

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 0084-78RKAM
Issue Date: February 27, 2020

Walker Environmental Group Inc.
Post Office Box, No. 100
Thorold, Ontario
L2N 7S9

Site Location: Walker South Landfill
3081 Taylor Rd
Niagara Falls City, Regional Municipality of Niagara

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 and operation of a 53.9 hectare waste disposal site within a total site area of 85.68 hectares having a maximum capacity of 17.7 million cubic meters, being known as the South Landfill Site,

to be used for the landfilling of the following types of waste:

Solid Non Hazardous Waste which includes Asbestos

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

"Adverse Effect " means the same as the definition in the EPA.

"Anniversary Date" means the date on which waste is first received at the *Site* ;

"Approval" or "ECA" means this entire Environmental Compliance Approval, issued in accordance with section 39 of the *EPA* , and includes any schedules to it, the application and the supporting documentation listed in schedule "A";

"Director " means any means any *Ministry* employee appointed by the Minister pursuant to Part II.1 of the Environmental Protection Act, as amended.;

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

"**Engineer**" means holder of a professional engineering licence, a temporary licence, a provisional licence, a limited licence or a certificate of authorization, as the case requires.

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

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

"**Operator**" means any person, other than the Owner's employees, authorized by the Owner as having the charge, management or control of any aspect of the site its successors or assigns;

"**Owner**" means any person that is responsible for the establishment or operation of the site being approved by this *Approval*, and includes the Niagara Waste Systems, its successors and assignees;

"**OWRA**" means the Ontario Water Resource Act, R.S.O 1990, Chapter O.40

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

"**PLC**" means the Public Liaison Committee;

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

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

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

"**Regulation 419**" or "**Reg. 419**" means Ontario Regulation 419, R.R.O.2005, made under the *EPA*, as amended from time to time;

"**Site**" means the entire South Landfill Site, including the buffer lands located at Parts of lots 31, 49, 50 and 66 in the (Former Township of Stamford) City of Niagara Falls in the Regional Municipality of Niagara, approved by this *ECA*.

"**Trained personnel**" means knowledgeable in the following through instruction and/or practice:

- i. relevant waste management legislation, regulations and guidelines;
- ii. major environmental concerns pertaining to the waste to be handled;

- iii. occupational health and safety concerns pertaining to the processes and wastes to be handled;
- iv. management procedures including the use and operation of equipment for the processes and wastes to be handled;
- v. emergency response procedures;
- vii. specific written procedures for the control of nuisance conditions;
- viii. Specific written procedures for refusal of unacceptable waste loads;
- ix. the requirements of this *ECA* .

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

TERMS AND CONDITIONS

General

1. This Approval revokes all previously issued Environmental Compliance Approval issued under Part V, EPA, for this *Site* . The approval given herein, including the Terms and Conditions set out, replaces all previously issued approvals and related Terms and Conditions under Part V, EPA for this *Site* .
2. The *Owner* and *Operator* shall ensure compliance with all the conditions of this *Approval* and shall ensure that persons authorized to carry out work on or operate any aspect of the *Site* is notified of this *Approval* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
3. Except as otherwise provided for in this *Approval* , the *Site* shall be designed, developed, built, operated and maintained in accordance with the application for this *Approval* , dated November 21, 2006, and the supporting documentation listed in Schedule "A"
4. (1) If there is a conflict between a provision of any document listed in Schedule "A" and a provision of any term or condition in this Approval of Approval, the provision in the term or condition shall apply.
 (2) If there is a conflict between documents listed in Schedule "A", the document bearing the most recent date shall apply.
5. The conditions of this *Approval* are severable. If any condition of this *Approval* , or the application of any condition of this *Approval* to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this *Approval* shall not be affected thereby.
6. 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 *Approval* or under any statute,

regulation or other legal requirement, 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 term or condition of this *Approval* or any statute, regulation or other legal requirement; or
- ii. acceptance by the *Ministry* of the information completeness or accuracy.

Adverse Effect

7. (1) The Owner and Operator shall take steps to minimize and ameliorate any adverse effect on the natural environment or impairment of water quality resulting from the *Site*, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- (2) The Owner shall ensure the *Site* is in compliance with Ontario Regulation 419/05.
8. Despite an *Owner, Operator* or any other person fulfilling any obligations imposed by this *Approval* the person remains responsible for any contravention of any other condition of this *Approval* or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect to the natural environment or impairment of water quality.

Inspection

9. The Owner and *Operator* shall take all reasonable steps to have trained personnel inspect the *Site* for any situation which may cause an adverse effect and to ensure that the *Site* is being operated in accordance with this *Approval*.

Certificate of Requirement

10. 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 *Approval* to each person acquiring an interest in the *Site* as a result of the dealing.
11. In the event any additional lands are acquired and added to the *Site* , the Owner shall:
 - (i) Within 60 days of the date of the land acquisition, submit to the Director for their review, two copies of a completed Certificate of Requirement and a registerable description of the new land; and
 - (ii) Within 10 calendar days of receiving the Certificate of Requirement authorized by the Director, register the Certificate of Requirement in the appropriate Land Registry Office on title to the Property and submit to the Director the duplicate registered copy immediately following registration.

Transferral or Encumbrance of Site

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

Notification

13. 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;

Inspection by Provincial Officer

14. No person shall hinder or obstruct any and all inspection authorized by the EPA, the OWRA and the PA of any place to which this Approval of Approval relates, and without restricting the generality of the foregoing, to
 - i. enter upon, at reasonable times, the premises or the location where the records required by the conditions of this Approval are kept;
 - ii. have access to, inspect, and copy, at reasonable times, any records required to be kept by the conditions of this *Approval* ;
 - iii. inspect , *at reasonable times*, the *Site* and related equipment and appurtenances;
 - iv. to inspect, at reasonable times, the practices, procedures, or operations required by the conditions of this *Approval* ; and
 - v. to sample and monitor for the purposes of assessing compliance with the terms and conditions of this *Approval*, the *EPA* , the *OWRA* or the *PA* .

Information and Records Retention

15. Any information requested by the *Ministry* or by a *Provincial Officer* , concerning the *Site* and its operation under this *Approval* , including but not limited to any records required to be kept by this *Approval* shall be provided to the *Ministry*, upon request, in a timely manner.
16. 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 *Approval* or under any statute,

regulation or other legal requirement, in relation to the information, shall not be construed as:

- a. an approval, waiver, or justification by the *Ministry* of any act or omission of any person that contravenes any term or condition of this *Approval* or any statute, regulation or other legal requirement; or
 - b. acceptance by the *Ministry* of the information completeness or accuracy.
17. The *Owner* shall retain records required by this Approval for a minimum of two (2) years except as otherwise authorized in writing by the *Director* .
18. The *Owner* shall maintain copies of documents listed in Schedule "A" of this Approval and make them available for inspection by a *Provincial Officer* upon request.

Financial Assurance

19. (1) The *Owner* shall ensure Financial Assurance, as defined in Section 131 of the *Act* , for the amount as identified in Schedule "E" of this *ECA* is submit to the *Director* by April 30 of each year. This Financial Assurance shall be in a form acceptable to the *Director* and shall provide sufficient funds for the closure, contingency, post-closure monitoring, operation and maintenance of the *Site* .
- (2) Cumulative amounts of the financial assurance following the end of the 4-year period identified in Schedule "E" shall be re-calculated based on the financial assurance re-evaluation report required under Condition No. 20.
20. (1) By no later than **April 30, 2022**, and every three years thereafter, the *Owner* shall submit a Financial Assurance Re-Evaluation Report to the *Director* for approval, with copies to the *District Manager*. The re-evaluation report shall include:
- i. updates of the discount, interest and inflation rates associated with the requirements for financial assurance in this *Approval* including justifications and sources of the proposed rates; and
 - ii. 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 *Approval* are based. The report shall take into consideration the:
 - (1) actual amounts of waste landfilled;
 - (2) projected rate of fill;
 - (3) progressive capping of completed fill areas;
 - (4) leachate generation rates;
 - (5) landfill gas generation rates;
 - (6) contaminating life span of the Site with respect to groundwater, surface water and landfill gas;
 - (7) any measures that have been carried out or need to be carried out to

prevent and ameliorate any adverse effect that relates to the site;
and

- (8) annual inspection, maintenance, and monitoring costs, including costs for leachate treatment and disposal and landfill gas use or discharge.

iii Updates on required Contingency Costs for the *Site*.

- (2) In the event a updated sewer-use discharge agreement is not reached between the *Owner* and the upper or lower tier Municipal Government to address all leachate volumes generated at the *Owner* 's *Site* , the *Owner* shall include all costs for the handling, transport and disposal of leachate at the site in the financial assurance calculations.

21. 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 60 days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.

Public Liaison Committee

22. Upon issuance of the *Approval* , the *Owner* shall incorporate into the existing Walker Public Liaison Committee the dissemination of information, review and exchange of information and monitoring results relevant to the operation of the *Site* .

23. The *Owner* shall provide the following to the *PLC* for review and recommendations:

- i. update of landfilling operations at the site
- ii. the Annual Report required by Condition No. (88)
- iii. proposed changes to the Environmental Compliance Approval for the Site; and
- iv. complaints and complaint response procedures
- v. closure plans

24. The *Owner* shall review annually in consultation with the members of the *PLC* the need for the committee, and the committee may be suspended upon consent of the *Regional Director* should there be insufficient interest among the public members.

25. The *Owner* shall not construe any recommendations provided by the *PLC* as supervisory or regulatory to the operation of the *Site* or as an approval of operations of the site.

