

**APPLICATION FORM FOR AN APPROVAL OR REGISTRATION OF A  
CLASS II OR CLASS III LANDFILL**

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## INTRODUCTION

This application form outlines the content requirements under the *Environmental Protection and Enhancement Act* (EPEA), for applications for approvals of Class II and Class III landfills. This form should also be used to renew a previous approval, or to amend, add, or delete terms or conditions from an existing approval. The requirements are in accordance with the *EPEA Activities Designation Regulation*, the *EPEA Approvals Procedure Regulation*, and the *EPEA Waste Control Regulation*. It is recommended that applicants consult the *Code of Practice for Landfills*, the *Guidelines for Landfills in Alberta*, and the *Standards for Landfills in Alberta*, as published from time to time by Alberta Environment, when preparing an application.

The landfill's storm water management system may also require an approval under the *Water Act*.

### TO: ALL APPLICANTS

1. The Director shall not review an application for the purpose of making a decision until it is a complete application and may request additional information during the review process.
2. The applicant must include all information in a stand-alone application and may not reference information previously submitted under the *Environmental Protection and Enhancement Act*. If there is relevant information that was previously submitted to the department it must be resubmitted as part of the new application.
3. Applications are available for public review and for certain projects the applicant may be required to hold public information meetings. All decisions on approval applications may be appealed.
4. Prior to the submission of the application for a new or laterally expanding landfill, a Disclosure Plan must be submitted to the Director. The Disclosure Plan must describe the need for the new or expanding landfill, the proposed process for public consultation, the proposed process for technical investigation of the site, and the process for obtaining other approvals such as a development permit.
5. Four copies of the completed application and attachments should be submitted to:

Regulatory Approvals Centre  
Alberta Environment  
7<sup>th</sup> Floor Oxbridge Place  
9820 – 106 Street  
Edmonton, Alberta  
T5K 2J6

Telephone: (780) 427-6311  
Facsimile: (780) 422-0154



**PROVINCE OF ALBERTA**  
*Environmental Protection and Enhancement Act*

**APPLICATION FORM FOR AN APPROVAL OR REGISTRATION OF A  
CLASS II OR CLASS III LANDFILL**

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**FOR OFFICE USE ONLY:**

Application Number: \_\_\_\_\_

Date Received: \_\_\_\_\_

Review by: \_\_\_\_\_

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**SECTION ONE: ADMINISTRATIVE INFORMATION**

1.1 Date of Application: \_\_\_\_\_

1.2 Name of Applicant: \_\_\_\_\_  
(Company or Corporation)

1.3 Contact Person: \_\_\_\_\_  
(Owner or Agent)

1.4 Address of Applicant: \_\_\_\_\_  
(Street, Avenue, Road, R.R., Box etc, City, Town, Village, Postal Code)

\_\_\_\_\_  
\_\_\_\_\_

1.5 Telephone Number: \_\_\_\_\_

1.6 Fax Number: \_\_\_\_\_

1.7 Name of Facility: \_\_\_\_\_

1.8 Location of Facility: \_\_\_\_\_  
(Street, Avenue, Road, R.R., Box etc., City, Town, Village, Postal Code)

\_\_\_\_\_  
\_\_\_\_\_

(¼ Section, Section, Township, Range, Meridian)

\_\_\_\_\_

(Plan, Block, Lot)

**STATEMENT OF CONFIRMATION**

I certify that I am familiar with the information contained in this application and enclosures, and that to the best of my knowledge and belief, such information is true, complete and accurate.

Signature of Applicant: \_\_\_\_\_ Date: \_\_\_\_\_  
(Signature)

Printed Name of Applicant: \_\_\_\_\_

Title of Applicant: \_\_\_\_\_

Telephone number of Applicant: \_\_\_\_\_

Note: All applications must be signed and certified by a principal executive officer of the applicant of at least the level of vice-president or a duly authorized representative of that person.

