

## OPERATIONAL CERTIFICATE

**MR-05479**

*Under the provisions of the Environmental Management Act,  
and in accordance with the approved  
Columbia Shuswap Regional District Solid Waste Management Plan, the*

### COLUMBIA SHUSWAP REGIONAL DISTRICT

Box 978

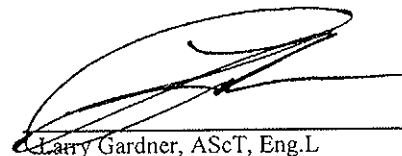
781 Marine Park Drive NE

Salmon Arm British Columbia

V1E 4P1

is authorized to manage municipal solid waste and discharge residual solid waste to the ground at a sanitary landfill facility located in Salmon Arm, British Columbia, subject to the conditions listed herein. Contravention of any of these conditions is a violation of the *Environmental Management Act* and may result in prosecution.

This Operational Certificate supersedes all previous versions of the Permit PR-05479 issued under the authority of the *Environmental Management Act*.



1. **AUTHORIZED DISCHARGE**

This authorization applies to the discharge of solid waste to a sanitary landfill known as the Salmon Arm landfill.

- 1.1 The works authorized are a sanitary landfill and related appurtenances located approximately as shown on the attached Site Plan A.
- 1.2 The maximum quantity of waste discharged shall not exceed the design capacity of the landfill as specified in the approved Design and Operations Plan. The final footprint and profile of the discharged waste shall be within that specified in the Design and Operations Plan, and roughly as shown on the attached Site Plan A.
- 1.3 The authorized discharge is municipal solid waste as defined in the *Environmental Management Act* and other waste as may be authorized by the Director.
- 1.4 The legal description of the location of the authorized landfill facility is Lot 1, Plan 45716, Section 7, Township 20, Range 9, West of the Sixth Meridian, Kamloops Division of the Yale District.
- 1.5 The civic address of the property is 4290 20<sup>th</sup> Avenue SE.

2. **DESIGN AND PERFORMANCE REQUIREMENTS**

2.1 **Design and Operations Plan**

The Operational Certificate holder shall prepare and maintain a current Design and Operations Plan. The Plan shall be reviewed and updated as needed at least once every five years. The Plan must address, but not be limited to, each of the subsections in the *Landfill Criteria for Municipal Solid Waste* including performance, siting, design, operational, closure and post-closure criteria. The facilities must be developed, operated and closed in accordance with the Plan. Should there be any inconsistency between this Operational Certificate and the Plan, this Operational Certificate shall take precedence. An updated Design and Operations Plan shall be submitted to the Director for approval by August 31, 2007.

2.2 **Qualified Professionals**

All facilities and information, including works, plans, assessments, investigations, surveys, programs and reports, must be certified by qualified professionals.

**2.3 Maintenance of Works and Emergency Procedures**

The Operational Certificate holder shall inspect the landfill, any related pollution prevention works and designated areas for managing recyclable or reusable materials regularly and maintain them in good working order. In the event of an emergency or condition beyond the control of the Operational Certificate holder which prevents continuing operation of the authorized works and/or the continued performance of the prescribed methods of operation, the Operational Certificate holder shall immediately notify the Director and take appropriate remedial action.

**2.4 Additional Facilities or Works**

The Director may require investigations, surveys, and the construction of additional facilities or works related to the landfill operation. The Director may also revise the requirements of any of the information required by this Operational Certificate including plans, programs, assessments and reports.

**2.5 Public Health, Safety and Nuisance**

The landfill shall be operated in a manner such that it will not create a public nuisance or become a significant threat to public health or safety with respect to landfill gas, unauthorized access, roads, traffic, airport activity, noise, dust, litter, vectors, or wildlife attraction.

**2.6 Surface Water Diversion**

Discharge of municipal solid waste into water is prohibited. The Operational Certificate holder shall construct adequate surface water and groundwater diversion works to minimize surface water run-off and groundwater seepage from entering the landfill.

**2.7 Ground and Surface Water Quality Impairment**

The landfill shall be operated in a manner such that ground or surface water quality does not decrease beyond that specified by the British Columbia Water Quality Guidelines, or other appropriate criteria as may be specified by the Director, at or beyond the landfill property boundary.

