuance (includes Initial Admin Fee, Annual Admin Fee and Lands Fee as applicable)	1812.67	235.65	2048.32

This Land Use Permit is issued under the authority of the Public Lands Act and its regulations, and is subject to the limitations and provisions thereof, and to the terms and conditions set forth herein.

PERMITTEE

This Land Use Permit is issued to:

Township of North Dundas

Phone Number of the Permittee:

613-774-2105

Post Office Address of Permittee:

636 St. Lawrence St PO Box 489

Winchester, ON

K0C 2K0

CANADA

Email Address of Permittee:

dward@northdundas.com

PERMITTED PURPOSE

This Land Use Permit authorizes the holder for:
Waste Disposal Site
Other

DESCRIBED LANDS

This Land Use Permit applies to the following location(s):
Part Lot 8 Concession 7, Winchester Twp, Boyne Rd, Winchester, ON
Area: 49.21 HA
ARN:

As per the sketch and description which is attached hereto. A copy of this sketch and description is on file with the Ministry and available for inspection at any time during normal business hours. If there is any inconsistency between the two sketches and descriptions, the sketch and description on file with the Ministry shall prevail.

PERMIT EFFECTIVE DATE:

September 1, 2024

PERMIT EXPIRY DATE:

August 31, 2029

Summary of Fees

Fee Type	Fee	HST	Total
Initial Administration Fee	183.51	23.86	207.37
Annual Administration Fee	0.00	0.00	0.00
Lands Fee	1629.16	211.79	1840.95
Annual Fee (includes Annual Admin Fee and Lands Fee as applicable)	1629.16	211.79	1840.95
Total Amount Due on Issuance (includes Initial Admin Fee, Annual Admin Fee and Lands Fee as applicable)	1812.67	235.65	2048.32

This Land Use Permit is subject to additional restrictions as set out in the terms and conditions attached.

The issuance of this Land Use Permit does not relieve the Permittee from the responsibility of acquiring any other approvals as may be required by law, nor does it relieve the Permittee from any other legal requirements, whether under the Public Lands Act and its regulations or otherwise.

Conditions Attached: Yes

Number of Schedules:

This Land Use Permit is subject to the following terms and conditions:

SECTION 1 – EFFECT OF THIS LAND USE PERMIT

1. This Land Use Permit gives the Permittee the non-exclusive right to occupy the Described Lands only. The Described Lands may be used only for the Permitted Purpose specified in this Land Use Permit and no other purpose.
2. Unless otherwise specified at any time by the Ministry, when this Land Use Permit becomes valid, any abandoned buildings or things located on the Described Lands are transferred to and become the property of the Permittee.
3. This Land Use Permit may not be assigned, transferred, mortgaged, or pledged. Sublicenses or any other sharing of occupancy is prohibited. If the Permittee is a corporation and undergoes a change of control, the Permittee shall immediately disclose the change of control in writing to the Ministry. The Permittee shall comply with any terms and conditions subsequently prescribed by the Ministry resulting from the disclosure, up to and including termination of this Land Use Permit. If this Land Use Permit is terminated, the Permittee shall not be entitled to a refund of any fees paid by the Permittee.

For the purposes of this Land Use Permit, “change of control” shall mean the occurrence of any of the following events: (i) an acquisition of the Permittee by another entity by means of any transaction or series of related transactions (including, without limitation, any reorganization, merger or consolidation but excluding any merger effected exclusively for the purpose of changing the domicile of the Company), or (ii) a sale of all or substantially all of the assets of the Permittee (collectively, a “Merger”), so long as in either case the Permittee’s stockholders of record immediately prior to such Merger will, immediately after such Merger, hold less than fifty percent (50%) of the voting power of the surviving or acquiring entity.

4. The Permittee shall notify the Ministry prior to any proposed sale or transfer of the improvements owned by the Permittee and located on the Described Lands. The Permittee is required to advise any purchaser or transferee that they are not being assigned this Land Use Permit, have no authority to use the Described lands, and that the sale or transfer of such improvements shall not entitle the new owner to the issuance of a new land use permit.
5. This Land Use Permit and all rights of the Permittee shall automatically terminate on the earlier of:
 - a) the expiry date;
 - b) the death, bankruptcy, or insolvency of the Permittee;
 - c) if the Permittee is a corporation, on the winding up or dissolution of the Permittee.

