



**Northparkes Mines**  
*A century of mining together*

# Management Plan

## Pollution Incident Response

**Risk Statement: High**

This document will be reviewed on a one yearly basis, unless a process change occurs earlier or a significant operational change or legislative amendments.

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## Revision Summary

First Issue	Issue Date	Implementation Requirements	Approved By
1	Aug 12	Prepared by Bharath Ram to comply with the new requirements introduced by the Protection Legislation Amendment Act 2011 (POEO Act).	M.D.

Version No.	Revision Date	Summary of Revision Details	Approved By
2	3 Apr 13	Review and minor changes in section 4 and section 6 by Bharath Ram	
3	31 Oct 14	Review and minor changes in sections 5, 7, 8, 9, 11 and 12 by Michael Thomas	
4	14 Jul 15	Reviewed and major changes to the document by MP	
5	Jan 16	Reviewed and update the entire document.	
6	Aug 16	Updated following aspects and impacts review. Included management of concentrate spill. Removed table indicating specific pollutants and referred to Chemalert and Dangerous Goods Licence on the DCS.	
7	May 17	Update plan to include contact names and 24 contact numbers, update of Revisions Summary, updated map showing the surrounding area likely to be affected by a pollution incident and updated list of potential pollutants.	
8	Nov 17	Update to document after annual test of PIRMP following test of Emergency Management Plan	C Dingle
9	Nov 18	Update to document after annual test of PIRMP following test of Emergency Management Plan	C Dingle
10	Dec 19	Update to document after annual test of PIRMP following test of Emergency Management Plan	C Dingle
11	Dec 20	Update to document after annual test of PIRMP following test of Emergency Management Plan. Minor changes made	C Higgins
11.01	Jun 21	Annual review	C Higgins
11.02	Dec 21	Update following desktop scenario. Personnel changes and position titles	C Higgins
11.03	Jan 23	Update following desktop scenario. Changes made to tailings dust controls and addition of tailings dust as potential health impact	M Thomas

Consultation Required	Hard Copy Locations
Not Applicable	Northparkes Website

Associated Documents to be Reviewed
Not Applicable

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# 1. OVERVIEW

## 1.1 Background

CMOC Mining Services Pty Limited (CMOC) is the manager of the Northparkes Joint Venture, an unincorporated joint venture between CMOC Mining Limited (80%); Sumitomo Metal Mining Oceania Pty Ltd (13.3%) and SC Mineral Resources (6.7%). Northparkes is a copper-gold operation in Goonumbla, situated 27 kilometres north-west of the town of Parkes.

Construction of the ore processing plant and associated facilities began in 1993. Open cut mining commenced on the E22 and E27 ore bodies in late 1993. Development of the E26 lift 1 block cave underground mine began in 1994, with full scale production commencing in 1997.

## 1.2 Mining Context

Operations at Northparkes primarily comprises underground mining from multiple ore sources that feed a processing plant with a capacity of 6.5 million tonnes per annum (Mtpa). The underground mine is accessed via a decline ramp from the surface for people and materials with ore transported to the surface via inclined conveyors and a hoisting shaft, with a nominal capacity of 7.2 Mtpa. Northparkes utilises low cost block and sub-level cave mining and exploits industry leading technology, such as semi-autonomous loaders and various cave monitoring systems.

The ore processing operation consists of four stages: crushing, grinding, flotation and thickening / filtering. In addition to producing concentrate, the ore processing team also manages tailings disposal. The concentrator was constructed in two modules. Each module consists of its own grinding circuit with a single flotation circuit, concentrate thickener and filter. After extracting the copper and gold bearing minerals, the tailings are combined in a single tailings thickener before being deposited in the active tailings storage facility.

Northparkes' copper concentrate is transported to a rail siding at Goonumbla where it is then transported by rail to Port Kembla, for shipping to overseas customers.

## 1.3 Pollution Incident

**A pollution incident means** an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

Notification of a pollution incident is required if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act as:

- a) harm to the environment is material if:
  - i. it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
  - ii. it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and
- b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

# 2. SCOPE

This document applies to all activities undertaken by Northparkes including mining and exploration activities, processing of copper / gold ore resources, project development, maintenance activities, mine closure, logistics, associated service and support functions, bore fields, farming operations and products.

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### 3. PURPOSE / OBJECTIVES

This PIRMP has been developed to satisfy pollution reporting obligations under the POEO Act. This plan outlines the classification, testing, reporting and management requirements of an environmental pollution incident.

