

GUIDANCE

REGIONAL OPERATIONS BRANCH | June 2020

Plans and Specifications Guidance for Hazardous Waste Management Facilities

Purpose of this document

This document is intended to assist applicants and their agents in preparing plans and specifications in a manner that meets the expectations of the Ministry of Environment and Climate Change Strategy (ministry) and in accordance with section 4 of the Hazardous Waste Regulation.

How to use this document

Applicants should develop documents for submission to the ministry using this guidance and template, and following site-specific application instructions provided during the [structured application process](#).

Within the template, text in *green italics* is for your information only and should be removed prior to submission. Text framed by square brackets “[]” indicate it may be necessary to insert text. Black text and tables are recommended by the ministry. Template text can be modified if equivalent information is included with adequate rationale.

The ministry expects submissions to be written in a manner that allows them to be implemented with certainty and consistency. Avoid the use of language that is ambiguous, vague or qualitative such as: appropriate, reasonable, general, suitable, and regularly. Provide clarity by stating what will be done and include a specific frequency and method where relevant. This document provides guidance on how to request a change in requirements under section 51 of the Hazardous Waste Regulation (HWR) for a registered site. By providing complete and accurate information in accordance with the Ministry of Environment and Climate Change Strategy (ENV) guidance documents, your application is less likely to experience delays or rejection.

Disclaimer

The guidance provided in this document helps to clarify ministry policy and the provisions of the Environmental Management Act (the Act) and the Hazardous Waste Regulation (HWR). This is not a legal document and the information in it does not constitute legal advice or impose any legally binding requirements. Guidance provided in this document does not replace the Act, the HWR or any other applicable law. Any amendments to the Act, the HWR and other legislation referred to in this document may affect provisions of the guidance; in the event of an inconsistency, the Act, HWR or other applicable legislation will prevail.

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PLANS AND SPECIFICATIONS GUIDANCE

Refer to the guidance sections below in conjunction with the corresponding sections of the plans and specifications template.

The terms effluent and emissions are used in this document, aligning with their use in the HWR. Effluent is defined in the *Environmental Management Act (EMA)*. Emissions is assumed to be equivalent to air contaminants, as defined in EMA.

Qualified professionals are expected to prepare certain sections of the plans and specifications, as indicated below. For the definition of a qualified professional and information on the ministry's professional reliance model, please refer to the ministry's [Professional Accountability Policy website](#).

1.0 Introduction

Briefly summarize the nature of the facility. Indicate whether hazardous waste storage, treatment, recycling and/or disposal take place and list the primary waste types the facility manages. State the purposes of the document using the template text provided or similar language.

2.0 Location and Surroundings

Within this section explain the following:

- Surrounding land uses
- Nature of the neighboring properties
- The topography of the site and/or drainage features
- Distance to the nearest downgradient waterbody
- Description of underlying aquifer
- Description of any sensitive receptors within 500 m of the property, including their distances and direction, including but not limited to:
 - Waterbodies
 - Drinking water sources (groundwater wells or surface water sources)
 - Parks or protected areas
 - Daycares
 - Schools
 - Hospitals
 - Other care facilities

The information described in this section should also be illustrated on a site location map included within the plans and specifications. The site location map must include a scale and a north arrow.

Ensure the map is legible in electronic and hardcopy formats. Publicly available satellite imagery with annotations indicating the above features is an acceptable format for the site location map.

2.1 Siting Standards

Provide a statement explaining how the location of the facility adheres to each of the siting standards required by section 3 of the HWR.

Include detailed descriptions, drawings, and any other required supporting documentation in Appendix A to clearly illustrate how the facility complies with the HWR section 3 siting standards. If possible, include features related to the siting standards on the site location map.

In addition to the above siting standards for all hazardous waste facilities, additional siting standards for mobile facilities, secure landfills, waste piles, surface impoundments and land treatment facilities, and disposal in secure buildings are outlined in the HWR. If applicable, this section must describe and provide justification on how the facility meets these additional siting requirements.

3.0 Facility Details

3.1 Site Plan

Provide a site plan for the facility. The site plan shows existing and planned works and key features of the property. Recent aerial photography or satellite imagery of the site may also be helpful. Ensure the site plan is legible electronically and when printed.