If exceedances to the specified water quality criteria occur as a result of landfill operations, the Director may require that leachate management control measures or works be undertaken. Terms of reference for any leachate management study and/or design work shall be submitted to the Director for review prior to conducting the work.



Larry Gardner, ASCT, Eng.L  
for Director, *Environmental Protection Act*  
Thompson and Cariboo Region  
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## 2.8 Landfill Gas Management

The Landfill shall not cause combustible gas concentrations to exceed the lower explosive limit in soils at the property boundary or 25% of the lower explosive limit at or in on-site or off-site structures.

An estimate of the emissions of non-methane organic compounds (NMOCs) has been carried out in accordance with the *Landfill Criteria for Municipal Solid Waste*. It was determined that the emissions of NMOCs are currently well below the 150 tonnes/year threshold, and as such, landfill gas recovery and management systems are not required at this time for NMOC emissions control. The Director may require an updated landfill gas emissions assessment in the future.

Because there are no natural landfill gas migration barriers at and around the Salmon Arm landfill, and since there are several buildings within 300 metres of the fill zone of the landfill, a landfill gas management program is required at this site as outlined in the Design and Operations Plan. Landfill gas monitoring and management at the Salmon Arm landfill is further complicated by the presence of an adjacent DLC landfill operation to the west and historic municipal solid waste landfill cells on the adjacent City-owned airport land to the north and east of the current Salmon Arm landfill property. Therefore, it is essential that an appropriately qualified professional oversee the landfill gas management program at this site. The Director may require revisions to the landfill gas management program where warranted.

## 2.9 Property Boundary

A 50 metre property boundary setback, including a 15 metre wide swath of trees, shall be maintained around the perimeter of the landfill property as shown in Site Plan C.

## 2.10 Bird Control

The Director may require bird control measures acceptable to Transport Canada to minimize the potential for birds causing a hazard to aircraft.

# 3. OPERATIONAL REQUIREMENTS

## 3.1 Waste Deposition and Compaction

Waste shall be spread on the working face in layers of 0.6 metre thickness or less and compacted. The working face shall not exceed a vertical height of 3 metres.



### 3.2 Daily Cover

A compacted layer of cover material of at least 0.15 metre of soil or functionally equivalent alternate cover material, as authorized by the Director, is to be placed on all exposed solid waste by the end of each day of operation. During periods of extreme weather conditions, such as those that cause the ground to freeze, a reduction to the normal cover frequency may be allowed in writing at the discretion of the Director.

### 3.3 Intermediate Cover

A compacted layer of cover material of at least 0.30 metre of soil is to be placed on areas of the landfill where waste disposal will not occur for a period exceeding a further 30 days.

### 3.4 Final Cover

Completed portions of the landfill are to progressively receive final cover during the active life of the landfill in accordance with the Design and Operations Plan.

### 3.5 Prohibited Wastes

The disposal of the following types of wastes is strictly prohibited:

- (a) Hazardous Wastes other than those specifically approved for disposal to authorized landfills in the *Hazardous Waste Regulation* under the *Environmental Management Act*
- (b) Biomedical wastes as defined in the Guidelines for the Management of Biomedical Wastes in Canada (Canadian Council of Ministers of the Environment, February 1992)
- (c) Bulk liquids and semi-solid wastes, which contain free liquids, as determined by US EPA Method 9095A Paint Filter Liquids Test, Test Methods for Evaluating Solid Wastes-Physical/Chemical Methods (EPA Publication No. Sw-846).

### 3.6 Waste Asbestos

Notwithstanding the requirements of subsection 3.5, the disposal of waste asbestos in compliance with the requirements of Section 40 of the *Hazardous Waste Regulation* under the *Environmental Management Act* is hereby approved.

### 3.7 Contaminated Soil

Soil that contains contaminants in concentrations less than "hazardous waste" as defined by the Hazardous Waste Regulation may be disposed at the landfill site.

Disposal includes monofilling, co-disposal with other wastes, and use as daily or intermediate cover material. Disposal does not include use as final cover material.

**3.8 Ozone Depleting Substances**

Release of ozone depleting substances from the storage, handling and disposal of used appliances, equipment, or any material containing ozone depleting substances is prohibited in accordance with the requirements of the *Ozone Depleting Substances Regulation*.