The objectives of this plan are, to:

- Ensure comprehensive and timely communication to relevant external authorities, the community and other stakeholders of pollution incidents;
- Minimise and control the risks of any potential pollution incident by development of planned actions; and

Ensure this plan is appropriately implemented by trained staff and is available and understood within the business

### 4. RESPONSIBILITIES

This management plan has been developed to describe Northparkes Mines response to a potential pollution incident and to meet requirements of the POEO Act.

General role responsibilities are outlined in the Health, Safety and Environment Responsibilities and Accountabilities Procedure (PRO-0080). Personnel carrying out work under this document must be familiar with and comply with it in full. The following persons have specific responsibility:

**Table 1: Responsibilities**

Role	Responsibility
emergency response and security team leader	– maintain emergency management procedures relating to combating hazardous material incidents
environment and farms superintendent	– complete external notifications required as a result of a pollution incident – communicating this management plan as required to on site personnel. Coordinate incident investigations relating to pollution incidents
pse manager	– complete government notifications as required
training coordinator	– maintain training programs and systems which assist in the response to a pollution event
All personnel	– communicate/escalate observations of possible incidents and hazards

### 5. DEFINITIONS

**Table 2: Definitions**

Key Word	Definition
PIRMP	Pollution Incident Response Management Plan

### 6. NOTIFICATION AND CONTACT DETAILS

In the event of a pollution incident the People, Safety and Environment Manager (or delegate) will assess the incident as per the Incident Management Procedure (PRO-0148). If the incident has potential to cause material environmental harm as per *Part 5.7, Section 147 of the Protection of the Environment Operations Act 1997* (POEO Act) appropriate external notification processes will be implemented.

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Immediate notification can be verbal however written notification must be completed within 7 days of the incident occurring.

The following information must be provided as per *Part 5.7, Section 150 of POEO Act 1997*:

- The time, date, nature, duration and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- The circumstances in which the incident occurred (including the cause of the incident, if known);
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution if known; and
- Other information prescribed by the regulations.

The notification list of regulatory authorities and project personnel to be notified of any relevant pollution incident for Northparkes is provided in Table 3 Government notifications of incidents:

**Table 3 Government notifications of incidents**

Contact	Phone Number
Emergency Services Parkes Rural fire Service	000 (only if fire or rescue services are required) 02 6851 1541
EPA Hotline (EPL4784)	131 555
Ministry of Health	02 9391 9000
Dam Safety NSW	02 9842 8070 0403 681 645
Parkes Shire Council	1800 648 585 02 6861 2333
Office of Environment and Heritage	131 555
Safe Work NSW	131 050
Department of Planning, Industry Environment – including Resources Regulator & Compliance Unit – Environment, Energy and Geoscience	1300 305 695 1300 361 967
ARTC Network Control (Goonumbla Rail Siding Only)	02 4902 7963

Northparkes 24 hour contact details for notifying pollution incidents are listed in Table 4 below:

**Table 4 Northparkes 24 hours contact details**

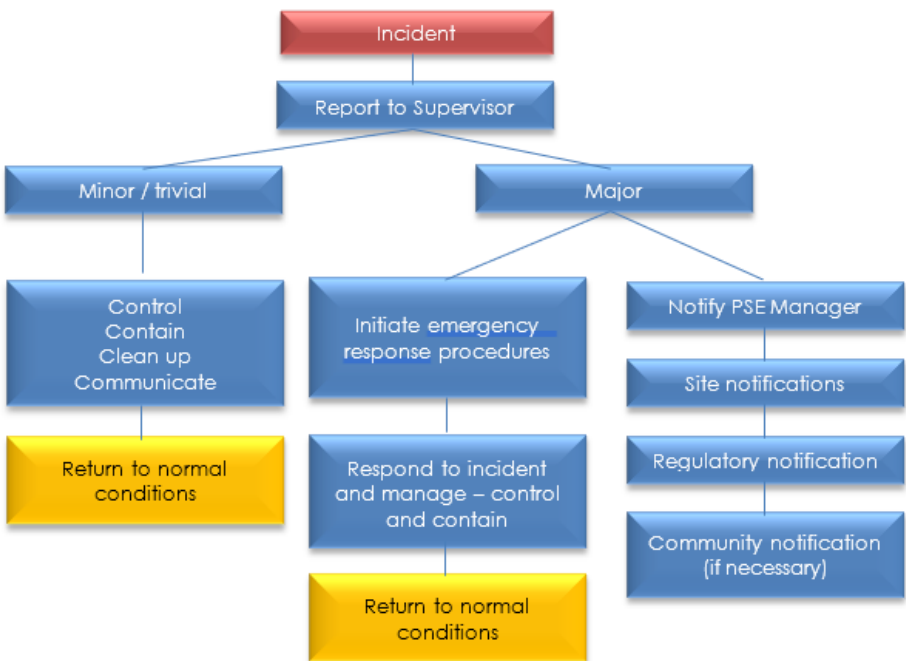
Name	Contact Name	Contact Number
Environmental Hotline	Chris Higgins	0459 042 391
Mill Control (24 Hrs)	Tim Bray	02 6861 3167
PSE Manager	Stacey Kelly	0419 961 615
Emergency Response and Security Team Leader	Ben Ryan	0437 786 719