Construction, Installation and Planning

Major Works

26. For the purposes of this *Approval*, major works includes, but are not limited to the following:

- i. Liner system;
 - ii. Leachate management system;
 - iii. Groundwater management system;
 - iv. Stormwater management system
 - v. Gas management system
27. A final detailed design shall be prepared for each *Major Work* to be constructed at the *Site* consistent with the conceptual design of the *Site* as presented in the Supporting Documentation Items (3), (7) and (9) in Schedule "A".
28. The final detailed design of each *Major Work* shall include the following:
 - i. design drawings and specifications;
 - ii. 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
 - iii. details on the monitoring, maintenance, repair and replacement of the engineered components of the major work, if any.
29. 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.
30. The final detailed design of each *Major Work* shall be submitted to the *Director* for approval, with two (2) copies to the District Manager.
31.
 - (1) No construction of a *Major Work* shall commence prior to the Director approving, in writing, the final detailed design of that Major Work. Each major work shall be constructed in accordance with the approved final detailed design and the QA/QC procedures shall be implemented as approved by the Director.
 - (2) Stage 1 Liner and Leachate Collection System is hereby approved as follows:
 - (i) Approval is granted for the detailed design for Stage 1 Liner and Leachate Collection System, all in accordance with the documentation listed as Items 26 through 30 in Schedule "A"; and
 - (ii) Revisions to the detailed design for Stage 1 Liner and Leachate Collection System in accordance with Items 26.(4), (7), (8), (10), (11), (13), (17), (18), (20), (21) and 42 in Schedule "A" are hereby approved.
 - (3) The Stage 2 Liner and Leachate Collection System is hereby approved, all in accordance with the documentation listed as Items 59 through 62 in Schedule "A".
 - (4) The detailed design of the stormwater management pond is hereby approved, all in accordance

with the documentation listed as Items 63 and 64 in Schedule "A".

- (5) Pursuant to Condition 30 of the ECA, the detailed design for Stage 3 liner and leachate collection system included in Items 73 and 74 in Schedule "A" is hereby approved.
 - (6) The detailed design for Stage 4 liner and leachate collection system is hereby approved, all in accordance with Item 78 of Schedule "A".
32. (1) Prior to accepting waste, the Owner shall submit in writing to the District Manager a letter indicating that the major works (as applied for under Condition 30) have been constructed as per approved detailed designs and request permission to commence landfilling in that Stage/Phase.
- (2) Landfilling in an approved Stage/Phase shall not commence until the Owner has received confirmation from the District Manager for the request in Condition No. 32(1) and the Financial Assurance required and approved by the Director as identified in Condition No. (19) has been received by the Director.
- (3) Within one hundred and twenty (120) days of receiving confirmation from the District Manager (as identified in Condition No. 32(2)), the *Owner* shall submit to the *Director* and *District Manager*, a written *Construction Report* documenting:
- i. all construction activities for the Stage/Phase;
 - ii. *QA/QC* activities;
 - iii. *Site* conditions; and,
 - iv. all details of the construction of the approved stage.
- are in accordance with the approved design plans and specifications.

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

Subsequent Stages

34. At least six months prior to the anticipated initiation or completion of landfilling in each Stage/Phase of the *Site*, a final detailed design for all applicable major works for the subsequent stage/phase shall be submitted to the *Director* for approval in accordance with the Condition No. (27).
35. (1) Prior to accepting waste in each subsequent Phase/Stage, the Owner shall submit in writing to the District Manager a letter indicating that the major works (as applied for under Condition 34) have been constructed as per approved detailed designs and request permission to commence landfilling in that Stage/Phase.
- (2) Landfilling in an approved Stage/Phase shall not commence until the Owner has received

confirmation from the District Manager for the request in Condition No. 35(1).

- (3) Within one hundred and twenty days of receiving confirmation from the District Manager (as identified in Condition No. 35(2), the *Owner* shall submit to the *Director* and *District Manager*, a written *Construction Report* documenting:
- i. all construction activities for the Stage/Phase;
 - ii. *QA/QC* activities;
 - iii. *Site* conditions; and,
 - iv. all details of the construction of the approved stage;

are in accordance with the approved design plans and specifications.

Geomembrane

36. The geomembrane shall be protected against puncturing and load-induced damage at all times, including during installation. During installation, care shall also be taken to:
- a. remove wrinkles in the geomembrane;
 - b. minimize stress concentration;
 - c. ensure high quality seams;
 - d. minimize differential settlement;
 - e. minimize exposure to ultraviolet light;
 - f. prevent damage due to sliding;
 - g. prevent damage due to installation in cold conditions; and
 - h. prevent damage due to rodents.
37. To ensure that the geosynthetic products specified in the design have been supplied and installed in accordance with the design drawings and specifications, a qualified inspector(s) shall be on the Site during construction to sample, test and confirm installation in accordance with the recommendations of the manufacturers, design drawings and specifications, and *QA/QC* procedures.

Blast Monitoring for Liner Performance

38. (1) The *Owner* shall ensure that no blasting operations in the Southeast Quarry causes damage to the liner system.
- (2) If Walker Aggregates Inc. is extracting rock in the Southeast Quarry directly along Taylor Road adjacent to where liner is to be constructed in Stage 2 of landfilling, then the *Owner* shall prepare a monitoring plan to ensure the ground vibration generated from the blast will not affect the performance of the liner system. The *Owner* shall submit the plan to the *Director* for approval, with copies to the *District Manager*. The *Director* must approve the plan before the liner construction can proceed.

Operation

Proper Operation

39. (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*, *Regulation 347*, *Regulation 232*, and the requirements of this *Approval*. At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.
- (2) Any changes to the Design and Operations Report shall be submitted to the *Director* for approval prior to their implementation.

Scavenging

40. The *Owner* shall ensure no scavenging at the *Site* occurs.

Burning Waste Prohibited

41. Burning of waste at the *Site* is prohibited.

Waste Type

42. Only solid non-hazardous waste (including asbestos) shall be accepted at the *Site*.

Capacity

43. (1) The total capacity of the *Site* is **17,700,000** cubic metres; and
- (2). The total capacity as identified in Condition No. 43(1) does not include the composite liner, leachate collection system or the final cover.

Daily and Annual Waste Limit

44. (1) No more than **10,000 tonnes** of waste per day shall be accepted at the *Site*.
- (2) The maximum rate at which the *Site* can receive waste is **1,100,000 tonnes** of waste per year consisting of the following breakdown:
- i. **850,000 tonnes** of solid non-hazardous waste; and
 - ii. **250,000 tonnes** of solid non-hazardous waste that meets the description of waste permitted for use as daily/interim cover as provided in Section 5.9 of Item No. 3 in Schedule "A" for use as daily and interim cover.
- (3) The maximum amount identified in Condition No. 44(2) includes an allowance of up to **100,000 tonnes** per year dedicated exclusively to the Region of Niagara. It also includes

approved wastes that are used as cover.

Service Area

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

Design and Operations Report

46. The Design and Operations Report shall be:

- i. retained at the Site;
- ii. kept up to date through periodic revisions; and
- iii. be available for inspection by *Ministry* staff.

Cover

47. The Owner shall ensure that a thickness of at least 4.0 m of waste (the upper 2.0 m shall be compacted waste) and cover material exists over the area of the leachate collection layer where the biosolids are to be landfilled prior to landfilling the biosolids.

48. Cover material shall be applied as follows:

- a. Daily Cover - At the end of each working day, the entire working face shall be covered with a minimum thickness of 150 mm of soil material or other material approved under Reg. 232/98 or any other alternative daily cover material approved by this Approval.
- b. Intermediate Cover - In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 mm material cover material (which restricts infiltration to less than 150 mm/year). This materials may consist of soil, contaminated soils, foundry sands, slag, aggregate grindings, aggregate production by-products (limited to shale, ground stone and crushed concrete) manufactured cover materials, or, an approved thickness of alternative cover material approved by this Approval; and
- c. Final Cover - In areas where landfilling has been completed to final contours, a minimum 600 mm thick layer of final soil cover and 150 mm of topsoil shall be placed as described in Item (3) in Schedule "A". Fill areas shall be progressively completed and rehabilitated as landfill development has reached final contours.

49. Alternative materials not approved by this Approval may be used as daily and interim cover material, subject to an approval by the *Director* via an amendment to the *Approval* .

Waste Placement

50. No waste shall be landfilled outside of the **limit of fill area** as shown in Item (3) in Schedule "A" attached to this *Approval*. No waste shall be landfilled in the buffer area.
51. Final slopes above grade at the time of *Site* closure within the waste fill area shall be within the range of 4H:1V (25%) and 20H:1V (5%).
52. The maximum height of the waste shall be 212.50 mASL.

Spills

53. All spills shall be forthwith reported to the Ministry's Spills Action Centre (SAC) and shall be recorded in a log as to the nature of the spill or upset, and the action taken for clean-up, correction and prevention of future occurrences

Buffer

54. A minimum buffer area width of thirty (30) metres shall be maintained between the perimeter of the approved fill area and the property line

Landfill Staging

55. Waste Landfilling Operations shall proceed in the various stages in the following order:
 - i. Stage 1;
 - ii. Stage 2;
 - iii. Stage 3; and
 - iv. Stage 4.

Impacted Surface Water

56. The *Owner* shall ensure that any surface water contaminated with leachate within the active limit of landfilling area shall be directed to the leachate collection/treatment system, recirculated back into the landfill, or removed off-site for disposal at an approved facility.

Hours of Operation

57. Waste shall only be accepted at the *Site* during the following time periods:
 - i. 7:00 am to 7:00 pm - Monday to Friday (except statutory holidays); and
 - ii. 7:00 am to 1:00 pm - Saturday.
58. On Saturdays that are most proximal to a Statutory holiday, hours of waste receipt may be extended to 4:00pm to receive waste only from curbside pick-up within the Region of Niagara.

59. On-site equipment used for daily site preparation and closing activities shall only be used during the following time periods:
- i. 6:00 am to 9:00 pm - Monday to Friday (except statutory holidays);
 - ii. 6:00 am to 3:00 pm - Saturday; and
 - iii. 24 hours a day and on Sundays during emergency events such as large snow events, large melt events, extreme rain events, and fire emergencies.
60. On Saturdays that are most proximal to a statutory holiday, hours of on-site equipment use may be extended to 6:00 pm to manage waste only from curbside pick-up within the Region of Niagara.
61. The operating hours may be extended to accommodate seasonal or unusual quantities of waste with the prior written approval concurrence of the *District Manager*

Site Access

62. (1) The Owner shall only permit access to and exit from the *Site* for the transportation of waste via the main entrance/exit at **3081 Taylor Road, Niagara Falls, Ontario**.
- (2) Prior to the completion of construction of the main entrance on Taylor Road, the East Landfill entrance on Thorold Townline Road may be used as temporary access to the Site for the transportation of waste in accordance with Items 36, 37 and 39 in Schedule "A".
63. The Owner shall provide and maintain access roads and on-site roads so that vehicles hauling waste to and on the *Site* may travel readily on any operating day.

