

Application Checklist for a New Oilfield Waste Management Facility or Component

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Alberta Energy Regulator

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Purpose of Checklist

Companies can use this checklist when completing an application for a new oilfield waste management facility or component to ensure that all requirements have been met. We may request more information than what is identified below.

If you would like to discuss application requirements, set up a preapplication meeting, or have specific questions about your application, you can contact the AER at Directive058@acr.ca. Note that preapplications meetings are to provide guidance only; they do not involve reviewing an application prior to submission.

The parts of this checklist that apply depend on whether you are applying for an oilfield waste management component or an oilfield waste management facility. Oilfield waste management components typically do not require public consultation (Part 5) or financial security (Part 6).

Part 1 Identify the Types of Activity Covered by the Application

The activities are listed in the order that they appear in *Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry*.

- Waste transfer or storage:** Collecting and storing oilfield waste until volumes are sufficient for economic transfer to treatment and disposal facilities. See section 12 of *Directive 058* for information on waste transfer or storage stations.
- Surface facilities associated with a disposal well:** Receiving oilfield waste that meets the requirements of *Directive 051: Injection and Disposal Wells – Well Classifications, Completions, Logging, and Testing Requirements* for injection down a disposal well. See section 13 of *Directive 058* for information on surface facilities associated with a disposal well.
- Fluid disposal:** Disposing of fluids generated at the facility down a disposal well. May also include receiving fluids meeting *Directive 051* for injecting down a disposal well. See section 13 of *Directive 058* for information on surface facilities associated with a disposal well.
- Waste processing:** Receiving and processing wastes for the purpose of hydrocarbon recovery, the physical separation of fluids and solids, and the processing of residuals generated by the facility. Different types of treatment and systems (e.g., tank treatment, centrifuging, filtering, and shaker systems, cavern disposal, etc.) are used for phase separation and hydrocarbon recovery. Solids pads are used to receive and dewater waste materials. See section 14 of *Directive 058* for information on waste processing.
- Custom treating:** Receiving and treating production fluids (e.g., crude oil and emulsions) from oil and gas exploration, and hydrocarbons recovered from the processing of wastes. A treater or tank treatment, or both, is used to render hydrocarbons to meet pipeline specifications.
- Clean oil terminalling:** Receiving crude oil and subsequent transfer either by truck or pipeline to a third party for sales.
- Tank/truck washing:** Washing with fresh or produced water (or both) in a wash bay using high-pressure washing equipment.

Note: Tank/truck washing infrastructure is to be constructed in accordance with *Directive 055: Storage Requirements for the Upstream Petroleum Industry* bulk pad requirements.

- **Biodegradation:** Aerobically biodegrading hydrocarbon-contaminated soils and sludges under the catabolic process by soil-residing microorganisms. See section 16 of *Directive 058* for information on biodegradation.

Note: If applying for a biodegradation facility, the applicant must respond in writing to all parts of section 26 in *Directive 058* (question/answer format).

- **Thermal treatment:** Removing organic components in oilfield waste by incineration, thermal oxidation, thermal desorption, thermal phase separation, or thermal distillation recovery. See section 17.0 of *Directive 058* for information on thermal treatment.

Note: If applying for an AER thermal facility, the applicant must respond in writing to all parts of section 27 of *Directive 058* (question/answer format).

If the type of activity you wish to conduct is not listed above or if you are applying for a landfill, contact Directive058@aer.ca for direction.

Part 2 General Information

In accordance with section 21.1 of *Directive 058*, provide the following:

1. Provide the area of the proposed oilfield waste management facility: _____
2. Provide the surface location of the site: _____
3. Identify the current land use and zoning for the site: _____
4. Indicate whether first- or third-party waste is accepted: _____

Part 3 Site-Specific Information

A concise summary of the information from the environmental site assessment (refer to appendix 4, “Requirements for Site Assessment and Groundwater Protection,” of *Directive 058*) must be included with the application. Address each item below explicitly, instead of simply referring to a page or section of an attached report.

