



ROSSWOOD LANDFILL

2021 Annual Report

Prepared for:
British Columbia Ministry of
Environment & Climate Change Strategy
EnvAuthorizationsReporting@gov.bc.ca

Prepared by:
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Executive Summary

The Rosswood Landfill serves the community of Rosswood, north of Terrace BC. The landfill is a natural attenuating landfill. During 2021, 201.8 tonnes (1,237 cubic meters) of refuse was deposited into the Rosswood landfill. Approximately 3.3 tonnes of materials were diverted from the landfill. Diverted materials include 1.3 tonnes (12.5 cubic meters) of clean wood, a total of 80 tires (0.8 tonnes), 1.4 tonnes (16.2 cubic meters) of metal, and 0.6 tonnes (7 cubic meters) of white goods.

There were no wildlife interactions at the Rosswood Landfill in 2021. There was no significant works withing the facility for the year of 2021. According to the Rosswood Landfill Operational Certificate MR-5511, there is no required environmental effects monitoring for this facility.



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1 Introduction

This annual report covers the period from January to December 2021 and has been prepared to fulfill the requirements of the Landfill’s Operational Certificate MR-5511. This report meets the requirements in Section 11.5 of the OC.

The 2021 Annual Report summarizes the following topics presented in Table 1.

Table 1: Report Objectives

<p>Waste Tracking Quantity of Waste Received and Recycled</p> <p>Wildlife Observations</p> <p>Operations</p> <p>Environmental Monitoring</p>	
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2 Background

The Rosswood Landfill Facility is owned and operated by the Regional District of Kitimat-Stikine (RDKS). It is located approximately 10 km northwest of the community of Rosswood and approximately 50 km north of the City of Terrace on Highway 113, also known as the Nisga’a Highway.

The Rosswood Landfill is responsible for the management of municipal solid waste generated in the Rosswood area. The majority of the community is residential, with few small businesses. All users of the facility self-haul to the landfill; there is no curbside collection in the area.

Landfill operations are regulated by the Ministry of Environment and Climate Change Strategy (ENV) Operational Certificate (OC) MR-5511, originally issued in August 1979 and updated in June 2012. Operations are conducted in accordance with the Rosswood Landfill Operations and Closure Plan prepared by Sperling Hansen Associates in February 1999.

The footprint of the Rosswood Landfill Facility is one hectare. The Rosswood Facility consists of a landfill with a separate area for the diversion of metal, tires, and clean wood. Metal is collected by a metal recycler from Terrace and tires are collected annually by the Tire Stewardship of British Columbia. Clean wood is burned on site, following the burning criteria in the OC.

3 Waste Disposal


The Rosswood Landfill serves the unincorporated community of Rosswood. In 2021, the approximate population that utilized the landfill was 150 residents. Waste is recorded in cubic metres at the Roswood



Landfill. The total volumes collected at the Rosswood landfill from January through to December 2021 of municipal solid waste, metal, tires, and clean wood are shown in Table 2 in cubic metres, and estimated tonnes.

Table 2: Landfilled and Diverted Waste by Volume and Converted Weight

Waste Type	Cubic Metres	Tonnes ^a
Landfilled Waste		
Refuse	1,237	201.8
Land Clearing	4.2	0.3
Diverted Waste		
Clean Wood	12.5	1.3
Metal	16.2	1.4
Tires	80 ^b	0.8
White Goods	7	0.6



3.1 Solid Waste Disposal

Landfilled wastes include refuse and land clearing wastes.

Refuse

Refuse is defined as discharged materials not including Restricted Waste (metal, organics, and recyclable materials) or Prohibited Waste (hazardous or radioactive waste, contaminated soil, smoldering or flammable material, explosive or highly combustible materials, or tires). Clean wood is segregated on site and burned.

In 2021, **201.8 tonnes** (1,237 cubic metres) of refuse was disposed of in the Rosswood landfill.

Land Clearing

Land clearing waste is defined as waste produced from the clearing of land for development, including trunks, stumps, tree branches 75 millimeters in diameter or greater, tree-tops, and whole trees. Land clearing debris does not include other organic materials, such as vegetative matter, tree branches under 75 millimeters, and compostable structural wood waste. Due to presence of rock and gravel within this land clearing debris, this material is often deposited in the landfill. In 2021, **0.3 tonnes** (4.2 cubic metres) of land clearing debris were disposed of in the landfill.

^a These values are based on pre-compaction volume (m³) data collected from January to December 2021. Volume data was converted to tonnage using the U.S. Environmental Protection Agency’s Volume to Weight Conversion Factors (2016) value of 175 kg/m³ for uncompacted mixed municipal solid waste.

^b This value represents the number of individual tires collected and stored on site during 2021.



3.2 Diverted Materials

At the Rosswood facility there are designated areas for the segregation of recyclable materials including clean wood, scrap metal, large appliances, and tires.

Clean Wood

Clean Wood means wood that is free of glue, laminate, paint, treatment, and may include small metal fasteners but does not include plywood or OSB. Clean wood is segregated and burned as prescribed in the Operational Certificate.

In 2021, **1.3 tonnes** or (12.5 cubic metres) of clean wood was received at the Rosswood Landfill.