**3.9 Wildlife and Vector Control**

Vectors (carriers capable of transmitting a pathogen from one organism to another including, but not limited to flies and other insects, rodents, and birds) shall be controlled by the application of cover material at the required frequency or by such additional methods as specified by the Director. The Director may require the installation of a bear-proof electric fence.

This landfill shall be operated so as to minimize the attraction of wildlife such as bears and birds by applying cover at required frequencies and instituting a good housekeeping program.

**3.10 Site Access and Supervision**

A suitably trained landfill operator, familiar with the requirements of the Operational Certificate and the specifications of the Design and Operations Plan, shall be present at all times during operating hours.

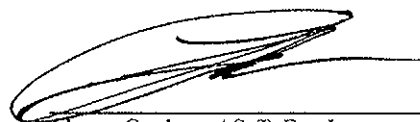
Locking gates shall be maintained at all access routes to the landfill site. Gates, perimeter fencing and/or barriers shall be installed where necessary to prevent unauthorized access to the site by vehicles. Gates shall be locked during non-operating hours.

**3.11 Dust Control**

Dust created within the landfill property shall be controlled, using methods and materials acceptable to the Director, such that it does not cause a public nuisance.

**3.12 Litter Control**

Litter shall be controlled by compacting the waste, minimizing the work face area, applying cover at the required frequencies, providing litter control fences and instituting a regular litter pickup and general good housekeeping program or as specified by the Director.



### **3.13 Waste Reduction and Alternate Disposal**

The Provincial Government has developed policies to promote the reduction, reuse and recycling of wastes. The Operational Certificate holder is encouraged to segregate for recycling and reuse, where possible, materials destined for disposal at this site.

Public scavenging shall not be permitted at the landfill. The controlled salvaging of waste by the landfill operator or persons authorized by the Operational Certificate holder is encouraged if areas or facilities for separation and storage of recyclable or reusable materials are provided.

In certain landfill environments, some construction and demolition debris or other wastes may create specific air and water quality concerns. If problems arise at this site that are attributable to specific wastes, the Director may require that alternate disposal/storage procedures be implemented.

### **3.14 Operations and Maintenance Manual**

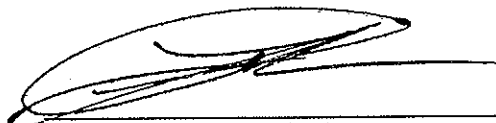
The Operational Certificate holder shall prepare an Operations and Maintenance Manual to be reviewed and updated as necessary on at least an annual basis. A draft Table of Contents shall be submitted to the Director by January 31, 2007.

## **4. MONITORING AND REPORTING REQUIREMENTS**

### **4.1 Environmental Monitoring Program**

The Operational Certificate holder shall submit to the Director an environmental monitoring plan, prepared by a qualified professional, that addresses as a minimum groundwater and landfill gas monitoring and reporting. Monitoring shall be carried out in accordance with the plan. The monitoring plan shall be submitted to the Director as part of the updated Design and Operations Plan by August 31, 2007 and shall be reviewed annually in the annual report required under Section 4.4. Based on the information submitted in the annual report, or any other information relevant to the site, the Director may vary the frequency, location and analyses of environmental monitoring as warranted.

As recommended in the Design and Operations Plan, the Operational Certificate holder is required to install an additional background groundwater monitoring well or wells prior to the development of phase 2 of the landfill. The location and installation of the background groundwater monitoring well(s) shall be specified and supervised by a qualified professional who is knowledgeable in the fields of hydrogeology and landfill impact assessment. Upon completion of the installation, a scaled site location plan indicating the landfill footprint, associated works and all existing monitoring wells shall be submitted to the Director.



Larry Gardner, ASCT, Eng.L  
for Director, *Environmental Protection Act*  
Thompson and Cariboo Region  
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The Operational Certificate holder shall ensure that environmental monitoring devices are adequately secured and maintained, including provisions to ensure protection from damage due to vehicles or vandalism.

The Operational Certificate holder shall maintain records of all monitoring program data and analyses available for inspection.

