

## ***Environmental Management Plan***

Cleanaway Operations Pty Ltd

Site Location:

Various locations around the Northern Territory

Registered Address:

4/441 St Kilda Road, Melbourne VIC 3004

## ***Executive Summary***

The Cleanaway – Industrial Waste Services division manages the Rio Tinto Owned waste depot located on the Gove Peninsula in Northeast Arnhem Land in the Northern Territory.

The primary licenced activities includes the collection, transport, and storage of liquid (bulk and packaged) and solid wastes, which are then diverted to resource recovery, treatment and/or disposal processes.

This Environmental Management Plan is to detail the collection, transport, and storage of liquid (bulk and packaged) and solid wastes in order to obtain an Environment Protection Licence for the transport of waste to different resource recovery, treatment and/or disposal facilities in the Northern Territory and Interstate.

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## Site Overview

The Cleanaway managed and Rio Tinto Owned waste depot is located on the Gove Peninsula in Northeast Arnhem Land in the Northern Territory. Rio Tinto operations began in 1968 where they started mining Bauxite and refining Alumina. The surrounding Buildings largely accommodates workshops, Offices and the light fuel farm which supplies fuel to the generators for the site and town power grid.

The Cleanaway managed waste depo, approximately 100m from the sea (Gove Peninsula) has a good storm water drainage system for all storm water that flows into the sea water channel as per the below storm water management plan and all liquid waste is stored in a 45,000lt bund.

The primary licenced activities including the collection, transport, and storage of liquid (bulk and packaged) and solid wastes, which are then diverted to resource recovery, treatment and/or disposal processes. A description of the waste handling and storage processes for major waste streams is provided in the Waste Receipt and Storage section.



Figure 1 Cleanaway site overview

## Operational Control and Supervision

The mine site is secured with 1.8m high mesh fencing with 3x entrée points and the waste yard is fully barricaded with all relevant access information at each entre point. The site runs 24/7 and can only be accessed via swipe card entre.

The site-based Branch Manager oversees daily operations including fleet and plant, with support from the operation supervisors, waste operators, sales staff and health, safety, and environmental support services. Activities which have the potential to cause environmental impacts are outlined in the appended Environmental Risk Register, along with controls and risk ratings. The controls and performance monitoring criteria are described in the sections below.

Training requirements of all staff are assessed to ensure work can be complete safely, to control potential impacts to people and the surrounding environment. A training register is maintained by the Branch manager, with support from a qualified trainer-assessor along with the broader health, safety and environment (HSE) team. Training includes company inductions, verifications of competency and regular feedback at team meetings to review HSE concerns.

## Waste Receipt and Storage

Prior to accepting wastes or providing waste collection services to Rio Tinto or customers, all wastes are identified through site approval system ChemAlert. If customers are not able to identify a waste type, Cleanaway complete a waste classification process, to ensure the waste can be safely handled, stored and transported to an appropriately licenced facility for further treatment, recovery or disposal. Once wastes are classified, the Branch manager confirms whether the waste can be accepted and provides advice to the sales team.

Once the waste has been accepted, it is transferred into ISO tanks or IBC's (which are loaded into containers). Once the ISO's and Containers have been Fully Loaded and the required paperwork filled out, Sea Swift Gove is called to pick up and transport the waste to the transit yard waiting to be loaded onto the next available barge, which is then shipped to Sea Swift Darwin.

Prior to the collection of listed wastes in Darwin, drivers are provided with a waste manifest and a run sheet. Upon arrival at Sea Swift Darwin, drivers inspect the waste to ensure it reflects the details recorded on the Runsheet and inspect the waste receptacles to ensure they are fit for transport and storage.

Upon arrival at the Sea Swift Depo, vehicles transporting waste are parked at the entrance and drivers report to reception. Here the waste manifest and associated documentation is reviewed to ensure the waste is clearly identified, and operations personnel can provide unloading and storage instruction. In the event there is insufficient documentation accompanying a load of waste, Cleanaway will contact NT EPA to discuss the most appropriate actions. Waste transport, unloading and storage instructions vary dependent on the waste type, as outlined in the table overleaf.

Septic waste is Disposed of locally at the town septic ponds. These are managed by Nhulunbuy Corporation (Table 1 below).

Waste Stream	Stored on Site?	Site Storage Location	Final Destination
Hydrocarbon waste	yes	Waste yard	Offsite for refining LTS Adelaide
General Waste	yes	Licensed landfill	Nhulunbuy Landfill
Commercial & Industrial Collection	No	Licensed landfill	Nhulunbuy Landfill
Grease Trap	Yes	Waste Yard	Offsite for refining LTS Adelaide
Oily Water	Yes	Waste Yard	Offsite for refining LTS Adelaide
Waste Oil	Yes	Waste Yard	Offsite for refining LTS Adelaide
Hazardous Chemicals - Packaged	Yes	Hazardous Chemical Storage Shed	Offsite for resource recovery / treatment / safe disposal
Septic Waste	No	Site septic systems	Town Septic Ponds

Table 1 Waste stream and final destination.