Metal

Metals are segregated onsite and sold at market value to scrap yards. In 2021 **1.4 tonnes** (16.2 cubic metres) of metal were diverted from landfill. There were 0.6 tonnes, or 7 cubic metres of white goods collected at the facility. However, because of service interruption due to Covid-19, there was no collection of scrap metal and large appliances from the Rosswood Facility in 2021.

Tires

In 2021, a total of 80 tires or an estimated 0.8 tonnes of tires were collected at the Rosswood Facility for diversion through the Tire Stewardship of British Columbia. The estimated tonnage of tires was converted using the U.S. Environmental Protection Agency's Volume to Weight Conversion Factors (2016) value of *Scrap—Light Duty Tires* (passenger, light truck) estimated at 22.5lbs per unit. This volume was then converted to metric tonnes.

4 Wildlife Occurrences and Observations

The Rosswood Landfill is located in an area with bears, wolves, coyotes, several species of birds of prey, and many other species of mammals that may attempt access to the facility. An electric fence surrounds the landfill area to prevent wildlife access; the fence is electrified from spring until late fall. Soil from site is used as daily and intermediate cover to prevent bird access, reduce odours and minimize wind-blown litter.

To prevent vectors (i.e., birds / wildlife) from gaining access to the landfill active face, Revelstoke Iron Grizzly (RIG) plates are used as alternative daily cover. The RIG plates are positioned each day to cover waste in the active face. Soil from the on-site borrow pit is used as intermediate cover.

The facility Operator is required to inspect the fence line weekly, testing for proper voltage, proper tension on fence stands, overall condition of the fence, and signs of wildlife activity. The results of the inspections are recorded on the Daily Operation Inspection Form.

In 2021, there was minimal activity within the Landfill by other vectors, including raptor species (i.e., bald eagles) and corvid species (i.e., crows and ravens).



5 Operations

There were no major works projects at the Rosswood facility for 2021.

6 Environmental Monitoring

As Operational Certificate MR-5511 does not require environmental effects monitoring at the Rosswood Landfill Facility, no water quality monitoring was conducted during 2021.

7 Summary

During 2021, 201.8 tonnes (1,237 cubic metres) of refuse was disposed in the Rosswood landfill. Approximately 3.3 tonnes of material were diverted from the landfill. Diverted materials include 1.4 tonnes (16.2 cubic metres) of metal diverted, and 0.6 tonnes (7 cubic metres) of white goods, 1.3 tonnes (12.5 cubic metres) of clean wood, a total of 80 tires (0.8 tonnes).

There were no wildlife incidents or encounters observed during 2021 at the Rosswood Landfill. There was minimal vector activity from birds, including raptor species (bald eagles), and corvid species (crows and ravens).

There were no major works or notable operations at the Rosswood Facility for 2021.

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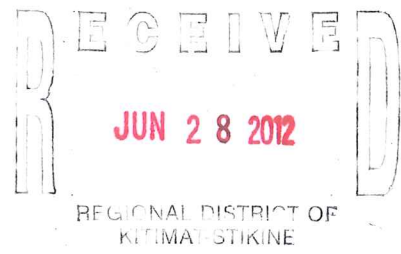
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Regional District of
Kitimat-Stikine

Appendix A Operational Certificate

5360 03 07



File: MR-5511

Date: June 22, 2012

REGISTERED MAIL

Regional District of Kitimat-Stikine
300-4545 Lazelle Avenue
Terrace, BC
V8G 4E1

Dear Operational Certificate Holder:

Enclosed is Operational Certificate MR-5511 issued under the provisions of the *Environmental Management Act*. Your attention is respectfully directed to the terms and conditions outlined in the operational certificate.

This operational certificate does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the operational certificate holder. It is also the responsibility of the permittee to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Administration of this operational certificate will be carried out by staff from the Skeena Region. Plans, data and reports pertinent to the operational certificate are to be submitted to the Regional Manager, Environmental Protection, at Ministry of Environment, Regional Operations, Skeena Region, 3726 Alfred Avenue, Box 5000, Smithers, BC, V0J 2N0.

Yours truly,

Mark Love, P. Ag.
for Director, *Environmental Management Act*
Skeena Region

Enclosure

JUN 5 8 5015



MINISTRY OF
ENVIRONMENT

OPERATIONAL CERTIFICATE

MR-5511
ROSSWOOD LANDFILL

Under the Provisions of the Environmental Management Act and in accordance with the approved Regional District of Kitimat-Stikine Solid Waste Management Plan, the

REGIONAL DISTRICT OF KITIMAT-STIKINE

Suite 300 – 4545 Lazelle Avenue

Terrace, British Columbia

V8G 4E1

is authorized to store, handle, treat and discharge municipal solid waste from Rosswood and surrounding area at the Rosswood landfill, subject to the conditions listed below.

Contravention of any of these conditions is a violation of the *Environmental Management Act* and may result in prosecution.

1. LOCATION OF LANDFILL PROPERTY

The location of the property where discharges are authorized to occur is a portion of unsurveyed Crown Land, approximately 600 metres north and 200 metres west of the northeast corner of District Lot 4977, Range 5 Coast District.