#### 4.2 Sampling Techniques

Sampling shall be carried out in accordance with the procedures described in the most recent edition of the "British Columbia Field Sampling Manual for Continuous Monitoring Plus the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples", or by suitable alternative procedures as authorized by the Director.

A copy of the above manual may be purchased from the Queen's Printer Publications Centre, P. O. Box 9452, Stn. Prov. Gov't. Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or (250) 387-6409).

Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination and breakage.

#### 4.3 Analyses

Analyses are to be carried out in accordance with procedures described in the most recent edition of the "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials", or by suitable alternative procedures as authorized by the Director.

A copy of the above manual may be purchased from the Queen's Printer Publication Centre, P. O. Box 9452, Stn. Prov. Govt. Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or (250) 387-6409).

#### 4.4 Annual Report

The Operational Certificate holder shall submit to the Director an annual report by March 31 each year for the previous calendar year. The annual report shall include but not be limited to:

- (a) an executive summary;
- (b) the type and tonnage of waste received, recycled and landfilled for the year;
- (c) a current topographic map detailing airspace consumption, on-site borrow pit changes and future developments;
- (d) updated estimates for the remaining capacity, closure date for the current phase and closure date for the current landfill footprint;



- (e) a statement of the current dollar value of the Closure Fund and the amount earmarked for the Salmon Arm Landfill site;
- (f) any proposed changes from the Design and Operations Plan and the environmental monitoring program;
- (g) an operations update which summarizes landfill development work completed in the subject reporting year and work planned for the subsequent year;
- (h) occurrences or observations of wildlife (medium and large carnivores) at the facility;
- (i) a statement regarding the facility's progress in reducing the regional solid waste stream, in accordance with the hierarchy of reduce, reuse and recycle principles; and,
- (j) the results of all monitoring programs as specified in this Operational Certificate. Data interpretation and comparison to the performance criteria in the *Landfill Criteria for Municipal Solid Waste* and the *Guidelines for Environmental Monitoring and Municipal Solid Waste Landfills*. Trend analyses, as well as an evaluation of the impacts of the discharges on the receiving environment in the previous year shall be carried out by a qualified professional.

## 5. CLOSURE AND POST-CLOSURE REQUIREMENTS

### 5.1 Closure Plan

The Design and Operations Plan, dated February 2001, contains sufficient closure planning information for Ministry purposes at this time. A more detailed Closure Plan, that satisfies the information requirements outlined in Section 8.1 of the British Columbia Landfill Criteria for Municipal Solid Waste, dated June 18, 1993, shall be submitted to the Director at least 1 year prior to the anticipated closure date. Based on waste disposal and population growth rate estimates, landfill site closure is currently forecast for 2078.

### 5.2 Closure Fund

The Operational Certificate holder shall provide for the funding of progressive closure operations, final closure and beyond closure by maintaining a closure fund. The value of the closure fund shall meet or exceed the estimated closure and post-closure costs as established in the approved Design and Operations Plan and updated in the annual report, plus a reasonable contingency for any remediation which may be required.

The Operational Certificate holder shall determine and ensure that the closure fund is adequate by preparing annually a financial statement of the fund which shall be made available to the Director upon request. The financial statement

shall report the accrued capital, interest and additions to the fund for the previous year and review the sufficiency of the fund and the rate of accrual in consideration of the projected costs of closure and post-closure obligations.

**5.3 Site Decommissioning**


In accordance with Section 40 of the *Environmental Management Act* and Part 2 of the *Contaminated Sites Regulation*, the Operational Certificate holder shall submit a site profile to the manager at least 10 days prior to decommissioning the facilities authorized in Section 1.

**5.4 Declaration of Landfill**

Landfills sited on titled land must register a covenant that the property was used for the purpose of waste disposal as a charge against the title to the property as provided for under Section 215.1 of the *Land Title Act*. Landfills located on crown land are to have a "notation on file" registered that the property was used for the purpose of waste disposal.

**5.5 Buildings and Structures**

The construction of buildings and other structures on landfills containing putrescible wastes is not recommended for a minimum period of 25 years after closure due to concerns about combustible gas and excessive settlement. Such activity will only be considered and /or authorized after an investigation and report by qualified persons. The report is to be submitted for authorization to the Director prior to initiating construction activities.