**SECTION TWO: GENERAL INFORMATION**

2.1 Type of Application:

- A New Approval or Registration
  - Proposed date for construction commencement: \_\_\_\_\_
  - Proposed date for construction completion: \_\_\_\_\_
  - Proposed date for of operational commencement: \_\_\_\_\_
- A Renewal of an Approval; Approval No. \_\_\_\_\_
- An Amendment to an Approval; Approval No. \_\_\_\_\_

2.2 Application for:

- Class II Landfill
  - Private       Public       Private and Public
- Class III Landfill
  - Private       Public       Private and Public
- Class II and III Landfill
  - Private       Public       Private and Public

proposed airspace available \_\_\_\_\_ m<sup>3</sup>

proposed estimated life span \_\_\_\_\_ years

2.3 Type of Class II Landfill:

Municipal

- infiltration gradient     natural attenuation     entombment     bioreactor

Industrial

- entombment

2.4 Non Municipal Solid Waste types accepted:

- Biomedical     NORM     Oilfield     Sulphur  
 dead animals/     asbestos     specified risk material  
 radioactive waste

other \_\_\_\_\_

other \_\_\_\_\_

2.5 Liner Design:

- Compacted Clay Liner     Composite     no liner

other \_\_\_\_\_

2.6 Leachate management:

Storage

- in cell     above ground tanks     leachate pond     other \_\_\_\_\_

Disposal

- recirculation     wastewater treatment plant     deepwell     other \_\_\_\_\_

2.7 Landfill Cap Design:

Type of System

- Evapotranspiration     Capillary barrier system     Anisotropic  
 Oxidative layer     other \_\_\_\_\_

Materials

- compacted clay     synthetic (HDPE, LDPE, PVC, other)     composite  
 Geosynthetic Clay Liner     compost     natural soils (sand, till, etc.)  
 other \_\_\_\_\_

2.8 Other proposed activities onsite:

- bioremediation     composting     cogeneration  
 biogas     recycling     leachate treatment

- sump waste       incineration       open pit burning
- landfill gas recovery

- 2.9 Provide a summary description of the proposed facility, including the capacity and size of the landfill.
- 2.10 State whether an environmental impact assessment report is required and summarize any review of the proposed project completed under the environmental assessment process.
- 2.11 Attach copies of existing approvals that were issued under the *Environmental Protection and Enhancement Act*, a predecessor of the Act, or the *Public Health Act*. Also attach any approvals that were issued under the *Water Act* or its predecessor and any temporary field approvals issued under the *Public Lands Act*.
- 2.12 Describe any public consultation undertaken or proposed. Briefly describe the target audiences and any environmental concerns identified in the review, and how those concerns were addressed.
- 2.13 Attach a copy of the information package delivered to all people who are directly affected by the landfill or to any interested parties, as well as any negative responses.
- 2.14 Provide a certified copy of the title to the site and of any lease, right-of-way agreement, or other documents necessary to show that the applicant has legal control of the proposed site.
- 2.15 Provide a copy of the development permit obtained from the municipality for the designated land use of the site.
- 2.16 Provide evidence that the local board of health approves or has no objection to the landfill.
- 2.17 Provide financial security or environmental reserve fund documentation for closure and post-closure care activities.
- 2.18 Any other information required by the Director, including information that is addressed in a standard, code of practice, or guideline published or adopted by the Director.

### **SECTION THREE: LANDFILL DEVELOPMENT AND SITING**

To assess the impact and necessity of the proposed facility, the applicant shall provide:

- 3.1 An analysis of the need for the new facility including:
  - (a) the geographical area that the facility will service and the types of waste that will be accepted;
  - (b) waste generation records and waste forecasts for the area to be served;
  - (c) an assessment of the current disposal system for waste in the area;
  - (d) the technical, environmental, and economic benefit of building a new facility: and

- 3.2 If the application is for a renewal:
- (a) a summary of the environment monitoring information and other operational records gathered during the previous approval period;
  - (b) a summary of the performance of a substance release control system used during the previous approval period; and
  - (c) a summary of the types and volumes of waste that were landfilled during the previous approval period.
- 3.3 A description of the criteria used to select the proposed site for the landfill, as well as any alternative sites.
- 3.4 A description of existing and surrounding land use within 800 metres of the proposed site;
- 3.5 Scale diagrams of the facility site and surrounding area, which comply with the Environmental Protection and Enhancement Act and Public Health Act setbacks, which includes:
- (a) a topography of the area including surface land contours, natural water drainage patterns, type of vegetation, and tree cover;
  - (b) natural and constructed physical features such as streams, rivers, water bodies, canals, and drainage controls;
  - (c) locations and surface elevations of all boreholes and monitoring wells;
  - (d) site boundaries (size of the facility) and land use designation of the site and adjacent properties;
  - (e) location of all directly affected development, infrastructure, and transportation routes;
  - (f) the location of any other recycling and waste management facilities that will be constructed on the site;
  - (g) if varying from environmental setbacks, justification of why the variance is necessary and information on how the environmental receptors will be protected; and
  - (h) if varying from Public Health, Municipal Government Act, or other setbacks, attach the written authorization provided for the variance of the setback.
- 3.6 Description and evaluation of the soil conditions of the site, and of the site investigation procedures, demonstrating its environmental suitability for the proposed landfill design and development.
- 3.7 A soil and land use inventory including the existing type of soil, the depths, volume and quality of topsoil and subsoil materials, drainage conditions, type of vegetation, and land use of the proposed landfill site prior to disturbance.

