WASTE MANAGEMENT OF CANADA CORPORATION

RICHMOND SANITARY LANDFILL SITE, MONITORING REPORT NO. 35

PART OF LOTS 1, 2 AND 3, CONCESSION IV, TOWN OF GREATER NAPANEE, COUNTY OF LENNOX AND ADDINGTON

MARCH 29, 2022

RICHMOND SANITARY LANDFILL SITE, MONITORING REPORT NO. 35

PART OF LOTS 1, 2 AND 3, CONCESSION IV, TOWN OF GREATER NAPANEE, COUNTY OF LENNOX AND ADDINGTON

WASTE MANAGEMENT OF CANADA CORPORATION

PROJECT NO.: 081-12459-03 (8570)
DATE: MARCH 29, 2022

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March 29, 2022

WASTE MANAGEMENT OF CANADA CORPORATION
1271 Beechwood Road
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Attention: Mr. Noah Wayt, District Manager, ELMG, Midwest

Dear Mr. Wayt:

Subject: Waste Management of Canada Corporation - Richmond Landfill Site Annual Monitoring Report #35

We are pleased to provide Monitoring Report #35 in accordance with the conditions of Environmental Compliance Approval No. A371203 (issued July 14, 2017 and March 19, 2021, respectively), and Environmental Compliance Approval No. 1688-8HZNJG.

Two (2) hard copies of this report have been provided to the District Manager and Senior Environmental Officer for the Ministry of the Environment, Conservation and Parks – Kingston District Office. Additional hard copies and electronic copies have been provided to the stakeholders as described in Condition 14.2 of ECA No. A371203. We have provided an electronic copy of this document to you and to Jim Forney and Chad Moose. If you require additional copies, please let us know.

We trust the enclosed is satisfactory. However, if you have any additional questions, please do not hesitate to contact the writer.

Yours truly,

Cristina Olarte, P.Eng., EP
Waste Management Engineer

CO/BDM/bdm
Encl.

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Date

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A-2 AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL (WASTE DISPOSAL SITE) NO. A371203, DATED JULY 14, 2017 (CONSOLIDATION OF JANUARY 9, 2012 ECA AND 2012 TO 2016 AMENDMENTS, REVISION OF CONDITION 8.5, ADDITION OF ITEMS 66 AND 67 TO SCHEDULE “A”, AND MINOR CORRECTIONS AND REVISIONS TO VARIOUS CONDITIONS, SCHEDULE “A” ITEMS, AND REASONS FOR CONDITIONS)

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1 INTRODUCTION

Waste Management of Canada Corporation's (WM) Richmond Landfill site is located within Part of Lots 1, 2, and 3, Concession IV, Former Township of Richmond, now the Town of Greater Napanee. The landfill site consists of a 16.2 hectare waste disposal landfill site within a total site area of 138 hectares and operates under Environmental Compliance Approval (ECA) (formerly Certificate of Approval) (Waste) No. A371203, including amendments. The Richmond Landfill ceased to accept waste for final disposal on June 30, 2011.

This monitoring report for the Richmond Landfill complies with conditions listed in current ECA No. A371203, issued March 19, 2021. It is noted the former version of ECA No. A371203 (issued July 14, 2017) was valid during the period of January 1, 2021 through March 18, 2021. As such, this report will refer to the former ECA and the current ECA. The report also complies with conditions listed in ECA (Industrial Sewage Works) No. 1688-8HZNJG, issued January 10, 2012. The specific conditions in the ECAs to which this report complies with are listed below:

- Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of former ECA No. A371203;
- Conditions 4.9 (i through vi), 14.2 and 14.3 (i through xv) of current ECA No. A371203; and
- Conditions 10(4) (a) (b), (c), (d), (e), (f), (g), and (h) of ECA No. 1688-8HZNJG.

This report was prepared following an overall site inspection completed by WSP Canada Inc. (WSP) on September 14, 2021; a detailed inspection of Stormwater Management (SWM) Ponds 1 and 2 completed by WSP on September 21, 2021; and discussions with management; and covers activities and monitoring for the 2021 calendar year.

A copy of current ECA No. A371203 is included in **Appendix A.1** of this report. The following other Certificates of Approval (C of As) and ECAs concerning the site are included in this report, as follows:

- Former ECA No. A371203 dated July 14, 2017, can be found in **Appendix A.2**. This approval governed site operations, monitoring, inspection, and reporting requirements for the period of January 1, 2021 through March 18, 2021.
- ECA No. 1688-8HZNJG (Industrial Sewage Works), dated January 10, 2012, can be found in **Appendix A.3**. This document outlines the requirements for the operation, maintenance, and reporting of the leachate and stormwater management systems.
- C of A (Industrial Sewage Works) No. 4-0129-64-956 dated January 24, 1995 is located in Appendix **A.4**. This approval governs the operation of the oil/sediment interceptor at the former soil recycling pad.
- C of A for a Waste Disposal Site No. A710003 (Soil Recycling) dated December 20, 1993 (Appendix **A.5**, with amendments), and
- ECA No. 5970-9HKP3V (Landfill Gas Collection and Flaring System), dated April 29, 2014 (**Appendix A.6**). The approval permits the operation of a candlestick flare as a contingency measure in the event the enclosed flare is shut down for repair or maintenance.

1.1 HISTORICAL APPEAL OF ECA NO. A371203 AND UPDATE TO CONDITIONS OF ECA NO. A371203

As noted in previous annual reports, an appeal was filed on January 30, 2012 by the Concerned Citizens Committee of Tyendinaga and Environs (CCCTE) pertaining to seven (7) conditions of ECA No. A371203 issued January 9, 2012. The seven (7) conditions were: Condition 8.5 (Monitoring Programs); Condition 9.1 (Groundwater and Surface Water Impact Contingency Plan); Condition 9.2 (Leachate Collection System Contingency Plan); Condition 9.5 (Public Notification Plan for Contingency Plans); and Conditions 14.1, 14.2, and 14.3 (Monitoring Reports and Annual Reporting). On March 30, 2012, the Environmental Review Tribunal (ERT) granted the CCCTE leave to

appeal all the conditions. The ERT lifted the automatic stay initiated by the appeal until the ERT issued its decision or otherwise ordered.

From May 2013 through June 2016, amendments to ECA No. A371203 were issued following ERT decisions pertaining to the aforementioned conditions. Some amendments were also issued that were unrelated to the ECA appeal. The June 2016 amendment to ECA No. A371203 was based on the ERT's final decision issued December 24, 2015, which stated the ERT was no longer required to supervise or participate in the CCCTE appeal of the ECA, subject only to the ERT's determination of the final wording of the ECA conditions and EMP provisions as outlined in the order. At present, no conditions of ECA No. A371203 remain under appeal, however, additional amendments to ECA No. A371203 will occur based on the findings of reports required in the June 2016 amendment, as outlined below.

As part of the ERT's ruling issued December 24, 2015, WM was required to demonstrate delineation of leachate-impacted ground on the site and off site. Between January 2016 and December 2020, extensive field studies were conducted to complete the requested delineation. On August 11, 2021, a hydrogeologist from the Ministry of the Environment, Conservation and Parks (MECP) issued an assessment that the delineation of the groundwater contamination had been sufficiently identified, and that WM could move forward with the development of a revised environmental monitoring program. On August 24, 2021, the MECP Kingston District Manager issued his concurrence of the MECP hydrogeologist's assessment that the extent of the leachate-impacted groundwater related to the Richmond Landfill had been delineated. As a result of this confirmation, an ECA application to amend select conditions of current ECA No. A371203 was submitted by WM on November 23, 2021. The application was submitted in accordance with Condition 8.5 (e) of the current ECA, which required WM to apply for approval to amend the ECA to address any non-compliance with Condition 8.8 and Guideline B-7, including a proposed Contaminant Attenuation Zone (CAZ) to be added to the ECA; and a proposed updated Environmental Monitoring Plan (EMP).

On December 14, 2021, a pre-consultation meeting held with representatives of WM, MECP, and BluMetric Environmental Inc. (BluMetric) to discuss a recommendation listed in the August 24, 2021 MECP Kingston District Manager's confirmation letter regarding the securement of groundwater rights to the property to the east of the site, or establish an engineered system to ensure hydraulic control of off-site migration of landfill leachate impacted groundwater in the intermediate bedrock flow zone. A conceptual design for inclusion of a hydraulic control system (HCS) was prepared by BluMetric and following the meeting, it was determined the HCS conceptual design should be incorporated into the November 2021 ECA application to amend ECA No. A371203. On January 7, 2022, WM submitted an addendum to the ECA application which included the conceptual design for the HCS along with supplementary information requested by the MECP during the December 14, 2021 pre-consultation meeting. A separate ECA application to amend ECA No. 1688-8HZNJG was also submitted by WM to the MECP for approval on January 7, 2022, for the inclusion of flow rates from the proposed hydraulic control system into SWM Pond 3, along with the addition of a monitoring parameter to Table 2 under Condition 8 of this ECA.

It is anticipated the revised ECAs will be issued in 2022, which may result in changes to the information presented within future versions of this report.

1.2 UPDATED ECA NO. A371203 RELATED TO JANUARY 23, 2020 PROVINCIAL OFFICER'S ORDER

On January 23, 2020, the MECP issued Provincial Officer's Order (POO) 3623-BL33DW to the Richmond Landfill. The POO was a result of a leachate overflow from the south pumping station into the south perimeter ditch during a period of wet weather events; and of a leachate spill near the leachate holding lagoon. As part of the POO, WM was required to prepare an Action Plan to identify immediate and short measures to effectively assess, manage and handle leachate generated at the site, and to identify longer term measures to manage, assess, and reduce leachate volumes generated at the site. All immediate and short-term measures identified under the Action Plan were satisfied by WM on March 26, 2020.

In regard to the longer-term measures identified under the Action Plan, WM retained WSP to prepare two (2) separate ECA applications. The first application requested an amendment to former ECA No. A371203 to construct a permanent forcemain between the leachate holding lagoon and the north chamber. This ECA application was submitted by WM to the MECP for approval on April 15, 2020. A second ECA application was prepared to request changes to the leachate storage facility previously approved under Condition 5.5 of former ECA No. A371203. Changes to the previously approved facility included an increase in the size of the storage tank (from 500 cubic metres (m^3) to 3,000 m^3) and a modification from a buried storage tank to an above ground, glass fused steel facility. This second ECA application was submitted by WM to the MECP for approval on April 30, 2020. With submission of these ECA applications, the longer-term measures to effectively assess and manage leachate at the site as identified by the Action Plan required by the POO were satisfied.

In late September 2020, the MECP initiated discussions with WM and WSP pertaining to the April 2020 ECA applications, and in early October 2020, minor revisions and clarifications regarding both applications were provided to the MECP by WSP. In mid-November 2020, the MECP confirmed they were satisfied with the content of the applications but would delay issuing an updated ECA until other applications and submissions pertaining to ECA No. A371203 were reviewed. Refer to **Section 1.3** for additional information.

On March 19, 2021, the MECP issued the current ECA No. A371203. The ECA approved the April 2020 ECA application to construct the permanent forcemain between the leachate holding lagoon and the north chamber, subject to the conditions listed in the current ECA. The ECA also approved the April 2020 ECA application to modify the existing approval for the leachate storage facility. The current ECA also included additions of several items to Schedule "A", including the ECA applications and subsequent correspondence between the MECP and WSP, and updated references to the reasons for the conditions. As a result of these approvals, the POO has been fully resolved.

1.3 UPDATED ECA NO. A371203 RELATED TO JANUARY 2020 AND MARCH 2020 SUBMISSIONS

On January 14, 2020, WM submitted an ECA application to the MECP requesting an amendment to former ECA No. A371203. The former ECA was issued on July 14, 2017, which consolidated the previous ECA issued on January 9, 2012 and subsequent amendments issued between January 2012 and June 2016. The ECA application was submitted to request the removal or revision of several conditions of the ECA. These conditions, which were relevant when the site was in operation, no longer applied once the site ceased to accept waste for final disposal. Summary tables containing rationale for the proposed removal or revision were included in the application submission.

On March 23, 2020, WM submitted an updated financial assurance re-evaluation for the Richmond Landfill, in accordance with Condition 2.7 of former ECA No. A371203, which required a revised financial assurance submission be provided to the MECP for approval by March 31, 2020. In the submission, cost items were updated and inflated using procedures outlined under Guideline F-15. An updated contaminating lifespan evaluation for the site was also included in the submission.

In late September 2020, the MECP initiated discussions with WM and WSP pertaining to the two (2) April 2020 ECA applications as discussed in **Section 1.2** of this report, and the January 2020 ECA application. In early October 2020, clarification and responses regarding the January 2020 ECA application were provided to the MECP by WSP. In early November 2020, the MECP responded to WSP and requested stakeholder notification regarding the proposed dissolution of the Public Liaison Committee (PLC) be completed, and also requested the submission of an updated Public Notification Plan based on comments received from stakeholders. An updated Public Notification Plan was submitted to the MECP for approval on November 11, 2020. Stakeholder notification was completed on November 30, 2020 and a 45-day comment period was opened for stakeholders to provide comments to the MECP.

On December 21, 2020, the MECP initiated discussions with WM regarding the March 2020 financial assurance submission and requested revisions to select items and clarifications regarding other components of the submission.

On January 22, 2021, WSP responded to the MECP on behalf of WM with an updated financial assurance re-evaluation and responses to the MECP comments from December 2020.

On March 4, 2021, the MECP notified WM that a draft amended ECA No. A371203 for the Richmond Landfill would be issued combining the two (2) April 2020 ECA applications as noted under Section 1.2 of this report; the January 2020 ECA application as noted in this section, and the updated financial assurance re-evaluation. The current ECA No. A371203 was issued on March 19, 2021.

The site location can be seen in the following **Figure 1**.

C:\1985\8570\DRAWINGS\2022\FINAL 8570-F1-2021 WSP.dwg

SHEET 1	DWN BY: T C G DATE: MARCH 24, 2022 CHK BY: B D M SCALE: N T S WASTE MANAGEMENT OF CANADA CORP. DRAWING NO. 8570 - Figure 1	SITE LOCATION PLAN RICHMOND LANDFILL	WASTE MANAGEMENT	wsp 101-1450 1st AVENUE W OWEN SOUND (ONTARIO) CANADA N4K 6W2 TEL: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM

2 PREVIOUSLY SUBMITTED REPORTS

Several reports have been completed and filed with the MECP in compliance with requirements of the conditions of the previous Provisional C of A and current ECAs. Those prepared by WSP (formerly GENIVAR Inc. and Henderson Paddon & Associates Limited.) are as follows:

Monitoring Report No. 1, March 1988

1987 Annual Monitoring - Complying with Conditions 10(b), 10(c), and 10(e) of the C of A dated August 11, 1987.

Final Design Report, September 1988

Complying with Conditions 2(a) and 11(a) of the C of A dated August 11, 1987, (Condition 2(a) and 10(a) of the C of A dated March 30, 1988).

Application for the Approval of Sewage Works for the Leachate Collection and Treatment Facilities, October 1988

Monitoring Report No. 2 to 23

1988 to 2009 Annual Monitoring Reports - Complying with Conditions 9(b), 9(c), 9(e), and 9(f) of C of A No. A371203 dated March 30, 1988, Condition 12 (3) of C of A No. 3-0975-90-916 dated October 21, 1991 (Monitoring Reports No. 5 through 22), and Conditions 10 (4) (a), (b), (c), (d), (e), (f), (g), and (h) of C of A No. 5268-7E8LJW, dated August 19, 2008 (Monitoring Reports 22 and 23).

Clay Liner – Design Construction and Testing, October 1989

Complying with Condition 2(b) of the C of A dated March 30, 1988.

Condition No. 7 Report, December 1991

This report was prepared and filed on December 31, 1991 by Laidlaw in connection with requirements of Certificate of Approval (Sewage) No. 31720-90-916.

Condition No. 29 Report, December 1991

This report was prepared and filed on December 31, 1991 by Laidlaw in connection with requirements of Certificate of Approval No. 19-371203 dated September 4, 1991.

Development & Operations Report

Report dated March 1996, to comply with Condition 2(a) of the C of A and as requested in the Amendment to the C of A on August 1, 1995.

Final Closure Plan

Final Closure Plan dated June 2007 was submitted to satisfy Condition 34 of the C of A that required a detailed closure plan pertaining to the termination of the landfill site, post closure inspection, maintenance and monitoring, and end use.

Construction Quality Assurance/Construction Quality Control (CQA/CQC) Plan for the Final Cover System

CQA/CQC Plan dated June 25, 2010, to comply with Condition 6(b) of the amended C of A issued March 31, 2010.

Odour Monitoring Plan

Submitted June 25, 2010 as part of the Environmental Monitoring Plan (EMP) prepared by Water and Earth Science Associates (WESA), to satisfy Condition 8(d) of the amended C of A issued March 31, 2010.

Financial Assurance Update

Revised Financial Assurance Plan dated June 25, 2010, to satisfy Condition 19 of the amended C of A issued March 31, 2010.

Operations and Procedures Manual

Updated Operations and Procedures Manual dated June 25, 2010, to satisfy Condition 66 of the amended C of A issued March 31, 2010.

Leachate Collection System Contingency Plan

Dated June 25, 2010, to satisfy Condition 84 of the amended C of A issued March 31, 2010.

Landfill Gas Collection System Contingency Plan

Dated June 25, 2010, to satisfy Condition 88 of the amended C of A issued March 31, 2010.

Design of Low Permeability Surface and Low Permeability Liner for Compost Pad and Pond

Dated June 25, 2010, to satisfy Conditions 138 and 139 of the amended C of A issued March 31, 2010.

Monitoring Report No. 24

2010 Annual Monitoring Report - Complying with Conditions 9(b), 9(c), 9(e), and 9(f) of C of A No. A371203 dated March 30, 1988 (as amended), Conditions 9a and 9b (i through xxv) of Notice 5 to amend C of A No. A371203 dated March 31, 2010, and Conditions 10(4) (a through h) of C of A No. 5268-7E8LJW dated August 19, 2008.

Waste Public Drop off Area ECA Application

Dated May 25, 2011, this application was submitted to request an amendment to Condition 35 of ECA No. A371203, to permit the continued use of the existing public drop off area after site closure on June 30, 2011, for residents to dispose of waste. Approval of this application was provided by the MECP on January 10, 2012.

Monitoring Report No. 25

2011 Annual Monitoring Report – Complying with Conditions 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Operations and Maintenance Manual Revision No. 1 – Stormwater/Leachate Management Systems

Dated March 22, 2012, to satisfy Condition 7 (3) of ECA No. 1688-8HZNJG. This report was updated to reflect changes in site operations. This report was not required to be submitted to MECP but is retained at the site as part of the operating records.

Operations and Procedures Manual Revision No. 1

Dated March 22, 2012, to satisfy Condition 4.3 (c) of ECA No. A371203. This report was updated to reflect changes in site operations. This report was not required to be submitted to MECP but is retained at the site as part of the operating records.

Odour Monitoring Plan Revision No. 1

Dated March 22, 2012, to satisfy Condition 8.5 d of ECA No. A371203. This report was updated to reflect changes in site operations and to address comments from the public and MECP on the initial submission.

Stormwater Contingency and Remedial Action Plan

Dated March 22, 2012 to satisfy Condition 9 (1) of ECA No. 1688-8HZNJG. This condition required the submission of a contingency and remedial action plan pertaining to the stormwater systems within six (6) months of the date of ECA issuance. The report was required to be submitted only to the MECP Kingston District Manager for approval. On March 15, 2021, an Environmental Officer from MECP Kingston District Office notified WM via email that the plan was reviewed as part of a desktop review of ECA No. 1688-8HZNJG. An action item originating from the MECP's review of the plan was provided to WM in the March 15, 2021. Refer to **Section 4.2.2** for additional details. To date, no other correspondence pertaining to the plan has been provided by WM, and acceptance of the stormwater contingency and remedial action plan has not been incorporated into the ECA.

Transfer Station Waste Frequency Removal ECA Application

Dated September 14, 2012, WM requested an amendment to Condition 5.18 (1), to reduce the frequency of waste removal from the public drop off area from twice per week, to once every two (2) weeks. To date, WM has not received comments from the MECP regarding the status of this application.

Public Notification Plan

Dated September 19, 2012 to satisfy Condition 9.5 of ECA No. A371203. This condition required the submission of a public notification plan to notify parties that contingency plans were implemented at the site, within 12 months of the date of issuance of the ECA.

Odour Survey Protocol

Dated February 2013. This report was submitted to address comments from the ERT hearing.

Public Notification Plan

Dated February 2013. This report was submitted to address comments from the ERT hearing.

Financial Assurance Update

Revised Financial Assurance Plan dated March 25, 2013, to satisfy Condition 2.7 of the ECA issued January 9, 2012.

Monitoring Reports No. 26 and 27

2012 and 2013 Annual Monitoring Reports – Complying with Conditions 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Maintenance Schedule – Ditches, Culverts, and Leachate Collection System

Dated June 12, 2014 to satisfy Conditions 13.9 and 13.10 of ECA No. A371203. This schedule was submitted as part of a MECP application regarding maintenance on the aforementioned landfill infrastructure for the duration of the landfill's contaminating lifespan.

Addendum to Monitoring Reports No. 26 and 27

Dated September 15, 2014, to satisfy Condition 5.11 (i through iv), which was inadvertently excluded from the 2012 and 2013 annual monitoring reports. This letter report was submitted to the MECP and various stakeholders as identified under Condition 14.2 of Notice 1 to amend ECA No. A371203.

Operations and Procedures Manual Revision No. 2

Dated October 28, 2014, to satisfy Condition 4.3 (b) of ECA No. A371203. This report was updated to reflect changes in site operations. This report was not required to be submitted to MECP but is retained at the site as part of the operating records.

Odour Monitoring Plan Revision No. 2

Dated November 24, 2014. This report was submitted as part of a MECP application to request consolidation of the Odour Monitoring Plan Revision No. 1, and the Odour Survey Protocol documents identified under Condition 8.5 (d) of ECA No. A371203 and was updated to reflect changes in site operations.

Leachate Storage System Design Brief

Dated January 13, 2015. This report was submitted as part of an ECA application seeking approval to construct an onsite leachate storage facility to simplify and improve leachate removal and truck loading operations.

Monitoring Report No. 28

2014 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Financial Assurance Update

Revised Financial Assurance Plan dated March 30, 2016, to satisfy Condition 2.7 of the ECA issued January 9, 2012. Submission was accepted by MECP in July 2017.

Monitoring Report No. 29

2015 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Surface Emission Survey Frequency Reduction Application

Dated June 24, 2016. This application was prepared in regard to a Condition in ECA No. A371203 which permits WM to apply for a reduction in the frequency of surface emission surveys performed in a calendar year based on the results of the 2013 and 2014 surface emission surveys. Submission was accepted by MECP in July 2017.

Odour Monitoring Plan Revision No. 3

Dated June 24, 2016. This report was prepared to accompany the Surface Emission Survey Frequency Reduction Application as referenced above. Submission was accepted by MECP in July 2017.

Monitoring Report No. 30

2016 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Monitoring Report No. 31

2017 Annual Monitoring Report –Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated January 9, 2012 (as amended), and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Monitoring Report No. 32

2018 Annual Monitoring Report –Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

ECA Application - Revisions to Environmental Compliance Approval No. A371203

Dated January 14, 2020. This application was prepared to request approval for amendments (removal or revision) to several Conditions of ECA No. A371203. There are several Conditions in the current ECA which were relevant when the site was in operation, but no longer apply now that the landfill has closed. Correspondence was exchanged between WM and the MECP between late September 2020 and late January 2021. Approval was granted via the current ECA issued March 19, 2021.

Monitoring Report No. 33

2019 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Financial Assurance Update

Revised Financial Assurance Plan dated March 20, 2020, to satisfy Condition 2.7 of the ECA issued July 14, 2017. Additional information was requested by the MECP in late December 2020. Approval was granted via the current ECA issued March 19, 2021.

ECA Application - Forcemain Between North Chamber and Leachate Holding Lagoon

Dated April 15, 2020. This application was prepared to request approval of the forcemain between the north chamber (pumping station PS2) and the leachate holding lagoon. The ECA application was one of the applications identified under the longer-term Action Item measures prepared by WM in response to the January 23, 2020 POO pertaining to an overflow of leachate from the south pumping station in early January 2020 and leachate spill event

near the leachate holding lagoon in mid-January 2020. Correspondence was exchanged between WM and the MECP between late September and mid-November 2020 pertaining to the application. Approval to construct the forcemain was granted via the current ECA issued March 19, 2021.

ECA Application - Modifications to Leachate Storage System

Dated April 30, 2020. This application was prepared to request approval of various changes to the previously approved leachate storage system under Condition 5.5 of former ECA No. A371203. The ECA application was one of the applications identified under the longer-term Action Plan measures prepared by WM in response to the January 23, 2020 MECP POO pertaining to an overflow of leachate from the south pumping station in early January 2020, and leachate spill event near the leachate holding lagoon in mid-January 2020. The changes include an increase in the size and the type of storage tank (from a buried unit to a above ground facility), among other items. Correspondence was exchanged between WM and the MECP between late September 2020 and mid-November 2020 pertaining to the application. Approval was granted via the current ECA issued March 19, 2021.

Public Notification Plan

Dated November 2020. This report was submitted to address comments from the MECP and various stakeholders regarding the January 2020 ECA application requesting approval for amendments to several Conditions of former ECA No. A371203. Approval was granted via the current ECA issued March 19, 2021.

Monitoring Report No. 34

2020 Annual Monitoring Report – Complying with Conditions 5.11 (i through vi), 14.2 and 14.3 (i through xxiii) of ECA No. A371203 dated July 14, 2017, and Conditions 10(4) (a through h) of ECA No. 1688-8HZNJG.

Stormwater Infrastructure Inspection and Maintenance Plan

Dated April 29, 2021. This report was submitted after an Environmental Officer with the Kingston District MECP completed a desktop review of ECA No. 1688-8HZNJG. Condition 9 (1) of the ECA required WM to submit a Stormwater Contingency and Remedial Action Plan which within six (6) months of the date of issuance of the ECA. WM submitted a plan on March 22, 2012 to the MECP Kingston District Manager for approval. The MECP's review of the plan identified a statement where a formal maintenance program was to be submitted five (5) years after site closure that would formalize a maintenance schedule for the remaining contaminating lifespan of the landfill. After discussions with WM, the MECP was unable to determine if the formal maintenance schedule was produced and noted that no formal cleaning or maintenance of the ponds has been completed. On March 15, 2021, the MECP Environmental Officer requested WM provide a written response outlining the measures to be taken to conduct a detailed performance assessment of the stormwater ponds including timeframes for completion of proposed work and submission of findings to the MECP. The stormwater infrastructure inspection and maintenance plan is intended to satisfy the MECP's request. To date, no response has been received from the MECP regarding the plan.

Spill Contingency Plan

Dated June 23, 2021. This report is intended to satisfy Condition 9.4 (1) of current ECA No. A371203, which required the submission of a spill contingency plan that is prepared in accordance with Ontario Regulation 224/07 and should include procedures to prevent and mitigate accidental leachate discharge to the environmental. To date, no response has been received from the MECP regarding this plan.

3 REPORTING REQUIREMENTS – ENVIRONMENTAL COMPLIANCE APPROVAL NO. A371203

3.1 ASSESSMENT OF ENGINEERING FACILITIES, DESIGN AND OPERATIONS OF THE SITE, AND ADEQUACY OF, AND NEED TO, IMPLEMENT CONTINGENCY PLANS

Condition 14.3 i of the former and current ECAs requires an assessment of the operation and performance of all engineered facilities. The following describes the facilities reviewed and the assessment completed.

3.1.1 LANDFILL MASS

The existing landfill mass was reviewed for slope stability, areas of settlement, integrity of the final cover, vegetation, leachate and gas seeps, and areas requiring remediation. The landfill slopes are regularly reviewed by WM and were inspected in the past year by WSP. No areas were discovered with slope instability, and minor amounts of settlement is occurring, mainly in the higher elevations of the landfill. The landfill final cover vegetation was reviewed and has established well, however, there are some barren areas on the northeast, east, and south sides of the landfill mound and in other isolated areas which require re-seeding, which were identified to WM during WSP's 2021 site inspection. Otherwise, no remedial work is required on the landfill mass.

3.1.2 LEACHATE COLLECTION SYSTEM

The existing leachate collection system and pump stations were reviewed to determine if they are operating as designed, and if any remedial work is required. WM staff regularly reviews the operation of the leachate system and completes repairs as required. It is understood that leachate is being collected from the system, and that no blockages are present. High-level alarms were installed in the north chamber, and replaced in the south pump station, in 2010 as per an ECA requirement.

Refer to **Section 3.2** for a discussion regarding the efficiency of the leachate collection system; for details pertaining to improvements made to the existing leachate collection system in 2021, and for information on additional improvements.

3.1.3 GAS COLLECTION SYSTEM

The existing gas collection system is regularly monitored by WM, to ensure that landfill gas is being collected and destroyed in the flare system. No new gas extraction wells were installed in 2021. The gas system was operating as site conditions permitted between January 1, 2021 and August 15, 2021. On August 16, 2021, the enclosed flaring system was shut down due to low gas generation rates that could not sustain flare operation. The enclosed flaring system was not in operation for the remainder of 2021.

3.1.4 STORMWATER MANAGEMENT SYSTEM

Three (3) stormwater sedimentation ponds collect stormwater runoff from the landfill site and remove sediment prior to discharge. Ponds are regularly inspected by WM staff. The ponds in the northwest and northeast corners of the site had no operational issues in 2021. The south pond was reconstructed in 2008-2009 and had no operational issues in 2021.

A detailed inspection of the stormwater infrastructure was completed by WSP on September 14, 2021 and September 21, 2021. Refer to **Section 4.2.2** and **Section 4.2.3** of this report for further information on the inspections completed, along with maintenance recommendations for components of the stormwater infrastructure.

3.1.5 LEACHATE HOLDING LAGOON

The leachate holding lagoon was inspected during the September 14, 2021 annual site inspection conducted by WSP and was found to be in acceptable condition. The lagoon was decommissioned by WM in 2010 but remained in place as a contingency for leachate storage. The lagoon was utilized for a period in January 2020 to temporarily store leachate due to high flows experienced as a result of abnormal rainfall events. No issues were noted with the lagoon by WM during this period.

On January 23, 2020, a MECP POO revoked the use of the leachate holding lagoon as a contingency storage measure. Additional details regarding the POO, and WM's action plan in response to the POO, can be found in Sections 3.15 and 3.23 of the 2020 annual monitoring report. The POO has since been resolved. As noted under **Section 1.2**, approval for construction of a leachate forcemain between the north chamber (pumping station PS2) and the leachate holding lagoon was granted via the current ECA issued March 19, 2021. The leachate forcemain shall not be operated until it has been demonstrated and accepted by the MECP that the integrity of the liner is not compromised and leakage from the lagoon is not of concern. The forcemain has not been constructed, and WM does not intend to construct it in future.

Leachate remains present in the holding lagoon as a result of transfers from the north chamber that occurred prior to January 23, 2020. Between May and November 2020, leachate from the lagoon was moved back to the north pumping chamber and was then pumped from the north chamber into a tanker truck and hauled from the site for treatment. During brief periods in 2021, leachate was again moved back from the lagoon to the north chamber and removed from the north chamber to a tanker truck and hauled from the site for treatment. This process is expected to resume in 2022 when weather and site conditions permit. Quantities removed from the lagoon will continue to be tracked separately from the volumes removed by the haulers at the truck loading station.

3.1.6 CONCLUSIONS

After a review of the engineered facilities at the site, it was concluded that there is currently no need to amend the design or adjust the operation of the Richmond Landfill site.

Since all engineering works are performing as designed, and monitoring results are satisfactory, it is our conclusion that at this time, there is no need to implement any contingency plans.

3.2 LEACHATE COLLECTION SYSTEM EFFICIENCY

Condition 14.3 ii of the former and current ECAs requires an assessment of the efficiency of the leachate collection system.

A review of the leachate volume removed from the landfill site was determined to be of a reasonable volume to conclude that the leachate collection system is continuing to operate effectively and is further discussed in **Section 3.11**. WM regularly inspects the infrastructure and has determined that there are no blockages in the system.

Cleaning and camera inspection was completed on September 14, 2021 by Tomlinson Environmental. No blockages were encountered and no issues with the system were observed during the cleaning and camera inspection event.

As noted under **Section 1.2**, the MECP granted approval for two (2) ECA applications to amend ECA No. A371203 via current ECA No. A371203 dated March 19, 2021. Both applications pertained to longer term measures to manage, assess, and reduce leachate volumes at the site, as identified under the Action Plan prepared by WM in response to the MECP POO issued on January 23, 2020. Approval was granted for the construction of a permanent forcemain between the north chamber (pumping station PS2) and the leachate holding lagoon. Approval was also granted for modifications to the leachate storage facility design previously approved under Condition 5.5 of former ECA No. A371203. Construction of the leachate storage tank commenced in April 2021 and substantial completion was issued on December 6, 2021. Construction of the leachate storage system infrastructure commenced in late June 2021 and was substantially completed on December 23, 2021. The reader is referred to **Section 3.9** for additional details regarding the construction of this infrastructure. Completion of leachate storage system construction activities is anticipated in early 2022.

As noted under **Section 1.1**, ECA applications to amend both current ECA No. A371203 and ECA No. 1688-8HZNJG for a proposed HCS were submitted on January 7, 2022, with the initial application to amend ECA No. A371203 submitted on November 23, 2021. The intent of the HCS is to ensure hydraulic control of off-site migration of landfill leachate-impacted groundwater. Refer to **Section 3.10** for details regarding the proposed HCS. Review of the ECA applications is anticipated to be completed by the MECP in 2022.

The aforementioned work is expected to improve the efficiency of the leachate collection system, which will allow for improved management of leachate volumes generated at the site.

3.3 EXISTING SITE CONDITIONS

Condition 14.3 iii of the former ECA required WM to provide plans showing the existing contours of the site.

WSP completed a GPS survey on November 16, 2011 for as constructed purposes upon completion of final capping conditions. A second GPS survey was completed on June 1, 2017 to document existing conditions. No significant change has occurred in the site topography other than settlement since that survey. This information, along with an updated landfill gas collection system plan, has been combined into a single drawing, which is contained in **Appendix B** of this report. The leachate storage tank and storage system components that were installed up to December 31, 2021 have also been incorporated into this drawing.

It is noted the current ECA does not require the provision of plans showing the existing contours of the site. As such, this section will be deleted from future reports.

3.4 2021 LANDFILL OPERATIONS AREA

Condition 14.3 iv of the former ECA requires information regarding the areas of landfilling operations during the reporting period.

No landfilling operations took place during the reporting period. On June 30, 2011, the Richmond Landfill ceased to accept waste in accordance with Condition 4.4 of the former ECA.

It is noted the current ECA does not require the provision of information regarding the areas of landfilling operations during the reporting period. As such, this section will be deleted from future reports.

3.4.1 EQUIPMENT

Upon completion of landfilling activities, several pieces of equipment were removed from the site. The following equipment remains onsite to assist in performing regular maintenance activities:

- a Case International farm tractor with a rotary mower.

If additional equipment was required, it was obtained from local contractors.

3.5 2022 LANDFILL OPERATIONS AREA

Condition 14.3 v of the former ECA requires information regarding the intended area of landfilling operations during the next reporting period.

Per Condition 4.4 of the former ECA, and Condition 3.4 of the current ECA, no waste will be received for disposal at the site after June 30, 2011.

It is noted the current ECA does not require the provision of information regarding the areas of landfilling operations during the next reporting period. As such, this section will be deleted from future reports.

3.6 2021 EXCAVATION AREAS

Condition 14.3 vi of the former ECA requires information regarding areas of excavation during the reporting period.

Excavation was completed at the site for the purpose of completing leachate seep repairs on the south, east, and north slopes of the landfill mound on two (2) separate occasions in 2021. Seep repairs were completed in accordance with previously established repair protocols as outlined in **Section 3.11**.

Excavation was also completed for construction of the leachate storage tank to the northeast of the east half of SWM Pond 3, during early April 2021. Excavation for the various components of the leachate storage system conveyance infrastructure was completed between late June 2021 and late July 2021, as outlined below:

- Excavation for the foundation of pumping station PS3, located west of the leachate storage tank;
- Excavation for the forcemain from the north chamber (pumping station PS2) to pumping station PS3 and associated infrastructure; along the northeast, east, and southeast sides of the landfill mound;
- Excavation for the forcemain between the south pumping chamber (pumping station PS1) to PS3;
- Excavation for the electrical cable from PS3 to the electrical building at the enclosed flare building, along the south side of the landfill mound;
- Excavation for the discharge line between the catch basin within the leachate storage tank secondary containment area and the northeast side of the east half of SWM Pond 3;
- Excavation for the discharge line between PS3 and the PDH (truck loading area);
- Excavation for the catch basin located on the pad at the truck loading area; the PDH structure at the truck loading area, and pumping station PS4 located north of the truck loading area; and
- Excavation for the forcemain between pumping station PS4 back to PS3.

The reader is referred to the drawing in **Appendix B** which shows the location of the leachate storage tank and leachate storage system conveyance infrastructure. All excavations for the leachate storage tank and storage system components were completed in accordance with project specifications and were backfilled by early October 2021.

It is noted the current ECA does not require the provision of information regarding areas of excavation during the reporting period. As such, this section will be deleted from future reports.

3.7 FINAL AND VEGETATIVE COVER INSPECTIONS

Condition 14.3 vii of the former ECA, and Condition 14.3 iii of the current ECA, requires a summary of the inspection of the final cover and vegetative cover, including identification of any seepages and remedial actions taken.

The placement of the final cover system was completed on the Richmond Landfill on September 23, 2011. Inspections which took place in 2021 verified that vegetative cover has mostly become well established. Some barren areas were identified during WSP's inspection on the northeast, east, and south sides of the landfill mound, including the areas where seeps were repaired between 2017 and 2020, and re-seeding of these areas has been recommended to WM.

As noted under **Section 3.6**, WM advised that seep repairs had been completed on the south, east, and north slopes in May 2021. No obvious leachate seeps were observed during WSP's annual inspection.

3.8 PREVIOUSLY EXISTING SITE FACILITIES

Condition 14.3 viii of the former ECA, and Condition 14.3 iv of the current ECA, requires information regarding previously existing site facilities.

3.8.1 BUILDINGS AND SIGNAGE

The landfill site office is located to the south of the landfill site on the main access road. The building houses hauling division staff, record services, communications equipment, weigh scale recording devices and operating staff facilities.

Landfill equipment is serviced in the existing maintenance building. Fuel storage is located in this area and a staff room for the landfill equipment operators is attached.

Several unoccupied homes and barns on WM-owned land surrounding the landfill were demolished in 2017, with additional demolition work completed in 2021.

Signs are erected along the access road near Beechwood Road identify the landfill site. The main sign supplies the following information:

A sign is also present on the main gates notifying the public drop off area for local residents was closed February 28, 2014 and remains closed. Signage indicating types of waste accepted at the site have been removed.

3.8.2 STAFF

WM staff manages and operates the site. Mr. William McDonough acted as the Landfill Manager for the 2021 calendar year. The site was managed by the Environmental Legacy Management Group (ELMG) (formerly Closed Sites Management Group (CSMG)) with Mr. Jim Forney being the Director of the ELMG.

Other landfill staff presently consists of the following:

- One (1) full time operator who is responsible for site maintenance and gas field repairs.

Other monitoring staff, and equipment operators, are brought on the site for contract work as required for ongoing maintenance activities.

3.8.3 TONNAGE CONTROL

A truck weigh scale is present at the site and was used to record daily net tonnages received when the site was accepting waste for disposal. A history of the present scale is provided as follows:

In 1998, an 80' Active Mod-U-Dec pitless truck scale with a Toledo digital weight display and printer was connected to a computer for data management. Truck traffic was controlled from the office by traffic light signals and by an air phone intercom system as trucks approach the scale.

- In 2004, electrical work was completed to allow the scale facility to be run by a generator in the event of power failure to the site. Standby power can be easily connected to the scale house facility to operate the necessities for the acceptance of waste vehicles.
- Three (3) separate calibration procedures were performed on the scale in 2012, and two (2) separate calibration procedures were performed on the scale in 2013, to ensure that weights are recorded correctly. Load cells have also been repaired as required.
- One (1) calibration procedure were performed on the scale in June 2014 to ensure that weights were recorded correctly.

In 2021, the scale was not in operation, and no calibration was performed.

3.8.4 SOIL RECYCLING PAD

A vacant area located to the east of the existing maintenance building is the former soil recycling pad and was used in the past for temporary storage of hydrocarbon-impacted soil. Upon site closure on June 30, 2011, the Richmond Landfill ceased to accept waste, including contaminated soil, for final disposal. The pad was flushed and cleaned after soil receipt ended. Surface runoff from this pad flows directly to the stormwater ponds. The oil/sediment separator is monitored for sediment buildup and cleaned as required. No buildup of sediment was noted within this structure in 2021.

In 2021, the former soil recycling pad was used for staging various components of the leachate storage tank and storage system construction project. Electrical boxes previously located along the east side of the pad were removed during excavation and installation of various components of the leachate storage system. The pad was dewatered in summer 2021 using the gate valve south of the interceptor chambers. A portion of the east side of the pad was used for construction of the truck loading area for removal of leachate from the leachate storage tank.

3.8.5 SMALL VEHICLE TRANSFER AREA

The public drop off area was approved for operation by the MECP on January 9, 2012, subject to the conditions listed in ECA No. A371203, and opened to the public on February 1, 2012. This area was used for small vehicles offloading waste, recyclables, and compostable materials. This practice facilitated the transfer of material from the smaller vehicles into the roll-off bins. A reuse centre where residents could donate and exchange reusable goods

was also constructed within the public drop off area. WM participated in the Ontario Electronic Stewardship (OES) program and Ontario Tire Stewardship (OTS) programs for electronics and tire recycling and was also a member of Stewardship Ontario's Municipal Hazardous or Special Waste (MHSW) program and collected paint and single use batteries for disposal offsite. White goods, including those which were tagged "freon removed", and scrap metal, were separated from the waste stream and temporarily stored on the site. WM removed these materials regularly for recycling.

On February 28, 2014, WM ceased operation of the public drop off area, reuse centre, OTS, OES and white goods areas. All approvals pertaining to the operation of the facility remain in place under former ECA No. A371203 and current ECA No. A371203. WM may elect to re-open the facility at a future date.

3.8.6 LANDFILL GAS COLLECTION AND FLARING SYSTEM

The landfill gas collection and flaring system (LFGCS) was implemented for odour control at the Richmond Landfill in 2000. The construction of Phase I of the system was carried out in the years 2000/2001 with the installation of a 2.1 metre diameter x 12.2-metre-high enclosed flaring system, according to Certificate of Approval (C of A) (Air) No. 8-4076-99-006, issued by the MECP on December 21, 1999. In 2003, C of A (Air) No. 1355-6LRN9N was issued by the MECP, which revoked and replaced the previous C of A. On April 29, 2014, the MECP issued ECA No. 5970-9HKP3V, which revoked and replaced the previous C of A. This approval permits the operation of a candlestick flare only when the enclosed flare is shut down for maintenance and repair.

Subsequent expansions and upgrades to the LFGCS have been made since the installation of the initial system in order to burn the landfill gas produced by the decomposing waste. WM reports that the present system, when in operation, collects gas from five (5) leachate clean-outs, four (4) leachate collection manholes and 42 vertical gas wells of the 62 wells installed. 20 decommissioned wells are also present. Please refer to the drawing in **Appendix B** for the gas collection system as built drawing.

As noted under **Section 3.1.3**, regular operation and maintenance of the landfill gas collection and flare system was carried out between January 1 and August 15, 2021. The enclosed landfill gas flare was effective at reducing odour around the landfill site. On August 16, 2021, the enclosed landfill gas flare was shut down due to low gas generation rates and did not resume operation in 2021. There have been no issues with odours or gas migration since the flare was shut down.

3.8.7 SEDIMENTATION PONDS

The three sedimentation ponds were operational in 2021. Prior to 2012, pond discharge was controlled and not permitted without prior testing and approval from MECP District staff. On January 10, 2012, the MECP issued ECA No. 1688-8HZNJG, which revoked and replaced the previous C of A for sewage works. The ECA allows for WM to operate the discharge outlet valves on the sedimentation ponds in the open position, thereby permitting the ponds to operate as designed in a free-flowing state. Revised maintenance, monitoring, and reporting programs are also listed in the ECA.

Additional information pertaining to the inspection of the sedimentation ponds and associated stormwater management infrastructure completed in 2021 can be found in **Section 4.2.2** of this report.

3.8.8 SITE ACCESS AND ROADS

The site entrance and roads were inspected by WSP during the annual site inspection. Aside from recommendations for re-grading the road surfaces in various areas of the perimeter access roads, no significant issues were identified by WSP during the September 2021 site inspection. It is noted that regrading of the north central, northeast, east, south, and south central roads was completed in October 2021 by the contractor responsible for the construction of the leachate storage system conveyance network. Fresh granular material was placed on portions of these access roads.

3.9 FACILITIES INSTALLED IN 2021

Condition 14.3 ix of the former ECA requires information about the installation of any facilities at the site during the reporting period. It is noted the current ECA does not require the provision of information regarding installation of any facilities at the site during the reporting period. As such, this section will be deleted from future reports.

On March 19, 2021, the current ECA No. A371203 was issued for the Richmond Landfill. As noted under Section 1.2, the ECA approved the proposed upgrades to the leachate storage facility that was previously approved under a Condition of the former ECA, and also approved the construction of a permanent forcemain between the leachate holding lagoon and the north chamber. Construction of a new leachate storage tank and associated leachate storage system conveyance network commenced in April 2021 and was substantially completed on December 23, 2021. This work was undertaken as a long-term measure to efficiently manage leachate generated at the site, as identified under WM's Action Plan in response to the MECP's POO issued in January 2020. Refer to **Section 1.2** of this report for additional information.

The major components of the leachate storage tank and leachate storage system conveyance network installed at the site in 2021 are identified in the following sections:

3.9.1 LEACHATE STORAGE TANK AND CONTAINMENT SYSTEM

The leachate storage tank consists of a glass fused steel (GFS) above ground facility and measures approximately 20.46 metres (m) in diameter and approximately 9.47 m in height. The tank can store approximately 3,000 m^3 of leachate. All GFS panels are bolted into place and sealed. The roof is constructed of triangular aluminum sealed panels that are clamped in an interlocking manner to an aluminum truss system forming a dome structure. The entire tank and dome structure is insulated, and the tank is cladded on the exterior. An access ladder is present on the tank along with an access hatch on the roof. Within the tank, piping through the floor contains both an inlet for leachate that is pumped from the various pumping stations into the tank, and an outlet for removal of leachate from within the tank to the truck loading area located to the west of the storage tank. A vertical stilling well pipe is installed under the tank inlet line to minimize liquid splash and foaming. The tank is equipped with a pressure sensor to facilitate continuous liquid level monitoring. A radio antenna is present on the roof to establish communications between the north chamber (pumping station PS2) and PS3, as outlined in **Section 3.9.2**.

The leachate storage tank is protected against catastrophic spill by a GFS secondary containment ring wall which has an inside diameter of approximately 32.4 m and a height of 4.47 m. The secondary containment ring wall can store up to 3,689 m^3 of leachate, which is excess of the capacity of the leachate storage tank. The containment area is equipped with a catch basin and drain line with a normally closed valve, with a discharge line leading to the northeast side of the east half of SWM Pond 3.

Construction of the leachate storage tank and containment system was completed by Greatario Engineered Storage Systems of Innerkip, ON. Construction commenced in April 2021. Substantial performance of the work was issued on December 6, 2021.

3.9.2 LEACHATE STORAGE SYSTEM

Improvements and upgrades to the existing leachate collection system are provided as follows:

- Existing south pumping chamber (pumping station PS1): improvements included the removal of the existing Grundfos pumps within the two (2) sideslope risers within the pumping chamber with larger (5.5 horsepower) EPG Surepumps. The larger pumps are capable of delivering leachate to the top of the leachate storage tank. The entire piping network within PS1 was also removed; and new pipes, valves and gauges were installed, along with pressure transducers on each pump. Associated electrical cables and conduit from PS1 back to the control panel within PS3 (located west of the leachate storage tank) were also installed. Installation of a 100mm diameter high density polyethylene (HDPE) forcemain to pump leachate from PS1 to the leachate storage tank was also completed.

- Existing north chamber (pumping station PS2): a 7.5 horsepower EPG Surepump was installed within the existing chamber, which is capable of pumping leachate from PS2 via forcemain to the top of the leachate storage tank. A lifting assembly for removal of the pump from within PS2 was also installed. A pressure transducer was installed on the pump and new float sensors were installed within the pumping chamber. A radio antenna was installed at PS2, along with associated electrical cables in a common trench to a radio tower located at the northeast corner of the landfill, and to a second radio tower located at the southeast corner of the landfill. The radio towers were installed to establish communications between PS2 and PS3 via the radio antenna installed on the roof of the leachate storage tank.
- New pumping station PS3: located to the west of the leachate storage tank, PS3 is comprised of a slab on grade heated building measuring approximately 5 m x 6 m. The building houses the control panel for the leachate storage system, and contains two (2) end suction, variable speed drive equipped Smart Turner pumps, which draw leachate from the storage tank to the truck loading area located on the east side of the former soil recycling pad. Electric spring actuator motors are present on the suction and discharge lines to prevent accidental emptying of the storage tank. Flow meters connected with the programmable logic control (PLC) are used to control the speed of the pumps when filling trucks. A 100mm HDPE discharge forcemain extends from PS3 to a structure on the former soil recycling pad and is terminated with a manual isolation valve and camlock hose connection adapter extending from a concrete structure. Operators of trucks hauling leachate will connect a hose from the camlock fitting at the structure to the camlock fitting on the truck. A control panel containing start and stop buttons for the PS3 pumps is present on the north side of the truck loading area for operator convenience. Power is supplied to the building via electrical cable extending from the west side of PS3, extending northwest and west along the south access road, and entering the electrical building at the enclosed flare.
- New pumping station PS4: located to the north of the truck loading structure and to the northeast of the former soil recycling pad, PS4 is comprised of a 1500mm diameter concrete structure containing a submersible pump and associated electrical controls and sensors. The purpose of PS4 is to convey any leachate spilled during truck loading operations back into the leachate storage tank, and to capture any surface water from the truck loading area. PS4 is connected via forcemain to the common forcemain servicing PS1 and PS2; and
- Common leachate forcemain: a new 100mm HDPE forcemain was installed from PS2 around the east half of the landfill down to PS3. A new 100mm forcemain was installed from the existing HDPE pipe extending into the floor of PS1, extending east back to PS3. A 75mm HDPE forcemain extends from the north side of PS4 into the HDPE forcemain extending from PS1. Electrical cables and conduit were installed within the same trench as the forcemains from PS2 to PS3; from PS3 to the truck loading area, and from PS1 back to PS3 at higher elevations than the forcemain.

Several valves for control of leachate from the various locations to the leachate storage tank were also installed but are not referenced in the aforementioned sections for ease of simplicity when detailing the leachate storage system.

Construction of the leachate storage system commenced in late June 2021 by R.W. Tomlinson Limited and was substantially completed on December 23, 2021. Completion of the leachate storage system is anticipated to be completed in early 2022.

3.10 FACILITIES PLANNED FOR 2022

Condition 14.3 x of the former ECA requires information regarding any facilities planned for installation during the next reporting period.

Installation of the remaining components for the leachate storage system, as identified in **Section 3.9.2** of this report, are anticipated to be completed in early 2022.

As noted under Section 1.2, WM has submitted ECA applications to amend the current ECA No. A371203 and ECA No. 1688-8HZNJG, pertaining to the MECP's August 24, 2021 decision that WM has completed delineation of leachate-impacted groundwater related to the Richmond Landfill. Among the items proposed within these ECA

applications is the installation of a hydraulic control system to control landfill leachate impacted groundwater into the intermediate bedrock flow zone. The proposed conceptual design of the hydraulic control system is comprised of three (3) existing groundwater extraction wells open in the intermediate bedrock system. Pressure transducers and submersible groundwater extraction pumps will be installed in each of the extraction wells to monitor water levels and control pump discharge, and individual control panels will be installed at each well to control operations of the pump and transmit data to equipment within PS3. This will enable continuous measurement of the groundwater level in each extraction well to be monitored remotely. All extraction wells will feed into a common forcemain that will discharge into SWM Pond 3. Upon approval of the applications by the MECP, construction of the hydraulic control system may be completed in 2022.

No other facilities are planned to be installed in 2022.

It is noted the current ECA does not require the provision of information regarding facilities planned for installation during the next reporting period. As such, this section will be deleted from future reports.

3.11 LEACHATE QUANTITIES

Condition 14.3 xi of the former ECA requires a summary of the quantity of any leachate or pre-treated leachate removed from the north and south pumping stations at the site during each operating week.