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# 7. GENERAL REQUIREMENTS

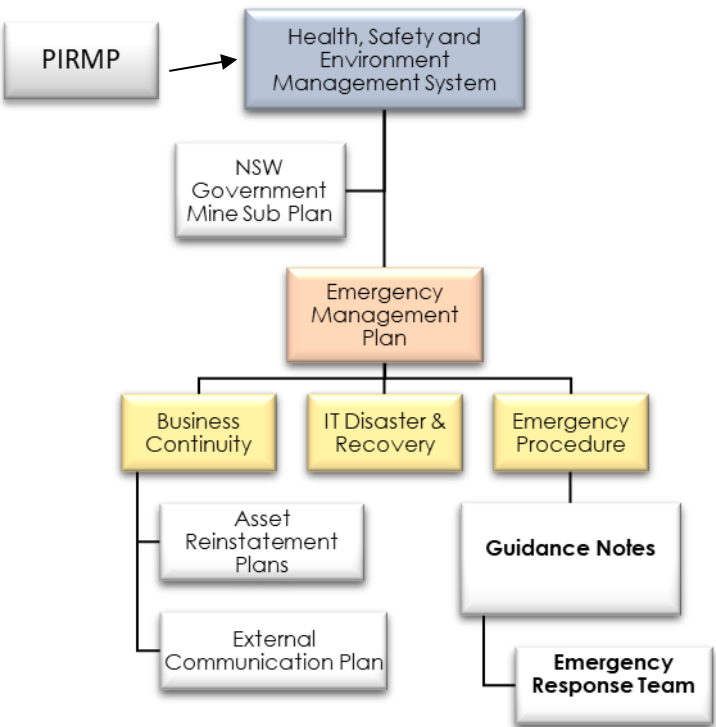
## 7.1 Relationships with other Plans

This management plan is linked to the Emergency Management Plan (PLN-0017). Figure 1 provides an overview of the management of a pollution incident as per this management plan.



**Figure 1 Pollution Incident Flow Chart**

Figure 2 provides an overview of the general Emergency Management process in the event that the incident is major and triggers the activation of the Emergency Management Plan.



**Figure 2 Emergency Management Flow Chart**

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## 8. HAZARDS AND RISK MANAGEMENT

### 8.1 Semi Quantitative Risk Assessments (SQRA) Critical Risks

Northparkes Mines has identified critical risks (Principle Hazards) using the SQRA process. These critical risks have the potential to cause significant injury, fatality or multiple fatalities. The risks in order of criticality:

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| 1. On site vehicle incident       | 11. Explosive product incident      |
| 2. Offsite vehicle incident       | 12. Shaft related incident          |
| 3. Underground rock fall incident | 13. Tyre explosion                  |
| 4. Electric shock / arc flash     | 14. Chemical incident               |
| 5. Fixed plant – crush incident   | 15. Confined space incident         |
| 6. Mobile plant crush incident    | 16. Air blast                       |
| 7. Fall from height Incident      | 17. Stockpile engulfment            |
| 8. Fire underground               | 18. Mine subsidence                 |
| 9. High pressure release incident | 19. Surface fire                    |
| 10. Falling object incident       | 20. Engulfment / inrush underground |

Of the top 20 SQRA critical risks there are six identified risks with environmental implications. These are risk numbers 1, 2, 8, 11, 14, 17, 18 and 19.

The significant potential pollution incidents identified at Northparkes Mines include:

- Air Pollution Incident: escape of significant dust or smoke to atmosphere causing exceedance of Air Quality Criteria as required by the Development Consent;
- Water Pollution incident: contaminated water leached or discharged to a watercourse or groundwater system;
- Tailings Failure: failure of tailings facility releasing material to land and water; and
- Concentrate: Escape or release of copper concentrate during transport to waterway or ocean;

Specific details of potential health and environmental hazards likely to be encountered at Northparkes are outlined in Table 5 Northparkes Health Hazards and Table 6 Northparkes Environmental Hazards respectively.

The Environmental Aspects and Impacts Register includes a list of these potential pollution hazards and their management practices.

Northparkes is located in an area which includes agricultural activities and activities associated with rail transport (from Goonumbra siding concentrate container loading activities). Pollution events have the potential to impact on surrounding agricultural properties and the residents at these locations.