The site plan should include:

- North arrow and scale
- Property boundaries, fences and buildings
- Works listed in section 3.1
- Stormwater management features (diversion, collection and treatment works and discharge location)
- Topographic features such as slopes or low-lying areas
- Any fuel or hazardous product storage facilities
- Location of spill response equipment
- Locations of fire hydrants and fire extinguishers

3.2 Works at the Site

Provide a detailed description of the works at the facility, include works that will be used for hazardous waste storage, treatment, recycling, and/or disposal and those works related to the management of stormwater effluent and emissions (air contaminants) that are produced incidental to facility operations.

The location of these works must be identified in an attached site plan as described above. Any works that are designed specifically for the facility, and/or that have manufacturers specifications should have drawings and/or specifications included in Appendix B.

Ensure all waste names used in this section match those provided in Table 1 of the facility's operational plan.

Guidance on completing Table 1:

Hazardous Waste Storage Works:

List all equipment used for hazardous waste storage, this may include tanks, drums, bins, totes, sludge pits (structures to contain a waste pile), etc. State the maximum storage capacity for containers greater than 1,000 L and indicate the construction material (e.g. steel, polyethylene, concrete etc.). For barrels, drums, totes, or similar individual storage containers less than 1,000 L each indicate the total capacity for all containers stored in one area (e.g., within a warehouse you may have capacity for 20,000 L, stored in 205 L drums).

Hazardous Waste Treatment, Recycling, and/or Disposal Works:

List the equipment used to treat, recycle, or dispose of the hazardous waste. Include a description of the process (e.g. filter crushing, filtration, sterilization, incineration, etc.). For treatment processes, each piece of equipment in the treatment sequence is expected to be included in the list of works. For example, for the treatment process of solids removal, the works may include a settling tank, filter, coagulant mixing tank, dissolved air floatation tank, clarifier and filter press.

Stormwater effluent and emissions (air contaminants):

List the equipment and works that are used to manage stormwater effluent and emissions at the facility.

Table 1: Works at the Site (Examples)

Hazardous Waste Storage			
Works	Storage Capacity (L or kg)	Hazardous Waste Type/Name	Location
Drums – Steel	2,000 kg	Waste oil – Filters	Warehouse
Tanks – Steel	50,000 L	Waste oil – Liquid	Tank Farm
Lined concrete pit	1,000 kg	Waste oil – Sludge	Outdoor covered area
Hazardous Waste Treatment, Recycling, and/or Disposal			
Works	Process Description	Hazardous Waste Type/Name	Location
Oil Filter Crusher	Crushing / draining of oil filters	Waste oil – Filters	Warehouse
Autoclave	Sterilization of biomedical waste.	Biomedical waste – clinical and laboratory sharps	Autoclave building, west side of main building
Emissions Treatment (for discharge to air)			
Works	Process Description	Associated Hazardous Waste Type/Name	Location
Electrostatic precipitator	Incineration	Waste oil – hydrocarbon contaminated soil	Incinerator building, north corner of compound
Wet scrubber	Neutralization	TDG Class 8 – corrosive liquids	Warehouse roof
Stormwater Effluent Management			
Works	Process Description	Storage Capacity (L)	Location
Oil/water separator	Three chamber oil / water separator	1000 L	Northwest corner of property

3.3 Stormwater Management

Stormwater may be considered effluent if there is potential for precipitation to come into contact with contaminants, including but not limited to those listed in schedule 1.2 of the HWR.

In this section:

- Indicate if the facility is entirely paved and/or which portions of the facility are gravel, etc.
- Describe the stormwater diversion measures designed to keep stormwater away from hazardous waste management areas.
- Describe stormwater collection and treatment within areas where precipitation has the potential to be in contact with contaminants, waste containers, etc.
- Describe the routing of stormwater off the property including how and where it is discharged from the property, the nature of the local storm drain (ditch, pipe, combined with sanitary, etc.) and the name and location of the waterbody where stormwater enters the receiving the environment.