In 2021, leachate continued to be hauled to the Town of Greater Napanee for treatment. Loads are collected from the site, manifested, and then discharged at the septage receiving facility located at Enviro Park Lane and West Street. In the event the Town of Greater Napanee is unable to receive leachate, WM has approval for disposal at the Ravensview septage receiving facility in Kingston, ON. Leachate continued to be extracted at the lowest portions on Phases 2 and 4 throughout most of 2021 and hauled as required for treatment off-site. Additional details are provided in **Section 4.1.**

As noted under **Section 3.9**, improvements and upgrades were completed to the existing leachate collection system in 2021; most notably, construction of an onsite leachate storage tank, construction of a leachate storage system conveyance network, and a truck loading area on the east side of the former soil recycling pad. It is anticipated operation of the truck loading area for the removal of leachate from the site will commence in 2022 upon completion of construction activities.

WM inspects the site each day for leachate seeps and problem areas in the final cap. If leachate seeps are encountered, they are promptly repaired to avoid any surface water contamination. Generally, leachate seeps are excavated, and granular material and dry clay are replaced and packed. When cracks develop in other areas of the final cap and the potential for gas migration is present, the final cap is scarified, or re-compacted and additional clay may be placed in the area to prevent gas migration. Through the continuous removal of leachate to the leachate treatment facilities, the potential for leachate seeps and gas outbreaks are minimized and the potential for any off-site impact is reduced. As discussed in **Section 3.7**, leachate seeps detected on the south, east and north slopes of the landfill mound were repaired in May 2021. No obvious leachate seeps were observed during WSP's annual inspection in September 2021. Some barren areas were identified on the northeast, east, and south sides of the landfill mound, including the areas where seeps were repaired in 2017 through 2020. These areas were identified to WM. Re-seeding of these areas have been recommended by WSP.

For 2021, leachate quantities are recorded daily, and are reported monthly. The reader is referred to **Section 4.1.1** of this report for a discussion of the monthly leachate quantities removed from the site.

Previously, if leachate could not be hauled from the site due to conditions at the Town of Greater Napanee or City of Kingston treatment facilities, leachate or leachate-impacted water was temporarily stored in the leachate-holding lagoon located to the north of the site. Once leachate treatment resumed at the receiving plant, this liquid would then be hauled to the plant for treatment and disposal. Storage of leachate in the holding lagoon was a temporary, last resort measure, and was outlined as such in the leachate management plan submitted to the MECP. In 2010, this pond was dewatered, and allowed to drain freely in future rainfall events. However, if the pond was required for temporary storage of leachate, the pond was capable of being used for this contingency.

In mid January 2020, the holding lagoon was used for temporary storage of leachate due to a period of high flows resulting from wet weather events. On January 23, 2020, use of the leachate holding lagoon for the temporary storage of leachate was revoked by the MECP under a POO. The POO has since been resolved; however, no leachate has been transferred from the north chamber to the holding lagoon since that time.

For brief periods in 2021, leachate from the holding lagoon was transferred back to the north chamber. Leachate from the north chamber was then transferred into trucks for disposal offsite at an approved treatment facility. The overall quantity of leachate transferred from the lagoon to the north chamber can be found in **Section 4.1.1** of this report.

As discussed under **Section 1.2**, approval to construct a permanent forcemain between the north chamber (pumping station PS2) and the holding lagoon was granted by the MECP on March 19, 2021 via conditions issued in current ECA No. A371203. A condition of the current ECA requires WM not to operate the leachate forcemain unless it has been demonstrated and accepted by the MECP that the integrity of the liner is not compromised and leakage from the lagoon is not of concern. To date, this forcemain has not been constructed and WM does not intend to construct it in the future.

It is anticipated in 2022, the remaining leachate within the holding lagoon will be transferred back to the north chamber (pumping station PS2). The leachate will then be pumped to the leachate storage tank, then transferred to trucks at the truck loading area for disposal offsite at an approved treatment facility.

3.12 TOXICITY TESTING – STORMWATER MANAGEMENT PONDS

Condition 14.3 xii of the former ECA, and Condition 14.3 vi of the current ECA, requires a discussion of the results of the toxicity testing of the landfill stormwater management ponds which includes potential impacts to the groundwater by the ponds.

BluMetric Environmental Inc. (BluMetric) has provided a memorandum regarding the results of toxicity testing of the stormwater ponds, and potential impacts to the groundwater by the ponds. The memorandum can be found in **Appendix C** of this report.

3.13 WASTE TONNAGE SUMMARIES

Condition 14.3 xiii of the former ECA requires the weekly, maximum daily, and total annual quantity (tonnes) of waste received at the site.

No waste was received at the site in 2021.

The public drop off area is also permitted on 25 occasions per year to have a “Large Waste Day” and receive up to 100 tonnes per day. In 2021, no Large Waste Days were utilized.

In the current ECA, there is no requirement to report weekly, maximum daily, or total annual quantity of waste received at the site. As such, this section will be removed from future reports.

3.14 SUMMARY OF COMPLAINTS

Condition 14.3 xiv of the former ECA, and Condition 14.3 vii of the current ECA, requires a summary of any complaints received and the responses made.

In 2021, there were no complaints received by WM regarding odours.

Over the years, a few immediate neighbours have occasionally contacted WM regarding odours from the landfill site. The normal decomposition of waste generates odours and is contained in landfill gas. WM implemented the

operation of a landfill gas recovery system in 2001 to control the escape of landfill gas. Gas wells were drilled in the waste mound, and collection piping withdraws landfill gas from the wells and all leachate manholes to reduce the odour emitted from the landfill site. Landfill gas is flared off via an enclosed flare to the south of the landfill footprint. The landfill flare was commissioned in April 2001 and successfully reduces landfill gas odours.

In June and July 2009, the consulting group RWDI, accompanied by a representative from the MECP, conducted a three (3) week long odour survey, and found no negative impacts on the local air quality. In addition, the MECP used their TAGA (Trace Atmospheric Gas Analyzer) unit to evaluate the local air quality and concluded that the air quality was similar to any rural air quality in Ontario.

WM staff also tour the surrounding area and concession roads regularly to monitor for odour, litter and illegally dumped waste. Observations are recorded and corrective measures taken as required. A weather station is located north of the office area, which monitors wind speed, wind direction, temperature, rainfall, solar radiation and relative humidity. Recorded local weather patterns help in addressing odour complaints.

If an odour complaint is received at the landfill site, WM staff is dispatched to investigate the source of the odour and record the conditions that may have influenced the odour. WM can complete this response plan if complaints are received directly by WM. If complaints are delayed or not directed towards WM, the potential odour source cannot be investigated, nor can corrective action be taken if the odour was potentially landfill related. A sign is posted near the front entrance, directing residents with questions, concerns and complaints to contact the Landfill Manager or WM Help Line. Phone numbers for both contacts are provided on the sign.

In June 2016, WM submitted an application to the MECP requesting a reduction in the frequency of surface emission surveys performed at the site, based on the results of the 2013 and 2014 surface emission surveys. Included in the application was a revised Odour Monitoring Plan, updated to reflect current site conditions and eliminated the use of surface emission surveys. WM requested that surface emission surveys be performed only in the event of confirming final cover system repairs to areas of the landfill mound, if the landfill mound was confirmed to be a source of odour at an off-site receptor identified in the Odour Monitoring Plan. On July 14, 2017, the MECP approved WM's request, and issued revised Conditions 8.5.3(a), (b) and (c) in former ECA No. A371203. Conditions 8.7 (a) and (b) in current ECA No. A371203 govern current odour monitoring, abatement activities, and remedial action protocols.

In 2021, no surface emission surveys were completed.

3.15 SUMMARY OF SEEPS/UPSET CONDITIONS/ EMERGENCY SITUATIONS, AND REMEDIAL ACTIONS

Condition 14.3 xv of the former ECA, and Condition viii of the current ECA, requires a discussion of any seeps, upset conditions or emergency situations and/or corrective/remedial actions taken.

As discussed under **Section 3.7**, seep repairs were undertaken on the south, east and north slopes in May 2021.

As noted under **Section 1.2**, the MECP POO issued on January 23, 2020 to the Richmond Landfill has been resolved. All immediate and short-term measures to assess and manage leachate generated at the site, identified by WM in the Action Plan submitted to the MECP on January 31, 2020, were completed on March 26, 2020. The long-term measures to manage, assess, and reduce leachate levels at the site involved the submission of ECA applications for improvements to the existing leachate collection system, including the construction of a permanent forcemain between the north chamber and the leachate holding lagoon, and upgrades to the leachate storage facility previously approved under Condition 5.5 of former ECA No. A371203. These ECA applications to amend former ECA No. A371203 were submitted in mid and late April 2020, which resolved the POO. On March 19, 2021, the MECP issued current ECA No. A371203. Among several items incorporated into this updated ECA was the approval to construct the leachate storage tank and storage system, and construction of the forcemain between the leachate holding lagoon and the north chamber (pumping station PS2). Details regarding construction of the system components completed in 2021 is outlined under **Section 3.9** of this report. Completion of the leachate storage system is anticipated in early 2022.

Leachate remains present within the holding lagoon. This leachate was transferred to the holding lagoon from the north chamber prior to January 23, 2020. For brief periods in 2021, a total of approximately 1,848 m^3 of leachate was transferred from the holding lagoon back to the north chamber. This leachate was later removed from the north chamber and hauled to the sewage treatment facilities in Napanee and/or Kingston for treatment. Refer to **Section 4.1** for additional information regarding leachate volumes. Removal of the remaining leachate within the holding lagoon is anticipated to occur in 2022.

No other seeps, upset conditions or emergency situations were reported at the site in 2021.

3.16 OPERATIONAL PROBLEMS

Condition 14.3 xvi of the former ECA, and Condition 14.3 ix of the current ECA, requires a discussion of any operational problems encountered at the site, and corrective action taken.

Refer to **Section 3.15** for the resolution of the leachate overflow and spill incidents which occurred at the site in January 2020.

No other operational problems occurred at the site in 2021.

3.17 REFUSAL OF WASTE

Condition 14.3 xvii of the former ECA, and Condition 14.3 x of the current ECA, requires a summary of any waste that was refused for disposal at the site, the reasons for refusal, and the carrier who brought the waste to the site.

In 2021, there were no incidents where waste was brought to the site and refused.

3.18 LEACHATE COLLECTION SYSTEM CLEANING AND INSPECTION

Condition 14.3 xviii of the former ECA, and Condition 14.3 xi of the current ECA, requires a summary of the leachate collection system cleaning and inspection activities.

In 2021, WM regularly inspected the leachate pumps and system each day that hauling of leachate occurred. No issues with the equipment or system were noted.

On September 14, 2021, camera inspection and flushing of the leachate collection system was completed by Tomlinson Environmental. No blockages were present in the system and no issues were encountered.

3.19 FINANCIAL ASSURANCE SUMMARY

Condition 14.3 xix of the former ECA, and Condition 14.3 xii of the current ECA, requires an update summary of the amount of financial assurance which has been provided to the Director.

An updated financial assurance re-evaluation was submitted to the MECP on March 20, 2020, as per Condition 2.7 of the former ECA. On March 19, 2021, the MECP issued the current ECA, which also accepted the March 2020 financial assurance submission. Condition 2.5 of the current ECA required WM to submit an updated financial assurance amount of $12,129,094 to the Director by April 7, 2021. On March 31, 2021, an irrevocable standby letter of credit for this amount was submitted by WM to the Director.

3.20 CHRONOLOGY OF SIGNIFICANT LANDFILL DESIGN, OPERATIONAL AND LAND USE CHANGES

Condition 14.3 xx of the former ECA requires a table detailing the chronology of significant landfill design, operational, and land use changes for the landfill, and any other information with respect to the site which the District Manager or Regional Director may require from time to time.

Please refer to **Appendix D** for a table which lists the aforementioned information. The table also lists the potential sources of Volatile Organic Compounds at the site.

3.21 STATEMENT OF COMPLIANCE

Condition 14.3 xxi of the former ECA, and Condition 14.3 xiii of the current ECA, requires a statement of compliance with all conditions of the ECA and other relevant Ministry groundwater and surface water requirements.

As a result of the site inspection completed in 2021; based on the readily available information provided by WM; and to the best of our knowledge, WSP certifies that WM has complied with the conditions outlined in the various Environmental Compliance Approvals and Certificates of Approval for the site, with respect to site operations. BluMetric has provided a memorandum regarding compliance with the environmental monitoring and reporting requirements of the ECA, which can be found in **Appendix E**.

Monitoring programs have identified elevated levels of some monitoring parameters at locations to the south of the landfill. Detailed explanation of sample results, and work completed prior to 2017, can be found in the spring and fall semi-annual monitoring reports prepared by BluMetric, and in previous annual reports completed by WSP.

In the spring of 2015, the ERT held a hearing on the appeal filed in 2012 by the CCCTE. The decision, with an accompanying order, was issued on December 24, 2015. The ERT ordered that additional field work be completed and a report prepared and provided to all Parties (as defined in the ECA). The report was completed by April 15, 2016.

After review of the April 2016 report, with review and comment from all Parties, the MECP determined that additional field work was required to further define the east and southwest boundaries of the proposed CAZ. That work began in the summer of 2016. The MECP ordered that the report based on this additional field work be submitted by May 31, 2017. As per the ECA, the Parties were to convene a meeting to discuss the report's contents. After reviewing input from all Parties, the MECP was to determine if the CAZ has been adequately defined. If the MECP agreed the CAZ has been adequately defined, WM was to submit the CAZ application. If the MECP did not agree the CAZ has been adequately defined, more field work would be ordered.

The report due May 31, 2017 was submitted by July 20, 2017. The report was delayed while additional field work was being completed. In November of 2017, the MECP indicated that the plume had been adequately defined but requested some additional field work to further define the shallow aquifer within the defined plume. Subsequently, in February 2018, the MECP decided additional field work was required in the northwest area of the CAZ. A work plan was submitted to MECP for approval.

In 2018, the field work in the northwest area of the CAZ was completed and a report was submitted to the MECP. The MECP reviewed the report, and requested an additional well be installed.

In 2019, additional wells were installed in the northwest area of the CAZ. All wells were dry. Additional investigation was completed on the east side of the proposed CAZ, just south of Beechwood Road. This well was also dry. Also in late 2019, additional work was done to confirm the leachate lagoon was not leaking.

In 2020, work was completed in accordance with the POO issued by the MECP on January 23, 2020 pertaining to the leachate overflow and spill incident.

As noted under **Section 1.1,** on August 11, 2021, the MECP hydrogeologist involved with review of the proposed CAZ issued an assessment that the delineation of the groundwater contamination had been sufficiently identified,

and WM could proceed with the development of a revised environmental monitoring program. This assessment was confirmed by the MECP Kingston District Manager on August 24, 2021. On November 23, 2021, WM submitted an application to amend ECA No. A371203. Among the items requested under this amendment application was the inclusion of the proposed CAZ in the ECA; addressing non-compliance with Condition 8.8 and Guideline B-7; and a proposed updated Environmental Monitoring Plan. An addendum to the November 23, 2021 ECA application was submitted on January 7, 2022, requesting the inclusion of a proposed HCS into the ECA. A separate ECA application to amend ECA No. 1688-8HZNJG was submitted on January 7, 2022 to include the proposed HCS flow rates into the overall flow volumes for SWM Pond 3, and minor amendments to monitoring parameters listed in the ECA. Review of these ECA applications is ongoing by MECP.

3.22 CONFIRMATION OF SITE INSPECTION PROGRAM

Condition 14.3 xxii of the former ECA, and Condition 14.3 xiv of the current ECA, requires confirmation that the site inspection program as required by this ECA has been complied with by the Owner.

WM has confirmed to WSP that the site inspection program that is required by the Environmental Compliance Approvals, the Certificates of Approval, and by the various reports that address the site operations and monitoring, have been complied with.

It is noted that on February 10, 2021, an Environmental Officer from the MECP Kingston District office completed a physical inspection of the site to assess for any major site/operational non-compliance with former ECA No. A371203 which could pose an immediate threat to the natural environment. The report was provided to WM via email on March 15, 2021. The report indicated that all previous non-compliance relating to the January 2020 leachate overflow and leachate spill events had been addressed through issuance and compliance with the associated POO. The report also noted that the site was scheduled for inspection during the 2020/2021 fiscal year, but given the many amendment applications that were under review by the MECP at the time of the inspection, and the pending re-issuance of the ECA as a result, a comprehensive assessment with the ECA was not conducted. The report noted a more in-depth inspection would be completed at a later date. Refer to **Appendix F** for a copy of the MECP inspection report.

A desktop review of ECA No. 1688-8HZNJG was also completed by the Kingston District MECP in February 2021. Refer to **Section 4.2.2** for additional information.

3.23 OPERATIONS, EQUIPMENT, PROCEDURES CHANGES, AND RECOMMENDATIONS

Condition 14.3 xxiii of the former ECA, and Condition 14.3 xv of the current ECA, requires documentation of any changes in operations, equipment, or procedures employed at the site, and recommendations regarding any proposed changes in operations of the site.

As part of ECA No. 1688-8HZNJG, issued January 10, 2012, WM was required to submit a Stormwater Contingency and Remedial Action Plan to the MECP District Manager within six (6) months of the date of issuance for the ECA. On March 22, 2012, WM submitted this plan. On March 15, 2021, an Environmental Officer from the MECP Kingston District office advised WM that a desktop review of ECA No. 1688-8HZNJG had been completed in February 2021, and as part of the examination of the file, the Stormwater Contingency and Remedial Action Plan submitted in March 2012 was reviewed. The MECP that a commitment in the plan included the submittal of a formal maintenance schedule for the stormwater infrastructure five (5) years after site closure. No such schedule had ever been submitted by WM. A request for preparation of a schedule was submitted by the Environmental Officer to WM. On April 30, 2021, WM submitted an inspection and maintenance schedule to the Environmental Officer at the MECP Kingston District office for approval. To date, WM has not received comments from the MECP regarding this schedule. Inspections on the stormwater infrastructure was completed by WSP on September 14, 2021 and September 21, 2021. Details regarding the inspection and recommended maintenance activities are

provided in **Section 4.2.2**. Annual inspections on the stormwater infrastructure will continue and the findings of the inspections will be included in future reports.

On September 14, 2012, WM submitted an application to amend ECA No. A371203, regarding the operation of the public drop off area. WM requested an amendment to Condition 5.18 (1), to reduce the frequency of waste removal from the public drop off area from twice per week, to once every two (2) weeks. To date, WM has not received comments from the MECP regarding the status of this application. As the transfer station has ceased operations, it is not anticipated there is a need for this amendment to proceed.

In August 2019, WM requested and received approval from the City of Kingston to dispose leachate at the Ravensview sewage treatment plant as a contingency measure. This facility replaces the contingency leachate disposal approval previously in place at the sewage treatment plant in Cobourg, ON. The approval for disposal of leachate at this facility is valid and has no calendar restrictions.

On March 19, 2021, the MECP issued current ECA No. A371203, which approved the following:

- Approval to construct the leachate storage tank in accordance with the ECA application submitted in April 2020 (a long-term Action Plan measure identified in response to the January 2020 POO);
- Approval to construct the leachate forcemain between the north chamber (pumping station PS2) and the leachate holding lagoon, in accordance with the ECA application submitted in April 2020 (a long-term Action Plan measure identified in response to the January 2020 POO);
- Removal of several Conditions of the former ECA, which applied when the site was in operation, but were no longer relevant in the post-closure period, in accordance with the ECA application submitted in January 2020;
- Approval of an updated public notification plan as per a Condition of the current ECA; and
- Approval of the financial assurance re-evaluation submitted by WM in March 2020.

Refer to **Section 1.2** and **Section 1.3** of this report for additional details regarding the aforementioned applications and submissions.

As a condition of the current ECA, a spill contingency plan was required to be submitted pertaining to the improvements made to the leachate collection system. The plan was developed and submitted to the MECP Kingston District Manager on June 23, 2021 for approval. The plan outlines contingency measures to be implemented in the event of a spill involving leachate at the site. As construction of the leachate storage tank and leachate storage system was in the early stages at the time the plan was submitted, an update to the spill contingency plan will be required once construction activities are completed. To date, WM has not received comments from the MECP regarding the status of this plan.

Construction of the improvements to the existing leachate collection system, including the installation of a leachate storage tank and leachate storage system conveyance network, was substantially completed on December 23, 2021. Details regarding these installation activities are outlined in **Section 3.9** of this report. It is anticipated that construction activities will be completed in early 2022, and that the truck loading area will then be utilized for the removal of leachate from the site. Leachate will no longer removed by trucks from the north chamber or south pumping station.

On September 28, 2021, a meeting between WM and the PLC took place for the first time in several years. The intent of the reinstated PLC was to discuss matters pertaining to the existing closed landfill site including development, operation (current and proposed) and ongoing monitoring, closure and post-closure care related to the site, along with review and comment on any subsequent applications for approval. Invitations to participate in the meeting were sent to the MECP Kingston District Manager and Environmental Officer, local communities including the Mohawks of the Bay of Quinte, and the Concerned Citizens Committee of Tyendinaga and Environs, with representatives from each group participating. The meeting was held virtually due to the ongoing COVID-19 pandemic. A second virtual meeting was held on December 7, 2021. It is anticipated that additional meetings will be held throughout 2022.

On January 1, 2022, Mr. Noah Wayt, District Manager for the WM Midwest ELMG, took over as acting landfill manager from Mr. William McDonough, who retired from WM.

3.24 PHYTOREMEDIATION SYSTEM

Condition 5.11 of the former ECA, and Condition 4.9 of the current ECA, lists the reporting requirements for the phytoremediation system at the Richmond Landfill, which includes the following:

(i) Results and an analysis of the results of the monitoring programs for the phytoremediation system;

(ii) Assessment of the results of the phytoremediation system as related to the stated objectives for the existing and proposed phytoremediation system;

(iii) Assessment of the need to change the monitoring program for the phytoremediation system and a recommendation of the required changes;

(iv) A report on operational problems identified during the operation of the phytoremediation system and a discussion of each problem and what was done to rectify each problem;

(v) Assessment of the need for operational changes for the phytoremediation system and a recommendation of the required changes; and

(vi) A Site plan which shows the location of the phytoremediation system and any changes made to the phytoremediation system.

The approval for the phytoremediation system was initially issued by the MECP on May 2, 2011 through Notice 8 to amend C of A No. A371203. As noted in previous annual monitoring reports, the system was installed in late May 2011 in the northwest corner of the landfill property. No monitoring results or assessment of the system's operation were available for 2011 as the trees required time to establish in their environment. In late September 2012, the entire plantation was plowed under due to poor growth and wet site conditions.

In April 2013, the ground within the entire phytoremediation area was disked, and low areas were drained to remove standing water. All planting areas were frost seeded with white clover and barley at this time. In May 2013, under the direction of Mr. Steve Shaw from Landscape Rehab Tree and Turf, approximately 6,700 dogwoods and willows were planted, and the area was sprayed with the chemical "Round Up" to retard weed growth. WM monitored the growth of the plantation throughout late spring, and by July 2013 reported a tree growth rate of 100 millimetres to 200 millimetres. Grass was mowed between the rows to promote continued growth. In October 2013, "Round Up" was again sprayed for weed control in the planted areas, and grass was mowed between tree rows. WM reported a live tree plantation of approximately 60%, with an average tree height between 250 millimetres to 350 millimetres.

In June 2014, under the direction of Mr. Steve Shaw of Landscape Rehab Tree and Turf, the herbicide Simazine was applied at a rate of seven (7) kilograms per hectare. A post emergent herbicide was also applied to areas where vegetation was already starting to re-establish. Gromoxone was used to burn down re-established grass and weeds and was applied at a rate of two (2) litres per hectare. A tree height of 50 centimetres to 100 centimetres was also reported.

In 2015, WM reported the plantation experienced good growth, with willows measuring approximately 1.5 metres to 2.4 metres in height, and the dogwoods measuring 0.9 metres to 1.2 metres in height. Approximately five (5) to 10 percent more shrubs that were not visible previously due to weeds also showed signs of growth.

For 2016, WM reported the plantation maintained vegetation, with the willows measuring 1.5 metres to 2.4 metres in height, and the dogwoods measuring between 0.9 metres to 1.2 metres in height. Additional shrubs that were not previously visible due to weeds exhibited signs of growth.

For 2017 through 2020, WM reported the plantation continued to develop and no operational issues were noted.

To address Condition 5.11 of the former ECA and Condition 4.9 of the current ECA for 2021, the following is noted:

- For Condition 5.11 (i, ii, and iii) of the former ECA, and for Conditions 4.9 (i, ii, and iii) of the current ECA, please refer to **Appendix G** for the results of the 2021 monitoring program for the phytoremediation area, as provided by BluMetric;
- For Conditions 5.11 (iv and v) of the former ECA, and Conditions 4.9 (iv and v) of the current ECA, WM reports that Hydro One completed pruning of the phytoremediation system in early spring 2021, which reduced the height of all vegetation under the maximum 3.66 metre (12 feet) requirement as per a Condition of the former and current ECA. During the September 2021 site inspection, WSP noted all vegetation had re-established in the phytoremediation area. All plant life will continue to be monitored for any signs of impairment. No other operational recommendations nor changes to the system are presented at this time.
- Please refer to the site plan located in **Appendix H** of this report, which shows the location of the phytoremediation system area as required by Condition 5.11 (vi) of the former ECA, and Condition 4.9 (vi) of the current ECA.

4 REPORTING REQUIREMENTS – ENVIRONMENTAL COMPLIANCE APPROVAL NO. 1688-8HZNJG

On January 10, 2012, the MECP issued Environmental Compliance Approval No. 1688-8HZNJG, which revoked and replaced the previous Certificate of Approval. The ECA removed the requirement to operate the ponds in a closed manner, thereby allowing the ponds to operate as designed, subject to quarterly toxicity testing to confirm no adverse effects to species listed in the ECA.

Since the ECA is the most recent version of the approval regarding the operation and management of the stormwater and leachate management systems at the Richmond Landfill, this section of the annual monitoring report is submitted in accordance with Conditions 10 (4) (a) (b), (c), (d), (e), (f), (g), and (h) of this document. An overview of the leachate management system present at the Richmond Landfill is provided below.

4.1 LEACHATE MANAGEMENT

Leachate haulage from the site to the Town of Greater Napanee sewage system began in 1996. Leachate was regularly hauled from the landfill by Sutcliffe Sanitation Services Ltd. and discharged directly to the sewage system. Close communication between the Town, WM and the leachate hauler was maintained to determine if leachate may be accepted for treatment. Before picking up a load of leachate, WM confirms with the Town that leachate can be hauled on that particular day. In the event that the Town is operating on high flows, the Town will notify WM that no leachate can be accepted until levels are reduced. WM will in turn notify the hauler.

During the winter of 2003/2004, WM constructed a leachate/septage dumping facility within the Town of Greater Napanee. The dumping facility is located at Enviro Park Lane and West Street within the Town of Greater Napanee on municipally owned property. The dumping facility was commissioned in April 2004, after which time all leachate was deposited at the dumping station. Station users are recorded by PIN numbers that uniquely identify each station user and log the quantity of material discharged to the dumping facility. Users are then billed on a user pay basis by the Napanee Utilities. Ownership, operation and maintenance of the facility are the responsibility of the Greater Napanee Utilities. WM has a usage contract, which allows WM to use the facility for a specified period of time as long as Napanee Utilities does not have a restriction on dumping due to treatment conditions at the sewage treatment plant. The dumping facility contains dumped loads and slowly discharges wastewater into the Napanee sewage system. Napanee Utilities has a C of A for this site.

It is a requirement of the landfill site's ECA that alternative leachate treatment options are available should the facility in the Town of Greater Napanee be unable to treat leachate. Approval was given to discharge leachate at the Ravensview Sewage Treatment Plant in 2019 on an on-going, as needed basis, and this approval is presented in **Appendix I** of this report. Leachate was hauled from the Richmond Landfill to Kingston for treatment in 2021.

In 2020, Tomlinson Environmental, a MECP approved waste hauler, was contracted by WM as an additional hauler to remove leachate from the Richmond Landfill. In May 2020, Smith's Septic Tank Service was contracted to replace both Sutcliffe Sanitation and Tomlinson Environmental as the designated leachate hauler from the site. For 2021, Smith's Septic Tank Service continued to be the designated leachate hauler.

4.1.1 LEACHATE QUANTITIES

Condition 10(4) (b) of the ECA requires a summary of the monthly quantity of leachate disposed offsite and corresponding leachate average quality.

Table 4.1 below lists the leachate quantities trucked from the site to the Town of Greater Napanee sewage treatment plant and to the Kingston Ravensview sewage treatment plant in 2021.

Table 4-1 2021 Monthly Leachate Quantities Hauled for Treatment*

Month	Napanee (m^3)	Kingston (m^3)	TOTAL
January	2,480.44	19.70	2,500.14
February	1,301.09	0	1,301.09
March	1,377.82	274.70	1,652.52
April	2,018.72	448.90	2,467.62
May	2,094.99	147.20	2,242.19
June	2,100.95	19.63	2,120.58
July	806.48	0	806.48
August	599.88	0	599.88
September	588.72	72.67	661.39
October	410.38	59.10	469.48
November	1,608.83	0	1,608.83
December	1,564.39	39.56	1,603.95
Total	**16,952.69**	**1,081.46**	**18,034.15**

*source: Section 3.1.2 - Leachate Generation, 2021 Leachate Volumes table (page 6) of report entitled *"Fall 2021 Semi-Annual Monitoring Report – Waste Management of Canada Richmond Landfill, Town of Greater Napanee, ON"* prepared by BluMetric Environmental Inc., dated January 13, 2022.

The average rate of removal for treatment was initially calculated to be 50.15 m^3/day.

No leachate was transferred from the north chamber to the leachate holding lagoon in 2021. However, for periods in 2021, the BluMetric report identified approximately 1,848 m^3 of leachate was transferred from the holding lagoon back to the north chamber for subsequent removal from the site. This leachate had been moved from the north chamber to the leachate holding lagoon prior to issuance of the MECP POO on January 23, 2020, which restricted further transfer of leachate from the north chamber to the lagoon. As a result, this volume of leachate was subtracted from the overall volume of leachate hauled for treatment for 2021. The result of this calculation is an overall volume of leachate generated by the landfill mound for 2021, as follows:

18,305.14 m^3 leachate hauled for treatment – 1,848 m^3 leachate previously generated = **16,186.15 m^3**

The average rate of removal of leachate generated by the landfill mound in 2021 was 44.35 m^3/day. It is recommended that leachate removal continue.

Please refer to **Appendix C** for information regarding monthly average leachate quality data, provided by BluMetric.

It is noted once the construction of the leachate storage tank and leachate storage system is completed, that all leachate removal from the site will occur from the truck loading area located on the former soil recycling pad to the north of the eastern portion of Stormwater Management Pond 3. Leachate removal from this location is expected to commence in early 2022. Any leachate transferred from the leachate holding lagoon into the north chamber (now referred to as pumping station PS2) will continue to be tracked separately until the lagoon is empty.

4.1.2 OPERATIONAL PROBLEMS AND CORRECTIVE ACTIONS

Condition 10(4) (c) of the ECA requires a description of any operating problems encountered and corrective actions taken.

A leachate spill and leachate overflow event occurred at the site in January 2020 due to high flows resulting from wet weather events. Additional details regarding the resolution of these incidents are provided in **Section 3.15** of this report. The POO has since been resolved.

On March 19, 2021, the MECP issued current ECA No. A371203, which approved the ECA applications submitted on April 15, 2020 and April 30, 2020 pertaining to improvements to the leachate collection system. As noted under **Section 3.9**, construction of the leachate storage tank and leachate storage system conveyance network commenced in April 2021 and was substantially completed on December 23, 2021. Completion of leachate storage facility construction activities is anticipated in early 2022. Leachate removal from the newly constructed truck loading area is expected to commence in early 2022.

As noted under **Section 1.1**, an application to amend ECA No. 1688-8HZNJG was submitted by WM to the MECP on January 7, 2022. The application resulted from a conceptual design of a HCS designed to control landfill leachate impacted groundwater along the southeast side of the landfill. While the proposed HCS was submitted for approval under current ECA No. A371203, the application to amend ECA No. 1688-8HZNJG is to incorporate the flow rate from the HCS into the overall flows for SWM Pond 3. A modification to amend monitoring and reporting requirements listed in Table 2 under Condition 8, to include sample parameter 1,4 – dioxane was also proposed in the application. Review of the application is currently underway by the MECP.

No issues from the treatment of the leachate at either the Napanee or Kingston sewage treatment plants have arisen that have been communicated to WM.

4.1.3 MAINTENANCE PERFORMED ON STRUCTURES

Condition 10(4) (d) of the ECA requires a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Works.

On September 14, 2021, cleaning and camera inspection of the leachate collection system was completed by Tomlinson Environmental. Additional details regarding this activity can be found in **Section 3.2** and **Section 3.18** of this report.

4.1.4 CALIBRATION AND MAINTENANCE OF LEACHATE MONITORING EQUIPMENT

Condition 10(4) (e) of the ECA requires a summary of the calibration and maintenance carried out on all leachate monitoring equipment.

In 2021, no calibration procedures were performed on any existing structures or equipment.

It is noted that during installation of the components of the leachate storage system conveyance network, various calibration procedures were performed as equipment was installed to ensure it was functioning as intended.

4.1.5 SUMMARY OF COMPLAINTS RECEIVED

Condition 10(4) (f) of the ECA requires a summary of any complaints received during the reporting period, and any steps taken to address the complaints.

In 2021, no odour complaints were received.

4.1.6 SUMMARY OF BY-PASS, SPILL OR ABNORMAL DISCHARGE EVENTS

Condition 10(4) (g) of the ECA requires a summary of all By-pass, spill, or abnormal discharge events.

In 2021, there were no by-pass, spill or abnormal discharge events.

4.2 SURFACE WATER MANAGEMENT

Surface water quality management is also operated under ECA No. 1688-8HZNJG, which revoked and replaced the previous C of A on January 10, 2012. The new approval permits the ponds to be free flowing, subject to toxicity testing to verify no adverse effects are caused to species listed in the ECA. This section is intended to satisfy the requirements outlined in Condition 10(4) (a), (c), (d), (f) and (g) of the ECA.

4.2.1 SUMMARY OF STORMWATER MONITORING DATA

Condition 10(4) (a) of the ECA requires a summary and interpretation of all stormwater monitoring data and a comparison to the Provincial Water Quality Objectives (PWQO), including an overview of the success and adequacy of the Works.

BluMetric has prepared a memorandum to satisfy this section of the ECA. The reader is directed to **Appendix C** of this report for further information.

4.2.2 OPERATING PROBLEMS AND CORRECTIVE ACTIONS

Condition 10(4) (c) of the ECA requires a description of any operating problems encountered and corrective actions taken.

On March 15, 2021, an Environmental Officer from the Kingston District MECP notified WM via email that a desktop review of ECA No. 1688-8HZNJG had been completed. Refer to **Appendix J f**or a copy of the email and inspection report. The Environmental Officer referred to Condition 9 (1) of the ECA, which required the submission of a Stormwater Contingency and Remedial Action Plan for the Site's stormwater management infrastructure to the District Manager for approval. The document was prepared by WSP on behalf of WM and was submitted to the Kingston District MECP on March 22, 2012. The Environmental Officer noted the plan included a commitment for submission of a formal maintenance program five (5) years after Site closure that would formalize a maintenance schedule for the remaining contaminating lifespan of the landfill, but based on discussions with WM, it was not evident to the MECP that this formal maintenance program was produced, nor has any formal cleaning for the stormwater ponds ever been completed. The MECP expressed concerns that WM was unable to determine if the ponds were functioning as designed with respect to hydraulic performance. The MECP requested WM prepare and submit a written response by March 31, 2021, outlining the measures to be taken to conduct a detailed performance assessment of the SWM ponds including timeframes for completion of the proposed work and submission of findings to the MECP. Subsequent discussions between WM and the MECP Environmental Officer resulted in a time extension for the submission to April 30, 2021. On April 30, 2021, WM submitted a document to the MECP Environmental Officer entitled "Richmond Sanitary Landfill Site, Stormwater Infrastructure and Maintenance Plan" to satisfy the MECP's request. This document outlined the general principles of the existing stormwater infrastructure and included inspection schedules for WM personnel; associated maintenance or repair requirements; and documentation requirements. The plan also outlined the annual inspection on the stormwater infrastructure to be completed by WSP. To date, WM has not received any comments from the MECP pertaining to the content of this plan.

On September 14, 2021, WSP completed the annual site inspection at the Richmond Landfill, which included a high-level overview of the stormwater management infrastructure. A more detailed inspection of SWM Ponds 1 and 2 was completed by WSP on September 21, 2021, accompanied by Mr. William McDonough of WM. The inspection report issued by WSP on October 8, 2021 identified action items including removal of vegetation from

the interior and exterior pond banks, particularly at SWM Ponds 1 and 2, re-grading of the paths around the ponds to improve vehicle accessibility, and maintenance improvements on the drainage structures in the pond. Refer to **Appendix K** for a copy of the overall site inspection report. Action items pertaining to the stormwater infrastructure are identified on pages 10 through 12 of the report.

Aside from this matter, there were no operating problems encountered for the stormwater management system.

4.2.3 SUMMARY OF MAINTENANCE ACTIVITIES

Condition 10 (4) (d) of the ECA requires a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Works.

The two (2) northerly sedimentation ponds and the south sedimentation pond operated in 2021 without any maintenance required on the ponds. The ponds are regularly inspected to ensure their operation meets the ECA.

As noted under **Section 4.2.2**, a detailed inspection of the stormwater ponds was performed in September 2021 by WSP. Recommended maintenance activities were outlined in the overall site inspection report issued on October 8, 2021 included in **Appendix K** of this report. Due to the ongoing COVID-19 pandemic and wet weather conditions, no maintenance activities were undertaken in 2021. It is anticipated that maintenance activities on the stormwater management infrastructure will be completed when conditions permit in 2022.

4.2.4 SUMMARY OF COMPLAINTS RECEIVED

Condition 10(4) (f) of the ECA requires a summary of any complaints received during the reporting period, and any steps taken to address the complaints.

In 2021, there were no complaints received regarding the ponds.

4.2.5 SUMMARY OF BY-PASS, SPILL OR ABNORMAL DISCHARGE EVENTS

Condition 10(4) (g) of the ECA requires a summary of all By-pass, spill, or abnormal discharge events.

In 2021, there were no stormwater events that were a by-pass, spill, or abnormal discharge event.

5 GENERAL

In 2021, WM completed ongoing maintenance and operation of the landfill site. Active litter control, gas management, leachate treatment and active monitoring of the landfill site resulted in no operational impacts on the surrounding area. The use of the landfill gas collection and flaring system reduced any potential landfill gas odours throughout January through mid-August 2021. On August 16, 2021, the enclosed flare was shut off due to low landfill gas generation rates. Since the flare was shut down, there have been no issues with odours or gas migration.

WM has been very active in monitoring all aspects of the site, both on and off site, ensuring that no impacts were caused on the surrounding areas. The entire landfill mound has had final cover in place since September 2011 and is regularly inspected. WM advised that seep repairs had been completed on the south, east, and north slopes in May 2021. No obvious leachate seeps were observed during WSP's annual inspection. Re-seeding of areas where leachate seep repairs had been undertaken between 2017 and 2020 has been recommended to WM.

Several changes to existing approvals occurred in 2021, as follows:

- March 19, 2021: current ECA No. A371203 was issued by MECP. This ECA approved separate ECA applications submitted by WM in April 2020 pertaining to the construction of a permanent forcemain between the leachate holding lagoon and the north chamber; and modifications to the existing leachate storage facility approved under Condition 5.5 of the former ECA. These items were included as long-term measures under the Action Plan submitted by WM on January 31, 2020, in response to the January 23, 2020 MECP POO issued to the Richmond Landfill due to a leachate overflow event and leachate spill at the site in early to mid-January 2020. The POO has since been resolved. The March 19, 2021 ECA also approved the January 2020 ECA application requesting the removal of, and amendments to, several Conditions of the former ECA; and approved the financial assurance re-evaluation submitted by WM in March 2020. An updated public notification plan was also included in the ECA;
- On August 24, 2021, the MECP Kingston District Manager provided notice to WM that the MECP was satisfied that the delineation of leachate impacted groundwater on site and off site had been identified, as determined through extensive field studies completed between 2016 and 2020, and completed as a result of the December 24, 2015 ERT ruling on the appeal of several conditions of ECA No. A371203 issued on January 9, 2012. On November 23, 2021, an application to amend current ECA No. A371203 was submitted by WM as a result of the August 24, 2021 notice. The application consisted of a request to include a CAZ into the ECA; addressed non-compliance with Condition 8.8 and Guideline B-7; and a proposed updated EMP. An amendment to the ECA application was submitted on January 7, 2022, requesting the inclusion of a proposed HCS into the ECA. A separate ECA application to amend ECA No. 1688-8HZNJG was also submitted on January 7, 2022 to incorporate flow rates from the HCS into the overall flow volumes from SWM Pond 3, along with a minor amendment to a sampling parameter. Both applications are currently under review by the MECP.

Modifications and upgrades to the existing leachate collection system at the site occurred in 2021. Construction of a new leachate storage tank capable of storing up to 3,000 m^3 of leachate commenced in April 2021. Substantial completion of the storage tank was issued on December 6, 2021. Upgrades to the existing north chamber and south pumping station were completed, including the installation of pumping stations PS3 and PS4; new leachate collection system forcemains from the pumping stations to PS3; associated electrical and communication controls; and construction of a truck loading area to the west of the new leachate storage tank and PS3 to facilitate controlled removal of leachate from the storage tank. Work was substantially completed on December 23, 2021 and is expected to be fully completed in early 2022. The truck loading area is expected to be utilized in early 2022 to remove leachate for treatment offsite.

Leachate extraction and treatment continues at the landfill site. Approximately 18,034.15 m^3 of leachate was removed and disposed offsite during the past year, or approximately 50.15 m^3/day. There was approximately 1,848 m^3 of leachate transferred from the leachate holding lagoon back to the north chamber for subsequent removal from the site. Therefore, the overall amount of leachate produced by the landfill mound in 2021 was 16,186.15 m^3, or approximately 44.35 m^3/day. It is recommended that leachate removal for treatment offsite continue.

Also in 2021, the PLC was re-instated, with meetings initiated by WM in September and December 2021 to discuss ongoing site operations, improvements, and monitoring activities. These meetings were held virtually due to the ongoing COVID-19 pandemic. Meetings are expected to continue into 2022.

Neighbours with concerns are always invited to visit the landfill with their concerns, which are addressed by the site manager.

As a result of the site inspection completed in 2021; based on the readily available information provided by WM; and to the best of our knowledge, we conclude the landfill is managed and operated in an environmentally sound and orderly manner in the post-closure period.

APPENDIX

A ENVIRONMENTAL COMPLIANCE APPROVALS AND CERTIFICATES OF APPROVAL

APPENDIX

A-1 *AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL (WASTE DISPOSAL SITE) NO. A371293, DATED MARCH 19, 2021 (OVERALL REVISION TO SEVERAL CONDITIONS TO BETTER REFLECT A CLOSED LANDFILL SITE; APPROVAL OF MARCH 2020 FINANCIAL ASSURANCE RE-EVALUATION; APPROVAL OF LEACHATE FORCEMAIN AND LEACHATE STORAGE FACILITY MODIFICATIONS; ADDITIONS OF ITEMS 68 THROUGH 73 TO SCHEDULE "A", AND REVISIONS/ADDITIONS TO REASONS FOR CONDITIONS)*

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A371203
Issue Date: March 19, 2021

Waste Management of Canada Corporation
Rural Route, No. 6
Greater Napanee, Ontario
K7R 3L1

Site Location: Richmond Landfill Site
1271 Beechwood Rd Lots 1, 2 and 3, Concession 4, Richmond
Greater Napanee Town, County of Lennox and Addington
K7R 3L1

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

the use, operation, and closure of a 16.2 hectare waste disposal landfill site including a landfill gas collection system and landfill gas flare within a total site area of 138 hectares

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

"***Contaminating Lifespan"or "CLS"*** refers to the period of time, after closure until the *Site* finally produces contaminants at concentrations below levels which have unacceptable health or environmental effects;

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

"*District Manager*" refers to the *District Manager* in the Ministry of the Environment's Kingston District Office;

"*District Office*" refers to the Ministry of the Environment Kingston *District Office* ;

"EPB" refers to the Environmental Permissions Branch of the Ministry of the Environment, Conservation and Parks;

"***EMP*** " refers to the Environmental Monitoring Plan;

"***Environmental Compliance Approval" or "ECA"*** means this entire provisional Environmental Compliance Approval document, issued in accordance with Section 20.2 of the *EPA* , and includes any schedules to it, the application and the supporting documentation listed in Schedule "A";

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

"*Major Works* " are those works that have an engineering component.

"*MECP* " or "***Ministry*** " refers to the Ontario Ministry of the Environment, Conservation and Parks;

"*Operator* " has the same meaning as "Operator" as defined in s.25 of the *EPA* ;

"*Owner* " means Waste Management of Canada Corporation and its successors and assigns;

"O. Reg. 101/94" means Ontario Regulation 101/94 as amended from time to time;

"***PA*** " means the *Pesticides Act* , R.S.O. 1990, c. P-11, as amended from time to time;

"Parties" mean Concerned Citizens Committee of Tyendinaga and Environs**;** Director, Ministry of the Environment, Conservation and Parks**;** Waste Management of Canada Corporation**;** Mohawks of the Bay of Quinte**:** and Tom Touzel on behalf of Napanee Green Lights;

***"Provincial Officer* "** means any person designated in writing by the Minister as a provincial officer pursuant to Section 5 of the *OWRA* or Section 5 of the *EPA* or Section 17 of *PA;*

"Regional Director" refers to the Director of the Ministry of the Environment's Eastern Regional Office;

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

"*Regulation 347* " or "*Reg. 347* " means Regulation 347, R.R.O. 1990, made under the *EPA* , as amended from time to time; and

"***Site*** " means the Richmond Landfill Site, located at 1271 Beechwood Road, Lots 1, 2 and 3, Concession 4, Richmond, Greater Napanee Town, County of Lennox and Addington .

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

TERMS AND CONDITIONS

1.0 GENERAL

Compliance

1.1 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of the ECA and the conditions herein and shall take all reasonable measures to ensure the person complies with the same.

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

In Accordance

1.3 Except as otherwise provided for in this ECA, the Site shall be designed, developed, constructed, operated and maintained in accordance with the supporting documentation listed in Schedule "A".

Other Legal Obligations

1.4 The issuance of, and compliance with, this ECA does not:

a. relieve any person of any obligation to comply with any provision of the EPA or any other 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 request that any further information related to compliance with this ECA be provided to the Ministry.

unless a provision of this ECA specifically refers to the other requirement or authority and clearly states that the other requirement or authority is to be replaced or limited by this ECA.

Adverse Effect

1.5 The Owner or Operator remain responsible for any contravention of any other condition of this ECA or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect or impairment of air and/or water quality.

Furnish Information

1.6 Any information requested by the Director or a Provincial Officer concerning the Site and its operation under this ECA, including but not limited to any records required to be kept by this ECA shall be provided in a timely manner.

1.7 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 ECA or under any statute, regulation or subordinate legal instrument, in relation to the information, shall not be construed as:

i. an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any condition of this ECA or any statute, regulation or other subordinate legal requirement; or
ii. acceptance by the Ministry of the information's completeness or accuracy.

1.8 Any information related 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, RSO 1990, CF-31.

Interpretation

1.9 This ECA revokes and replaces the previous ECA and all subsequent amendments.

1.10 Where there is a conflict between a provision of any document, including the application, referred to in this ECA, and the conditions of this ECA, the conditions in this ECA shall take precedence.

1.11 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 in writing .

1.12 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.

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

Certificate of Requirement

1.14 Pursuant to Section 197 of the EPA, no person having an interest in the Site shall deal with the Site in any way without first giving a copy of this ECA to each person acquiring an interest in the Site as a result of the dealing.

1.15 The Certificate of Requirement shall be registered in the appropriate land registry office on title to the Site and a duplicate registered copy shall be submitted to the Director within ten (10) calendar days of receiving the Certificate of Requirement signed by the Director.

No Transfer or Encumbrance

1.16 No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and is satisfied with the arrangements made to ensure that all conditions of this ECA will be carried out and that sufficient financial assurance is

deposited with the Ministry to ensure that these conditions will be carried out.

Change of Owner

1.17 The Owner shall notify the Director, in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any changes in the following information:

i. the ownership of the Site;
ii. the Operator of the Site;
iii. the address of the Owner or Operator;
iv. the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R. S. O. 1990, c. B.17, shall be included in the notification;
v. the name of the corporation where the Owner or Operator is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the Corporations Information Act, R. S. O. 1990, c. C.39, shall be included in the notification.

1.18 In the event of any change in the ownership of the Site, other than a change to a successor municipality, the Owner shall notify in writing the succeeding owner of the existence of this ECA, and a copy of such notice shall be forward to the Director and District Manager.

Inspections

1.19 No person shall hinder or obstruct a Provincial Officer from carrying out any and all inspections authorized by the EPA, or the PA, of any place to which this ECA relates, and without limiting the foregoing:

i. to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this ECA are kept;
ii. to have access to, inspect, and copy any records required to be kept by the conditions of this ECA;
iii. to inspect the Site related equipment and appurtenances;
iv. to inspect the practices, procedures, or operations required by the conditions of this ECA; and
v. to sample and monitor for the purposes of assessing compliance with the terms and conditions of this ECA or the EPA, or the PA.

2.0 FINANCIAL ASSURANCE

Overview

2.1 Financial assurance shall be provided as required by the Director, in an amount that is sufficient to pay for compliance with and performance of any action specified in this ECA, including

closure, monitoring and maintenance of the Site, maintenance of all required contaminant control systems including leachate management systems, contaminant monitoring for the contaminating lifespan of the Site and contingency plans for the Site in accordance with this ECA.

2.2 Financial assurance may be provided in one or more of the following forms: cash, irrevocable letter of credit, surety bond, or some other form, all satisfactory to the Director.

Inflation Rate

2.3 The Owner shall ensure the methodology used to determine the inflation rate for the financial assurance re-evaulation calculation is the current approach deemed acceptable by the Ministry.

Interest (Discount) Rate

2.4 The Owner shall ensure the methodology used to determine the interest rate for the financial assurance re-evaulation calculation is the current approach deemed acceptable by the Ministry.

Proposed Payment Schedule

2.5 Within twenty (20) days of issuance of this ECA, the Owner shall submit an updated financial assurance, as defined in Section 131 of the EPA, for the amount of **$12,129,094.00** to the Director. This Financial Assurance shall be in a form acceptable to the Director and shall provide sufficient funds for the closure, contingency, post-closure operation, monitoring and maintenance of the Site.

2.6 The total amount of financial assurance shall be updated as follows for the following years:

i. March 31, 2022 - **$11,720,510.00;**
ii. March 31, 2023 - **$11,311,887.00;** and
iii. March 31, 2024 - **$10,874,529.00**.

Updated Review Report

2.7 A revised or new financial assurance program shall be submitted to the Director by no later than **March 31, 2024** and then at an interval no greater than a period of every three (3) years thereafter. The report shall include:

a. updates of the discount, interest and inflation rates associated with the requirements for financial assurance in this ECA including justifications and sources of the proposed rates; and
b. a report prepared by a qualified Professional Engineer which updates the cost estimates on which the amounts associated with the requirements for financial assurance in this ECA are based.

2.8 If any financial assurance is scheduled to expire or notice is received, indicating financial assurance will not be renewed, and satisfactory methods have not been made to replace the financial assurance at least sixty (60) days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.

3.0 GENERAL OPERATIONS

Proper Operation

3.1 The Site shall be properly operated and maintained at all times. All waste shall be managed and disposed of in accordance with the EPA and Regulation 347 and the requirements of this ECA. At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

Operations Manual

3.2 The Owner shall ensure the operations and procedures manual for the Site includes discussions on the following items.:

a. Health and safety;
b. Operation and maintenance of the Site;
c. Nuisance management;
d. Leachate management;
e. Landfill gas management;
f. Surface water/Stormwater management;
g. Inspections and monitoring;
h. Contingency plans and emergency procedures;
i. Complaints; and,
j. Reporting and record keeping.

3.3 The operations and procedures manual shall be:

a. retained at the Site;
b. reviewed every five (5) years and updated by the Owner as required; and
c. be available for inspection by Ministry staff.

Site Closure

3.4 The Owner shall ensure that no waste is received for disposal at the Site after **June 30, 2011** and the site is capped with final cover material by **September 30, 2011**.

Capacity

3.5 The ECA permits disposal of waste at the Site to fill an air space of **2,842,700 cubic metres**

(including waste, daily and interim cover material).

Site Security

3.6 During non-operating hours, the Site entrance and exit gates shall be locked and the Site shall be secured against access by unauthorized persons.