2. AUTHORIZED STORAGE, HANDLING AND DISCHARGES OF WASTES

2.1 Discharge of Municipal Solid Waste

This section applies to the discharge of municipal solid waste to ground at the landfill located approximately as shown on the attached site plan. The site reference number for this discharge is E208839. Refer to Section 6 for the operational requirements associated with this discharge.

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Mark Love, P.Ag.
For Director, Environmental Management Act

OPERATIONAL CERTIFICATE: MR-5511

- 2.1.1 Subject to Sections 5.2, 5.3, and 5.4 the characteristics of the discharge shall be typical of municipal solid waste.
- 2.1.2 The quantity of solid wastes discharged to ground shall not exceed the design capacity of the landfill facility specified as follows: (1) by an engineered final design footprint (see Section 3.3); and (2) by engineered excavation and final grade contours (see Section 3.4).
- 2.1.3 The authorized works are a separate municipal solid waste disposal area and related appurtenances located approximately as shown on the attached site plan.

2.2 **Storage and Handling of Wastes for Salvage and Recycling**

This section applies to the storage and handling of municipal solid wastes for salvage and recycling. Refer to Section 8 for the operational requirements associated with this discharge.

- 2.2.1. Subject to Section 5.2, the characteristics of the discharge shall be typical of recyclable municipal solid waste.
- 2.2.2. The quantity of recyclable wastes stored or handled is indeterminate.
- 2.2.3. The authorized works are a separate recyclable municipal solid waste storage area and related appurtenances located approximately as shown on the attached site plan.

2.3 **Discharge of Air Contaminants from Open Burning**

This section applies to the discharge of air contaminants to the atmosphere from the regulated open burning of selected combustibles from a burn pile located approximately as shown on the attached site plan. The site reference number for this discharge is E277509. Refer to Section 9 for the operational requirements associated with this discharge.

- 2.3.1. The characteristics of the discharge shall be typical of those resulting from the regulated open burning of selected combustibles as per Section 9.3.
- 2.3.2. The maximum authorized rate of discharge is indeterminate.
- 2.3.3. The authorized works are a separate burn area associated with a landfill operation and related appurtenances located approximately as shown on the attached site plan.

3. LANDFILL DESIGN

3.1 Design by Qualified Professional(s)

The landfill and associated works [including but not limited to the size(s) and location(s) of disposal area(s), maximum allowable slopes of disposal area(s), leachate management system, progressive and final closure details, etc.] shall be designed by qualified professionals [such as engineer(s) and/or geoscientist(s)] registered in the Province of British Columbia who have expertise in the field of landfill design. These details shall be incorporated into a "Design, Operations and Closure Plan" (DOCP) and made available to the Director upon request. Where a design feature prepared by a qualified professional is in conflict with any requirement of this operational certificate, it shall be brought to the attention of the Director who shall determine a resolution to the conflict.

3.2 Construction

The landfill and associated works shall be constructed in accordance with the design prepared by qualified professionals, and as documented in the DOCP.

3.3 Engineered Footprint

The landfill design shall include preparation of an engineered final design footprint delineating the maximum extent of solid waste disposal allowable at the facility horizontally (in plan view). The engineered final design footprint shall be clearly shown on a scaled plan of the site and the plan shall be made available in PDF format (see Section 3.6). These details shall be documented in the DOCP.

3.4 Engineered Excavation and Final Grade Contours

The landfill design shall include preparation of engineered excavation grade (if below grade landfilling is to occur) and final grade contours delineating the maximum extent of solid waste disposal allowable at the facility vertically (in cross-sectional view). The engineered excavation and final grade contours shall be clearly shown on scaled drawings (accompanied with typical cross sections to aid in depicting the landfill profile) and the drawings shall be made available in PDF format (see Section 3.6). These details shall be documented in the DOCP.

3.5 Legal Survey

The landfill property shall be legally surveyed on or before June 30, 2018.

3.6 **Scaled Drawings**

A scaled site plan accurately showing the legal survey (when completed), the engineered final design footprint, and final design contours shall be included in the DOCP, and made available in PDF format upon request by the Director. Additional scaled drawings showing excavation contours (if relevant) and typical cross sectional views of the site shall also be included in the DOCP.

4. **LANDFILL GAS MANAGEMENT**

4.1 **Lower Explosive Limit**

The landfill shall be operated such that combustible gas concentrations do not exceed the lower explosive limit in soils at the property boundary or 25% of the lower explosive limit in any on-site or off-site structure or facility, including any services (water, sewer, electrical, etc.)

5. **GENERAL REQUIREMENTS**

5.1 **Site Identification**

A sign shall be erected at the main entrance to the landfill which identifies the following: site name, owner, operator, contact phone number and address, hours of operation, tipping fees (if applicable) and prohibition of hazardous wastes. The lettering on the sign shall be such that it is clearly readable by the public upon approach.

5.2 **Prohibited Wastes**

No wastes as defined by the *Hazardous Waste Regulation* shall be received, stored, treated or disposed of at this site except as authorized by the Director. Lead-acid batteries shall not be landfilled but may be salvaged/recycled provided they are stored, handled and shipped in compliance with the *Hazardous Waste Regulation* and with Section 9 of this operational certificate. Tires equal to or less than (22") in rim size and auto hulks shall not be landfilled.