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Specific details of potential health and environmental hazards likely to be encountered at Northparkes are outlined in Table 5 and Table 6 respectively.

**Table 5 Northparkes Health Hazards**

Source/Pollutant	Impact	Events	Impact description	Likelihood	Controls
Substance	Dust - Inhalable	Dust generation from mobile plant and operations	Respiratory diseases, difficulty to breath	C-Possible	- Mining operations(surface/underground (UG) dust controls, UG ventilation standards, Bogging procedures include dust suppression processes, PPE, dust monitoring, routine respiratory medical surveillance
	Dust- Respirable	Dust generation from mobile plant and operations	Respiratory diseases, difficulty to breath	C-Possible	- Mining operations dust controls, UG ventilation standards, Bogging procedures include dust suppression processes, PPE, dust monitoring, routine respiratory medical surveillance
	Respirable Crystalline Silica	Dust generation from mobile plant and operations	Respiratory diseases, difficulty to breath	C-Possible	- Mining operations dust controls, UG ventilation standards, Bogging procedures include dust suppression processes, Personnel Protective Equipment (PPE), dust monitoring, routine respiratory medical surveillance
	Arsenic	Dust generated from concentrate stock piles and load out operations, contact with concentrate area surfaces, laboratory processes	Chronic effects, skin irritation	C-Possible	- As per dust control measures, pressure cleaning as preventative maintenance process, training on personal hygiene & crib room etiquette, boot cleaners, PPE, biological monitoring
Sound / Vibration	Noise (Continuous)	Noise generation from mobile plant and operations	Temporary / permanent hearing loss	C-Possible	- Blasting- distance separated for safe blasting distance, personal protective equipment (PPEP, Mobile Plant - fit for purpose machinery, enclosed cabs, personal protective equipment (PPE), standard operating procedures (SOP), job safety analysis (JSA),, double hearing protection specific tasks, noise dosimetry, routine audiometry
	Noise (Impact)	Noise generated from impact tools - rattle guns, needle guns, hammer drills. Noise generated from underground plant operation	Temporary / permanent hearing loss	C-Possible	- SOP's, TRACKS, JSA's, hearing protection training, PPE, noise monitoring, routine audiometry

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Source/Pollutant	Impact	Events	Impact description	Likelihood	Controls
Radiation	Gamma / X-rays	Exposure to radiation from density gauges (slurry measurement), Amdel (on stream analyser), NDT via contractors	Acute/Chronic affects	D-Unlikely	- Radiation management plan, specific training, dedicated Radiation Safety Officer, SOP's, signage, dosimetry for specific area operators, dedicated trained Amdel technicians, barricading of Amdel source to restrict exposure potential
Substances	Diesel Exhaust Particulate (DP/DPM)	Diesel Fume & Particulate generation from mobile plant and operations		C-Possible	- Fit for purpose machinery, Ventilation, Mobile Plant maintenance, particulate filters on some mobile plant, PPE, respirator fit testing, respirator protection training, Diesel Particulates Monitoring (DPM), routine medical surveillance
Substances	Dust – respirable (Perceived impact)	Dust generated from tailings facilities	Unknown. Possible acute/chronic affects, skin irritation, respiratory diseases, difficulty to breath	D-Unlikely	- Scheduled deposition, ripping with grador and farm implements, air quality monitoring program, ad hoc inspections, weekly weather assessment, consultation with adjoining landholders, text message during potential dust period.

**Table 6 Northparkes Environmental Hazards**

Source/ Pollutant	Impact	Events	Impact description	Likelihood	Controls
Sewage	Water Pollution	Failure of plant causes sewage spill (i.e. pump/failure/tank rupture) Pipeline leakage	Bacteriological contamination of water bodies Groundwater pollution, bacteria and phosphate contamination	C-Possible	- Planned maintenance (i.e. visual observations) - Infrastructure designed to specifications - Dosing system - Control system with alarm - Licensed contractor regularly inspects infrastructure / water quality - Area drains to retention pond
	Land Contamination	Pipeline leakage	Sewage entering the soil, bacteria and phosphate contamination	C-Possible	- Planned maintenance (i.e. visual inspections), pipeline designed to specifications
Fire – Bushfire/Wildfire/Grassfire	Ecological degradation	Burning rubber	Damage to vegetation	D-Unlikely	- Reclaim tunnels have smoke detection and sprinkler systems with communication system - Workshops have smoke alarms - Hot work permit procedures with trained personnel. - Fans used to extract smoke from area - Emergency response procedures and dedicated ER team - Designated welding and cutting areas in workshop - Bushfire Management Plan