On-Site Roads

3.7 Site roads shall be maintained in a manner approved by Item 19 of Schedule "A".

Vermin, Scavenging, Dust, Litter, Odour, Noise, etc.

3.8 The Site shall be operated and maintained such that the vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

3.9 No scavenging is to occur at the Site.

Dust

3.10 The Owner shall control fugitive dust emissions from Site sources including Site roads. If necessary, major sources of dust shall be treated with water and/or dust suppression materials to minimize the overall dust emissions from the Site.

Noise

3.11 The Owner shall comply with noise criteria in MECP Guideline entitled “Noise Guidelines for Landfill Sites."

4.0 SITE OPERATIONS

Cover Material

4.1 i. Final Cover - Final cover placed after the effective date of this ECA must meet the following specifications. In areas where landfilling has been completed to final contours, a minimum 900 mm thick layer of native silty clay till soil shall be placed having a hydraulic conductivity of 1×10^{-8} m/s or less followed by 150 mm of topsoil. The Owner shall construct the final cover system for the Site in accordance with Items 33 to 36 of Schedule "A" and this ECA .

ii. The Owner shall ensure that no contaminated soils are used in the final cover.

Cleaning Leachate Collection System

4.2 The leachate collection system piping for each stage of the landfill shall be inspected and cleaned in accordance with the schedule outlined in Condition 13.7.

Leachate Storage System

4.3 Approval is hereby granted for construction of the leachate storage system, all in accordance with Items 70 and 71 in Schedule "A".

4.4 The Owner shall ensure there are no leachate spills during construction of the leachate storage system and during truck loading.

4.5 (1) The water level in the leachate storage tank should be maintained close to the low level of 127.50 m. Storage capacity above the low level shall only be used in case the Napanee Water Pollution Control Plant and other regional wastewater treatment plants are unable to accept all of the leachate from the Site.

(2) Leachate pumping to the storage tank shall stop when the maximum water level of 136.17 m is reached. In this case the leachate should be pumped to the holding lagoon as an emergency storage measure.

(3) Leachate in the lagoon shall be sent off-site for treatment as soon as the capacity at the the Napanee Water Pollution Control Plant and other regional wastewater treatment plants become available.

(4) The Owner shall ensure immediate actions are taken when the high water level alarms at the pumping stations and the storage tank are sound to prevent leachate spills.

4.6 (1) Approval is granted for construction of the leachate forcemain between the north pumping chamber PS2 and holding lagoon, all in accordance with the ECA application and supporting documents listed as Items 69 and 71 in Schedule "A".

(2) The leachate forcemain shall not be operated unless it has been demonstrated and accepted by the Ministry that the integrity of the liner is not compromised and leakage from the lagoon is not of concern.

Phytoremediation System

4.7 (1) The phytoremediation system located in the northwest corner of Site shall be constructed and operated in accordance with Item 38 in Schedule A.

(2) The extent of the phytoremediation system shall not extent beyond the limits as shown in Item 38 in Schedule A.

(3) The phytoremediation system located in the northwest corner of the Site shall not be irrigated

with any leachate.

(4) The Owner shall ensure that the vegetation does not exceed a height of 3.66 metres (12 feet). Where vegetation reaches or exceeds a height of 3.66 metres (12 feet), the Owner shall prune the vegetation forthwith.

4.8 (1) The following monitor wells will be used to monitor groundwater levels around the phytoremediation system in the northwest corner of the Site:

a. Shallow Zone - M27, M66-2, M67-2, M86, M100, M101, M102 and M103
b. Intermediate Bedrock Zone - M3A-3, M72, M73, M74, M75 and M95-1

(2) The following monitors will be used to monitor groundwater quality around the phytoremediation system in the northwest corner of the Site:

a. Shallow Zone - M66-2, M67-2, M101 and M103
b. Intermediate Bedrock Zone - M5-3, M6-3, M74 and M75

(3) For the monitoring wells identified in Conditions 5.10 (1) and 5.10 (2), the Owner shall analyze groundwater for determining the groundwater levels and quality around the phytoremediation system in the northwest corner of the Site based on the EMP approved and any future approved changes identified in future amendments.

4.9 Reporting on the phytoremediation system shall be part of the annual monitoring report for the Site and shall include but not be limited to the following:

i. results and an analysis of the results of the monitoring programs for the phytoremediation system;
ii. assessment of the results of the phytoremediation system as related to the stated objectives for the existing and proposed phytoremediation system;
iii. assessment of the need to change the monitoring program for the phytoremediation system and a recommendation of the required changes;
iv. a report on operational problems identified during the operation of the phytoremediation system and a discussion of each problem and details of what was done to rectify each problem;
v. assessment of the need for operational changes for the phytoremediation system and a recommendation of the required changes;
vi. a Site plan which shows the location of the phytoremediation system and any changes made to the phytoremediation system;

Surface Water

4.10 The Owner shall not discharge surface water to receiving water bodies without an approval under Section 53 of the OWRA.

5.0 WASTE AND RECYCLABLE DROP-Off FACILITY

Compliance

5.1 Except as otherwise provided by these conditions, the Waste and Recyclable Drop-Off Facility shall be designed, developed, maintained and operated in accordance with the Applications for a Provisional Certificate of Approval for a Waste Disposal Site dated May 25, 2011, and the supporting documentation, plans and specifications listed in Schedule "A".

Waste Types

5.2 (1) The Waste and Recycling Drop-Off Facility shall accept the following types of waste:

i. Solid Non Hazardous Waste - Domestic Waste, Construction and Demolition Waste;
ii. Blue Box Materials;
iii. Tires; and
iv. White Goods and Metal;

(2) Contaminated soil shall not be accepted at the Waste and Recycling Drop Off Facility.

(3) If the Owner participates in Stewardship Ontario, Ontario Tire Stewardship, or any other recyling program developed by the Province of Ontario, then the waste that has been approved for collection under the aforementioned programs will also be accepted at the public drop off area.

Waste Quantity

5.3 (1) The total amount of waste and recyclable material, which may be received at the Waste and Recyclable Drop off Facility shall not exceed **50 tonnes** per day.

(2) On twenty-five occasions throughout a single calendar year the Owner is permitted to have a "Large Waste Day" where the Owner is permitted to accept up to **100 tonnes** per day. The Owner shall notify the District Manager in writing within 48 hours after the Owner has used one of the "Large Waste Days".

(3) The maximum amount of waste that may be stored at the Waste and Recycling Drop-Off Facility shall not exceed **50 tonnes**.

(4) The maximum number of waste storage containers that may be stored/utilized at the Waste and Recyclable Drop-Off Facility at any one time shall be as follows:

i. nine (9) - 40 yard bins for metals, tires and solid non hazardous waste

consisting of domestic, construction and demolition waste;
ii. two (2) - 8 yard bins for blue box materials;
iii. three (3) - five (5) gallon pails for single use batteries.

Service Area

5.4 Only waste that is generated within the boundaries of the **Town of Greater Napanee, Town of Deseronto and Tyendinaga Township** which includes the **Mohawks of the Bay of Quinte** shall be accepted at the Site**.** No waste shall be received for disposal at this Site from outside the approved service area.

Hours of Operation

5.5 The operating hours of the Waste and Recycling Drop-Off Facility shall be as follows:

i. 8 a.m. to 5 p.m. - Monday to Friday, except for statutory holidays; and
ii. 8 a.m. to 1 p.m. - Saturday

5.6 No waste shall be received at the Waste and Recycling Drop-Off Facility except during operating hours when the Site is under the supervision of trained personnel.

Removal Frequency

5.7 (1) Waste materials shall be removed from the Waste and Recycling Drop-Off Facility on a minimal frequency of twice per week with the exception of white goods and blue box materials.

(2) White goods and blue box materials shall be removed at a frequency no less than once every six months.

(3) Wastes which have been approved for collection under Stewardship Ontario, Ontario Tire Stewardship, or any other recycling programs developed by the Province of Ontario, shall be removed from the Site at the frequency as detailed in the requirements for the aforementioned programs.

Operations

5.8 Recycling activities shall be completed as per Ontario Regulation 101/94.

5.9 Recyclable materials shall be properly separated and each area properly identified. The areas shall be kept in a neat and tidy manner.

5.10 All storage containers/bins used to store waste and/or recyclable materials shall be maintained in good condition to prevent leakage. The Owner shall immediately remove from service any leaking container. Containers/bins used to store clean scrap metal may be equipped with

drainage holes to permit the drainage of rainwater.

5.11 With the exception of white goods, waste may only be stored within the waste storage bins in accordance with Items 52, 53, 54 and 55 in Schedule "A".

5.12 All waste types shall be segregated either into bins, or in designated areas defined by barriers. All bins and designated waste storage areas shall be clearly labelled.

5.13 The Owner shall ensure that all white goods received at the Waste and Recyclable Drop-off Facility have been drained of any refrigerants, and have the appropriate paperwork (current ODP card) demonstrating that the refrigerants have been removed.

6.0 TRAINING

Employees and Training

6.1 A training plan for all employees that operate any aspect of the Site shall be developed and implemented by the Operator. Only trained employees shall operate any aspect of the Site or carry out any activity required under this ECA. For the purpose of this ECA "trained" means knowledgeable either through instruction or practice in:

i. the relevant waste management legislation including EPA, O. Reg. 347 , regulations and guidelines;
ii. major environmental and occupational health and safety concerns pertaining to the waste to be handled;
iii. the proper handling of wastes;
iv. the management procedures including the use and operation of equipment for the processes and wastes to be handled;
v. the emergency response procedures;
vi. the specific written procedures for the control of nuisance conditions;
vii. the terms, conditions and operating requirements of this ECA and,
viii. proper inspection, receiving and recording procedures and the activities to be undertaken during and after a load rejection.

7.0 INSPECTIONS AND RECORD KEEPING

Inspections and Log Book

7.1 (1) An inspection of the entire Site and all equipment on the Site shall be conducted daily when the transfer station is in operation to ensure that the Site is being operated in compliance with this ECA. Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the Site if needed.

(2) If the transfer station is not in operation, daily inspection of the entire Site and all

equipment on Site is not required. However, inspection of the leachate management system and all associated components shall be carried out weekly.

7.2 A record of the inspections shall be kept in a daily log book or a dedicated electronic file that includes:

i. the name and signature of person that conducted the inspection;
ii. the date and time of the inspection;
iii. the list of any deficiencies discovered;
iv. the recommendations for remedial action; and
v. the date, time and description of actions taken.

7.3 A record shall be kept in the log book of all the following:

i. the type, date and time of arrival, hauler, and quantity (tonnes) of all waste received at the Site; and,
ii. a list of the refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

7.4 The Owner shall maintain records of monthly site inspection in the form of a written log or a dedicated electronic file that shall include at least the following:

i. the amount of any leachate removed, or treated and discharged from the Site;
ii. complaints received and actions taken to resolve them; and
iii. emergency situations and actions taken to resolve them.

7.5 The Owner shall inspect the waste mound and surrounding areas for the presence of leachate seeps as required by Condition No. 13.2.

Record Retention

7.6 Except as authorized in writing by the Director, all records required by this ECA shall be retained at the Site for a minimum of two (2) years from their date of creation.

7.7 The Owner shall retain all documentation listed in Schedule "A" for as long as this ECA is valid.

7.8 All quarterly summary reports are to be kept at the Site for as long as this ECA is valid.

7.9 The Owner shall retain employee training records as long as the employee is working at the Site.

7.10 The Owner shall make all of the above documents available for inspection upon request of Ministry staff.

8.0 MONITORING

Groundwater Monitors

8.1 The Owner shall ensure all groundwater monitoring wells are properly capped, locked and protected from damage.

8.2. All groundwater monitoring wells whether included in the monitoring program or not shall be assessed at least every five years, and repaired, replaced or decommissioned as required in accordance with good standard practice to prevent groundwater contamination and in compliance with the requirements of Ontario Regulation 903.

8.3 The Owner shall repair or replace any monitoring well included in the monitoring program which is destroyed or in any way made inoperable for sampling such that no more than one (1) sampling event is missed.

8.4 Any monitoring well included in the monitoring program that is no longer required as part of the groundwater monitoring program may be decommissioned provided its removal from the monitoring program has been approved by the Director. A report on the decommissioning shall be provided in the annual monitoring report for the period during which the well was decommissioned.

Monitoring Programs

8.5 (a) The Owner shall submit to the District Manager by no later than April 15, 2016, with copies to the Parties, a revised Environmental Monitoring Plan ("EMP"). The revised EMP shall implement all of the provisions of the Interim Environmental Monitoring Plan Revision No. 04, prepared by WESA, dated August 2015, ("Interim EMP") subject to the following modifications ordered by the Tribunal:

i. The Interim EMP shall be further modified to implement continuous conductivity monitoring on Marysville Creek for one (1) year, commencing May 1, 2016, with continuous conductivity loggers placed at: an appropriate location on the Creek, far enough upstream of Deseronto Road to ensure no interference from road salt; and a second location upstream of the landfill to detect background influences. The results of the continuous conductivity monitoring shall be reported in conjunction with the January and July 2017 Semi-annual reports.

ii. The Interim EMP shall be further modified to state that the need for additional nested monitoring wells in the area of Marysville Creek and the landfill shall be assessed should 1,4-dioxane or another listed parameter be detected.

iii. The Interim EMP shall be further modified to require that the domestic and agricultural wells at properties located south of Highway 401 on County Road 1 West and Belleville Road, at the addresses noted in the row entitled "Off-site Domestic Wells", Table 2, page 11 of the August 2015 Interim EMP, should be tested for 1,4-dioxane every two (2) years

for at least the next six (6) years, or until the extent of the leachate contaminated groundwater is declined if that takes longer than six (6) years, and then every five (5) years once the delineation is complete.

iv. The Interim EMP shall be further modified to require that confirmation resampling (Step 2 under the groundwater evaluation methods and trigger mechanisms set out in Section 7.1 of the proposed revised EMP) is to occur at the same time as a water quality conformance assessment (Step 1).

v. The Interim EMP shall be further modified to set a Reasonable Use Limit (RUL) for 1,4-dioxane at 1 µg/L. Should Ontario amend O. Reg 169/03 to set an Ontario Drinking Water Quality Standard for 1,4-dioxane, the RUL shall be re-calculated in accordance with procedure document B-7-1, and the Interim EMP shall be amended as necessary to reflect the re-calculated RUL.

(b) The Owner shall carry out monitoring in accordance with the revised EMP submitted by April 15, 2016 as of April 16, 2016.

(c) The Owner shall submit a report to all the Parties and the District Manager by April 15, 2016 detailing any relevant work carried out relating to the delineation of off-site leachate impacted groundwater or surface water not otherwise described in the January 15, 2016 report submitted further to items 8.5(c) i. to iii. set out in the Tribunal's Order dated July 21, 2015 as amended on October 29, 2015 [the provisions of which are set out in Appendix A], detailing any relevant additional work carried out during this time period, and providing an assessment with necessary supporting rationale as to whether the off-site leachate impacted groundwater has been delineated. The assessment shall be conducted in accordance with the following criteria:

The extent of leachate impacted groundwater shall be delineated if it is demonstrated that groundwater quality within a sufficient number of monitoring wells at the outer extent of the impacted area that are hydraulically connected to the defined area of leachate impacted groundwater does not exceed:

i. the reasonable use limit ("RUL") for 1,4-dioxane;

ii. any RUL as defined in Guideline B-7 and its corresponding procedure, B-7-1 unless the exceedance is identified as not originating from the leachate from the landfill; or

iii. any RUL set out in this approval for other parameters unless the exceedance is identified as not originating from the leachate from the landfill.

(d) The following process shall be followed with respect to the report submitted under 8.5(c):

i. CCCTE, the MBQ and NGL shall have until June 1, 2016 to provide written comments on the report to the Owner and the District Manager and specifically whether delineation has been completed in accordance with the criteria.

ii. After receiving the written comments from CCCTE, the MBQ and NGL, the District Manager will convene a meeting among all the Parties to obtain further input and attempt to reach a consensus on whether delineation has been completed.

iii. By no later than July 31, 2016, the District Manager shall issue a written notice to the Owner and copying the Parties indicating whether delineation has been completed in accordance with the criteria.

iv. If it has been determined by the District Manager that delineation has not been completed, the Owner shall submit another proposal for additional groundwater investigation that shall be considered in accordance with steps i. through iii. with timelines modified by the District Manager accordingly.

v. The procedures or deadlines set out in steps i. through iv. can be altered with the consent of all the Parties.

(e) Within 90 days of the District Manager providing written notice to the Owner that delineation has been completed, the Owner shall submit to the Director, Environmental Permissions Branch, Ministry of the Environment, Conservation and Parks an application for approval to amend the ECA to address any non-compliance with Condition 8.8 and Guideline B-7, including if warranted an application to incorporate a contaminant attenuation zone into the approval, and including a proposed updated EMP. The application to amend the ECA shall be treated as a standard application and be posted on the EBR Registry for public comment. The application shall outline the options that were considered for bringing the Site into compliance with Guideline B-7 and the rationale for the preferred option, and include all necessary supporting documentation.

8.6 The Owner shall ensure that a comprehensive investigation of the hydrogeological implications and potential impacts of an existing pipeline which runs across the northern part of the neighbouring properties to the south of the Site is conducted and a report outlining the findings is submitted to the District Manager and the Parties.

8.7 (a) The Owner shall conduct odour monitoring and undertake abatement activities as described in the Odour Monitoring Plan dated June 2016, set out as Item 67 in Schedule "A".

(b) In the event of odours that are three (3) intensity units (based on the scale provided on Table 3.1 of the Odour Monitoring Plan) or greater are detected at an offsite receptor over a period outlined in Section 3.3.1.2 of the Odour Monitoring Plan, and the landfill mound is confirmed to be the source of the odour, repairs shall be made to the landfill mound as soon as possible. Upon completion of repairs, a surface emission survey shall be carried out to demonstrate that total hydrocarbon vapours, expressed as methane, do not exceed 500 parts per million per each grid dimension.

Compliance Criteria

8.8 The Site shall be operated in such a way to ensure compliance with the MECP's Guideline B-7 Reasonable Use Concept at monitoring points along the property line that have the potential to be impacted by leachate from the Site.

8.9 For the purpose of Condition 8.8, a reasonable use limit of 1 µg/L shall be used for the parameter 1,4-dioxane unless an Ontario Drinking Water Quality Standard is established in O. Reg. 169/03 in which case the RUL for 1,4-dioxane shall be recalculated in accordance with the B-7-1 Procedure Document and the interim EMP or EMP, as the case may be, shall be amended as necessary to reflect the recalculated RUL.

8.10 Notwithstanding Condition 8.8, if a contaminant attenuation zone ("CAZ") is established, the Site shall be operated in such a way to ensure compliance with MECP's Guideline B-7 Reasonable Use Concept at

i. monitoring wells that act as groundwater compliance points within the CAZ; or

ii. along the boundary of the CAZ where it replaces the property line,

unless the non-compliance is identified as not originating from the leachate from the landfill.

8.11 Any off site exceedance of parameters for groundwater, surface water, or odour shall be reported to the District Manager within 48 hours of determination of the exceedance. In addition, a statement detailing which results are out of compliance with the Ministry's guidelines and objectives shall be provided at the same time as the results.

8.12 Any monitoring result that detects 1,4-dioxane at or above the detection limit of 1 µg/l at any groundwater well or domestic well at which 1,4-dioxane has not been detected in the past or at any surface water monitoring location shall be reported to the District Manager within 48 hours of determination of the exceedance.

8.13 Unless otherwise agreed to in writing by the residents of the residences listed below, unless the residence is vacant and likely to remain vacant, the Owner shall provide whole house replacement water supplies for the residences located at 1264, 1252, 1250, 1206, 1181, and 1144 Beechwood Road.

9.0 CONTINGENCY PLANS

Groundwater and Surface Water Impact Contingency Plan

9.1 (a) The Owner shall initiate the contingency plans outlines in section 7.4 of the revised EMP referenced in Condition 8.5(a), or as replaced with an updated version, when any of the identified trigger mechanisms occur.

(b) Notwithstanding Condition 9.1(a), the Owner shall not use fracture trench as a Leachate

Collection System contingency measure.

Leachate Collection System Contingency Plan

9.2 i. The Owner shall initiate the Leachate Collection System Contingency Plan at a minimum when the trigger mechanisms identified in Items 41, 47 and 48 of Schedule "A" have been identified as occurring.

ii. The conceptual Leachate Collection System Contingency Plans as identified in Item Nos. 41, 47 and 48 in Schedule "A" are considered acceptable. In the event the Owner needs to implement the Contingency Plan, the Owner shall submit to the Director for approval prior to implementation, with copies to the District Manager, detailed design drawings for works or any remedial system required for the contingency plan.

Leachate Contingency Plan

9.3 The Owner shall on a biannual basis confirm that there is a suitable location available for disposal of leachate and what that location is. Confirmation shall be provided to the District Manager upon receipt. If a location for disposal of leachate is not available, the Owner shall provide an action plan for approval to the District Manager.

9.4 (1) By June 30, 2021, the Owner shall submit a Spill Contingency Plan to the District Manager. The Spill Contingency Plan shall be prepared in accordance with Ontario Regulation 224/07 and should include procedures to prevent and mitigate accidental leachate discharge to the environment.

(2) The Spill Contingency Plan shall be readily accessible to any Operators on Site, and shall be kept up to date by the Owner.

Landfill Gas Contingency Plan

9.5 i. The Owner shall initiate the Landfill Gas System Contingency Plan at a minimum when the trigger mechanisms identified in Item Nos. 42, 47 and 48 in Schedule "A" have been identified as occurring.

ii. The conceptual Landfill Gas System Contingency Plans as identified in Item Nos. 42 and 48 in Schedule "A" are considered acceptable. In the event the Owner needs to implement the Contingency Plan, the Owner shall submit to the Director for approval prior to implementation, with copies to the District Manager, detailed design drawings for works or any remedial system required for the contingency plan.

Public Notification Plan for Contingency Plans

9.6 (a) The Owner shall provide notice to interested persons and follow the procedures set out in

the Public Notification Plan dated November 2020 set out as Item 73 in Schedule "A" upon the occurrence of any event that triggers notice to be given as set out in the Plan.

(b) Should the Owner wish to amend the Public Notification Plan, the Owner shall submit a request for amendment, with supporting documents, to the District Manager, for approval. The request should also include a list of interested persons that were consulted on the proposed amendments and a summary of their comments.

10.0 PUBLIC LIAISON COMMITTEE

10.1 The Owner shall use its best efforts to establish and maintain a Public Liaison Committee (PLC) for the Site. The PLC shall serve as a focal point for dissemination, review and exchange of information and monitoring results relevant to the operation of the undertaking. In addition, the purpose of the PLC will be to provide community review of the development, operation (current and proposed) and ongoing monitoring, closure and post-closure care related to the Site. The PLC will also be provided the opportunity to review and comment on any subsequent applications for approval under the EPA.

10.2 The Owner shall invite representatives from the Town of Greater Napanee, the Ministry, the Township of Tyendinaga, the Quinte Conservation Authority and the Mohawks of the Bay of Quinte to sit on the committee.

10.3 Community members shall be appointed by the PLC. The community member positions are intended to be available to individuals that are not members of groups already represented on the PLC and have an interest in the operation of the Site. The PLC shall encourage individuals who reside in close proximity to the Site to participate. A community member is defined as a taxpayer and/or resident of the Town of Greater Napanee and/or The Township of Tyendinaga.

10.4 The general mandate of the PLC shall include:

a. Review operations and provide regular input to the Owner with respect to all matters pertaining to landfill site operation, including issues pertaining to ongoing operations, monitoring, the need for contingency plans or remedial measures, response to community complaints, the need for changes to the ECA, post-closure monitoring and maintenance, and development of the proposed end use for the Site;
b. Review operational and monitoring reports;
c. Consider and make recommendations to the Owner regarding outside consulting advice in respect of the Site;
d. Facilitate ongoing dialogue between the Owner, and the community, including residents and businesses in the immediate vicinity of the Site;
e. Provide reports regularly to the community on the activities of the PLC, the landfill operations and landfill related issues and seek public input on these activities and issues;
f. Monitor the Owner’s complaint response program and make recommendations to the

Owner with respect to this program; and

g. Provide recommendations to the Owner with respect to unresolved complaints.

10.5 The Owner shall provide for the administrative costs of operating the PLC, including the cost of meeting places and clerical services.

10.6 The PLC meetings shall take place on a semi-annual basis.

10.7 Minutes and agendas of meetings shall be prepared and distributed on a timely basis.

10.8 The Owner shall provide the PLC with reasonable access to the Site , as well as the Owner's consultants as required and consultants reports in accordance with protocols agreed to between the Owner and the PLC.

10.9 Unless disclosure would be contrary to the Freedom of Information and Protection of Privacy Act ,the PLC, the Town of Greater Napanee, the Township of Tyendinaga, and the Mohawks of the Bay of Quinte are to be provided all formal submissions and correspondence related to the Site operations by the Owner at the same time as these items are submitted to the Ministry .

10.10 All recommendations made to the Owner with respect to ongoing Site operations, monitoring and the implementation of contingency measures shall be discussed at joint meetings between representatives of the Owner and the PLC. The purpose of these meetings will be to arrive at an agreement between the Owner and PLC with respect to implementation of the recommendations.

10.11 The Owner will provide and deliver to the PLC, the Town of Greater Napanee, the Township of Tyendinaga and the Mohawks of the Bay of Quinte all monitoring results, reports and any other information required to be collected and/or submitted to the MECP by a Condition of this ECA.

10.12 The Owner, with approval from the District Manager, may dispense with the PLC after January 1, 2022 if there is no interest from the public in continuing with it.

11.0 COMPLAINTS PROCEDURE

11.1 If at any time, the Owner receives complaints regarding the operation of the Site, the Owner shall respond to these complaints according to the following procedure:

a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information and the time and date of the complaint;

b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

c. The Owner shall complete a report written within one (1) week of the complaint date,

listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents. A copy of the report shall be retained at the Site.

11.2 The Owner shall post the Site complaints procedure at Site entrance along with the name and phone number of a suitable, local contact to receive complaints or questions related to the Site. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

12.0 EMERGENCY SITUATIONS

12.1 In the event of a fire or discharge of a contaminant to the environment, Site staff shall contact the MECP Spills Action Centre (1-800-268-6060) and the District Office of the MECP.

12.2 The Owner shall submit to the District Manager a written report within three (3) days of the spill or incident, outlining the nature of the incident, remedial measures taken and measures taken to prevent future occurrences at the Site.

12.3 The Emergency Response Manual shall be updated on a regular basis and be provided to the District Manager within one (1) month of the revision date.

12.4 The Owner shall ensure that adequate fire fighting and contingency spill clean-up equipment is available and that emergency response personnel are familiar with its use and location.

13.0 SITE CLOSURE

13.1 The Owner shall ensure a sign with the following information is present at the front gate of the Site:

a. the name of the Site and Owner;
b. the ECA number;
c. the name of the Operator;
d. a warning against unauthorized access;
e. the telephone number to which complaints or questions may be directed;
f. a twenty-four (24) hour emergency telephone number;
g. the Site is closed;
h. dumping outside of the gate is illegal; and
i. alternative locations for waste disposal.

13.2 (1) After Site closure, on a weekly basis, the Owner shall inspect the Site for leachate seeps and for signs of illegal dumping of waste. Illegal waste shall be removed within 48 hours of detection. Leachate seeps shall be repaired within 7 days of detection. Upon approval from the Director, the frequency for inspecting for leachate seeps may be reduced to quarterly.

(2) Once the leachate management system in accordance with Items 69 and 70 of Schedule "A" is in operation, inspection frequency for leachate seeps and signs of illegal dumping of waste can be reduced to once a month.

13.3 (1) During the post-closure period, the Owner shall inspect the Site monthly for the following (but not limited to) items:

a. General settlement areas or depressions on the waste mound;
b. Shear and tension cracks on the waste mound;
c. Condition of the surface water drainage works;
d. Erosion and sedimentation in surface water drainage system;
e. Presence of any ponded water on the waste mound;
f. Adequacy of cover material;
g. Evidence of vegetative stress, distressed poplars, or sideslope plantings on or adjacent to the waste mound;
h. Condition of groundwater monitoring wells and gas wells;
i. Presence of insects, vermin, rodents, and scavenging animals on or adjacent to the waste mound;
j. Condition of fence surrounding the Site; and
k. General Site appearance.

(2) During the post-closure period, the following features shall be inspected, recorded, and maintained on a quarterly (every three (3) months) basis:

a. evidence of settlement;
b. landfill gas collection system, landfill gas flare and related equipment;
c. cover soil integrity;
d. vegetative cover;
e. gates and fencing around the Site;
f. surface water drainage works; and
g. erosion and sediment in surface water drainage system.

13.4 Any deficiencies noted in the above items shall be repaired within one (1) month time of notice.

13.5 Upon Site closure, grass on the berms and the top of the landfill shall be cut a minimum of once per per year.

13.6 The ditches and culverts surrounding the Site shall be inspected on an annual basis and cleaned as required until the end of the contaminating lifespan.

13.7 (1) The leachate collection system shall be camera inspected every five (5) years after 10 years of Site closure, with cleaning as required; and

(2) Changes to the maintenance schedule for the leachate collection system shall be approved

by the District Manager.

13.8 The following shall remain in place and be operational at the Site until the end of the contaminating lifespan:

a. Leachate extraction equipment;
b. Landfill gas extraction equipment; and
c. Sedimentation ponds.

14.0 SEMI ANNUAL AND ANNUAL REPORTING

Semi Annual Monitoring Reporting

14.1 By **January 15** and **July 15** of each year, the Owner shall submit semi-annual monitoring reports to the District Office and post the reports on a publicly accessible website. These semi annual reports shall include:

a. The results in tabular form and an interpretive analysis of the results from the leachate, groundwater, surface water, and landfill gas monitoring programs approved by this ECA, including:

i. an assessment of the need to amend the monitoring programs;
ii. an evaluation of any observations of saline upwelling in the groundwater;
iii. an estimation of the leachate generated at the Site;
iv. an evaluation of leachate quality, levels, and mounding within the landfill;
v. figure(s) showing the landfill site and contaminant attenuation zone;
vi. maps or figures showing groundwater concentrations of alkalinity, tritium, 1-4 dioxane, and ammonia in the shallow and intermediate aquifers;
vii. figure(s) showing the off-site properties suspected or confirmed of being impacted by leachate from the landfill;
viii. a complete inventory of the groundwater monitoring well locations;
ix. detailed analysis on groundwater quality trends on downgradient groundwater wells which have been impacted or are suspected of being impacted by leachate from the landfill.

b. An assessment with regards to the compliance of the groundwater quality at the property boundary and compliance points with regards to Guideline B-7 Reasonable Use Concept;

c. A report on the status of any monitoring wells required to be tested pursuant to the EMP and a statement as whether those wells are in compliance with Ontario Regulation 903;

d. The second semi-annual report will include an Annual Summary section which

describes the results from the current calendar year and any data quality changes identified from previous years, or through the current year.

e. All surface and groundwater analytical results reported in future Semi-Annual and Annual Monitoring Reports shall be reported by groups of substances (i.e. VOCs, PAHs, inorganics, etc.) and by numeric location, and shall be posted by WMC on a publicly accessible website, with the data being posted on such website being updated annually.

Annual Reporting

14.2 A written report on the development, operation, and closure of the Site shall be completed annually (the "Annual Report"). The Annual Report shall be submitted to the District Manager, the PLC, the Town of Greater Napanee, the Township of Tyendinaga, the Mohawks of the Bay of Quinte, and a representative of the Concerned Citizens Committee of Tyendinaga and Environs by **March 31st** of each year and shall cover the year ending the preceding December 31st.

14.3 The Annual Report shall include the following:

i. an assessment of the operation and performance of all engineered facilities, the need to amend the design or operation of the Site, and the adequacy of and need to implement the contingency plans;
ii. an assessment of the efficiency of the leachate collection system;
iii. a summary of the inspection of the final cover and vegetative cover including identification of any seepages and remedial actions taken;
iv. previously existing Site facilities;
v. a summary of the quantity of any leachate or pre-treated leachate removed from the north and south pumping stations at the Site during each operating month;
vi. a discussion of the results of the toxicity testing of the landfill stormwater management ponds which includes potential impacts to the groundwater by the SWMP;
vii. a summary of any complaints received, the responses made and corrective/remedial taken if required;
viii. a summary of any seeps, upset conditions or emergency situations and or corrective/remedial actions taken
ix. a discussion of any operational problems encountered at the Site and corrective action taken;
x. a summary of the amount of wastes refused for disposal at the Site, the reasons for refusal and the carrier who brought the waste to the Site;
xi. a summary of the leachate collection system cleaning and inspection activities;
xii. an update summary of the amount of financial assurance which has been provided to the Director;
xiii. a statement of compliance with all conditions of this ECA and other relevant Ministry groundwater and surface water requirements;
xiv. a confirmation that the Site inspection program as required by this ECA has been

complied with by the Owner;

xv. any changes in operations, equipment or procedures employed at the Site; and recommendations regarding any proposed changes in operations of the Site.

14.4 (a) In the event the District Manager requires additional information to be submitted to complete the District Office's assessment on whether or not the Site is in compliance, the District Manager shall provide written notification to the Owner at least sixty (60) days before the submission of the next Semi-Annual or Annual Report submission date on the type of additional information to be included in the report.

(b) In the event the District Manager determines that the inclusion of information in either the annual or semi-annual report annual for which notification under 14.4(a) was provided is no longer warranted or needed for the Ministry's assessment of whether or not the Site is in compliance, the District Manager shall notify the Owner in writing of the information that is no longer required. The District Manager can later request the information be re-included in the report as per Condition 14.4 (a).

Schedule "A"

1. Application for a Certificate of Approval for a Waste Disposal Site (Landfill), dated January 11, 1988.

2. Report entitled "Sutcliffe Sanitation Services Ltd., Landfill Site Expansion Development and Operations Report", prepared by Henderson Paddon and Associates Limited, dated September 1985.

3. Report entitled "Addendum No. 1 Sutcliffe Sanitation Services Limited Landfill Site Expansion Development and Operations Report" prepared by Henderson Paddon and Associates Limited dated December 1986.

4. Report entitled "Hydrogeologic Study Proposed Landfill Expansion, Township of Richmond" prepared by Morrison Beatty Limited and dated September 30, 1985.

5. Report entitled "Proposed Groundwater and Surface Water Monitoring Program, Sutcliffe Sanitation Services Limited Landfill, Township of Richmond" prepared by Morrison Beatty Limited and dated August 1987.

6. Letter dated September 12, 1990 from Mr. J.R. Bray, P.Eng. to Tricil Limited (c/o Laidlaw Waste Systems Ltd.).

7. Application for Approval of a Waste Disposal Site, dated May 24, 1995 and signed by Michael Pullen, Director, Environmental Management, Laidlaw Waste Systems (Richmond) Ltd.

8. Letter from Jeff Armstrong, Henderson, Paddon & Associates Limited to I. Parrott, MOEE dated May 30, 1995 re: Development of Landfill Base of Phases IV and V (including attached drawings 8570D-400 to 406, inclusive and 8570D-94-Site).

9. Letter from Jeff Armstrong, Henderson Paddon and Associates Limited to i. Parrott, MOEE dated June 23, 1995 re: Additional information to Support Application for Provisional Certificate of Approval for a Waste Disposal Site A371203.

10. Letter from Jeff Armstrong, Henderson Paddon and Associates Limited to I. Parrott, MOEE dated July 21, 1995 re: Public Consultation on the Re-Design of the Landfill Base for Phase IV and V.

11. Application for Approval for a Waste Disposal Site dated July 25, 1996 signed by Mr. Michael Pullen, Director, Environmental Management.

12. Report entitled "Undertaking to Establish an Organic Composting Facility at the Laidlaw Waste Systems (Richmond) Ltd. Landfill Site" dated July 1996, prepared by Laidlaw Waste Systems (Richmond) Ltd.

13. Plan entitled "Richmond Township Landfill Proposed Compost Pad Expansion", revised April

12, 1996, prepared by Henderson Paddon and Associates Ltd.

14. The June 9, 1999, report entitled "Conceptual Design for a Landfill Gas Collection and Flaring System Richmond Landfill Site Napanee, Ontario" which was prepared by Comcor Environmental Limited.

15. Drawing 8570G-L1 dated May 2000- Phase I Proposed Leachate Collector, Napanee Landfill, Napanee, Ontario

16. A letter dated July 31, 2000, regarding concerns raised during review of application, to Tes Gebrezghi, MOE, from Jeff Armstrong, Henderson Paddon & Associates Limited

17. A report titled "Assessment of Napanee Water Pollution Control Plant To Treat Leachate from the Laidlaw Landfill, Richmond, Ontario, dated May 1996 and prepared by Henderson, Paddon & Associates Limited

18. A report titled "CWS Response to the Town of Greater Napanee Audit of the Richmond Landfill Operation, dated May 12, 2000, and prepared by Canadian Waste Services Inc.

19. Report entitled "Richmond Sanitary Landfill Site Final Closure Plan" and appendices dated June 2007 prepared by Henderson, Paddon and Associates Limited.

20. Memorandum dated November 30, 2007 from K. Stephenson, Hydrogeologist, Eastern Region, MOE to C. Dobiech, Kingston District, MOE.

21. Memorandum dated December 5, 2007 from Victor Castro, Surface Water Scientist, Eastern Region, MOE to Craig Dobiech, Kingston District, MOE.

22. Letter dated July 11, 2008 from Greg Washuta, Senior Waste Engineer, EAAB, MOE to Mike Walters, WMCC.

23. Letter, attachments, and Appendix B dated September 26, 2008 from Randy Harris, Site Manager, WMCC to Greg Washuta, Senior Waste Engineer, EAAB, MOE.

24. Letter dated February 23, 2009 from Greg Washuta, Senior Waste Engineer, EAAB, MOE to Randy Harris, Site Manager, WMCC.

25. Drawing number 8570-2006 entitled "June 2006 Existing Conditions Richmond Landfill Napanee, Ontario" dated March 19, 2007 prepared by Henderson Paddon and Associates Limited.

26. Drawing number 8570F-104 entitled "Richmond Landfill Site Proposed Final Contours Landfill and Borrow Areas" dated March 1995 prepared by Henderson Paddon and Associates Limited.

27. Letter dated March 2009 from Randy Harris, Site Manager, Waste Management of Canada Corporation to Greg Washuta, Senior Waste Engineer, Waste Unit, EAAB, MOE.

28. Drawing number 8570F-114 entitled "Richmond Township Landfill Sections 'A-A' and 'B-B'" created by Henderson Paddon and Associates Limited, dated March 1996.

29. Drawing number 8570F-115 entitled "Richmond Township Landfill Sections 'C-C', 'D-D', and 'E-E'" created by Henderson Paddon and Associates Limited, dated March 1996.

30. Memorandum dated February 25, 2009 from K. Stephenson, Hydrogeologist, Eastern Region, MOE to C. Dobiech, Kingston District, MOE.

31. Letter dated June 1, 2009 from Mr. Randy Harris, Site Manager, Waste Management of Canada Corporation to Application Processor, Client Services Section, Environmental Assessment and Approvals Branch, Ministry of the Environment.

32. Report entitled "Site Conceptual Model Report, WM Richmond Landfill" and attached appendices A to H inclusive by Dr. B.H. Kueper and WESA Inc., dated October 2009.

33. Report entitled "Richmond Sanitary Landfill Site OS-08-570-13-OS Construction Quality Assurance/Construction Quality Control Plan for the Final Cover System", dated June 2010, prepared by GENIVAR Consultants LP.

34. E-mail dated August 20, 2010 from Greg Washuta, Senior Waste Engineer, Waste Unit, Environmental Assessment and Approvals Branch, Ministry of the Environment to Dave White and Randy Harris, Waste Management of Canada Corporation.

35. Letter dated August 24, 2010 from Jeff E. Armstrong, Senior Environmental Engineer, GENIVAR Consultants LP to Greg Washuta, Senior Waste Engineer, Waste Unit, Environmental Assessment and Approvals Branch, Ministry of the Environment.

36. Document entitled "Richmond Sanitary Landfill Site Construction Quality Assurance/Construction Quality Control Plan for the Final Cover System ERRATA" prepared by Jeff E. Armstrong, Senior Environmental Engineer, GENIVAR Consultants LP, dated August 24, 2010.

37. Application for a Provisional Certificate of Approval for a Waste Disposal Site for Waste Management of Canada Corporation's Richmond Landfill Site, signed by Randy Harris, Site Manager on September 30, 2010.

38. Report entitled "Phytoremediation Plan - WM Richmond Landfill Town of Greater Napanee, Ontario" dated December 2010 and prepared by WESA Inc.

39. Report entitled "Richmond Sanitary Landfill Site - Operations and Procedures Manual June 25, 2010" prepared by GENIVAR Consultants LP Inc dated June 25, 2010.

40. Report entitled "Landfill Gas Collection and Flaring System Design Report - Richmond Landfill" prepared by GENIVAR Consultants LP dated June 29, 2009.

41. Report entitled "Richmond Sanitary Landfill Site - Leachate Collection System Contingency Plan" prepared by GENIVAR Consultants LP dated June 25, 2010.

42. Report entitled "Richmond Sanitary Landfill Site - Landfill Gas Collection System Contingency Plan" prepared by GENIVAR Consultants LP dated June 25, 2010.

43. Report entitled "Financial Assurance Plan" completed by GENIVAR Consultants LP and dated June 25, 2010;

44. Report entitled "Contaminating Lifespan" (Appendix D of Financial Assurance Plan) completed by GENIVAR Consultants LP and dated June 16, 2010.

45. Report entitled "Final Report - Environmental Monitoring Plan - WM Richmond Landfill" prepared for Waste Management of Canada Corporation by WESA Inc. and dated June 29, 2010.

46. Appendix "A" (Report Entitled "Odour Monitoring Plan" prepared for Waste Management of Canada Corporation by GENIVAR Consultants LP dated June 25, 2010) of the report entitled "Environmental Monitoring Plan - WM Richmond Landfill" prepared for Waste Management of Canada Corporation by WESA Inc. and dated June 29, 2010.

47. Letter dated January 14, 2011 addressed to Mr. Randy Harris, Waste Management of Canada Corporation from Mr. Greg Washuta, Ministry of the Environment providing comments on Items 39 through 46 in Schedule "A".

48. Letter dated February 28, 2011 addressed to Mr. Greg Washuta, Ministry of the Environment from Mr. Randy Harris, Waste Management of Canada Corporation providing additional information regarding financial assurance, the status of the environmental monitoring plan and various contingency plans.

49. Letter dated April 5, 2011 addressed to Mr. Randy Harris, Waste Management of Canada Corporation from Mr. Dale Gable, Ministry of the Environment requesting additional information on financial assurance, the status of the environmental monitoring plan and various contingency plans.

50. Letter dated April 20, 2011 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. providing additional information on the environmental monitoring plan, financial assurance and the contaminating lifespan of the Site.

51. Letter dated August 12, 2011 and supporting documentation addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Reid Cleland, Waste Management of Canada Corporation requesting amendment to Condition No. 35. The supporting documentation included the following:

    i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated August 15, 2011.

52. Letter report dated May 25, 2011 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. requesting an amendment to permit the approval of continued recyclables disposal at the Richmond Landfill Site. The supporting documentation included the following:

    i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated May 25, 2011;
    ii. Drawing No 8570713-MT1 entitled "Site Location Map" prepared by GENIVAR INC. and dated May 17, 2011; and
    iii. Drawing No. 8670713-MT2 entitled "Site Plan Mini-transfer Station" prepared by GENIVAR Inc. and dated May 17, 2011.

53. Letter report dated May 25, 2011 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. requesting an amendment to Condition No. 35 which would allow the continue use of the mini-transfer station at the Richmond Landfill Site. The supporting documentation included the following:

    i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated May 25, 2011;
    ii. Development and Operations Report for a Waste Transfer Station prepared by GENIVAR Inc. (Project No. 081-12493-00) and dated May 2011
    iii. Drawing No 8570713-MT1 entitled "Site Location Map" prepared by GENIVAR INC. and dated May 17, 2011; and
    iv. Drawing No. 8670713-MT2 entitled "Site Plan Mini-transfer Station" prepared by GENIVAR Inc. and dated May 17, 2011.

54. Letter dated June 20, 2011 addressed to Mr. Reid Cleland, Waste Management of Canada Corporation from Mr. Dale Gable, Ministry of the Environment requesting additional information on the continued operation of the Waste and Recycling Drop-Off Facility.

55. Letter dated June 30, 2011 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. providing additional information on the operations of the Waste and Recycling Drop-Off Facility. The information included the following:

    i. Development and Operations Report for a Waste Transfer Station prepared by GENIVAR Inc. (Project No. 081-12493-00) and dated June 2011.

56. Environmental Review Tribunal Order for Case No. 12-033 issued on April 26, 2013.

57. Report entitled "Richmond Sanitary Landfill Site- Odour Monitoring Plan - Revision No. 2" prepared by Waste Management of Canada Corporation.

58. Report entitled "Richmond Sanitary Landfill Site - Public Notification Plan - February 2013" prepared for WMCC by GENIVAR Inc. and dated February 2013.

59. Environmental Review Tribunal Order for Case No. 12-033 issued on July 21, 2015.

60. Environmental Review Tribunal Order for Case No. 12-033 issued on August 13, 2015.

61. Environmental Review Tribunal Order for Case No. 12-033 issued on October 29, 2015.

62. Environmental Compliance Approval Application dated June 10, 2014 signed by Reid Cleland, Waste Management of Canada Corporation.

63. Environmental Compliance Approval Application dated January 13, 2015 signed by Reid Cleland, Waste Management of Canada Corporation, and the supporting documentation including the Design Brief - Leachate Storage System Richmond Landfill Site dated January 2015 prepared by WSP Canada Inc.

64. Environmental Review Tribunal Order for Case No. 12-033 issued on December 24, 2015.

65. Email dated May 13, 2016 from Peter Brodzikowski, WSP Canada to Rick Li, Ministry of the Environmental and Climate Change providing a response to the Ministry' review comments on the leachate storage system and the maintenance schedule.

66. Environmental Review Tribunal Order for Case No. 12-033 issued on April 14, 2016.

67. Report entitled "Odour Monitoring Plan - Revision No. 3 Richmond Sanitary Landfill Site" prepared for WMCC by WSP Canada and dated June 2016.

68. Environmental Compliance Approval Application dated January 14, 2020 signed by William McDonough, Waste Management of Canada Corporation, and the supporting documentation, for amending the ECA to remove irrelevant conditions and update conditions as necessary.

69. Environmental Compliance Approval Application dated April 15, 2020 signed by William McDonough, Waste Management of Canada Corporation, and the supporting documentation, for installation of a forcemain between pumping chamber PS2 and the leachate holding lagoon.

70. Environmental Compliance Approval Application dated April 30, 2020 signed by William McDonough, Waste Management of Canada Corporation, and the supporting documentation regarding modifications to the leachate storage system.

71. Letter dated October 8, 2020 addressed to Rick Li, Ministry of the Environment, Conservation and Parks from WSP providing a response to MECP's review comments on the above three applications (Items 68, 69 and 70).

72. Email dated November 11, 2020 to Rick Li, MECP from Bev Leno, WSP RE: *WM Richmond Landfill Site ECA No. A371203 - Response to MECP Comments re Three Applications with Reference Nos. 4645-BKVS9Y, 9759-BNQQC6, and 9778-BP7HQN.*

73. Report entitled "Richmond Sanitary Landfill Site Public Notification Plan – November 2020", prepared by Waste Management of Canada Corporation and dated November 2020.

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

1. *The reason for Conditions 1.1 and 1.2 is to ensure that the Site is designed, operated, monitored and maintained in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.*

2. *The reason for Conditions 1.3, 1. 4. 1. 5, 1.9, 1.10, 1.11, 1.12, 1.13, and 8.8 is to clarify the legal rights and responsibilities of the Owner under this ECA.*

3. *Conditions 1.6, 1.7 and 1.8 are included to ensure that the appropriate Ministry staff have ready access to information and the operations of the Site, which are approved under this Certificate.*

4. *Conditions 1.14 and 1.15 are included, pursuant to subsection 197(1) of the EPA, to provide that any persons having an interest in the Site are aware that the land has been approved and used for the purposes of waste disposal.*

5. *The reasons for Condition 1.16 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this ECA.*

6. *The reasons for Conditions 1.17 and 1.18 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.*

7. *The reason for Condition 1.19 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 ECA. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA and OWRA.*

8. *The reasons for Conditions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 , 2.7, and 2.8 are to ensure that sufficient funds are available to the Ministry to close the landfill, and to carry out all expected post-closure care activities and any contingencies. Failure to include requirements for financial assurance would not be in the public interest and may result in a hazard or nuisance to the natural environment or any person.*

9. *The reasons for Conditions 3.1, 3.2 and 3.3 are to ensure the Owner operates the Site in an environmentally safe manner. This to is ensure the environment and public health are protected.*

10. *The reason for Condition 3.4 is to establish a closure date for the Site.*

11. *The reasons for Condition 3.5 is to specify the total Site capacity approved under this ECA, based on the Owner's application and supporting documentation.*

12. *The reasons for Condition 3.6 are to specify Site access to/from the Site and to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no Site attendant is on duty.*

13. *The reason for Condition 3.7 is to ensure the on-site roads are well maintained to provide access to the site operation and maintenance works*.

14. *The reason for Conditions 3.8 and 3.10 is to ensure that nuisance such as odour, litter, and dust are minimized during landfilling.*

15. *The reasons for Condition 3.9 are the protection of public health and safety and minimization of the potential for damage to environmental control, monitoring and other works at the landfill Site. Scavenging is the uncontrolled removal of material from waste at a landfill Site.*

16. *The reason for Condition 3.11 is to ensure that noise from or related to the operation of the landfill is kept to within Ministry limits and does not result in a hazard or nuisance to any person.*

17. *The reason for Condition 4.1 is to ensure proper closure of the landfill Site by the application of a final cover which is aesthetically pleasing, controls infiltration, and is suitable for the end use planned for the Site.*

18. *The reasons for Condition 4.2 are to ensure proper operation of the leachate collection system. This is to ensure the protection of the environment and public health.*

19. *The reason for Conditions 4.3 and 4.4 is to* approve the proposed leachate storage system for improvement to the leachate handling and trucking.

20. *The reasons for Condition 4.5 is to ensure leachate collected from the Site is transported off-site for treatment in time, and the water level of the leachate storage system is controlled to prevent overflow and spills.*

21. *The reason for Condition 4.6 is to approve the construction of forcemain between the north pumping chamber and holding lagoon to provide emergency storage capacity for leachate in case the leachate storage system is full.*

22. *The reason for Conditions 4.7 to 4.9 is to approve the phytoremediation system and ensure it is properly operated, maintained and monitored.*

23. *The reason for Condition 4.10 is to ensure surface water at the site is not impacted by landfill operations. This is to ensure the environment and public health are protected.*

24. *The reason for Condition 5.1 is to approve the continued operation of the Waste and Recycling Drop-Off Facility as per the submitted information.*

25. *The reason for Conditions 5.2, 5.3, 5.4 and 5.7 is to ensure the type of waste, the quantity of waste service and removal frequency are clearly identified.*

26. *The reasons for Condition 5.5 and 5.6 is to specify the normal hours of operation for the landfill Site and a mechanism for amendment of the hours of operation and ensure trained staff are present to accept waste*

27. *The reasons for Conditions 5.8 through 5.13 is to ensure the operation is done in a manner that will not cause a nuisance or an adverse effect. This is to ensure the long-term protection of the environment and human health.*

28. *The reason for Condition 6.1 is to ensure that the Site is supervised and operated by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person.*

29. *The reasons for Conditions 7.1, 7.2 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, and 14.1 are to provide for the proper assessment of effectiveness and efficiency of Site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this ECA, the EPA and its regulations.*

30. *The reasons for Conditions 8.1, 8.2, 8.3, and 8.4 are to ensure protection of the natural environment and the integrity of the groundwater monitoring network.*

31. *The reason for Condition 8.5 is to demonstrate that the landfill Site is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.*

32. *The reason for Condition 8.6 is to ensure that the existing pipeline at south of the Site does not pose an impact on neighbouring properties.*

33. *The reason for Condition 8.7 is to ensure the odour from the Site does not result in adverse effect to the surrounding environment.*

34. *The reason for Condition 8.8 is to ensure the groundwater quality at the Site boundary complies with applicable MECP standards and does not pose an impact to the*

environment.

