# HAZARDOUS MATERIALS MANAGEMENT PLAN

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| 4 | Rev 3 | J Coffey (SLR) | Update following Mod 5 | 12 Jun 2019 | M Williams |
| | | | | | |
| | | | | | |

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# 1. Introduction

Hera Mine is an underground metalliferous mine owned by Hera Resources Pty Ltd (Hera Resources), a wholly owned subsidiary of Aurelia Metals Limited (Aurelia). The mine is located approximately 100km southeast of Cobar and approximately 4km south of Nymagee in the central west of New South Wales (NSW) (refer **Figure 1**).

This Hazardous Materials Management Plan (HMMP) has been prepared in accordance with Schedule 3, Condition 41 of Project Approval (PA) 10_0191 which was issued by the Department of Planning and Environment (DPE) on 31 July 2012 under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). PA 10_0191 has since been modified five times with the most recent modification (MOD 5) being approved on 3rd December 2019. The site also operates in accordance with Environment Protection Licence (EPL) 20179, as well as Mining Lease (ML) 1686 (issued 16 May 2013) and ML 1746 (issued 7 December 2016) issued under the *Mining Act 1992* (Mining Act).

Hera Resources is committed to the safe and efficient transportation, storage, handling and use of all hazardous material at the site. In addition to addressing the PA 10_0191 requirements, this HMMP has been prepared to address the requirements of the following documents:

- *International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold* (UNEP/ICME, 2002);
- *AS/NZ 4452:1997 – The Storage and Handling of Toxic Substances*;
- *Australian Code for the Transportation of Dangerous Goods by Road and Rail* (National Transport Commission, 2011);
- *Hazardous Industry Planning Advisory Paper No. 11 – Route Selection* (Department of Planning, 2002); and
- *Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning* (Department of Planning, 2002).

This HHMP is limited in scope to the Project Approval boundary and potentially impacted neighbouring properties, particularly those in close proximity to the site, and describes the following:

- The consultation undertaken during preparation of this management plan;
- The legal and other requirements associated with management of hazardous materials;
- Management measures that will be implemented during the life of the mine;
- Evaluation of compliance;
- Incident reporting;
- Competence and awareness training;
- Preventative measures; and
- Document review.

Hera Mine (as approved) involves the following aspects (refer **Figure 2**):