Site Security

64. During non-operating hours, the Owner shall lock the site entrance and exit gates to secure against access by unauthorized persons.

Signage

65. The Owner shall install and maintain a sign which complies with local by-laws at the main entrance/exit to the *Site* on which is legibly displayed the following information:
- i. the name of the *Site* and *Owner* ;
 - ii. the number of the *Approval* ;
 - iii. the name of the *Operator* ;
 - iv. the normal hours of operation;
 - v. the allowable and prohibited waste types;
 - vi. a telephone number to which complaints may be directed;
 - vii. a twenty-four (24) hour emergency telephone number (if different from above); and
 - viii. a warning against dumping outside the *Site* .

66. The Owner shall install and maintain signs on the site that control speed and direct vehicles to the working face.

Nuisances

67. The Owner shall take all reasonable steps to operate and maintain the *Site* such that the vermin, vectors, dust, litter, odour, noise and traffic do not create an adverse effect.

Cleaning Leachate Collection System

68. (1) For each Stage/Phase, the leachate collection system piping in that Stage/Phase of the landfill shall be inspected annually for the first five years after waste placement overtop of each pipe and then as often as inspections indicate to be necessary .
- (2) The Owner shall conduct and document visual inspections of the leachate collection system (as a component of Condition No. 77) on a monthly basis to assist in determining the need for more frequent cleaning and/or maintenance.
- (3) The leachate collection system shall be cleaned on a frequency as per Reg. 232/98.

Employees and Training

69. A specific training plan for each employee whom is part of any landfill operation at the *Site* shall be developed and implemented by the *Operator* . Only *trained personnel* shall operate any aspect of the *Site* or carry out any activity required under this *Approval* . Documentation of training and personnel whom have taken the training shall be maintained and kept at Niagara Waste Systems Ltd.'s main office at 2800 Thorold Townline Road.

Environmental Inspector

70. The Owner shall permit an Environmental Inspector (which includes other appropriate technical expert(s)) employed by the MOE to inspect the *Site*, during hours of waste disposal operations on such terms and conditions, after consultation with the Owner, as deemed appropriate by the District Manager and, for greater certainty:
- i. the Owner shall provide the Environmental Inspector with adequate office facilities, including a telephone, and a computer, for use when at the South Landfill, and appropriate arrangements for on-site transportation;
 - ii. the Owner shall, on a semi-annual basis, reimburse MOE for the reasonable costs of the Environmental Inspector and associated expenses.
71. Implementation of Condition No. 70 shall be required of the Owner in accordance with the following conditions:

- a.. The Owner shall undertake an air space survey of the bottom and top waste contours to determine the estimated air space used for waste disposal in the prior six months. The air space survey shall include daily cover material and shall take into account settlement. The first air space survey shall be undertaken six months after waste is first received at the Site. The Owner shall undertake further air space surveys semi-annually in January and June after the completion of the first air space survey.
- b. Wastes which the Owner has been ordered to dispose of at the Site by any ministry, department or agency of the federal or Provincial Crown shall be excluded from the air space calculations.
- c. Each Air Space Survey shall be conducted by an Ontario Land Surveyor or other qualified consultant and such air space survey shall be confirmed by the District Manager. The Owner shall keep a copy of each air space survey on-site and make them available to MOE personnel.
- d. Based on the annual rate of waste received at the Site reflected by the most recent air space survey, the Owner shall provide the funding equivalent for an Environmental Inspector being on-site for the following number of days per week as shown in the Table below:

Funding Equivalent to Number of Days Per Week the Environmental Inspector may inspect the Site	Annual Rate Waste Received at the Site in Cubic Meters
1	0 up to 500,000
2	500,000 up to 650,000
3	650,000 up to 800,000
4	800,000 up to 950,000
5	950,000 or more

- e. Notwithstanding Condition No. 71(d), the requirement for an Environmental Inspector shall not commence until the annual rate of fill at the Site is equal to or greater than 350,000 cubic meters.
 - f. Notwithstanding Condition No. 71(d) and 69(e), upon the commencement of the construction of the Site, the District Manager may require funds for an Environmental Inspector to be on-site up to one day per week.
72. Notwithstanding Condition No. 71, the Environmental Inspector may in consultation with the Owner, be increased, reduced, suspended or terminated on such terms and conditions as deemed appropriate by the District Manager and, for greater certainty, the District Manager may require an Environmental Inspector to be on-site for up to five days per week in cases of apparent significant non-compliance with this Approval until such non-compliance is resolved.

73. If the Environmental Inspector is terminated, the District Manager may required the Owner to develop a “Transparency and Accountability Plan” which sets a framework for public access to environmental performance reporting relating to the Site and alternative performance measures program.
74. The Owner shall include as part of the annual reporting for the Site an assessment of the effectiveness of the Compliance, Transparency and Accountability program implemented at the Site and make recommendations for changes in funding, frequency or application of the program.

MONITORING, RECORDING NOTIFICATION

First Receipt of Waste

75. Within one week of the *Anniversary Date* , the *Owner* shall notify the *District Manager* in writing of the date on which the *Site* first received waste

Daily Inspections and Record Keeping

76. (1) The *Owner* shall conduct a visual inspection of the *Site* each day to ensure that: the *Site* is secure; that the operation of the *Site* is not causing any adverse effects on the environment.
- (2) Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the *Site* if needed.
77. The Owner shall keep a record of the inspections in a daily log book or electronically 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.
78. The Owner shall keep daily records (when landfill is operating or landfill activity is on-going) that includes but are not limited to the following landfill related operations:
- a. the type, date and time of arrival, hauler, and quantity (tonnes) of all waste and cover material received at the Site;
 - b. the Stage of the Site in which waste disposal operations are taking place;
 - c. the date of refusals of waste shipments at the Site, the reason for the refusal, and the origin of the waste, if known;
 - d. a calculation of the total quantity (tonnes) of waste received at the Site during each operating day and each operating month;

- e. the amount of any leachate removed, or treated and discharged from the Site (on a monthly basis);
- f. a record of litter collection activities and the application of any dust suppressants;
- g. a record of the daily inspections; and
- h. 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.

Complaints Procedure

79. 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(s) (related to the *Site*) of the complaint and forward a reply to the complainant; and
 - c. The *Owner* shall complete and retain on-site 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.

Leachate Management

80. The leachate contingency plan listed as Items 40 and 41 in Schedule "A" that sets out how the leachate will be treated at the *Site* in the event the long-term sewer use discharge agreement between the *Owner* and the applicable upper or lower tier municipal government is terminated is hereby approved.

Landfill Gas Monitoring

81. (1) The *Owner* shall ensure all existing structures and future structures (with the exception of the non-building components of the landfill gas collection system) to be built shall be situated and constructed in a manner which minimizes the potential for explosive hazards due to landfill gas.
- (2) The *Owner* shall install and maintain methane detection and alarm equipment, with active venting or an effective passive venting system to relieve any possible landfill gas

accumulation in all enclosed buildings on the *Site* which at times are occupied by people.

- (3) The Owner shall conduct routine monitoring for explosive methane gas levels in all buildings on the *Site* , especially enclosed structures which at times are occupied by people.

82. The design of the *Site* and any plans, specifications and descriptions for the control of landfill gas must ensure that the subsurface migration of landfill gas meets the limits of Section (14) of Reg. 232.

Environmental Monitoring Program

83. (1) Monitoring programs for groundwater, surface water, leachate, landfill gas and air quality monitoring shall be carried out in accordance with Schedules "B", "C", and "D", respectively and Items (3) through (23) in Schedule "A".
 - (2) The frequency of the landfill air quality sampling program shall be conducted as per Items (22) and (23) in Schedule "A".
 - (3)
 - i. At least fourteen (14) days prior to conducting the first air quality sampling event, the Owner shall notify the District Manager in writing of the proposed date for the sampling event and to request the ministry co-ordinate their staff and equipment to collect duplicate samples during the sampling event.
 - ii. In conjunction with Condition No. 83 (3)(i), the Owner shall permit ministry staff to be on-site to collect duplicate samples during the first sampling air quality sampling.
 - (4) In the event, the air quality data collected in Condition No. 83(1) exceeds the predicted modelled contaminant levels at the locations monitored, the Owner shall re-run and submit the results of the predictive air model used during the Environmental Assessment submission (or any other air modelling program acceptable to the ministry) utilizing the collected ambient air monitoring to the District Manager as a component of the Annual Report as required by Condition No. (88). As a component of the discussion, the Owner shall provide details on the steps to be taken to ensure the site will continue to meet compliance requirements for air quality.
84. (1) The *Owner* may request to make changes to the monitoring program(s) to the *District Manager* in accordance with the recommendations of the annual report as described in Condition No. (88). The Owner shall make clear reference to the proposed changes in separate letter that shall accompany the annual report.
 - (2) Within fourteen (14) days of receiving the written correspondence from the District Office confirming that the District Office is in agreement with the proposed changes to the environmental monitoring program(s) identified in Condition No. (83), the *Owner*

shall forward a letter identifying the proposed changes and a copy of the correspondences from the District Manager and all other correspondences and responses related to Condition No. (88), to the *Director* requesting the *Approval* be amended to approve the proposed changes to the environmental monitoring plan prior to implementation.