20th Ave. S.E.

# SITE PLAN A

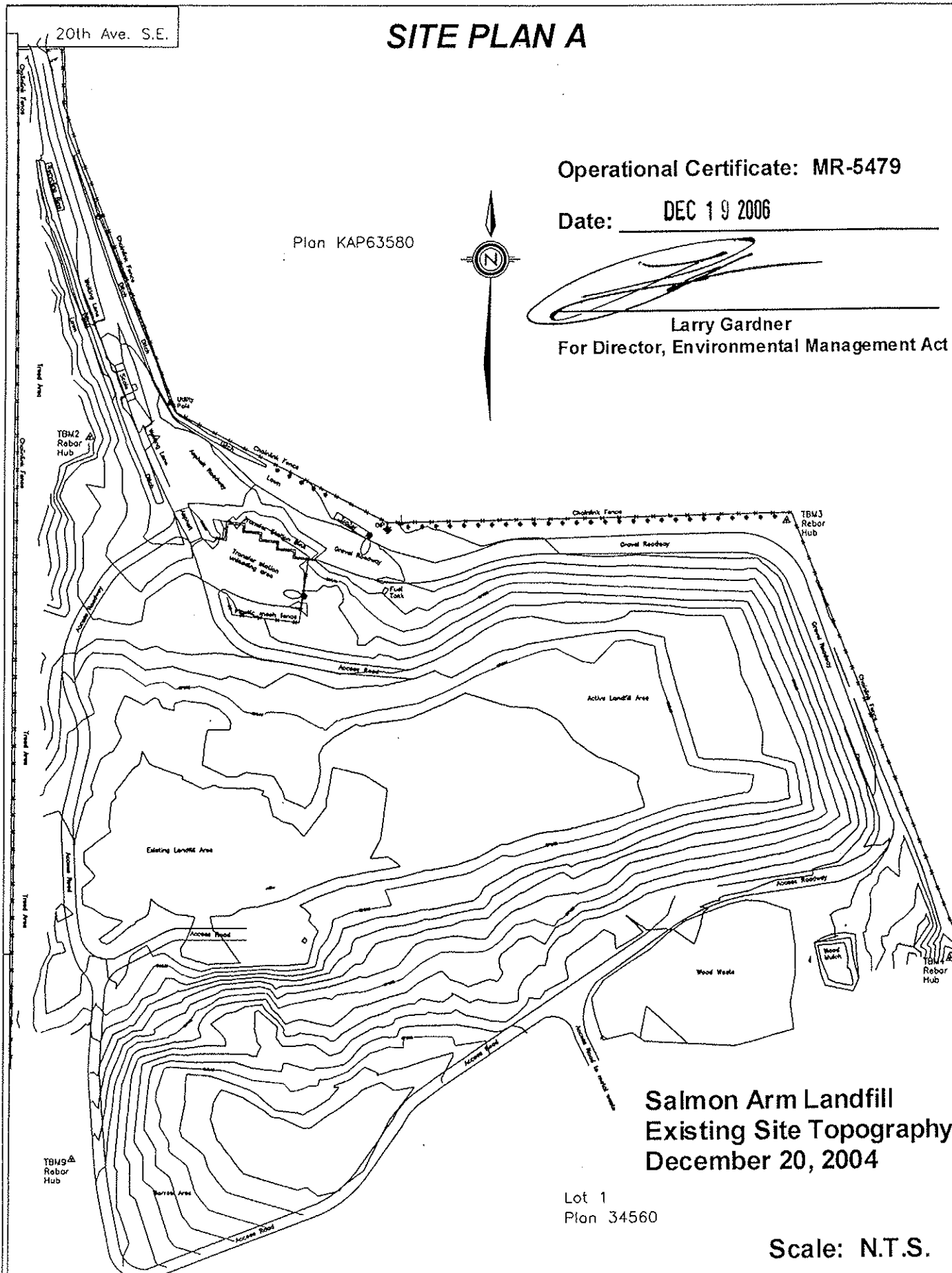
Plan KAP63580

Operational Certificate: MR-5479

Date: DEC 19 2006



Larry Gardner  
For Director, Environmental Management Act