- Facility plot plan

The facility plot plan must clearly indicate the location of all equipment identified on the lease and include all surface improvements, water bodies, and vegetation for at least 100 metres past the edge of the lease boundaries, to demonstrate that all off-lease spacing requirements have been met (e.g., distance to a residence, water bodies, road allowance).

Included on the plot plan, in a separate plot plan, or in a written discussion, the applicant must identify any surface or buried pipelines, utility lines, conduits, pits, and tanks; disposal wells or source wells; existing or abandoned monitoring wells or standpipes; any area containing buried fill material or waste; known groundwater directional flow; all groundwater monitoring wells; and any areas of known extensive or frequent spills.

- If there are any surface waters, inferred areas of groundwater discharge, or local groundwater and surface water users within a three-kilometre radius, provide a summary, the locations, and the distances (in metres).
- Describe the regional hydrogeology and geology of the site as derived from data in the public domain.
- Describe the soil. The description must include the physical characteristics of the soil, including the thickness, texture (e.g., coarse- or fine-grained), internal drainage characteristics, evidence of fracturing, and estimate of the moisture content.

The description must also include the background chemical characteristics of the soil, including pH, electrical conductivity, sodium adsorption ratio, major ions (Ca, Mg, Na, Cl, SO₄, K), cation exchange capacity, total metals, petroleum hydrocarbon fractions F1, F2, F3, F4, and benzene, toluene, ethylbenzene, and xylene (BTEX).

- Attach all borelogs associated with soil assessment.

Note: If there are exceedances, justify the exceedances in the baseline soil parameters and discuss how you will manage and monitor these exceedances.

- For those facilities or components that require groundwater monitoring provide a written response to the items identified in section 21.3(g) of *Directive 058*.

- Provide a description of how the surface run-off water will be controlled, accumulated, and discharged at the facility or component.

Note: If a pond or dike is used, it must be sized to contain a 1-in-10-year 24-hour storm event.

Part 4 Operational Specific Information

- In accordance to section 24.1(d) of *Directive 058*, provide a process flow diagram that clearly outlines what is being applied for within the current application. The diagram must clearly identify the following:
 - Process equipment (e.g., centrifuges, shaker systems)
 - Measurement points as outlined in section 10.2.7 of *Directive 017: Measurement Requirements for Oil and Gas Operations*
 - Storage vessels, tanks (including pop tanks), solids pads, and receiving pads
 - Sources of receipt and deliveries, including all fluid lines, disposal wells, flare lines, and vent points
- Along with the process flow diagram, provide a description of the treatment and process technologies, from receipt to disposition of waste
- Provide a list of all proposed waste streams to be received for each facility activity (see appendix 3 of *Directive 047: Waste Reporting Requirements for Oilfield Waste Management Facilities* for a full list of waste streams).
- If the facility will be accepting non-oilfield waste generated in Alberta, provide the information listed in section 3.2.6.1 of *Directive 058 Addendum 2015-01-14: Oilfield Waste Management Facility Approvals – Notification and Amendment Procedures*.

Note: The receipt of Alberta-generated non-oilfield waste is not applicable to oilfield waste management components.

- If the facility be accepting imported oilfield waste, provide the information listed in section 3.2.6.2 of the *Directive 058* addendum.

Note: The receipt of imported oilfield waste is not applicable to oilfield waste management components.

- If due to exceptional circumstance, the design and construction of your facility or component do not meet the equipment spacing requirements detailed in the *Oil and Gas Conservation Rules*, Part 8 (including proximity to a water body), and the requirements in *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting* and *Directive 058*, include the following:
 - a copy of the spacing waiver obtained from the AER;

or

 - a detailed explanation of what equipment will not meet the requirements and why,