- (3) In the event any other changes to the environmental monitoring program are proposed outside of the recommendation of the annual report, the *Owner* shall follow current ministry procedures for seeking approval for amending the *Approval*.
85. In the event of a confirmed exceedance of a site-specific trigger level for groundwater or surface water impacts due to leachate, the *Owner* shall complete the following:
- i. immediately notify the *District Manager*; and
 - ii. an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the *Owner* in accordance with the approved trigger mechanisms and associated contingency plans described in the Design and Operations Report listed as Item (3) in Schedule "A" or as to be approved by Condition No. (86).
86. If monitoring results indicate that the *Site* has had an impact on background groundwater concentrations, the *Owner* shall follow the procedure outlined in Item 43 of Schedule "A" to model contaminant attenuation, and develop trigger mechanisms and contingency plan. The report on contaminant modelling, trigger mechanisms and contingency plan shall be submitted to the *Director* for approval, with copies to the *District Manager*, within ninety (90) days of confirmation of the impact.
87. If monitoring results, investigative activities and implementation criteria indicate the need to implement contingency measures, the *Owner* shall ensure that the following steps are taken:
- a. The *District Manager* shall be notified by the *Owner* as soon as possible of the need to implement contingency measures and the proposed contingency measures that need to be implemented;
 - b. If engineered systems/components or changes to the approved landfill design are required then the *Owner* shall prepare and submit detailed plans, specifications and descriptions for the design, operation and maintenance of the contingency measures to the *Director* for approval; and
 - c. For contingency plan that have an engineered system/component or involve changes to the approved landfill design, the contingency measures shall be implemented by the *Owner* upon approval by the *Director*.

Annual Report

88. A written report on the development, operation and monitoring of the *Site*, shall be completed

annually (the Annual Report). The Annual Report shall be submitted to the *District Manager* and the PLC by no later than April 30 of each year. The Annual Report shall include but not be limited to the following:

- a. the results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs;
- b. an assessment of the operation and performance of all engineered facilities, any updated drawings for facilities, the need to amend the design or operation of the *Site*, and the adequacy of and need to implement the contingency plans;
- c. site plans showing the existing contours of the *Site*; areas of landfilling operation during the reporting period; areas of intended operation during the next reporting period; areas of excavation during the reporting period; the progress of final cover, vegetative cover, and any intermediate cover application; previously existing site facilities; facilities installed during the reporting period; and site preparations and facilities planned for installation during the next reporting period;
- d. calculations of the volume of waste, daily and intermediate cover, and final cover deposited or placed at the *Site* during the reporting period and a calculation of the total volume of *Site* capacity used during the reporting period;
- e. a calculation of the remaining capacity of the *Site* and an estimate of the remaining *Site* life;
- f. a summary of the quantity of any leachate or pre-treated leachate removed from the *Site* or leachate treated and discharged from the *Site* on a monthly basis;
- h. a summary of the monthly, maximum daily and total annual quantity (tonnes) of waste received at the *Site*.
- i. a summary of any complaints received and the responses made;
- j. a discussion of any operational problems encountered at the *Site* and corrective action taken;
- k. an update summary of the amount of financial assurance which has been provided to the *Director*;
- l. a report on the status of all monitoring wells and a statement as to compliance with Ontario Regulation 903;
- m. a discussion on the sampling results of the ambient air monitoring along the perimeter of the landfill site, a discussion on a comparison between the predicted air quality and actual air quality results and a discussion on whether there is a need for additional mitigation measures to address potential landfill air quality;
- n. an assessment of the need to develop and implement contingency plans for control of groundwater, leachate, surface water and landfill gas;
- o. any other information with respect to the *Site* which the *Regional Director* may require from time to time; and
- p. A discussion on the site's compliance with the Conditions in this Approval.

Closure Plan

89. At least 2 years prior to the anticipated date of closure of this *Site* , the Owner shall submit to the Director for approval, with copies to the District Manager and the PLC, a detailed site closure plan pertaining to the termination of landfilling operations at this *Site* , post-closure inspection, maintenance and monitoring, and end use, based on Section 7 in Item 3 in Schedule "A" attached to this *Approval* . The plan shall include the following:
- a. a plan showing *Site* appearance after closure;
 - b. a description of the proposed end use of the *Site* ;
 - c. a descriptions of the procedures for closure of the *Site*, including:
 - i. advance notification of the public of the landfill closure;
 - ii. posting of a sign at the Site entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
 - iii. completion, inspection and maintenance of the final cover and landscaping;
 - iv. site security;
 - v. removal of unnecessary landfill-related structures, buildings and facilities; and
 - vi. final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
 - vii. a schedule indicating the time-period for implementing sub-conditions i) to vi) above.
 - d. descriptions of the procedures for post-closure care of the Site, including:
 - i. operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
 - ii. record keeping and reporting; and
 - iii. complaint contact and response procedures;
 - e. an assessment of the adequacy of and need to implement the contingency plans for leachate and methane gas;
 - f. an updated estimate of the contaminating life span of the *Site* , based on the results of the monitoring programs to date; and
 - g. an update of the cost estimates for financial assurance and the amount which has been provided to the *Director* to date.
90. The *Site* shall be closed in accordance with the closure plan as approved by the *Director*.
91. (1) Approval is hereby granted for the construction of temporary berm, temporary leachate pump chamber, and temporary forcemain in Stage 1 of the Site in accordance with Items 32 through 35 in Schedule "A".

- (2) Prior to completion of Stage 1 Liner and Leachate Collection System, the *Owner* shall notify the *District Manager* in writing when the permanent leachate pump chamber shall be in operation and the temporary leachate pump chamber and forcemain be decommissioned.
- (3) The Design and Operations Report listed as Item 3 in Schedule "A" is hereby amended in accordance with Item 38 in Schedule "A".

Landfill Gas Management System

92. (1) Stage 1 of the landfill gas management system shall be constructed and operated in accordance with the detailed design listed as Items 44 and 46 through 50 in Schedule "A" of this Approval.
 - (2) Stage 2 of the landfill gas management system shall be constructed and operated in accordance with the detailed design listed as Items 69 and 70 in Schedule "A" of this Approval.
 - (3) The landfill gas management system shall be constructed and the gas extraction wells shall at least be installed in completed areas where final contours are reached or in interim completed areas that are inactive for over six months, provided such installation is technically feasible.
 - (4) Within one hundred and twenty (120) days of commissioning of each stages of the gas management system, the *Owner/Operator* shall submit to the *District Manager* a construction report detailing the construction activities and any design changes made to the landfill gas system during construction.
 - (5) The *Owner/Operator* shall ensure an Operation and Maintenance Manual (Manual) for the gas management system is submitted to the Director, with copies to the District Manager. The Manual shall provide, but not be limited to, details on inspection and maintenance schedules, documentation procedures, shut-down procedures, Ministry contact procedures, flare operations, and maintenance.
 - (6) Stage 3 of the landfill gas management system shall be constructed and operated in accordance with the detailed design listed as Items 75 and 76 in Schedule "A" of this Approval.
93. (1) Following commissioning of the Stage 1 landfill gas management system, at least once a year, the *Owner* shall conduct an evaluation of the effectiveness of the landfill gas collection system and submit to the *District Manager*. This shall include an assessment of the system design and operational parameters, adequacy of the extraction wells spacing for maximum landfill gas collection coverage; details on the management of the system to satisfy the design parameters and a description of rationale for adjustments to optimize system operation; effectiveness of the condensate management system; and any possible improvements that can be implemented to maximize the landfill gas recovery, etc.
 - (2) Should there be an indication of inadequate system performance based on regular monitoring results or the system effectiveness evaluation required in sub-condition (1), the *Owner* shall forthwith prepare a detailed plan for improvement of the gas collection system and submit to the

Director for approval.

94. Any gas extraction well that needs to be replaced due to damage or the well is deemed to be not functioning properly, the Owner/Operator shall replace the gas extraction well within a reasonable time frame of identifying the need for replacement. Any such changes to the gas extraction system shall be documented in the annual report.
95. The annual report submitted to the District Manager shall include an assessment of the operation of the landfill gas collection system, including but not limited to the following:
- a) total volume of landfill gases collected during the reporting year expressed in cubic metres and adjusted to standard 25^oC, 101.3 kPa;
 - b) percentage of methane contained in the collected gases expressed as an average value of the total volume of gases collected over the reporting period;
 - c) a description of any significant maintenance or operational problems encountered and the actions taken for remediation;
 - d) any changes to the gas collection system implemented over the reporting period including any extensions of the collection system, installation of new extraction wells, replacement wells, and any other extraction wells that have been mothballed or decommissioned;
 - e) any other changes to the gas collection system implemented over the reporting period;
 - f) any updates to the inspection and maintenance plan as a result of changes made to the gas collection system during the reporting period; and
 - g) any updates to the Operation and Maintenance Manual.

Capacity for the East Landfill Soil Temporary Storage Facility

- 96 The *Owner* shall ensure that 250,000 cubic metres of volumetric capacity is left available at the *Site* for the duration of the lifespan of the East Landfill's Soil Temporary Storage Facility (Environmental Compliance Approval no. A120211).

Schedule "A"

This Schedule forms part of this Environmental Compliance Approval"

1. Application for a Provisional Certificate of Approval for a Waste Disposal Site submitted by Niagara Waste Systems Limited requesting approval for a waste disposal site (South Landfill). The application was signed by John Fisher, Vice President and General Manager Niagara Waste Systems dated November 21, 2006.
2. Letter and supporting documentation (EA Decision) dated November 15, 2006 addressed to Mr. John Fisher, Walker Industries from the Honourable Laurel Broten, Minister of the Environment providing the Notice of Approval to proceed with the proposed undertaking as required under the EAA.
3. Report entitled "Proposed Walker South Landfill - Design and Operations Report" prepared by Gartner Lee Limited dated September 2006.
4. Letter dated December 8, 2006 addressed to Mr. John Fisher, Walker Environmental Services from Mr. Dale Gable, Ministry of the Environment providing comments on Financial Assurance.
5. Letter dated January 31, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd. from Mr. Dale Gable, Ministry of the Environment providing groundwater and surface water technical support comments.
6. Letter dated February 6, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems Ltd. providing comments and updated calculating for financial assurance.
7. Letter dated February 8, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd. from Mr. Dale Gable, Ministry of the Environment providing comments on the Design and Operations Plan.
8. Letter dated February 12, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems providing responses to the groundwater and surface water comments.
9. Letter dated February 20, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems Ltd. providing a response to comments on the Design and Operations Plan.
10. Letter dated March 2, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd. from Mr. Dale Gable, Ministry of the Environment providing comments on the Gas Collection System.
11. Letter dated March 8, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd.

from Mr. Dale Gable, Ministry of the Environment providing District Office comments on the application.