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Source/ Pollutant	Impact	Events	Impact description	Likelihood	Controls
Chemical Spill	Land / water	Accidental chemical spill – reagent handling, transport, storage and disposal Spill <100L	Chemical spills onto soil causing contamination Chemical spills and substance enters the groundwater or surface water systems	B-Likely	<ul style="list-style-type: none"> <li>- Regular maintenance through plant shutdowns on all equipment, bunded lubrication storage area</li> <li>- Hazardous Substances and Contamination Control MP</li> <li>- Spill Clean-up SOP and training in spill response</li> <li>- Supply of spill kits, enretech</li> <li>- Bunded storage and waste areas</li> <li>- Oil water separators</li> </ul>
		Spill >100L		B-Likely	<ul style="list-style-type: none"> <li>- Hazardous Substances and Contamination Control MP</li> <li>- Spill Clean-up SOP and training in spill response</li> <li>- Supply of spill kits, enretech</li> <li>- Bunded waste hydrocarbon storage areas</li> <li>- Oil water separators</li> <li>- Emergency response procedures and dedicated ER team</li> </ul>
		Toxic chemicals	Toxic chemicals entering the natural environment	B-Likely	<ul style="list-style-type: none"> <li>- Dangerous goods signage and labelling, intrinsically safe radio batteries, separation of reagents, monthly planned area inspections</li> <li>- Dedicated ER team with chemical handling training.</li> <li>- Emergency scenarios undertaken</li> <li>- Reagent yard in bunded area, SDS available, stainless tank, fume hood and scrubbers</li> <li>- Bunded transfer point. Hazardous substance approvals procedure for new substances</li> <li>- SOPs for reagent transfer and handling</li> <li>- Trained and competent operators and regular equipment maintenance</li> <li>- Registered and appropriately licenced vehicles and drivers for transport</li> <li>- Tank levels monitored via CITECT system</li> <li>- Sump operated automatically to control spills or major rainfall events</li> </ul>
Tailings	Land	TSF wall failure	Contamination of surrounding land	C-Possible	<ul style="list-style-type: none"> <li>- Piezometer &amp; inclinometers monitoring for wall pressures</li> <li>- Contracted TSF civil engineer oversees design and provides recommendation for operation</li> <li>- Annual surveillance audit conducted by contacted -</li> <li>- TSF civil engineer and submitted to DSC for approval</li> <li>- Two yearly independent audits of TSFs &amp; tailings stewardship program</li> <li>- Disaster Management and Recovery team for major failures and ER team for incident control / response</li> <li>- TSF to be managed by Northparkes with the support and reporting through contracted TSF civil engineer</li> </ul>

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Source/ Pollutant	Impact	Events	Impact description	Likelihood	Controls
					- TSF civil engineer contracted from Knight Piesold
	Water	TSF wall failure	Contamination of nearby watercourse	C-Possible	<ul style="list-style-type: none"> <li>- Piezometer &amp; inclinometer monitoring for wall pressures</li> <li>- Contacted TSF civil engineer oversees design and provides recommendation for operation</li> <li>- Annual surveillance audit conducted by contracted TSF civil engineer and submitted to DSC for approval</li> <li>- Two yearly independent audits of TSFs &amp; tailings stewardship program</li> <li>- Disaster Management and Recovery team for major failures and ER team for incident control / response</li> <li>- Water management infrastructure designed to divert clean water around mining operation</li> <li>- TSF to be managed by Northparkes with the support and reporting through contracted TSF civil engineer</li> <li>- TSF civil engineer contracted from Knight Piesold</li> </ul>
	Land	TSF line failure	Contamination of surrounding land	C-Possible	<ul style="list-style-type: none"> <li>- Lines in bunded trench</li> <li>- Regular inspections</li> <li>- Dedicated TSF resource</li> <li>- CITEC monitoring on flows</li> <li>- Alarm set points.</li> <li>- Standby line</li> <li>- 2 yearly independent audit</li> <li>- Ample bunding material readily available</li> <li>- Machinery readily available to prepare a bund</li> <li>- Trained and competent operators</li> </ul>
	Wildlife	Habitat loss	Wildlife trapped /killed from exposure to tailings	C-Possible	<ul style="list-style-type: none"> <li>- Cyanide is no longer used on site</li> <li>- Bare vegetation around TSF</li> <li>- Regular TSF inspections</li> </ul>
Water treatment plant (WTP)	Water	Failure of WTP	Water storage tank to overflow polluting surrounding environment Cause erosion of surrounding land	C-Possible	<ul style="list-style-type: none"> <li>- Citec alarm system</li> <li>- External alarm system</li> <li>- Tank level indicators</li> <li>- Trained operators</li> <li>- Daily inspections of WTP and regular maintenance</li> <li>- Drainage around area directed to two sumps and overflow directed to RP1</li> </ul>
Mineral Waste	Ground and surface water	Leachate	Groundwater and surface water contamination	B-Likely	- Mineral Waste Assessments and acid rock drainage assessment
Topsoil	Water/land/ecological	Incorrect topsoil placement may result in sediment loss	Water pollution (GW/SW) Land degradation (erosion/soil loss) Introduction of weed species through topsoil placement impacting on biodiversity	B-Likely	<ul style="list-style-type: none"> <li>- Site drainage and control ponds, specifications for topsoil stockpiles, Site Inspections, water quality monitoring, Site Disturbance Procedure, training module;</li> <li>- Topsoil Management Plan</li> </ul>