- 3.8 A detailed Hydrogeological Investigation Program identifying the hydrologic and hydrogeologic characteristics of the site including:
- (a) the groundwater and surface water regimes associated with the new or laterally expanding landfill;
  - (b) for a laterally expanding landfill, the potential impacts on groundwater regimes relative to the existing landfill;
  - (c) the potential contaminant flow paths from the landfill into the receiving environment;
  - (d) domestic, municipal, and other licensed water well locations within 5 km of the proposed site and municipal wellhead protection zones;
  - (e) a detailed technical report including, at a minimum, all of the following information:
    - i. a description of the topography, surface drainage patterns, geology, and hydrogeology;
    - ii. detailed borehole records showing the geologic and hydrogeologic conditions encountered and depth of all major stratigraphic features;
    - iii. cross-sections showing:
      - a. an interpretation of the geologic stratigraphy;
      - b. directions of groundwater flow;
      - c. hydraulic conductivities of the geologic strata that influence or control groundwater movement; and
    - iv. text interpretation of the hydrologic and hydrogeologic conditions on a regional and local scale.

## **SECTION FOUR: DESIGN AND CONSTRUCTION**

The applicant shall provide:

- 4.1 A Design Plan and Construction Specifications which shall include, at a minimum, all of the following information:
- (a) an engineering design report that provides:
    - i. a description of the design intent and a summary of the components included in the design to achieve the design intent;
    - ii. an assessment of the long-term integrity of the liner and leachate collection system where the landfill is proposed to be located in an unstable area;
    - iii. an evaluation of the potential for leachate generation and leachate composition based on site specific conditions;
    - iv. an evaluation of the potential for landfill gas generation and gas composition based on the type of waste accepted, climate, the landfill design, or other site specific conditions;
    - v. a description of monitoring systems;
    - vi. a preliminary closure plan that includes at a minimum, the following:
      - a. a staging plan for closure of the landfill or portions of the landfill;
      - b. a plan to manage surface water infiltration or moisture additions according to the design intent of the landfill cells; and
      - c. a plan for final cover and re-vegetation of completed areas of the landfill and the potential end-use of the landfill after closure; and

- vii. engineering design maps and plans that provide:
- viii. topographic maps showing the overall proposed site development and setbacks;
- ix. a site plan that shows the proposed landfill footprint and the location of the points of compliance;
- x. a minimum 30 metre separation between the waste footprint and the landfill property line;
- xi. cross-sections showing the proposed surface elevations, base elevations and grades for the landfill development;
- xii. detailed drawings for structural components of the landfill including, but not limited to, liner systems and leachate collection and removal systems;
- xiii. a run-on control system to prevent flow onto the active landfill area for events up to at least the peak discharge from a 1 in 25 year – 24 hour duration rainfall event;
- xiv. a run-off control system for the active landfill area to collect and control at least the run-off water volume resulting from a 1 in 25 year – 24 hour duration rainfall event; and
- xv. a groundwater monitoring system.

4.2 A Construction Quality Assurance Plan and a Construction Quality Control Plan.

4.3 A detailed Landfill Design Plan complete with final drawings, which includes:

- (a) the proposed landfill development of trench locations, sequencing, depths, and finished height of fill;
- (b) the physical and chemical properties of any engineered containment systems;
- (c) the above-liner leachate control and management system being proposed;
- (d) the below-liner leak detection system being proposed;
- (e) an evaluation of the potential for leachate generation and leachate composition based on site specific conditions;
- (f) a description of the monitoring systems;
- (g) the cover materials to be used;
- (h) surface run-off and run-on control systems and the design of all holding ponds proposed for the facility;
- (i) any proposed gas interception and venting systems;
- (j) the quality assurance and quality control methods to be employed to ensure compliance with the approved site engineering practices; and
- (k) a development plan and schematic cross-section of the landfill.