12. Letter dated March 8, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems Ltd. providing a response to comments on the gas collection system and financial assurance.
13. Letter dated March 29, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd. from Mr. Dale Gable, Ministry of the Environment providing comments on leachate discharge to the sanitary sewer.
14. Letter dated March 29, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems Ltd. providing a response to the District Office comments.
15. Letter dated April 25, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd. from Mr. Dale Gable, Ministry of the Environment providing a response from the Ministry's TSS on NWS responses to groundwater and surface water comments.
16. Letter dated May 8, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems Ltd. providing a response to the April 25, 2007 letter.
17. Letter dated May 22, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd. from Mr. Dale Gable, Ministry of the Environment providing comments on groundwater and surface water trigger mechanisms and leachate discharge to the sanitary sewer.
18. Email dated September 26, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems providing a contingency plan should NWS not meet Regulation 419.
19. Letter dated September 27, 2007 addressed to Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems providing comments on sewer use bylaws, financial assurance and air quality monitoring.
20. Report dated September 27, 2007 entitled "Ambient Air Quality Monitoring Program - Niagara Waste Systems Limited" prepared for Niagara Waste Systems Limited by RWDI Air Inc.
21. Letter dated October 11, 2007 addressed to Ms. Alison Braithwaite, Niagara Waste Systems Ltd. from Mr. Dale Gable, Ministry of the Environment providing comments on the ambient air quality monitoring program.
22. Letter dated October 25, 2007 addressed to Mr. Alison Braithwaite, Niagara Waste Systems Ltd. from Brad Bergeron, RWDI Air Inc. providing a response to the comments on the ambient air quality monitoring program.

23. Email of November 20, 2007 addressed to Mr. Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems providing information on landfill gas air quality monitoring frequency.
24. Letter dated January 22, 2008 addressed to Dale Gable, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems providing updated financial assurance calculations.
25. Email of January 29, 2008 addressed to Mr. Tes Gebrezghi, Ministry of the Environment from Ms. Alison Braithwaite, Niagara Waste Systems providing a Schedule of Payments table of the combined Financial Assurance Costs for closure, post-closure and contingency costs on a yearly basis until closure. This email included the table as follows:
 - i. Table Attachment entitled "FA South by year.doc" prepared on January 29, 2008
26. Detailed Design Drawings for Stage 1 Base Liner and Leachate Collection System, South Landfill Site:
 - (1) Drawing No. LF-001 "Existing Conditions and Facility Layout" dated February 10, 2009, prepared by AECOM.
 - (2) Drawing No. LF-002 "Grading Plan - Attenuation Layer" dated February 10, 2009, prepared by AECOM.
 - (3) Drawing No. LF-003 "Grading Plan - Secondary Leachate Collection System Layer" dated March 26, 2009, prepared by AECOM.
 - (4) Drawing No. LF-004 "Piping Layout - Secondary Leachate Collection System Layout" Revision F dated June 8, 2010, prepared by AECOM;
 - (5) Drawing No. LF-005 "Grading Plan - Top of Primary Clay Liner" dated February 10, 2009, prepared by AECOM.
 - (6) Drawing No. LF-006 "Piping Layout - Primary Leachate Collection System Layout" dated March 26, 2009, prepared by AECOM.
 - (7) Drawing No. LF-007 "Typical Details - Liner System for Landfill Base and Side Slopes / Temporary Berm (Cross Sections 'A' and 'B')" Revision F dated June 8, 2010, prepared by AECOM;
 - (8) Drawing No. LF-008 "Typical Sections - Temporary Berm Connection Detail / Interim Temporary Berm and Anchor Trench" Revision F dated June 8, 2010, prepared by AECOM;
 - (9) Drawing No. LF-009 "Typical Sections - Cross Sections 'D' and 'E' " dated April 3, 2009, prepared by AECOM.
 - (10) Drawing No. LF-010 "Typical Details - Details of Base Liner at Toe of Slope Along West and South Side Slopes" Revision F dated June 8, 2010, prepared by AECOM;

- (11) Drawing No. LF-011 "Typical Details - Details of Base Liner at Toe of Slope Along East Side Slope / Cross Section 'F' / Detail '24' " Revision F dated June 8, 2010, prepared by AECOM;
 - (12) Drawing No. LF-012 "Typical Details - Sections and Details for Primary and Secondary Leachate Pump Chambers" dated March 26, 2009, prepared by AECOM.
 - (13) Drawing No. LF-013 "Typical Details - Primary and Secondary Leachate Pump Chambers / Bedrock Excavation at Top and Toe of Side Slope" Revision F dated June 8, 2010, prepared by AECOM;
 - (14) Drawing No. LF-014 "Primary Leachate Collection System Cleanout Structures on Base Liner" dated February 10, 2009, prepared by AECOM.
 - (15) Drawing No. LF-015 "Primary Leachate Collection System Cleanout Structures on Base Liner" dated February 10, 2009, prepared by AECOM.
 - (16) Drawing No. LF-016 "Temporary Leachate Chamber and Forcemain Plan" Revision C dated July 27, 2009 prepared by AECOM.
 - (17) Drawing No. LF-017 "Typical Details - Alternative Temporary Berm (Sections 'A' and 'B')" Revision F dated June 8, 2010 prepared by AECOM;
 - (18) Drawing No. LF-018 "Typical Details - Alternative Temporary Berm with Increased Height (Section 'J')" Revision F dated June 8, 2010 prepared by AECOM;
 - (19) Drawing No. LF-019 "Temporary Pump Chamber" Revision B dated July 15, 2009 prepared by AECOM.
 - (20) Drawing No. LF-020 "Typical Details - Hybrid Temporary Berms" Revision F dated June 8, 2010 prepared by AECOM; and
 - (21) Drawing No. LF-021 "Typical Details - Typical Cleanout Chamber Detail" Revision F dated June 8, 2010 prepared by AECOM.
27. Report entitled "Detailed Design for Stage 1 Liner and Leachate Collection System, South Landfill" dated February 2009, prepared by AECOM.
 28. Letter dated March 25, 2009 addressed to Alison Braithwaite, Niagara Waste Systems Limited from Rick Li, Ministry of the Environment providing review comments on detailed design drawings and specifications.
 29. Letter dated March 31, 2009 addressed to Rick Li, Ministry of the Environment from Edward San, AECOM providing response to the Ministry's March 25, 2009 letter.

30. Letter dated April 3, 2009 addressed to Rick Li, Ministry of the Environment from Edward San, AECOM providing information on the buffer zone and associated facilities.
31. Letter dated January 5, 2009, from Bradley Cassidy, Environmental Coordinator, Niagara Waste Systems Limited to Brad Ross, Ministry of the Environment providing notification of a change in location of the *Site* entrance/exit.
32. Letter dated July 17, 2009 addressed to Greg Washuta, Ministry of the Environment from Edward San, AECOM Canada Ltd. regarding the revisions to temporary works in the detailed design of Stage 1 Liner and Leachate Collection System.
33. Letter dated July 23, 2009 addressed to Edward San, AECOM from Rick Li, Ministry of the Environment providing comments on the submitted design for temporary works.
34. Letter dated July 27, 2009 addressed to Rick Li, Ministry of the Environment from Edward San, AECOM providing response to the Ministry's July 23, 2009 letter.
35. Updated Specification for Section 3 "Temporary Berm" prepared by AECOM dated July 2009.
36. Letter dated September 23, 2009 addressed to Brad Cassidy, Niagara Waste Systems Limited from Rick Li, Ministry of the Environment providing comments on the temporary use of the East Landfill entrance for access to the South Landfill.
37. Letter dated September 30, 2009 addressed to Rick Li, Ministry of the Environment from Brad Cassidy, Niagara Waste Systems Limited providing response to the Ministry's September 23, 2009 letter.
38. Letter dated September 28, 2009 addressed to Rick Li, Ministry of the Environment from Brad Cassidy, Niagara Waste Systems Limited, regarding the application to amend the Provisional Certificate of Approval No.0084-78RKAM for the South Landfill pursuant to Condition 91(3) of this Approval and the supporting documentations.
39. Letter dated October 7, 2009 addressed to Rick Li, Ministry of the Environment from Brad Cassidy, Niagara Waste Systems Limited providing response to the Ministry's comments with regard to the storm water management and the traffic assessment.
40. Letter dated December 19, 2008 addressed to Brad Ross, Ministry of the Environment from Bradley Cassidy, Niagara Waste Systems Limited and the attachment regarding the Niagara Waste Systems South Landfill Leachate Contingency Plan.
41. Letter dated February 5, 2010 addressed to Rick Li, Ministry of the Environment from Alison Braithwaite, Niagara Waste Systems Limited and the attached Site Plan regarding the updated Niagara Waste Systems Limited South Landfill Leachate Contingency Plan.
42. Application for a Provisional Certificate of Approval for a Waste Disposal Site regarding modification

to the detailed design for Stage 1 liner and leachate collection system signed by Alison Braithwaite of Niagara Waste System Limited dated June 11, 2010.