5.3 **Waste Asbestos**

Notwithstanding Section 5.2 of this operational certificate, the disposal of waste asbestos under Section 2.1 of this operational certificate and in compliance with the requirements of Section 40 of the *Hazardous Waste Regulation* is hereby authorized.

5.4 **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, use as a refuse cell berm material and use as a refuse cell cover material. Disposal must occur within a disposal area as authorized by Section 6 of this operational certificate. Disposal does not include use as final cover material.

5.5 **Waste Measurement**

The quantity of waste material landfilled at the site shall be measured or estimated by means suitable to the Director. The results shall be submitted in accordance with Section 11.5, once per year on or before June 30 for the previous year, expressed in tonnes/yr and/or m³/yr.

5.6 **Ozone Depleting Substances**

Release of ozone depleting substances from the storage, handling and transport of used refrigerator equipment, freezers, motor vehicle air conditioners and other air conditioning equipment, fire extinguishers and the like is strictly forbidden as per the requirements of the *Ozone Depleting Substances and Other Halocarbons Regulation*.

5.7 **Fire Prevention**

The operational certificate holder shall make all reasonable efforts to prevent unauthorized fires from occurring at the landfill site. As a minimum, a fire break clear of all combustible materials at least 15 metres wide shall surround all disposal, treatment and individual storage areas which have received or are receiving combustible materials. Disposal areas that have had 30 cm of compacted mineral soil cell cover or final cover applied are exempt. Water supply and pumping capabilities and/or soil and earth moving equipment shall be maintained at a sufficient level to extinguish fires. In addition, reasonable efforts shall include, but are not necessarily limited to, the preparation of a Fire Prevention and Response Plan.

5.8 **Extinguishment of Fires**

In the event of an unauthorized fire (including any smouldering fire), the operational certificate holder shall immediately make all reasonable efforts to extinguish the fire. The operational certificate holder shall also immediately notify the Provincial Emergency Program (phone: 1-800-663-3456) and any local fire authority of an unauthorized fire.

5.9 **Buffer Zone**

No material shall be landfilled within 50 metres of the property boundary.

5.10 **Litter Control**

The operational certificate holder shall make all reasonable efforts to prevent litter from scattering. Any litter scattered on neighbouring property shall be cleaned up as soon as practicable.

5.11 **Water Table Restriction**

Wastes shall not be deposited or stored less than 1.2 metres above the highest groundwater level.

5.12 **Surface Water Management**

The distance between a natural body of surface water and any stored or buried materials shall be a minimum of 25 metres.

5.13 **Inert Materials**

Specific inert materials may be exempted from the requirements of Section 5.11 by the Director. The permission of the Director must be obtained in writing prior to any disposal or handling of inert materials on an exemption basis.

5.14 **Maintenance of Works and Emergency Procedures**

The operational certificate holder shall inspect the operation regularly and maintain it in good order. The operational certificate holder shall immediately notify the Director of any circumstance which prevents continuing operation in the approved manner or results in non-compliance with the requirements of this operational certificate.

5.15 **Electric Fencing**

5.15.1 **Design, Construction and Maintenance**

Wherever required, electric fencing and gate systems at the landfill shall be designed, constructed, and maintained such that bears are prevented from entering into the landfill through any portion of the fence or gates at any time of the day.

5.15.2 Fence Type

Fencing may be either high tensile smooth wire or fence fabric (e.g., mesh-wire, page-wire, chainlink or the like). The configuration of a high tensile smooth wire fence shall consist of a minimum of eight strands, with four energized strands alternating with four grounded strands as follows: the bottom strand shall be a grounded (-) strand and shall not be more than 10 cm from the earth at any location; and thence starting from the bottom strand, the other seven strands shall be spaced 15 ± 2 cm, 15 ± 2 cm, 15 ± 2 cm, 20 ± 2 cm, 20 ± 2 cm, 20 ± 2 cm, and 25 ± 2 cm. Additional strands to this minimum configuration may be used.

A fence fabric may be used instead of high tensile smooth wire. The fence fabric shall: be a minimum of 1.22 metres high; be constructed of a minimum wire thickness of 11 gauge, and have a maximum mesh size of 15 cm. The bottom of the fabric shall not be more than 10 cm from the earth at any location. Any uncharged fence fabric must have a minimum of four strands of charged wires on an outrigger system, spaced as follows: the first strand shall not be higher than 25 cm from the ground; and each of the remaining three strands shall be spaced approximately 25 cm apart from adjacent charged strands.

5.15.3 Wire Tension

For a high tensile smooth wire fence construction, all strands shall be tightened to a minimum of 125 lbs tension at 20°C. The required tension is to be corrected for temperature by use of the following formula for 12-½ gauge high tensile steel wire:

$$Tension = 125 - 2.5(Temperature - 20)$$

where: *Tension* is in lbs force

Temperature is in °C

5.15.4 Post Spacing

Fence posts shall be spaced a maximum of 7.5 metres apart.