Waste Type	Code	Approximate Annual Volume	Volume Type	Transport Method
General Waste		240	Tonnes	Hooklift
Comingled Recycling		60	Tonnes	Hooklift
Wood/Timber		48	Tonnes	Hooklift
Wood/Timber Treated		24	Tonnes	Hooklift
E-Waste		12	Tonnes	Hooklift
Garnet Waste	D300	6,000	Litres	Vac Truck / Tanker / IBC
Paint (Mixed)	F100	TBC	Tonnes	IBC
Unleaded	G110	TBC	Litres	IBC
Paint Thinners	G110	4,000	Litres	IBC
Aviation Fuel	G110	4,000	Litres	IBC
Oil	J100	480,000	Litres	Vac Truck / Tanker / IBC / ISO
Oil – Hydraulic	J100	TBC	Litres	Vac Truck / Tanker / IBC
Oil – Transformer	J100	6,000	Litres	Vac Truck / Tanker / IBC
Oil – Gardinia G3 Lubricant	J100	TBC	Litres	IBC
Oil – Omala S2G150 Gear lubricant	J100	TBC	Litres	IBC
Oil – Gear Oil	J100	TBC	Litres	IBC
Corrosion inhibitor	J100	5,000	Litres	IBC
Dustex Road Stabilisation	J100	5,000	Litres	IBC
Grease	J100	5,000	Tonnes	IBC
Oily Rags	J100	24,000	Tonnes	IBC
Oily Filters	J100	24,000	Tonnes	IBC
Mixed Hydrocarbons	J100	TBC	Tonnes	IBC
Hydraulic Hoses	J100	TBC	Tonnes	IBC
DPF Filters	J100	TBC	Tonnes	IBC
Oily Water	J120	24,000	Litres	Vac Truck / Tanker / IBC / ISO

Diesel	J120	24,000	Litres	Vac Truck / Tanker / IBC
Diesely Water	J120	TBC	Litres	Vac Truck / Tanker / IBC
Coolant	J120	6,000	Litres	IBC
Cooking Oil	K100	24,000	Litres	Vac Truck / Tanker / IBC
Grease Trap Disposal	K100	30,000	Litres	Vac Truck / Tanker / IBC
Septic / Sewerage	K130	100,000	Litres	Vac Truck / Tanker
Oil – Transformer (<5ppm PCB)	M100	TBC	Litres	IBC
Dobatex Gold Cleaning Agent	M250	5,000	Litres	IBC
Flocculant Waste	M250	10,000	Litres	Vac Truck / Tanker / IBC
PFAS Contaminated Material	M270	TBC	Tonnes	Hooklift
Aerosol Cans	N100	TBC	Tonnes	IBC
Contaminated Soil	N120	20,000	Litres	Hooklift / Vac Truck / Tanker / IBC
Oily Sludge	T130	TBC	Litres	Vac Truck / Tanker / IBC / ISO
Drill Mud	T130	20,000	Litres	Vac Truck / Tanker / IBC

**Table 2 Waste types and estimated volumes transported per year.**

### Waste Treatment and Disposal

Cleanaway adopts the Waste Management Hierarchy, with the objective to minimise tonnages to landfill. Wastes stored on site are sorted and segregated by waste type. Recoverable waste streams are sent to offsite processing facilities for recycling and reuse, and all other waste is transported to licenced treatment and disposal facilities for safe, regulated disposal.



**Figure 2 Waste Management Hierarchy**

### Emergency Management

Emergency management on site includes risk identification, assessment, preparation and planning for a range of potential emergency scenarios, including (but not limited to) fire, large spills, and flooding. Area wardens and first aid officers are points of escalation and control in the event of an emergency. Standby and evacuation

alarms are maintained and routinely tested, and instructions are provided for appropriate use during emergency scenarios.

## **Fire**

Key risks to cause fire on site include mixing of incompatible waste types during storage, unauthorised access, and lightning strike. Dedicated dangerous goods storage areas are established within the hazardous chemical storage shed to provide safe segregation and prevent uncontrolled mixing of incompatible substances. The site is fully fenced and secured to manage the risk of unauthorised access and vandalism outside of business hours.