43. Letter report dated August 17, 2009 regarding Niagara Waste Systems Limited - South Landfill (SLF) C of A #0084-78RKAM Reasonable Use Contingency Plan prepared AECOM.
44. Report entitled "Stage 1 Major Works Detailed Design Landfill Gas Management, Walker South Landfill Certificate of Approval 0084-78RKAM" dated May 27, 2011 prepared by Comcor Environmental Limited.
45. Letter dated August 3, 2011 addressed to Rick Li, Ministry of the Environment from Scott Hurley, Niagara Waste Systems Limited RE: Certificate of Approval ("CofA") #0084-78RKAM Condition 30 Niagara Waste System Limited South Landfill.
46. Letter dated August 12, 2011 addressed to Scott Hurley, Niagara Waste Systems Limited from Rick Li, Ministry of the Environment providing review comments on the Stage 1 Landfill Gas Management System.
47. Letter dated August 26, 2011 addressed to Rick Li, Ministry of the Environment from Scott Hurley, Niagara Waste Systems Limited providing a response to MOE's August 12, 2011 letter.
48. Letter dated October 6, 2011 addressed to Rick Li, Ministry of the Environment from Scott Hurley, Niagara Waste Systems Limited regarding Stage 1 Phase 2 detailed design and installation details for the cleanout lateral.
49. Letter dated August 26, 2011 addressed to Rick Li, Ministry of the Environment from Shannan P. McGarr, Comcor Environmental Limited regarding radius of influence for gas extraction wells.
50. Detailed design drawing set for the South Landfill Landfill Gas Collection System Stage 1 Construction prepared by Comcor Environmental Limited dated October 4, 2011 that includes the following:
 - (1) G101 Existing Site Area Plan
 - (2) G102 Phase 1 - Proposed System Layout
 - (3) G103 Phase 2 - Proposed System Layout
 - (4) G111 Phase 1- Plan and Profile 700 ϕ Header Sta 0+000 - 0+475.58
 - (5) G112 Phase 1- Plan and Profile 150 ϕ Cleanout Lateral
 - (6) G113 Phase 2- Plan and Profile 700 ϕ Header Sta 0+475.58 - 1+050
 - (7) G114 Phase 2- Plan and Profile 700 ϕ Header Sta 1+050 - 1+466.22
 - (8) G161 Trench Details
 - (9) G162 Sections
 - (10) G163 Systems Details
 - (11) G164 Systems Details
51. Letter dated November 11, 2011 to David Lee, Senior Review Engineer, Ministry of the Environment from Scott Hurley, Environmental Specialist, Niagara Waste Systems Limited.

52. Letter dated January 16, 2012 to Mr. Scott Hurley, Environmental Co-ordinator, Niagara Waste Systems Limited from Mr. Rich Vickers, District Manager, Niagara District Office, Ministry of the Environment. Re: Proposed Changes to the South Landfill Monitoring Program CofA #0084-76RKAM.
53. Report entitled "2011 Financial Assurance Recalculation Report, South Landfill" dated April 2011 prepared by AECOM.
54. Letter dated February 7, 2012 addressed to Scott Hurley, Niagara Waste Systems Limited from Rick Li, Ministry of the Environment providing comments on the Financial Assurance Recalculation.
55. Letter dated February 13, 2012 addressed to Scott Hurley, Niagara Waste Systems Limited from Rick Li, Ministry of the Environment providing additional comments on the Financial Assurance Recalculation.
56. Letter dated February 29, 2012 addressed to Rick Li, Ministry of the Environment from Scott Hurley, Niagara Waste Systems Limited providing a response to MOE comments on the Financial Assurance Recalculation (Items 54 and 55).
57. Letter dated March 8, 2012 addressed to Scott Hurley, Niagara Waste Systems Limited from Rick Li, Ministry of the Environment regarding the Financial Assurance Recalculation.
58. Letter dated April 5, 2012 addressed to Rick Li, Ministry of the Environment from Scott Hurley, Niagara Waste Systems Limited providing revised Financial Assurance Recalculation, and includes the following attachments:
- 1) **Table R1:** Revised Annual Post-Closure Care Cost Estimate Excluding Gas Control System (Annual Cost Revised with Updated Leachate Disposal Unit Rate)
 - 2). **Table R2:** Final Closure Report Cost
 - 3). **Table B6B:** Revised Post-Closure Care Cost for Landfill Excluding Gas Control System
 - 4) **Table B8B:** Total Post-Closure Care Cost for Gas Control System
 - 5) **Table 8B:** Updated Financial Assurance Amount (Revised April 2012)
59. Detailed Drawing Set entitled "Niagara Waste Systems - Stage 2 Base Liner and Leachate Collection System" prepared for Niagara Waste Systems by AECOM (Project No. 60194116) issued November 30, 2012. The set included the following drawings:
- i. Drawing No. ST-2-LF-000 - Cover Sheet
 - ii. Drawing No. ST-2-LF-001 "Existing Conditions and Facility Layout" dated November 30, 2012;
 - iii. Drawing No. ST-2-LF-002 "Grading Plan - Attenuation Layer" dated November 30, 2012;
 - iv. Drawing No. ST-2-LF-003 "Secondary Leachate Collection System Layer" dated November 30, 2012;
 - v. Drawing No. ST-2-LF-004 "Existing Conditions and Facility Layout" dated November 30, 2012;

- vi. Drawing No. ST-2-LF-005 "Grading Plan - Top of Primary Clay Liner" dated November 30, 2012;
 - vii. Drawing No. ST-2-LF-006 "Piping Layout - Primary Leachate Collection System Layout" dated November 30, 2012;
 - viii. Drawing No. ST-2-LF-007 "Typical Details - Sections Through Base Liner System" dated November 30, 2012;
 - ix. Drawing No. ST-2-LF-008 "Typical Details - Temporary Berm Section "A" and Details" dated November 30, 2012;
 - x. Drawing No. ST-2-LF-009 "Typical Details - Temporary Berm Section "B" and "C", Interim Berm Detail" dated November 30, 2012;
 - xi. Drawing No. ST-2-LF-010 "Typical Details - Section "D" and Base Liner Treatment at Toe of Side Slope" dated November 30, 2012;
 - xii. Drawing No. ST-2-LF-011 "Typical Details - Anchor Trench, Cleanout chambers and Bedrock Excavation Details" dated November 30, 2012;
 - xiii. Drawing No. ST-2-LF-012 "Typical Sections - Sections "E" and "F" " dated November 30, 2012;
 - xiv. Drawing No. ST-2-LF-013 "Typical Details - Leachate Collection System Cleanout Structures - Plan Views" dated November 30, 2012;
 - xv. Drawing No. ST-2-LF-014 "Typical Details - Leachate Collection System Cleanout Structures - Plan Views" dated November 30, 2012; and
 - xvi. Drawing No. ST-2-LF-015 "Typical Details - Leachate Collection System Cleanout Structures - Sections/Details" dated November 30, 2012.
60. Report entitled "Niagara Waste Systems Limited - Detailed Design for Stage 2 Liner and Leachate Collection System, South Landfill" prepared by AECOM (Project No. 60194116) dated November 2012.
61. Letter dated May 24, 2013 addressed to Mr. Scott Hurley, Walker Environmental Group Inc. from Mr. Dale Gable, Ministry of the Environment providing comments on the Stage 2 detailed design drawings.
62. Letter dated May 30, 2013 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Tim McVicar, Walker Environmental Group Inc. providing clarification on the detailed design drawings for Stage 2.
63. Letter dated July 3, 2013 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Scott Hurley, Walker Environmental Group Inc. submitting the design report and design drawings for the surface water control facility for the Site.
64. Design Report entitled "Walker Environmental Group Inc. - Stormwater Management Design Report for the South Landfill in the City of Niagara Falls, Ontario" prepared by AECOM dated April 2013. The design report included the detailed drawing set entitled "Walker Environmental Group Inc. - South Landfill Site - Stormwater Management Pond" prepared for Walker Environmental Group Inc. by AECOM (Project No. 60194116 The set included the following drawings:
- i. Drawing No. SWM-1 entitled "Plan and Profile" dated April 17, 2013;

- ii. Drawing No. SWM-2 entitled "Cross Sections "A", "B", "C" and "D"" dated April 17, 2013;
 - iii. Drawing No. SWM-3 entitled "Cross Sections "E", "F", "G" and "H"" dated April 17, 2013;
 - iv. Drawing No. SWM-4 entitled "Control Flow Structures Hickenbottom Drain - DICB #2, #3, and #4 (Types 1 and 2)" dated April 17, 2013;
 - v. Drawing No. SWM-5 entitled "Ditches Inlet Details DICB #1 and #5 (Type #3), Culverts #1 and #2" dated April 17, 2013;
 - vi. Drawing No. SWM-6 entitled "Ditch Inlet Details DICB #1 and #5 (Type 3), Culverts #1 and #2" dated April 17, 2013;
 - vii. Drawing No. SWM-7 entitled "Typical Section Along South Side of Landfill" dated April 17, 2013;
 - viii. Drawing No. R01 entitled "Niagara Waste Systems Limited- South Landfill Site - Stormwater Management Pond - Retaining Walls West Headwall at Culvert #1" dated March 28, 2013; and
 - ix. Drawing No. R02 entitled "Niagara Waste Systems Limited- South Landfill Site - Stormwater Management Pond - Retaining Walls East Headwall at Culvert #2" dated March 28, 2013.
65. Environmental Compliance Approval application dated July 18, 2013 and signed by Mr. Tim McVicar, General Manager requesting amendment to increase the annual rate of fill at the Site.
66. Report dated July 15, 2013 entitled "Walker Environmental Group Inc. - South Landfill Environmental Screening Report for Daily Cover Fill Rate Increase Modification".
67. Letter dated October 9, 2013 addressed to Mr. Tim McVicar, Walker Environmental Group Inc. from Mr. Dale Gable, Ministry of the Environment requesting additional information on traffic patterns, type of cover material and financial assurance.
68. Letter dated October 17, 2013 addresses to Mr. Dale Gable, Ministry of the Environment from Mr. Tim McVicar, Walker Environmental Group Inc. providing additional information on traffic patterns, clarification on cover material and public notification.
69. Letter dated November 5, 2014 addressed to the Director, EAB from Tim McVicar, Walker Environmental Group Inc. submitting an application requesting an emergency amendment to the ECA. The supporting documentation included:
- i. Environmental Compliance Approval Application signed by Tim McVicar, WEGI dated November 5, 2014.
70. Figure 1 Revision B entitled "South Landfill Waste Storage - Plan View" prepared by Walker Environmental Group Inc and dated November 20, 2014.
71. Report entitled "Stage 2 Major Works Detailed Design Landfill Gas Management, Walker South Landfill" dated December 15, 2014 prepared by Comcor Environmental Limited.