5.15.5 Grounding System

A grounding system shall be installed consisting of solid grounding rods (i.e., not pipe) with a minimum diameter of 16 mm (5/8 inch) that have a buried length of at least 2 metres. A minimum of three grounding rods (spaced at least 3 metres apart) shall be installed and connected to the energizer. Alternative energizer grounding systems (e.g., grounding plates, or a deep-

driven grounding system) may be used provided the grounding is equivalent to or better than three grounding rods. A grounding rod (or equivalent) shall be installed at least once every 450 metres along the fence and connected to the grounded wire strands or uncharged fence fabric. Additional grounding may be required for dry sites or if other conditions affect proper grounding.

5.15.6 Period of Operation

Electric fencing shall be fully operational during the period of April 1 to October 31 inclusive each year and at any other time of year when there is bear activity in the immediate surrounding area. If snow is present during this period, any electrified strands above the snow line shall be isolated from the remainder of the system and energized.

5.15.7 Minimum Voltage

Electric fencing shall be operated with a minimum voltage of 6,000 volts.

5.15.8 Gate(s)

Any access through electric fencing for vehicles, equipment and personnel shall consist of an electrified gate system that is closed during non-operating hours. The gate system shall be electrified to a minimum voltage of 6,000 volts at all times except when being opened or closed. Any gate that is open during operating hours shall be periodically checked by the attendant for bear activity during hours of operation. Gaps between the gate and the fence and the earth, and between gate panels (for a double-hung gate), shall not exceed 10 cm.

5.15.9 Fence Inspections

The entire perimeter of the electric fencing shall be inspected at least once every seven days and the voltage of the fencing measured at several points along the fencing and at each gate using a proper electric fence voltmeter. The results of voltage testing shall be recorded in a log book. Any results less than the minimum 6,000 volts shall be immediately investigated for the cause of the low voltage (e.g., low battery, litter, vegetation, loose or crossed wires, broken insulators, breaks in the grounding system, etc.). Corrective actions to restore proper voltage shall be immediately undertaken.

Signs of digging or other attempts by bears to penetrate electric fencing shall be recorded in a log book. Any penetrations through electric fencing by bears shall be immediately reported to the Conservation Officer Service at 1-877-952-7277 and to the Director at 250-847-7260.

JUN 22 2012



Mark Love, P.Ag.

For Director, Environmental Management Act

In cases of low voltage or signs of penetration attempts, inspections shall be increased from once per week to once per day until proper voltage is fully restored and until there are no new signs of penetration attempts, respectively.

5.16 **Other Agency Requirements**

This operational certificate does not relieve the operational certificate holder from complying with requirements of federal, provincial, regional district or municipal authorities.

6. **OPERATIONAL REQUIREMENTS FOR THE DISPOSAL OF SOLID WASTE**

6.1 **Location**

The operational certificate holder shall identify an area for the disposal of solid waste (herein referred to as the solid waste disposal area) that is within the authorized municipal solid waste disposal footprint (see Section 2.1.3). Signs which identify the nature of the waste acceptable at the designated solid waste disposal area shall be erected and maintained. The lettering on the sign shall be such that it is clearly readable by the public upon approach.

6.2 **Nature of Wastes**

Wastes disposed at the active face of the solid waste disposal area may include any municipal solid waste except liquid wastes and hot ashes or as otherwise restricted by Section 5.2.

6.3 **Bear-Proofing**

The solid waste disposal area shall be maintained inside an electric fence. The electric fence shall comply with all requirements of Section 5.16.

6.4 **Waste Compaction**

Wastes at the active face of the solid waste disposal area shall be spread in layers of 60 centimetres or less on the active face and then compacted with a minimum of three (3) passes with heavy equipment.

6.5 **Maximum Lift Height**

The maximum height of any lift of compacted waste in the solid waste disposal area shall be 5 metres.

6.6 Waste Cover

Cover shall be applied to waste in the solid waste disposal area as specified below. The operational certificate holder shall maintain a log book to record all dates of cover application.

6.6.1 Active Face Cover

Except as otherwise stated in Sub-section 6.6.2, the active face of the solid waste disposal area does not normally require cover. Based on information concerning environmental or public health concerns related to exposed waste at the active face, however, the Director may require that the active face be covered completely at a specified frequency with 0.15 m of soil (or functional equivalent) for a specified period.

6.6.2 Cell Cover

A uniform cover of 30 cm compacted soil shall be applied to all sides of the active waste cell in the solid waste disposal area such that no more than 200 m² of waste is exposed at the active face at any time and such that the volume of waste in the cell does not exceed 2,000 m³. Once the maximum volume of waste has been reached in a cell, the active face shall be covered with 30 cm of compacted soil and a new waste cell begun.

6.6.3 Final Cover

Completed portions of the solid waste disposal area shall progressively receive final cover during the active life of the landfill (see Section 12.5).

6.7 Dead Animal Disposal


Dead animals and animal parts shall be disposed of in the solid waste disposal area and covered as soon as practicable with a minimum of 60 centimetres of soil and/or waste material such that flies and scavenging animals are prevented from accessing the carrion. Disposal of Specified Risk Material from cattle shall only be done in accordance with Canadian Food Inspection Agency requirements and procedures.

7. OPERATIONAL REQUIREMENTS FOR COMPOSTING

7.1 Composting

Composting operations shall comply with the requirements of the *Organic Matter Recycling Regulation* and any other relevant legislation.