In the event of a fire, the evacuation alarms are activated, and the area warden is notified. The warden arranges notification of emergency services and provides an assessment of the situation. If safe to proceed, the warden will provide instruction to trained personnel to extinguish the fire, or to otherwise evacuate the area. NT EPA will be notified of any fire occurrences.

## **Large spill**

Waste is stored within dedicated areas across site. A material safety data sheet for each chemical is kept on site, and at the site entrance for easy access in the event of an emergency. In the event of a spill, the size and nature of the spill is assessed, referring to the SDS for handling instructions. If the spill can be safely contained and cleaned up, then appropriate spill response equipment is deployed. Where the spill cannot be quickly and safely contained, the operations manager is notified. The operations manager will assess the risk and activate the standby alarm if appropriate unless the spill poses a threat and requires a site evacuation in which case the evacuation alarm is activated. The operations manager will co-ordinate notification to Emergency Services, including the NT EPA, and assist in co-ordinating the spill response as appropriate. An incident report is then complete and stored within the Health, Safety and Environment Database.

## **Flooding**

As outlined in the stormwater management section, stormwater flow paths divert surface water away from waste storage locations. Bunded storage areas are also elevated to prevent stormwater ingress.

In the event that flooding presents an uncontrolled containment risk for hazardous wastes, the operations manager will liaise with emergency services and co-ordinate actions as required. NT EPA will be notified of any emergency situations which pose a risk to the environment and/or community.

## **Stormwater Management**

### **INTRODUCTION**

The Stormwater Management Plan (SWMP) applies to all rain which falls onto or is directed onto the site including stormwater from roadways and landforms. The SWMP also applies to the management of any process waters that may be generated onsite, which are a distinctive and separate waste streams to the stormwater. Process water should not be treated as stormwater.

This Stormwater Management Plan provides a plan for the site to control and manage the risk of discharging contaminated water offsite and to provide to staff, contractors and visitor's informative guidance relating to the facility.

### **SITE OVERVIEW**

The site operates within the Rio Tinto Gove Operations facility, Nhulunbuy, NT. The following areas are operated by Cleanaway:

- Scaffolding yard



- Main office and general storage yard
- Waste storage shed.
- The Site services the Rio Tinto Gove Operations facility, with waste collected including:
- As per the Diagram on page 6

Waste is sorted within the waste storage shed, before being transported by barge to Darwin for treatment/ disposal.

No EPA licence exists for the site, with operation to be undertaken as per the Rio Tinto Mining Management Plan (2019). Appendix C of the Mining Management Plan (2019) details the environmental protection management strategies for the site.

Stormwater runoff across the site is directed to Rio Tinto’s underlying stormwater system which discharges within the bays south of the site.

## OBJECTIVES

The objectives of this Stormwater Management Plan (SWMP) plan are to:

- Prevent contamination of off-site land and stormwater system in line with the requirements of the relevant Rio Tinto Mining Management Plan / consent conditions for stormwater quality.
- Provide operational personnel with site specific instructions relating to stormwater management that are reasonably practicable based on the environmental risk posed by site activities.

EA Water protection	Outdoor areas and site activities must be managed so that only clean stormwater leaves the site.
	All stormwater drains must be coloured blue to distinguish them from other types of drains and pits
	Do not allow anything to be stored or parked on top of a stormwater drain
	Stormwater drains must be kept free of waste, litter, sediment, or obstructions
	Spills and leaks must be contained and cleaned up immediately; this includes removal of clean-up materials.
	All stormwater pollution controls must be visually inspected at least monthly. Seals must be checked at least quarterly for any installed stormwater shutoff valves.
EA Soil protection	All liquid wastes, chemicals and liquid products must be managed in a designated bund.
	Empty containers and transfer hoses must be stored in a designated bund unless triple-rinsed.
	All containers (including drums and tanks) storing liquids must be in sound condition, not leaking, and have a clearly visible label listing its content. Any redundant labels must be removed or obscured.
	Bunds must be kept clean and free of residue build-up.
	Stormwater in bunds must be removed following rain and managed in accordance with the Stormwater Management Plan.
	All solid waste stockpiles must be risk assessed for soil protection, and if required liquid runoff prevented from entering the stormwater system or running onto an unsealed surface.
	All tanks, pits and bunds must be maintained in serviceable condition and bunds and storage areas must be visually inspected at least monthly. Any leaks must be rectified.
LSR Hazardous chemicals	All spills and leaks must be cleaned up immediately following the Spill Response Procedure.
	All hazardous materials must be labelled and the packaging must not leak.