35. *The reason for Conditions 8.9, 8.10, 8.13 and 9.1 is to incorporate the Environmental Review Tribunal Order dated April 14, 2016.*

36. *The reason for Conditions 8.11 and 8.12 is to incorporate the interim orders issued by the Environmental Review Tribunal on July 21, 2015 and August 13, 2015.*

37. *The reason for Conditions 9.2, 9.3, 9.4, 9.5, 11.1 and 11.2 is to ensure that the Owner 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.*

38. *The reasons for Condition 9.6 are to ensure there is a public notification plan in the event that any contingency plan is activated or engaged, and to reflect the interim order issued by the ERT on April 26, 2013.*

39. *The reason for Conditions 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 10.10, 10.11, and 10.12 is to establish a forum for the exchange of information and public dialogue on activities carried out at the landfill Site. Open communication with the public and local authorities is important in helping to maintain high standards for site operation and environmental protection.*

40. *The reasons for Conditions 12.1 and 12.2 are to ensure that the Ministry is informed of any spills or fires at the Site and to provide public health and safety and environmental protection.*

41. *The reason for Condition 12.3 is to ensure the Emergency Response Manual is updated regularly.*

42. *The reasons for Condition 12.4 are to guarantee that appropriate measures are taken by the Owner to prevent future occurrences of spills or fires at the site and to protect public health and safety and the environment.*

43. *The reasons for Conditions 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, and 13.8 are to ensure that final closure of the Site is completed in accordance with Ministry requirements, an aesthetically pleasing manner and to ensure the long-term protection of the natural environment.*

44. *Conditions 14.1 and 14.4 is included in the ECA to reflect the interim order issued by the ERT on April 26, 2013.*

45. *The reasons for Conditions 14.2 and 14.3 are to reflect the interim order issued by the ERT on April 26, 2013, and to ensure that regular review of Site development, operations and monitoring data is documented and any possible improvements to Site*

design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing Site activities and for determining the effectiveness of Site design.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A371203 issued on March 20, 1988

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. 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 Minister of the Environment, Conservation and Parks 777 Bay Street, 5th Floor Toronto, Ontario M7A 2J3	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**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at https://ero.ontario.ca/ , you can determine when the leave to appeal period ends.

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

DATED AT TORONTO this 19th day of March, 2021

Mohsen Keyvani, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

RL/
c: District Manager, MECP Kingston - District
Peter Brodzikowski, P.Eng. , WSP Canada Inc.

APPENDIX

A-2

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL (WASTE DISPOSAL SITE) NO. A371203, DATED JULY 14, 2017 (CONSOLIDATION OF JANUARY 9, 2012 ECA AND 2012 TO 2016 AMENDMENTS, REVISION OF CONDITION 8.5, ADDITION OF ITEMS 66 AND 67 TO SCHEDULE "A", AND MINOR CORRECTIONS AND REVISIONS TO VARIOUS CONDITIONS, SCHEDULE "A" ITEMS, AND REASONS FOR CONDITIONS)

Ontario

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

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A371203
Issue Date: July 14, 2017

Waste Management of Canada Corporation
851 Robinson Rd E
Rural Route, No. 6
Erie, Pennsylvania
USA 16509

Site Location: Richmond Landfill Site
Lot Pt 1, 2, 3, Concession 4
Greater Napanee Town, County of Lennox and Addington
K7R 3L1

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

the use, operation, and closure of a 16.2 hectare waste disposal landfill site including a landfill gas collection system and landfill gas flare within a total site area of 138 hectares

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

" ***Contaminating Lifespan"or "CLS"*** refers to the period of time, after closure until the *Site* finally produces contaminants at concentrations below levels which have unacceptable health or environmental effects;

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

" *District Manager* " refers to the *District Manager* in the Ministry of the Environment's Kingston District Office;

" *District Office* " refers to the Ministry of the Environment Kingston *District Office* ;

"EAB" refers to the Environmental Approvals Branch of the Ministry of the Environment;

" ***EMP*** " refers to the Environmental Monitoring Plan;

" ***Environmental Compliance Approval" or "ECA"*** means this entire provisional Environmental Compliance Approval document, issued in accordance with Section 20.2 of the *EPA* , and includes any schedules to it, the application and the supporting documentation listed in Schedule "A";

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

" *Major Works* " are those works that have an engineering component.

" *MOECC* " or " ***Ministry*** " refers to the Ontario Ministry of the Environment and Climate Change;

“ *Operator* ” has the same meaning as “Operator” as defined in s.25 of the *EPA* ;

“ *Owner* ” means Waste Management of Canada Corporation and its successors and assigns;

"O. Reg. 101/94" means Ontario Regulation 101/94 as amended from time to time;

“ ***PA*** ” means the *Pesticides Act* , R.S.O. 1990, c. P-11, as amended from time to time;

"Parties" mean Concerned Citizens Committee of Tyendinaga and Environs **;** Director, Ministry of the Environment and Climate Change **;** Waste Management of Canada Corporation **;** Mohawks of the Bay of Quinte **;** and Tom Touzel on behalf of Napanee Green Lights.

***"Provincial Officer* "** means any person designated in writing by the Minister as a provincial officer pursuant to Section 5 of the *OWRA* or Section 5 of the *EPA* or Section 17 of *PA;*

“Regional Director” refers to the Director of the Ministry of the Environment’s Eastern Regional Office;

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

" *Regulation 347* " or " *Reg. 347* " means Regulation 347, R.R.O. 1990, made under the *EPA* , as amended from time to time; and

" ***Site*** " means the Richmond Landfill Site.

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

TERMS AND CONDITIONS

1.0 GENERAL

Compliance

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

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

In Accordance

1.3 Except as otherwise provided for in this *ECA* , the *Site* shall be designed, developed, constructed, operated and maintained in accordance with the supporting documentation listed in Schedule “A”.

Other Legal Obligations

1.4 The issuance of, and compliance with, this *ECA* does not:

a. relieve any person of any obligation to comply with any provision of the *EPA* or any other

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 request that any further information related to compliance with this *ECA* be provided to the *Ministry*.

unless a provision of this *ECA* specifically refers to the other requirement or authority and clearly states that the other requirement or authority is to be replaced or limited by this *ECA* .

Adverse Effect

1.5 The *Owner* or *Operator* remain responsible for any contravention of any other condition of this *ECA* or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect or impairment of air and/or water quality.

Furnish Information

1.6 Any information requested by the *Director* or a *Provincial Officer* concerning the *Site* and its operation under this *ECA* , including but not limited to any records required to be kept by this *ECA* shall be provided in a timely manner.

1.7 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 *ECA* or under any statute, regulation or subordinate legal instrument, in relation to the information, shall not be construed as:

i. an approval, waiver, or justification by the *Ministry* of any act or omission of any person that contravenes any condition of this *ECA* or any statute, regulation or other subordinate legal requirement; or

ii. acceptance by the *Ministry* of the information's completeness or accuracy.

1.8 Any information related 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, RSO 1990, CF-31.

Interpretation

1.9 This *ECA* revokes and replaces the previous *ECA* and all subsequent amendments.

1.10 Where there is a conflict between a provision of any document, including the application, referred to in this *ECA* , and the conditions of this *ECA,* the conditions in this *ECA* shall take precedence.

1.11 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 in writing **.**

1.12 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.

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

Certificate of Requirement

1.14 Pursuant to Section 197 of the *EPA* , no person having an interest in the *Site* shall deal with the *Site* in any way without first giving a copy of this *Certificate* to each person acquiring an interest in the *Site* as a result of the dealing.

1.15 The Certificate of Requirement shall be registered in the appropriate land registry office on title to the *Site* and a duplicate registered copy shall be submitted to the *Director* within ten (10) calendar days of receiving the Certificate of Requirement signed by the *Director* .

No Transfer or Encumbrance

1.16 No portion of this *Site* shall be transferred or encumbered prior to or after closing of the *Site* unless the *Director* is notified in advance and is satisfied with the arrangements made to ensure that all conditions of this *ECA* will be carried out and that sufficient financial assurance is deposited with the *Ministry* to ensure that these conditions will be carried out.

Change of Owner

1.17 The *Owner* shall notify the *Director* , in writing, and forward a copy of the notification to the *District Manager* , within 30 days of the occurrence of any changes in the following information:

i. the ownership of the *Site* ;
ii. the *Operator* of the *Site* ;
iii. the address of the *Owner* or *Operator* ;
iv. the partners, where the *Owner* or *Operator* is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act* , R. S. O. 1990, c. B.17, shall be included in the notification;
v. the name of the corporation where the *Owner* or *Operator* is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the *Corporations Information Act* , R. S. O. 1990, c. C.39, shall be included in the notification.

1.18 In the event of any change in the ownership of the *Site* , other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *ECA* , and a copy of such notice shall be forward to the *Director* and *District Manager* .

Inspections

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

i. to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this *ECA* are kept;
ii. to have access to, inspect, and copy any records required to be kept by the conditions of this *ECA*;
iii. to inspect the *Site,* related equipment and appurtenances;
iv. to inspect the practices, procedures, or operations required by the conditions of this *ECA*; and
v. to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *ECA* or the *EPA*, or the *PA*.

2.0 FINANCIAL ASSURANCE

Overview

2.1 Financial assurance shall be provided as required by the *Director* , in an amount that is sufficient to pay for compliance with and performance of any action specified in this *ECA* , including closure, monitoring and maintenance of the *Site* , maintenance of all required contaminant control systems including leachate management systems, contaminant monitoring for the contaminating lifespan of the *Site* and contingency plans for the *Site* in accordance with this *ECA.*

2.2 Financial assurance may be provided in one or more of the following forms: cash, irrevocable letter of credit, surety bond, or some other form, all satisfactory to the *Director* .

Inflation Rate

2.3 The *Owner* shall ensure the methodology used to determine the inflation rate for the financial assurance re-evaulation calculation is the current approach deemed acceptable by the *Ministry*.

Interest (Discount) Rate

2.4 The *Owner* shall ensure the methodology used to determine the interest rate for the financial assurance re-evaulation calculation is the current approach deemed acceptable by the *Ministry*.

Proposed Payment Schedule

2.5 Within twenty (20) days of issuance of this *ECA* , the *Owner* shall submit an updated financial assurance, as defined in Section 131 of the *EPA* , for the amount of **$13,659,912.00** to the *Director* . This Financial Assurance shall be in a form acceptable to the *Director* and shall provide sufficient funds for the closure, contingency, post-closure operation, monitoring and maintenance of the *Site* .

2.6 The total amount of financial assurance shall be updated as follows for the following years:

i. March 31, 2018 - **$13,172,376.00;**
ii. March 31, 2019 - **$12,685,305.00;** and
iii. March 31, 2020 - **$12,171,802.00** .

Updated Review Report

2.7 A revised or new financial assurance program shall be submitted to the *Director* by no later than **March 31, 2020** and then at an interval no greater than a period of every three (3) years thereafter. The report shall include:

a. updates of the discount, interest and inflation rates associated with the requirements for financial assurance in this *ECA* including justifications and sources of the proposed rates; and
b. a report prepared by a qualified Professional Engineer which updates the cost estimates on which the amounts associated with the requirements for financial assurance in this *ECA* are based.

2.8 No waste shall be received, accepted, disposed or transferred at the *Site* unless appropriate financial assurance is received.

2.9 If any financial assurance is scheduled to expire or notice is received, indicating financial assurance will not be renewed, and satisfactory methods have not been made to replace the financial assurance at least sixty (60) days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.

3.0 CONSTRUCTION, INSTALLATION and PLANNING

Major Works

3.1 (1) The final detailed design of *Major Works* shall include the following:

a. design drawings and specifications;
b. a detailed quality assurance / quality control (QA/QC) program for construction of the major work, including necessary precautions to avoid disturbance to the underlying soils; and
c. details on the monitoring, maintenance, repair and replacement of the engineered components of the major work, if any.

(2) Maintenance or replacing components (i.e. piping for the gas collection system) related to existing *Major Works* are not considered *Major Works* under Section 3.0 of the *ECA* 3.2 Any design optimization or modification that is inconsistent with the conceptual design shall be clearly identified, along with an explanation of the reasons for the change.

3.3 Each major work shall be constructed in accordance with the approved final detailed design and the QA/QC procedures shall be implemented as proposed by the *Owner* . Any significant variances from the conceptual design for the *Site* shall be subject to approval by the *Director* .

3.4 As-built drawings for all *Major Works* shall be retained on site and made available to *Ministry* staff for inspection.

4.0 GENERAL OPERATIONS

Proper Operation

4.1 The *Site* shall be properly operated and maintained at all times. All waste shall be managed and disposed of in accordance with the *EPA* and *Regulation 347* and the requirements of this *ECA.* At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

Operations Manual

4.2 The *Owner* shall ensure the operations and procedures manual for the *Site* includes discussions on the following items.:

a. Health and safety;
b. Operation and maintenance of the *Site*;
c. Waste disposal area and development;
d. Nuisance management;
e. Leachate management;
f. Landfill gas management;
g. Surface water/Stormwater management;

h. Inspections and monitoring;
i. Contingency plans and emergency procedures;
j. Complaints; and,
k. Reporting and record keeping.

4.3 The operations and procedures manual shall be:

a. retained at the *Site*;
b. reviewed on an annual basis and updated by the *Owner* as required; and
c. be available for inspection by *Ministry* staff.

Site Closure

4.4 The *Owner* shall ensure that no waste is received for disposal at the *Site* after **June 30, 2011** and the site is capped with final cover material by **September 30, 2011** .

Capacity

4.5 The *ECA* permits disposal of waste at the *Site* to fill an air space of **2,842,700 cubic metres** (including waste, daily and interim cover material).

Yearly Waste Limit

4.6 No more than 125,000 tonnes of waste per year may be accepted at the *Site* .

Service Area

4.7 Only waste that is generated in the Province of Ontario shall be accepted at the *Site* **.**

Hours of Operation

4.8 Waste shall only be accepted at the *Site* during the following time periods:

i. 8 am to 5 PM - Monday to Friday (except statutory holidays)
ii. 8 am to 1 PM - Saturday

4.9 With the prior written approval of the *District Manager* , the time periods may be extended to accommodate seasonal or unusual quantities of waste.

4.10 The *Owner* may provide limited hours of operation provided that the hours are posted at the landfill gate and that suitable notice is provided to the public of any change in operating hours.

4.11 Upon reasonable notice to the *Director,* contingency actions may take place outside normal hours of operation. Emergency response may occur at any time as required.

Site Security

4.12 During non-operating hours, the *Site* entrance and exit gates shall be locked and the *Site* shall be secured against access by unauthorized persons.

On-Site Roads

4.13 *Site* roads shall be maintained in a manner approved by Item 19 of Schedule "A".

Waste Inspection Procedures

4.14 The *Operator* shall develop and implement a program to inspect waste to ensure that the waste is of a type approved for acceptance under this *ECA* .

Waste Inspection and Deposition

4.15 All loads of waste must be properly inspected by trained *Site* personnel prior to acceptance at the *Site* and waste vehicles must be diverted to appropriate areas for waste disposal.

4.16 The *Owner* shall deposit waste in a manner that minimizes exposure area at the landfill working face and all waste shall be compacted before cover is applied.

Litter Control:

4.17 All loose, windblown litter shall be collected and disposed of at an approved disposal facility.

Vermin, Scavenging, Dust, Litter, Odour, Noise, etc.

4.18 The *Site* shall be operated and maintained such that the vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

4.19 No scavenging is to occur at the *Site* .

Dust

4.20 The *Owner* shall control fugitive dust emissions from *Site* sources including but not limited to *Site* roads, stockpiled cover material and closed landfill area prior to seeding especially during times of dry weather conditions. If necessary, major sources of dust shall be treated with water and/or dust suppression materials to minimize the overall dust emissions from the *Site* .

Noise

4.21 The *Owner* shall comply with noise criteria in *MOECC* Guideline entitled “Noise Guidelines for Landfill Sites."

5.0 SITE OPERATIONS

Cover Material

5.1 i. Intermediate Cover - In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 mm of soil cover or an approved thickness of alternative cover material shall be placed.

ii. Final Cover - Final cover placed after the effective date of this *ECA* must meet the following specifications. In areas where landfilling has been completed to final contours, a minimum 900 mm thick layer of native silty clay till soil shall be placed having a hydraulic conductivity of 1 x 10 -8 m/s or less followed by 150 mm of topsoil. The *Owner* shall construct the final cover system for the *Site* in

accordance with Items 33 to 36 of Schedule "A" and this *ECA* .

iii. The *Owner* shall ensure that no contaminated soils are used in the final cover.

Cleaning Leachate Collection System

5.2 The leachate collection system piping for each stage of the landfill shall be inspected and cleaned in accordance with the schedule outlined in Condition 13.10.

Leachate Sump Pits

5.3 A leachate maintenance level of no greater than 0.66 metres shall be maintained in the north pumping chamber and documented each working day.

5.4 Appropriate alarms shall be installed to warn *Site* personnel of rising leachate levels within the sump pits so that the *Owner* can take appropriate action to prevent an overflow.

Leachate Storage System

5.5 Approval is hereby granted for construction of the leachate storage system, all in accordance with Items 63 and 64 in Schedule "A".

5.6 The *Owner* shall ensure there are no leachate spills during construction of the leachate storage system and during truck loading.

Compost Pad Area and Compost Pond

5.7 The *Owner* shall stop operation of the compost pad by no later than **September 30, 2011** .

5.8 The *Owner* shall removed all compost material (finished, curing compost, bulking material) from the *Site* by no later than **September 30, 2011** .

Construction and Operation of Phytoremediation System

5.9. (1) The phytoremediation system located in the northwest corner of *Site* shall be constructed and operated in accordance with Item 38 in Schedule A.

(2) The extent of the phytoremediation system shall not extent beyond the limits as shown in Item 38 in Schedule A.

(3) The phytoremediation system located in the northwest corner of the *Site* shall not be irrigated with any leachate.

(4) The *Owner* shall ensure that the vegetation does not exceed a height of 12 feet.

(5) Where vegetation reaches or exceeds a height of 12 feet, the *Owner* shall prune the vegetation forthwith.

(6) Within seven (7) days of completion of planting of the phytoremediation system as identified in Item 38 of Schedule "A", the *Owner* shall notify the *District Manager* in writing that the planting has been completed.

Monitoring of Phytoremediation System

5.10 (1) The following monitor wells will be used to monitor groundwater levels around the phytoremediation system in the northwest corner of the *Site* :

a. Shallow Zone - M27, M29, M30, M31, M38, M66-2, M67-2, M100, M101, M102 and M103
b. Intermediate Bedrock Zone - M3A-3, M5-3, M6-3, M74 and M75

(2) The following monitors will be used to monitor groundwater quality around the phytoremediation system in the northwest corner of the *Site* :

a. Shallow Zone - M29, M66-2, M67-2, M101, M102 and M103
b. Intermediate Bedrock Zone - M5-3, M6-3, M74 and M75

(3) For the monitoring wells identified in Condition 5.10 (2), the *Owner* shall analyze groundwater for determining the quality of groundwater around the phytoremediation system in the northwest corner of the *Site* based on the *EMP* approved prior to this notice and any future approved changes identified in future amendments.

Reporting

5.11 Reporting on the phytoremediation system shall be part of the annual monitoring report for the *Site* and shall include but not be limited to the following:

i. results and an analysis of the results of the monitoring programs for the phytoremediation system;
ii. assessment of the results of the phytoremediation system as related to the stated objectives for the existing and proposed phytoremediation system;
iii. assessment of the need to change the monitoring program for the phytoremediation system and a recommendation of the required changes;
iv. a report on operational problems identified during the operation of the phytoremediation system and a discussion of each problem and details of what was done to rectify each problem;
v. assessment of the need for operational changes for the phytoremediation system and a recommendation of the required changes;
vi. a *Site* plan which shows the location of the phytoremediation system and any changes made to the phytoremediation system;

Waste and Recyclable Drop-Off Facility

Compliance

5.12 Except as otherwise provided by these conditions, the Waste and Recyclable Drop-Off Facility shall be designed, developed, maintained and operated in accordance with the Applications for a Provisional Certificate of Approval for a Waste Disposal Site dated May 25, 2011, and the supporting documentation, plans and specifications listed in Schedule "A".

Waste Types

5.13 (1) The Waste and Recycling Drop-Off Facility shall accept the following types of waste:

i. Solid Non Hazardous Waste - Domestic Waste, Construction and Demolition Waste;
ii. Blue Box Materials;
iii. Tires; and
iv. White Goods and Metal;

(2) Contaminated soil shall not be accepted at the Waste and Recycling Drop Off Facility.

(3) If the *Owner* participates in Stewardship Ontario, Ontario Tire Stewardship, or any other recyling program developed by the Province of Ontario, then the waste that has been approved for collection under the aforementioned programs will also be accepted at the public drop off area.

Waste Quantity

5.14 (1) The total amount of waste and recyclable material, which may be received at the Waste and Recyclable Drop off Facility shall not exceed **50 tonnes** per day.

(2) On twenty-five occasions throughout a single calendar year the *Owner* is permitted to have a "Large Waste Day" where the *Owner* is permitted to accept up to **100 tonnes** per day. The *Owner* shall notify the *District Manager* in writing within 48 hours after the *Owner* has used one of the "Large Waste Days".

(3) The maximum amount of waste that may be stored at the Waste and Recycling Drop-Off Facility shall not exceed **50 tonnes** .

(4) The maximum number of waste storage containers that may be stored/utilized at the Waste and Recyclable Drop-Off Facility at any one time shall be as follows:

i. nine (9) - 40 yard bins for metals, tires and solid non hazardous waste consisting of domestic, construction and demolition waste;
ii. two (2) - 8 yard bins for blue box materials;
iii. three (3) - five (5) gallon pails for single use batteries.

Service Area

5.15 Only waste that is generated within the boundaries of the **Town of Greater Napanee, Town of Deseronto and Tyendinaga Township** which includes the **Mohawks of the Bay of Quinte** shall be accepted at the *Site* **.** No waste shall be received for disposal at this *Site* from outside the approved service area.

Hours of Operation

5.16. The operating hours of the Waste and Recycling Drop-Off Facility shall be as follows:

i. 8 a.m. to 5 p.m. - Monday to Friday, except for statutory holidays; and
ii. 8 a.m. to 1 p.m. - Saturday

5.17 No waste shall be received at the Waste and Recycling Drop-Off Facility except during operating hours when the *Site* is under the supervision of trained personnel.

Removal Frequency

5.18 (1) Waste materials shall be removed from the Waste and Recycling Drop-Off Facility on a minimal frequency of twice per week with the exception of white goods and blue box materials.

(2) White goods and blue box materials shall be removed at a frequency no less than once every six months.

(3) Wastes which have been approved for collection under Stewardship Ontario, Ontario Tire Stewardship, or any other recycling programs developed by the Province of Ontario, shall be removed from the *Site* at the frequency as detailed in the requirements for the aforementioned programs.

Operations

5.19 Recycling activities shall be completed as per *Ontario Regulation 101/94* .

5.20 Recyclable materials shall be properly separated and each area properly identified. The areas shall be kept in a neat and tidy manner.

5.21 All storage containers/bins used to store waste and/or recyclable materials shall be maintained in good condition to prevent leakage. The *Owner* shall immediately remove from service any leaking container. Containers/bins used to store clean scrap metal may be equipped with drainage holes to permit the drainage of rainwater.

5.22 With the exception of white goods, waste may only be stored within the waste storage bins in accordance with Items 52, 53, 54 and 55 in Schedule "A".

5.23 All waste types shall be segregated either into bins, or in designated areas defined by barriers. All bins and designated waste storage areas shall be clearly labelled.

5.24 The *Owner* shall ensure that all white goods received at the Waste and Recyclable Drop-off Facility have been drained of any refrigerants, and have the appropriate paperwork (current ODP card) demonstrating that the refrigerants have been removed.

Surface Water

5.25 The *Owner* shall take all appropriate measures to minimize surface water from coming in contact with waste. Temporary berms and ditches shall be constructed around active waste disposal areas to prevent extraneous surface water from coming in contact with the active working face.

5.26 The *Owner* shall not discharge surface water to receiving water bodies without an approval under Section 53 of the *OWRA* .

6.0 TRAINING

Employees and Training

6.1 A training plan for all employees that operate any aspect of the *Site* shall be developed and implemented by the *Operator.* Only trained employees shall operate any aspect of the *Site* or carry

out any activity required under this *ECA* . For the purpose of this *ECA* "trained" means knowledgeable either through instruction or practice in:

i. the relevant waste management legislation *including EPA, O. Reg. 347* , regulations and guidelines;
ii. major environmental and occupational health and safety concerns pertaining to the waste to be handled;
iii. the proper handling of wastes;
iv. the management procedures including the use and operation of equipment for the processes and wastes to be handled;
v. the emergency response procedures;
vi. the specific written procedures for the control of nuisance conditions;
vii. the terms, conditions and operating requirements of this *ECA* and,
viii. proper inspection, receiving and recording procedures and the activities to be undertaken during and after a load rejection.

7.0 INSPECTIONS AND RECORD KEEPING

Daily Inspections and Log Book

7.1 An inspection of the entire *Site* and all equipment on the *Site* shall be conducted each day the *Site* is in operation to ensure that the *Site* is being operated in compliance with this *ECA* . Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the *Site* if needed.

7.2 A record of the inspections shall be kept in a daily log book or a dedicated electronic file that includes:

i. the name and signature of person that conducted the inspection;
ii. the date and time of the inspection;
iii. the list of any deficiencies discovered;
iv. the recommendations for remedial action; and
v. the date, time and description of actions taken.

7.3 A record shall be kept in the daily log book of all the following:

i. the type, date and time of arrival, hauler, and quantity (tonnes) of all waste received at the *Site*; and,
ii. a list of the refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

Monthly Records

7.4 Monthly *Site* inspection records in the form of a written log or a dedicated electronic file shall include the following:

i. a summary of wastes received and refused for disposal at the *Site*;
ii. the area of the *Site* in which waste disposal operations are taking place;
iii. a calculation of the total quantity (tonnes) of waste received at the *Site* during each operating day and each operating week;
iv. the amount of any leachate removed, or treated and discharged from the *Site*;
v. a record of litter collection activities and the application of any dust suppressants;
vi. a record of the daily inspections;

vii. a description of any out-of-service period of any control, treatment, disposal or monitoring facilities, the reasons for the loss of service, and action taken to restore and maintain service;
viii. type and amount of daily, intermediate and final cover used;
ix. maintenance and repairs performed on equipment employed at the *Site*;
x. complaints received and actions taken to resolve them;
xi. emergency situations and actions taken to resolve them; and
xii. any other information required by the *District Manager*.

Site Inspections

7.5 During *Site* operations, the *Owner* shall inspect the site monthly for the following items but not limited to these items:

i. General settlement areas or depressions on the waste mound;
ii. Shear and tension cracks on the waste mound;
iii. Condition of surface water drainage works;
iv. Erosion and sedimentation in surface water drainage system;
v. Presence of any ponded water on the waste mound;
vi. Adequacy of cover material;
vii. Evidence of vegetative stress, distressed poplars or side slope plantings on or adjacent to the waste mound;
viii. Condition of groundwater monitoring wells and gas wells;
ix. Presence of insects, vermin, rodents and scavenging animals on or adjacent to the waste mound;
x. Condition of fence surrounding the *Site* ; and,
xi. General *Site* appearance.

7.6 The *Owner* shall inspect the waste mound and surrounding areas for the presence of leachate seeps as required by Condition No. 13.5.

Record Retention

7.7 Except as authorized in writing by the *Director* , all records required by this *ECA* shall be retained at the *Site* for a minimum of two (2) years from their date of creation.

7.8 The *Owner* shall retain all documentation listed in Schedule “A” for as long as this *ECA* is valid.

7.9 All monthly summary reports are to be kept at the *Site* until they are included in the Annual Report.

7.10 The *Owner* shall retain employee training records as long as the employee is working at the *Site* .

7.11 The *Owner* shall make all of the above documents available for inspection upon request of *Ministry* staff.

8.0 MONITORING

Groundwater Monitors

8.1 The *Owner* shall ensure all groundwater monitoring wells are properly capped, locked and protected from damage.

8.2. All groundwater monitoring wells whether included in the monitoring program or not shall be assessed at least every five years, and repaired, replaced or decommissioned as required in accordance with good standard practice to prevent groundwater contamination and in compliance with the requirements of Ontario Regulation 903.

8.3 The *Owner* shall repair or replace any monitoring well included in the monitoring program which is destroyed or in any way made inoperable for sampling such that no more than one sampling event is missed.

8.4 Any monitoring well included in the monitoring program that is no longer required as part of the groundwater monitoring program may be decommissioned provided its removal from the monitoring program has been approved by the *Director* . A report on the decommissioning shall be provided in the annual monitoring report for the period during which the well was decommissioned.

Monitoring Programs

8.5 (a) The *Owner* shall submit to the *District Manager* by no later than April 15, 2016, with copies to the *Parties* , a revised Environmental Monitoring Plan (" *EMP* "). The revised *EMP* shall implement all of the provisions of the Interim Environmental Monitoring Plan Revision No. 04, prepared by WESA, dated August 2015, ("Interim *EMP* ") subject to the following modifications ordered by the Tribunal:

i. The Interim *EMP* shall be further modified to implement continuous conductivity monitoring on Marysville Creek for one year, commencing May 1, 2016, with continuous conductivity loggers placed at: an appropriate location on the Creek, far enough upstream of Deseronto Road to ensure no interference from road salt; and a second location upstream of the landfill to detect background influences. The results of the continuous conductivity monitoring shall be reported in conjunction with the January and July 2017 Semi-annual reports.

ii. The Interim *EMP* shall be further modified to state that the need for additional nested monitoring wells in the area of Marysville Creek and the landfill shall be assessed should 1,4-dioxane or another listed parameter be detected.

iii. The Interim *EMP* shall be further modified to require that the domestic and agricultural wells at properties located south of Highway 401 on County Road 1 West and Belleville Road, at the addresses noted in the row entitled "Off-site Domestic Wells", Table 2, page 11 of the August 2015 Interim *EMP* , should be tested for 1,4-dioxane every two years for at least the next six years, or until the extent of the leachate contaminated groundwater is declined if that takes longer than six years, and then every five years once the delineation is complete.

iv. The Interim *EMP* shall be further modified to require that confirmation resampling (Step 2 under the groundwater evaluation methods and trigger mechanisms set out in Section 7.1 of the proposed revised *EMP*) is to occur at the same time as a water quality conformance assessment (Step 1).

v. The Interim *EMP* shall be further modified to set a Reasonable Use Limit (RUL) for 1,4-dioxane at 1 µ g/L. Should Ontario amend O. Reg 169/03 to set an Ontario Drinking Water Quality Standard for 1,4-dioxane, the RUL shall be re-calculated in accordance with procedure document B-7-1, and the Interim *EMP* shall be amended as necessary to reflect the re-calculated RUL.

(b) The *Owner* shall carry out monitoring in accordance with the revised *EMP* submitted by April 15, 2016 as of April 16, 2016.

(c) The *Owner* shall submit a report to all the *Parties* and the *District Manager* by April 15, 2016 detailing any relevant work carried out relating to the delineation of off-site leachate impacted groundwater or surface water not otherwise described in the January 15, 2016 report submitted further to items 8.5(c) i. to iii. set out in the Tribunal's Order dated July 21, 2015 as amended on October 29, 2015 [the provisions of which are set out in Appendix A], detailing any relevant additional work carried out during this time period, and providing an assessment with necessary supporting rationale as to whether the off-site leachate impacted groundwater has been delineated. The assessment shall be conducted in accordance with the following criteria:

The extent of leachate impacted groundwater shall be delineated if it is demonstrated that groundwater quality within a sufficient number of monitoring wells at the outer extent of the impacted area that are hydraulically connected to the defined area of leachate impacted groundwater does not exceed:

i. the reasonable use limit ("RUL") for 1,4-dioxane;

ii. any RUL as defined in Guideline B-7 and its corresponding procedure, B-7-1 unless the exceedance is identified as not originating from the leachate from the landfill; or

iii. any RUL set out in this approval for other parameters unless the exceedance is identified as not originating from the leachate from the landfill.

(d) The following process shall be followed with respect to the report submitted under 8.5(c):

i. CCCTE, the MBQ and NGL shall have until June 1, 2016 to provide written comments on the report to the *Owner* and the *District Manager* and specifically whether delineation has been completed in accordance with the criteria.

ii. After receiving the written comments from CCCTE, the MBQ and NGL, the *District Manager* will convene a meeting among all the *Parties* to obtain further input and attempt to reach a consensus on whether delineation has been completed.

iii. By no later than July 31, 2016, the *District Manager* shall issue a written notice to the *Owner* and copying the *Parties* indicating whether delineation has been completed in accordance with the criteria.

iv. If it has been determined by the *District Manager* that delineation has not been completed, the *Owner* shall submit another proposal for additional groundwater investigation that shall be considered in accordance with steps i. through iii. with timelines modified by the *District Manager* accordingly.

v. The procedures or deadlines set out in steps i. through iv. can be altered with the consent of all the *Parties* .

(e) Within 90 days of the *District Manager* providing written notice to the *Owner* that delineation has been completed, the *Owner* shall submit to the *Director* , Environmental Approvals Branch, Ministry of the Environment and Climate Change an application for approval to amend the *ECA* to address any non-compliance with Condition 8.6 and Guideline B-7, including if warranted an application to incorporate a contaminant attenuation zone into the approval, and including a proposed updated *EMP* . The application to amend the *ECA* shall be treated as a standard application and be posted on the EBR Registry for public comment. The application shall outline the options that were considered for bringing the *Site* into compliance with Guideline B-7 and the rationale for the preferred option, and

include all necessary supporting documentation.

8.5.2 The *Owner* shall conduct a comprehensive investigation of the hydrogeological implications and potential impacts of an existing pipeline which runs across the northern part of the neighbouring properties to the south of the *Site* and submit a report to the *District Manager* and the *Parties* outlining the findings by June 15, 2016.

8.5.3 (a) The *Owner* shall conduct odour monitoring and undertake abatement activities as described in the Odour Monitoring Plan dated June 2016, set out as Item 67 in Schedule "A".

(b) Surface emission surveys may be discontinued upon completion of the fourth quarter surveys in 2016, provided that the total hydrocarbon vapours, expressed as methane, does not exceed 500 parts per million per each grid dimension.

(c) In the event of odours that are three (3) intensity units (based on the scale provided on Table 3.1 of the Odour Monitoring Plan) or greater are detected at an offsite receptor over a period outlined in Section 3.3.1.2 of the Odour Monitoring Plan, and the landfill mound is confirmed to be the source of the odour, repairs shall be made to the landfill mound as soon as possible. Upon completion of repairs, a surface emission survey shall be carried out to demonstrate that total hydrocarbon vapours, expressed as methane, do not exceed 500 parts per million per each grid dimension.

Compliance Criteria

8.6 The *Site* shall be operated in such a way to ensure compliance with the *MOECC* 's Guideline B-7 Reasonable Use Concept at monitoring points along the property line that have the potential to be impacted by leachate from the *Site* .

8.6.1 For the purpose of Condition 8.6, a reasonable use limit of 1 µ g/L shall be used for the parameter 1,4-dioxane unless an Ontario Drinking Water Quality Standard is established in O. Reg. 169/03 in which case the RUL for 1,4-dioxane shall be recalculated in accordance with the B-7-1 Procedure Document and the interim *EMP* or *EMP* , as the case may be, shall be amended as necessary to reflect the recalculated RUL.

8.6.2 Notwithstanding Condition 8.6, if a contaminant attenuation zone ("CAZ") is established, the *Site* shall be operated in such a way to ensure compliance with *MOECC* 's Guideline B-7 Reasonable Use Concept at

i. monitoring wells that act as groundwater compliance points within the CAZ; or

ii. along the boundary of the CAZ where it replaces the property line,

unless the non-compliance is identified as not originating from the leachate from the landfill.

8.7 Any off site exceedance of parameters for groundwater, surface water, or odour shall be reported to the District Manager within 48 hours of determination of the exceedance. In addition, a statement detailing which results are out of compliance with the Ministry's guidelines and objectives shall be provided at the same time as the results.

8.8 Any monitoring result that detects 1,4-dioxane at or above the detection limit of 1 m g/l at any groundwater well or domestic well at which 1,4-dioxane has not been detected in the past or at any surface water monitoring location shall be reported to the District Manager within 48 hours of determination of the exceedance.

8.9 Unless otherwise agreed to in writing by the residents of the residences listed below, unless the residence is vacant and likely to remain vacant, the *Owner* shall provide whole house replacement water supplies for the residences located at 1264, 1252, 1250, 1206, 1181, and 1144 Beechwood Road.

9.0 CONTINGENCY PLANS

Groundwater and Surface Water Impact Contingency Plan

9.1 (a) The *Owner* shall initiate the contingency plans outlines in section 7.4 of the revised *EMP* referenced in Condition 8.5(a), or as replaced with an updated version, when any of the identified trigger mechanisms occur.

(b) Notwithstanding Condition 9.1(a), the *Owner* shall not use fracture trench as a Leachate Collection System contingency measure.

Leachate Collection System Contingency Plan

9.2 i. The *Owner* shall initiate the Leachate Collection System Contingency Plan at a minimum when the trigger mechanisms identified in Items 41, 47 and 48 of Schedule "A" have been identified as occurring.

ii. The conceptual Leachate Collection System Contingency Plans as identified in Item Nos. 41, 47 and 48 in Schedule "A" are considered acceptable. In the event the *Owner* needs to implement the Contingency Plan, the *Owner* shall submit to the *Director* for approval prior to implementation, with copies to the *District Manager* , detailed design drawings for works or any remedial system required for the contingency plan.

Leachate Contingency Plan

9.3 The *Owner* shall on a biannual basis confirm that there is a suitable location available for disposal of leachate and what that location is. Confirmation shall be provided to the *District Manager* upon receipt. If a location for disposal of leachate is not available, the *Owner* shall provide an action plan for approval to the *District Manager* .

Landfill Gas Contingency Plan

9.4 i. The *Owner* shall initiate the Landfill Gas System Contingency Plan at a minimum when the trigger mechanisms identified in Item Nos. 42, 47 and 48 in Schedule "A" have been identified as occurring.

ii. The conceptual Landfill Gas System Contingency Plans as identified in Item Nos. 42 and 48 in Schedule "A" are considered acceptable. In the event the *Owner* needs to implement the Contingency Plan, the *Owner* shall submit to the *Director* for approval prior to implementation, with copies to the *District Manager* , detailed design drawings for works or any remedial system required for the contingency plan.

Public Notification Plan for Contingency Plans

9.5 (a) The Owner shall provide notice to interested persons and follow the procedures set out in the Public Notification Plan dated February 2013 set out as Item 58 in Schedule "A" upon the occurrence of any event that triggers notice to be given as set out in the Plan.

(b) Should the *Owner* wish to amend the Public Notification Plan, the *Owner* shall apply to the *Director* for an amendment to this approval and include in the Application a list of interested persons that were consulted on the proposed amendments and a summary of their comments.

10.0 PUBLIC LIAISON COMMITTEE

10.1 The *Owner* shall use its best efforts to establish and maintain a Public Liaison Committee (*PLC*) for the *Site* . The *PLC* shall serve as a focal point for dissemination, review and exchange of information and monitoring results relevant to the operation of the undertaking. In addition, the purpose of the *PLC* will be to provide community review of the development, operation (current and proposed) and ongoing monitoring, closure and post-closure care related to the *Site* . The *PLC* will also be provided the opportunity to review and comment on any subsequent applications for approval under the *EPA* .

10.2 The *Owner* shall invite representatives from the Town of Greater Napanee, the *Ministry* , the Township of Tyendinaga, the Quinte Conservation Authority and the Mohawks of the Bay of Quinte to sit on the committee.

10.3 The *Owner* shall, in consultation with the *PLC* , develop a terms of reference for the *PLC* that will describe how the *PLC* shall carry out business, and the terms of reference shall include a dispute resolution strategy to resolve issues and disagreements between the *PLC* and the *Owner* . The *Owner* shall provide the terms of reference to the *Director* and the *Regional Director* for placement on the public record.

10.4 The general mandate of the *PLC* shall include:

a. Review operations and provide regular input to the *Owner* with respect to all matters pertaining to landfill site operation, including issues pertaining to ongoing operations, monitoring, the need for contingency plans or remedial measures, response to community complaints, the need for changes to the *ECA*, post-closure monitoring and maintenance, and development of the proposed end use for the *Site*;
b. Review operational and monitoring reports;
c. Consider and make recommendations to the *Owner* regarding outside consulting advice in respect of the *Site*;
d. Facilitate ongoing dialogue between the *Owner*, and the community, including residents and businesses in the immediate vicinity of the *Site*;
e. Provide reports regularly to the community on the activities of the *PLC*, the landfill operations and landfill related issues and seek public input on these activities and issues;
f. Monitor the *Owner*'s complaint response program and make recommendations to the *Owner* with respect to this program; and
g. Provide recommendations to the *Owner* with respect to unresolved complaints.

10.5 The *PLC* shall not exercise any supervisory, regulatory, approval, legal or other decision making role with respect to the operations at the *Site* .

10.6 The *Owner* shall provide for the administrative costs of operating the *PLC* , including the cost of meeting places and clerical services.

10.7 The *PLC* shall operate under a Terms of Reference of the committee. Any changes to the Terms of Reference for the *PLC* shall be made by the *PLC* . Any changes to the Terms of Reference for the *PLC* shall be provided to the *Ministry* for information purposes.

10.8 Community members shall be appointed by the *PLC* . The community member positions are intended to be available to individuals that are not members of groups already represented on the *PLC* and have an interest in the operation of the *Site* . The *PLC* shall encourage individuals who reside in close proximity to the *Site* to participate. A community member is defined as a taxpayer and/or resident of the Town of Greater Napanee and/or The Township of Tyendinaga.

10.9 The function of the *Ministry* member will be to provide advice, information and input to other members as required.

10.10 The *PLC* shall determine the appropriate meeting frequency and review it on an annual basis.

10.11 Minutes and agendas of meetings shall be printed and distributed on a timely basis.

10.12 The *PLC* shall have reasonable access to the *Site* and its landfill related facilities for the purpose of carrying out its objective and mandate and the *Owner* 's consultants' reports relating to *Site* operations shall be provided to the *PLC* .

10.13 The *Owner* shall provide the *PLC* with access to the *Owner* 's consultants as required and consultants reports in accordance with protocols agreed to between the *Owner* and the *PLC* .

10.14 Unless disclosure would be contrary to the Freedom of Information and Protection of Privacy Act ,the *PLC* , the Town of Greater Napanee, the Township of Tyendinaga, and the Mohawks of the Bay of Quinte are to be provided all formal submissions and correspondence related to the *Site* operations by the *Owner* at the same time as these items are submitted to the *Ministry* .

10.15 The *Owner* shall allow access to the *Site* during normal operating hours, to enable any individual member of the *PLC* and member of the public recommended by local representatives on the *PLC* , to observe operations. An individual member of the *PLC* must contact the *Operator* to arrange for a *Site* pass, be accompanied by an *Operators* representative at all times and follow all safety procedures.

10.16 All recommendations made to the *Owner* with respect to ongoing *Site* operations, monitoring and the implementation of contingency measures shall be discussed at joint meetings between representatives of the *Owner* and the *PLC* . The purpose of these meetings will be to arrive at an agreement between the *Owner* and *PLC* with respect to implementation of the recommendations.

10.17 The *Owner* will provide and deliver to the *PLC* , the Town of Greater Napanee, the Township of Tyendinaga and the Mohawks of the Bay of Quinte all monitoring results, reports and any other information required to be collected and/or submitted to the *MOECC* by a Condition of this *ECA* .

10.18 The *Owner* with approval from the *Director* and the *District Manager,* may dispense with the *PLC* if, after a period of time and after giving sufficient notice, there is no interest from the public in continuing with it. The need for a *PLC* shall be reviewed by the *Owner* on a yearly basis .

11.0 COMPLAINTS PROCEDURE

11.1 If at any time, the *Owner* receives complaints regarding the operation of the *Site* , the *Owner* shall respond to these complaints according to the following procedure:

a. The *Owner* shall record and number each complaint, either electronically or in a log book,

and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information and the time and date of the complaint;

b. The *Owner*, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

c. The *Owner* shall complete a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents. A copy of the report shall be retained at the *Site*.

11.2 The *Owner* shall post *Site* complaints procedure at *Site* entrance along with the name and phone number of a suitable, local contact to receive complaints or questions related to the *Site* . All complaints and the *Owner* 's actions taken to remedy the complaints must be summarized in the Annual Report.

12.0 EMERGENCY SITUATIONS

12.1 In the event of a fire or discharge of a contaminant to the environment, *Site* staff shall contact the *MOECC* Spills Action Centre (1-800-268-6060) and the *District Office* of the *MOECC* .

12.2 The *Owner* shall submit to the *District Manager* a written report within three (3) days of the spill or incident, outlining the nature of the incident, remedial measures taken and measures taken to prevent future occurrences at the *Site* .

12.3 The Emergency Response Manual shall be updated on a regular basis and be provided to the *District Manager* within one month of the revision date.

12.4 The *Owner* shall ensure that adequate fire fighting and contingency spill clean up equipment is available and that emergency response personnel are familiar with its use and location.

13.0 SITE CLOSURE

13.1 i. The *Owner* shall construct the final cover system for the *Site* in accordance with Items 33 to 36 inclusive of Schedule "A" and this *ECA* .

ii. Prior to subgrade preparation, the *Owner* shall inspect for any evidence of leachate springs or seeps and immediately remedy any seeps or springs prior to placement of the final cover and topsoil.

13.2 If final contours are reached in any part of the *Site* then that part of the *Site* shall be closed in accordance with the closure plan, Items 19 to 30 on Schedule "A" and this amendment to the *ECA* as approved by the *Director.*

13.3 Within sixty (60) days prior to *Site* closure, the *Owner* shall notify the public via an advertisement in all local newspapers. In addition, notice shall be given to the *District Office* , the Town of Greater Napanee, the Mohawks of the Bay of Quinte and all residents and businesses within a 1,000 metre radius of the *Site* .

13.4 The *Owner* shall update the sign at the front gate of the *Site* to indicate the following:

a. the name of the *Site* and *Owner*;

b. the *ECA* number;
c. the name of the *Operator*;
d. a warning against unauthorized access;
e. the telephone number to which complaints or questions may be directed;
f. a twenty-four (24) hour emergency telephone number;
g. the *Site* is closed;
h. dumping outside of the gate is illegal; and
i. alternative locations for waste disposal.

13.5 After *Site* closure, on a weekly basis, the *Owner* shall inspect the *Site* for leachate seeps and for signs of illegal dumping of waste. Illegal waste shall be removed and disposed of within 48 hours of detection. Leachate seeps shall be repaired within 48 hours of detection.. Upon approval from the *Director* , the frequency for inspecting for leachate seeps may be reduced to quarterly.

13.6 Upon closure of the *Site* , the following features will be inspected, recorded and maintained on a quarterly (every three (3) months) basis:

a. evidence of settlement;
b. landfill gas collection system, landfill gas flare and related equipment;
c. cover soil integrity;
d. vegetative cover;
e. gates and fencing around the *Site*;
f. surface water drainage works; and
g. erosion and sediment in surface water drainage system.

13.7 Any deficiencies noted in the above items shall be repaired within one month time of notice.

13.8 Upon *Site* closure, grass on the berms and the top of the landfill shall be cut a minimum of two (2) times per year.

13.9 Upon closure of the *Site* , the ditches and culverts surrounding the *Site* shall be cleaned on an annual basis for the first five (5) years after *Site* closure. After 5 years of *Site* closure, the ditches and culverts shall be inspected on a annual basis and cleaned as required until the end of the *contaminating lifespan* .

13.10 i. The leachate collection system shall be camera inspected and cleaned on an annual basis for years 4 and 5 after *Site* closure.

ii. The leachate collection system shall be camera inspected every two years after 5 years of *Site* closure, with cleaning as required.

iii. Changes to the maintenance schedule for the leachate collection system shall be approved by the *Director* .

13.11 If weather conditions do not allow timely placement of final and vegetative cover, silt curtains shall be employed to minimize silt loadings to surface water bodies.

13.12 The following shall remain in place and be operational at the *Site* until the end of the contaminating lifespan:

a. Leachate extraction equipment;
b. Landfill gas extraction equipment; and
c. Sedimentation ponds.

14.0 SEMI ANNUAL AND ANNUAL REPORTING

Semi Annual Monitoring Reporting

14.1 By **January 15** and **July 15** of each year, the *Owner* shall submit semi-annual monitoring reports to the *District Office* and post the reports on a publicly accessible website. These semi annual reports shall include:

a. The results in tabular form and an interpretive analysis of the results from the leachate, groundwater, surface water, and landfill gas monitoring programs approved by this *ECA* , including:

i. an assessment of the need to amend the monitoring programs;
ii. an evaluation of any observations of saline upwelling in the groundwater;
iii. an estimation of the leachate generated at the *Site* ;
iv. an evaluation of leachate quality, levels, and mounding within the landfill;
v. figure(s) showing the landfill site and contaminant attenuation zone;
vi. maps or figures showing groundwater concentrations of alkalinity, tritium, 1-4 dioxane, and ammonia in the shallow and intermediate aquifers;
vii. figure(s) showing the off-site properties suspected or confirmed of being impacted by leachate from the landfill;
viii. a complete inventory of the groundwater monitoring well locations;
ix. detailed analysis on groundwater quality trends on downgradient groundwater wells which have been impacted or are suspected of being impacted by leachate from the landfill.

b. An assessment with regards to the compliance of the groundwater quality at the property boundary and compliance points with regards to Guideline B-7 Reasonable Use Concept;

c. A report on the status of any monitoring wells required to be tested pursuant to the EMP and a statement as whether those wells are in compliance with Ontario Regulation 903;

d. The second semi-annual report will include an Annual Summary section which describes the results from the current calendar year and any data quality changes identified from previous years, or through the current year.

e. All surface and groundwater analytical results reported in future Semi-Annual and Annual Monitoring Reports shall be reported by groups of substances (i.e. VOCs, PAHs, inorganics, etc.) and by numeric location, and shall be posted by WMC on a publicly accessible website, with the data being posted on such website being updated annually.

Annual Reporting

14.2 A written report on the development, operation, and closure of the *Site* shall be completed annually (the “Annual Report”). The Annual Report shall be submitted to the *District Manager, the PLC,* the Town of Greater Napanee, the Township of Tyendinaga, the Mohawks of the Bay of Quinte, and a representative of the Concerned Citizens Committee of Tyendinaga and Environs by **March 31st** of each year and shall cover the year ending the preceding December 31st.

14.3 The Annual Report shall include the following:

i. an assessment of the operation and performance of all engineered facilities, the need to amend the design or operation of the *Site*, and the adequacy of and need to implement the contingency plans;
ii. an assessment of the efficiency of the leachate collection system;
iii. *Site* plans showing the existing contours of the *Site;*
iv. areas of landfilling operation during the reporting period;
v. areas of intended operation during the next reporting period;
vi. areas of excavation during the reporting period;
vii. a summary of the inspection of the final cover and vegetative cover including identification of any seepages and remedial actions taken;
viii. previously existing *Site* facilities;
ix. facilities installed during the reporting period;
x. A discussion on any facilities planned for installation during the next reporting period;
xi. a summary of the quantity of any leachate or pre-treated leachate removed from the north and south pumping stations at the *Site* during each operating week;
xii. a discussion of the results of the toxicity testing of the landfill stormwater management ponds which includes potential impacts to the groundwater by the SWMP;
xiii. a summary of the weekly, maximum daily and total annual quantity (tonnes) of waste received at the *Site* .
xiv. a summary of any complaints received, the responses made and corrective/remedial taken if required;
xv. a summary of any seeps, upset conditions or emergency situations and or corrective/remedial actions taken
xvi. a discussion of any operational problems encountered at the *Site* and corrective action taken;
xvii. a summary of the amount of wastes refused for disposal at the *Site* , the reasons for refusal and the carrier who brought the waste to the *Site* ;
xviii. a summary of the leachate collection system cleaning and inspection activities;
xix. an update summary of the amount of financial assurance which has been provided to the *Director;*
xx. a table detailing the chronology of significant landfill design, operational, and land use changes for the landfill and any other information with respect to the site which the *District Manager or Regional Director* may require from time to time;
xxi. a statement of compliance with all conditions of this *ECA* and other relevant *Ministry* groundwater and surface water requirements;
xxii. a confirmation that the *Site* inspection program as required by this *ECA* has been complied with by the *Owner* ;
xxiii. any changes in operations, equipment or procedures employed at the *Site* ; and recommendations regarding any proposed changes in operations of the *Site* .

14.4 (a) In the event the *District Manager* requires additional information to be submitted to complete the *District Office* 's assessment on whether or not the *Site* is in compliance, the *District Manager* shall provide written notification to the *Owner* at least sixty (60) days before the submission of the next Semi-Annual or Annual Report submission date on the type of additional information to be included in the report.

(b) In the event the *District Manager* determines that the inclusion of information in either the annual

or semi-annual report annual for which notification under 14.4(a) was provided is no longer warranted or needed for the *Ministry* 's assessment of whether or not the *Site* is in compliance, the *District Manager* shall notify the *Owner* in writing of the information that is no longer required. The *District Manager* can later request the information be re-included in the report as per Condition 14.4 (a).