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Source/ Pollutant	Impact	Events	Impact description	Likelihood	Controls
LPG Storage	Ecological	LP gas leakage from bulk container	Damage to vegetation due to explosion of bulk container	E-Rare	<ul style="list-style-type: none"> <li>- Area is weeded, sprayed for weed reduction, has a rock barrier to reduce chance of impact from machinery</li> <li>- Annual inspections on pressure vessel</li> <li>- Procedures in place for refilling</li> <li>- Outlet pipe braced with bollard to reduce risk of damage from ground movements</li> </ul>
Process water	Surface and groundwater	Discharge of water onsite	Failure of water management infrastructure results in discharge of process water into surrounding watercourses	C-Possible	<ul style="list-style-type: none"> <li>- Process Water Dam has piezometer monitoring equipment installed and undertaken monthly by OPD crew members (Dave Allan/Steve Jarick)</li> <li>- Series of surface water monitoring locations around the plant and TSFs are monitored prior to and following rain events</li> <li>- Daily TSF inspections include visual observations of ponds and drainage lines</li> <li>- Water management infrastructure designed for 1 in 100 yr 72hr rainfall event</li> <li>- Pumping infrastructure (including pipework) with suitable transfer capacity</li> <li>- Ponds pumped prior to and after rainfall to maintain capacity. Storages with the potential for offsite release are prioritised</li> <li>- Storages designed and operated in accordance with Table 6, <i>Water Management Performance Measures</i>, of DC 11_0060</li> <li>- Audits/inspections of drainage channels and bunding (ZHOW, ad hoc)</li> </ul>
Discharge of contaminated water off-site	Surface and groundwater	Discharge of water off-site	Water pollution due to discharge of water from retention and sediment ponds	B- Likely	<ul style="list-style-type: none"> <li>- Water levels are checked on a weekly basis</li> <li>- Pump water where required to reduce the water level in the dams</li> <li>- Staff gauges installed in ponds that have the potential to externally discharge</li> </ul>
Tailing Storage Facilities (TSF)	Air quality	Dust emissions from the TSF	TSF dust emissions when windy conditions	B-Likely	<ul style="list-style-type: none"> <li>- Deposition, dust prevention trials (ie cropping/vegetation), tailings surface ripping, water carts, daily visual inspections, air quality monitoring network.</li> <li>- Weekly weather assessment</li> </ul>
Copper concentrate	Soil and water contamination	Spillage as a result of train or truck accident when hauling product from site to rail siding and port.	Soil and water pollution due to spillage during transport.	B- Likely	<ul style="list-style-type: none"> <li>- Contract management processes regarding appropriate competencies of contractors transporting concentrate to rail siding and port facilities</li> <li>- Water management controls at Goonumbla siding in event of spillage whilst unloading from the truck and loading to train</li> <li>- Concentrate logistics procedure</li> </ul>

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Source/ Pollutant	Impact	Events	Impact description	Likelihood	Controls
					<ul style="list-style-type: none"><li>- Containers are FFP (lids)</li><li>- Satellite monitoring of concentrate trucks</li><li>- Time sheet monitoring for concentrate truck drives (management of fatigue)</li><li>- Site drug and alcohol testing includes concentrate truck drivers</li></ul>

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## 9. LEGISLATIVE REQUIREMENTS

This Pollution Incident Response Management Plan (PIRMP) has been developed to describe Northparkes Mines response to a potential pollution incident and to meet requirements of the POEO Act.