Table 3

## REGULATORY CONTEXT

This SWMP is intended to operate within the regulatory context set by:

- Water Act 1992 (NT EPA)
- Waste Management and Pollution Control Act 1998 (NT EPA)
- Environment Protection Act 2019 (NT EPA)

This SWMP relies on non-statutory guidance provided in the following:

- Cleanaway Enterprise Level Procedure: Stormwater Management (Cleanaway, 2020)
- ANZG 2018. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. Available at [www.waterquality.gov.au/anz-guidelines](http://www.waterquality.gov.au/anz-guidelines)
- Mining Management Plan (Rio Tinto, 2019)

The following **Environmental Absolutes (EA)** and **Lifesaving Rules (LSR)** apply to this SWMP:

Role	Name	Contact	Responsibility
Branch Manager	Ryan Coughlan	0439692004	Ensures that resources are allocated to meet the Stormwater Management Plan. Responsible for reporting complaints and incidents to Rio Tinto and EPA in the absence of the Environmental Business Partner. Ensure that the Stormwater Management Plan is updated when required. Report complaints to the Stakeholder and Community Relations Manager. Conduct daily site inspections and implement risk controls.
Regional Manager	Peter Cunningham	0478 838 095	Ensures that resources are allocated to meet the Stormwater Management Plan. Responsible for reporting complaints and incidents to Rio Tinto and EPA in the absence of the Environmental Business Partner.
Senior Environmental Business Partner	Tom Robertson	0481 911 410	Support Investigation of community complaints and communicate findings to the Stakeholder and Community Relations Manager.
Environmental Business Partner	Paulo Castro	0498 355 532	Responsible for reporting incidents and complaints to Rio Tinto and EPA.
All workers on site	NA	NA	Report any complaints to the operations manager/ supervisor. Report any litter to the supervisor. Ensure the site is kept tidy and no litter is present. If required undertake litter picking and help address any other environmental issues (fences clean and secure, noise, odour, dust, spills). Complete environmental inspections as needed.

## CONTACT DETAILS

Service Provider	Name	Contact
City Council	East Arnhem Regional Council	(08) 8986 8986
Environmental Regulator	NT Environmental Protection Authority	1800 064 567
Water Authority	Power and Water	1800 245 090

## **RISK MANAGEMENT**

### ***Hazard identification***

Below is a brief description of some of the key characteristics of the site, its activities and the receiving environment that are likely to affect stormwater management at the site (refer to Figure 1 and 2 for the yard areas and waste storage shed respectively):

- All water that falls on roof and hardstand areas of the site drains to the legal point of discharge interconnected with the Rio Tinto refinery stormwater system.
- One of site stormwater drain is located within the Cleanaway operated premises, located adjacent the mechanic shed in the scaffold storage area. This location was confirmed to be a blind sump with no connection to Rio Tinto stormwater infrastructure.
- A stormwater drain is located to the east of the waste storage shed. Within the vicinity of this area includes a number of sheds and roadways.

### ***Inspection and Maintenance***

In addition to operating in accordance with the above with processes, maintenance activities are conducted to verify that control measures are effective. Key activities include:

- A thorough preventative maintenance and servicing schedule for all fleet, to ensure safe and efficient operation
- Monthly workplace inspections, including waste storage areas and the stormwater system.
- Routine litter collection from the yard
- Annual cleanout of the vegetated stormwater drains, removing excess growth & debris

Risks identified	Risk controls	Responsible person	Timing
<b>Runoff accidentally directed to the wrong drain</b>	<ul style="list-style-type: none"> <li>All stormwater drains must be coloured blue to distinguish them from other types of drains and pits. All drains reporting to an on-site treatment system are to be painted yellow. All drains discharging to sewer/trade waste must be painted red.</li> <li>Liquid waste or contaminated water runoff must be prevented from entering the stormwater system or running onto an unsealed surface.</li> <li>If a significant discharge to stormwater occurs, then water sampling and analysis may be required (please refer to Section 6.2).</li> </ul>	Operations manager	Ongoing
<b>Poor maintenance of stormwater system resulting in clogging</b>	<ul style="list-style-type: none"> <li>Do not allow anything to be stored or parked on top of a stormwater drain.</li> <li>Stormwater drains must be kept free of waste, litter, sediment, or obstructions.</li> </ul>	Branch manager	Ongoing
<b>Poor site practices resulting in stormwater contamination</b>	<ul style="list-style-type: none"> <li>All containers that are stored outside in unroofed areas must have closed lids or be otherwise covered (with a tarp or similar) to prevent rainwater ingress. Where containers have not been covered or closed and stormwater ingress has occurred, liquid in containers must be treated as contaminated leachate and must not be released to environment.</li> <li>Empty containers and transfer hoses must be stored in a designated bund unless triple-rinsed (or if hoses are positively sealed at both ends).</li> <li>If a significant discharge to stormwater occurs, then water sampling and analysis may be required (please refer to Section 6.2).</li> </ul>	Operations manager	Ongoing
<b>Leaks from containers storing liquid wastes</b>	<ul style="list-style-type: none"> <li>All liquid wastes, chemicals and liquid products must be managed in a designated bund.</li> <li>All containers (including drums and tanks) storing liquids must be in sound condition, not leaking, and have a clearly visible label listing its content. Any redundant labels must be removed or obscured.</li> <li>All hazardous materials must be labelled, and the packaging must not leak.</li> </ul>	Operations manager	Ongoing
<b>Bunds are leaking or clogged</b>	<ul style="list-style-type: none"> <li>A sump is located within the waste storage shed, isolated from the stormwater system – Liquid within the sump must be emptied when nearing capacity or routinely every 3 months, whichever is more frequent, with material to be disposed of within the ISO Tank.</li> <li>Bunds must be kept clean and free of residue build-up.</li> <li>All bunds must be maintained in serviceable condition. Any cracks/leaks must be rectified.</li> <li>Please refer to HSE QRG 4.2.9.05 – Bunding.</li> </ul>	Operations manager	Ongoing
<b>Accidental spills causing stormwater contamination</b>	<ul style="list-style-type: none"> <li>Spills and leaks must be contained and cleaned up immediately; this includes removal of clean-up materials.</li> </ul>	Operations manager	Ongoing

