



# Bunds, Sumps, Washdowns and Oily Water Separators Management Procedure

## Environment

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## 1 Purpose and Scope

This procedure specifies the operational environmental requirements relating to the management of bunds, sumps, washdowns and oily water separators (OWS) at the Roy Hill Project. This procedure applies to all personnel involved in activities at the Mine, Rail and Port operations that affect the management of bunds, sumps, washdowns and OWS.


## 2 Procedure

### 2.1 Management Actions

#### 2.1.1 Bunds and Secondary Containment

1. Bund temporary hydrocarbon and chemical storage areas in accordance with Australian Standard 1940 (2004) 'The Storage and Handling of Flammable and Combustible Liquids' and construct with materials of an impervious nature to prevent soil and groundwater contamination in the event of accidental spillage.
2. Design and construct all permanent chemical and hydrocarbon storage, fuelling/transfer facilities, ammonium nitrate and emulsion facilities in accordance with the 'Environmental Basis of Design' (100RH-0000-EN-BOD-2001).
3. Ensure that bunding is capable of holding 110% of the whole tank's contents where chemical and hydrocarbon storage tanks are not double skinned and self bunded.
4. Provide secondary containment bunding for multiple container storage with a minimum capacity of 110% of the largest storage vessel within the containment facility, where containers are stored for more than 12 hours but less than 5 days (transit storage).
5. Provide secondary containment bunding for multiple container storage with a minimum capacity of 110% of the largest storage vessel within the containment facility plus an additional 25% of the total capacity of all stored individual containers, where containers are stored for more than 5 days.
6. Provide secondary containment for all stationary equipment holding > 20 litres (L) of hydrocarbon or chemical to 110% capacity of the total hydrocarbons or chemicals contained in the equipment, except where all of the following are demonstrated:
  - Equipment is not being used in, above or within 10 metres (m) of water (including marine or estuarine high tide marks, creeks, rivers, man-made or natural drainage lines);
  - There is an internal bund with 110% capacity of the maximum total hydrocarbon or chemical capacity of the equipment, any spillage in the tray can be readily seen and there is a mechanism for removal of any spillage in the tray; and
  - The refuelling point is within the perimeter of the internal spill tray and, in the event of overfilling, all spillage will return to the internal spill tray.

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7. Use High Density Polyethylene (HDPE) liners for bunding, secondary containment or temporary wash down areas must have a minimum permeability of  $1 \times 10^{-9}$  m/s, and a minimum thickness of 1.5 millimetre (mm). Ensure that black "builder's plastic" is not used for lining bunds.
8. Grade semi-permanent and permanent bunded storage areas to drain away from storage tanks to a sump which can be emptied or pumped out, as required.
9. Maintain distances between tanks and bunding as described in Australian Standard AS 1940 (2004) 'The Storage and Handling of Flammable and Combustible Liquids'.
10. Provide secondary containment for all hydrocarbon and chemical transfer points in case of failure or leaks.
11. Locate all hydrocarbon and chemical pipelines and hoses above ground, and where not possible, pipes are to be located within a secondary duct and containment facility. Design the duct and containment facility to facilitate pipeline inspection, leak and rupture detection as well as to allow for recovering any leakage that may occur.
12. Fit service trucks, re-fuelling trailers and other vehicles used for the transportation of hydrocarbons and chemicals with stocked spill kits and drip trays at all times.
13. Close drains or valves in bunds, drip trays and other containment equipment during normal use.
14. Use liners and drip trays for drill rigs where refuelling or field maintenance (e.g. replacement of hydraulic hoses) is being undertaken.
15. Place drip trays under fuel connection points where there is no containment to capture any spills or leaks that may occur.
16. Ensure that personnel undertaking fuel transfer remain in attendance to observe the transfer and respond promptly to any fuel overflows.

### 2.1.2 Bund Maintenance, Spills and Leaks

1. Provide appropriate equipment to remove contents from bunds and other containment areas.
2. Remove storm water from within bunding/spill trays as soon as practicable after a rain event.
3. Remove spillages in bunding/spill trays when spills occur, to ensure capacity is maintained and contamination is minimised.
4. Keep bunding/spill trays free of flammable materials or rubbish (e.g. rags).
5. Dispose of the contents of bunding/spills trays offsite to an approved wastewater disposal facility, or treat the wastewater through an OWS or oily water filter.
6. Provide spill management equipment and emergency response equipment appropriate to the volume and type of hydrocarbons or chemicals being stored, and make it available, clearly labelled and highly visible at each chemical / hydrocarbon storage location at all times.