4.4 A statement outlining any deviations from minimum design and construction standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable.

- 4.5 A report justifying any deviation from minimum design and construction standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable, including a description of any potential impacts that may result from the deviation.
- 4.6 Any other information required by the Director, including information that is addressed in a standard, code of practice, or guideline published or adopted by the Director.

## **SECTION FIVE: LANDFILL OPERATION**

The applicant shall provide:

- 5.1 A copy of the proposed operating procedure manual for the facility, which shall address:
- (a) day-to-day operational procedures for waste control, covering waste, or alternative cover operations;
  - (b) day-to-day waste acceptance procedures and policies to ensure that prohibited wastes are not accepted and that special wastes are handled according to published guidelines;
  - (c) surface water management, litter, and nuisance controls;
  - (d) liner protection plan;
  - (e) a site safety plan;
  - (f) emergency response procedures for fires, and substance releases;
  - (g) the remedial procedures to be implemented should groundwater quality fail to meet performance standards;
  - (h) procedures for the management of subsurface landfill gas (and surface, if applicable) which shall address detection, interception, venting, and recovery;
  - (i) procedures for the management of leachate including collection, treatment, and disposal;
  - (j) procedures for control of litter and minimizing the escape waste from the landfill site (including tracking of waste from vehicles);
  - (k) the Landfill Monitoring Plan in accordance with the Monitoring, Analysis and Correction Action section of the Standards for Landfill in Alberta (as updated); and
  - (l) a plan for other operations where they are included at the landfill site such as the storage, processing, recycling or composting of segregated waste or feedstocks.
- 5.2 Copies of any emergency response plans required to be filed with the municipality in which the facility is located, or with the Disaster Services Branch, Municipal Affairs and confirmation that these documents have been filed with the appropriate agency as required.
- 5.3 A copy of the contingency plan in place to deal with any unforeseen sudden or gradual releases of substances to the environment.

- 5.4 A copy of the proposed soil conservation plan and procedures based on the soils inventory, including the depths and volumes of topsoil and subsoil to be salvaged, methods of topsoil and subsoil stockpiling, storage locations of topsoil and subsoil, and measures to be taken to prevent the use or loss of topsoil and subsoil during storage.
- 5.5 A list of substances, the sources of the substances, and the amount of each substance that will be released into the environment as a result of the new or laterally expanding landfill, the methods by which the substances will be released, and the steps taken to reduce the amount of substances release.
- 5.6 A statement outlining any deviations from minimum landfill operation standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable.
- 5.7 A report justifying any deviation from minimum landfill operation standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable, including a description of any potential impacts that may result from the deviation.
- 5.8 Any other information required by the Director, including information that is addressed in a standard, code of practice, or guideline published or adopted by the Director

## **SECTION SIX: MONITORING, ANALYSIS, AND CORRECTIVE ACTION**

The applicant shall provide:

- 6.1 A copy of the proposed landfill monitoring program, which shall address at a minimum:
  - (a) a groundwater monitoring program;
  - (b) a surface water monitoring program;
  - (c) a leachate monitoring program; and
  - (d) a subsurface landfill gas monitoring program.
- 6.2 The Groundwater Monitoring Program shall include, at a minimum, the following:
  - (a) a program to establish baseline groundwater quality prior to the start of landfill operations;
  - (b) a list of parameters to be monitored for background groundwater quality analysis;
  - (c) approximate locations of piezometers and groundwater monitoring wells and the rationale for their locations;
  - (d) a description of piezometer construction, materials, screening intervals, casing, and annular seals and completion depths;
  - (e) a commitment to do in-situ hydraulic conductivity tests on completed piezometers;
  - (f) a detailed program for groundwater sample collection and analysis, that includes, at a minimum, the following:
    - i. a monitoring schedule with a commitment for annual sampling, at a minimum;