	<ul style="list-style-type: none"> <li>All spills and leaks must be cleaned up following the Spill Response Procedure outlined in the Site Emergency Management Plan.</li> <li>If a significant discharge to stormwater occurs, then water sampling and analysis may be required (please refer to Section 7.2).</li> </ul>		
<b>Staff on site don't know how to manage stormwater</b>	<ul style="list-style-type: none"> <li>Annual environmental awareness training for all staff on site.</li> </ul>	Operations manager	Yearly
	<ul style="list-style-type: none"> <li>Site induction for all workers on site, including Cleanaway employees, contractors, consultants etc.</li> </ul>	Operations manager	As required
	<ul style="list-style-type: none"> <li>Cleanaway "Lifesaving rules and environment absolutes" Video must be watched by all workers during onboarding</li> </ul>	Operations manager	Once

### Checking risk controls

The following monitoring is required at the site to check that the risk controls specified earlier are maintained and functional:

### Stormwater sampling frequency

Check	Actions required	Records	Responsible person	Timing
Daily, weekly, monthly, annual inspections	<ul style="list-style-type: none"> <li>Site inspection checklists are to be completed and submitted through MYOSH.</li> <li>They provide an ongoing record of inspections and help identify issues as they arise.</li> </ul>	MYOSH	Operations manager	Daily, weekly, monthly, yearly
Stormwater sampling and analysis	<ul style="list-style-type: none"> <li>Refer to Appendix A for sampling and analysis procedures.</li> </ul>	Laboratory Information Management System (LIMS)	Operations Manager	See section 0
Complaints records	<ul style="list-style-type: none"> <li>All complaints must be recorded in MYOSH as described previously.</li> </ul>	MYOSH	Environment business partner (or Branch or Regional manager if EBP not available)	As required
Training records	<ul style="list-style-type: none"> <li>Annual environmental awareness training must be completed by all operations staff and training records must be stored in MYOSH.</li> </ul>	MYOSH	Operations manager	Yearly (February)
Induction records	<ul style="list-style-type: none"> <li>All workers on site must be inducted onto the site, and induction records are to be stored on MYOSH.</li> </ul>	MYOSH	Operations manager	As required
Onboarding records	<ul style="list-style-type: none"> <li>Cleanaway "Lifesaving rules and environment absolutes" Video must be watched by all staff during onboarding.</li> </ul>	PageUp	Operations manager	Once

<p>SWMP update and review</p>	<ul style="list-style-type: none"> <li>• This SWMP must be reviewed:</li> <li>• Every 3 years, or</li> <li>• Whenever a significant change occurs to the activities on the site.</li> <li>• The review process should consider:</li> <li>• changes in regulatory requirements</li> <li>• changes in site activities</li> <li>• inspection findings, incident investigations and non-conformances</li> <li>• changes in organisational structure and/or responsibilities</li> <li>• changes in voluntary obligations and compliance obligations.</li> </ul>	<p>PORTAL</p>	<p>Branch manager</p>	<p>Every 3 years, or after a change in site activities</p>
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### Stormwater sampling frequency

Stormwater sampling is to be carried out as described in Appendix A. The frequency of sampling is determined as follows:

Stormwater sampling is to be carried out as described in Appendix A. The frequency of sampling is determined as follows:

- Not required
  - The site releases no stormwater, or
  - The site accepts no waste and doesn't store any hazardous materials; or
  - All activities related to waste or pollution are carried out in covered areas; or
  - For any other reason, contamination of stormwater is not plausible.
- Yearly
  - The site does not meet any of the criteria above for "not required", or
  - (For sites that previously did quarterly sampling) The site's previous year of quarterly sampling showed that stormwater risks have been mitigated.
- Quarterly
  - The site has received regulatory notices regarding stormwater in the last year.
  - The site has recently implemented significant stormwater controls due to an identified risk of stormwater contamination.