72. Letter dated December 24, 2015 to Rick Li, Ministry of the Environment and Climate Change from Lesley Clarke, Walker Environmental Group Inc. providing a response to the Ministry's review comments on the detailed design for Stage 2 Landfill Gas Management System.
73. Letter dated August 19, 2015 addressed to Dale Gable, Ministry of the Environment and Climate Change from Lesley Clarke, Walker Environmental Group Inc. regarding Walker Environmental Group - South Landfill Major Works Approval - Stage 3 Liner and Leachate Collection System. The following attachments are included:
 - (1) Detailed design drawing set for Stage 3 Base Liner and Leachate Collection System Walker South Landfill, Niagara Falls, Ontario Revision C dated May 30, 2016 prepared by Golder Associates
 - (2) Specification for Stage 3 Liner and Leachate Collection System, South Landfill Walker Environmental Group Inc. dated August 2015 prepared by Golder.
74. Letter dated March 24, 2016 addressed to Rick Li, Ministry of the Environment and Climate Change from Lesley Clarke, Walker Environmental Group Inc. providing a response to the ministry's comments on the detailed design for Stage 3 liner and leachate collection system.
75. Application to Amend Environmental Compliance Approval 0084-78RKAM, signed by Tim Murphy, Walker Environmental Group, dated October 14, 2016.
76. Document entitled "Stage 3 Major Works Detailed Design Landfill Gas Management", prepared by Comcor Environmental Limited, dated September 26, 2016.
77. Letter dated January 10, 2018 to Ms. Clarke, Walker Environmental Group from Kim Groombridge, District Manager, Niagara District Office, Ministry of the Environment and Climate Change.
78. Document entitled "ECA No. 0084-78RJKAM - Stage 4 Detailed Design, Walker South Landfill", prepared by Golder Associates Ltd., dated July 20, 2018.
70. Document entitled "2019 Financial Assurance Re-evaluation Report South Landfill", ECA No. 0084-78RKA, prepared by Golder Associates Ltd. on behalf of Walker Environmental Group, dated April 2019.

Schedule "B"

This Schedule forms part of this Environmental Compliance Approval. It describes the groundwater monitoring program referred to in Condition No. (83).

B.1 MONITORING PROGRAM OBJECTIVES

The overall goal of the groundwater monitoring program is to detect and assess the effects of the landfill on local water resources. The following objectives have been identified to achieve this goal:

- a) to monitor groundwater quality in the shallow weathered zone, the intermediate depth in the overburden, and the bedrock aquifer;
- b) to identify and characterize movement of leachate-related contaminants in the overburden and bedrock at the site boundary;
- c) to evaluate the effectiveness of the engineered landfill; and
- d) to determine the need for implementation of the contingency plan.

B.2 MONITORING PLAN

The groundwater monitoring plan shall be carried out by the Owner to address the stated objectives and will include:

B.2.1 Measurement of Water Levels

Groundwater levels shall be measured in the groundwater monitors listed in Table B1 four times per year.

B.2.2 Collection of Groundwater Samples and Frequency

Collection of groundwater samples from the following monitors:

Table B1 - Sampling Location, Sampling Periods and Parameter List

Monitoring Well	Mar	Jun	Sept	Dec
<i>Upgradient Groundwater</i>				
17-1	B4D	A4D	B4D	D
17-2	B4D	A4D	B4D	D
17-3	B4D	A4D	B4D	D
19-1	D	A4D(sr)	D	D
19-2	B4D	A4D	B4D	D
19-3	B4D	A4D	B4D	D
40-1	A4D*	D	D	D
40-2	B4D	A4D	B4D	D
46-1	D	A4D(sr)	D	D
46-2	B4D	A4D	B4D	D
46-3	B4D	A4D	B4D	D
47-1R	D	A4D(sr)	D	D
47-2R	B4D	A4D	B4D	D
47-3R	B4D	A4D	B4D	D
53-1	B4D	A4D	B4D	D
53-2	B4D	A4D	B4D	D
53-4	D	A4D(sr)	D	D
<i>Downgradient Groundwater</i>				
MHC2	B2D	A2D	B2D	A2D
MHC2g	B2D	A2D	B2D	A2D
73-1	B4D	A4D	B4D	D
18-1	D	A4D(sr4)	D	D
18-2	B4D	A4D	B4D	D
18-3	B4D	A4D	B4D	D
16-1	B4D	A4D	B4D	D
16-3	B4D	A4D	B4D	D
39-1	A4D*	D	D	D
26-1	A4D*	D	D	D
67-1	A4D*	D	D	D

- Notes:
- (1) D - Field depth measurement
 - (2) (sr) - sampled at reduced frequency, every 2-4 years, in conjunction with the East Landfill monitoring schedule, because well is very slow to recover following a sampling event.
 - (3) * - Sampled annually to coincide with East to Northeast gradient due to annual drainage to canal.
 - (4) A2, A3, A4, B2, B3, B4 are parameter lists
 - (5) Irondequoit groundwater samples are to be collected in February instead of March to ensure sampling conditions are obtained under a west to northwest flow direction
 - (6) (sr4) - sampled at reduced frequency to every 4 years.

B.2.3 Sampling Parameter Lists

Sampling Parameters for A2

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Nitrite	Sulphate	Field Dissolved Oxygen
Chemical Oxygen Demand	Field Temperature	Ammonia
Total Kjeldahl Nitrogen	Total Phosphorus	Arsenic
Barium	Boron	Cadmium
Chromium	Copper	Iron
Lead	Mercury	Zinc
Total Phenols	Biochemical Oxygen Demand	Suspended Solids

Sampling Parameters for B2

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Nitrite	Sulphate	Total Phenols
Chemical Oxygen Demand	Field Temperature	Ammonia
Total Kjeldahl Nitrogen	Total Phosphorus	Iron
Total Suspended Solids	Biochemical Oxygen Demand	Suspended Solids

Sampling Parameters for A4

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Nitrite	Sulphate	Dissolved Organic Carbon
Chemical Oxygen Demand	Ammonia	Total Kjeldahl Nitrogen
Total Phosphorus	Arsenic	Barium
Boron	Calcium	Cadmium
Chromium	Copper	Iron
Lead	Magnesium	Manganese
Mercury	Potassium	Sodium
Zinc	Total Phenols	Benzene
Toluene	Vinyl Chloride	Dichloromethane
1,4-Chlorobenzene		

Sampling Parameters for B4

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Sulphate	Dissolved Organic Carbon	Chemical Oxygen Demand
Ammonia	Barium	Boron
Calcium	Iron	Magnesium
Sodium		

B.3 MONITORING SYSTEM MAINTENANCE

During each monitoring event, the monitoring network shall be visually inspected. Changes in the physical condition of each well will be noted and necessary repairs undertaken. Monitoring wells that are shown to be damaged beyond repair or whose integrity is in doubt will be decommissioned in accordance with current regulations and standard procedures and replaced, if necessary.

B.4 GROUNDWATER TRIGGER MECHANISM

B.4.1 Groundwater Trigger Objective

The objective of the groundwater trigger mechanism is to identify when implementation of the contingency plan (to be submitted for approval by Condition No. 86) is required in order to prevent leachate-impacted groundwater from causing an adverse effect on local water resources.

B.4.2 Trigger Locations

The following monitoring wells shall be used as the trigger monitoring wells locations

73-1, 16-1, 16-3, 18-1, 18-2, 18-3, 26-1, 39-1, 67-1, MHC2 and MHC2g.

B.4.3 Trigger Parameters

The trigger parameters are those listed in Sampling Parameters A4.

Schedule "C"

This Schedule "C" forms part of this Environmental Compliance Approval. It describes the surface water monitoring program referred to in Condition No. (83).

C.1 OBJECTIVES

- a) The primary goal of the Surface Water Monitoring Program is to monitor for any landfill-related impairment of surface water above Provincial Water Quality Objectives (PWQOs). Where the concentration of a specific parameter already exceeds the PWQO in background surface waters, the aim is to allow no further deterioration of surface water quality.
- b) The secondary goal of the Surface Water Monitoring Program is to verify that the engineered components of the surface water management and leachate collection systems are performing as designed.

C.2 MONITORING PLAN

Surface water monitoring will be conducted to address the stated objectives, through:

- a) monitoring the quality of water from the surface water management features to determine whether or not it is acceptable for discharge to the natural environment;
- b) visual inspections for evidence of leachate impacts; and
- c) monitoring the quality of the Old Welland Canal and Ten Mile Creek upstream and downstream of the landfill.

The water quality at these monitoring locations will determine the need to implement the contingency plan.

C.2.1 Surface Water Monitoring Stations, Schedule and Analyses

C.2.2 Collection of Surface Water Samples and Frequency

Collection of surface water samples from the following locations:

Table C1 - Sampling Location, Sampling Periods and Parameter List

Monitoring Well	Location	Mar	Jun	Sept	Dec
All South Landfill Stormwater Management Ponds ***					
SW2		B2F	A2F	B2F	A2F
WC2		B2	A2	B2	A2
WC6		B2	A2	B2	A2
SW8		B2	A2	B2	A2
SW9**		B2	A2	B2	A2
NWS-A****		B2	B2	B2	B2
NWS -B****		B2	B2	B2	B2

- Notes: (1) ** - New Monitoring location.
 (2) *** Sampling and monitoring will be conducted in accordance with the ECA for waste water.
 (3) **** - a minimum of one sample from the NWS-A and NWS-B shall be collected during SWMP discharge events 14 days in duration or less. A minimum of one sample every two weeks from the SWMP, NWS-A and NWS-B shall be collected during SWMP discharge events greater than 14 days in duration.
 (4) A2, A3, A4, B2, B3, B4 are parameter lists

C.2.3 Sampling Parameter Lists

Sampling Parameters for A2

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Nitrite	Sulphate	Field Dissolved Oxygen
Chemical Oxygen Demand	Field Temperature	Ammonia
Total Kjeldahl Nitrogen	Total Phosphorus	Arsenic
Barium	Boron	Cadmium
Chromium	Copper	Iron
Lead	Mercury	Zinc
Total Phenols	Biochemical Oxygen Demand	Suspended Solids

Sampling Parameters for B2

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Nitrite	Sulphate	Total Phenols
Chemical Oxygen Demand	Field Temperature	Ammonia
Total Kjeldahl Nitrogen	Total Phosphorus	Iron
Total Suspended Solids	Biochemical Oxygen Demand	Suspended Solids

C.3 TRIGGER MECHANISMS

C.3.1

The Owner shall follow the trigger mechanism requirements for the Stormwater Management Ponds as detailed under ECA for waste water.