- ii. description of the complete sampling protocol and how water samples will be preserved and analysed; and
    - iii. a monitoring schedule for measurement of hydrostatic head with respect to fixed datums.
  - (g) a Groundwater Contingency Plan outlining groundwater quality objectives that would trigger implementation of the groundwater remediation plan.
- 6.3 The Surface Water Monitoring Program shall include, at a minimum, the following:
- (a) a program to establish baseline surface water quality of the receiving stream for run-off from the landfill;
  - (b) a detailed program for surface water sample collection and analysis, during the active life, final closure and post-closure period for the landfill that establishes upstream and downstream surface water quality of any receiving stream for run-off water;
  - (c) a detailed program for the sampling and analysis for run-off impounded surface water prior to its release; and
  - (d) a Surface Water Contingency Plan.
- 6.4 The Subsurface Landfill Gas Monitoring Program shall include, at a minimum, the following:
- (a) a description of the subsurface landfill gas monitoring sites and their locations;
  - (b) the methods to be used for measurement and detection of the lateral migration of subsurface landfill gas;
  - (c) the frequency for measurement of subsurface landfill gas; and
  - (d) a Subsurface Landfill Gas Contingency Plan for the mitigation of subsurface landfill gas migration.
- 6.5 The Leachate Monitoring Program shall include, at a minimum, the following:
- (a) a program to measure the leachate head during the active life, final closure and post-closure care period for the landfill, which shall include:
    - i. sampling methodology and frequency; and
    - ii. analysis of leachate quality; and
  - (b) a program to monitor the leak detection system.
- 6.6 A statement outlining any deviations from minimum monitoring, analysis and corrective action standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable.
- 6.7 A report justifying any deviation from minimum monitoring, analysis and corrective action standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable, including a description of any potential impacts that may result from the deviation.
- 6.8 Any other information required by the Director, including information that is addressed in a standard, code of practice, or guideline published or adopted by the Director.

## SECTION SEVEN: FINAL CLOSURE AND POST CLOSURE CARE

The applicant shall provide:

- 7.1 A description of the plan developed to perform any planned or unplanned closure of the facility, or any part of it, at any point during its active life including:
- 7.2 A detailed conservation and reclamation plan describing:
  - (a) the intended land use of the reclaimed areas and how the reclamation plan will meet these requirements;
  - (b) soil replacement including depths and volume of subsoil and topsoil to be replaced;
  - (c) the proposed slopes of the final cover;
  - (d) surface water drainage restoration;
  - (e) final topography;
  - (f) erosion control;
  - (g) revegetation and conditioning of the site, including:
    - i. species list, seed source and quality, seeding rates and methods;
    - ii. fertilization rates and methods;
    - iii. wildlife habitat plans where applicable including target species and habitat; and
  - (h) subsidence remediation.
- 7.3 A description of the proposed post-closure monitoring.
- 7.4 An estimate, in current dollars, of the cost of unplanned or planned closure and of post-closure monitoring and site maintenance.
- 7.5 The financial assurance instruments that the applicant will provide to cover the cost of facility closure and post-closure care.
- 7.6 An estimate of the expected year of final closure of the facility.
- 7.7 The expected land use and zoning of the site after effective closure
- 7.8 A statement outlining any deviations from minimum final closure and post closure care standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable.
- 7.9 A report justifying any deviation from minimum final closure and post closure standards described in a standard, code of practice, or guideline published or adopted by the Director, if applicable, including a description of any potential impacts that may result from the deviation.
- 7.10 Any other information required by the Director, including information that is addressed in a standard, code of practice, or guideline published or adopted by the Director.



**PROVINCE OF ALBERTA**  
*Environmental Protection and Enhancement Act*

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CLASS II OR CLASS III LANDFILL**

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**FOR OFFICE USE ONLY**

**EMS DATA**

Facility Name: \_\_\_\_\_  
Approval ID: \_\_\_\_\_  
Manual Approval ID: \_\_\_\_\_  
Status: \_\_\_\_\_  
Status Date: \_\_\_\_\_  
Status Comments: \_\_\_\_\_  
Operation ID: \_\_\_\_\_  
Effective Date: \_\_\_\_\_  
Expiry Date: \_\_\_\_\_  
Renewal Allowed: \_\_\_\_\_  
Document Type: \_\_\_\_\_  
Comments: \_\_\_\_\_

**OPERATION EMS DATA**

Operation ID: \_\_\_\_\_  
Facility Name: \_\_\_\_\_  
Parent Op ID: \_\_\_\_\_  
Description: \_\_\_\_\_  
Operator: \_\_\_\_\_  
Owner: \_\_\_\_\_  
Legal Land Location: \_\_\_\_\_  
Municipality: \_\_\_\_\_  
District: \_\_\_\_\_  
Provincial Electoral Division: \_\_\_\_\_  
River Basin: \_\_\_\_\_  
River Sub Basin: \_\_\_\_\_  
Region: \_\_\_\_\_