Salmon Arm Landfill  
Existing Site Topography  
December 20, 2004

Lot 1  
Plan 34560

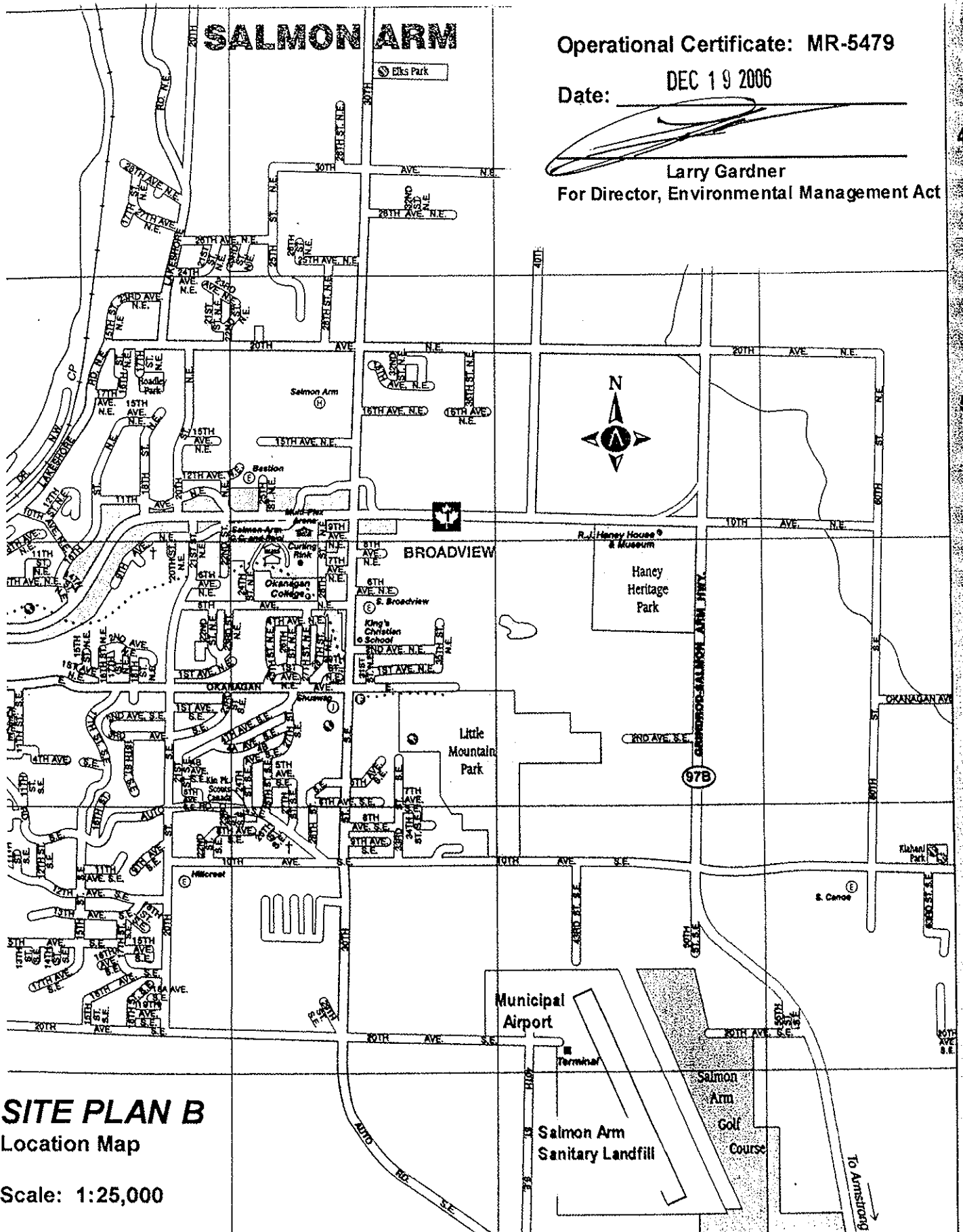
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Operational Certificate: MR-5479