## 10. PRE-EMPTIVE ACTIONS TO BE TAKEN

Northparkes has taken several measures to reduce the pollution incidents on site. All the relevant environmental management plans incorporate pollution reduction measures while carrying out the mining activities. The pre-emptive actions at Northparkes, taken to minimise the likelihood of environmental hazards include the following:

- Inductions;
- Health, Safety & Environment Management Plans;
- Standard Operating Procedures ;
- Risk frame work and assessment tools – SQRA;
- Hazard Identification tools – Pre Task Hazard Assessment (PTHA) and JHA;
- Regular inspections, monitoring and auditing of site environmental controls;
- Spill containment (e.g. bunding and spill kits);
- Water cart & fire truck utilised as necessary;
- Emergency response equipment – emergency response vehicles, trucks and gear;
- Emergency response team;
- Training – Spill Response, etc.; and
- Risk frameworks.
- Mobile equipment availability (pumping units)

These processes are summarised in the Environmental Management Strategy [DOCID-3-3544](#).

Northparkes will implement appropriate measures to limit, as far as reasonably practicable, the risk of pollution due to mining activities. Such measures are set out in the management plans and Standard Operating Procedures including:

- Noise Management Plan [PLN-0070](#);
- Non Mineral Waste Management Plan [PLN-0041](#);
- Surface Water Management Plan [PLN-0058](#);
- Air Quality Management Plan [PLN-0063](#);
- Safety Management System [PLN-0031](#);
- Incident Management Procedure [PRO-0148](#);
- Emergency Management Plan [PLN-0017](#);
- Pre Incident Plan - Diesel Bund [GUI-0074](#);
- Pre Incident Plan – Reagent Yard [GUI-0064](#);
- Site Security Management Plan [PLN-0038](#);
- Zero Harm Operations Walk Procedure [PRO-0113](#);
- Health, Safety and Environment Management System (HSE MS) Management Plan [PLN-0035](#); and
- Hydro-carbon and Spill Management Plan [PLN-0049](#).

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## 11. INVENTORY OF POLLUTANTS

An inventory of all chemicals utilised on site is maintained via ChemAlert. If any new chemicals have to be brought to site other than the one already approved in ChemAlert, a 'Chemical Approval and Risk Assessment Form' (FRM-0134), chemical risk assessment of the new substance and SDS are submitted, then reviewed and approved by Environment, Health, Safety, Supply and Metallurgical teams.

Significant pollutants, their quantities, types of containment and storage locations can be found in ChemAlert on the Northparkes Intranet. The Dangerous Goods Licence is also stored on the DCS which includes information on the approved Dangerous Goods and maximum quantities approved for site.

A summary of significant pollutants found at Northparkes is provided in the Table 7.

**Table 7 Significant pollutants stored at Northparkes**

Material Name	Solid/Liquid/Gases or Powder	Maximum Amount	Type of containment	Relevant Health and Environmental Properties
Diesel	Liquid	530400 L	Bunded area	Flammable
Engine Oil	Liquid	21800 L	Bunded area	Flammable
Hydraulic Oil	Liquid	20000 L	Bunded area	Flammable
Flocculent	Powder	20000 Kg	Flocculent storage area	Irritant
DSP 701	Liquid	16000 L	Reagent yard	Corrosive
Sodium Hydrosulphide	Liquid	60000 L	Reagent yard	Corrosive
Frother DSF 11	Liquid	20000 L	Reagent yard	Irritant
PAX	Powder	10000 Kg	Reagent yard in a shed	Irritant
Nitric Acid	Liquid	30000 L	Nitric acid bunded area	Corrosive
Oxalic Acid	Powder	1000 Kg	Storage shed in a bunded area	Corrosive
Tailings	Powder	-	Cropping, hay bales, surface ripping, wet tailings	Irritant
Copper Concentrate	Powder	-	Concentrate Shed/containers on truck/train.	Irritant
Contaminated water	Liquid	1088 ML 20 ML 3000 ML 36.5 ML 38ML 26ML	Caloola's (combined) Process water dam E22 pit RP9 RP34 Tree Borrow	Contamination
Waste Oil	Liquid	10000 L	Bunded area	Flammable
Transmission Oil	Liquid	50000 L	Bunded area	Flammable
Torque	Liquid	11800 L	Bunded area	Flammable



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## 12. SAFETY EQUIPMENT ON SITE

Some of the safety equipment at Northparkes include;

- Spill kits are available on site. The spill kits are provided with enretech, booms and socks to control, contain and clean any spills;
- Breathing apparatus;
- Pre-incident plans for site specific tasks;
- Chemical suits for handling any chemical/hydrocarbon spills;
- Plant and equipment are available to create additional bunding in the event of significant sediment or contaminated water runoff, or a fuel spill using material available on site;
- HAZMAT Trailer is kept on site with the emergency response team;
- Refuge chambers;
- PPE – for different chemicals, storage areas and warehouse; and
- Gas monitoring meters.
- Mobile equipment (pumping units)

The spill kits are located at various areas around site near chemical and hydrocarbons usage locations such as underground operating areas, underground offices, vehicle maintenance workshops, contractor yards, warehouse, ore processing areas, core shed, lab, chemical storage area, hydrocarbon storage area.