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Mark Love, P.Ag.
For Director, Environmental Management Act

OPERATIONAL CERTIFICATE: MR-5511

7.2 **Bear-Proofing**

If the composting operation is to receive any organic wastes that are potential attractants to bears, then composting shall be completely enclosed by an electric fence or contained in a bear-proof structure (building or composting vessel). The electric fence shall comply with all requirements of Section 5.16.

8. **OPERATIONAL REQUIREMENTS FOR THE STORAGE OF WASTES FOR SALVAGE AND RECYCLING**

8.1 **Location**

The operational certificate holder may identify an area for the storage of selected wastes for salvage and recycling (herein referred to as the salvage/recycling area). Any salvage/recycling shall be restricted to the designated salvage/recycling area. This area shall be clearly identified at the landfill site. Signs which identify the nature of the materials acceptable at the designated salvage/recycling area shall be erected and maintained. The lettering on the sign shall be such that it is clearly readable by the public upon approach.

8.2 **Nature of Wastes**

Wastes to be salvaged/recycled may be any items with potential salvage or recycling value such as tires, lead-acid batteries, auto hulks, white goods, furniture, used lumber, used goods and the like, but shall not include any refuse consisting of or containing putrescibles, any liquid wastes, hot ashes or materials otherwise restricted by Section 5.2 (except lead-acid batteries if stored, handled, and shipped in compliance with the *Hazardous Waste Regulation*).

8.3 **Compliance**

Salvage/recycling shall comply with the requirements of the *Storage of Recyclable Material Regulation* and any other relevant legislation and any additional requirements contained in this operational certificate.

8.4 **Contamination**

Contamination of any of the designated salvage/recycling storage piles with putrescible wastes shall be cleaned up immediately.

9. **OPERATIONAL REQUIREMENTS FOR REGULATED OPEN BURNING**

9.1 **Location**

The operational certificate holder may identify an area for the use of open burning to dispose of selected combustibles (herein referred to as the open burning area). Any open burning of selected wastes shall be restricted to the designated open burning area. This area shall be clearly identified at the landfill site. Signs which identify the nature of the waste acceptable at the designated open burning area shall be erected and maintained. The lettering on the sign shall be such that it is clearly readable by the public upon approach.

9.2 **Quantity, Timing, and Duration of Discharge**

The maximum authorized quantity of wood residue to be open burned during each event is that which has accumulated at the time of burn initiation. The pile(s) shall be constructed so as to ensure a rapid and complete burn. The quantity of air contaminants is indeterminate.

The maximum authorized duration of each burn shall be limited to the period between two hours after sunrise on the day of ignition, and sunset on the following day. Each open burn must be completely extinguished at the end of the authorized burn duration.

Should a condition arise which prevents the burn pile(s) from being burned within this period, the Director must be notified in accordance with Section 9.10 of this authorization.

9.3 **Nature of Wastes**

No wastes shall be burned which are unacceptable to the Director. Acceptable materials for burning may only include dry, unpainted, untreated demolition, construction and packing-related wood residue, clean stumps and brush, but must exclude nuisance-causing combustibles such as glue-containing wood, painted and treated wood, sawdust, yard wastes, mulch, wood chips, rubber, plastics, tars, insulation, roofing material, asphalt shingles, etc.

9.4 **Favourable Weather for Smoke Dispersion**

Open burning shall not proceed unless the recorded Environment Canada Ventilation Index Forecast for Terrace is greater than 55 (GOOD) for the morning and afternoon of the proposed burn.

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In order to make this determination, the Environment Canada Ventilation Index Forecast for Terrace shall be obtained prior to ignition. The contact number for the forecast is 1-888-281-2992. Ventilation index forecasts can also be obtained after 7:00 a.m. from the following Environment Canada website:

http://www.weatheroffice.gc.ca/forecast/textforecast_e.html?Bulletin=flcn39.cwv

The operational certificate holder must also obtain a burn registration number from the Ministry of Forests (1-888-797-1717) prior to ignition.

Open burning of wood residue must not be initiated or continued if the local air flow will cause the smoke to negatively impact a nearby population or cause pollution. No burning shall occur during periods of fire hazard or when burning is prohibited by other agencies.

9.5 **Fire Accelerant**

A suitable amount of approved fire accelerant such as diesel fuel or commercial fire starter gel or a flame-thrower shall be used to ensure efficient and rapid ignition of the waste material.

9.6 **Minimization of Smoke**

The burn shall be tended in a manner that ensures minimization of smoke emissions. Measures to minimize smoke shall include, but not necessarily be limited to: stacking of waste in a manner that eliminates inclusion of dirt; waiting to burn until wastes are reasonably dry after any significant precipitation event; and using adequate equipment and staff.

9.7 **Contingency Plan**

Prior to burning, a contingency plan must be in place detailing how the open burn will be extinguished in the event of any of the following occurring:

- i) Inadequate smoke dispersion in the surrounding environment;
- ii) wood residue continues to smoulder after the authorized burn period; and,
- iii) the Director requires that the open burn be extinguished for environmental protection reasons.

At a minimum, the plan must detail the actions to be taken to extinguish the open burn should any of the above conditions occur. The plan shall be made available to the Director upon request.