The Permittee shall not be entitled to a refund of any fees paid by the Permittee in the event of early termination in such circumstances.

6. Without limiting the Ministry’s other rights in this Land Use Permit or at law, the Ministry may terminate this Land Use Permit upon 15 days’ notice to the Permittee or such longer period as may be provided by an authorized Ministry representative in their sole discretion, where:
 - a) the Permittee has failed to comply with any of the terms and conditions of this Land Use Permit and such failure is not rectified within the notice period provided by the Ministry; or
 - b) the Ministry considers it to be in the public interest to do so;

provided that where there are less than 15 days remaining in the term of this Land Use Permit, then the Ministry may terminate this Land Use Permit immediately on notice to the Permittee. The Permittee shall not be entitled to a refund of any fees paid by the Permittee.

7. “Public interest” includes, without limitation, the settlement of a land claim or implementation of an agreement involving Ontario and an Indigenous community.
8. The Permittee acknowledges and agrees that:
 - a) upon expiry or earlier termination of this Land Use Permit, the decision to issue a new land use permit is at the sole discretion of the authorized Ministry representative, and the Permittee has no right to, nor is entitled to, the issuance of a new land use permit based on prior use of the Described Lands;

- b) the issuance of any land use permit or permits for the use of the Described Lands will not create any interests or future rights whatsoever in the Described Lands;
 - c) the making of any improvements to or on the Described Lands (whether or not permitted by the Ministry) does not confer upon the Permittee any right to use the Described Lands other than within the terms of this Land Use Permit, nor does it give the Permittee any right to any future land use permits;
 - d) there are no other representations, warranties, or conditions between the Crown and the Permittee, regarding the use of the Described Lands;
 - e) this Land Use Permit does not convey any right, title, or interest in the Described Lands and is a Land Use Permit only;
 - f) this Land Use Permit does not convey any right, title, or interest in any trees standing, growing, or being on the Described Lands, or in any minerals, sand, gravel, or similar materials, in, on, or under the Described Lands. Use of any such materials, unless specifically authorized herein, requires separate written authorization from an authorized Ministry representative.
9. The Permittee's obligations set forth in Conditions 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, and 24 of this Land Use Permit shall survive the expiry or earlier termination of this Land Use Permit.

SECTION 2 – “AS IS WHERE IS”, INDEMNITY, AND RELEASE

10. The Permittee accepts the Described Lands in an 'as is, where is' condition and acknowledges that the Ministry has made no warranties or representations as to the suitability of the Described Lands for the Permitted Purpose, including access to the Described Lands and quality of that access, and that it is the sole responsibility of the Permittee to satisfy itself regarding the suitability of the lands for the Permitted Purpose.
11. No cause of action arises, no proceeding may be brought and no remedy is available or damages, costs, or compensation payable in connection with any injury, loss, expense, or costs incurred or suffered by the Permittee as a result, directly or indirectly, of any acts or omissions by any person or party (including, without limitation, any acts or omissions of the Crown or those for whom it is responsible at law), that disrupt, stop, or otherwise interfere with the Permittee's ability to access, occupy, or use the Described Lands, howsoever occurring.
12. The Permittee shall indemnify, defend, save, and keep harmless the Crown, its officers, employees, elected officials, servants, and agents from and against any and all claims, demands, suits, actions, damages, losses, costs, or expenses arising out of any injury to persons (including death) and loss or damage to property, which may be or be alleged to be caused by or suffered as a result of or in any manner associated with: (a) the exercise of any right or privilege granted to the Permittee by this Land Use Permit; and (b) any act or omission of the Permittee or its invitees related to the use of the Described Lands.