Whilst regular sampling of stormwater is not required, sampling may be required if there is a significant release of potentially contaminated water to off-site land and/ or waters (i.e. during a spill or following a fire event) or demonstration of the quality of the liquid within the blind sump.





Appendix 1 Site Environmental Risk Register

Receptor and Control		Maintenance / Monitoring			Schedule												Record Location	Actions Identified	
Receptor	Control	Primary Owner*	Requirement	Actual Scope	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Record Location	Actions Identified
Groundwater, Stormwater and Land	Tank & Bund inspections	Branch Manager	Tank and bund compliance checks (all bunds and tanks > 1000L)	Visual inspection of bund, tank shell, valves and vents	Monthly													MYOSH	
				Close check of external foundations and tank supports for erosion, settlement and structural deterioration	Annually													MYOSH	
				Integrity and thickness testing where possible (non-destructive testing) for tank shell, floor and roof and any structures holding up tank (plinths, legs, etc)	10-yearly	Next due...												Site folders	
Groundwater, Stormwater and Land	Maintenance of stormwater systems	Branch Manager	Stormwater system clean and not causing contamination to site land or environment	Inspection of entire stormwater system to determine if a thorough weeding and clean is required, including interceptor pit cleaned and wastewater disposed of at appropriately licenced facility. Booms at SW02 replaced if required	6-monthly (additional as needed)													MYOSH	
	Spill Management	Operations staff, Branch Manager	Requirement to maintain stocked and easily accessible spill kits onsite.	Immediate clean-up of spills Visual inspection and stocktake of onsite spill kits to ensure adequate stock is available.	As Required														
Air/Gas/Odour	JDE/DAMS for Vehicle Maintenance	Operations workers, supervisors	Company policy	Vehicles checked pre-start daily, all maintenance is logged, any faults addressed. Vehicles serviced regularly as part of preventative maintenance system	Daily for all vehicles													JDE, DAMS performance dashboard	
	Monthly site inspections	Branch Manager	Site inspection including addressing safety, environmental and regulatory requirements as per company procedure	Includes observation of potential hazards, odours at site boundaries	Monthly													MYOSH	
Dust / Windblown Waste	Monthly site inspections	Branch Manager	Site inspection including addressing safety, environmental and regulatory requirements as per company procedure	Includes checking of dust prevention measures, site housekeeping														MYOSH	
Light Emission / Noise / Visual Amenity	JDE/DAMS for Vehicle Maintenance	Operations workers, supervisors	Company policy	Vehicles checked pre-start daily, all maintenance is logged, any faults (including noisy vehicles) addressed. Vehicles serviced regularly as part of preventative maintenance system	Daily for all vehicles													JDE, DAMS performance dashboard	
	Monthly site inspections	Branch Manager	Site inspection including addressing safety, environmental and regulatory requirements as per company procedure	Site housekeeping checked, any noticed errors in machinery addressed	Monthly													MYOSH	
General Waste Management/ Administration	Monthly site inspections	Branch Manager	Site inspection including addressing safety, environmental and regulatory requirements as per company procedure	Includes observations related to licence and legal compliance	Monthly													MYOSH	
	Documentation update	Branch Manager	Cleanaway EPLs (Air Quality, Stormwater), company policy	Update of site Environmental Risk Register, as well as environmental management plans, including Stormwater Management Plan, Odour Management Plan, Dust Management Plan, including review of effectiveness of controls and actions for improvement	Annual/more frequently as required													G:\HSE\Cleanaway Liquids (Wingfield)\Environmental Management	



Environmental Residual Risk Register  
 Site Register: Industrial Services Gove  
 Document Owner: Ryan Coughlan  
 Date: December 2021