9.8 **Extinguishment**

All combustion shall be completely extinguished at the end of the authorized period as set out in Section 9.2 "Quantity, Timing and Duration of Discharge."

9.9 **Fire Supervision and Suppression**

An attendant shall be on-site to supervise the burn. Adequate fire suppression equipment shall be available for the entire duration of the event, and must be capable of extinguishing the fire if necessary. Local fire departments must be notified of the operational certificate holder's intent to burn, prior to ignition.

9.10 **Maintenance of Works and Emergency Procedures**

The operational certificate holder shall inspect the burn piles regularly and ensure that they are burning well. In the event of an emergency, or condition beyond the control of the operational certificate holder which prevents continuing operation of the approved method of open burning, the operational certificate holder shall notify the Director within two hours. If notification is necessary, it shall be accomplished by contacting the Environmental Protection program at (250) 847 - 7260.

The Director may require additional controls on the burning process and may require that the burn be extinguished at any time based on its impacts on the receiving environment.

9.11 **Documentation**

Following completion of each burn, notice shall be sent to the Director by fax (250-847-7591) or by e-mail to a Skeena Environmental Protection staff member advising of the following details: time of burn initiation, time of burn cessation, volume of wood residue burned, venting index values obtained for burning, and any extraordinary conditions encountered during the burn.

10. **MONITORING REQUIREMENTS**

The operational certificate holder shall have a qualified professional evaluate whether an environmental effects monitoring program is needed. The assessment and recommended monitoring program, should one be required, shall be submitted for Director's approval on or before June 30, 2015. Existing ground water wells and nearby surface waters should be considered for the program. The final recommendations shall be included in the DOCP.

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11. REPORTING REQUIREMENTS

11.1 Reporting

All reports, drawings, data, studies and the like shall be submitted in hardcopy and electronic formats unless otherwise specified by the Director.

11.2 Log Book

As required by Sections 5.16.9 and 6.6 the operational certificate holder shall maintain a log book. The log book shall be made available for inspection by Ministry staff upon request.

11.3 Non-compliance Reporting

The operational certificate holder shall immediately notify the Director of any non-compliance with the requirements of this operational certificate and take appropriate remedial action. Written confirmation of all non-compliance events, including available test results, is required by facsimile or email to Environmental Protection Staff within 24 hours of the original notification unless otherwise directed by the Director.

11.4 Non-compliance Follow-up

Upon request, the operational certificate holder shall submit to the Director a written report within 30 days of the non-compliance occurrence. The report shall include, but not necessarily be limited to, the following:

- i) All relevant information and test results related to the non-compliance;
- ii) an explanation of the most probable cause(s) of the non-compliance; and
- iii) remedial action planned and/or taken to prevent similar non-compliance(s) in the future.

11.5 Annual Report

The operational certificate holder shall submit a basic annual report to the Director on or before June 30 each year for the previous calendar year.

The report shall contain, at a minimum:

- i) the type and tonnage or volume of waste received, recycled, and landfilled for the year;
- ii) occurrences or observations of wildlife attempting to access the facility;
- iii) the results of any monitoring programs undertaken by the operational certificate holder for this site. Trend analysis, as well as an evaluation of any identified impacts of the discharges on the receiving environment in the previous year shall be carried out by a qualified professional, if determined to be necessary by the Director.

12. CLOSURE REQUIREMENTS

12.1 Notification of Closure

The operational certificate holder shall notify the Director in writing of intentions to close the landfill site.

12.2 Closure Plan

A closure plan shall be submitted to the Director no later than 6 months in advance of scheduled closure. The closure plan shall, at a minimum, include the following:

- i) Proposed end-use of the landfill property after closure;
- ii) anticipated total waste volume, tonnage, and life remaining of the landfill;
- iii) a topographic plan showing the final elevation contours of the landfill and surface water diversion and drainage controls;
- iv) design of the final cover suited to the intended end-use of the site, including the thickness and permeability of barrier layers and drainage layers, and information on topsoil, vegetative cover and erosion prevention controls;
- v) procedures for notifying the public about the closure and about alternative waste disposal facilities;

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- vi) rodent and nuisance wildlife control procedures;
- vii) a comprehensive monitoring plan if determined to be necessary by a qualified professional, including groundwater monitoring, surface water monitoring, landfill gas monitoring, leachate monitoring, final cover monitoring, and erosion and settlement monitoring, for a minimum post-closure period of 25 years;
- viii) a plan and accompanying design for the collection, storage and treatment/use of landfill gas for a minimum 25 year post-closure period (if required);
- ix) a plan for operation of any required pollution abatement engineering works such as leachate collection and treatment systems, for a minimum post-closure period of 25 years; and
- x) an estimated cost, updated annually, to carry out closure and post-closure activities for a minimum period of 25 years.

12.3 Closure Funding

The operational certificate holder shall ensure that sufficient funds will be available to provide for all closure and post-closure requirements as outlined in the closure plan required by Section 12.2, plus a reasonable contingency for any remediation which may be required.