Show the facility stormwater design features including but not limited to those listed above on the site plan or other figure. Reference the figure(s) in this section.

If the facility is not paved, describe the infiltration properties of the facility substrate, the groundwater flow direction and location of the receiving water body. Note that discharges to ground are considered discharges to the environment. If stormwater is not expected to infiltrate into groundwater, provide rationale and indicate where it is expected to enter the environment.

3.4 HWR Design Requirements

It is expected that a qualified professional (typically a professional engineer) will confirm the facility is designed to meet the requirements of the HWR and will sign and seal design specifications.

Reference each section of the HWR that relates to facility design and describe in detail how the facility will meet each requirement. For most facilities, this should include HWR sections 7 through 10 and 16, as well as any site-specific considerations such as washout prevention (HWR section 3(a) or (c)). Certain facility types and/or works have additional design requirements listed in the Part 4 of the HWR under Performance Standards, including PCB storage facilities, treatment facilities, incinerators and thermal treatment facilities, secure landfills, waste piles, surface impoundments, land treatment facilities and secure buildings.

This section should summarize facility design information in an itemized format and reference design specifications and/or other supporting documentation in appendices.

4.0 Certification

All authors of the plans and specifications are expected to sign the document. Information related to facility design is expected to be certified by a professional engineer.

For the definition of a qualified professional and information on the ministry's professional reliance model, please refer to the ministry's Professional Accountability Policy website.

5.0 Figures

Place the location map, site plan, and any other relevant figures directly following the text.

6.0 Siting Standards Supporting Documentation (Appendix A)

Provide an appendix (Appendix A) with supporting documents that demonstrate how the facility meets the HWR siting standards. Ensure all maps are legible electronically and when printed. Annotate figures to show the facility location in relation to siting features.

Please ensure that supporting documents are organized in a manner that facilitates efficient retrieval (e.g. logically sequenced, well labelled, linked to document navigation functions).

Example

Siting Standards Supporting Documentation

- A1 – Holocene fault locations
- A2 – 200-year floodplain
- A3 – Tsunami run up zone
- Etc.

7.0 Design Specifications (Appendix B)

Include design and/or manufacturer specifications for relevant components of the facility in this appendix. For example, for pollution control equipment, hazardous waste treatment equipment, containment design, leak detection systems, etc.

Please ensure that supporting documents are organized in a manner that facilitates efficient retrieval (e.g. logically sequenced, well labelled, linked to document navigation functions).

PLANS AND SPECIFICATIONS TEMPLATE

Hazardous Waste Regulation Section 4 – Plans and Specifications

Company Legal Name: *as registered with the BC Corporate Registry*

Doing Business As: *if applicable*

Facility Address:

[Civic Address], [Municipality], [Postal Code],

P.O. Box numbers are not acceptable for the facility address. If the facility does not have a civic address, provide alternative location information (latitude and longitude), and driving directions to the facility.

Ministry Registration Number(s): [RS# and/or BCG#]

Plans and Specifications Version No.: [##] *most recently updated version number*

Plan Date: [YYYY-MM-DD] *date of most recent version of the plan*

Reminder: Section 43(2)(4) of the HWR requires that the ministry be notified of any material changes to the information provided at the time of application, within 30 days of the date of the change.

This includes but is not limited to:

- *Facility contact information, phone number, email, etc.*
- *Mailing address, billing address, billing email address*

Also, any changes to the content of the plan requires prior written approval of the director.

In order to provide notification of changes to this registration, or to propose changes to the plans and specifications plan, an amendment application form is required to be submitted to the ministry.

PLANS AND SPECIFICATIONS

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Please include page numbers in your submission

- 1.0 INTRODUCTION
- 2.0 LOCATION AND SURROUNDINGS
 - 2.1 Siting Standards
- 3.0 FACILITY DETAILS
 - 3.1 Works at the Site
 - 3.2 Stormwater Management
 - 3.3 HWR Design Requirements
 - 3.3.1 Weather Protection - HWR Section 7
 - 3.3.2 Access Security - HWR Section 8
 - 3.3.3 Prevention of Fire, Explosion, Accidental Reactions - HWR Section 9
 - 3.3.4 Spill Protection - HWR Section 10
 - 3.3.5 Storage Facility Additional Requirements - HWR Section 16(1)
- 4.0 CERTIFICATION

Figures

Appendix A – Siting Standards Supporting Documentation

Appendix B – Design Specifications

1.0 INTRODUCTION

[Company Name][operates / intends to operate] a hazardous waste management facility located at [street address of facility] (the facility).