Schedule "A"

1. Application for a Certificate of Approval for a Waste Disposal Site (Landfill), dated January 11, 1988.

2. Report entitled "Sutcliffe Sanitation Services Ltd., Landfill Site Expansion Development and Operations Report", prepared by Henderson Paddon and Associates Limited, dated September 1985.

3. Report entitled "Addendum No. 1 Sutcliffe Sanitation Services Limited Landfill Site Expansion Development and Operations Report" prepared by Henderson Paddon and Associates Limited dated December 1986.

4. Report entitled "Hydrogeologic Study Proposed Landfill Expansion, Township of Richmond" prepared by Morrison Beatty Limited and dated September 30, 1985.

5. Report entitled "Proposed Groundwater and Surface Water Monitoring Program, Sutcliffe Sanitation Services Limited Landfill, Township of Richmond" prepared by Morrison Beatty Limited and dated August 1987.

6. Letter dated September 12, 1990 from Mr. J.R. Bray, P.Eng. to Tricil Limited (c/o Laidlaw Waste Systems Ltd.).

7. Application for Approval of a Waste Disposal Site, dated May 24, 1995 and signed by Michael Pullen, Director, Environmental Management, Laidlaw Waste Systems (Richmond) Ltd.

8. Letter from Jeff Armstrong, Henderson, Paddon & Associates Limited to I. Parrott, MOEE dated May 30, 1995 re: Development of Landfill Base of Phases IV and V (including attached drawings 8570D-400 to 406, inclusive and 8570D-94-Site).

9. Letter from Jeff Armstrong, Henderson Paddon and Associates Limited to i. Parrott, MOEE dated June 23, 1995 re: Additional information to Support Application for Provisional Certificate of Approval for a Waste Disposal Site A371203.

10. Letter from Jeff Armstrong, Henderson Paddon and Associates Limited to I. Parrott, MOEE dated July 21, 1995 re: Public Consultation on the Re-Design of the Landfill Base for Phase IV and V.

11. Application for Approval for a Waste Disposal Site dated July 25, 1996 signed by Mr. Michael Pullen, Director, Environmental Management.

12. Report entitled "Undertaking to Establish an Organic Composting Facility at the Laidlaw Waste Systems (Richmond) Ltd. Landfill Site" dated July 1996, prepared by Laidlaw Waste Systems (Richmond) Ltd.

13. Plan entitled "Richmond Township Landfill Proposed Compost Pad Expansion", revised April 12, 1996, prepared by Henderson Paddon and Associates Ltd.

14. The June 9, 1999, report entitled "Conceptual Design for a Landfill Gas Collection and Flaring System Richmond Landfill Site Napanee, Ontario" which was prepared by Comcor Environmental

Limited.

15. Drawing 8570G-L1 dated May 2000- Phase I Proposed Leachate Collector, Napanee Landfill, Napanee, Ontario

16. A letter dated July 31, 2000, regarding concerns raised during review of application, to Tes Gebrezghi, MOE, from Jeff Armstrong, Henderson Paddon & Associates Limited

17. A report titled "Assessment of Napanee Water Pollution Control Plant To Treat Leachate from the Laidlaw Landfill, Richmond, Ontario, dated May 1996 and prepared by Henderson, Paddon & Associates Limited

18. A report titled "CWS Response to the Town of Greater Napanee Audit of the Richmond Landfill Operation, dated May 12, 2000, and prepared by Canadian Waste Services Inc.

19. Report entitled "Richmond Sanitary Landfill Site Final Closure Plan" and appendices dated June 2007 prepared by Henderson, Paddon and Associates Limited.

20. Memorandum dated November 30, 2007 from K. Stephenson, Hydrogeologist, Eastern Region, MOE to C. Dobiech, Kingston District, MOE.

21. Memorandum dated December 5, 2007 from Victor Castro, Surface Water Scientist, Eastern Region, MOE to Craig Dobiech, Kingston District, MOE.

22. Letter dated July 11, 2008 from Greg Washuta, Senior Waste Engineer, EAAB, MOE to Mike Walters, WMCC.

23. Letter, attachments, and Appendix B dated September 26, 2008 from Randy Harris, Site Manager, WMCC to Greg Washuta, Senior Waste Engineer, EAAB, MOE.

24. Letter dated February 23, 2009 from Greg Washuta, Senior Waste Engineer, EAAB, MOE to Randy Harris, Site Manager, WMCC.

25. Drawing number 8570-2006 entitled "June 2006 Existing Conditions Richmond Landfill Napanee, Ontario" dated March 19, 2007 prepared by Henderson Paddon and Associates Limited.

26. Drawing number 8570F-104 entitled "Richmond Landfill Site Proposed Final Contours Landfill and Borrow Areas" dated March 1995 prepared by Henderson Paddon and Associates Limited.

27. Letter dated March 2009 from Randy Harris, Site Manager, Waste Management of Canada Corporation to Greg Washuta, Senior Waste Engineer, Waste Unit, EAAB, MOE.

28. Drawing number 8570F-114 entitled "Richmond Township Landfill Sections 'A-A' and 'B-B'" created by Henderson Paddon and Associates Limited, dated March 1996.

29. Drawing number 8570F-115 entitled "Richmond Township Landfill Sections 'C-C', 'D-D', and 'E-E'" created by Henderson Paddon and Associates Limited, dated March 1996.

30. Memorandum dated February 25, 2009 from K. Stephenson, Hydrogeologist, Eastern Region, MOE to C. Dobiech, Kingston District, MOE.

31. Letter dated June 1, 2009 from Mr. Randy Harris, Site Manager, Waste Management of Canada Corporation to Application Processor, Client Services Section, Environmental Assessment and

Approvals Branch, Ministry of the Environment.

32. Report entitled "Site Conceptual Model Report, WM Richmond Landfill" and attached appendices A to H inclusive by Dr. B.H. Kueper and WESA Inc., dated October 2009.

33. Report entitled "Richmond Sanitary Landfill Site OS-08-570-13-OS Construction Quality Assurance/Construction Quality Control Plan for the Final Cover System", dated June 2010, prepared by GENIVAR Consultants LP.

34. E-mail dated August 20, 2010 from Greg Washuta, Senior Waste Engineer, Waste Unit, Environmental Assessment and Approvals Branch, Ministry of the Environment to Dave White and Randy Harris, Waste Management of Canada Corporation.

35. Letter dated August 24, 2010 from Jeff E. Armstrong, Senior Environmental Engineer, GENIVAR Consultants LP to Greg Washuta, Senior Waste Engineer, Waste Unit, Environmental Assessment and Approvals Branch, Ministry of the Environment.

36. Document entitled "Richmond Sanitary Landfill Site Construction Quality Assurance/Construction Quality Control Plan for the Final Cover System ERRATA" prepared by Jeff E. Armstrong, Senior Environmental Engineer, GENIVAR Consultants LP, dated August 24, 2010.

37. Application for a Provisional Certificate of Approval for a Waste Disposal Site for Waste Management of Canada Corporation's Richmond Landfill Site, signed by Randy Harris, Site Manager on September 30, 2010.

38. Report entitled "Phytoremediation Plan - WM Richmond Landfill Town of Greater Napanee, Ontario" dated December 2010 and prepared by WESA Inc.

39. Report entitled "Richmond Sanitary Landfill Site - Operations and Procedures Manual June 25, 2010" prepared by GENIVAR Consultants LP Inc dated June 25, 2010.

40. Report entitled "Landfill Gas Collection and Flaring System Design Report - Richmond Landfill" prepared by GENIVAR Consultants LP dated June 29, 2009.

41. Report entitled "Richmond Sanitary Landfill Site - Leachate Collection System Contingency Plan" prepared by GENIVAR Consultants LP dated June 25, 2010.

42. Report entitled "Richmond Sanitary Landfill Site - Landfill Gas Collection System Contingency Plan" prepared by GENIVAR Consultants LP dated June 25, 2010.

43. Report entitled "Financial Assurance Plan" completed by GENIVAR Consultants LP and dated June 25, 2010;

44. Report entitled "Contaminating Lifespan" (Appendix D of Financial Assurance Plan) completed by GENIVAR Consultants LP and dated June 16, 2010.

45. Report entitled "Final Report - Environmental Monitoring Plan - WM Richmond Landfill" prepared for Waste Management of Canada Corporation by WESA Inc. and dated June 29, 2010.

46. Appendix "A" (Report Entitled "Odour Monitoring Plan" prepared for Waste Management of Canada Corporation by GENIVAR Consultants LP dated June 25, 2010) of the report entitled "Environmental Monitoring Plan - WM Richmond Landfill" prepared for Waste Management of Canada Corporation by WESA Inc. and dated June 29, 2010.

47. Letter dated January 14, 2011 addressed to Mr. Randy Harris, Waste Management of Canada

Corporation from Mr. Greg Washuta, Ministry of the Environment providing comments on Items 39 through 46 in Schedule "A".

48. Letter dated February 28, 2011 addressed to Mr. Greg Washuta, Ministry of the Environment from Mr. Randy Harris, Waste Management of Canada Corporation providing additional information regarding financial assurance, the status of the environmental monitoring plan and various contingency plans.

49. Letter dated April 5, 2011 addressed to Mr. Randy Harris, Waste Management of Canada Corporation from Mr. Dale Gable, Ministry of the Environment requesting additional information on financial assurance, the status of the environmental monitoring plan and various contingency plans.

50. Letter dated April 20, 2011 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. providing additional information on the environmental monitoring plan, financial assurance and the contaminating lifespan of the Site.

51. Letter dated August 12, 2011 and supporting documentation addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Reid Cleland, Waste Management of Canada Corporation requesting amendment to Condition No. 35. The supporting documentation included the following:

i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated August 15, 2011.

52. Letter report dated May 25, 2011 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. requesting an amendment to permit the approval of continued recyclables disposal at the Richmond Landfill Site. The supporting documentation included the following:

i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated May 25, 2011;
ii. Drawing No 8570713-MT1 entitled "Site Location Map" prepared by GENIVAR INC. and dated May 17, 2011; and
iii. Drawing No. 8670713-MT2 entitled "Site Plan Mini-transfer Station" prepared by GENIVAR Inc. and dated May 17, 2011.

53. Letter report dated May 25, 2011 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. requesting an amendment to Condition No. 35 which would allow the continue use of the mini-transfer station at the Richmond Landfill Site. The supporting documentation included the following:

i. Application for a Certificate of Approval for a Waste Disposal Site signed by Mr. Reid Cleland, Waste Management of Canada Corporation and dated May 25, 2011;
ii. Development and Operations Report for a Waste Transfer Station prepared by GENIVAR Inc. (Project No. 081-12493-00) and dated May 2011
iii. Drawing No 8570713-MT1 entitled "Site Location Map" prepared by GENIVAR INC. and dated May 17, 2011; and
iv. Drawing No. 8670713-MT2 entitled "Site Plan Mini-transfer Station" prepared by GENIVAR Inc. and dated May 17, 2011.

54. Letter dated June 20, 2011 addressed to Mr. Reid Cleland, Waste Management of Canada Corporation from Mr. Dale Gable, Ministry of the Environment requesting additional information on the continued operation of the Waste and Recycling Drop-Off Facility.

55. Letter dated June 30, 2011 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Jeff Armstrong, GENIVAR Inc. providing additional information on the operations of the Waste and Recycling Drop-Off Facility. The information included the following:

i. Development and Operations Report for a Waste Transfer Station prepared by GENIVAR Inc. (Project No. 081-12493-00) and dated June 2011.

56. Environmental Review Tribunal Order for Case No. 12-033 issued on April 26, 2013.

57. Report entitled "Richmond Sanitary Landfill Site- Odour Monitoring Plan - Revision No. 2" prepared for WMCC by WSP Canada and dated November 25, 2014.

58. Report entitled "Richmond Sanitary Landfill Site (081-12459-00) - Public Notification Plan - February 2013" prepared for WMCC by GENIVAR Inc. and dated February 2013.

59. Environmental Review Tribunal Order for Case No. 12-033 issued on July 21, 2015.

60. Environmental Review Tribunal Order for Case No. 12-033 issued on August 13, 2015.

61. Environmental Review Tribunal Order for Case No. 12-033 issued on October 29, 2015.

62. Environmental Compliance Approval Application dated June 10, 2014 signed by Reid Cleland, Waste Management of Canada Corporation.

63. Environmental Compliance Approval Application dated January 13, 2015 signed by Reid Cleland, Waste Management of Canada Corporation, and the supporting documentation including the Design Brief - Leachate Storage System Richmond Landfill Site dated January 2015 prepared by WSP Canada Inc.

64. Environmental Review Tribunal Order for Case No. 12-033 issued on December 24, 2015.

65. Email dated May 13, 2016 from Peter Brodzikowski, WSP Canada to Rick Li, Ministry of the Environmental and Climate Change providing a response to the Ministry' review comments on the leachate storage system and the maintenance schedule.

66. Environmental Review Tribunal Order for Case No. 12-033 issued on April 14, 2016.

67. Report entitled "Odour Monitoring Plan - Revision No. 3 Richmond Sanitary Landfill Site" prepared for WMCC by WSP Canada and dated June 2016.

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

1. *The reason for Conditions 1.1 and 1.2 is to ensure that the Site is designed, operated, monitored and maintained in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.*
2. *The reason for Conditions 1.3, 1. 4. 1. 5, 1.9, 1.10, 1.11, 1.12, 1.13, 3.1, 3.2, 3.3 and 8.6 is to clarify the legal rights and responsibilities of the Owner under this ECA.*

3. *Conditions 1.6, 1.7 and 1.8 are included to ensure that the appropriate Ministry staff have ready access to information and the operations of the Site, which are approved under this Certificate.*
4. *Conditions 1.14 and 1.15 are included, pursuant to subsection 197(1) of the EPA, to provide that any persons having an interest in the Site are aware that the land has been approved and used for the purposes of waste disposal.*
5. *The reasons for Condition 1.16 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this ECA.*
6. *The reasons for Conditions 1.17 and 1.18 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.*
7. *The reason for Condition 1.19 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 ECA. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA and OWRA.*
8. *The reasons for Conditions 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 , 2.7, 2.8, and 2.9 are to ensure that sufficient funds are available to the Ministry to close the landfill, and to carry out all expected post-closure care activities and any contingencies. Failure to include requirements for financial assurance would not be in the public interest and may result in a hazard or nuisance to the natural environment or any person.*
9. *The reason for Condition 3.4 is to ensure the availability of as-built drawings for inspection and information purposes.*
10. *The reasons for Conditions 4.1, 4.2 and 4.3 are to ensure the Owner operates the Site in an environmentally safe manner. This to is ensure the environment and public health are protected.*
11. *The reason for Condition 4.4 is to establish a closure date for the Site.*
12. *The reasons for Conditions 4.5, 4.6 and 4.7 is to specify the approved areas from which waste may be accepted at the Site and the types and amounts of waste that may be accepted for disposal at the Site, based on the Owner's application and supporting documentation.*
13. *The reasons for Conditions 4.8, 4.9, 4.10 and 4.11 are to specify the normal hours of operation for the landfill Site and a mechanism for amendment of the hours of operation.*
14. *The reasons for Condition 4.12 are to specify Site access to/from the Site and to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no Site attendant is on duty.*
15. *The reason for Condition 4.13 is to ensure the on-site roads are well maintained to provide access to the site operation and maintenance works.*
16. *The reason for Condition 4.14 is to ensure that only waste types approved by this ECA is accepted at the Site.*
17. *The reason for Conditions 4.15 to 4.18 and 4.20 is to ensure that nuisance such as odour, litter, and dust are minimized during landfilling.*
18. *The reasons for Condition 4.19 are the protection of public health and safety and minimization of the potential for damage to environmental control, monitoring and other works at the landfill Site. Scavenging is the uncontrolled removal of material from waste at a landfill Site.*
19. *The reason for Condition 4.21 is to ensure that noise from or related to the operation of the landfill is kept to within Ministry limits and does not result in a hazard or nuisance to any person.*
20. *The reason for Condition 5.1 is to ensure that landfilling operations are conducted in an environmentally acceptable manner. Daily and intermediate cover is used to control potential nuisance effects, to facilitate vehicle access on the Site, and to ensure an acceptable Site*

appearance is maintained. The proper closure of a landfill Site requires the application of a final cover which is aesthetically pleasing, controls infiltration, and is suitable for the end use planned for the Site.

21. *The reasons for Conditions 5.2, 5.3 and 5.4 are to ensure proper operation of the leachate collection system. This is to ensure the protection of the environment and public health.*
22. *The reason for Conditions 5.5 and 5.6 is to* approve the proposed leachate storage system for improvement to the leachate handling and trucking.
23. *The reasons for Condition 5.7 and 5.8 is to ensure the Owner is aware that the composting operation will cease by the given date.*
24. *The reason for Condition 5.9 is to approve the proposed phytoremediation system as applied and established operations conditions for the phytoremediation system.*
25. *The reason for Conditions 5.10 and 5.11 is to clarify the responsibilities of the Owner, the requirements of the Ministry, the authority of the Ministry and protects the natural environment and human health.*
26. *The reason for Condition 5.12 is to approve the continued operation of the Waste and Recycling Drop-Off Facility as per the submitted information.*
27. *The reason for Conditions 5.13, 5.14, 5.15 and 5.18 is to ensure the type of waste, the quantity of waste service and removal frequency are clearly identified.*
28. *The reasons for Condition 5.16 and 5.17 is to specify the normal hours of operation for the landfill Site and a mechanism for amendment of the hours of operation and ensure trained staff are present to accept waste*
29. *The reasons for Conditions 5.19 through 5.24 is to ensure the operation is done in a manner that will not cause a nuisance or an adverse effect. This is to ensure the long-term protection of the environment and human health.*
30. *The reason for Conditions 5.25 and 5.26 are to ensure surface water at the site is not impacted by landfill operations. This is to ensure the environment and public health are protected.*
31. *The reason for Condition 6.1 is to ensure that the Site is supervised and operated by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person.*
32. *The reasons for Conditions 7.1, 7.2 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11 and 14.1 are to provide for the proper assessment of effectiveness and efficiency of Site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this ECA, the EPA and its regulations*
33. *The reasons for Conditions 8.1, 8.2, 8.3, and 8.4 are to ensure protection of the natural environment and the integrity of the groundwater monitoring network.*
34. *The reason for Condition 8.5 is to demonstrate that the landfill Site is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.*
35. *The reason for Conditions 8.6.1, 8.6.2, 8.9, and 9.1 is to incorporate the Environmental Review Tribunal Order dated April 14, 2016.*
36. *The reason for Conditions 8.7 and 8.8 is to incorporate the interim orders issued by the Environmental Review Tribunal on July 21, 2015 and August 13, 2015.*
37. *The reason for Conditions 9.2, 9.3, 9.4, 11.1 and 11.2 is to ensure that the Owner 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.*

38. *The reasons for Condition 9.5 are to ensure there is a public notification plan in the event that any contingency plan is activated or engaged, and to reflect the interim order issued by the ERT on April 26, 2013.*
39. *The reason for Conditions 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 10.10, 10.11, 10.12, 10.13, 10.14, 10.15, 10.16, 10.17 and 10.18 is to establish a forum for the exchange of information and public dialogue on activities carried out at the landfill Site. Open communication with the public and local authorities is important in helping to maintain high standards for site operation and environmental protection.*
40. *The reasons for Conditions 12.1 and 12.2 are to ensure that the Ministry is informed of any spills or fires at the Site and to provide public health and safety and environmental protection.*
41. *The reason for Condition 12.3 is to ensure the Emergency Response Manual is updated regularly.*
42. *The reasons for Condition 12.4 are to guarantee that appropriate measures are taken by the Owner to prevent future occurrences of spills or fires at the site and to protect public health and safety and the environment.*
43. *The reasons for Conditions 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8, 13.9, 13.10, 13.11 and 13.12 are to ensure that final closure of the Site is completed in accordance with Ministry requirements, an aesthetically pleasing manner and to ensure the long-term protection of the natural environment.*
44. *Conditions 14.1 and 14.4 is included in the ECA to reflect the interim order issued by the ERT on April 26, 2013.*
45. *The reasons for Conditions 14.2 and 14.3 are to reflect the interim order issued by the ERT on April 26, 2013, and to ensure that regular review of Site development, operations and monitoring data is documented and any possible improvements to Site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing Site activities and for determining the effectiveness of Site design.*

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A371203 issued on March 20, 1988

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. 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 Environmental Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1

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

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca*, you can determine when the leave to appeal period ends.*

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 July, 2017

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

RL/
c: District Manager, MOECC Kingston - District
Beverly Leno/ Peter Brodzikowski, WSP Canada Inc.

APPENDIX

A-3 *ENVIRONMENTAL COMPLIANCE APPROVAL (SEWAGE WORKS) NO. 1688-8HZNJG, DATED JANUARY 10, 2012*

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 1688-8HZNJG
Issue Date: January 10, 2012

Waste Management Canada Corporation
1271 Beechwood Rd
Rural Route, No. 6
Napanee, Ontario
K7R 3L1

Site Location: Richmond Landfill Site
1271 Beechwood Road, Parts of Lots 1,2, &3, Concession 4, Richmond
Greater Napanee Town, County of Lennox and Addington

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

leachate collection and disposal facility and stormwater management facility to service the Richmond Landfill Site located on Parts of Lots 1, 2 and 3, Concession 4, in the Town of Greater Napanee as follows:

SEWAGE WORKS APPROVED ON AUGUST 19, 2008:

Stormwater Management Pond - SWM Pond No. 3

a new stormwater management facility located south of the approved landfill footprint and north of Beechwood Road to service 20 ha drainage area of the Richmond Landfill Site, designed to provide quantity and quality control of stormwater runoff from storm events up to 1:100 return frequency consisting of the following:

- two (2) extended wet detention ponds interconnected by two (2) 750 mm diameter culverts providing a permanent pool storage capacity (including sediment storage) of 19,642 m^3 between the elevations of 122.4 m ASL and 124.4 m ASL and active storage capacity of 7,620 m^3 between the elevations of 124.4 m ASL and 124.73 m ASL (overall total storage capacity of 27,262 m^3);

- each detention pond equipped with a rip rap lined inlet structure, a forebay, and cattails planted in the shallow areas surrounding the permanent pool;

- an outlet structure consisting of one (1) 600 mm x 600 mm precast concrete catch basin equipped with a 100 mm diameter inlet orifice, one (1) 300 mm diameter PVC discharge pipe equipped with one (1) 300 mm diameter gate valve, discharging through a drainage ditch to the Beechwood Road side ditch eventually flowing to Marysville Creek;

- one (1) 3.0 m wide rip rap lined emergency spillway with an invert elevation of 124.73 m ASL, discharging through a drainage ditch to the Beechwood Road side ditch; and

- including all controls and associated appurtenances.

all in accordance with the Application for Approval of Industrial Sewage Works submitted by Waste Management of Canada Corporation dated April 11, 2008, drawings and design specification prepared by Henderson Paddon & Associates Limited, Owen Sound, Ontario and the document listed in Schedule 'B'.

EXISTING LEACHATE MANAGEMENT FACILITY:

- one (1) approximately 504 m long 200 mm diameter perforated PVC or HDPE perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending through seven (7)1200 mm diameter pre-cast concrete service manholes (MH12, MH11, MH10, MH9, MH8, MH7 and MH1) along the west side and north side of landfill footprint discharging to a 22.3 m^3 capacity North Concrete Pumping Chamber which is not equipped with pumps;

- one (1) approximately 429 m long 150 mm diameter perforated PVC perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending through six (6) 1200 mm diameter pre-cast concrete service manholes (MH6, MH5, MH4, MH3, MH2 and MH1) along the east side and north side of landfill footprint discharging to a 22.3 m^3 capacity North Concrete Pumping Chamber which is not equipped with pumps;

- one (1) approximately 393 m long 200 mm diameter perforated PVC perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending along the west side and south side of landfill footprint discharging to a leachate pumping station described below;

- one (1) approximately 296 m long 200 mm diameter perforated PVC perimeter leachate collector pipe, installed in a 50 mm clear stone bedding wrapped in geotextile, extending along the east side and south side of landfill footprint discharging to a leachate pumping station described below;

- one (1) side slope riser leachate pumping station equipped with two (2) 80 USGPM capacity submersible pumps and a sump with bottom dimension of 2 m x 2 m filled with 50 mm gravel, discharging to a leachate lagoon described below;

- one (1) 16,245 m^3 storage capacity leachate lagoon, lined with clay and HDPE synthetic liner, located north of the landfill footprint used for temporary storage of leachate or leachate contaminated stormwater until dispose off site to a pre-approved sewage treatment plant;

- one (1) leachate storage lagoon located west of the landfill footprint used for collecting leachate and stormwater runoff from a composting facility until it is used for composting operations or disposed off-site to a pre-approved sewage treatment plant;

- including all controls and associated appurtenances.

SEWAGE WORKS APPROVED ON OCTOBER 21, 1991:

Stormwater Management Pond - SWM Pond No. 1

A stormwater management pond constructed on a site approximately 750 m north of Beechwood Road and north of the fill area for a 25 year design storm having a minimum storage volume of 228 m^3 to retain surface runoff from an area of 3.38 ha (consisting of fill area) and to discharge at a rate of 70 L/s via a 375 mm diameter outlet pipe (fitted to a drop inlet pipe structure) to a Headwater Tributary of Marysville Creek (Intermittent), together with a drawdown structure, a 1200 mm diameter drop inlet pipe, a 3.5 m wide emergency spill-way channel, rock baffle, erosion and silt control protection;

Stormwater Management Pond - SWM Pond No. 2

A stormwater management pond constructed on a site approximately 750 m north of Beechwood Road and northwest of the fill area for a 25 year design storm having a minimum storage volume of 332 m^3 to retain surface runoff from an area of 4.94 ha (consisting of fill area) and to discharge at a rate of 103 L/s via a 375 mm diameter outlet pipe (fitted to a drop inlet pipe structure) to a Headwater Tributary of Marysville Creek (Intermittent), together with a drawdown structure, a 1200 mm diameter drop inlet pipe, a 3.5 m wide emergency spill-way channel, rock baffle, erosion and silt control protection;

all in accordance with the information submitted by Henderson Paddon and Associates Limited Consulting Engineers and the following documents listed in Schedule 'A'.

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

"*Approval* " means this Environmental Compliance Approval and any schedules attached to it, and the application .

"*By-pass"* means any discharge from the *Works* that does not undergo any treatment before it is discharged to the environment;

"*Director"* means a person appointed by the Minister pursuant to section 5 of the *EPA* for the purposes of Part II.1 of the *EPA*.

"*District Manager* " means the District Manager of the Kingston District Office;

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

"*Ministry"* means the ministry of the government of Ontario responsible for the *EPA* and *OWRA* and includes all officials, employees or other persons acting on its behalf.

"*Owner"* means Waste Management of Canada Corporation and its successors and assignees;

"*OWRA* " means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended.

"Substantial Completion" has the same meaning as *"substantial performance"* in the Construction Lien Act; and

"*Works"* means the sewage works described in the *Owner* 's application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval.*

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

TERMS AND CONDITIONS

I - GENERAL

1. GENERAL PROVISIONS

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

(2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Approval* , the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Approval* .

(3) Where there is a conflict between a provision of any submitted document referred to in this *Approval* and the Conditions of this *Approval* , the Conditions in this *Approval* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Approval* are severable. If any requirement of this *Approval*, or the application of any requirement of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this *Approval* shall not be affected thereby.

2. EXPIRY OF APPROVAL

The approval issued by this *Approval* will cease to apply to those parts of the *Works* which have not been constructed by August 19, 2013.

3. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:

(a) change of *Owner*;

(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B17 shall be included in the notification to the *District Manager*;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the *District Manager*;

(2) In the event of any change in ownership of the *Works*, other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Approval*, and a copy of such notice shall be forwarded to the *District Manager* and the *Director*.

4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Within one year of the *Substantial Completion* of the *Works*, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date

through revisions undertaken from time to time and a copy shall be retained at the *Works* or at operational office of the *Owner* for the operational life of the *Works* .

5. BY-PASSES

(1) Any *By-pass* of sewage from any portion of the *Works* is prohibited, except where:

(a) it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(b) the *District Manager* agrees that it is necessary for the purpose of carrying out essential maintenance and the *District Manager* has given prior written acknowledgment of the *By-pass* ; or

(2) The *Owner* shall maintain a logbook of all *By-pass* events which shall include, at a minimum, the time, location, duration, quantity of *By-pass* , the authority for *By-pass* pursuant to subsection (1), and the reasons for the occurrence.

II - LEACHATE COLLECTION AND DISPOSAL SYSTEM

6. LEACHATE MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works* , carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the leachate stream over the time period being monitored.

(2) For the purposes of this condition, the following definitions apply:

(a) Monthly means once every month;

(b) Quarterly means once every three months;

(c) Semi-annually means once every six months; and

(d) Annually means once every twelve months;

(3) **Leachate grab samples** shall be collected from a designated sampling location at the indicated

monitoring frequency and analyzed for each parameter listed in Table 1 and all results recorded:

Table 1 Leachate Monitoring Sampling Location: North Pumping Chamber		
Sampling Frequency: Quarterly		**Sampling Frequency: Annually**
Parameter	**Parameter**	**Parameter**
Alkalinity	Arsenic	Silver
Dissolved Organic Carbon (DOC)	Cadmium	Aluminum
Hardness	Chromium	Boron
pH	Cobalt	Barium
Total Ammonia Nitrogen	Copper	Beryllium
Nitrate Nitrogen	Mercury	Calcium
Nitrite Nitrogen	Molybdenum	Sodium
Total Kjeldahl Nitrogen	Nickel	Magnesium
Phenols	Lead	Manganese
PAHs	Selenium	Iron
BTEX	Zinc	Total Phosphorus
USEPA 624		Conductivity
		Hydrogen Sulphide
		Sulphate
		BOD5
		Total Trihalomethanes (THM)

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions; and

(d) the Environment Canada publications "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout" (July 1990) and "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia

magna" (July 1990), as amended from time to time by more recently published editions.

(5) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval* .

7. OPERATION AND MAINTENANCE

(1) The *Owner* shall exercise due diligence in ensuring that, at all times, the *Works* and the related equipment and appurtenances used to achieve compliance with this *Approval* are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate operator training, including training in all procedures and other requirements of this *Approval* and the *Act* and regulations, process controls and alarms.

(2) By February 19, 2009, the *Owner* shall prepare an operations manual, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works* ;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works* ;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager* ; and

(f) procedures for receiving, responding and recording public complaints, including recording any follow up actions taken.

(3) The *Owner* shall maintain the operations manual current and retain a copy at the *Works* or *Owner* 's Head Office for the operational life of the *Works* . Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(4) The *Owner* shall maintain a logbook to record and report the volume of leachate disposed off-site, the date, and the name of the receiving sewage treatment plant;

III - STORMWATER MANAGEMENT FACILITY

8. MONITORING AND RECORDING

The *Owner* shall carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this *Approval* are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) The *Owner* shall collect stormwater grab samples from the following designated sampling locations at a **monthly** sampling frequency during spring and fall (**March, April, May, September, October,** and **November** and analyse for the parameters listed in Table 2;

Table 2
Stormwater and Surface Water Monitoring
Sampling Location: SWM Ponds No. 1, No. 2, and No. 3

Parameter	Parameter	Field Parameter
pH	Aluminum	pH
Alkalinity	Arsenic	Temperature
Hardness	Barium	Conductivity
Biological Oxygen Demand (CBOD5)	Boron	
Un-ionized Ammonia	Cobalt	
Total Ammonia Nitrogen	Beryllium	
Total Kjeldahl Nitrogen	Cadmium	
Nitrate Nitrogen	Chromium	
Total Phosphorus	Copper	
Total Suspended Solids	Iron	
Total Dissolved Solids	Mercury	
Total Organic Carbon	Nickel	
Chloride	Potassium	
Chemical Oxygen Demand (COD)	Sodium	
Phenols	Selenium	
BTEX	Silver	
Naphthalene	Zinc	

(3) The *Owner* shall collect stormwater grab samples from **SWM Ponds No. 1, No. 2, and No. 3** sampling locations at a **Quarterly** frequency and conduct acute lethality tests for Daphnia magna and Rainbow Trout;

(4) The methods and protocols for sampling, analysis and recording shall conform, in order of

precedence, to the methods and protocols specified in Condition 6 (4);

(5) The measurement frequencies specified in subsection (2) in respect to any parameter are minimum requirements which may, after two (2) years of monitoring in accordance with this Condition, be modified by the *District Manager* in writing from time to time.

(6) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Approval* at the *Works* or *Owner* 's Head Office.

9. OPERATION AND MAINTENANCE

(1) Within six (6) months of the issuance date of this *Approval* , the *Owner* shall prepare a "Stormwater Contingency and Remedial Action Plan" for the *Works* and submit to the *District Manager* for approval.

(2) The *Owner* shall operate the *Works* (**SWM Pond No. 1**, **SWM Pond No. 2**, and **SWM Pond No. 3**) in a **normally open position**.

(3) Using the monitoring results obtained under Condition 8 (3), the *Owner* shall ensure that the stormwater runoff discharged from the *Works* (**SWM Pond No. 1**, **SWM Pond No. 2** , and **SWM Pond No. 3**) is not acutely lethal to Daphnia *magna* and Rainbow Trout.

(4) In the event that monitoring results obtained under Condition 8 (3) show that the stormwater is acutely lethal either to Daphnia *magna* or Rainbow Trout, then, the *Owner* shall resample within two (2) weeks period after receiving the lab results to confirm the toxicity results.

(5) In the event that the toxicity results **are not confirmed** during the second round of sampling conducted under Condition 9 (4), then, normal stormwater monitoring shall be resumed.

(6) In the event that the toxicity results **are confirmed** after the second round of sampling conducted under Condition 9 (4), the *Owner* shall operate the *Works* in a **normally closed position**, notify the *District Manager* forthwith, and conduct acute lethality tests for Daphnia *magna* and Rainbow Trout at **a monthly frequency**.

(7) While operating the *Works* in a **normally closed position**, the *Owner* shall implement the "Stormwater Contingency and Remedial Action Plan" prepared under Condition 9 (1) and continue conducting the toxicity monitoring program required under Condition 9 (6).

(8) The *Owner* shall resume operating the *Works* in a **normally open position** if toxicity monitoring results from **two (2) consecutive sampling events** conducted under Condition 9(6) show that the stormwater is not acutely lethal to Daphnia *magna* and Rainbow Trout.

(9) Discharge of contaminated stormwater from the *Works* to storm sewer/surface water is prohibited, except where it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(10) The *Owner* shall prepare an operations manual prior to the commencement of operation of the *Works* , that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works* ;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works* ;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the *District Manager* ; and

(10) The *Owner* shall maintain the operations manual current and retain a copy at the *Works* or *Owner* 's Head Office for the operational life of the *Works* . Upon request, the *Owner* shall make the manual available to *Ministry* staff.

(11) The *Owner* shall maintain a record of the date and the estimated volume of leachate contaminated stormwater disposed off site under the approved "Stormwater Contingency and Remedial Action Plan" for the *Works* .

(12) The *Owner* shall notify the *District Manager* orally, as soon as possible, and in writing within seven days of any discharge of leachate contaminated stormwater to receiving surface water including an assessment of the relative extent of leachate contamination, estimated volume of stormwater discharged, and proposed or completed remedial actions.

(13) The *Owner* shall inspect the *Works* (**SWM Ponds**) at least once a year and, if necessary, clean and maintain the *Works* to prevent the excessive build-up of sediments and/or vegetation.

(14) The *Owner* shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the site and/or *Owner's* operational headquarter for inspection by the *Ministry* . The logbook shall include the following:

(a) the name of the *Works* ;

(b) the date and results of each inspection, maintenance and cleaning, including an estimate of the quantity of any materials removed; and

(c) the volume of contaminated stormwater disposed off-site, the date, and the name of the receiving sewage treatment plant;

IV - GENERAL

10. REPORTING

(1) Ten (10) days prior to the date of a planned *By-pass* being conducted pursuant to Condition 5 and as soon as possible for an unplanned *By-pass* , the *Owner* shall notify the *District Manager* (in writing) of the pending start date, in addition to an assessment of the potential adverse effects on the environment and the duration of the *By-pass* .

(2) In addition to the obligations under Part X of the Environmental Protection Act, the *Owner* shall, within 10 working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by product, intermediate product, oils, solvents, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the *District Manager* describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(3) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(4) The *Owner* shall prepare on an annual basis, and submit upon request, a performance report within ninety (90) days following the end of the calendar year being reported upon. The first such report shall cover the period following the commencement of operation of the *Works* and subsequent reports shall be prepared to cover successive calendar years following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all stormwater monitoring data and a comparison to the Provincial Water Quality Objectives (PWQO), including an overview of the success and adequacy of the *Works* ;

(b) a summary of the monthly quantity of leachate disposed off site and corresponding average leachate quality;

(c) a description of any operating problems encountered and corrective actions taken;

(d) a summary of all maintenance carried out on any major structure, equipment,

apparatus, mechanism or thing forming part of the *Works* ;

(e) a summary of the calibration and maintenance carried out on all leachate monitoring equipment; and

(f) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(g) a summary of all *By-pass* , spill or abnormal discharge events; and

(h) any other information the *District Manager* requires from time to time.

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

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Approval* and the practice that the *Approval* is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the *Owners* their responsibility to notify any person they authorized to carry out work pursuant to this *Approval* the existence of this *Approval* .

2. Condition 2 is included to ensure that, when the *Works* are constructed, the *Works* will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Approval* and continue to operate the *Works* in compliance with it.

4. Condition 4 is included to ensure that the *Works* are constructed in accordance with the *Approval* and that record drawings of the *Works* "as constructed" are maintained for future references.

5. Condition 5 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to *By-pass* could result in greater injury to the public interest than the *By-pass* itself where a *By-pass* will not violate the approved leachate requirements, or where the *By-pass* can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the *Ministry* to take action in an informed manner and will ensure the *Owner* is aware of the extent and frequency of *By-pass* events.

6. Conditions 6 and 8 are included to enable the *Owner* to evaluate and demonstrate the performance of the *Works* , on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives specified in the *Approval* and that the *Works* does not cause any impairment to the receiving watercourse.

7. Conditions 7 and 9 are included to require that the *Works* be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, damage to any property or injury to any person is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the *Owner* and made available to the *Ministry* .

8. Condition 10 is included to provide a performance record for future references, to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Approval,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

SCHEDULE 'A'

1. Application for the sewage works dated March 20, 1990, signed by 171496 Canada Inc., F.C. Ford, P. Eng., Henderson, Paddon and Associates and Township of Richmond.

2. Report entitled "Tricil Limited Landfill site parts of Lots 1, 2 and 3, Concession IV, Township of Richmond, County of Lennox and Addington" dated September 1988, prepared by Henderson Paddon and Associates Limited.

3. Letter dated July 19, 1990, signed by Dick Van Wyck, Legal Counsel, Laidlav Waste System, addressed to Ranee Mahalingam, Review Engineer, Ministry of the Environment.

4. Letter dated September 6, 1990, signed by J. M. Tomlinson. P.Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingam, Approvals Branch, Ministry of the Environment, together with revised section entitled "Stormwater management facilities" of the report entitled "Tricil Limited Landfill Site Parts of Lots 1, 2 and 3, Concession IV, Township of Richmond, County of Lennox and Addington" dated September 1988, prepared by Henderson Paddon and Associates Limited.

5. Letter dated September 6, 1990, signed by Jay Clark, P.Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingam, P. Eng., Review Engineer, Approvals Branch, Ministry of the Environment.

6. Letter dated April 29, 1991, signed by Ranee Mahalingam. P.Eng., Review Engineer, Approvals Branch, Ministry of the Environment, addressed to J. K. Tomlinson. P.Eng., Henderson Paddon and Associates Limited.

7. Letter dated May 23, 1991, signed by Jay Clark, P.Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingam, P.Eng., Review Engineer, Approvals Branch, Ministry of the Environment.

8. Minutes of the meeting held at Ministry of the Environment, 250 Davisville Avenue, Toronto, on June 25, 1991.

9. Letter dated July 24, 1991, signed by J. M. Tomlinson, P.Eng.. Henderson Paddon and Associates Limited, addressed to Bruce W. Metcalfe, Surface Water Technologist, Southeastern Region, Ministry of the Environment.

10. Letter dated July 25, 1991, signed by Bruce W. Metcalfe, Surface Water Technologist, Southeastern Region, Ministry of the Environment, addressed to J. M. Tomlinson, P.Eng., Henderson Paddon and Associates Limited.

11. Letter dated July 29, 1991, signed by J. M. Tomlinson, P. Eng., Henderson Paddon and Associates Limited, addressed to Ranee Mahalingan, Approvals Branch, Ministry of the Environment, enclosing a copy of the revised application and revised drawings No. 8570A (1, 2, 3, 4) and 8570 -7.

12. Application for Approval of Sewage Works dated May 19, 2011, submitted by Waste Management of Canada and prepared by Genivar Inc., Owen Sound, Ontario.

SCHEDULE 'B'

1. "Final Report - 2007 Annual Monitoring Report, Waste Management of Canada Richmond Landfill, Town of Napanee, Ontario" dated March 2008, prepared by Water and Earth Science Associates Ltd. (WESA), Kingston, Ontario.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 5268-7E8LJW issued on August 19, 2008

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
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) 314-4506 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 January, 2012

Ian Parrott, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

SH/
c: District Manager, MOE Kingston - District
Jeff Armstrong, GENIVAR Inc.

APPENDIX

A-4 *CERTIFICATE OF APPROVAL (INDUSTRIAL SEWAGE) NO. 4 – 0129-64-956 (OIL/SEDIMENT INTERCEPTOR), DATED JANUARY 24, 1995*

Laidlaw Waste Systems (Canada) Ltd.
3410 South Service Road
Burlington, Ontario
L7R 3Y8

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

Establishment of sewage works for the collection, transmission, treatment and disposal of stormwater from Laidlaw Landfill, Richmond Township, Ontario, consisting of the following:

- collection and transmission of stormwater and other drainage from a petroleum hydrocarbon contaminated soils storage area of 3,200 square metres, with collected drainage discharging at a maximum rate of 15,000 Litres per hour, via a catch basin and 150 millimetre diameter piping to a three chambered oil/sediment interceptor,

- one oil interceptor with three interconnected chambers, with each chamber having dimensions of 1.15 metres length, 1.34 metre width, and a liquid depth of 0.925 metres, discharging via 150 millimetre diameter piping to the sediment control ditch leading to the downstream sedimentation pond,

- all other controls, electrical equipment, instruments, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works,

all in accordance with the Application for Approval of Industrial Sewage Works dated November 11, 1994 signed by .J. Pullen, P.Eng. (Regional Manager, Engineering and Compliance), Laidlaw Waste Systems (Canada) Ltd. ("the Owner"), and all supporting documentation and information.

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

TERMS AND CONDITIONS

1. OPERATION

(1) The Owner shall prepare a draft operations manual prior to the commencement of operation of the works and shall revise and implement the operations manual within six (6) months of the commencement of operation of the works.

(2) The Owner shall ensure that both the draft and revised manuals include as a minimum:

(a) operating procedures for routine operation of the works, including but not limited to, routine inspection of the oil interceptor chambers, and removal of accumulating solid and liquid wastes;

(b) operating procedures for operation of the works during spills, fires, equipment malfunction, power outages, and other emergency or abnormal operating conditions, including notification procedures for the Ministry;

(c) best management practices to minimize contaminant discharges to the oil interceptor; and,

(d) any other procedures the Owner deems necessary for the proper operation of the works.

(3) The Owner shall maintain the operations manual, as revised from time to time, at the location of the works for so long as it is in operation, and shall make the manual available to Ministry personnel for inspection and copying, upon request.

(4) The Owner shall keep the operations manual up to date through revisions undertaken from time to time, so as to reflect any changes in described operation and maintenance procedures for the works or any newly introduced operation and maintenance procedures made necessary by good engineering practice, this certificate or the requirements of the Ministry.

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

1. Condition No. 1 is included to ensure certain operation procedures are followed to prevent deleterious effects on the environment.

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 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the 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.

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 sewage works are 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 53, Ontario Water Resources Act,
Ministry of Environment and Energy,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario.
M4S 1H2

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 24th *day of* January 1995

R. P. Cornelius, P. Eng.
Director
Section 53
Ontario Water Resources Act

AA/pm

cc District Manager, MOEE Kingston District Office

APPENDIX

A-5 CERTIFICATE OF APPROVAL NO. A710003 (SOIL RECYCLING), DATED DECEMBER 20, 1993

Ministry of the Environment | Ministère de l'Environnement

tario

PROVISIONAL CERTIFICATE OF APPROVAL FOR A WASTE DISPOSAL SITE

CERTIFICAT D'AUTORISATION PROVISOIRE DE DÉCHARGE

Provisional Certificate Number A710003
Certificat provisoire no.

Under the Environmental Protection Act and 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 et sous réserve des restrictions qui y sont stipulées, le présent certificat provisoire d'autorisation est délivré à:

Laidlaw Waste Systems (Canada) Ltd.
3410 South Service Road
BURLINGTON, Ontario
L7R 3Y8

the use and operation of a waste processing facility

.11 in accordance with the plans and specifications:

1. Application for a Certificate of Approval for a Waste Disposal Site (Processing) dated August 30, 1993.

2. Letter from Laidlaw Waste Systems Ltd. to the Ministry of Environment and Energy, dated July 12, 1993, briefly describing the proposal for recycling petroleum contaminated soils and listing supporting documentation.

3. Letter from Laidlaw Waste Systems Ltd. to the Ministry of Environment and Energy, dated July 12, 1993, explaining the soil recycling process. Supporting information includes District Office Notification Form - Mobile Soil Reclamation, Certificate of Insurance, letter of credit, site plan and layout drawings, and detail drawings of sediment/oil interceptor system for quality control of leachate run-off.

4. Letter and supporting documentation from Laidlaw Waste Systems Ltd. to the Ministry of Environment and Energy dated November 5, 1993 providing additional information on emergencies and contingencies, public information (including public notice and newspaper advertisement), hours of operation, and a monitoring plan for the soil storage pad at the Laidlaw landfill site in Richmond Township.

5. Memo to the Ministry of Environment and Energy from Laidlaw Waste Systems Ltd. dated November 9, 1993, providing list of property owners which received a hand delivered public notice explaining the proposal.

6. Letter from the Richmond-Tyendinaga Environmental Association to the Ministry of Environment and Energy dated September 23, 1993 providing support for the soil recycling proposal.

7. Letter from the Township of Richmond to the Ministry of Environment and Energy dated October 8, 1993 and Resolution No. 316/93, dated October 4, 1993, providing Council's support for the proposal.

Ontario Ministry of Environment and Energy Provisional Certificate of Approval for a Waste Disposal Site A210222 dated September 18, 1992, or as amended.

). Ontario Ministry of Environment and Energy Provisional Certificate of Approval for a Waste Management System A840681 dated March 18, 1992, or as amended.

.0. Ontario Ministry of Environment and Energy Certificate of Approval (Air) Number 8-3212-88-919 dated April 23, 1992, or as amended.

ocated in: Township of Richmond
Part of Lot 2, Concession IV
(Beechwood Road)

nd is subject to the following definitions and conditions:

efinitions:

ertificate" means the entire certificate of approval including its nedules, if any, issued in accordance with Section 27, Part V of the onmental Protection Act;

"Director" means Director of the Southeastern Region of the Ministry or his appointee;

"District Manager" means the District Manager of Kingston District Office, Southeastern Region of the Ministry;

"Ministry" means the Ontario Ministry of Environment and Energy;

"Owner" means Laidlaw Waste Systems (Richmond) Ltd.;

"Operator" means Laidlaw Waste Systems (Canada) Ltd.; its officers, employees, agents or contractors;

"Site" means the area(s) on landfill site, Certificate of Approval No. A371203, to be used by the processing facility described in this Certificate.

General Conditions

1. The requirements of this Certificate are imposed pursuant to Part V of the Environmental Protection Act. The issuance of this Certificate in no way abrogates the operator's legal obligations to take all reasonable steps to avoid violating other applicable provisions of this legislation and other legislation and regulations.

2. (1) The requirements of this Certificate are severable. If any requirement of this Certificate, or the application of any requirement of this Certificate to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of this Certificate shall not be affected thereby.

   (2) In all matters requiring the interpretation and implementation of this Certificate, the conditions of the certificate shall take precedence, followed in descending order by the application and the documentation, referred to in this Certificate, which is submitted in support of the application.

3. The operator must ensure compliance with all the terms and conditions of this Certificate. Non-compliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement.

4. (1) The operator shall, forthwith upon the request of the Director or District Manager, furnish any information requested concerning compliance with this Certificate including any records required to be kept by this Certificate.

(2) In the event the operator provides to the Ministry information, records, documentation of notification in accordance with this Certificate,

(a) the receipt of said information by the Ministry;

(b) the acceptance by the Ministry of the information's completeness or accuracy; or,

(c) the failure of the Ministry to prosecute the operator, or to require the operator to take any action, under this Certificate of any statute or regulation in relation to said information;

shall not be construed as the approving, excusing or justifying by the Ministry of any act or omission of the operator relating to said information, amounting to non-compliance with this Certificate or any statute or regulation.

(3) All records referred to in this Certificate shall be retained on file in a secure manner for a period not less than two years.

5. The owner/operator shall allow Ministry personnel, or a Ministry authorized representative(s) to:

(1) carry out any and all inspections authorized by Section 156, 157 or 158 of the Environmental Protection Act, as amended from time to time, of any place to which this Certificate relates; and, without restricting the generality of the foregoing, to:

(a) enter at reasonable times upon the premises, or the location where the records required by the conditions of this Certificate are kept:

(b) have access to and copy, at reasonable times, any records required by the conditions of this Certificate;

(c) inspect at reasonable times any facilities, equipment, practices, or operations required by the conditions of this Certificate; and

(d) sample and monitor at reasonable times for the purpose of assuring compliance with the conditions of this Certificate.

6. (1) The owner/operator shall notify the District Manager in writing of any change in ownership, name of corporation, the operator, or termination of the facility within 30 days of the change occurring.

(2) In the event the facility is permanently closed a Provincial Officer shall inspect the site and the site shall not be used for any other purpose prior to the inspection and written clearance by the District Manager.

(3) The operator shall ensure that all communications made pursuant to this condition will refer to this Certificate's number.

7. (1) In accordance with Section 19(4) of the Environmental Protection Act this Certificate, the application filed to obtain and documentation referred to in the certificate which may be reasonably necessary for a proper reading and understanding of it, with the exclusion of those documents marked "confidential" by the operator shall be made available for public inspection at the request of any person.

(2) Additional information to that set out in subcondition (1) relating to this Certificate 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.

8. Except as specified in this Certificate the site shall be operated in accordance with the application for this Provincial Certificate of Approval dated August 30, 1993 and its supporting information described in items 1 to 10 on pages 1 and 2 of this Certificate.

9. (1) The operation of this site is limited to the storage and processing of non hazardous waste soils contaminated with petroleum hydrocarbons, liquid waste classes 211, 212, 213, 221, 222, 251, 252, 253 and 254 as defined in the Ministry of the Environment "New Ontario Waste Classes" document, dated January, 1986 from the Province of Ontario.

(2) No wastes other than those listed in subcondition (1) shall be collected and stored at this site without amendment to this Certificate.

(3) No wastes contaminated with halogenated organics, including PCBs, with concentrations greater than two (2) micrograms per grams shall be accepted at this site.

(4) No waste mixing or diluting with uncontaminated soil shall occur at the site. No waste mixed or diluted with uncontaminated soil shall be accepted at the site.

(5) No users outside the areas listed in subcondition (1) shall use this site without amendment to this Certificate.

10. (1) The operator shall ensure that site personnel, trained in contingency measures are on duty at all times during normal operating hours or during any additional hours the facility may be open. Public access to the site shall be restricted.

(2) All site personnel shall have practical knowledge of the waste material to be handled under this Certificate and shall be fully trained and knowledgeable about all aspects of the site operation including the requirements of this Certificate which relate to the work they are doing and their safety on the site.

(3) Prior to operating the site the operator shall prepare an operation manual for use by site personnel which shall contain, but not necessarily be limited to the following:

(a) an outline of the responsibilities of site personnel;

(b) operation and receiving procedures;

(c) storage, handling, sorting and shipping procedures;

(d) contingency procedures to be followed by personnel in the event of fire and other emergencies.

(4) 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.

(5) Within 30 days of the issuance date of this Certificate a copy of the operation manual shall be submitted to the District Manager.

11. (1) The operator shall establish a record system for all waste received at the site which shall include, but not necessarily be limited to, the documentation of quantities received and processed at the site each month; source of generation; receiving and shipping dates and volumes of wastes or processed soils shipped to approved markets, transfer/processing facilities and waste landfill sites; and documentation of environmental and other problems experienced in operating this site.