## 13. COMMUNICATION OF EMERGENCY SITUATIONS

### 13.1 On site / Internal Communication

During emergency situations all internal communications are managed as detailed in the Northparkes Emergency Management Plan.

### 13.2 Community Engagement

Northparkes will notify immediately via telephone/SMS of any major pollution incidents which may have direct impact to the surrounding neighbours. Other moderate incidents will be notified through community meetings. A record has been maintained on site with the names and contact details of the surrounding neighbours.

Preliminary notifications of major emergency pollution incidents will include the following information:

- When a pollution incident occurs;
- Time, date and location of the pollution incident;
- What steps are being taken to address the incident, both immediately and in the longer term;
- What it means to their health, safety, community and environment; and
- What precautions or actions they need to take.

A secondary or final notification will be made when the incident is officially over to provide an update on the above.

Community notifications will be made by Superintendent - Environment & Farms or their delegate.

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### 13.3 Stakeholder and Media Management

A nominated spokesperson is determined by the nature of the incident (e.g. business unit or site specific focus). Other employees may be nominated where a matter is of a technical or specialist nature.

Primary point of contact for stakeholder and media will be Manager - People, Safety and Environment or their delegate for all incidents.

## 14. MINIMISING HARM TO PERSONS AND PREMISES

Refer to the Emergency Management Arrangements and Emergency Management Plan (PLN-0017) for the site. At all times minimising harm to persons shall be a priority. Northparkes plans mock scenario's and has insurance in place for pollution events.

If there is a Spill the Hydrocarbon and Spill Management Procedure ([PLN-0049](#)). This procedure outlines the containment and remediation actions to be implemented following a spill.

## 15. TRAINING, TESTING AND REVIEW

### 15.1 Staff Training

All managers, supervisors and staff will be trained progressively. Tool box talks will be presented to educate workers of preventative actions, controls, PIRMP updates, site issues and environmental pollution incidents involved in the site. The tool box meetings will present the chance for employees to raise any concerns or issues with the projects and PIRMP.

All employees, subcontractors, suppliers and visitors to the site will be notified via a site induction of the requirements on site for pollution prevention.

Through tool box talks, site personnel and subcontractors will be educated on those aspects of environmental management as appropriate to the task assigned to them.

### 15.2 Testing

After preparation of the PIRMP, it is to be tested via a mock pollution incident to ensure personnel are aware of the processes and responsibilities on site. All testing of this management plan and any supplementary amendments that are made are to be documented and stored to make it available to EPA when requested.

The PIRMP will be reviewed and maintained to ensure information in the plan is accurate and up to date.

Northparkes emergency team at regular basis has undertaken emergency scenarios involving environmental pollution incidents.

### 15.3 Scenario test

The most recent scenario test was a desktop scenario held on 25 November 2021 and included Chris Higgins, Tim Bell, Michael Thomas, Dave Joseph, Steve Jarick, Jess Rhodes and Ben Ryan.

Notes and actions taken during this meeting are tracked through the incident management system.





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## 16.2 Northparkes Operational Layout





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### 16.3 Dangerous Goods Storage Area (surface magazine)





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## 16.4 Site Drainage Map and Mine Lease Boundary





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## 16.5 Predicted Potential Impact Areas



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## 17. REFERENCE MATERIALS

Reference materials should assist with understanding the hazard or determining how the hazard should be managed. Table 5 contains a list of reference materials, which may include items such as:

- design principles
- engineering and/or technical standards
- legislation (including Codes of Practice, Australian Standards, etc.)
- original equipment manufacturer materials
- external alerts and/or notices received from government officials

**Note:** any internal documents referred to in this document, should be referenced within the document.

**Table 8: Reference Materials**

Document Title	ID No.   Year
Northparkes Incident Management Team Response Procedure	<a href="#">PRO-0102</a>
<i>Environmental Guidelines – Preparation of Pollution Incident response Management Plan</i>	
<b>Dangerous Goods Licence</b>	<b>TBA</b>
Chemical Approval Risk Assessment	FRM-0134
Hazardous Substances and Contamination Control	PLN-0068
Environmental Aspects and Impacts Register	DOCID-3-8926
Topsoil Management Plan	<a href="#">PLN-0055</a>
Site Disturbance Procedure	<a href="#">PRO-0100</a>
Mineral Waste and Acid Rock Drainage Management Plan	<a href="#">PLN-0048</a>
Bushfire Management Plan	<a href="#">PLN-0051</a>