### 2.1.3 Sumps

1. Discharge of water from sumps without an attached OWS into on-site stormwater drainage is permitted only if there is no visible sign of contamination. Seek assistance from the Site Environmental Team for advice if required.
2. Test soil in sumps at the Port and Rail without an OWS for contamination. If the soil is found to be contaminated then it must be taken offsite for disposal at an approved facility. If the soil is not contaminated, then it may be reused on site.

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Reuse soil from sumps at the Mine that do not have an attached OWS, in industrial areas onsite (i.e. Mine Services Area) but not within environmentally sensitive areas (i.e. drainage lines at the Mine).

### 2.1.4 Permanent Washdown Facilities

1. Design and construct washdown facilities in accordance with the requirements of the 'Water Quality Protection Note 68 Mechanical Equipment Washdown' (Department of Water, 2006). Ensure that the design includes adequate fauna egress provision.
2. Construct permanent washdown facilities with an impervious reinforced concrete pad and a perimeter kerb or bund wall around the whole facility to minimise stormwater entering the sump.
3. Design the washdown facility to incorporate a sump where the contents can be pumped out.
4. Design the capacity of the washdown facility sump to allow for significant rainfall events.
5. Monitor the sump wastewater level following rainfall events and pump out the sump to prevent overflows.
6. Maintain washdown facility equipment as per manufacturer's instructions or more regularly as required to ensure efficient operation.

### 2.1.5 Oily Water Separators

1. All water in sumps with an OWS must not be discharged without passing through the OWS.
2. Maintain OWS equipment as per manufacturer's instructions or more regularly as required to ensure efficient operation.
3. Remove sediment and waste from OWS to a licensed facility for disposal, or alternatively deposit the sediment within the Project bioremediation facility for further treatment.
4. Treat washdown bay and any other potentially contaminated wastewater so that the total recoverable hydrocarbons are <15 milligrams per litre (mg/L) prior to any reuse of the water or discharge.

## 2.2 Training and Awareness

1. Familiarise all personnel associated with bunds, sumps, washdowns and OWS management activities with the requirements of this procedure.
2. Include information on bunds, sumps, washdowns and OWS management requirements in site inductions or site communications where relevant.
3. Conduct toolbox talks and develop environmental site notices and environmental awareness posters periodically highlighting bunds, sumps, washdowns and OWS management requirements – this is the responsibility of the Superintendent Environment Mine or Port and Rail (or delegate where required).
4. Display relevant environmental site notices and environmental awareness posters at prominent workplace locations.
5. Update the training records of personnel in the Learning Management System once registered training has been completed (with the exception of toolbox talks).
6. Maintain records of training attendance onsite for audit and inspection purposes.

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### 2.3 Monitoring Actions

1. Undertake monitoring in accordance with approval conditions and commitments, and ensure that all data required for regulatory reporting is captured.
2. Store all monitoring records within the Roy Hill Document Management System.

### 2.4 Incidents, Audits and Inspections

1. Undertake regular inspections of the active work area against the requirements of this procedure.
2. Undertake regular compliance audits against the requirements of this procedure in accordance with the 'Environmental Audit Procedure' (OP-PRO-00018).
3. Schedule inspections and audits against the requirements of this procedure in accordance with the approved HSE Integrated Inspection and Audit Schedule.
4. Store copies of all audits and inspections within the Roy Hill Document Management System.
5. Undertake an investigation into the cause(s) of incidents reportable to regulators in accordance with the 'Incident Investigation Specification' (OP-SPC-00156) and develop actions to prevent recurrence of the incident.
6. Enter corrective and preventative actions from incidents, audits and inspections into the Roy Hill Incident Management System.
7. Undertake monthly inspections of bulk combustible liquid and hazardous goods storage facilities using the 'Dangerous Goods Management Environmental Inspection Form' (OP-FRM-00222).
8. Inspect storage bunds following rainfall for liquid spillage or collected rainfall and available containment volume.