(2) The information collected under subcondition (1) shall be submitted in a report to the District Manager on or before the first day of December during each year of operation or until the Director or the District Manager has given notice in writing that these submissions are no longer required.

12. (1) The operator shall ensure that the site is operated in a safe and secure manner; that the operation of this site does not impede or is impeded by the landfilling operation on which this site is located; and that the wastes are properly handled, contained, stored, tested and processed at the site; so as not to pose a threat to the general public, site personnel and the environment.

(2) The operator shall ensure that wastes received at the facility are processed and moved from the site to approved markets, processing facilities and landfill sites on a regular basis; and that waste processing does not exceed 5,000 tonnes per day and waste storage on site does not exceed 40,000 tonnes.

(3) Notwithstanding Condition 1 the operator shall ensure that the processing operation is in compliance with noise, hours of operation, fire regulations and any other applicable by-laws of the local municipality/regional governments; and the requirements of Ontario Provisional Certificate of Approval for a Waste Disposal Site-A210222; and Ontario Provisional Certificate of Approval for a Waste Management System A840681 described in items 8 and 9 on page 2 of this Certificate.

(4) The operator shall take all necessary measures possible to contain and minimize all emissions, including air emissions caused by the operation of the processing equipment, waste storage and the processed soil storage; and shall comply with Ontario Certificate of Approval (Air) 8-3212-88-919 described in item 10 on page 2 of this Certificate; and all other applicable legislation governing emissions.

(5) Any waste water collected in the catchment basin for the soil storage pad described in item 3 on page 1 of this Certificate shall be disposed of in a proper manner under Section 53 of the Ontario Water Resources.

(6) Only waste processing equipment as approved under Certificates of Approval A210222 and 8-3212-88-919 described in items 8 and 10 on page 2 of this Certificate shall be used at this site.

13. The local fire department shall be informed of the processing facility and this Certificate.

14. (1) Processed waste which contains Total Volatile Hydrocarbons above (100) micrograms per gram which are not reprocessed or soil waste which is not processed shall be taken from the site for disposal to approved landfill sites or to approved transfer or processing sites for further processing shall be transported under a approved waste management system.

(2) Testing of waste soils and processed soils on this site shall be carried out as specified in Certificates of Approval A210222 and 8-3212-88-919 described in items 8 and 10 on page 2 of this Certificate.

15. This Certificate expires with the termination of the site; when all the wastes have been removed from the site; and the restoration of the site has been approved, in writing, by the District Manager.

16. (1) Within 90 days of the date of this Certificate the operator shall provide financial security for the closure of the site in an amount acceptable to the Director. The security can be in the form of a fund, bond, an irrevocable letter of credit or any other form as may be acceptable to the Director. The amount of financial assurance shall be established based on current costs for cleaning up the site and the assessed value of the fund, bond, or letter of credit shall be approved by the Director, in writing, before being submitted to the Ministry. The assessed value submitted to the Director for approval shall be an independent estimate which shall include, but not necessarily be limited to:

i) trucking, disposal and labour costs for removal of all waste from the site;

ii) costs of equipment dismantling and cleaning on the site.

iii) any legal and contractual costs associated with the closure of the site.

(2) In the event the financial assurance is scheduled to expire or notice is received that it will not be renewed and a replacement in a form satisfactory to the Director is not received at least 60 days before the expiry or renewal date, the operator shall forthwith replace it with a cash deposit.

(3) The operator shall review the closure costs as specified in subcondition (1) on a yearly basis and shall increase, or may decrease the financial assurance when instructed, in writing, by the Director. A copy of the review assessment shall be provided in the report specified in Condition 11(2).

(4) The operator shall at all times while the site is operating maintain the ten million dollars ($10,000,000) third party liability insurance described in item 3 on page 1 of this Certificate and a copy of the policy shall be submitted to the Director within 30 days of the date of this Certificate.

17. The obligations imposed by the terms and conditions of this Certificate of Approval are obligations of due diligence.

The reasons for the imposition of these condition are as follows:

1. Conditions 1, 2, 3, 4 and 7 are to clarify the legal rights and obligations of this Provisional Certificate of Approval.

2. Condition 5 is to ensure that the appropriate Ministry staff have ready access to the waste disposal site to inspect the operations that are approved under this Provisional Certificate of Approval. The condition is supplementary to the powers of entry afforded a Provincial Manager pursuant the Environmental Protection Act, as amended.

3. Conditions 6, 8 and 15 are to ensure that the waste disposal site is operated in accordance with the application for this Certificate and supporting information and not under any name or in any way which the Director has not been asked to consider; and to ensure the property is cleaned up and restored to the satisfaction of the Ministry prior to closure.

4. Condition 9 is to ensure that this site is used only to collect, handle and transport waste within the limitations approved under this Provisional Certificate of Approval.

5. Conditions 10 and 12 are to ensure that the waste recycling site is properly managed in an organized manner by adequately trained persons, in order to prevent environmental detriment; and to ensure the safety of the general public and site personnel.

6. Condition 11 is to provide both the operator and the Ministry of Environment and Energy with an assessment of the waste recycling site.

7. Condition 13 is to ensure fire personnel are informed of the this waste processing site and the type of waste which is stored on this site.

8. Condition 14 is to ensure that the collection, handling, and transportation of all waste materials are conducted in an environmentally acceptable manner in accordance with provincial regulations.

9. Condition 16 is to ensure funds are available from the operator for site closure in the event the site needs to be closed and the operator is not able to do the work; ant to clean up any environmental impairment should the operator be unable or refuse to do so. The use and operation of the site without this condition would not be in the public interest.

10. Condition 17 is required to clarify that the terms and conditions of this Certificate of Approval impose a standard of due diligence and not absolute liability.

You may, by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Certificate , require a hearing by the Board. Section 142 of the Environmental Protection Act, R.S.O. 1990 c. E-19, as amended, provides that the notice requiring the hearing shall state:

1. The portion 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 <u>each</u> portion appealed.

In addition to these legal requirements, the notice should 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 works are located;

and the notice should be signed and dated by the appellant.

This notice should be served upon:

The Secretary
Environmental Appeal Board
112 St. Clair Avenue West
5th Floor
TORONTO, Ontario
M4V 1N3

AND

The Director
Section 39, E.P.A.
Ministry of Environment and Energy
133 Dalton Avenue, Box 820
KINGSTON, Ontario
K7L 4X6

ated at Kingston this 20th day of December, 1993.

Director
Section 39, E.P.A.
Ministry of Environment and Energy

(Pour obtenir une copie du present document certificat en francais, communiquer le Ministère de l'Environnement et de l'Énergie 613 549-4000.)

APPENDIX

A-5-1 *AMENDMENT TO CERTIFICATE OF APPROVAL NO. A710003 DATED AUGUST 25, 1999, REGARDING NOTIFICATION OF CHANGE OF NAME*

Canadian Waste Services Inc.
1275 North Service Road, Suite 700
Oakville, Ontario
L6M 3G4

You are hereby notified that the Provisional Certificate of Approval No. A 710003, dated December 20, 1993, which was issued to Laidlaw Waste Systems (Canada) Ltd., as amended, is further amended as follow:

The Name and Address of the Company have changed:

FROM: Laidlaw Waste Systems (Canada) Ltd.
3410 South Service Road
Burlington, Ontario
L7R 3Y8

TO: Canadian Waste Services Inc.
1275 North Service Road, Suite 700
Oakville, Ontario
L6M 3G4

The following definitions in "Definitions" are revoked and replaced with:

"Operator" means Canadian Waste Services Inc.; its officers, employees, agents or contractors; and

"Owner" means Canadian Waste Services Inc.

The list of Plans and Specifications is hereby amended, by adding the following:

1. Letter and its attachment dated June 22, 1999, from Michael J. Pullen, Director, Canadian Waste Services Inc., to Geoff Carpentier, Ministry of the Environment (MOE), notifying the Ministry of a change in Corporate name, address and providing list of their officers.

The reason for the imposition of these conditions is as follows:

1. The reason for the above changes is to acknowledge the letter regarding the notification of name and address change, dated June 22, 1999.

All other conditions on the original Certificate and as amended, not affected by this amendment, remain in effect.

Ontario

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.

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,
2300 Yonge St., 12th Floor,
P.O. Box 2382
Toronto, Ontario.
M4P 1E4

AND

The Director,
Section 39, Environmental Protection Act,
Ministry of the Environment,
250 Davisville Avenue, 3rd Floor,
Toronto, Ontario.
M4S 1H2

*Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board by: Tel: (416) 314-4600, Fax: (416) 314-4506 or e-mail: www.ert.gov.on.ca.

DATED AT TORONTO this 25th *day of* August, 1999.

A. Dominski, P. Eng.
Director
Section 39
Environmental Protection Act

MK/lf
c: District Manager, Kingston

APPENDIX

A-5-2 *AMENDMENT TO CERTIFICATE OF APPROVAL NO. A710003 DATED MARCH 26, 2004, REGARDING NOTIFICATION OF CHANGE OF NAME*

Ministry of the Environment
Environmental Assessment and Approvals Branch
Floor 12A
2 St Clair Ave W
Toronto ON M4V 1L5
Fax: (416)314-8452
Telephone: (416) 314-7902

Ministère de l'Environnement
Direction des évaluations et des autorisations environnementales
Étage 12A
2 av St Clair O
Toronto ON M4V 1L5
Télécopieur: (416)314-8452
Téléphone : (416) 314-7902

Ontario

March 26, 2004

Jessica Campbell, Director, Regulatory Affairs & Environmental Compliance
Waste Management of Canada Corporation
5045 South Service Road, Suite 300
Burlington, Ontario
L7L 5Y7

Dear Sir/Madam:

Re: Notification of Change of Name
MOE Reference Number 9673-5XFSHB

The Ministry of the Environment (the "Ministry") acknowledges receipt of your letter dated February 2, 2004 requesting a change in company name:

FROM: Canadian Waste Services Inc.

TO: Waste Management of Canada Corporation

By this letter, the Ministry advises you that your notification of change in company name has been registered in our records for the following Certificate(s) of Approval:

Certificate(s) of Approval for Waste Disposal Sites, Section 27, EPA:

A230901 East Gwillimbury
A230701 Hwy 48
A230201 Aurora
A032006 Blackwell LF
A380103 Kingston - St. Remy Place
A100144 Brant St. Hamilton
A620042 Sarnia MacGregor Rd.
A210237 Mavis, Mississauga
A031810 LaSalle LF
A021601 Ridge LF
8602-4HQQZW Trenton, Chester Rd.
A253001 Tecumseth LF
A100130 Lottridge - Hamilton

A440109 California Ave. - Brockville
A120138 Cushman Rd. - St. Catherines
A030309 Petrolia MRF
A140327 Conrad Place, Waterloo
A580730 Timmins - Deloro
A580731 Timmins - Ogden
A580732 Timmins - German
A170404 Mount Forest - Sligo Rd.
A100139 Lansdowne Ave - Hamilton
A450707 Carleton Place
A010128 Maidstone
A230615 Bowes Rd.
A680243 Esandar
A210622 Brydon
A461002 Ottawa LF
A032203 Warwick LF
A030303 Petrolia LF
A021603 Blenheim LF
A040213 Exeter Rd. - London
A280229 Unwin
A210328 New Toronto
4458-5QTLS3 Timmins MRF
A250111 Saunders Rd - Barrie
1308-5HNRY6 Wentworth - Brampton
A371203 Richmond LF
A710003 Richmond LF

The Ministry will not be providing you with an amended certificate(s) to reflect the change in company name. Therefore, this letter must be appended to its corresponding Certificate(s) of Approval. The name change will be included in any future amended Certificate(s) of Approval.

If you have any questions regarding the above, please contact me at the above phone number.

Yours truly,

Sanja Jankovic

Sanja Jankovic
Application Processor

cc: District Manager, MOE York-Durham
District Manager, MOE, Sarnia
District Manager, MOE Kingston
District Manager, MOE Hamilton
District Manager, MOE Halton-Peel
District Manager, MOE Peterborough

District Manager, MOE Barrie
District Manager, MOE Niagara
District Manager, MOE Guelph
District Manager, MOE Timmins
District Manager, MOE Ottawa
District Manager, MOE Toronto
District Manager, MOE London
Area Manager, MOE Windsor
Area Manager, MOE Belleville

File Storage Number: 230901, 230701, 230201, 032006, 380103, 100144, 620042, 210237, 031810, 021601, 0209, 253001, 100130, 440109, 120138, 030309, 140327, 580730, 580731, 580732, 170404, 100139, 450707, 010128, 230615, 680243, 210622, 461002, 032203, 030303, 021603, 040213, 280229, 210328, 0822, 250111, 0611, 371203

APPENDIX

A-6 *ENVIRONMENTAL COMPLIANCE APPROVAL (AIR) NO. 5970-9HKP3V (LANDFILL GAS COLLECTION AND FLARING SYSTEM, INCLUDING CANDLESTICK FLARE) DATED APRIL 29, 2014*

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 5970-9HKP3V
Issue Date: April 29, 2014

Waste Management of Canada Corporation
117 Wentworth Crt
Brampton, Ontario
L6T 5L4

Site Location: Richmond Landfill
1271 Beechwood Road, RR #6 Lots 1,2 and 3, Conc.4, Reference Plan 29R-6605, Geo. Twp. of Richmond
Greater Napanee Town, County of Lennox and Addington
K7R 3L1

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

- one (1) enclosed flare used to incinerate the landfill gases from an expanded landfill gas collection system to include landfill gas collection from a maximum of 54 landfill gas wells, 12 leachate manhole and 9 cleanouts, having a landfill gas burning capacity of 0.61 standard cubic metre per second with the combustible levels ranging from 30 to 55 percent by volume. The flare has a maximum heat input of 41 gigajoules per hour, exhausting into the atmosphere through a stack, having an exit diameter of 2.1 metres, extending 12.2 metres above grade;

- one (1) backup candlestick flare used to incinerate the landfill gases from an expanded landfill gas collection system, having a landfill gas burning capacity of 0.354 cubic metres per second with the combustible levels ranging from 30 to 50 percent by volume, exhausting into the atmosphere through a stack, having an exhaust tip diameter of 0.15 metres, extending 6.7 metres above grade;

all in accordance with the Application for Approval (Air & Noise) submitted by Waste Management of Canada Corporation, dated August 5, 2011 and signed by Reid Cleland, Director of Disposal Operations; and the supporting information, including the Emission Summary and Dispersion Modelling Report, submitted by Comcor Environmental Limited, dated September 16, 2011 and signed by Jonathan Petsch, and additional information provided by Comcor Environmental Limited, dated March 21, 2014, and signed by Jonathan Petsch.

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

1. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above.

2. "CEM System" means the continuous monitoring and recording system used to optimize the operation of the Equipment to minimize the emissions from the Equipment, as described in the Company's application, this Approval, including Schedule "A", and in the supporting documentation referred to herein, to the extent approved by this Approval;

3. "Company" means Waste Management of Canada Corporation that is responsible for the construction or operation of the Facility and includes any successors and assigns.

4. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located.

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

6. "Equipment" means the equipment and processes described in the Company's application, this Approval and in the

supporting documentation referred to herein, to the extent approved by this Approval.

7. "Facility" means the entire operation on the property where the Equipment is located.

8. "Manual" means a document or a set of documents that provides written instructions to staff of the Company.

9. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf.

10. "Publication NPC-232" means the Ministry Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995, as amended.

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

TERMS AND CONDITIONS

PERFORMANCE REQUIREMENTS

1. The Company shall ensure that the noise emissions from the Facility comply with the limits determined in accordance with Publications NPC-232.

2. The Company shall operate the Equipment in such a manner that the minimum temperature shall be 900 degrees Celsius at a point representing a minimum retention time of 0.75 second, at all times the landfill gases are flowing to the enclosed flare system.

3. The Company shall operate the Equipment in such a manner that a flame is present at all times when landfill gases are flowing to the candlestick flare system.

OPERATION AND MAINTENANCE

4. The Company shall ensure that the Facility and the Equipment, including the CEM System, is properly operated and maintained at all times. The Company shall:

(1) prepare, not later than three (3) months after the date of this Approval, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Facility and the Equipment, including:

(a) routine operating and maintenance procedures in accordance with good engineering practices, and as recommended by the Equipment and CEM System supplier;

(b) emergency procedures;

(c) procedures for any record keeping activities relating to the operation and maintenance of the Facility and the Equipment, including the CEM System;

(d) all appropriate measures to minimize noise and odourous emissions from all potential sources;

(e) periodic inspection of the Equipment which is to be conducted by individuals experienced with the Equipment; and timetables for work to be carried out;

(f) procedures for recording and responding to environmental complaints relating to the operation of the Facility; and

(g) operator training which is to be provided by an individual experienced with the Equipment; and,

(2) implement the recommendations of the Manual;

RECORD RETENTION

5. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:

(1) all records on maintenance, repair and inspection of the Facility, the Equipment, and the CEM System;

(2) all records produced by the CEM System;

(3) all records on operator training;

(4) all records on the environmental complaints, including:

(a) a description, time and date of the incident;

(b) wind direction and other weather conditions at the time of the incident; and,

(c) a description of the measures taken to address the cause of the incident and to prevent a similar occurrence in the future, and the outcome of the measures taken; and,

(5) all records of any upset conditions associated with the operation of the Equipment;

NOTIFICATION OF COMPLAINTS

6. The Company shall notify the District Manager, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

(1) a description of the nature of the complaint;

(2) the time, date and location of the incident; and,

(3) the wind direction and other weather conditions at the time of the incident;

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

1. Condition Nos. 1 to 3 inclusively are included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.

2. Condition No. 4 is included to emphasize that the Facility must be maintained and operated according to a procedure that will result in compliance with the EPA, the regulations and this Approval.

3. Condition No. 5 is included to require the Company to keep records and to provide information to the Ministry so that compliance with the EPA, the regulations and this Approval can be verified.

4. Condition No. 6 is included to require the Company to notify/report to the Ministry so that compliance with the EPA, the regulations and this Approval can be verified.

SCHEDULE "A"

This Schedule "A" forms part of this Approval.

PARAMETER:	Temperature (enclosed flare system)
LOCATION:	The sample point for the continuous temperature monitoring and recording system shall be located at a location in the combustion chamber where the minimum retention time of the combustion gases at a minimum temperature of 900 degrees Celsius for at least 0.75 second is achieved.
PERFORMANCE:	The continuous temperature monitoring and recording system shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type:	shielded "K" type thermocouple, or equivalent
Accuracy:	±1.5 percent of the minimum gas temperature

DATA RECORDER:	The data recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 1 minute or better.
RELIABILITY:	The monitoring system shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

PARAMETER:	Temperature (candlestick flare system)
LOCATION:	The sample point for the continuous temperature monitoring and recording system shall be located as close to the combustion zone of the candlestick flare as possible.
PERFORMANCE:	The continuous temperature monitoring and recording system shall meet the following minimum performance specifications for the following parameters.

PARAMETERS	SPECIFICATION
Type:	shielded "K" type thermocouple, or equivalent
Accuracy:	±1.5 percent of the minimum gas temperature

DATA RECORDER:	The data recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 2 minutes or better.
RELIABILITY:	The monitoring system shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 1355-5LRN9N issued on May 8, 2003

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. 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 Environmental Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment
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) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca, you can determine when the leave to appeal period ends.

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

DATED AT TORONTO this 29th day of April, 2014

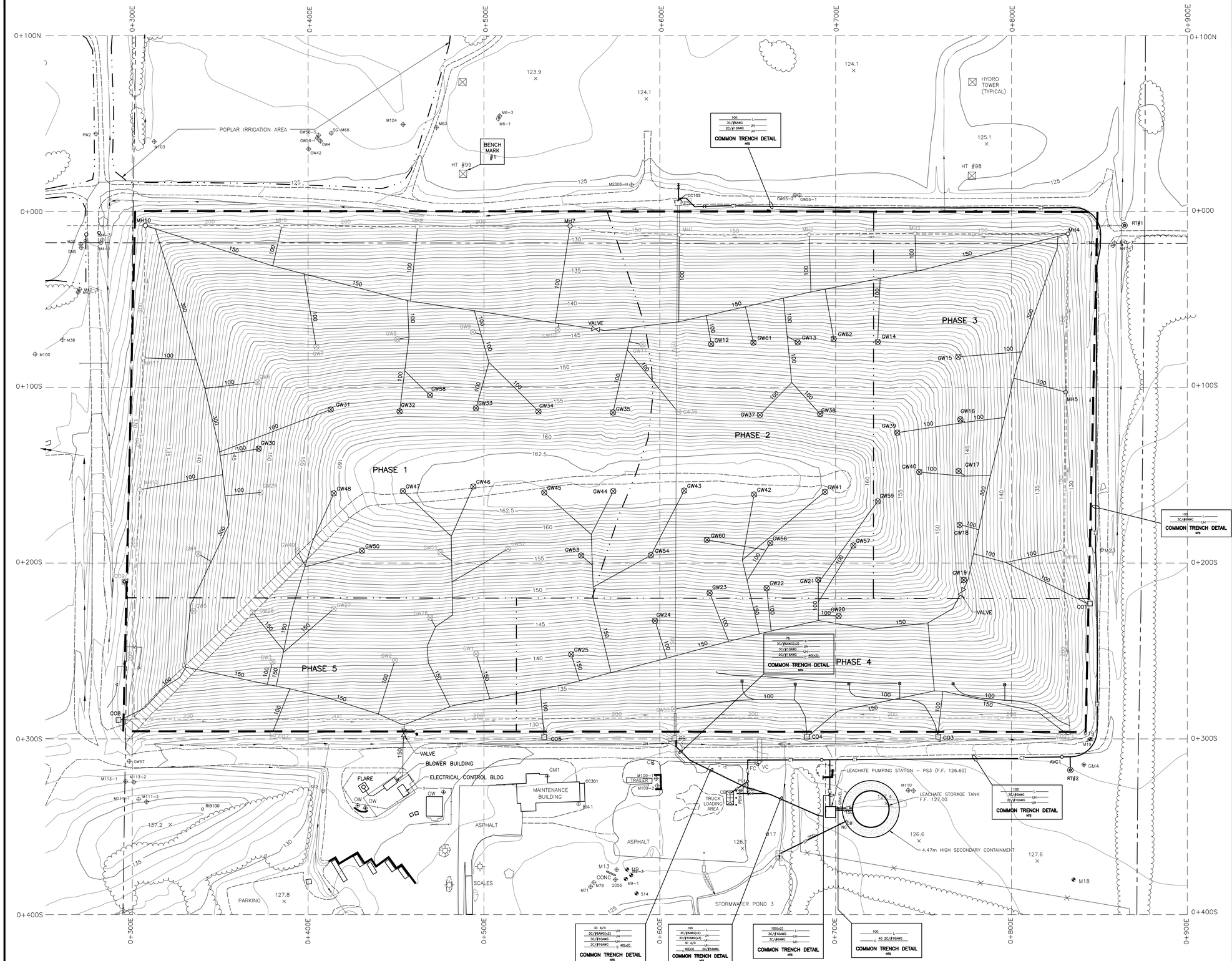
Ian Greason, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AB/
c: District Manager, MOE Kingston - District
Jonathan Petsch, Comcor Environmental Limited

APPENDIX

B

LANDFILL GAS COLLECTION SYSTEM AS BUILT DRAWING TO DECEMBER 2021



LEGEND:

- 125 — EXISTING GROUND
- INTERVAL CONTOURS
- REFERENCE GRID LINE
- LEGAL BOUNDARIES
- APPROVED LIMIT OF LANDFILL
- EXISTING DRAINAGE DITCH
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING TREE
- HT #98 — EXISTING HYDRO TOWER (ID #)
- EXISTING HYDRO POLE
- EXISTING RADIO TOWER
- UH — EXISTING UNDERGROUND HYDRO
- EXISTING ROAD EDGE
- MH3 — EXISTING LEACHATE MANHOLE
- 150 — EXISTING GAS HEADER & DIAMETER (mm)
- 100 — EXISTING GAS LATERAL & DIAMETER (mm)
- CT — EXISTING COMMON TRENCH
- GAS MONITOR
- GROUNDWATER MONITOR
- OBSERVATION WELL
- GW62 — ACTIVE VERTICAL EXTRACTION GAS WELL
- GW52 — NON-ACTIVE VERTICAL EXTRACTION GAS WELL
- MH4 — ACTIVE GAS EXTRACTION MANHOLE
- MH3 — NON-ACTIVE GAS EXTRACTION MANHOLE
- CO4 — ACTIVE GAS EXTRACTION CLEANOUT
- CO2 — NON-ACTIVE GAS EXTRACTION CLEANOUT

NOTES:

1) EXISTING GROUND CONTOURS AND TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN ARE BASED ON INFORMATION OBTAINED FROM AERIAL PHOTOGRAPHY FLOWN ON JUNE 27, 2009 BY BASE MAPPING AND FIELD SURVEY DATA BY SMC TO JUNE 1, 2017.
2) CONTOUR INTERVAL SHOWN IS 0.5m.
3) THE LOCAL SITE GRID IS BASED ON 0+000N BEING THE NORTH LANDFILL LIMIT. THE NORTHWEST CORNER OF THE LANDFILL LIMIT IS 0+300E AND IS PERPENDICULAR TO THE EAST/WEST GRID LINE. THE WEST LIMIT OF THE LANDFILL IS LOCATED ALONG THE LOT LINE BETWEEN LOTS 1 AND 2, CONCESSION 4.
4) AS-BUILT INFORMATION SHOWN FOR HDPE GAS PIPING WAS PROVIDED BY WM AND IS APPROXIMATE ONLY. THE LOCATION OF ALL THE GAS WELLS SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEY DATA OBTAINED BY WSP (FORMERLY GENIVAR INC) ON NOVEMBER 17, 2011. LOCATION OF GAS WELLS 59 THROUGH 62 AND ASSOCIATED LATERALS WAS PROVIDED BY WM AND IS APPROXIMATE ONLY.
5) WM REPORTS NO GAS COLLECTION WELLS WERE INSTALLED IN 2021. WM ALSO REPORTS THAT THE PRESENT SYSTEM COLLECTS GAS FROM FIVE (5) LEACHATE CLEANOUTS, FOUR (4) LEACHATE COLLECTION MANHOLES AND 42 VERTICAL GAS WELLS, WHEN THE SYSTEM IS IN OPERATION. 20 DECOMMISSIONED VERTICAL GAS WELLS ARE ALSO PRESENT ON THE LANDFILL MOUND. FLARING OF LANDFILL GAS OCCURRED PERIODICALLY BETWEEN JANUARY 1, 2021 AND AUGUST 15, 2021. ON AUGUST 16, 2021, THE ENCLOSED FLARE WAS SHUT OFF DUE TO LOW GAS GENERATION RATES. THE FLARING SYSTEM WAS NOT IN OPERATION FOR THE REMAINDER OF 2021.

B.M. #1 ELEV. = 124.667

TOP OF BRACKET, NORTH WEST LEG OF HYDRO TOWER No. 99. LOCATED ±25m NORTH AND ±180m EAST OF NORTH WEST CORNER OF APPROVED LANDFILL LIMIT.

B.M. #2 ELEV. = 125.146

TOP OF BRACKET, NORTH WEST LEG OF HYDRO TOWER No. 100. LOCATED ±25m NORTH AND ±80m WEST OF NORTH WEST CORNER OF APPROVED LANDFILL LIMIT.

SCALE : 1:1000

0 50 100m

DATE	DESCRIPTION	APP BY

WSP
101-1450 1st AVENUE W
OWEN SOUND, ONTARIO, CANADA N4K 6W2
TEL: 519-376-7812 | FAX: 519-376-8098 | WWW.WSP.COM

WASTE MANAGEMENT

LANDFILL GAS COLLECTION SYSTEM
AS BUILT DRAWING TO DECEMBER 2021

RICHMOND LANDFILL
NAPANEE, ONTARIO

DWN BY: J V C
CHK BY: B D M

DATE: MARCH 24, 2022
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 8570 - 2021 GAS AS BUILT

SHEET
2021GAB

G:\1985\8570\DRAWINGS\2022\FINAL 8570_GAS AS-BUILT to December 2021.dwg Mar 24, 2022 - 6:06am

APPENDIX

C

MEMORANDUM: 2021 STORMWATER MANAGEMENT PONDS AND LEACHATE MONITORING RESULTS, PREPARED BY BLUMETRIC ENVIRONMENTAL INC.

MEMORANDUM

Date:	23 March 2022
To:	Noah Wayt, Waste Management (WMCC)
Cc:	Chris Prucha and Jim Forney (WMCC) and Beverly Minshall, WSP Canada Inc.
From:	François Richard and Madeleine Corriveau, BluMetric Environmental Inc.
Project No:	220196-03
Re:	2021 Stormwater Management Ponds and Leachate Monitoring Results WMCC Richmond Landfill, Town of Greater Napanee, ON

The purpose of this memorandum is to provide a summary and interpretation of the stormwater and leachate monitoring data collected from the Waste Management of Canada Corporation (WMCC) Richmond Landfill in 2021, in accordance with Conditions 6 and 8 of Environmental Compliance Approval (ECA) No. 1688-8HZNJG issued January 10, 2012. This memorandum is prepared in accordance with Conditions 10(4)(a) and (b) of the ECA.

STORMWATER MANAGEMENT PONDS

A summary of the stormwater monitoring results is attached in **Table 1**. Samples were collected during six events in 2021, conducted in March, April, May, September, October, and November, from the discharge points of each of the three stormwater management ponds: Northeast (NE) Pond, Northwest (NW) Pond and Southwest (SW) Pond.

The results of the chemical analyses are compared to the Provincial Water Quality Objectives (PWQO) in **Table 1** and were consistent with historical results. Consistent to previous years, the concentrations of the following parameters exceeded the PWQO on occasion: aluminum, iron, pH, total phosphorus, and zinc.

Tel. 613-531-2725
Fax. 613-531-1852

BluMetric Environmental Inc.
The Tower, The Woolen Mill, 4 Cataraqui Street, Kingston, Ontario, Canada K7K 1Z7

www.blumetric.ca

The results from the surface water monitoring program of the receiving waters for these ponds (Marysville Creek and Beechwood Ditch), as reported in the Spring and Fall 2021 Semi-Annual Monitoring Reports dated July 2021 and January 2022, respectively, indicate that there are no measurable impacts to water quality from landfill-related activities, including operation of the stormwater management ponds.

Samples were also collected from the stormwater management ponds and analyzed for acute lethality of Rainbow Trout (RBT) and Daphnia magna (DM) on a quarterly frequency, in accordance with Condition 8(3) of the ECA. Condition 14.3(vi) of ECA No. A371203[1] for the waste disposal site requires that the Annual Report includes a discussion of the results of the toxicity testing which includes potential impacts to the groundwater by the stormwater management ponds. The results are summarized below; there was no mortality of any test organisms observed in the samples.

Percent Mortality of Rainbow Trout (RBT) and Daphnia Magna (DM) in Stormwater Management Pond Samples, 2021

	March 18, 2021		June 10, 2021		Sept. 27, 2021		December 14, 2021	
	RBT	DM	RBT	DM	RBT	DM	RBT	DM
SW Pond	0	0	0	0	0	0	0	0
NE Pond	0	0	0	0	0	0	0	0
NW Pond	0	0	0	0	0	0	0	0

Consistent with previous years, the acute lethality results from the 2021 samples indicate that the stormwater management ponds were operating as designed and discharging non-lethal effluent to the receiving waters. The data do not indicate any potential impacts to shallow groundwater from the stormwater management ponds.

Based on the 2021 stormwater management data, as well as the results from the semi-annual surface water monitoring program, it is our opinion that the stormwater management ponds at the WMCC Richmond Landfill are adequate.

[1] Note that prior to the March 19, 2021 ECA No. A371203 amendment, this condition was referred to as Condition 14.3(xii)

LEACHATE MONITORING

The requirements for leachate monitoring under ECA No. 1688-8HZNJG are presented in Condition 6 and Table 1 of the ECA. The leachate monitoring results for 2021 are presented in the attached **Table 2**. The results are indicative of the leachate quality that is disposed off-site.

We trust you will find this evaluation of the 2021 stormwater and leachate monitoring data for the WMCC Richmond Landfill site to be satisfactory. If you have any questions regarding the above information, please contact the undersigned anytime.

Respectfully submitted,
BluMetric Environmental Inc.

François A. Richard, P.Geo., Ph.D
Senior Hydrogeologist

Madeleine Corriveau, M.Sc., P.Geo.
Senior Geoscientist

Encl.

TABLES

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 1: 2021 Pond Sampling Results

Parameter	Units	*PWQO*	NE Pond 2021-03-18	NW Pond 2021-03-18	SW Pond 2021-03-18	NE Pond 2021-04-12	NW Pond 2021-04-12	SW Pond 2021-04-12	NE Pond 2021-05-07	NW Pond 2021-05-07	SW Pond 2021-05-07
Alkalinity	mg/L		230	67	120	190	180	200	320	160	200
Aluminum	mg/L	*0.075*	< 0.02	**0.077**	< 0.02	0.061	< 0.02	< 0.02	< 0.02	0.02	< 0.02
Ammonia	mg/L		< 0.05	< 0.05	< 0.05	3.24	0.516	0.232	0.097	0.502	0.664
Unionized Ammonia	mg/L	*0.02*	< 0.00061	< 0.00061	< 0.00061	0.003	0.00064	< 0.00061	0.001	0.0049	0.006
Arsenic	mg/L	*0.1*	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	mg/L		0.05	0.022	0.024	0.045	0.043	0.041	0.062	0.018	0.039
Benzene	mg/L	*0.1*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Beryllium	mg/L	*1.1*	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006
Biochemical Oxygen Demand	mg/L		< 2	4	3	< 2	< 2	< 2	< 2	< 2	< 2
Boron	mg/L	*0.2*	0.054	0.022	< 0.02	< 0.02	0.047	0.028	0.085	0.062	0.036
Cadmium	mg/L	*0.0002*	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chemical Oxygen Demand	mg/L		16	20	14	33	26	20	47	38	22
Chloride	mg/L		19	5.5	9.1	16	25	26	26	22	24
Chromium (III)	mg/L	*0.0089*	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (Total)	mg/L		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (VI)	mg/L	*0.001*	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cobalt	mg/L	*0.0009*	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper	mg/L	*0.005*	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Dissolved Oxygen	mg/L	.	8.82	8.61	5.62	3.07	4.21	1.3	378	10.13	5.99
Ethylbenzene	mg/L	*0.008*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Field Conductivity	µS/cm		586	630	292	454	459	490	7670	407	471
Field Temperature	°C		1	5.9	4.3	10.8	12.9	12.4	10.1	11.8	10.9
Hardness	mg/L		240	65	120	200	170	200	290	140	200
Iron	mg/L	*0.3*	< 0.1	< 0.1	< 0.1	0.14	< 0.1	< 0.1	0.29	0.28	< 0.1
m+p-Xylene	mg/L	*0.002*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Mercury	mg/L	*0.0002*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Naphthalene	mg/L	*0.007*	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Nickel	mg/L	*0.025*	0.001	0.002	< 0.001	< 0.001	0.002	< 0.001	0.002	0.002	0.001
Nitrate	mg/L		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
o-Xylene	mg/L	*0.04*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
pH (Field)	-	*6.5-8.5*	6.67	6.98	**6.32**	6.58	6.64	6.6	7.67	**7.58**	7.57
pH (Lab)	-	*6.5-8.5*	7.94	7.91	7.84	7.78	8.03	7.85	7.93	**7.9**	7.86
Phenols	mg/L	*0.001*	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Phosphorus (total)	mg/L	*0.03*	< 0.03	**0.13**	0.03	< 0.03	< 0.03	< 0.03	**0.031**	0.03	< 0.03
Potassium	mg/L		3.5	3.3	2.4	2	4.2	3.2	4.2	3.7	3.1
Selenium	mg/L	*0.1*	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Silver	mg/L	*0.0001*	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Sodium	mg/L		21	6.8	8.2	11	26	21	32	31	23
Toluene	mg/L	*0.0008*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Total Dissolved Solids	mg/L		270	90	155	225	270	280	395	225	245
Total Kjeldahl Nitrogen	mg/L		0.5	0.4	0.5	8.5	1.1	0.8	1	1.5	1.1
Total Organic Carbon	mg/L		7.3	7.8	6	13	9.5	7.1	14	12	6.6
Total Suspended Solids	mg/L		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Xylenes	mg/L		< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Zinc	mg/L	*0.03*	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

PWQO: Provincial Water Quality Objectives
Highlighted values indicate PWQO exceeded
Note 1: results for Cr-III and Cr-VI not available

BluMetric™ Environmental

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 1: 2021 Pond Sampling Results

Parameter	Units	*PWQO*	NE Pond 2021-09-27	NW Pond 2021-09-27	SW Pond 2021-09-27	NE Pond 2021-10-27	NW Pond 2021-10-27	SW Pond 2021-10-27	NE Pond 2021-11-11	NW Pond 2021-11-11	SW Pond 2021-11-11
Alkalinity	mg/L		250	170	310	170	170	180	310	130	180
Aluminum	mg/L	*0.075*	**0.17**	**0.21**	**0.12**	**0.45**	**0.37**	**0.11**	**0.086**	**0.17**	< 0.02
Ammonia	mg/L		0.26	0.52	0.39	< 0.15	< 0.15	< 0.15	< 0.15	0.16	< 0.15
Unionized Ammonia	mg/L	*0.02*	0.0021	0.0034	0.0031	< 0.00091	< 0.00059	< 0.0006	< 0.00061	< 0.00061	< 0.00061
Arsenic	mg/L	*0.1*	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	mg/L		0.067	0.054	0.11	0.056	0.043	0.046	0.077	0.026	0.035
Benzene	mg/L	*0.1*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Beryllium	mg/L	*1.1*	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006
Biochemical Oxygen Demand	mg/L		2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Boron	mg/L	*0.2*	0.091	0.081	0.042	0.049	0.049	< 0.02	0.064	0.067	0.033
Cadmium	mg/L	*0.0002*	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chemical Oxygen Demand	mg/L		61	37	28	41	33	27	45	33	31
Chloride	mg/L		22	15	9.5	19	16	7.2	25	27	27
Chromium (III)	mg/L	*0.0089*	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (Total)	mg/L		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium (VI)	mg/L	*0.001*	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00062	0.00055
Cobalt	mg/L	*0.0009*	0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper	mg/L	*0.005*	0.005	< 0.002	0.004	0.004	0.005	< 0.002	0.002	0.002	< 0.002
Dissolved Oxygen	mg/L	.	4.72	4.62	5.72	7.01	6.23	7.15	6.72	7.8	8.92
Ethylbenzene	mg/L	*0.008*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Field Conductivity	µS/cm		593	447	804	510	356	408	698.2	499.5	484
Field Temperature	°C		13.8	15	13.8	8.6	9.5	9.1	4.6	4.3	4.1
Hardness	mg/L		250	170	390	180	170	190	320	130	180
Iron	mg/L	*0.3*	**0.37**	**0.46**	**0.83**	**0.49**	**0.33**	0.14	0.19	0.2	< 0.1
m+p-Xylene	mg/L	*0.002*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Mercury	mg/L	*0.0002*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Naphthalene	mg/L	*0.007*	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Nickel	mg/L	*0.025*	0.002	0.001	0.001	0.002	0.001	< 0.001	0.001	0.002	< 0.001
Nitrate	mg/L		< 0.1	< 0.1	0.14	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
o-Xylene	mg/L	*0.04*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
pH (Field)	-	*6.5-8.5*	7.42	7.29	7.43	7.48	7.26	7.28	6.84	6.59	6.79
pH (Lab)	-	*6.5-8.5*	8.19	8.15	8.31	7.85	7.94	7.95	7.74	8.09	7.73
Phenols	mg/L	*0.001*	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Phosphorus (total)	mg/L	*0.03*	**0.099**	**0.078**	**0.091**	**0.15**	**0.43**	**0.034**	**0.042**	**0.059**	**0.04**
Potassium	mg/L		6.4	7.5	5	6.1	6.7	4.4	6.1	7.3	5.5
Selenium	mg/L	*0.1*	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Silver	mg/L	*0.0001*	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Sodium	mg/L		20	18	15	14	16	8	21	32	26
Toluene	mg/L	*0.0008*	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Total Dissolved Solids	mg/L		340	215	430	215	210	180	320	185	205
Total Kjeldahl Nitrogen	mg/L		1.3	0.9	1.1	< 0.7	< 0.7	< 0.7	0.8	< 0.7	< 0.7
Total Organic Carbon	mg/L		19	12	9	12	9.9	7.7	14	9.8	10
Total Suspended Solids	mg/L		< 10	19	13	11	12	< 10	10	< 10	< 10
Total Xylenes	mg/L		< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Zinc	mg/L	*0.03*	< 0.01	< 0.01	**0.046**	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

PWQO: Provincial Water Quality Objectives
Highlighted values indicate PWQO exceeded
Note 1: results for Cr-III and Cr-VI not available

BluMetric™ Environmental

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 2: 2021 Leachate Sampling Results

Quarterly List					
Reading Name	Units	North Chamber 2021-03-18	North Chamber 2021-06-14	North Chamber 2021-07-06	North Chamber 2021-12-15
1,1,1,2-Tetrachloroethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
1,1,1-Trichloroethane	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
1,1,2,2-Tetrachloroethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
1,1,2-Trichloroethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
1,1-Dichloroethane	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
1,1-Dichloroethylene	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
1,2-Dibromoethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
1,2-Dichlorobenzene (o)	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
1,2-Dichloroethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
1,2-Dichloropropane	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
1,3,5-Trimethylbenzene	mg/L	< 0.002	< 0.004	0.0003	< 0.002
1,3-Dichlorobenzene (m)	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
1,4-Dichlorobenzene (p)	mg/L	0.0064	< 0.004	0.00051	0.0033
1-Methylnaphthalene	mg/L	0.00056	< 0.0005	< 0.00005	< 0.00005
2-Methylnaphthalene	mg/L	0.00086	< 0.0005	< 0.00005	< 0.00005
Acenaphthene	mg/L	0.00058	< 0.0005	0.000053	< 0.00005
Acenaphthylene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Alkalinity	mg/L	1700	1200	370	1200
Ammonia	mg/L	193	135	19.3	3.3
Anthracene	mg/L	0.000059	< 0.0005	< 0.00005	< 0.00005
Arsenic	mg/L	0.002	0.002	0.002	0.002
Benzene	mg/L	0.0044	0.0032	0.00028	< 0.001
Benzo(a)anthracene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Benzo(a)pyrene	mg/L	< 0.000009	< 0.00009	< 0.000009	< 0.000009
Benzo(b)fluoranthene	mg/L	< 0.00005	< 0.0003	< 0.00005	< 0.00005
Benzo(e)pyrene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Benzo(g,h,i)perylene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Benzo(k)fluoranthene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Biphenyl	mg/L	0.00021	< 0.0005	< 0.00005	< 0.00005
Bromodichloromethane	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
Bromoform	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Bromomethane	mg/L	< 0.005	< 0.01	< 0.0005	< 0.005
Cadmium	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Carbon Tetrachloride	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
Chlorobenzene	mg/L	0.0038	0.0029	0.00028	< 0.001
Chloroethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Chloroform	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
Chloromethane	mg/L	< 0.005	< 0.01	< 0.0005	< 0.005
Chromium	mg/L	0.011	0.011	< 0.005	0.007
Chrysene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Cis-1,2-Dichloroethylene	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
Cis-1,3-Dichloropropylene	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Cobalt	mg/L	0.0078	0.0056	0.001	0.0048
Copper	mg/L	< 0.002	0.013	< 0.002	0.006
Dibenzo(a,h)anthracene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Dibromochloromethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Dichloromethane	mg/L	< 0.005	< 0.01	< 0.0005	< 0.005
Dissolved Organic Carbon	mg/L	83	190	34	30
Ethylbenzene	mg/L	0.0056	0.006	0.00055	< 0.001
Fluoranthene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Fluorene	mg/L	0.00032	< 0.0005	< 0.00005	< 0.00005
Hardness	mg/L	740	550	180	620
Indeno(1,2,3-cd)pyrene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	0.0008
m+p-Xylene	mg/L	0.019	0.023	0.0027	< 0.001
Mercury	mg/L	< 0.0002	n/a	< 0.0002	< 0.0002
Molybdenum	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naphthalene	mg/L	0.0093	0.0037	0.00055	< 0.00005
Nickel	mg/L	0.033	0.027	0.007	0.022
Nitrate	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

WM-Richmond Landfill
ECA 1688-8HZNJG
Table 2: 2021 Leachate Sampling Results

Quarterly List					
Reading Name	Units	North Chamber 2021-03-18	North Chamber 2021-06-14	North Chamber 2021-07-06	North Chamber 2021-12-15
Nitrite	mg/L	0.055	< 0.01	< 0.01	0.03
o-Xylene	mg/L	0.0056	0.0045	0.00054	< 0.001
Perylene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
pH (Lab)	unitless	7.2	7.38	8.01	7.38
Phenanthrene	mg/L	0.0003	< 0.0003	0.000039	< 0.00003
Phenols	mg/L	0.0059	0.034	0.0041	0.0036
Pyrene	mg/L	< 0.00005	< 0.0005	< 0.00005	< 0.00005
Selenium	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Styrene	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Tetrachloroethylene	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
Toluene	mg/L	< 0.002	< 0.004	0.00031	< 0.002
Total Kjeldahl Nitrogen	mg/L	200	130	22	4.3
Total Xylenes	mg/L	0.025	0.027	0.0033	< 0.001
Trans-1,2-dichloroethylene	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
Trans-1,3-dichloropropylene	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Trichloroethylene	mg/L	< 0.001	< 0.002	< 0.0001	< 0.001
Trichlorofluoromethane	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Vinyl Chloride	mg/L	< 0.002	< 0.004	< 0.0002	< 0.002
Zinc	mg/L	< 0.01	0.059	< 0.01	0.022

Annual List		
Reading Name	Units	North Chamber 2021-06-14
Aluminum	mg/L	0.12
Barium	mg/L	0.16
Beryllium	mg/L	< 0.0006
Biochemical Oxygen Demand	mg/L	230
Boron	mg/L	1.3
Calcium	mg/L	120
Conductivity	µS/cm	3300
Iron	mg/L	17
Magnesium	mg/L	63
Manganese	mg/L	0.51
Phosphorus (total)	mg/L	0.42
Silver	mg/L	< 0.0004
Sodium	mg/L	290
Sulphate	mg/L	< 1
Sulphide	mg/L	n/a
Total Trihalomethanes	mg/L	< 0.004

APPENDIX

D DETAILED CHRONOLOGY OF SIGNIFICANT LANDFILL DESIGN AND OPERATION, AND LAND USE CHANGES, AND POTENTIAL VOLATILE ORGANIC COMPOUND SOURCES AT THE SITE

Detailed Chronology of Significant Landfill Design & Operation,
and Land Use Changes
Richmond Landfill Site

8570

Date	Description
1954	▪ Landfill operations began at the site under Sutcliffe Sanitation Services Limited.
1971	▪ Service area expanded to include the Town of Napanee and Desoronto.
1971	▪ Ministry of the Environment (MOE) issued Provisional Certificate of Approval (C of A) No. A371203 for a 10.1 hectare landfill footprint.
1974	▪ Burning operations ceased at the site.
1979	▪ Service area increased to include the Town of Picton, Richmond Township, Township of Tyendinaga, North Fredericksburg, Adolphustown and Sophiasburgh. Waste tonnage was also increased.
August 11, 1987	▪ Landfill site expansion approved to 16.2 hectares and to include the site service area with the Counties of Lennox and Addington, Prince Edward, Hastings and Frontenac.
January 1988	▪ Tricil Limited purchased the landfill site from Sutcliffe Sanitation Services Limited.
September 1989	▪ From Aerial photography - landfilling in Phase 1. Sewage lagoon is present and located in Phase 4. All farm buildings exist.
1990	▪ The site came under ownership of Laidlaw as a result of the acquisition of Tricil Limited.
December 1990	▪ Landfill operations began in the Phase 2 cell area on prepared clay base.
1991	▪ Leachate holding lagoon was constructed north of the hydro corridor.
Summer 1993	▪ Contaminated soil pad constructed to the east of the maintenance building.
1993	▪ Phase 3 landfill base was constructed during the summer with waste placed in the fall.
September 2, 1994	Notice to amend C of A (Waste) No. A371203 was issued by MOE. The amendment approved the construction and operation of a composting facility.
December 1994	▪ From aerial photography - landfilling is being completed in Phase 3. Compost pad and sedimentation pond in the northeast (Pond 1) and south (Pond 3) is being constructed; northwest is not constructed and soil stockpile exists on top of Phase 1.
January 24, 1995	C of A (Industrial Sewage No. 4-0129-94-956) issued by MOE. Approval was granted for the oil/water separator at the contaminated soil stockpile.
1995	▪ Phase 4 Cell was constructed in the summer/fall of 1995 with landfilling commencing in the summer of 1996.
August 1, 1995	Notice to amend C of A (Waste) No. A371203 was issued by MOE. The amendment prohibited leachate recirculation in Phases 1, 2, and 3.
December 1995	▪ From Aerial photography - landfilling is occuring on the top of Phase 3. Phase 4 recently constructed. Soil stockpile is being constructed on top of Phase 1.
September 1996	▪ Leachate haulage to Napanee started.
September 11, 1996	Notice to amend C of A (Waste) No. A371203 was issued by MOE. The amendment approved the expansion of the leaf and yard waste facility to an organic waste composting facility.
November 1996	▪ From Aerial mapping - active area is Phase 4 with soil stockpiled on Phases 1, 2 and 3.
1997	Change in ownership - Canadian Waste Services Inc.
January 1997	▪ North Leachate Pump chamber installled.
February 1997	▪ First phase of leachate recirculation system installed in Phase 4.
November 1997	▪ Landfilling is occurring on the top portion of Phase 4. Contaminated soil stockpile on top of Phase 1 is in place. Sedimentation pond in northwest corner (Pond 2) is not yet constructed.
1998	▪ Last level of recirculation piping installed in Phase 4.
Summer 1998	▪ Phase 5 constructed.
Fall 1998	▪ Installation of temporary gas collection and flaring system to establish gas generation rates - two (2) temporary vertical gas extraction wells, a temporary gas collection trench, and temporary flaring/mechanical system.
November 5, 1998	▪ Small landfill fire in Phase 5 waste. Soil sampling of adjacent properties indicated no impact to surrounding environment.
December 1998	▪ From aerial photography - Phase 5 has been constructed and waste placement has begun in Phase 5. Soil is being stockpiled on top of Phases 1, 2 and 3.
1999	▪ Two (2) levels of leachate recirculation installed in Phase 5
Summer 1999	▪ Northwest sedimentation pond (Pond 2) constructed.
November 1999	▪ From Aerial photography - landfilling is occuring in Phase 5. Northwest sedimentation pond (Pond 2) has been constructed. Landfill flare is not in place.
December 21, 1999	C of A (Air) No. 8-4076-99-006 issued by MOE. The certificate was issued for a permanent, enclosed flare.