SECTION 3 – RESPONSIBILITIES OF THE PERMITTEE

13. The Permittee shall pay the Total Amount Due on Issuance upon 30 days of receiving this Land Use Permit, and thereafter shall pay the Annual Fee no later than each anniversary of the commencement of the term. The Land Use Permit is not valid until the Total Amount Due on Issuance has been received. Land Use Permit Annual Fees are not refundable.
14. The Permittee shall at all times comply with all applicable laws, regulations, by-laws, government orders, and directions in its use of the Described Lands.
15. The Permittee shall be solely responsible for obtaining any other necessary permits, licenses, and approvals relating to the use of the Described Lands by the Permittee for the Permitted Purpose.
16. The Permittee may not affix any building, structure, or works, on the Described Lands (including posting any signs or notices), nor make any alteration, renovation, enlargement, reconstruction, or other improvement to the Described Lands without the written approval of an authorized Ministry representative, except as otherwise expressly permitted in this Land Use Permit.
17. The Permittee shall maintain the Described Lands in a clean, sanitary, and safe condition, in accordance with any applicable legislation, regulations, by-laws, government orders and directions. Without limiting the generality of the foregoing, the Permittee is an occupier for the purposes of the Occupier's Liability Act and shall take such care as in all circumstances is reasonable to see that persons entering on the Described Lands, and the property brought on the Described Lands by these persons, are reasonably safe while on the Described Lands.

18. The Permittee shall not allow waste, garbage, or other objectionable material to collect on the Described Lands.
19. The Permittee shall not bring any hazardous substances or other contaminants onto the Described Lands without the approval of an authorized Ministry representative. The Permittee may bring retail purchased consumer products such as cleaning supplies, fuel, and lubricants for motor powered vehicles or vessels, and lawn and garden care products, that, in each case, are necessary for and used in the ordinary course of the Permittee's use of the Described Lands for the Permitted Purpose, without prior approval of the Ministry. All such products must be used, stored, and disposed of in accordance with their Material Safety Data Sheet or as specified in the instructions provided on their labels. The Ministry may impose conditions on any such approval. In the event that the Described Lands are contaminated by any act or omission of the Permittee or its invitees, the Permittee shall immediately notify the Ministry and shall undertake all necessary remediation of the Described Lands to contain and remove such contamination, at its sole cost and expense. If the Permittee fails to undertake such remediation or to diligently complete such remediation, the Ministry may undertake such remediation on the Permittee's behalf, and the cost of doing so is a debt due the Crown by the Permittee and may be recovered by the Ministry.
20. The Permittee shall deliver to the Ministry a completed occupier's self-reporting form with accompanying photographs upon request of the Ministry, depicting the state of the Described Lands.
21. The Ministry may inspect the Described Lands at any time for the purpose of ascertaining compliance with the conditions of this Land Use Permit. The Ministry may issue a notice of repair and maintenance to the Permittee. The Permittee shall immediately undertake all repairs and maintenance outlined in such notice. If the Permittee fails to undertake such repairs and maintenance or to diligently complete such repairs and maintenance, the Ministry may undertake such repairs and maintenance on the Permittee's behalf, and the cost of doing so is a debt due the Crown by the Permittee and may be recovered by the Ministry.
22. The Permittee shall be responsible for prompt payment of all real property and other taxes that may be levied against the Described Lands and the Permittee's use thereof (including payments that may be made by the Crown in lieu of such taxes).
23. The Permittee shall be responsible for all utilities consumed by the Permittee on the Described Lands and shall pay the cost of such utilities to the Ministry or directly to the applicable utility company, as the Ministry may direct.
24. Upon the date when the Permittee has no further right to occupy the Described Lands, the Permittee shall remove all improvements, personal property, or other assets of the Permittee on the Described Lands including any signs or notices posted by the Permittee, at its sole cost and expense. The Permittee shall leave the Described Lands in a clean and safe condition, restored to its original state prior to the use of the Described Lands by the Permittee. The Permittee shall also promptly deliver to the Ministry a completed occupier's self-reporting form and accompanying photographs of the Described Lands evidencing the completion of such obligations. Any improvements, property or assets remaining on the Described Lands following expiry or termination of this Land Use Permit may be disposed of by the Ministry at the expense of the Permittee or, at the option of the Ministry, may be retained by the Ministry as the property of the Crown without compensation to the Permittee. If the Permittee fails to leave the Described Lands in a clean and safe condition, restored to its original state, the Ministry may undertake such work as is necessary to restore the lands to the required condition, and the cost of doing so is a debt due the Crown by the Permittee and may be recovered by the Ministry.
25. The Permittee shall keep a copy of this Land Use Permit available at all times while on the Described Lands and shall produce it on demand to any Ministry official.