Residual Risk\* Ranking

Receptor and Impact / Risk Driver		Current State							Future State													
Receptor	Critical Recept or (Y/N)	Impact Mechanisms					Controls			Assessment			Proposed Risk Mitigation Strategy			Estimation						
		Chemical Reaction	Solid Uncontrolled	Liquid Uncontrolled	Gaseous Uncontrolled	Fire	Noise & Vibration	Light	Risk Controls	Current Status of control	Primary Owner*	Critical Risk Control (Y/N)*	Legal Requirement? (Y/N)	Likelihood	Consequence	Rating	Proposed Controls / Monitoring	MgOSH Number	Due Date	Likelihood	Consequence	Rating
Surface water / Land / Groundwater	Yes	✔	✔	✔	✔	✔		Spill of liquids waste, oils, packaged wastes on site; Tank or pipework failure resulting in release of material; Bunding, pit integrity failure; Spills outside bunded areas; Hazardous materials spilt during transport; Failure of vehicles resulting in fuel/fluid leakage	Spill kits located strategically around site and on vehicles, spills reported immediately and kits restocked after use	Operational, maintained and checked	Site Manager	Yes	No	Unlikely	Minor	7						
								Liquid and Solid Waste Storage Plan in place which is inline with the requirements of the Environmental Management Plan for the broader site area	Operational, maintained and checked	Site Manager	Yes	No										
								Stormwater Management Plan in place with contingencies for managing contaminated stormwater	Operational, maintained and checked	Site Manager	Yes	No										
								Monthly detailed visual inspections of all tanks, pits and bunds. Any defects addressed accordingly using MyOSH	Operational, maintained and checked	Site Manager	Yes	No										
								Regular maintenance by qualified service contractors on all mobile plant Vehicles maintained through JDE/DAMS Trucks and tankers equipped with spill kits	Operational, maintained and checked	Site Manager	Yes	No										
								All liquids and dangerous goods are stored within bunded, undercover areas. This includes individual bunds, or the bunded catchments.	Operational, maintained and checked	Site Manager	Yes	No										
								Regular movement of waste stored in the transfer area off site.	Operational, maintained and checked	Site Manager	No	No										
								Vehicle and equipment washdown is undertaken off site at the Rio Tinto managed wash facility	Operational, maintained and checked	Site Manager	No	No										
								Water from waste storage areas is separated from the stormwater system	Operational, maintained and checked	Site Manager	Yes	No										
								Monthly site inspections have additional focus on packaged waste, ensuring materials stored correctly, spill kit checks	Operational, maintained and checked	Site Manager	Yes	No										
Drivers & Plant operators trained to escalate any non-conformances to plant manager to raise an incident	Partial Implementation	Site Manager	Yes	No																		
Emergency Procedure in place - reviewed annually																						
Risk assessments & work instructions / SWMS are in place for all major processes, JSEAs used for non-routine tasks																						



Lighting Emissions, Visual Amenity and Noise	Yes						Noisy vehicles / equipment / practices; Untidy garden areas;	Monthly site inspections, informal inspections and housekeeping address equipment noise issues, walkways, tidiness	Operational, maintained and checked	Site Manager	Yes	No	Unlikely	Minor	7					
							Landscaped areas maintained on regular basis	Operational, maintained and checked	Site Manager	Yes	No									
							The site is surrounded by the Rio Tinto Gove Alumina Refinery;	No control required			No									
							Pre start checks completed daily and any noise items addressed; Vehicles equipped with mufflers and broad spectrum reverse alarms to current Australian Standards;	Operational, maintained and checked	Site Manager	Yes	No									
Waste Management	Yes						Prohibited waste is accepted at site; Irresponsible waste management/treatment conducted	All hydrocarbon wastes to only be accepted from Rio Tinto Gove Operations - verbal query prior to accepting the waste.	Operational, maintained and checked	Site Manager	Yes	No	Unlikely	Minor	7					
							Liquid and Solid Waste Storage Plan in place which is inline with the requirements of the Environmental Management Plan for the broader site area	Operational, maintained and checked	Site Manager	Yes	No									
							Work instructions/SWMS used for regular site activities, JSEAs for non-routine tasks	Implementation	Site Supervisors	Yes	No									
							All outgoing materials correctly labelled/placard and manifested prior to leaving site Drivers trained in hazardous material transport Downstream third parties subject to risk audit by Corporate Risk & Audit team	Operational, maintained and checked	Site Supervisors	Yes	No									
Regulatory	Yes						Failure to report to the regulator; Failure to adequately monitor; Failure to have adequate financial assurance; Failure to identify non compliance; PINs/PANs, higher level of regulator scrutiny; Poor community perception, risk of withdrawal of licence by regulator	Monthly Site inspections; All controls as listed above implemented; Annual update of SEMP, ERR, LSWSP and SWMP;	Operational, maintained and checked	Health and Safety and Environmental Business Partners, Site Manager	Yes	No	Unlikely	Minor	7					
							Risk-based environmental monitoring in line with ERR; Calendar schedules for maintenance and other reoccurring activities	Operational, maintained and checked	Environmental Business Partner and Site Manager	Yes	No									
							Corporate standards, audits, reviews, APS and regulator inspections; Environmental incidents, hazards and complaints reported and addressed in MyOSH; Transparency with regulator & community;	Operational, maintained and checked	Environmental Business Partner and Site Supervisor	Yes	No									