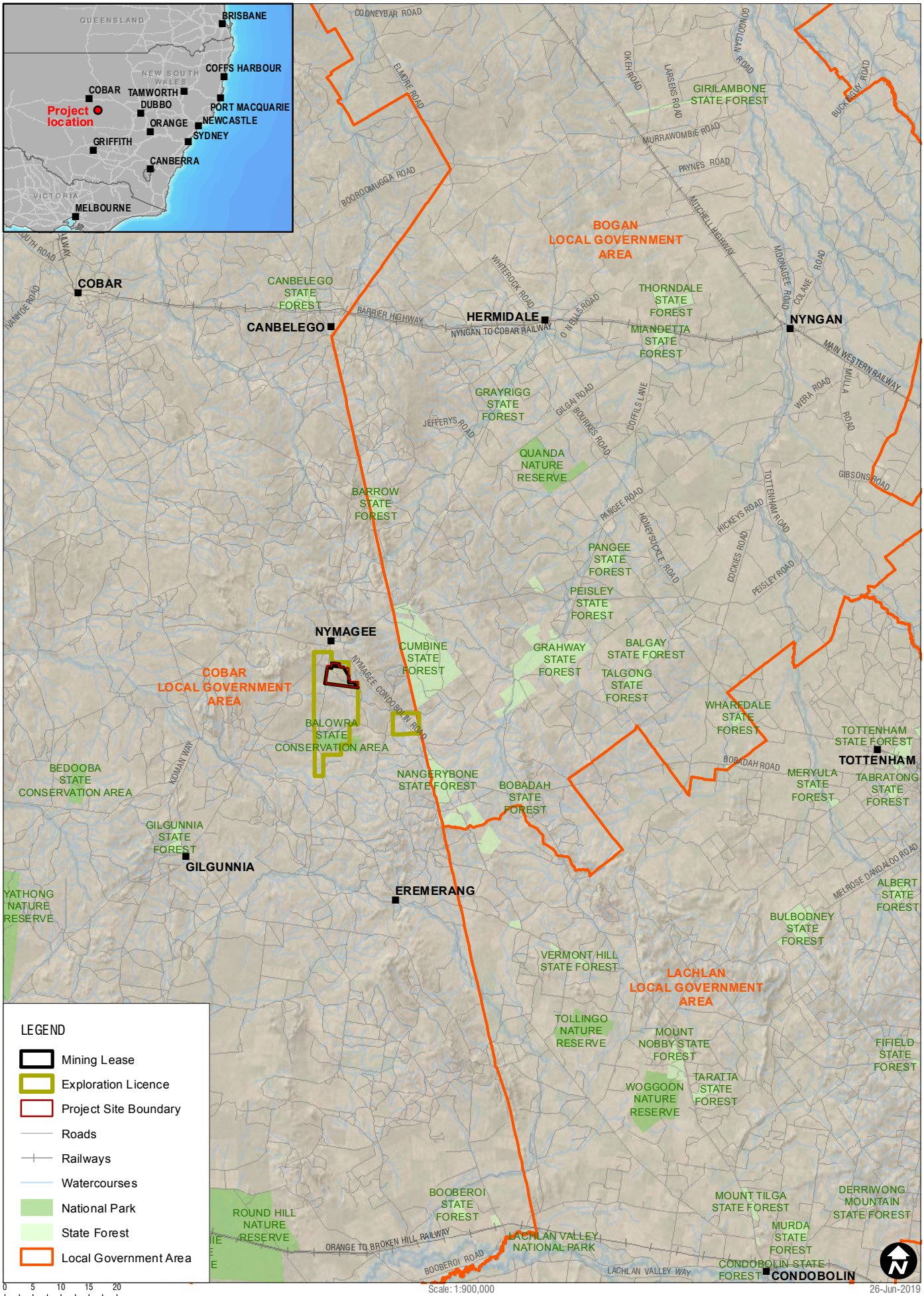
- Extraction of waste rock and metalliferous ore using underground open stope mining methods and underground load and haul operations until 31 December 2022, from ML1686 and ML1746.
- Backfilling of underground stope voids created during underground mining using waste rock including waste rock transferred from the surface Waste Rock Emplacements (WREs).
- Use of surface infrastructure required for the underground mine, including a box cut, portal and decline, magazines, fuel store, ventilation rises and power and water store.
- Use of a processing plant, including a Run of Mine (ROM) pad, WRE, crushing, grinding and screening operations, gravity separation and flotation circuits to process up to 505,000 tonnes per annum (tpa) of metalliferous ore to produce gold and silver doré (unrefined bars) and a zinc/lead concentrate.
- Use of the Northern and Southern WREs for the placement of waste rock (to date only the Southern WRE is constructed).
- Use of a Tailings Storage Facility (TSF), including cyanide detoxification of tailings prior to discharge to the TSF.
- Use of ancillary facilities, including a ventilation rise, escapeway, Site Office, car park, Contractors Office, Laydown area and workshop, a Reagent Store, plant workshop, ablutions facilities, crib room, hardstand, laydown areas, concentrate storage shed, and an explosives magazine.
- Use of a water management system to enable the harvesting and supply of water for environmental flows.
- Use of a Light Vehicle Access Road and a Main Site Access Road and intersection to allow site access from Burthong Road.
- Transportation of zinc/lead concentrate from the Mine to Hermidale via the Principal Concentrate Transportation Route, or when unavailable, via the Secondary Concentrate Transportation Route.

This version of the HMMP has been updated following approval of MOD 5, which included the following aspects:

- Increasing the rate of transportation of concentrate from Hera Mine to the Hermidale rail siding from 50 000 tonnes (t) per calendar year to 60 000 t per calendar year including an increase of daily truck movements from 4 to 8;;
- Installation of a 13.7 hectare (ha), 204 Mega litre (ML) to crest height Water Management Dam to act as an external decant pond for the existing TSF;
- Receipt of water from dewatering of the Nymagee Copper Mine for use in processing operations at the Hera Mine or evaporation within the Water Management Dam; and
- Increasing the approved maximum elevation of the Southern Waste Rock Emplacement from 10m above ground level to 15m above ground level, or approximately 350m AHD.

The location of surrounding receptors in relation to the site are shown on **Figure 3**.