Date: DEC 19 2006

Larry Gardner  
For Director, Environmental Management Act



**SITE PLAN B**

Location Map

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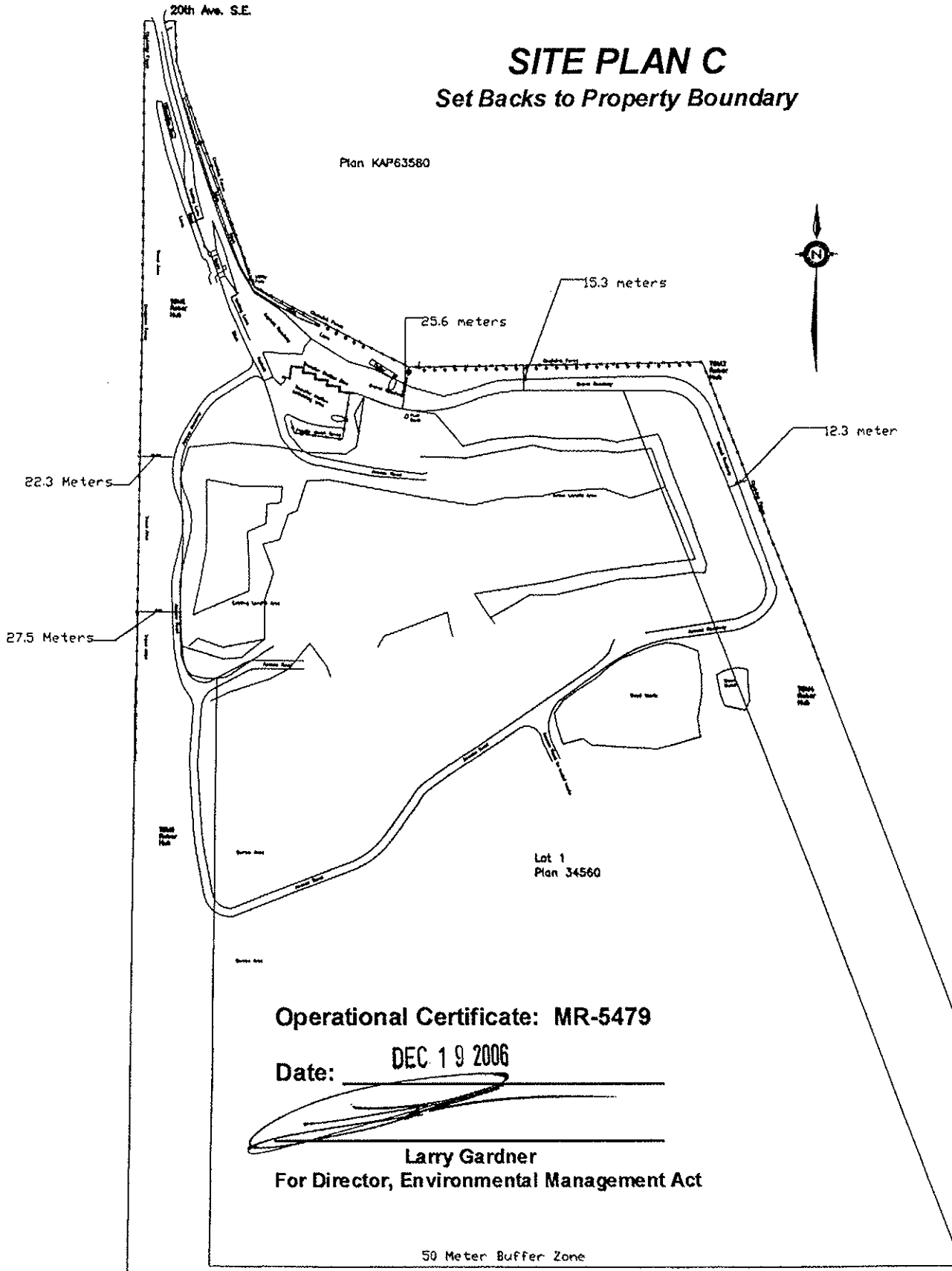
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# SITE PLAN C

## Set Backs to Property Boundary

Plan KAP63580



Operational Certificate: MR-5479

Date: DEC 19 2006

Larry Gardner  
For Director, Environmental Management Act

50 Meter Buffer Zone

Scale: N.T.S.