Detailed Chronology of Significant Landfill Design & Operation,
and Land Use Changes
Richmond Landfill Site

8570

Date	Description
2000	▪ First loads of biosolids received at compost pad for composting.
April to May 2000	Installation of 24 vertical gas extraction wells in landfill mound. Throughout the year, connection of 12 cleanouts and nine (9) leachate manholes, along with the landfill gas wells, to the system occurred.
August 29, 2000	C of A issued by MOE, approving installation of the Phase 1 leachate collection system.
Fall 2000	▪ Leachate collector installed on north and west sides of Phase 1.
December 2000	▪ From aerial photography - landfilling on top of Phase 3. Soil stockpile on top of Phase 1 is being depleted. The peripheral leachate collector on Phase 1 has been constructed. Sedimentation pond in northwest corner (Pond 2) is in place. Flare has been installed.
February 2001	▪ Landfill gas collection and flaring started.
Summer 2001	▪ Leachate collector replaced between Manhole 1 to 4.
July 10, 2001	▪ Landfilling on the north slope of Phase 2.
2002	Condensate drain traps were installed at low points in the gas collection system to reduce the amount of moisture at the flare.
Summer 2002	▪ Leachate collector replaced between Manhole 1 and 7.
July 2002	▪ Landfillling is occurring on the north face of Phase 1. Contaminated soil stockpile on top of Phase 1 is nearly completed.
2003	▪ Change in ownership - Waste Management of Canada Corporation.
2003	▪ High pressure odour misting system installed.
2003	▪ 10 new vertical gas collection well installed.
May 8, 2003	C of A (Air) No. 1355-5LRN9N issued, which revoked the previous C of A. The notice approved the operation of the flare and gas collection system, comprising of a maximum of 54 wells, 12 leachate manholes and 9 cleanouts.
2004	▪ Six (6) new vertical gas collection wells installed.
Spring 2004	▪ Leachate receiving station was constructed in Napanee.
2006	▪ Final year of odour spray system operation.
June 18, 2007	Submission of final closure plan to MOE
2007	▪ three (3) new vertical gas collection wells installed, and five (5) vertical gas collection wells were redrilled. Pumps were also placed in select wells to lower leachate levels and improve gas collection.
Summer 2008	▪ Five (5) vertical gas collection wells were redrilled, and the gas header pipe on the east and west slopes was upgraded from 150mm diameter to 300mm diameter to improve flow and decrease friction loss. Isolation valves were also added at various locations on the gas header.
August 19, 2008	▪ C of A (Industrial Sewage Works) No. 5268-7E8LJW issued, approving upgrades/construction to the south sedimentation pond (Pond 3).
Fall 2008 through Summer 2009	▪ Upgrades/construction of south sedimentation pond (Pond 3).
2009	▪ Landfilling in old access road area - south slope.
July through September 2009	▪ Installation of seven (7) vertical gas extraction wells over the crest of the landfill mound, and redrilling of 12 wells on the upper north, east, and south slopes.
2010	▪ Decommissioning of leachate holding lagoon north of landfill mound.
March 31, 2010	▪ Notice 5 to C of A No. A371203, issued by MOE. The amendment approved the final closure plan, listed a date of closure for the landfill, and dates for completion of final cover installation for various phases of the landfill. The notice also requested the submission of a revised financial assurance calculation, contingency plans, design for the final cover system, design for low permeability liner for compost pad and pond, and revised environmental monitoring plan, by June 30, 2010.
June 25, 2010	▪ Submission of financial assurance plan, final cover construction quality assurance plan, contingency plans for the leachate and landfill gas collection systems, design for low permeability liner for compost pad and pond, and odour monitoring plan, to MOE to satisfy various conditions from March 31, 2010 C of A amendment.
June 29, 2010	▪ Submission of environmental monitoring plan and groundwater/surface water contingency plan, to MOE to satisfy various conditions from March 31, 2010 C of A amendment.
August 25, 2010	▪ Notice 6 to C of A No. A371203, issued by MOE. The amendment approved the construction quality assurance plan for the final cover system.
August 27, 2010	▪ Start of installation of final cover system on Phase 1.

Detailed Chronology of Significant Landfill Design & Operation,
and Land Use Changes
Richmond Landfill Site

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Date	Description
October 28, 2010	▪ Completion date of final cover placed on entire Phase 1 portion of landfill.
December 2010	▪ Submission of phytoremediation plan for northwest corner of property.
Spring 2011	▪ Installation of three (3) vertical gas extraction wells.
May 2, 2011	▪ Notice 8 to C of A No. A371203, issued by MOE. The amendment approved the construction/operation of the phytoremediation system in the northwest corner of the property.
May 25, 2011	▪ Application submitted to MOE requesting continued operation of the public drop off facility.
May 25, 2011	▪ Application submitted to MOE requesting that the operation of the stormwater ponds be as designed (free flowing).
June 30, 2011	▪ Last load of waste accepted and disposed in landfill mound. ▪ Closure of the public drop off facility. ▪ Decommissioning of contaminated soil pad.
July 4, 2011	▪ Start of installation of final cover system on Phases 2, 3, 4, and 5.
August 2011	▪ Decommissioning of compost pad and pond completed.
September 23, 2011	▪ Final cover system over entire Phases 2, 3, 4, and 5 completed.
January 9, 2012	▪ MOE issues Environmental Compliance Approval (ECA) No. A371203, consolidating the previous C of A and amendments. The permit also approved several submissions from June 2010, subject to various conditions. ▪ MOE issues amendment to ECA No. A371203, approving the re-opening of the public drop off facility, subject to conditions.
January 10, 2012	▪ MOE issues ECA No. 1688-8HZNJG, consolidating the previous C of As and amendments for Industrial Sewage Works. Approval also granted to allow the stormwater management ponds to operate in a free flowing manner.
February 1, 2012	▪ The public drop off facility re-opened to the public, subject to the conditions listed under the amendment to ECA A371203 issued January 9, 2012.
May 3, 2013	▪ MOE issues amendment to ECA No. A371203, reflecting the Environmental Review Tribunal (ERT) settlement of five (5) of the seven (7) conditions of the January 9, 2012 ECA that were appealed by the Concerned Citizens' Committee of Tyendinaga and Environs (CCCTE). The notice amended and added conditions regarding the assessment of groundwater monitoring wells, odour monitoring and abatement activities (including frequency of surface emission surveys after 2014), public notification plan, semi-annual and annual monitoring reporting, additional information pertaining to site compliance, and removal of information from the annual monitoring report. Odour monitoring and reporting will follow the "Odour Monitoring Plan - Revision No. 1" and "Odour Survey Protocol" submitted in March 2012 and February 2013, respectively, while implementation of the Public Notification Plan will occur in accordance with the "Public Notification Plan - February 2013".
October 4, 2013	▪ MOE issues amendment to ECA No. A371203, approving the March 2013 financial assurance submission, as revised in July 2013. Conditions regarding the amounts of financial assurance to be posted through 2016 were amended.
February 28, 2014	▪ The public drop off facility was closed by WM. All approvals remain in place should WM elect to re-open the facility in the future.
April 29, 2014	▪ MOE issues ECA (Air) No. 5970-9HKP3V, approving the operation of a candlestick flare. The candlestick flare installation addresses a contingency plan for the landfill gas collection system, in that it would be operational only when the enclosed flare is shut down for maintenance or repair.
June 12, 2014	Application to amend ECA No. A371203 is submitted by WM, for the approval of a cleaning and maintenance schedule for the ditches, culverts, and leachate collection system at the landfill.
January 2015	▪ Application to amend ECA No. A371203 is submitted by WM, for the approval of a leachate storage tank to be constructed onsite.
August 14, 2015	▪ Ministry of Environment and Climate Change (MOECC) issues Notice 3 to amend ECA No. A371203 reflecting the ERT interim order regarding one of the conditions of the January 9, 2012 ECA that was appealed by the CCCTE. The notice amended the former Environmental Monitoring Plan (EMP) condition, and also Conditions 8.5 (a) i, ii, and iii (EMP and Replacement/Installation/Testing of Monitoring Wells), and adding two (2) conditions to the ECA for protocols of reporting exceedances to the MOECC District Manager, and the reporting of 1,4-dioxane levels.

**Detailed Chronology of Significant Landfill Design & Operation,
and Land Use Changes
Richmond Landfill Site**

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Date	Description
November 5, 2015	▪ MOECC issues Notice 4 to amend ECA No. A371203, reflecting the ERT interim order to amend of the conditions of the January 9, 2012 ECA that was appealed by the CCCTE. The notice amended the date of completion of testing of groundwater monitoring wells M-187 through M-190 to December 1, 2015.
December 24, 2015	▪ The ERT issues a decision with an accompanying order regarding the appeal of the January 9, 2012 ECA No. A371203 by the CCCTE. The ERT has ordered that additional field work be completed and a report prepared that is to be provided to all parties to the hearing. The report is to be completed by April 15, 2016. After the report is reviewed, the parties will meet to discuss the contents. After reviewing input from all parties, the MOECC will determine if the Contaminant Attenuation Zone (CAZ) has been adequately defined. If the MOECC agrees the CAZ has been adequately defined, WM will submit the CAZ application. If the MOECC does not agree the CAZ has been adequately defined, more field work will be ordered. The ERT also found that it is unnecessary to maintain a further supervisory role in the matter once the wording of the ECA conditions and EMP provisions has been finalized.
April 14, 2016	▪ The ERT issues a decision with an accompanying order regarding the appeal of the January 9, 2012 ECA No. A371203 by the CCCTE. The order included the ERT's acceptance of the final wording of the remaining appealed ECA conditions and EMP provisions that was proposed on consent of all parties. The ERT concluded that it was not necessary to include one additional sentence that was proposed by the CCCTE. The ERT granted a request by WM to extend the date set out in Condition 8.5(e) from April 15, 2016 to June 15, 2016 to allow WM to complete the work required under that condition without being out of compliance. The ERT also directed the MOECC Director to make amendments to the ECA in accordance with the ERT's decision.
April 15, 2016	▪ MOECC issues Notice 5 to amend ECA No. A371203. This Notice revoked and replaced Conditions 8.2 (groundwater well assessment) and 8.5 d (odour monitoring plan references). The Notice also replaces Items 56, 57, and 58 in Schedule 'A' with Items 56 (November 2014 Odour Monitoring Plan) and Item 57 (February 2013 Odour Monitoring Plan).
June 15, 2016	▪ MOECC issues Notice 6 to amend ECA No. A371203. This Notice is based on the ERT order issued on April 14, 2016, and addresses the remaining conditions in the appeal of the January 9, 2012 ECA No. A371203 by the CCCTE. The Notice includes the submission of a revised EMP based on the August 2015 Interim EMP and updated to include (1) one year conductivity monitoring of Marysville Creek; (2) if specified parameters listed in the EMP are detected, assessment of the need to install additional nested monitoring wells in the vicinity of Marysville Creek; (3) the need for testing of domestic and agricultural wells on properties south of Highway 401 at locations and for paraters listed in the EMP; (4) a revision in the timing of confirmation resampling as listed under groundwater trigger mechanisms in the EMP; and (5) the establishment of a Reasonable Use Limit for 1,4-dioxane. Monitoring of the site now follows the schedule listed in the Interim EMP. Along with conditions outlining the process of delineating offsite leachate impacted groundwater or surface water, and meetings and timeframes with the MOECC and interested parties to discuss the delineation process, a condition was included ordering WM to complete a study on the hydrogeological impacts of a pipeline running under the northern part of the properties present south of the site and the submission of a report of the findings by June 15, 2016. The Notice also address compliance criteria, water supply to specified residences, approves groundwater and surface water contingency plans, and denies the use of a fracture trench as listed in the Leachate Collection System Contingency Plan. Finally, the notice stated the ERT was no longer required to supervise or participate in the CCCTE appeal of the ECA, subject only to the ERT's determination of the final wording of the ECA conditions and EMP provisions as outlined in the order. ▪ MOECC issues Notice 6 to amend ECA No. A371203. In addition to the order issued by the ERT as listed above, the Notice also addressed the approval of two (2) ECA applications pertaining to cleaning of the leachate collection system, ditches and culverts, and the proposed leachate storage tank construction. The Notice includes the approval of a leachate storage tank, revises the cleaning and inspection frequency of the leachate collection system along with ditches and culverts, and updates the condition number pertaining to odour monitoring. Several items were also added to Schedule 'A', including the ERT order.

**Detailed Chronology of Significant Landfill Design & Operation,
and Land Use Changes
Richmond Landfill Site**

8570

Date	Description
June 24, 2016	Application to amend ECA No. A371203 is submitted by WM, requesting a reduction in the frequency of surface emission events conducted at the site. The request is permitted under a condition of the aforementioned ECA, so long as readings from 2013 and 2014 surface emission survey events do not exceed 500 parts per million by volume of methane.
July 14, 2017	▪ MOECC issues consolidated ECA No. A371203. This ECA consolidates all amendments issued since January 9, 2012, and revoked/replaced the previous ECA. The ECA also approved the financial assurance re-evaluation submitted by WM on March 30, 2016, and revised Conditions 2.5, 2.6, and 2.7, pertaining to amounts of financial assurance to be posted within 20 days of ECA issuance and for calendar years 2018, 2019 and 2020, and also revised the condition which specifies the date of submission for the next updated financial assurance re-evaluation. ▪ MOECC issues consolidated ECA No. A371203. In addition to the items listed previously under this date, the MOECC issues approval of the June 24, 2016 application to reduce the frequency of surface emission events conducted at the site. The consolidated ECA includes the addition of "Odour Monitoring Plan - Revision No. 3" (included as part of the June 2016 application package) to Schedule "A" items, and permits WM to no longer perform surface emission events three (3) times per calendar year. A condition was added to the ECA that in the event of odour detection at or greater than three (3) "intensity units" (based on the scale listed in the Odour Monitoring Plan), and the landfill mound is determined to be the source of the odour, repairs will be undertaken and a surface emission event will be performed to confirm there are no exceedances of the 500 ppmv methane threshold emitting from the repaired area.
August 2019	▪ WM receives approval to discharge leachate at the Ravensview sewage treatment plant in Kingston, ON. This facility will be used as a contingency should the Napanee sewage treatment plant not be available.
January 14, 2020	▪ Application to amend ECA No. A371203 is submitted by WM, for the approval of amendments (removal/revisions) of several ECA conditions, to better reflect the operation of a closed landfill site.
April 15, 2020	▪ Application to amend ECA No. A371203 is submitted by WM, to request approval of the forcemain between pumping chamber PS2 and the leachate holding lagoon.
April 30, 2020	▪ Application to amend ECA No. A371203 is submitted by WM, to request approval of various changes to the previously approved leachate storage system under Condition 5.5. Changes include an increase in the size and type of storage tank, among other items.
March 15, 2021	▪ MECP Kingston District Office completes desktop review of ECA No. 1688-8HZNJG. The MECP requested WM prepare a written response outlining the measures to be taken to conduct a detailed performance assessment of SWMP No.'s 1, 2 and 3 including timeframes for completion of proposed work and submission of findings to the Ministry. A submission date of March 31, 2021 was requested, but later revised to April 30, 2021.
March 19, 2021	▪ MECP issues consolidated ECA No. A371203. The consolidated ECA approves various changes to the July 14, 2017 ECA requested under the January 14, 2020 ECA application; and revoked/replaced the 2017 ECA. The ECA approves the forcemain between pumping chamber PS2 and the leachate holding lagoon; approves the various changes (size and type of leachate storage tank) to the previously approved leachate storage system; and approves the March 2020 financial assurance re-evaluation with new conditions pertaining to the amounts of financial assurance to be posted for calendar years 2022, 2023, and 2024. The updated ECA better reflects the operation of a closed landfill site. Additional modifications in the ECA include an updated public notification plan, and the requirement for WM to prepare a spill contingency plan for the leachate storage system;
April 19, 2021	▪ Construction begins on the leachate storage system approved by MECP under the March 19, 2021 ECA No. A371203.
April 30, 2021	▪ WM submitted a stormwater infrastructure inspection and maintenance plan to MECP - Kingston District Office for review/approval, as requested under a desktop review of ECA No. 1688-8HZNJG. As of December 31, 2021, no response from MECP had been provided to WM.

**Detailed Chronology of Significant Landfill Design & Operation,
and Land Use Changes
Richmond Landfill Site**

8570

Date	Description
June 24, 2021	▪ WM submitted a spill contingency plan for the leachate storage system to MECP - Kingston District Office for review/approval, as required under Condition 9.4 (1) of ECA No. A371203. As of December 31, 2021, no response from MECP had been provided to WM.
August 16, 2021	▪ The enclosed landfill gas flare ceased operations due to low landfill gas generation volumes.
August 24, 2021	▪ MECP - Kingston District Manager provides WM with correspondence confirming the submission by WM (with technical comments from MECP hydrogeologist) that the extent of leachate impacted groundwater pertaining to the Richmond Landfill leachate contamination plume has been delineated. This onsite and offsite delination was required by a decision issued on December 24, 2015 by the Environmental Review Tribunal. In accordance with Condition 8.5 (e) of ECA No. A371203, WM is required within 90 days of receipt of correspondence to submit an application to the MECP approvals branch to amend the ECA to address any non-compliance with Condition 8.8 and Guideline B-7, including if warranted an application to incorporate a contaminant attenuation zone into the approval, and including a proposed updated EMP. The correspondence identifies additional work to be completed by WM pertaining to the delineation along the east side of the landfill (securing groundwater rights to the affected property or establishment of an engineered system to ensure control of the leachate plume such that it does not extend to the adjacent property, and installation of additional monitoring wells on the neighbouring property for assessment and delineation); the south-central off-site area (updating the EMP to ensure regular sampling of water from this area occurs to allow for on-going monitoring of conditions); and the north lagoon (groundwater and surface water monitoring adjacent to the lagoon has not shown any associated leachate related impacts. Extensive testing is required before additional leachate may be transferred to the lagoon).
September 28, 2021	▪ A virtual PLC meeting was held to discuss the progress of construction of the leachate storage system and to inform committee members of the August 24, 2021 MECP decision confirming delineation of the leachate contaminant plume. An update was provided on the status of the ECA application as required under Condition 8.5 (e) of ECA No. A371203. This was the first PLC meeting held in several years.
November 23, 2021	▪ Application to amend ECA No. A371203 is submitted to MECP Approvals. The application is being submitted in accordance with Condition 8.5 (e) of ECA No. A371203, to amend the ECA to address non-compliance with Condition 8.8 and Guideline B-7, including incorporation of a contaminant attenuation zone (CAZ) into the approval. The application includes a proposed updated environmental monitoring plan (EMP), and proposes revisions to items under Condition 4.0 (Site Operations); Condition 8.0 (Monitoring); and Condition 14.0 (Semi Annual and Annual Reporting). Notification to neighbouring residents of the ECA application was included in the application; and was posted on the WM website. The application was also discussed during a virtual PLC meeting held December 7, 2021.
December 23, 2021	▪ Construction of the leachate storage system achieved substantial completion. Completion of work is scheduled for January 2022.

The potential sources of Volatile Organic Compounds (VOCs) on the landfill site include the following:

- The unlined Phase 1 area of the landfill, operated since 1954 until site closure in 2011;
- Maintenance shop located south of the landfill footprint (date of initial operation unknown);
- Sewage lagoon operated by Sutcliffe Sanitation, located on the south side of the landfill in the area now covered by Phase 4 (date of initial operation unknown, but decommissioned in 1990 prior to Phase 2 construction of the landfill);
- Stormwater runoff from the contaminated soil pad constructed in 1993, located to the east of the maintenance shop;
- Historic sporadic leachate seep breakouts (typically along the south and northwest sides of the landfill);
- Septic sewage systems with distribution tile fields, located east of the scalehouse and maintenance shop (dates of installation unknown); and
- Former abbatoir located immediately south of the site (operated from the mid-1960s to early 2000s).

In addition to the November 2021 ECA application pertaining to the delineation of the leachate contaminate plume, WM is working on development of a hydraulic containment system to control the leachate contaminate plume from migrating along the east side of the landfill property. An ECA application to request the approval for installation of an engineered control in this area will be submitted in early 2022.

APPENDIX

E

STATEMENT OF COMPLIANCE - 2021 ENVIRONMENTAL MONITORING AND REPORTING, PREPARED BY BLUMETRIC ENVIRONMENTAL INC.

MEMORANDUM

Date:	23 March 2022
To:	Noah Wayt, Waste Management (WMCC)
Cc:	Chris Prucha and Jim Forney (WMCC) and Beverly Minshall, WSP Canada Inc.
From:	François Richard and Madeleine Corriveau, BluMetric Environmental Inc.
Project No:	220196-03
Re:	Statement of Compliance, 2021 Environmental Monitoring and Reporting WMCC Richmond Landfill, Town of Greater Napanee, ON

Condition 14.3 paragraph xiii of Environmental Compliance Approval (ECA) No. A371203 amended March 19, 2021[1] for the Waste Management of Canada Corporation (WMCC) Richmond Landfill requires that the Annual Report includes a statement of compliance with all conditions of the ECA and other relevant Ontario Ministry of Environment, Conservation and Parks (MECP) groundwater and surface water requirements. BluMetric Environmental Inc. is contracted by WMCC to complete the environmental monitoring program at the landfill, and to prepare the Semi-Annual Monitoring Reports as required by Condition 14.1 of the ECA. The purpose of this memorandum is to provide a statement of compliance with the environmental monitoring and reporting requirements of the ECA.

During the 2021 calendar year, the environmental monitoring program was conducted in accordance with the Environmental Monitoring Plan (EMP) for the site (Interim EMP revision 05, dated April 15, 2016). Any specific exceptions to the sampling program (i.e., dry or damaged monitoring wells, dry surface water locations, etc.) are described in the Spring and Fall 2021 Semi-Annual Monitoring Reports dated July 2021 and January 2022, respectively.

Both 2021 Semi-Annual Monitoring Reports were submitted to MECP and other stakeholders in compliance with Condition 14.1 of the ECA. The reports were also posted by WMCC on a publicly accessible website.

[1] Note that prior to the March 19, 2021 ECA amendment, this condition was referred to as Condition 14.3, paragraph xxi

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The Tower, The Woolen Mill, 4 Cataraqui Street, Kingston, Ontario, Canada K7K 1Z7

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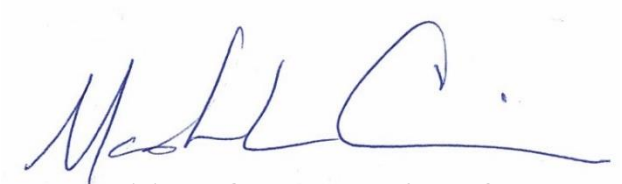
The Semi-Annual Monitoring Reports include an assessment with regard to the compliance of groundwater quality in comparison to MECP Guideline B-7. The reports also include a statement of compliance of the monitoring well conditions to Ontario Regulation 903.

We trust you will find this statement of compliance with the environmental monitoring and reporting requirements of ECA No. A371203 to be satisfactory.

If you have any questions regarding the above information, please contact the undersigned anytime.

Respectfully submitted,
BluMetric Environmental Inc.

François A. Richard, P.Geo., Ph.D.
Senior Hydrogeologist



Madeleine Corriveau, M.Sc., P.Geo.
Senior Geoscientist

APPENDIX

F

CLOSED WASTE DISPOSAL SITE INSPECTION REPORT – PREPARED BY MECP KINGSTON DISTRICT OFFICE FOR INSPECTION OF RICHMOND LANDFILL TO ENSURE COMPLIANCE WITH ECA NO. A371203 – FEBRUARY 10, 2021

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

Closed Waste Disposal Site Inspection Report

Client:	Waste Management of Canada Corporation, Business/Facility Name: Waste Management Mailing Address: 1271 Beechwood Rd, Napanee, Ontario, Canada, K7R 3L1 Physical Address: 1271 Beechwood Rd, Greater Napanee, Town, County of Lennox and Addington, Ontario, Canada, K7R 3L1 Telephone: (613)388-1057, FAX: (613)388-2785, email: lcooper1@wm.com Client #: 7403-5X8KZG, Client Type: Corporation, NAICS: 562110, 562210		
Inspection Site Address:	Richmond Landfill Site Address: 1271 Beechwood Rd Lots 1 2 and 3 Concession 4 Richmond, Greater Napanee, Town, County of Lennox and Addington, K7R 3L1 District Office: Kingston - District LIO GeoReference: Zone: 18, UTM Easting: 336128.20, UTM Northing: 4902806.4, Latitude: 44.260053, Longitude: -77.05292 Site #: 6577-7DQLNH		
Contact Name:	Bill McDONOUGH	**Title:**	Sr. Project Manager
Contact Telephone:	226-280-1795 **ext**	**Contact Fax:**	
Last Inspection Date:			
Inspection Start Date:	2021/02/08	**Inspection Finish Date:**	2021/02/08
Region:	Eastern		

1.0 INTRODUCTION

Following the January 2020 identification of leachate spills at the Site (truck spill and leachate collection chamber overflow) a Provincial Officer's Order was issued to address the concerns and non-compliances identified. Part of the work conducted by Waste Management of Canada (the 'Company') involved submission of ECA amendment applications for:

- leachate storage system modifications to include the installation of a 3000 m3 enlarged storage tank and associated pumping infrastructure,
- installation of leachate forcemain and associated pumping infrastructure between closed landfill and adjacent leachate storage lagoon, and
- general wording and compliance updates to ECA #A371203 to reflect full closure of the site and current operating conditions.

While the site was scheduled for inspection in the 20/21 fiscal year, given the broad scope of amendment applications currently under review by the ministry, and the pending re-issuance of the ECA as a result, a comprehensive compliance assessment with the current approval was not conducted at this time. A fulsome inspection will be conducted in the near future once the ECA has been re-issued and the Company has made the operational/administrative changes required.

Accordingly, this inspection was conducted to assess for any major site/operational non-compliance which could pose an immediate threat to the natural environment. A physical inspection of the Site was conducted on February 10, 2021 by the undersigned Officer.

2.0 INSPECTION OBSERVATIONS

Certificate of Approval Number(s): ● Yes ○ No

A371203

2.1 FINANCIAL ASSURANCE
Required Financial Assurance is in place for the Site.

2.2 CLOSURE PLAN
The Site stopped receiving waste in 2011 and has been closed since, in accordance with required plans.

2.3 ACCESS CONTROL
Site access controlled by locking gate when not staffed.

2.4 FINAL COVER
Final cover is in place. As part of the requirements of the recently issued Provincial Officers Order a formal assessment of landfill infiltration was required including an evaluation of the existing landfill cap by a third party Qualified Person. The evaluation was required to assess for settlement, shear or tension cracks, landfill gas or other indications of compromised integrity. A report was received on December 21, 2020 and reviewed by a ministry engineer who concurred with the consultant's findings that the landfill cap was found to be in good condition and constructed in accordance with provincial standards. During the physical site inspection no obvious signs of cap performance issues (obvious slumping, indications of breakouts or significant erosion, etc.) were found.

2.5 LEACHATE CONTROL SYSTEM
No indications of leachate collection system failure were noted during this most recent site inspection however excessive leachate generation from water infiltration into the collection system has been an acknowledged issue at this location culminating in the identification of leachate spills to land in January 2020 from overflows of the collection chambers. The Company has implemented interim leachate management measures including switching of haulers and additional reliable municipal receiver sites as a backup contingency while approval for permanent contingencies and additional leachate storage structures are being pursued. Ministry investigation into the identified non-compliance remains ongoing.

2.6 METHANE GAS CONTROL SYSTEM
The Site does have a landfill gas collection system and flares off accumulated gases in accordance with an applicable ECA. No odour issues associated with landfill gas were noted at the time of inspection.

2.7 MONITORING PROGRAMS:
A full monitoring program is currently in place while the Company continues to conduct the necessary work to establish a formal Contaminant Attenuation Zone and associated Environmental Monitoring Program which will be incorporated into the Site ECA. Currently no impacts offsite of Company-owned lands is occurring with the exception of a small portion of a property to the southeast. Negotiations continue between the Company and property owner to either purchase the property outright or otherwise control the offsite discharge through mechanical means.

2.8 GROUND WATER/SURFACE WATER IMPACTS
The Site inspection did not identify any obvious evidence of ground/surface water impact. Detailed monitoring of surface/groundwater conditions is done regularly as required with findings presented in semi-annual monitoring reports. The most recent submitted report (January 2021) is currently under review by ministry technical experts.

2.9 Registration On Title:
Not applicable

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

All previous non-compliance relating to the spill of leachate at the Site has been addressed through issuance and compliance with the associated Provincial Officers Order.

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate ?
No
Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review

of relevant material ?
No
Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?
Yes
Specifics:
Leachate impacted groundwater continues to migrate offsite to private property to the southeast of the site. This is a previously identified issue which is required to be addressed prior to formal ministry acceptance of a proposed Contaminant Attenuation Zone('CAZ') and associated amendment of the site ECA to reflect said CAZ and an updated Environmental Monitoring Plan. Impacts are considered environmental as the property in question (and surrounding residential properties) currently sit vacant and has had no residential occupants for several years.

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?
Yes
Specifics:

Was there any indication of minor administrative non-compliance?
No
Specifics:

5.0 ACTION(S) REQUIRED

1. Resolution of off-site groundwater impacts to the southeast to be required prior to ministry acceptance of Contaminant Attenuation Zone and revised Environmental Monitoring Plan.

6.0 OTHER INSPECTION FINDINGS

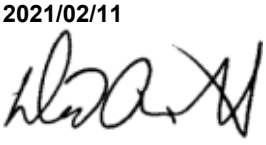
Not Applicable

7.0 INCIDENT REPORT

Applicable
6142-BY5J6A

8.0 ATTACHMENTS

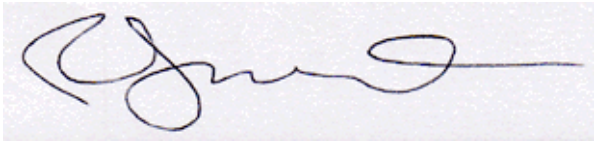
PREPARED BY:
Environmental Officer:
Name: **David Arnott**
District Office: **Kingston District Office**
Date: **2021/02/11**
Signature



REVIEWED BY:
District Supervisor:
Name: **Roberto Sacilotto**

District Office: **Kingston District Office**
Date: **2021/02/12**

Signature:



File Storage Number: SILNNABE600 - RICHMOND WDS

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

We want to hear from you. Please tell us about the quality of your interaction with our staff. You can provide feedback at 1-888-745-8888.

APPENDIX

G 2021 PHYTOREMEDIATION SYSTEM MONITORING RESULTS, PREPARED BY BLUMETRIC ENVIRONMENTAL INC.

MEMORANDUM

Date:	23 March 2022
To:	Noah Wayt, Waste Management (WMCC)
Cc:	Chris Prucha and Jim Forney (WMCC) and Beverly Minshall, WSP Canada Inc.
From:	François Richard and Madeleine Corriveau, BluMetric Environmental Inc.
Project No:	220196-03
Re:	2021 Monitoring Results, Phytoremediation System WMCC Richmond Landfill, Town of Greater Napanee, ON

Condition 4.9 of Environmental Compliance Approval (ECA) No. A371203, amended March 19, 2021[1], for the Waste Management of Canada Corporation (WMCC) Richmond Landfill requires that the Annual Report includes an assessment of the results from the phytoremediation system as related to the stated objectives for the existing and proposed phytoremediation system, as well as an assessment of the need to change the monitoring program for the phytoremediation system and a recommendation of the required changes.

BluMetric Environmental Inc. is contracted by WMCC to complete the environmental monitoring program at the landfill, and to prepare the Semi-Annual Monitoring Reports as required by Condition 14.1 of the ECA. The purpose of this memorandum is to provide the monitoring results for the phytoremediation system and related assessments required by Condition 4.9 of the ECA.

During the 2021 calendar year, the results from the environmental monitoring program, conducted in accordance with the latest Environmental Monitoring Plan (Interim EMP (rev. 05) dated April 2016), were also used to monitor groundwater levels and quality around the phytoremediation system in the northwest corner of the Site.

[1] Note that prior to the March 19, 2021 ECA amendment, this condition was referred to as Condition 5.11

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The Tower, The Woolen Mill, 4 Cataraqui Street, Kingston, Ontario, Canada K7K 1Z7

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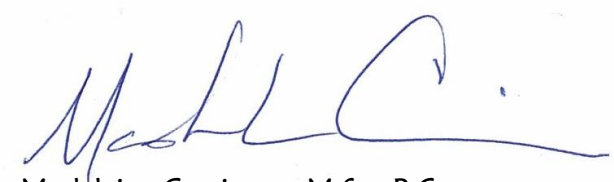
To address ECA Condition 4.9 (i), groundwater levels were recorded from monitoring wells specified in Condition 4.8 (1) which includes monitors installed in the Shallow Groundwater Flow Zone (M27, M66-2, M67-2, M86, M100, M101, M102 and M103) as well as the Intermediate Bedrock Groundwater Flow Zone (M3A-3, M72, M73, M74, M75 and M95-1). Similarly, Condition 4.8 (2) lists wells for quality monitoring and includes locations from the Shallow Flow Zone (M66-2, M67-2, M101 and M103) and Intermediate Bedrock Flow Zone (M5-3, M6-3, M74 and M75). Groundwater elevation and quality results are presented in **Tables 1** and **2**, respectively. Additional details related to the 2021 monitoring results are available in the Spring and Fall 2021 Semi-Annual Monitoring Reports.

The phytoremediation system was initially planted in May 2011, and following some start-up issues was completely removed in 2012. The ground was reworked, and 6,700 dogwoods and willows were planted in May 2013. The trees were pruned by Ontario Hydro personnel in March 2021. Since the plantation has yet to become fully established, no trends are apparent from the monitoring results in relation to the operation of the phytoremediation system. No information is available to address Conditions 4.9 (ii and iii), as the system continues to establish itself. These conditions will be addressed in future monitoring reports.

We trust you will find this statement of compliance with the environmental monitoring and reporting requirements of ECA No. A371203 to be satisfactory. If you have any questions regarding the above information, please contact the undersigned anytime.

Respectfully submitted,
BluMetric Environmental Inc.

François A. Richard, P.Geo., Ph.D.
Senior Hydrogeologist



Madeleine Corriveau, M.Sc., P.Geo.
Senior Geoscientist

Encl.

TABLES

WM-Richmond Landfill
ECA A371203
Table 1: 2021 Phytoremediation System Monitoring Results (Water Levels)

Monitoring Well	Water Level masl	Monitoring Well	Water Level masl	Monitoring Well	Water Level masl
3-May-21		23-Aug-21		25-Oct-21	
Shallow Groundwater Flow Zone					
M27	126.42	M27	125.03	M27	126.30
M66-2	123.23	M66-2	122.09	M66-2	123.04
M67-2	122.83	M67-2	122.17	M67-2	122.27
M86	121.62	M86	122.22	M86	122.97
M100	125.58	M100	123.83	M100	124.52
M101	124.09	M101	122.69	M101	123.34
M102	124.22	M102	122.91	M102	124.13
M103	124.04	M103	122.64	M103	123.13
Intermediate Bedrock Groundwater Flow Zone					
M3A-3	124.96	M3A-3	124.22	M3A-3	124.83
M72	125.10	M72	122.42	M72	122.89
M73	121.73	M73	122.47	M73	122.92
M74	123.86	M74	123.11	M74	123.57
M75	123.06	M75	123.29	M75	123.48
M95-1	123.47	M95-1	122.50	M95-1	122.98

WM-Richmond Landfill
ECA A371203
Table 2a: 2021 Phytoremediation System Monitoring Results (Spring Groundwater Quality)

Name	Date	Alkalinity	Ammonia	Boron	Calcium	Chloride	Conductivity	Dissolved Organic Carbon	Iron	Magnesium	Manganese	Nitrate	Nitrite	Potassium	Sodium	Sulphate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	mg/L	mS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																	
M66-2	5/4/2021	250	< 0.15	0.38	120	110	1300	1.8	< 0.1	35	< 0.002	0.14	< 0.01	3.8	98	250	700
M67-2	5/6/2021	350	0.47	0.71	48	5.1	640	2.1	0.54	28	0.045	< 0.1	< 0.01	8.3	50	2.9	325
M101	5/6/2021	470	< 0.15	0.068	160	60	1100	2.6	< 0.1	47	0.004	< 0.1	< 0.01	4.3	17	61	600
M103	5/5/2021	600	< 0.15	0.23	120	150	1600	3.5	< 0.1	76	< 0.002	0.39	< 0.01	5.6	120	61	835
Intermediate BedrockGroundwater Flow Zone																	
M5-3	5/4/2021	460	1.33	1.1	36	48	970	1.5	< 0.1	26	< 0.002	< 0.1	< 0.01	13	140	< 1	555
M6-3	5/4/2021	530	1.92	1.1	770	1500	5400	46	< 0.5	480	0.12	< 0.1	< 0.01	51	3400	99	2780
M74	5/6/2021	320	1.62	0.62	43	45	750	3.9	0.17	24	0.039	< 0.1	< 0.01	14	72	5.1	360
M75	5/4/2021	410	1.37	1.1	35	60	1100	1.6	< 0.1	24	0.005	< 0.1	< 0.01	14	150	61	550

Name	Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethylene	1,2-Dichlorobenzene (o)	1,2-Dichloroethane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene (m)	1,4-Dichlorobenzene (p)	1,4-Dioxane	Benzene	Chlorobenzene	Chloroethane	Chloromethane	Cis-1,2-Dichloroethylene	Dichloromethane	Ethylbenzene	m+p-Xylene	o-Xylene	Styrene	Tetrachloroethylene	Toluene	Total Xylenes	Trans-1,2-dichloroethylene	Trichloroethylene	Vinyl Chloride
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																													
M66-2	5/4/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M67-2	5/6/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M101	5/6/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	0.00019	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0029	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M103	5/5/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.012	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
Intermediate BedrockGroundwater Flow Zone																													
M5-3	5/4/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	0.00018	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	0.00012	< 0.0002	< 0.0001	< 0.0002	0.00012	< 0.0001	< 0.0001	< 0.0002
M6-3	5/4/2021	< 0.002	< 0.001	< 0.002	< 0.002	< 0.001	< 0.001	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.14	< 0.001	< 0.001	< 0.002	< 0.005	< 0.001	< 0.005	< 0.001	< 0.001	< 0.001	< 0.002	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 0.002
M74	5/6/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M75	5/4/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002

WM-Richmond Landfill
ECA A371203
Table 2b: 2021 Phytoremediation System Monitoring Results (Fall Groundwater Quality)

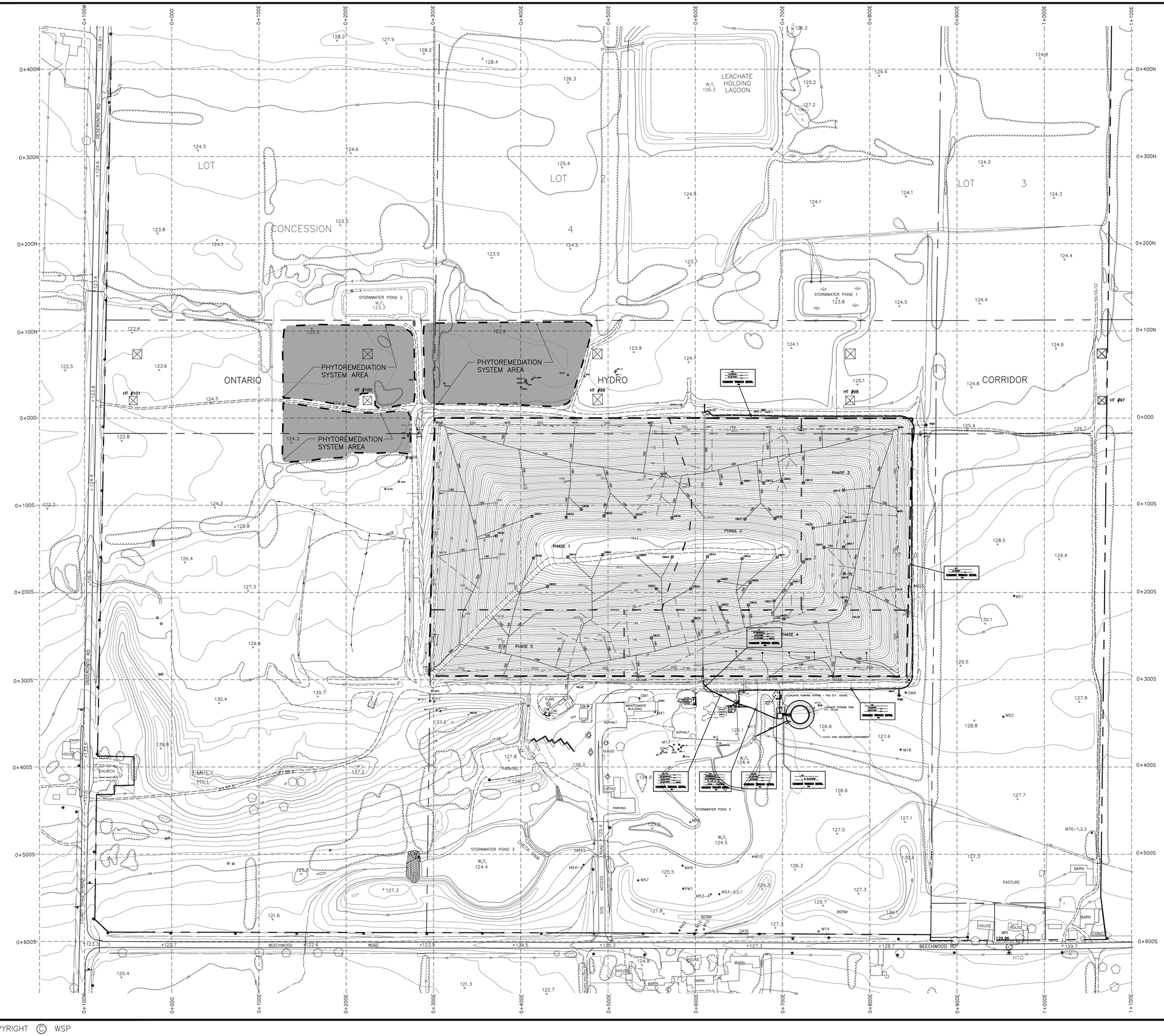
Name	Date	Alkalinity	Ammonia	Boron	Calcium	Chloride	Conductivity µS/cm	Dissolved Organic Carbon	Iron	Magnesium	Manganese	Nitrate	Nitrite	Potassium	Sodium	Sulphate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	mg/L	mS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																	
M66-2	10/27/2021	310	< 0.15	0.59	120	110	1300	1.7	< 0.1	35	0.003	0.17	< 0.01	4.8	110	210	745
M67-2	10/27/2021	350	0.75	0.91	46	5	640	2.5	0.56	28	0.032	< 0.1	0.011	10	52	3.2	285
M101	10/29/2021	470	< 0.15	0.072	140	56	1100	2.5	< 0.1	44	0.005	< 0.1	< 0.01	4	17	57	655
M103	10/27/2021	600	< 0.15	0.22	120	160	1600	3.5	< 0.1	75	0.002	0.18	< 0.01	5.8	120	47	860
Intermediate BedrockGroundwater Flow Zone																	
M5-3	10/27/2021	440	1.36	1.1	36	49	950	1.4	< 0.1	27	< 0.002	< 0.1	< 0.01	13	140	1.2	495
M6-3	10/27/2021	400	1.77	1	110	1500	5300	70	< 0.1	140	< 0.002	< 0.1	< 0.01	25	780	110	2600
M74	10/29/2021	310	1.31	0.74	38	30	680	2.7	< 0.1	23	0.028	< 0.1	< 0.01	12	62	14	375
M75	10/27/2021	360	1.5	1.3	35	76	1000	1.7	< 0.1	23	0.014	< 0.1	< 0.01	14	160	85	530

Name	Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethylene	1,2-Dichlorobenzene (o)	1,2-Dichloroethane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene (m)	1,4-Dichlorobenzene (p)	1,4-Dioxane	Benzene	Chlorobenzene	Chloroethane	Chloromethane	Cis-1,2-Dichloroethylene	Dichloromethane	Ethylbenzene	m+p-Xylene	o-Xylene	Styrene	Tetrachloroethylene	Toluene	Total Xylenes	Trans-1,2-dichloroethylene	Trichloroethylene	Vinyl Chloride
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone																													
M66-2	10/27/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M67-2	10/27/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M101	10/29/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	0.00016	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0046	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M103	10/27/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.01	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
Intermediate BedrockGroundwater Flow Zone																													
M5-3	10/27/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	0.00019	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	0.00015	< 0.0002	< 0.0001	< 0.0002	0.00015	< 0.0001	< 0.0001	< 0.0002
M6-3	10/27/2021	< 0.001	< 0.0005	< 0.001	< 0.001	< 0.0005	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.25	< 0.0005	< 0.0005	< 0.001	< 0.0025	< 0.0005	< 0.0025	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.0005	< 0.001	< 0.0005	< 0.0005	< 0.0005	< 0.001
M74	10/29/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002
M75	10/27/2021	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0001	< 0.0001	< 0.0002	< 0.0005	< 0.0001	< 0.0005	< 0.0001	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0002

APPENDIX

H

SITE LOCATION PLAN – PHYTOREMEDIATION SYSTEM



LEGEND:

- 125 — EXISTING GROUND
- INTERVAL CONTOURS
- REFERENCE GRID LINE
- LEGAL BOUNDARIES
- APPROVED LIMIT OF LANDFILL
- PHASING LIMITS
- EXISTING DRAINAGE DITCH
- EXISTING WEEPER
- 150 — EXISTING GAS LATERAL
- EXISTING FENCE LINE
- EXISTING TREE LINE
- EXISTING TREE
- HT #98 — EXISTING HYDRO TOWER (ID #)
- EXISTING HYDRO POLE
- EXISTING RADIO TOWER
- UH — EXISTING UNDERGROUND HYDRO
- EXISTING ROAD EDGE
- MH3 — EXISTING LEACHATE MANHOLE
- 150 — EXISTING GAS HEADER & DIAMETER (mm)
- 100 — EXISTING GAS LATERAL & DIAMETER (mm)
- CT — EXISTING COMMON TRENCH
- GM1 — GAS MONITOR
- M9 — GROUNDWATER MONITOR
- OBSERVATION WELL
- GW62 — ACTIVE VERTICAL EXTRACTION GAS WELL
- GW52 — NON–ACTIVE VERTICAL EXTRACTION GAS WELL
- MH4 — ACTIVE GAS EXTRACTION MANHOLE
- MH3 — NON–ACTIVE GAS EXTRACTION MANHOLE
- CO4 — ACTIVE GAS EXTRACTION CLEANOUT
- CO2 — NON–ACTIVE GAS EXTRACTION CLEANOUT

NOTES:

1) EXISTING GROUND CONTOURS AND TOPOGRAPHIC FEATURES SHOWN ON THIS PLAN ARE BASED ON INFORMATION OBTAINED FROM AERIAL PHOTOGRAPHY FLOWN ON JUNE 27, 2009 BY BASE MAPPING AND FIELD SURVEY DATA BY SMC TO JUNE 1, 2017.
2) CONTOUR INTERVAL SHOWN IS 0.5m
3) THE LOCAL SITE GRID IS BASED ON 0+000N BEING THE NORTH LANDFILL LIMIT. THE NORTH WEST CORNER OF THE LANDFILL LIMIT IS 0+300E AND IS PERPENDICULAR TO THE EAST/WEST GRID LINE. THE WEST LIMIT OF THE LANDFILL IS LOCATED ALONG THE LOT LINE BETWEEN LOTS 1 AND 2, CONCESSION 4.
4) THE PHYTOREMEDIATION SYSTEM IN THE NORTHWEST CORNER OF THE LANDFILL WAS PLANTED IN THE SPRING OF 2011. DUE TO WET CONDITIONS AND POOR GROWTH, ALL AREAS WERE PLOWED UNDER IN SEPTEMBER 2012, AND GROUND CONDITIONS WERE REWORKED. ALL AREAS WERE REPLANTED IN SPRING 2013. IN 2014, WM REPORTED THAT VEGETATION HAD RE–ESTABLISHED WELL. VARIOUS CHEMICALS WERE USED TO PROMOTE GROWTH AND REMOVE GRASS AND WEEDS. THE HEIGHT OF PLANTS VARIES FROM 50 CM TO 100 CM.
5) IN 2015 AND 2016, WM REPORTED THE PLANTATION EXPERIENCED GOOD GROWTH. THE WILLOWS ARE APPROXIMATELY 1.5m TO 2.4m IN HEIGHT, AND THE DOGWOODS ARE APPROXIMATELY 0.9m TO 1.2m IN HEIGHT. APPROXIMATELY FIVE (5) TO TEN (10) PERCENT MORE SHRUBS THAT WERE NOT ABLE TO BE SEEN PREVIOUSLY IN THE WEEDS, HAVE SHOWN SIGNS OF GROWTH.
6) FOR 2017 THROUGH 2020, WM REPORTED NO OPERATIONAL PROBLEMS OR CHANGES. GROWTH CONTINUES TO DEVELOP, AND ALL PLANT LIFE WAS MONITORED FOR ANY SIGN OF IMPAIRMENT.
7) IN 2021, WM REPORTED NO OPERATIONAL PROBLEMS OR CHANGES. HYDRO ONE COMPLETED PRUNING ACTIVITIES IN LATE APRIL 2021, WHICH REDUCED THE HEIGHT OF VEGETATION IN COMPLIANCE WITH A CONDITION OF ECA NO. A371203. GROWTH IN THE PLANTATION RE–ESTABLISHED THROUGHOUT THE 2021 GROWING SEASON. ALL PLANT LIFE WILL CONTINUE TO BE MONITORED FOR ANY SIGN OF IMPAIRMENT.

B.M. #1 ELEV. = 124.667

TOP OF BRACKET, NORTH WEST LEG OF HYDRO TOWER No. 99, LOCATED ±25m NORTH AND ±180m EAST OF NORTH WEST CORNER OF APPROVED LANDFILL LIMIT.

B.M. #2 ELEV. = 125.146

TOP OF BRACKET, NORTH WEST LEG OF HYDRO TOWER No. 100, LOCATED ±25m NORTH AND ±80m WEST OF NORTH WEST CORNER OF APPROVED LANDFILL LIMIT.

SCALE : 1:2000

0 100 200m

DATE	DESCRIPTION	APP BY

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL: 519-376-7612 | FAX: 519-376-8008 | WWW.WSP.COM

WASTE MANAGEMENT

DWN BY: J V C
CHK BY: B D M
DATE: MARCH 24, 2022
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 8570 - 2021 PS

SITE PLAN
2021 PHYTOREMEDIATION SYSTEM
RICHMOND LANDFILL
NAPANEE, ONTARIO

SHEET
2021PS

G:\1985\8570\DRAWINGS\2022\FINAL 8570–2021 phytoremediation system.dwg Mar 24, 2022 – 6:39am

APPENDIX

I

LETTERS OF APPROVAL FOR ALTERNATE LEACHATE TREATMENT SITES

From: McDonough, William <wmcdonou@wm.com>
Sent: February 10, 2020 3:44 PM
To: Leno, Bev
Subject: FW: Landfill Leachate Disposal from Waste Management Richmond Landfill
Attachments: Septage Facility Usage Agreement.pdf

Bev,
This is the leachate disposal approval from Kingston.

Bill McDonough
Senior Project Manager
wmcdonou@wm.com

Waste Management
8039 Zion Line
Watford ON N0M 2S0
Cell: 226 280-1795

From: Dickerson,Troy <tdickerson@utilitieskingston.com>
Sent: Tuesday, August 13, 2019 1:52 PM
To: McDonough, William <wmcdonou@wm.com>
Cc: Runions,Julie <jrunions@utilitieskingston.com>; Patenaude,James <jpatenaude@utilitieskingston.com>
Subject: [EXTERNAL] RE: Landfill Leachate Disposal from Waste Management Richmond Landfill

Hello Bill,
I have had a look at the test results and nothing is in there for us to disallow it from being brought to Ravensview septage facility to dispose of.
We will allow the leachate to be discharged at Ravensview Sewage Treatment Plant septage facility.
However, If there is a problem with the facility or we find that the leachate is affecting the treatment process, we will stop future discharge.
Attached is the form to be filled out and brought to 85 Lappan's Ln. At Lappen's Lane you can pick up a FOB.
We charge $16.71 per cubic meter (leachate is considered industrial waste), charged at 90% capacity. Loads are pre-paid and loaded on to the key fob that they swipe at Ravensview. Transponder and fob key is $60 +HST for new truck.

Any questions, please feel free to contact me.

Kind Regards,

Troy Dickerson
Quality Assurance Operator Water/wastewater Operations
P.O. Box 790, Kingston, ON K7L 4X7
P: 613-546-1181 x.2190 C: 613-532-3048
tdickerson@utilitieskingston.com

From: McDonough, William [mailto:wmcdonou@wm.com]
Sent: 08-6-2019 2:59 PM
To: Dickerson,Troy
Subject: RE: Landfill Leachate Disposal from Waste Management Richmond Landfill

Troy,
At this point its vac truck loads hauled by Sutcliffe. They haul our leachate using the same trucks they haul septage. I think they haul about 15 m3 loads.
Next year we are constructing an onsite storage tank that would allow us to haul larger loads but until the tank is built we have not looked into how much larger the loads might be.

Bill McDonough
Senior Project Manager
wmcdonou@wm.com

Waste Management
8039 Zion Line
Watford ON N0M 2S0
Cell: 226 280-1795

From: Dickerson,Troy <tdickerson@utilitieskingston.com>
Sent: Tuesday, August 6, 2019 1:23 PM
To: McDonough, William <wmcdonou@wm.com>
Subject: [EXTERNAL] RE: Landfill Leachate Disposal from Waste Management Richmond Landfill

Would the 100m3 come in a couple of tankers or a bunch of vac truck loads?
We have a dumping facility for septage and if we allow you to discharge here it is first come first serve to dumping.
Do you have your own tanker truck or is it another company that hauls the leachate?

Troy Dickerson
Quality Assurance Operator Water/wastewater Operations
P.O. Box 790, Kingston, ON K7L 4X7
P: 613-546-1181 x.2190 C: 613-532-3048
tdickerson@utilitieskingston.com

From: McDonough, William [mailto:wmcdonou@wm.com]
Sent: 08-6-2019 10:03 AM
To: Dickerson,Troy
Subject: RE: Landfill Leachate Disposal from Waste Management Richmond Landfill

Troy,
On average we dispose of about 100 cubic meters per day into the Napanee sewer system. As we get into August and September that can crop to half that amount. Our problem is right after rain events when our volume increases significantly and at the same time Napanee is experiencing high flows due to infiltration and shuts us off. We are wondering if Kingston can handle 100 cubic meters per day when we get shut off from Napanee. Any amount would help us. Thanks for giving this consideration.