**Environmental Inherent Risk Profile**  
 Site Register: Industrial Services Gove  
 Document Owner: Ryan Coughlan  
 Compiled By: Land and Water Consulting  
 Date: December 2021

**Inherent Risk\* Ranking**

Site Activities	Impact Mechanisms*								SURFACE WATER			GROUNDWATER			LAND			AIR / GAS / ODOUR			DUST / WINDBLOWN WASTE			LIGHT EMISSION / VISUAL AMENITY / NOISE			FLORA AND FAUNA			Inherent Risk (Activity)									
	Chemical Reaction	Solid Uncontrolled Release	Liquid Uncontrolled Release	Gaseous Uncontrolled Release	Fire	Noise & Vibration	Light	CRITICAL RECEPTOR	Yes	Likelihood	Consequence	Rating	CRITICAL RECEPTOR	Yes	Likelihood	Consequence	Rating	CRITICAL RECEPTOR	Yes	Likelihood	Consequence	Rating	CRITICAL RECEPTOR	No	Likelihood	Consequence	Rating	CRITICAL RECEPTOR	No	Likelihood	Consequence	Rating	CRITICAL RECEPTOR	Yes	Likelihood	Consequence	Rating	Inherent Risk (total)	Inherent Risk (max)
Liquid and solid waste collections & transport within Rio Tinto site	✓	✓	✓	✓	✓	✓	✓	✓	Possible	Moderate	13	Possible	Moderate	13	Possible	Moderate	13	Unlikely	Minor	7	Possible	Minor	8	Possible	Minor	8	Unlikely	Moderate	12	74	13								
Transfer of waste oil into ISO tank	✓	✓	✓	✓	✓	✓	✓	✓	Possible	Moderate	13	Possible	Moderate	13	Likely	Moderate	14	Unlikely	Moderate	12	Unlikely	Minor	7	Unlikely	Insignificant	2	Unlikely	Moderate	12	73	14								
Loading/unloading of packaged waste/ liquid & dangerous goods	✓	✓	✓	✓	✓	✓	✓	✓	Possible	Moderate	13	Possible	Moderate	13	Possible	Moderate	13	Possible	Minor	8	Possible	Minor	8	Possible	Minor	8	Unlikely	Moderate	12	75	13								
Vehicle Washdown - off site on Rio Tinto Facility			✓			✓			Likely	Moderate	14	Possible	Moderate	13	Likely	Moderate	14	Possible	Insignificant	3	Possible	Minor	8	Possible	Minor	8	Unlikely	Minor	7	67	14								
Office and amenities	✓		✓		✓				Unlikely	Insignificant	2	Rare	Insignificant	1	Unlikely	Insignificant	2	Rare	Insignificant	1	Rare	Insignificant	1	Rare	Insignificant	1	Rare	Insignificant	1	9	2								
Vehicle movements and parking onsite			✓		✓				Possible	Moderate	13	Possible	Moderate	13	Possible	Moderate	13	Unlikely	Minor	7	Possible	Minor	8	Possible	Minor	8	Unlikely	Moderate	12	74	13								
Forklift operation (waste movement around site)			✓		✓		✓		Possible	Minor	8	Possible	Minor	8	Possible	Minor	8	Possible	Moderate	13	Possible	Minor	8	Possible	Minor	8	Unlikely	Moderate	12	65	13								
Storage of DG waste	✓		✓		✓		✓		Possible	Moderate	13	Possible	Moderate	13	Possible	Moderate	13	Possible	Moderate	13	Possible	Minor	8	Possible	Minor	8	Unlikely	Moderate	12	80	13								
<b>Number</b>	5	1	8	4	7	4	0				8			8			8			8			8			8			8			8			8			8	
<b>INHERENT RISK (Receptor)</b>									<b>Surface water</b>				<b>Groundwater</b>				<b>Land</b>				<b>Air / Odour / Gas</b>				<b>DUST / WINDBLOWN WASTE</b>				<b>LIGHT EMISSION / VISUAL AMENITY</b>				<b>FLORA AND FAUNA</b>						
											89			87			90			64			56			51			80			80			80				
											14			13			14			13			8			8			12			12			12				
											17.2%			16.8%			17.4%			12.4%			10.8%			9.9%			15.5%										