12.4 Final Cover

The final cover system shall be designed by a qualified professional to match the intended end-use of the landfill site and to match the needs of any required environmental management systems (leachate minimization or recirculation, as the case may be, landfill gas collection and treatment, etc.). Generally, the final cover shall consist of a layer of 1 metre of low permeability ($<1 \times 10^{-5}$ cm/s) compacted soil followed by a layer of topsoil suitable for establishment of vegetation. Higher permeability soil may be used if determined to be acceptable by a qualified professional and specified in the DOCP. The final cover shall be constructed with minimum and maximum slopes as specified by a qualified professional (see Section 3.4) to promote runoff and minimize erosion, with appropriate runoff drainage controls, erosion controls, and gas venting controls. The site shall be seeded with a grass/legume mixture suited to the local climate.

12.5 **Progressive Application of Final Cover**

Completed trench portions of the landfill shall progressively receive intermediate cover during the active life of the landfill. Completed area-fill portions of the landfill shall progressively receive final cover during the active life of the landfill. The maximum area of disposed refuse that has not yet received final cover shall not exceed 25% of the total final footprint area. Final cover is to be applied according to the specifications identified in Section 12.4.

13. **ENVIRONMENTAL IMPACT**

Inspections of the discharge will be carried out by Environmental Protection personnel as a part of the routine operational certificate inspection procedure. Based on these inspections and any other information available to the Director on the effect of the discharge on the receiving environment, the operational certificate holder may be required to undertake additional monitoring, undertake additional studies, install additional pollution control works, or change the method of operation.

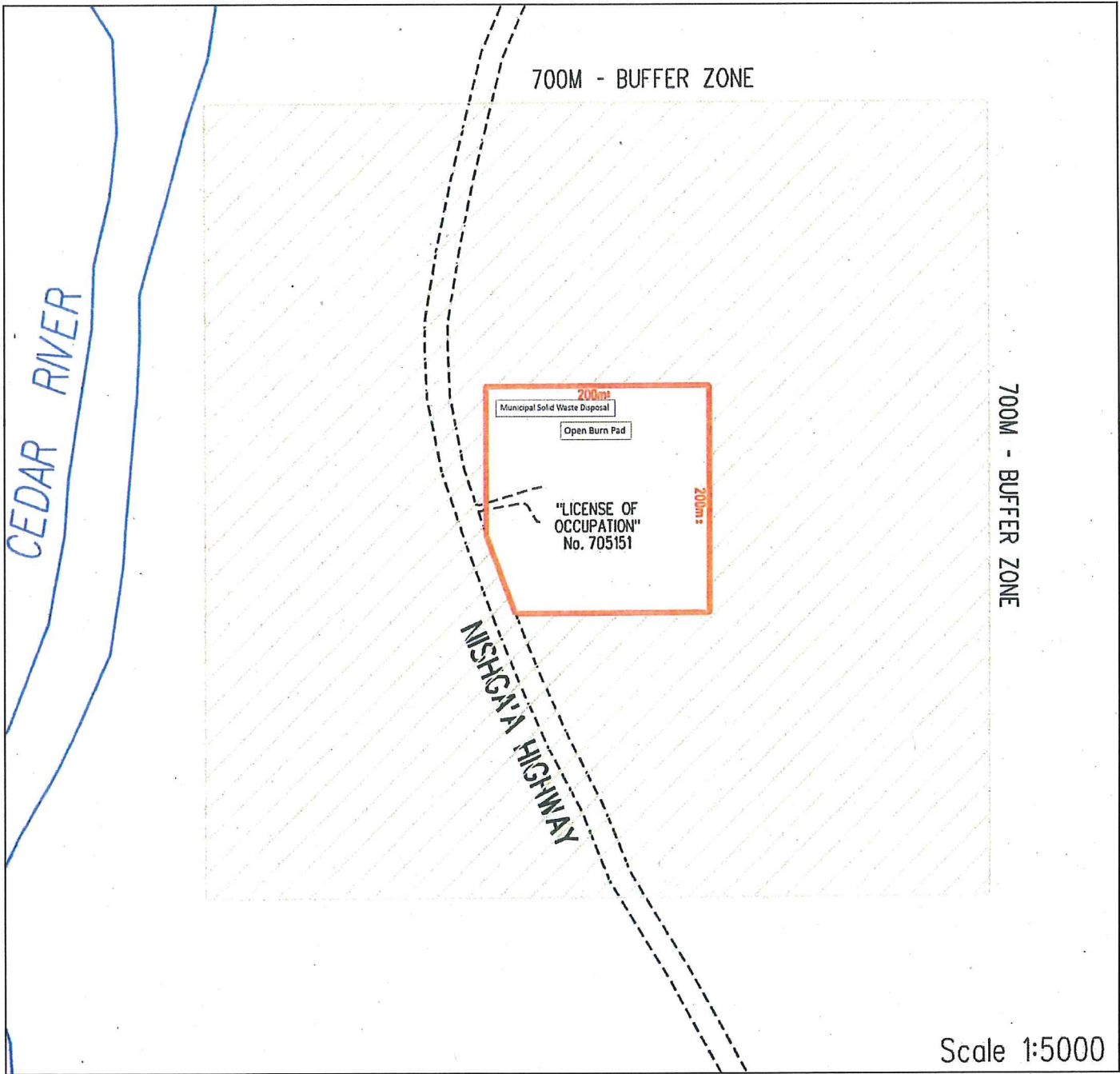
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Site Plan – Rosswood Landfill



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