### 2.5 Contingency Actions

1. Implement contingency actions in accordance with this procedure where deficiencies are identified during inspections, audits and incident reporting.
2. Implement the 'Management of External Complaints Procedure' (EA-PRO-00002), where relevant.
3. Conduct a risk assessment to determine the most effective mitigation measures should additional contingency actions be required, and follow the change management process.
4. Arrange for sump or bund pump out (emptying) if the required containment volume of storage bund is nearing capacity.
5. Leaks and/or damage from storage facilities are to be appropriately contained and repaired as soon as possible.
6. Remove contaminated soil or surface water as soon as practicable in the event of a spill, contain it in a designated area and removed to an offsite licensed facility or to the project bioremediation facility depending on the type of hazardous material spilt.
7. Use only biodegradable quick-break surfactants in response to hydrocarbon spillage. Dispose of surplus or discarded surfactant concentrate into solid general waste bins, not into the sewage system.
8. Manage spills in accordance with the 'Spill Response Environmental Management Procedure' (OP-PRO-00275).

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### 2.6 Reporting Requirements

1. Report all non-compliances with this procedure, all regulatory exceedances and all community complaints as an incident in the Roy Hill Incident Management System.
2. Close out all incidents and corrective actions in accordance with the 'Incident, Non-Conformance and Action Management Procedure' (OP-PRO-00702).
3. Report contaminated soil volume and type of materials transported to the bioremediation facility or offsite using the 'Bioremediation Facility Logsheet Form' (OP-FRM-00043) and the 'Contractor Environmental Report' (OP-FRM-00305).
4. Report the locations of hydrocarbon-contaminated sites within the Roy Hill Project Incident Management System and fully remediated.
5. Record the locations where hydrocarbon spills >1,000 L have occurred within the GIS.
6. Report OWS sampling results to the Manager Environment and Approvals.

### 3 Accountabilities

Unless otherwise specified, the following roles are accountable or responsible for the activities outlined in this procedure.

Table 1 – Accountabilities

Role	Responsibility
General Managers	Accountable for ensuring that resources are available to support the implementation of this procedure where it is relevant to their area of responsibility
Managers	Accountable for the implementation of this procedure where it is relevant to their area of responsibility
Superintendents	Responsible for the implementation of this procedure where it is relevant to their area of responsibility
Environment Team	Responsible for review and update of this procedure

### 4 Abbreviations

Table 2: Abbreviations

Abbreviation	Definition
GIS	Geographic Information System
HDPE	High Density Polyethylene
HSE	Health, Safety and Environment
L	Litre
m	Metre
mm	Millimetre
SDS	Safety Data Sheet
OWS	Oily water separator

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Abbreviation	Definition
ppm	Parts per million
TPH	Total petroleum hydrocarbon

## 5 Definitions

Table 3: Definitions

Term	Definition
As soon as practicable	As soon as it is capable or feasible of being put into practice or being done or accomplished.
Environment	The meaning given to that term at common law and in any legislation in force in the State or Territory of Australia in which the <i>site</i> is situated including any land, water, atmosphere, climate, sound, odour, taste, the biological factor of animals and plants and the social factor of aesthetic.
Operational Environmental Requirements	A plan, procedure or work instruction that must be complied with.
Project	The Roy Hill Iron Ore Project.
Shall	Mandatory requirement.
Should	Discretionary requirement, but ought to be done if practicable.
Work	Includes the provision of materials and labour.

## 6 References

Table 4: References

Document number	Title
	<i>Water Quality Protection Note 68 Mechanical Equipment Wash down (DoW, 2006)</i>
	<i>Australian Standard AS 1940:2004 The Storage and Handling of Flammable and Combustible Liquids</i>
OP-PRO-00043	Bioremediation Facility Logsheet Form
OP-WIN-00112	Bioremediation Soil Testing Work Instruction
OP-FRM-00305	Contractor Environmental Report
100RH-0000-EN-BOD-2001	Environmental Basis of Design
OP-FRM-00222	Dangerous Goods Management Environmental Inspection Form
OP-SPC-00156	Incident Investigation Specification
OP-MAN-00007	Mine Environmental Monitoring Manual

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Document number	Title
OP-MAN-00011	Port and Rail Environmental Monitoring Manual
OP-PRO-00063	Waste Management Procedure

Note that up-to-date environmental documents should be accessed from the e-Care Roy Hill intranet portal to ensure that the current version is being used.

## 7 Review

This Procedure is to be reviewed as follows:

- Following the grant of or modification to relevant approvals;
- Annually; or
- As a result of findings or actions identified through inspections, audits and incident reporting.

Reviews are to examine the appropriateness of the procedure, taking into consideration corporate, system and compliance requirements and legislative changes since the last review was undertaken.

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