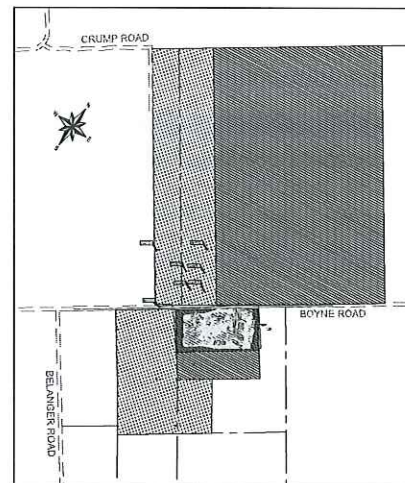
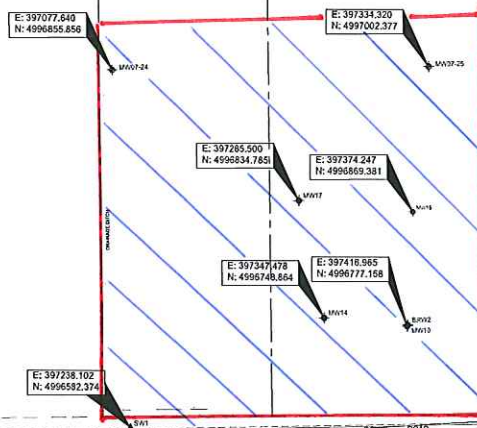
MINISTRY OF NATURAL RESOURCES


boxSIGN 4QYPLY8-1XXKVXL5

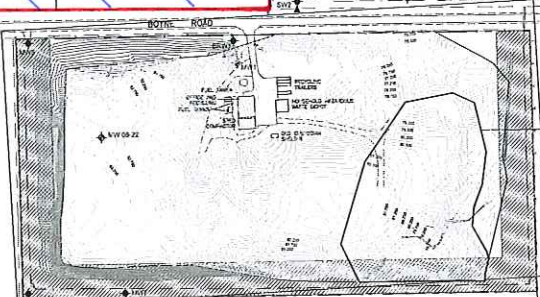
Name:

Title:

Under Delegated Authority



OVERALL SITE PLAN
SCALE: 1:12,500



LEGEND

- ◆ APPROXIMATE BOREHOLE LOCATION IN PLAN, CURRENT INVESTIGATION BY GOLDBERG ASSOCIATES LTD.
- ◆ APPROXIMATE BOREHOLE LOCATION IN PLAN, PREVIOUS INVESTIGATION BY OTHERS
- ▲ APPROXIMATE SURFACE WATER SAMPLE LOCATION IN PLAN, PREVIOUS INVESTIGATION BY OTHERS
- APPROXIMATE CURRENT BOUNDARY OF LANDFILL SITE
- APPROXIMATE BOUNDARY OF CURRENT CONTAMINANT ATTENUATION ZONE
- ▨ APPROXIMATE LOCATION OF BUFFER ZONE
- APPROXIMATE LOCATION OF PERIMETER DRAIN
- FENCE
- GROUND SURFACE CONTOUR (m), JUNE 4, 2008 AND DECEMBER 2009
- ▨ APPROXIMATE BOUNDARIES OF PROPERTIES/EASEMENTS THE TOWNSHIP INTENDS TO ACQUIRE
- ▨ APPROXIMATE BOUNDARY OF PROPERTY CURRENTLY OWNED BY THE TOWNSHIP

REFERENCE

BASE PLAN SUPPLIED IN ELECTRONIC FORMAT BY STANTEC CONSULTING LTD.

NOTE:

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING GOLDBERG ASSOCIATES LTD. REPORT No. 06-1122-127 Phase 07-6501 PROJECT IS IN GEO COORDINATE MTM NAD83.

DRAFT



FIGURE 2

PROJECT No.	06-1122-127
FILE No.	061122-127-127
DATE	15/09/12
DESIGN	J.M.
CHECK	J.M.
INCH	1/4"
SCALE	1:12,500

SITE PLAN

BOYNE ROAD LANDFILL
TOWNSHIP OF
NORTH DUNDAS

REV	DATE	DESCRIPTION	BY	CHK	APP
1	Feb. 2010	S.R. 2009 LANDFILL GROUNDWATER UPDATE	A.B.	M.W.C.	
2	Mar. 2009	J.L.R. 2008 LANDFILL GROUNDWATER UPDATE	J.E.M.	M.L.R.T.	P.A.S.
3	Dec. 2008	REVISION DESCRIPTION	CAD	CHK	RW