Include a brief summary of activities carried out (or proposed) at the hazardous waste management facility.

This document is intended to fulfill the requirement for plans and specifications required in section 4(1) of the Hazardous Waste Regulation (HWR). The following sections describe the facility location, siting details, surrounding land uses and receptors and confirm that the facility is designed to meet the requirements of the HWR. Drawings of the facility and its components as well as engineering and manufacturer's specifications are appended for reference.

2.0 LOCATION AND SURROUNDINGS

Generally describe where the facility is located. Include specific information requested in the plans and specifications guidance. Attach and reference a site location map.

2.1 Siting Standards

Describe any deviations from the siting standards or include the statement below. Modify to include additional siting standards where applicable.

The facility is [not] located within a 200- year floodplain, within 100 meters of a Holocene fault, in a place which is subject to tsunamis, within 100 meters of land subject to slope failure or within the boundaries of any park or wildlife management or protection area. The facility meets the siting standards in section 3 of the HWR. Supporting documentation is provided in Appendix A.

3.0 FACILITY DETAILS

The following sections describe the facility. All features of the facility are provided on the site plan [attach and reference a site plan].

3.1 Works at the Site

Hazardous waste is [proposed to be] stored [treated, recycled and discharged] at the facility. Table 1 lists the works at the site that are used for these purposes. The location of these works is illustrated on

the attached site plan. Detailed descriptions of the works are provided below and design and/or manufacturers specifications are included in Appendix B, where noted.

Table 1: Works at the Site

Remove/modify tables as needed

Hazardous Waste Storage			
Works	Storage Capacity (L or kg)	Hazardous Waste Type/Name	Location

Hazardous Waste Treatment, Recycling, and/or Disposal			
Works	Process Description	Hazardous Waste Type/Name	Location

Emissions Treatment (for discharge of air contaminants)			
Works	Process Description	Associated Hazardous Waste Type/Name	Location

Stormwater Effluent Management			
Works	Process Description	Storage Capacity (L)	Location

Include plain language description of the works listed above and reference associated specifications provided in an appendix. Use subheadings to describe different types of works if warranted.

3.2 Stormwater Management

In this section describe the facility drainage design, stormwater treatment, and how and where stormwater enters the receiving environment. Show the stormwater management features on the site plan or other figure and reference the figure here.

3.3 HWR Design Requirements

The facility has been designed in accordance with the requirements of the HWR. Detailed descriptions of how the facility meets these requirements are provided below.

Describe the facility design under headings corresponding to relevant sections of the HWR. Reference design specifications or other supporting documentation in appendices.

3.3.1 Weather Protection - HWR Section 7

3.3.2 Access Security - HWR Section 8

3.3.3 Prevention of Fire, Explosion, Accidental Reactions - HWR Section 9

3.3.4 Spill Protection - HWR Section 10

3.3.5 Storage Facility Additional Requirements - HWR Section 16(1)

Include headings for additional design requirements under HWR Part 4 where they apply.

4.0 CERTIFICATION

These plans and specifications were prepared in accordance with and meet the requirements of the Hazardous Waste Regulation.

The information contained in this document is true and complete to the best of my knowledge.

_____ Name	_____ Signature
_____ Title	_____ Stamp
_____ Name of Company	_____ Date

FIGURES

APPENDIX A – SITING STANDARDS SUPPORTING DOCUMENTATION

APPENDIX B – DESIGN SPECIFICATIONS

REVISION HISTORY			
Approval Date	Effective Date	Document Version	Notes
January 2015	January 2015	Ver. 1	Document created
April 29, 2020	April 29, 2020	Ver. 2	Content enhancements and updates
June 22, 2020	June 22, 2020	Ver. 3	Title adjusted