Bill McDonough
Senior Project Manager
wmcdonou@wm.com

Waste Management
8039 Zion Line
Watford ON N0M 2S0
Cell: 226 280-1795

From: Dickerson,Troy <tdickerson@utilitieskingston.com>
Sent: Tuesday, August 6, 2019 8:40 AM
To: McDonough, William <wmcdonou@wm.com>
Subject: [EXTERNAL] RE: Landfill Leachate Disposal from Waste Management Richmond Landfill

Thank you Bill,
What is the time frame on when you would like to bring to dispose of?
What are the volumes? Is it a truck per day? Per week?

Cheers,

Troy Dickerson
Quality Assurance Operator Water/wastewater Operations
P.O. Box 790, Kingston, ON K7L 4X7
P: 613-546-1181 x.2190 C: 613-532-3048
tdickerson@utilitieskingston.com

From: McDonough, William [mailto:wmcdonou@wm.com]
Sent: 08-6-2019 7:21 AM
To: Dickerson,Troy
Subject: RE: Landfill Leachate Disposal from Waste Management Richmond Landfill

Troy,
Attached are the results of the monthly leachate testing that we do for Napanee. Please let me know if you need anything else. Thanks for your help.

Bill McDonough
Senior Project Manager
wmcdonou@wm.com

Waste Management
8039 Zion Line
Watford ON N0M 2S0
Cell: 226 280-1795

From: Dickerson,Troy <tdickerson@utilitieskingston.com>
Sent: Friday, August 2, 2019 1:59 PM
To: McDonough, William <wmcdonou@wm.com>
Cc: Runions,Julie <jrunions@utilitieskingston.com>
Subject: [EXTERNAL] RE: Landfill Leachate Disposal from Waste Management Richmond Landfill

Good after noon Bill,
I was sent this email to touch base with you about possibly allowing leachate from Richmond's Landfill in Napanee.
The first thing I would need is to get the latest test result of the leachate.
Once I have the results and review them I will contact you to discuss.

Cheers,

Troy Dickerson
Quality Assurance Operator Water/wastewater Operations
P.O. Box 790, Kingston, ON K7L 4X7
P: 613-546-1181 x.2190 C: 613-532-3048
tdickerson@utilitieskingston.com

From: Runions,Julie
Sent: 07-12-2019 1:12 PM
To: Dickerson,Troy
Cc: Emon,Philip; Hannah,Kevin; Patenaude,James
Subject: FW: Landfill Leachate Disposal from Waste Management Richmond Landfill

Hi Troy,
See the email below.
Can you please review and reply to Bill McDonough?
If you think a meeting is appropriate, I can attend.

Thank you,
Julie

Julie Runions, P.Eng.
Manager, Water and Wastewater Treatment Operations
P.O. Box 790, Kingston, ON K7L 4X7
P: 613-546-1181 x.2172
jrunions@utilitieskingston.com

From: McDonough, William [mailto:wmcdonou@wm.com]
Sent: 07-11-2019 12:08 PM
To: Runions,Julie
Subject: Landfill Leachate Disposal from Waste Management Richmond Landfill

Ms. Runions,
I manage Waste Management's closed Richmond landfill near Napanee. We manage most of our landfill leachate by trucking it into Napanee. Like many communities, Napanee has infiltration/inflow problems after rainstorms and occasionally after storms cannot accept our leachate. We are looking for additional waste water treatment plants that could handle some our leachate. MECP staff has given me your name and suggested Kingston might be able help us.

Would you be willing to meet with me to discuss whether Kingston can help us?

Bill McDonough
Senior Project Manager
wmcdonou@wm.com

Waste Management
8039 Zion Line
Watford ON N0M 2S0
Cell: 226 280-1795

Recycling is a good thing. Please recycle any printed emails.

Utilities Kingston

Septage Facility Usage Agreement

Utilities Kingston – Receptionist 613-546-1181 ext.2337
85 Lappan's Lane
P.O. Box 790
Kingston, ON, K7L 4X7

Transceiver No. original application: _____

Proximity Key No. original application: _____

Fill out Part 1 and 2, and submit this form, in person, to register and obtain a *Transceiver and Proximity Key* for each truck.

PART 1 – CUSTOMER INFORMATION

Company: _____

Primary Contact: _____

Email Address: _____

Phone#: _____

Cell #: _____

Address: _____

City: _____

Postal Code: _____

Truck Make: _____ Cab Colour: _____

Type/Model: _____

No. Of Axles: _____ Tank Volume: _____liters or gallons – (circle one)

MOE Approval #: _____ Your Truck ID/Name: _____

PART 2 – TERMS OF AGREEMENT / INFORMATION

Each customer (company) will fully complete an agreement for each truck requiring access to septage receiving, and for which a Transceiver and Proximity Key will be required. These will enable site access and use of the Cataraqui Bay Wastewater Treatment Plant Septage Receiving Station, subject to the activation of the *Transceiver* and *Proximity Key.*

Access may be restricted for any of the following reasons;

- Failure to keep accounts current
- Failure to provide proper manifest information, providing false manifest information. Transponders and Keys may only be used for the truck they were originally assigned to.
- Failure to abide by the terms of the sewer use bylaw. Random samples of dumped waste may be collected and analyzed to ensure the material dumped is within acceptable limits.

This agreement is a one-time application and provides the customer **one** *Transceiver* and **one** *Proximity Key* for each truck for a fee of $60.00 + HST per truck.

Transceiver/Proximity Key:

- The Transceiver and Key are assigned to a specific truck, and are obtained from the Receptionist at Utilities Kingston, 85 Lappan's Lane, Kingston, ON.
- The customer will prepay for loads which the clerk will credit to the Proximity Key. Payments may be made by cheque, debit or credit card. The proximity key does not have to accompany payment when loads are purchased and credited to the key. (You do need to know which truck the purchased loads are to be applied to.)
- The Transceiver permits access to the site during permitted hours, when the terms of use are met.
- The Key activates the dumping system when one or more prepaid loads remain, and when the terms of use are met.

Lost/Damaged/Refunded *Proximity Keys/Transceivers*:

- Replacement Transceivers are available at a fee of $60.00 + HST, and replacement Proximity Keys for a fee of $30.00 + HST.
- The Receptionist will record the replacement number(s) on the Agreement.
- The customer must notify the Receptionist at Utilities Kingston of the last day the Key was used when making a request for a transfer of the unused balance in the case of a lost or damaged Key, or for a refund. The Key will be disabled on the day the request is made (if requested during normal business hours), and available loads remaining on the day the request is made (if requested during normal business hours) will be made available for refund or transfer.
- A refund will not be processed until after 10 days of the date the request was received by Utilities Kingston. A refund of the unused balance, less a $25 administration fee, will be paid to the applicant by cheque. The Transceiver must accompany the Key if a refund is requested. A $25 administration fee may apply for any contract or information changes.

Care and Operation on-Site/at Septage Receiving Station:

- Drivers are required to allow the gate to fully open before proceeding through.
- The customer must follow the instructions mounted inside the septage control box.
- The sewer use bylaw must be complied with – inorganics, plastic, rags, etc. are not permitted to be dumped.
- When septage unloading is completed, the customer must close the control box door and ensure it is properly latched, and disconnect the off-loading hose from the truck. Damage to equipment or facilities will be invoiced to the customer/company.
- If problems are experienced at the Septage Receiving Station, please report them to Utilities Kingston staff at the Cataraqui Bay Wastewater Treatment Plant, or phone (613) 546-1181 ext 2503, or ext 2296 (after hours).
- Utilities Kingston does not guarantee that the Septage Receiving station will be available for use at all times.

I, ______________________________(customer), hereby agree to these terms of agreement.

Signature of Customer: ______________________ Date: ______________________

PART 3 – UTILITIES KINGSTON USE ONLY - Processing

Original Request Processed by:
Name: ______________________ Date: ______________________

Payment method: Credit Card ☐ Debit Card ☐ Cheque ☐

PART 4 – UTILITIES KINGSTON USE ONLY – Transceiver/ Proximity Key Reference History

Transceiver No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Transceiver No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Transceiver No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____
Proximity Key No.: ________	Date Activated: ________	Date De-activated: ________	Receptionist: ____/____

APPENDIX

J

CORRESPONDENCE FROM MECP KINGSTON DISTRICT OFFICE TO WM REGARDING ACTION ITEM ON DESKTOP REVIEW OF ECA NO. 1688-8HZNJG – MARCH 15, 2021

Wellwood, Debbie

From: McDonough, William <wmcdonou@wm.com>
Sent: March 15, 2021 2:21 PM
To: Brodzikowski, Peter; Leno, Bev
Subject: FW: Inspection reports
Attachments: Richmond Closed Waste Disposal Site Inspection Report.pdf

Bev & Peter,
As we discussed a couple of weeks ago, MECP has been reviewing our permits as part of their normal inspections. They have found where we did not submit a maintenance plan on the Stormwater Ponds. Could you prepare that plan for me. I think it can be fairly simple. I also need to provide a schedule for inspection and maintenance. I will need to have you do an inspection, hopefully with me present, and from that inspection develop and a list of maintenance work if required. Dave Arnott is looking for the plan by the end of the month. Is that possible our do you need more time?

Bill McDonough
Senior Project Manager
wmcdonou@wm.com

5768 Nauvoo Road
Watford, ON N0M 2S0

Cell 226 280-1795

From: Arnott, David (MECP) <David.Arnott@ontario.ca>
Sent: Monday, March 15, 2021 1:52 PM
To: McDonough, William <wmcdonou@wm.com>
Subject: [EXTERNAL] Inspection reports

Hi Bill,

As I think I'd mentioned during one of our earlier calls I'd stopped by the site last month and was reviewing the requirements for the waste/industrial sewage ECA's. Attached is the report for the waste portion. The industrial sewage report is still sitting with management here and I'll send it along once signed-off but I wanted to reach out as there's an action item from that one as follows:

By March 31, 2021 provide to the undersigned Provincial Officer a written response outlining the measures to be taken to conduct a detailed performance assessment of SWMP No.'s 1, 2 and 3 including timeframes for completion of proposed work and submission of findings to the Ministry.

The item stems from the following observation:

The 2012 Stormwater Contingency Plan prepared in accordance with the ECA identifies inspection and maintenance requirements in relation to the approved SWMP's and associated ditching, including a commitment for submission of a formal maintenance program 5 years after site closure (~2017) that would formalize a maintenance schedule for the remaining contaminating lifespan of the landfill. Based upon conversation with Company officials it does not appear this formal maintenance schedule was produced, nor has any formal cleaning/maintenance of the three SWMP's been done. Without formal assessment and regular maintenance of the SWMP's, in particular the older SWMPs No.1 and No.2, the Company is unable to

determine whether the ponds are functioning as designed/approved with respect to hydraulic performance (capacity, retention times etc.)

I recognize that March 31 might be too soon at this point, so if you require more time please advise. If you'd like additional clarification or have any questions just let me know.

Dave

David Arnott
Provincial Officer #827
Ontario Ministry of the Environment, Conservation and Parks
Eastern Region

Phone: 613-549-4000 x 2693
Spills Action Centre: 1-800-268-6060
Pollution Hotline (Anonymous): 1-866-MOE-TIPS

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

Industrial Sewage Inspection Report

Client:	Waste Management of Canada Corporation, Business/Facility Name: Waste Management Mailing Address: 1271 Beechwood Rd, Napanee, Ontario, Canada, K7R 3L1 Physical Address: 1271 Beechwood Rd, Greater Napanee, Town, County of Lennox and Addington, Ontario, Canada, K7R 3L1 Telephone: (613)388-1057, FAX: (613)388-2785, email: lcooper1@wm.com Client #: 7403-5X8KZG, Client Type: Corporation, NAICS: 562110, 562210		
Inspection Site Address:	Richmond Landfill Site Address: 1271 Beechwood Rd Lots 1 2 and 3 Concession 4 Richmond, Greater Napanee, Town, County of Lennox and Addington, K7R 3L1 District Office: Kingston - District LIO GeoReference: Zone: 18, UTM Easting: 336128.20, UTM Northing: 4902806.4, Latitude: 44.260053, Longitude: -77.05292 Site #: 6577-7DQLNH		
Contact Name:	Bill McDONOUGH	**Title:**	Senior Project Manager
Contact Telephone:	226-280-1795 **ext**	**Contact Fax:**	
Last Inspection Date:			
Inspection Start Date:	2021/02/09	**Inspection Finish Date:**	2021/02/16
Region:	Eastern		

1.0 INTRODUCTION

Stormwater from the Site is managed primarily through the operation of three (3) SWMPs (stormwater management ponds) identified as:

- SWM Pond No. 3 located north of Beechwood Road and south of the landfill footprint,
- SWM Pond No. 2 located north of Beechwood Road and northwest of the landfill footprint, and
- SWM Pond No.1 located north of Beechwood Road and north of the landfill footprint

In 2012 Amended ECA #1688-8HZNJG (the 'ECA') was issued to remove conditions surrounding controlled discharge of the SWMPs and authorize operation of the ponds in an free-flowing state. The ECA also approves:

- a lined leachate storage lagoon also located north of the landfill footprint to be used for the temporary storage of leachate or leachate-contaminated stormwater prior to disposal at an approved disposal facility, and
- a second leachate storage lagoon located west of the landfill footprint to be used for the collection of leachate or leachate-impacted stormwater runoff from onsite composting.

It is noted the corresponding ECA #A371203 prohibited operation of the previously approved composting pad and required removal of all composting material in 2011. Accordingly, the leachate storage lagoon approved for the collection of leachate/stormwater runoff from the composting pad is no longer in use.

Recent concerns raised by a local concerned citizen group regarding the integrity of the landfill leachate storage lagoon resulted in the ministry requiring extensive assessment work to be conducted by the Company. This work has been ongoing over the past several months, consisting in part of theoretical water balance calculations and monitoring in and around the lagoon. An assessment report was prepared which is currently under review in conjunction with the results of additional groundwater monitoring required. The findings of this review will be communicated under separate cover and therefore this inspection report does not consider this component of the approved industrial sewage works, rather

focusses on a desktop review of the general requirements of ECA #1688-8HZNJG in relation to the approved SWMP's.

2.0 INSPECTION OBSERVATION

Facility MEWS (Works) Number:
Not Applicable

Sector Type:
Waste Disposal

Effluent Type:
Landfill Leachate, Storm Water

Receiver Type:
Surface Water

Name of Receiver:
Unnamed ditches/seasonal water courses discharging to Marysville Creek

Is there a sensitive receptor on/in the receiver?
No

N/A

Certificate of Approval Number(s):
Yes
C of A Number(s): ECA #1688-8HZNJG

N/A

2.1 WASTEWATER TREATMENT PROCESS DESCRIPTION

The majority of stormwater accumulated from around the closed landfill (20ha drainage area) is directed via site grading to SWMP No.3 which consists of two (2) large interconnected detention ponds discharging via onsite drainage channels to the nearby Beechwood Road municipal drainage ditch which ultimately connects downgradient of the Site to the Marysville Creek.

The remaining two SWMP's (No.1 and 2) collect stormwater drainage from smaller catchment areas north of the landfill footprint (3.38ha and 4.94ha respectively), discharging to intermittent headwater tributaries of the Marysville Creek.

The 2012 Stormwater Contingency Plan prepared in accordance with the ECA identifies inspection and maintenance requirements in relation to the approved SWMP's and associated ditching, including a commitment for submission of a formal maintenance program 5 years after site closure (~2017) that would formalize a maintenance schedule for the remaining contaminating lifespan of the landfill. Based upon conversation with Company officials it does not appear this formal maintenance schedule was produced, nor has any formal cleaning/maintenance of the three SWMP's been done. Without formal assessment and regular maintenance of the SWMP's, in particular the older SWMPs No.1 and No.2, the Company is unable to determine whether the ponds are functioning as designed/approved with respect to hydraulic performance (capacity, retention times etc.) **See Section 6.0 below.**

Condition Discuss O/M Manual

2.2 EFFLUENT SUMMARY REPORT

What are the facility's effluent limits based on?
None

Does the facility comply with its limits?
Yes

The ECA imposes minimum sampling frequencies (subject to District Manager modification) for a minimum parameter list, however there are no imposed contaminant concentration limits or general objectives contained within the ECA

2.3 SEWAGE TREATMENT WORKS CAPACITY ASSESSMENT

Flow (m^3/day)	Year 1	Year 2	Year 3

	2018	2019	2020
Average daily flow	0.00	0.00	0.00
Maximum daily flow	0.00	0.00	0.00
Capacity Design	0.00	0.00	0.00
% of capacity (based on average daily flow)	0.00	0.00	0.00

There are no flow measurement requirements in the ECA.

2.4 SAMPLING REQUIREMENTS

What are the facility's sampling requirements based on?
Certificate of Approval/Permit

Does the facility meet sampling requirements?
Yes

Sampling is being done by third party environmental consultant in accordance with requirements of ECA. No concerns are noted with the monitoring data presented in the 2020 Annual Report. Monitoring data provided in the upcoming 2021 Annual Report will be reviewed upon submission.

2.5 REPORTING REQUIREMENTS

What are the facility's reporting requirements based on?
Certificate of Approval/Permit

Does the facility meet reporting requirements?
No

Annual Reporting is being conducted as required. Spill events at the site in early 2020 were not initially reported to the ministry as required both by EPA Part X and Condition 10(2) of the ECA. Those non-compliant matters addressed through Provincial Officer's Order issued at the time.

2.6 FLOW MEASUREMENT

No flow measurements required.

2.7 MINISTRY SAMPLE RESULTS

Were Ministry samples collected during the inspection?
No

Reason:
Frozen conditions.

N/A

2.8 FINANCIAL ASSURANCE

N/A

2.9 SPILL PREVENTION AND CONTINGENCY PLANS

Is the facility required to have a Spill Prevention and Contingency Plan (SPCP) as required by Ontario Regulation 224/07?
No

Has the facility had any spills since the last inspection?
Yes

Were all the spills reported to the ministry?
No

Does the facility's operations or spill history suggest that a SPCP be developed?
Yes

Comments:
Condition 10 of the ECA requires preparation of an Operations Manual which includes a requirement for a "Spill

Prevention, Control and Countermeasures Plan". The Operations Manual was reviewed as part of this inspection and found to contain and/or reference contingency planning for the various approved components of the approval. **See Section 6.0 below.**

The ministry will be looking to incorporate spill contingency planning requirements into the upcoming Section 27 ECA amendment.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

No recent previous non-compliances in relation to stormwater management works.

4.0 SUMMARY OF INSPECTION FINDINGS

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?
No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material?
No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment?
No

Specifics:

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material?
No

Specifics:

Was there any indication of minor administrative non-compliance?
No

Specifics:

5.0 ACTION(S) REQUIRED

1. By March 31, 2021 provide to the undersigned Provincial Officer a written response outlining the measures to be taken to conduct a detailed performance assessment of SWMP No.'s 1, 2 and 3 including timeframes for completion of proposed work and submission of findings to the Ministry.

6.0 OTHER INSPECTION FINDINGS

It was determined that both the 2012 Stormwater Contingency Plan and the 2012 Operations and Maintenance Manual had not been reviewed by the Company in the recent past. It is therefore recommended that both documents subsequently be reviewed, to ensure they are still accurate with respect to the current operation/maintenance of the Works. If found to be inaccurate or not reflective of current operational/maintenance requirements then the Plan shall be updated and revised accordingly.

7.0 INCIDENT REPORT

Applicable
6142-BY5J6A

8.0 ATTACHMENTS

PREPARED BY:
Environmental Officer:
Name: **David Arnott**
District Office: **Kingston District Office**
Date: **2021/02/16**
Signature

REVIEWED BY:
District Supervisor:
Name:
District Office:
Date:

Signature:

File Storage Number: SILNRIBE400 - RICHMOND LANDFILL - WASTE MANAGEMENT OF CANADA

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

We want to hear from you. Please tell us about the quality of your interaction with our staff. You can provide feedback at 1-888-745-8888.

APPENDIX

K

2021 ANNUAL SITE AND STORMWATER INFRASTRUCTURE INSPECTION LETTER PREPARED BY WSP CANADA INC. AND DATED OCTOBER 8, 2021

October 8, 2021

Waste Management – Environmental Legacy Management Group
1271 Beechwood Road,
Town of Greater Napanee, ON
K7R 3L1

Attention: Mr. William McDonough, Site Manager

Subject: Annual Site and Stormwater Infrastructure Inspection - Richmond Landfill

Dear Mr. McDonough:

This letter is intended to summarize the findings of the annual site inspection performed by WSP Canada Inc. (WSP) at Waste Management of Canada Corporation's (WM) Richmond Landfill site, located at 1271 Beechwood Road, Town of Greater Napanee, ON. The purpose of the inspection is to verify that the site is operated in compliance with the post closure requirements listed in the site's Environmental Compliance Approvals (ECA).

The site inspection was performed on Tuesday, September 14, 2021. Weather conditions at the time were overcast, with sunny breaks in the afternoon. Winds were estimated at 15 to 20 kilometres per hour (9 to 12 miles per hour), increasing to 25 kilometres per hour (20 miles per hour) in the afternoon. Temperatures ranged from 18 degrees Celsius (C) (64 degrees Fahrenheit (F)) to 22 degrees C (77 degrees F). Ground conditions were damp to dry.

The inspection consisted of a walking tour of the facility, and discussions also took place with Mr. Stan Wallbank of WM. Observations were recorded in a field notebook and photographs were also taken.

In addition this year, an inspection was performed on the stormwater management infrastructure at Stormwater Ponds 1 and 2 on Tuesday, September 21, 2021. You were in attendance for this inspection. Weather conditions were overcast with calm conditions, with a temperature of 22 degrees C (77 degrees F). Ground conditions were dry.

A summary of findings for various components inspected is presented on the following pages:

Suite 101
1450, 1st Avenue West
Owen Sound, ON, Canada N4K 6W2

T: +1 519 376-7612
F: +1 519 376-8008
wsp.com

MAIN ENTRANCE

PAVEMENT

The pavement was observed to be in fair condition, with no litter observed. Evidence of potholes was observed at the entrance off Beechwood Road. Fill has been placed in the potholes since the last inspection. Refer to **Photo 1** in the photo log for reference.

STANDING WATER

No standing water was observed.

FENCING

The following comments pertain to the chain link fence and the paige wire fence along the southern extent of the landfill property:

At the main entrance, the chain link fence was noted to be in fair condition. As noted during previous inspections, several dislodged fence posts were observed. Please refer to **Photo 2** in the photo log for visual reference. The chain link is still intact in these areas.

The paige wire fence along the front of the site along Beechwood Road was observed to be in fair to poor condition. Areas of concern as noted in previous inspections are identified below, along with changes in conditions:

- Just east of the entrance, two (2) trees have been removed. The fence is still leaning in this location;
- A small tree was noted to be down and tangled in the fence east of the anchor at the first hydro pole east of the entrance;
- A section of fence in the valley at and east of the second hydro pole previously observed to be down has been replaced with newer paige wire. Refer to **Photo 3** of the photo log for visual reference. The fence in this area is still leaning and in poor condition;
- There is a gap in the fence at the farm gate west of the third hydro pole (#3193) east of the entrance, and in the fence west of the farm gate;
- Fence posts are leaning in several locations;
- West of the landfill entrance, the fence continues to exhibit a low point at the transition from the chain link fence to post/paige wire fence; and
- Fence posts continue to be obscured by thick vegetation, beginning at the first hydro pole west of the landfill entrance, extending west to the southwest corner near the Beechwood Road and County Road 10 intersection. The “No Trespassing” signs on the fence in this area are becoming obscured due to the vegetation. Refer to **Photo 4** of the photo log for visual reference.

SIGNAGE

Several signs are present at the main entrance and the gates which contain information required by various conditions of the site’s ECA (site closure, closure of the public drop off area, contact number

for those who have questions/comments/complaints, for example). No contact name is listed on the sign. The sign to the east of the main entrance listing contact information is becoming faded and obscured with vegetation, as observed in **Photo 5** of the photo log. This signage does not identify a contact name receiving questions/comments/complaints. Additional signage along the main entrance road includes posted speed limits, the emergency assembly area, and WM promotional safety material. A red canister labeled "Emergency Plan" is located on the chain link fence on the west side of the entrance gate. These signs are in good condition, and do not require replacement.

The Stop sign at the west side of the entrance was found to be leaning away from the traffic path and is becoming obscured with thick vegetation. Refer to **Photo 6** of the photo log for visual reference.

NORTH AND WEST PERIMETER FENCES

NORTH PERIMETER FENCE

The perimeter fence along Selby Road was observed to be in fair to poor condition. Several fence sections are down or contain holes, while in other areas, fence posts are at risk of falling into the ditch due to erosion. "No Trespassing" signs in various locations have either fallen off the fence or are flipped over. As per previous inspections, a gate was noted open at 3682 Selby Road, which permits access to the northwest section of the landfill.

The perimeter fence comprised of t-posts and paige wire east of the entrance to 3792 Selby Road (former WM Wildlife House) extending east approximately 250 metres, is down. Refer to **Photo 7** of the photo log for visual reference.

The former WM Wildlife House is in fair to poor condition. All windows in the house have been smashed, and there is a hole in the roof over the entryway door to the garage. Debris is also present in front of the house. Refer to **Photo 8** of the photo log for visual reference.

WEST PERIMETER FENCE

The perimeter fence along County Road 10 was observed to be in good to fair condition. As noted in previous inspections, the fence has been cut in an area along the northwest corner of the landfill property on County Road 10 to access monitoring wells 82-1 and 82-2, north of hydro tower X527B. Refer to **Photo 9** of the photo log for visual reference. "No Trespassing signs" are predominantly visible, but some signs are becoming faded from sun exposure. Nearly all fence posts are upright, with vegetation becoming entangled in the paige wire. Litter is present in several locations of the ditch along County Road 10.

The lock on the fence gate leading to hydro tower 101-X-21B was cut earlier this year and a different lock has been installed. There is a gap between the chain securing the fence to the fence post.

STORMWATER POND 3

The pond was inspected in two (2) parts; the area east of the main entrance road and the area west of the main entrance road.

Pond 3 east of the main entrance road was noted to be in good condition. The grass on the berms surrounding the pond was mowed in early summer 2021. No erosion was observed on the banks of the pond. The east end of the culvert extending under the main entrance road was obscured by thick vegetation and was not visible. Monitoring wells in this area were noted to be locked with exception of M14 and M12, as noted in previous inspections. At both locations, no lock is present, and the top of the

"casing" can be freely opened. Riprap at the inlet on the northeast side of the pond does not require replacement. No stains, sheens, floating foam or scum was observed. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access.

A large blue barrel remains present at the southwest corner of the landfill property, outside the perimeter fence and adjacent to a nested series of monitoring wells. The barrel has been noted in this location during annual inspections dating back to 2016. It is not clear why the barrel is present.

Pond 3 west of the main entrance road was also noted to be in good condition. The grass has established and was mowed in early summer 2021. No erosion was observed on the banks of the pond. The west end of the culvert extending under the main entrance road is mostly obscured by vegetation and was not visible. No stains, sheens, floating foam or scum was observed. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access. Monitoring wells were noted to be locked.

The outlet control structure at the west end of Pond 3 was also inspected. Low water levels were present in the pond, and no water was entering the outlet structure at the time of the inspection. The solar panel at the west side of the discharge outlet pipe was observed to be lying on the ground as documented in previous inspections. The outlet at Beechwood Road is obscured with vegetation, as seen in **Photo 10** of the photo log, as is the emergency spillway. Portions of the channel from the emergency spillway to the outlet area also overgrown with vegetation. Larger vegetation has established in the spillway channel. The riprap that is visible in the emergency spillway and spillway channel is in good to fair condition. The inlet structure and outlet pipe are also becoming obscured with vegetation. Refer to **Photos 11 and 12** of the photo log for visual reference. The gate valve on the outlet pipe was not operated as the key was not readily located.

No personal floatation devices (PFDs) were observed at the pond.

FORMER PUBLIC DROP OFF AREA AND WEIGH SCALES

A minor amount of loose litter was observed at this location, to the southwest of the flare compound. Refer to **Photo 13** of the photo log for visual reference. No refuse odour was detected at the time of the inspection. The area has been cleared of most garbage trucks. Several containers for litter were noted. Evidence of pest control in the form of several bait boxes was observed. No evidence of vermin was noted. Some potholes were noted to the south of the retaining wall, and in the gravel surface immediately west of the weigh scales. The former re-use centre was observed to be in good condition.

The former parking area west of the public drop off facility, north of Pond 3 was also inspected. Electrical boxes remain secured to the four (4) concrete blocks in this area, but vegetation is obscuring the presence of the boxes and lines. It was not immediately clear if the outlets were connected to live electricity. Roll-off bins have been parked at the path leading to the north side of Stormwater Pond 3, although vehicles can still access the path to the emergency spillway.

The weigh scales were noted to be in fair condition, with some asphalt wear on the west side of the approach ramp. Sections of the protective steel on the east side of the scale were observed to be missing or bent at the access points to the electrical junction boxes under the scale, as noted during previous inspections. The pole containing the scale entrance/exit traffic lights was observed lying on

the ground as per previous inspections. It was not immediately clear if live electricity is present at the pole.

FLARE COMPOUND

The chain link fence surrounding the flare compound was found to be in good condition, with appropriate signage present. The gate to the compound was closed but not locked. New electrical cable from the leachate storage tank and pumping station east of the flare has been installed to the exterior of the electrical building. The flare was not operating at the time of the inspection.

FORMER BORROW AREA

The former borrow area located on the southwest section of the site was noted to be in good to fair condition. Minor erosion was observed in select areas along with sediment accumulation. Minimal vegetation has established. There was no evidence of excavation. Refer to **Photo 14** of the photo log for visual reference.

FORMER COMPOST PAD AND POND

The location of the former compost pad and pond area immediately west of the landfill footprint was examined and found to be in good condition. This area has evolved into a storage area for roll off bins, small dumpsters, and concrete blocks. A single seacan with "WESA" signage is also present. The road leading into the area is in good to fair condition. The road immediately to the south contains numerous potholes and ponded water, as documented during previous inspections.

It was also noted that GM12, a monitoring location just southeast of this area, does not have a lock, as noted in previous reports.

PHYTOREMEDIATION AREA

The trees within the phytoremediation area, located in the Hydro One transmission line right of way, were pruned by Hydro One in spring 2021. Vegetation has re-established in the area since that time. **Photo 15** in the photo log provides a visual reference of the phytoremediation area. As per a condition in ECA No. A371203, vegetation must not exceed a height of 3.65 metres (12 feet) and if reached or exceeded, the vegetation must be pruned forthwith.

It was observed that monitoring well GM5, just off the northwest corner of the access road, has a damaged casing and no lock, as observed during previous inspections.

STORMWATER POND 2

The path to the pond was found to be in good condition up to the midpoint of the north side, where access was then restricted due to substantive vegetative growth. Trees are present on both the interior and exterior sides of the pond. Refer to **Photos 16, 17, and 18** of the photo log for visual reference. Erosion on the banks of the pond was not visible. "Confined Space" signage is present on the drawdown structure and on the "cage" at the drop inlet pipe spillway, but there is no other posted signage advising of the presence of a confined space. The drawdown structure was inspected and the stop logs were found to be in good condition and do not require replacement. Refer to **Photo 19** of the photo log for visual reference. Some water was observed in the area leading up to the inlet. Access to the structures is obscured by vegetation, preventing visual confirmation of stable ground surface. Refer

to **Photo 20** of the photo log for visual reference. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access. The inlets of both pipes in the structures are free of debris. Refer to **Photo 21** of the photo log for visual reference. The outlet pipes are obscured by vegetation and little riprap is present. No evidence of silt exiting the site was observed. Wooden pallets were observed at the outlet pipes, allowing personnel to access the area during high flows. Pallets are unstable and rotten in some locations. Refer to **Photo 22** of the photo log for visual reference. Low water levels were present in the pond, and no flow through the discharge outlet occurred during the inspection. No stains, sheens, floating foam or scum was observed. A PFD was observed on the south side of the pond but was observed to be frayed and in poor condition.

LEACHATE HOLDING LAGOON

The leachate holding lagoon was found to be in good to fair condition. Leachate is present in the lagoon, but no transfer of leachate to the landfill mound was occurring. Access around the north, south, west, and east sides of the lagoon has been maintained. The northeast side of the lagoon was not inspected due to tall grass cover. A PFD in good condition was observed lying on the ground on the crest of the northwest bank. Evidence of what appeared to be a former beaver dam was observed in the southeast corner of the lagoon. Refer to **Photo 23** of the photo log for visual reference. No discernible cracks or tears were noted in the exposed high-density polyethylene membrane. "Confined Space" signage was not observed on the in-ground structures on the east and northwest sides of the lagoon. Refer to **Photo 24** of the photo log for visual reference.

STORMWATER POND 1

The path leading to the pond was found to be in good condition, with depressions present on the northeast and southeast sides of the access path. Vehicular access around the pond has been maintained. Refer to **Photos 25 and 26** of the photo log for visual reference. No erosion was observed on the banks. No trees are present on the interior berm, but some shrubs are present. "Confined Space" signage is present on the drawdown structure and on the cage surrounding the drop inlet pipe, but there is no other posted signage advising of the presence of a confined space. Access to the structures is obscured by vegetation, preventing visual confirmation of stable ground surface. The wooden pathway to the drawdown structure is in fair to poor condition. Refer to **Photo 27** of the photo log for visual reference. The stop logs within the drawdown structure were inspected and found to be in poor condition at the base of the structure and require replacement. Refer to **Photo 28** of the photo log for visual reference. Excess vegetation is present at the structures. Refer to **Photos 29 and 30** of the photo log for visual reference. Sediment accumulation in the pond could not be determined due to thick vegetation along the lower banks restricting visibility and access. The inlets of both pipes in the structures are free of debris with some sediment buildup present. Refer to **Photo 31** of the photo log for visual reference. The outlet pipes are obscured by vegetation. No evidence of silt exiting the site was observed. Refer to **Photo 32** of the photo log for visual reference. A cap was found on the outlet of the drop inlet pipe. Refer to **Photo 33** of the photo log for visual reference. No water was present in the pond at the time of the inspection. No stains, sheens, floating foam or scum was observed. No PFDs were observed at the pond.

DITCHES SURROUNDING LANDFILL FOOTPRINT

All grass lined ditches were found to be free of sediment and ponded water. No erosion on the banks of the ditches was observed. Vegetation was in good condition and does not require cutting. Riprap at

ditch inlets and outlets was in good condition. No stains, sheens, floating foam or scum was observed. No areas were identified with excessive sediment that required cleaning.

The northeast, east, and southeast ditches between the north chamber and south pumping station, and from the south pumping station to an area northeast of the flare compound, are awaiting restoration activities from the contractor responsible for installation of the leachate storage system. The work includes ditch re-grading, placement of riprap at culvert inlets/outlets, and hydroseeding. This work is anticipated to be completed by mid-October 2021.

A concrete block remains in place above the culvert installed under the northwest access road in 2018.

LANDFILL MOUND

The landfill mound was noted to be in good to fair condition. WM advised WSP that seep repairs had been completed in select areas on the south and east slopes in May 2021. Vegetation has established in these areas. No obvious leachate seeps were observed. Odour was detected along the southeast and northwest perimeter. It was noted the leachate collection system flushing event was ongoing at the time of the inspection, and several manhole covers had been removed to accommodate this activity. Some brown patches of vegetation were observed on the southeast and northeast slopes, as documented in previous inspections. Refer to **Photo 34** of the photo log for visual reference. Identification of landfill gas wells on the landfill crest were clearly visible, while other locations were not as clearly defined. Monitoring well M19 located on the southeast corner of the landfill mound, continues to be "encased" by a traffic cone, and appears to have experienced additional damage since the last inspection. Refer to **Photo 35** of the photo log for visual reference. It is not clear if this well is part of the current monitoring network.

ACCESS ROAD

The access road surrounding the landfill mound was found to be in good condition. Observations were recorded as follows:

- No standing water was observed;
- Additional granular material has been placed on the northeast, east, and southeast/south central access road, as part of restoration activities from the leachate storage system installation work. Refer to **Photos 36, 37, and 38** of the photo log for visual reference. Additional grading on the road is planned when ditching re-grading activities are completed.
- Some potholes were observed on the road west of the north chamber; and on the northwest and southwest portions of the access road. Refer to **Photos 39 and 40** for visual reference; and
- A few potholes were observed on the south-central access road at the tee intersection and west of the maintenance building. Refer to **Photo 41** of the photo log for visual reference.

FORMER CONTAMINATED SOIL PAD

The soil pad was inspected, and no litter was observed. The area was used for staging various components of the leachate storage tank and storage system construction project currently in progress. Electrical boxes formerly present along the east side of the pad have been removed. The pad was dewatered in summer 2021, using the gate valve south of the interceptor chambers. The catch basin grate at the south end of the pad was found to be free of debris. All three (3) lids at the interceptor

chamber at the southcentral area of the pond were noted to be dislodged. No "Confined Space" signage was noted. Refer to **Photo 42** of the photo log for visual reference. The southwest side of the pad has experienced wear; contains large potholes and is in poor condition. Refer to **Photo 43** of the photo log for visual reference.

LEACHATE STORAGE TANK AND STORAGE SYSTEM PROJECT

Work on installation of the storage tank and system commenced in April 2021 and is ongoing. Refer to **Photo 44** of the photo log for progress completed to date. Completion of the project is anticipated for late October 2021.

RECOMMENDATIONS

The Richmond Landfill was noted to be in good to fair condition, with all infrastructure operating as intended.

ACTION ITEMS – ECA NO. A371203

A review of ECA No. A371203 was undertaken as part of the annual site inspection. Action items to ensure compliance with the ECA are provided as follows:

ECA CONDITION	WSP RECOMMENDATION
Condition 3.3: "the operations and procedures manual shall be…(b) reviewed every five (5) years and updated by the Owner as required…"	It is recommended that WM review the site's operations and procedures manual and update as relevant to account for the leachate storage tank/system infrastructure.
Condition 3.6: "During non-operating hours, the Site entrance and exit gates shall be locked and the Site shall be secured against access by unauthorized persons."	It is recommended that all perimeter and chain link fencing should be repaired at the identified locations to improve site security. The gate on Selby Road should also be closed and secured to ensure site security and restrict trespassers.
Condition 3.7: "Site roads shall be maintained in a manner approved by Item 19 of Schedule "A" (final closure plan).	Repairs to the access roads are recommended.
Condition 3.8: "The Site shall be operated and maintained such that…litter…do not create a nuisance."	Cleanup of the litter from the area southwest of the flare compound; and at the former WM Wildlife Habitat House; is recommended.
Condition 6.1: "A training plan for all employees that operate any aspect of the site shall be developed and implemented by the Operator. Only trained employees shall operate any aspect of the Site or carry out any activity required under this ECA…"	It is recommended that WM update the site's training plan and ensure employees operating the system are properly trained on the leachate storage tank/storage system infrastructure.
Condition 8.1: "The Owner shall ensure all groundwater monitoring wells are properly capped, locked, and protected from damage."	It is recommended that locks be installed on all monitoring wells. At monitoring well M19, repairs and a proper casing are recommended.

ECA CONDITION	WSP RECOMMENDATION
Condition 11.2: "The Owner shall post the Site complaints procedure at Site entrance along with the name and phone number of a suitable, local contact to receive complaints or questions related to the Site."	The site's complaints procedure signage at the main entrance is faded and obscured by vegetation. Some information required by the ECA condition (name of contact) is also missing. It is recommended the signage be cleared of vegetation and updated with suitable contact information.

ACTION ITEMS - STORMWATER INFRASTRUCTURE

In March 2021, WSP was advised by WM that the Ministry of Environment, Conservation and Parks (MECP) Kingston District Office had completed a desktop review of the site's ECAs. An action item was identified by the MECP pertaining to the Industrial Sewage Works ECA No. 1688-8HZNJG. The stormwater contingency plan submitted by WM in 2012 (a requirement of submission under this ECA) identified inspection and maintenance requirements in relation to the stormwater ponds and associated ditching, including a commitment for submission of a formal maintenance program five (5) years after site closure that would formalize a maintenance schedule for the duration of the site's contaminating lifespan. The MECP could not determine if this plan had been submitted. The MECP requested a written response from WM by April 30, 2021 outlining measures to be taken to conduct a detailed performance assessment of the ponds, including a schedule of inspection and maintenance activities, with timeframes for completing of maintenance work and submission of findings to the MECP. In late April 2021, WM submitted a stormwater inspection and maintenance schedule to the MECP on April 30, 2021. Within this document was a statement that maintenance recommendations for each stormwater pond would be included in the annual site inspection report. To date, no response has been received from the MECP regarding this submission.

Inspection of the stormwater infrastructure (Stormwater Pond 3) was completed by WSP on September 14, 2021, while inspection of Stormwater Ponds 1 and 2 was completed by WSP and WM on September 21, 2021. In accordance with the inspection tables included in the April 2021 inspection and maintenance schedule, the ponds and associated infrastructure were inspected, and observations were recorded.

The stormwater infrastructure observations are provided in greater detail under the Stormwater Pond headings in this inspection report. Maintenance recommendations for each pond are provided on the following pages:

STORMWATER POND 1

- All vegetation greater in height and diameter than a shrub should be removed from the interior and exterior pond banks (minimal vegetation of this type is present);
- Regrading of the path around the top of the pond is recommended to improve accessibility for vehicles;

- Improvements to the accessibility of the drainage structures in the pond; and to the outlet pipes, should be undertaken. Vegetation should be cleared and leveling of the ground to the structures are examples of improvements;
- Excess vegetation at the inlet and secondary inlet structures should be cleared to improve visibility during future inspections. Improved access would also permit measurements of sediment accumulation within the pond to be completed;
- Excess vegetation at the outlet pipes should be cleared to improve visibility during future inspections, and to confirm no silt is exiting the site;
- Stop logs within the inlet structure should be replaced;
- Investigate the reason the outlet pipe from the secondary structure is capped, and consider removing the cap to permit drainage;
- Replace the "Confined Space" signage at both structures, and mount signage on posts near the structures for visibility; and
- Install at least one (1) PFD at the stormwater pond.

STORMWATER POND 2

- All vegetation greater in height and diameter than a shrub should be removed from the interior and exterior pond banks. Vegetation along the northeast and east sides of the pond currently restricts vehicle access around the pond, and accessing the area by foot is difficult;
- Regrading of the path around the northeast and east sides of the pond is recommended after vegetation removal to improve accessibility for vehicles;
- Improvements to the accessibility of the drainage structures in the pond; and to the outlet pipes, should be undertaken, such as clearing of vegetation and re-grading of the ground to the structures;
- Excess vegetation at the inlet and secondary inlet structures should be cleared to improve visibility during future inspections. Improved access would also permit measurements of sediment accumulation within the pond to be completed;
- Excess vegetation at the outlet pipes should be cleared to improve visibility during future inspections, and to confirm no silt is exiting the site. Replacement of the wooden pallets over the outlet pipe with a more stable platform is also recommended;
- Replace the "Confined Space" signage at both structures, and mount signage on posts near the structures for visibility; and
- Replace the existing PFD with one (1) new PFD.

STORMWATER POND 3

- All vegetation greater in height and diameter than a shrub should be removed from the emergency spillway and spillway outlet channel;
- Improvements to the accessibility of the drainage culvert under the main entrance road, should be undertaken, such as clearing of vegetation from the culvert ends, and confirming access to

these culverts is stable. Currently both ends of the culvert are not visible due to thick vegetation;

- Excess vegetation at the inlet structure should be cleared to improve visibility during future inspections. Improved access would also permit measurements of sediment accumulation within the pond to be completed;
- Excess vegetation at the outlet pipes and in the outlet channel, particularly at the discharge point near Beechwood Road, should be cleared to improve visibility during future inspections and to verify no silt is exiting the site;
- Operation of the valve at the outlet pipe should be undertaken to confirm functionality of the valve. A key for the valve was not located during the inspection;
- No "Confined Space" signage is present at the inlet structure. Signs are present on the interceptor chambers at the northeast end of the pond, but no signage is posted anywhere. Add signage to the inlet structure and post signage at the structure and at the interceptor chambers;
- The lids at the interceptor chambers off the former contaminated soil pad should be secured; and
- Install PFDs at both the east and west ponds.

RECOMMENDATIONS - GENERAL

- Brush and other vegetative matter should be removed from site signage (No Trespassing signs on perimeter fence, from Stop sign at landfill entrance and from sign east of main entrance with contact information) so the signs are clearly visible. The Stop sign at the site exit should also be turned so it is clearly visible to outbound traffic;
- Regrading of the former public drop off area and the path leading to the Stormwater Pond 3 emergency spillway is recommended to fill potholes, prevent ponded water, and improve overall access;
- Electrical boxes present to the west of the former public drop off area should be clearly marked. If these boxes are "live", signage indicating the presence of electricity should be posted, or consider disabling the electricity to these areas;
- To protect the electrical junction boxes currently exposed under the east side of the weigh scales, consider replacing the steel "skirt". Also, it should be confirmed if "live" electricity is present here and at the traffic signal pole lying on the ground northeast of the scale;
- Regrading of the road into the former compost pad and pond area is recommended to fill potholes, prevent ponded water, and improve overall access;
- At the leachate holding lagoon, it is recommended that PFDs be installed near the discharge line. "Confined Space" signage is also recommended for installation on the inground structures, with additional signage posted to advise of the presence of a confined space;

- Consider improvements to the travel surface on the former contaminated soil pad, particularly along the southwest portion. Erosion and potholes should be filled to improve access.

It is noted the 2022 inspection will be scheduled for late summer/early fall, in order to access all locations and to assess vegetative growth on the landfill mound and in the former borrow area.

We trust the enclosed is satisfactory. However, should you have any questions or require clarification, please do not hesitate to contact the undersigned.

Yours truly,

Beverly (Bev) D. Minshall, C.E.T., rcji
Environmental Technologist
/bdm/dlw
Encl.
cc: Mr. Jim Forney, Group Director, Midwest, WM – Environmental Legacy Management Group
Mr. Noah Wayt, WM – Environmental Legacy Management Group
Ms. Cristina Olarte, P.Eng., Waste Management Engineer, WSP

WSP ref.: 081-12459-02 (8570)

Photo 1: View facing north of the pavement at the site entrance off Beechwood Road. Potholes have been filled with granular material.

Photo 2: View facing southeast of the chain link fence along the east side of the landfill entrance. The posts have separated from the top rail.

Photo 3: View facing north of a section of wire fence east of the landfill entrance along Beechwood Road. A hole previously observed in the fence has been repaired.

Photo 4: View facing southeast of paige wire fence west of the site entrance. “No Trespassing” signs are obscured by thick vegetation.

Photo 5: View facing northeast of the signage east of the landfill entrance. The sign is becoming obscured by vegetation, which affects visibility of the contact information.

Photo 6: View facing southwest of the Stop sign at the landfill entrance. The Stop sign is leaning away from the traffic sight line and thick vegetation is obscuring additional signage on the fence.

Photo 7: View facing southwest of a section of the north perimeter fence along Selby Road, east of the former Wildlife Habitat house. Fence posts in the area are leaning, the paige wire fence is down, and the "No Trespassing" sign (circled) is not visible.

Photo 8: View facing southeast of the Wildlife Habitat house at 3792 Selby Road. All windows in the house have been smashed; a hole is present in the garage roof; and debris is present at the front of the house.

Photo 9: View facing east of a hole in the paige wire fence along County Road 10, east of hydro tower ID X527B and west of monitoring wells 82-1 and 82-2.

Photo 10: View facing southwest of the Stormwater Pond 3 spillway channel outlet to the north ditch along Beechwood Road. The outlet is becoming obscured with thick vegetation.

Photo 11: View facing southwest of the inlet structure at the west end of Stormwater Pond 3. The inlet to the structure (circled) is presently clear, but vegetation is beginning to encroach the area.

Photo 12: View of the outlet pipe at the west end of Stormwater Pond 3. The outlet is becoming obscured by vegetation.

Photo 13: View facing northwest of the area south of the flare compound. Litter was observed in several locations.

Photo 14: View facing west of the former borrow area. No evidence of excavation was observed.

Photo 15: View facing east of the phytoremediation system. Vegetation was pruned by Hydro One in spring 2021.

Photo 16: View facing north of the access path leading to Stormwater Pond 2. The path is in good condition.

Photo 17: View facing west of the path along the south side of Stormwater Pond 2. Large trees are present on the interior of the pond.

Photo 18: View facing east of the northeast path around Stormwater Pond 2. Vegetation has obscured the path, restricting access.

Photo 19: View of the stop logs present within the drawdown structure of Stormwater Pond 2.

Photo 20: View facing south of the drop inlet pipe spillway structure at Stormwater Pond 2. Vegetation is obscuring access.

Photo 21: View inside drop inlet pipe structure at Stormwater Pond 2. Sediment is present in the structure but does not obstruct flow.

Photo 22: View of the outlet pipe from Stormwater Pond 2. Wooden pallets allow for access during high flows but are not considered to be a stable walking surface. No evidence of silt exiting the site was observed.

Photo 23: View facing southwest of the leachate holding lagoon. Debris shown in the water may be evidence of a former beaver dam. No evidence of rodents (no damage to the HDPE liner) was observed.

Photo 24: View facing east of the northwest structure at the leachate holding lagoon. "Confined Space" signage was not observed.

Photo 25: View facing west of the access path around the southwest portion of Stormwater Pond 1.

Photo 26: View facing north of the access path around the west side of Stormwater Pond 1.

Photo 27: View facing south of access to the draw down structure at Stormwater Pond 1.

Photo 28: View of the stop logs inside the draw down structure at Stormwater Pond 1. Boards at the base of the structure have rotted and require replacement.

Photo 29: View of the drop inlet pipe structure (circled) at Stormwater Pond 1. Vegetation has obscured the structure.

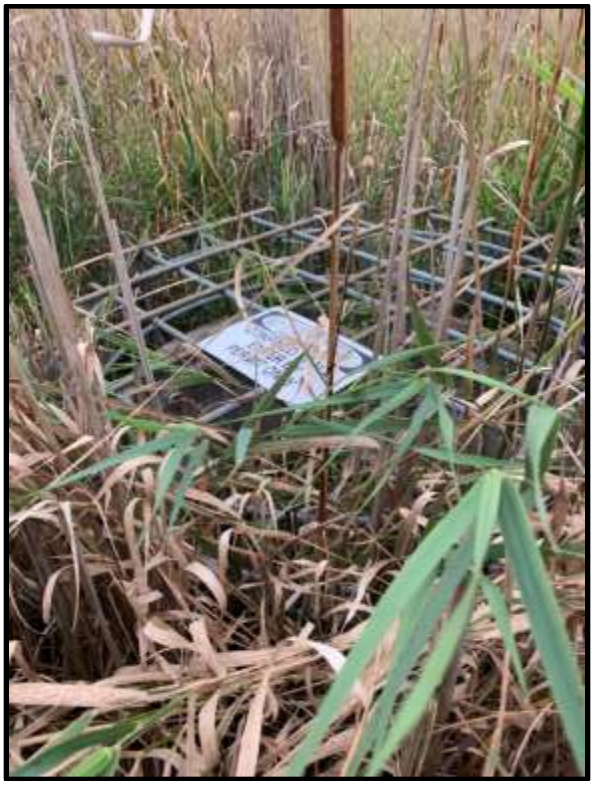


Photo 30: View of the "cage" over the drop inlet pipe structure at Stormwater Pond 1. Vegetation is obscuring access to the structure.

Photo 31: View of the inlet pipe of the drop inlet pipe structure at Stormwater Pond 1.

Photo 32: View of the outlet pipe from the drawdown structure at Stormwater Pond 1. No evidence of silt exiting the pond was observed.

Photo 33: View of the outlet pipe from the drop inlet pipe structure at Stormwater Pond 1. A cap is present on the outlet pipe.

Photo 34: View facing south of the northeast landfill mound. Brown patches are visible at locations of former seep repairs.

Photo 35: View (encircled) of monitoring well M19 on the southeast corner of the landfill. It is not clear if the well is part of the site's monitoring network.

Photo 36: View facing east of granular material placed on the northeast access road, as part of the leachate forcemain installation restoration activities.

Photo 37: View facing south of granular material placed on the east access road as part of leachate forcemain installation restoration activities.

Photo 38: View facing south of granular material placed on the southeast access road as part of leachate forcemain installation restoration activities.

Photo 39: View facing west of potholes present on the north central access road, west of the north chamber.

Photo 40: View facing north of potholes present on the southwest access road, northwest of the base of the landfill mound access road.

Photo 41: View facing south of a pothole present on the west side of the tee intersection at the maintenance building.

Photo 42: View of the dislodged lids south of the former contaminated soil pad. No “Confined Space” signage is present.

Photo 43: View facing west of the southwest side of the former contaminated soil pad. Potholes are present and the area has exhibited wear.

Photo 44: View facing southeast of progress on the leachate storage system construction project