- a description of how safety will not be compromised by a relaxation of the requirements, and
 - for waterbody spacing, the preventive measures that will be employed at the facility to minimize the risk of a spill, and in the event of a spill, the preventive measures for ensuring that the spill does not reach a water body.
- If due to exceptional circumstance, the design and operation of your facility or component do not meet the storage requirements of *Directive 055* and the *Directive 055* addendum, include the following:
- a detailed explanation of why the storage requirements are not being met or a description of the alternative storage methods and design, or both,
 - a discussion of the mitigative measures that will be taken to ensure that a level of environmental protection and safety equal to the level set out in *Directive 055* or the *Directive 055* addendum is achieved, and
 - signed engineering (registered with APEGA) diagrams of the storage systems and design.
- In accordance with Part E of *Directive 058*, provide a list of all storage equipment (e.g., tanks, solids pad, receiving pad) on site. The list must identify the notation associated with the equipment and the size of the storage unit (in cubic metres as well as length by width for solid pads). If the storage equipment is for only one specific use y (e.g., tank for storing fresh water), identify this in the list.
- If the facility or component will be receiving waste streams containing hydrogen sulphide, provide a written discussion of how sour material will be handled at the facility and the operational procedures put in place to manage vapours.

Part 5 Public Consultation – See Section 3 of *Directive 056* for Information

Personal consultation, confirmation of nonobjection, and notification requirements must be done in accordance with section 21.4(a) and (c) of *Directive 058* and section 3 of *Directive 056: Energy Development Applications and Schedules*.

- If due to exceptional circumstance not all applicable requirements cited above have been met, include the following (as per *Manual 12: Energy Development Applications Procedures and Schedules*) in a separate attachment:
- the participant involvement summary of all personal consultation and notification that has been completed;
 - the names, addresses, telephone numbers, and legal land descriptions of participants for which personal consultation and notification requirements have been completed;
 - a detailed explanation of why not all notification requirements can be completed; and
 - an explanation of how you would like the AER to proceed with this application.

The AER will review the circumstance and decide whether an exemption is warranted.

- If there are outstanding statements of concern related to this application, include the following (as per *Manual 12*) in a separate attachment:
- names, addresses, telephone numbers, and legal land descriptions of the participants with statements of concern;
 - the approximate distance from the proposed facility to the land and residence, if applicable, of the participants with statements of concerns;
 - a copy of the written statement of concern received; if not available, a summary of issues;
 - a chronology of the participant involvement program conducted with the party;
 - steps taken to mitigate the outstanding statements of concern;
 - a copy of the project-specific information package provided;
 - a list of other documents distributed; and
 - a discussion of how you would like the AER to proceed with your application.

Part 6 Financial Security – Submitted under a Separate Cover

- Provide the site-specific liability assessment as per and *Directive 001: Requirements for Site-Specific Liability Assessments in Support of the AER's Liability Management Programs* and *Directive 075: Oilfield Waste Liability (OWL) Program*. The liability assessment must include the following:

- Phase I environmental site assessment of current site conditions.
- Phase II environmental site assessment of current site conditions, if recommended in the Phase I environmental site assessment.

Note that an assessment done according to *Directive 058*, appendix 4, may not be provided as a substitute to a Phase II environmental site assessment.

- *Directive 075*, appendix 7, “Facility Liability Declaration Form.”
- A clear description of the closure activities required and the associated cost for each major task as required by section 5 of *Directive 001*.
 - The cost estimates must be developed as if a third party were conducting the work and supplying the necessary equipment.
 - For each of the liability types (suspension, abandonment, decontamination/remediation, and reclamation), an explanation is required on how the cost estimates were derived (considerations, assumptions, sources of costs, etc.). *Directive 001*, forms 001-A to 001-F, may be used for guidance, but they do not provide sufficient detail on their own.
 - The lead assessor must certify that they prepared or supervised the liability assessment and place their professional seal or stamp, as applicable.
 - The liability assessment must clearly document, in a distinct section, the specific role of all personnel involved, their technical training, and their previous experience conducting assessments and developing cost estimates.
 - All reports used in preparing the liability assessment must be signed by a professional in good standing with their accrediting body and include their professional designation or certification.

This list is not exhaustive. Review *Directive 001* to ensure that all of the required information is addressed. Send any questions about financial security requirements to liabilitymanagement@aer.ca.

Note: Approval holders must be prepared to post financial security upon AER request in accordance with *Directive 075*.