C.3.2 Trigger for Contingency

If concentrations at WC2 exceed applicable regulatory standards (i.e., PQWOs) and the 75th percentile of upstream concentrations at WC6 on two consecutive discharge events and attributed to stormwater discharge from the South Landfill. Should trigger exceedences not be attributable to operations at the South Landfill, Condition 25 of Environmental Compliance Approval No. A120211 shall be undertaken, as well as an assessment of the Southeast Quarry discharge(s) with regards to trigger exceedances.

Schedule "D"

This Schedule forms part of this Environmental Compliance Approval. It describes the leachate monitoring program referred to in Condition No. (83).

D.1 MONITORING PROGRAM OBJECTIVES

The objectives of the leachate monitoring program are to monitor the leachate water quality with respect to compliance with the Region's Sewer Use By-law on an ongoing basis.

D.2 MONITORING PLAN

The groundwater monitoring plan shall be carried out by the Owner to address the stated objectives and will include:

D.2.1 Frequency

Leachate samples from the Leachate Collection System shall be collected three times per year in March (B3) , June (A3) and September (B3).

D.2.2 Sampling Parameter Lists

Sampling Parameters for A3

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Nitrite	Sulphate	Dissolved Organic Carbon
Chemical Oxygen Demand	Ammonia	Total Kjeldahl Nitrogen
Total Phosphorus	Arsenic	Barium
Boron	Calcium	Cadmium
Chromium	Copper	Iron
Lead	Magnesium	Manganese
Mercury	Potassium	Sodium
Zinc	Total Phenols	Benzene
Toluene	Vinyl Chloride	Dichloromethane
1,4-Chlorobenzene	Suspended Solids	Biochemical Oxygen Demand

Sampling Parameters for B3

pH	Conductivity (field and lab)	Total Dissolved Solids
Alkalinity	Chloride	Nitrate
Sulphate	Dissolved Organic Carbon	Chemical Oxygen Demand
Ammonia	Barium	Boron
Calcium	Iron	Magnesium
Sodium	Suspended Solids	Biochemical Oxygen Demand

Schedule "E"

This Schedule forms part of this Environmental Compliance Approval. It describes the financial assurance instalment payments referred to in Condition No. (19).

Payment Date	Cumulative Amount
Current FA Requirement	
By April 30, 2020	\$24,099,190.04
By April 30, 2021	\$26,528,965.83
By April 30, 2022	\$28,958,741.63
By April 30, 2023	\$31,388,517.42

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

- 1. The reason for Conditions (1), (2), (4), (5), (6), (7), (8), (9), (15), (16), (17), (18), and (46) is to clarify the legal rights and responsibilities of the Owner under this Environmental Compliance Approval.*
- 2. The reason for Conditions (3) and (39) 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.*
- 3. The reason for Conditions (10) and (11) 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.*
- 4. The reasons for Condition (12) 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 Environmental Compliance Approval.*
- 5. The reason for Condition (13) is 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.*
- 6. The reason for Condition (14) 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 Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA and OWRA.*
- 7. The reasons for Conditions (19), (20) and (21) 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.

8. *The reason for Conditions (22), (23), (24) and (25) 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.*
9. *The reason for Conditions (26), (27), (28), (29), (30), (31) and (32) is to ensure that the Site is designed, constructed and operated in an environmentally acceptable manner, based on the conceptual design and operations for the Site. Condition (29) has been specifically included to allow for optimization of design for subsequent stages based on operating experience and monitoring results and to ensure that any necessary remedial action is undertaken before landfilling may proceed in the next stage.*
10. *The reason for Condition (33) is to ensure the availability of as-built drawings for inspection and information purposes.*
11. *The reason for Condition (34) and (35) is to confirm that Site conditions are as expected and the Site has been prepared and constructed in accordance with the approved design.*
12. *The reason for Condition (36) is to ensure the Owner keeps the geomembrane in good conditions during installation.*
13. *The reason for Condition (37) is to ensure the geomembrane is supplied and installed as per the design specifications.*
14. *The reasons for Condition (38) is to ensure the liner is not damaged by adjacent quarry blasting operations and that a plan is in place to monitor should blasting and liner construction be adjacent to each other. This is to ensure the long - term health and safety of the public and the environment.*
15. *The reasons for Conditions (40), (67) and (68) 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 and that 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 (41) is that open burning of municipal waste is unacceptable because of concerns with air emissions, smoke and other nuisance affects, and the potential fire hazard.*
17. *The reasons for Conditions (42), (43), (44) and (45) 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.

18. *The reasons for Condition (47) are to minimize the potential for clogging of the drainage layer and to minimize temperature effects on the leachate collection system. Failure to maintain the specified minimum thickness of waste and cover material may result in a decrease in the service life of the drainage layer.*
19. *The reason for Condition (48) 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.*
20. *The reason for Condition (49) is to specify the approval requirements for use of alternative cover material at the Site.*
21. *The reason for Conditions (50), (51), (52) and (54) is to specify restrictions on the extent of landfilling at this Site based on the Owner's application and supporting documentation. These limits define the approved volumetric capacity of the site. Approval to landfill beyond these limits would require an application with supporting documentation submitted to the Director.*
22. *The reason for Condition (53) is to ensure the owner calls the Spills Action Centre in the event of a spill.*
23. *The reason for Condition (55) is to identified the landfill staging as per the submitted information by the Owner.*
24. *The reasons for Condition (56) is to ensure surface water on is managed in an acceptable manner at the site. This is to ensure the long-term health and safety of the public and the environment.*
25. *The reasons for Conditions (57), (58), (59), (60), (65) and (66) 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.*
26. *The reasons for Conditions (61) are to specify the normal hours of operation for the landfill Site and provide a mechanism for amendment of the hours of operation.*
27. *The reasons for Conditions (62), (63) and (64) 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.*

28. *The reason for Condition (65) and (66) is to ensure the Owner has a sign at the entrance of the site to ensure the public are fully aware of important information and restrictions related to Site operations under this Approval.*
29. *The reasons for Condition (68) are to minimize the potential for clogging of leachate collection pipes and to ensure effective operation of the leachate collection system components for as long as they are required. Failure to clean out these components on a regular basis may result in a decrease in their service lives. Regular cleaning of the leachate collection pipes is especially important during stages of landfilling when the level of both organic and inorganic constituents in the leachate is high and, consequently, the potential for clogging due to encrustation is greatest. As the landfill reaches the more stable methane producing stage, pipe cleaning may be required less frequently.*
30. *The reason for Condition (69) is to ensure an established plan is in place to for all employees pertaining to the site operation.*
31. *The reasons for Conditions (70), (71), (72), (73), and (74) are to ensure that there is a person, reporting directly to the Ministry, with associated costs reimbursed by the Owner, who is responsible for inspecting the Site, based on the requirements in this Approval to ensure that the Site is operated in an environmentally acceptable manner.*
32. *The reason for Condition (75) is to ensure that the Ministry is notified of the date on which the Site opens for receipt of waste.*
33. *The reasons for Conditions (76), (77), (78) and (79) 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 Approval, the EPA and its regulations.*
34. *The reason for Condition (80) is to ensure the Owner has a contingency plan to address leachate management should the Owner no longer be permitted to discharge leachate into the sanitary sewer.*
35. *The reasons for Conditions (81) and (82) is to ensure landfill gas at the site is monitored and any landfill gas management systems meet current standards. This is to ensure the long-term health and safety of the public and the environment.*
36. *The reasons for Condition (83) 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.*

37. *The reasons for Condition (84) is to ensure any changes to the environmental monitoring plan are recognized in the Approval.*
38. *The reasons for Condition No. (85), (86) and (87) is to ensure the Owner has an established set of procedures and plans to address groundwater and surface water compliance exceedances. This is to ensure the health and safety of the public and the environment.*
39. *The reasons for Conditions (88) are to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report and compliance report is an important tool used in reviewing site activities and for determining the effectiveness of site design.*
40. *The reasons for Conditions (89) and (90) 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.*
41. *The reasons for Condition 91 is to approve the construction of temporary facilities in Stage 1 and acknowledge revisions to the Design and Operations Report.*
42. *The reason for Condition 92 is to approve the detailed design of Stage 1 landfill gas management system submitted under Condition 30 of this Approval, and to ensure the construction activities are documented and the system operation and maintenance manual is prepared following construction.*
43. *The reason for Condition 93 is to ensure the gas collection system is operated as designed and any deficiency is identified and improvement measures be implemented promptly.*
44. *The reason for Condition 94 is to ensure damaged or non-functioning gas wells be replaced promptly.*
45. *The reason for Condition 95 is to specify the information regarding the gas management system to be included in the annual report and to ensure compliance with the Ministry's requirement on annual operations.*
46. *The reason for Condition 96 is To ensure that adequate capacity is left available at the Site as a means of a contingency measure for the East Landfill's Soil Temporary Storage Facility.*

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s).

0084-78RKAM issued on May 15, 2019

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

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

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

The Notice should also include:

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

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

This Notice must be served upon:

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

AND

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

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

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

DATED AT TORONTO this 27th day of February, 2020



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

IP/

c: District Manager, MECP Niagara
Tanner Gennaro, Golder Associates Ltd.