**Figure 1 Locality Plan**

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## Regional Locality

**FIGURE 1**

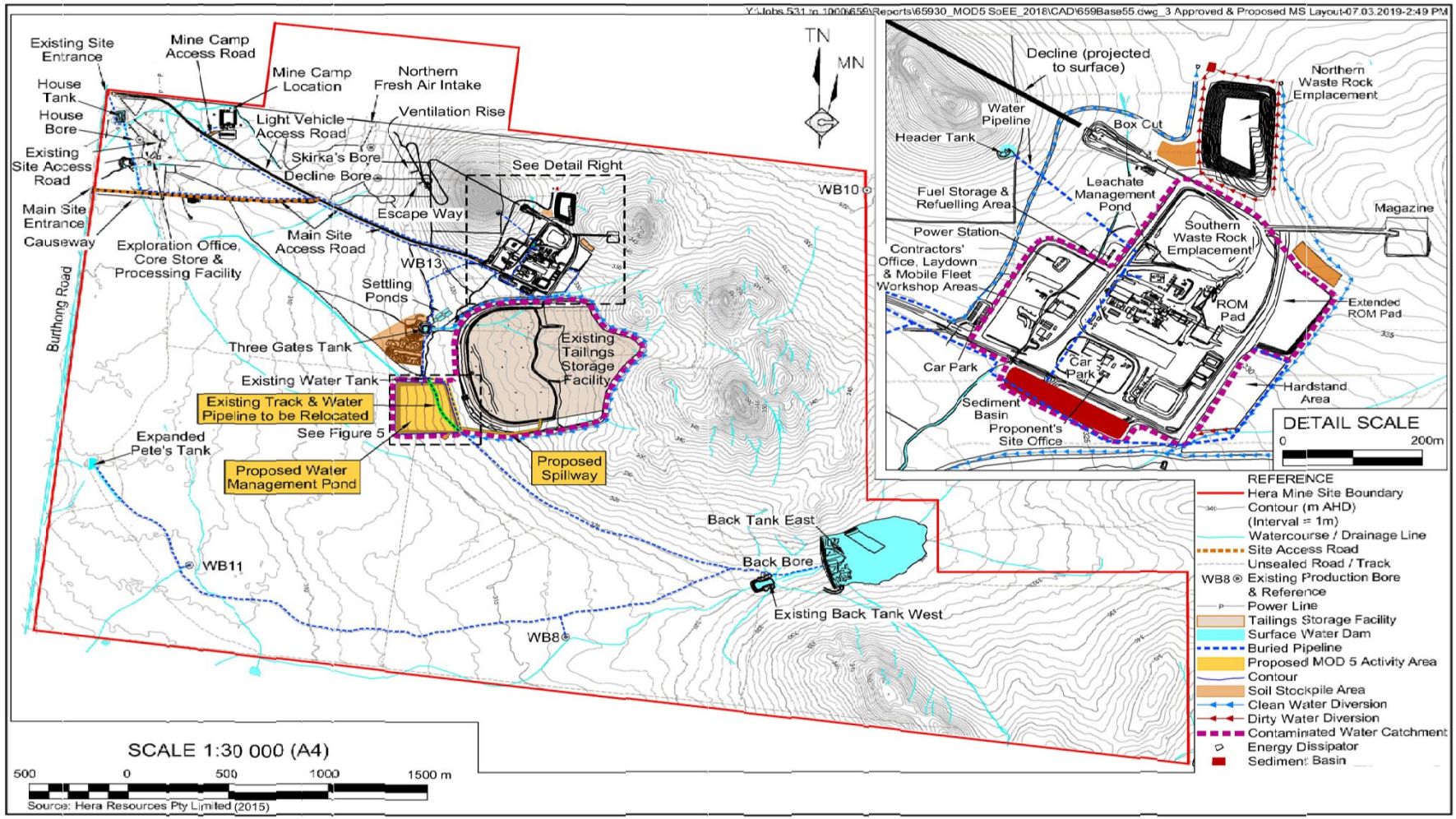
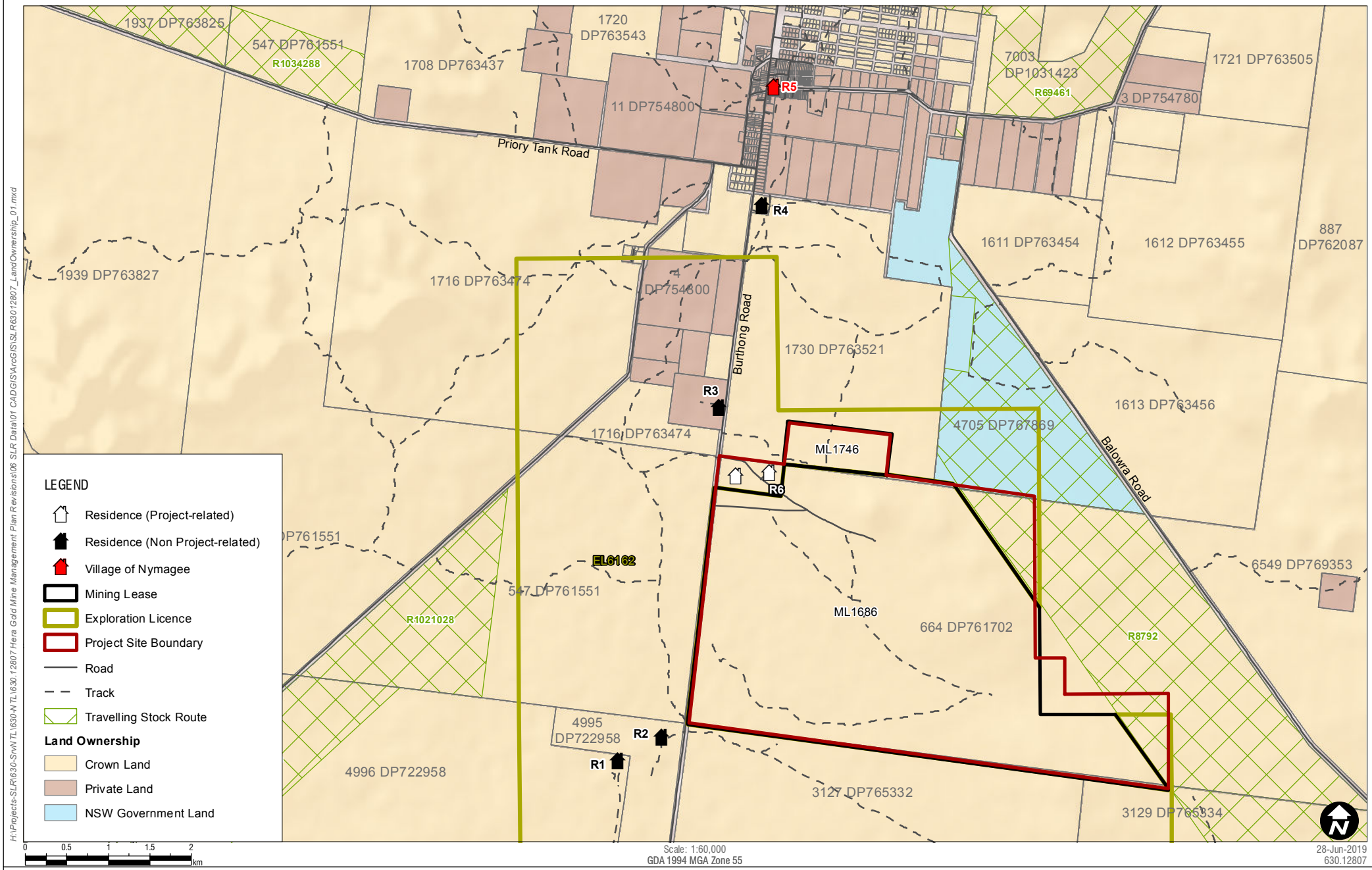



**Figure 2 Approved Site Layout**

**Figure 3 Surrounding Land Ownership and Receptors**

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**Surrounding Land Ownership and Receptors**

**FIGURE 3**

# 2. Consultation

Schedule 3, Condition 41(a) of PA 10_0191 requires this HMMP to be prepared in consultation with the Environment Protection Authority (EPA), Cobar Shire Council (Council), Transport for New South Wales (TfNSW), SafeWork NSW and the DPIE Resources Regulator and DPIE – Water prior to be submitted to the Director-General for approval.

A copy of the previous version of this HMMP was provided to the EPA, TfNSW, former NSW Office of Water (now DPIE Water), WorkCover NSW (now SafeWork NSW), former Division of Resources and Energy (now Resource Regulator) and Council for their comment and review on 18 October 2012. Feedback was incorporated into the final document.

This revision of the HMMP was submitted to the EPA, Council, TfNSW, DPIE RR and SafeWork NSW on 16th February 2020. Consultation evidence is provided as **Appendix 2** and summarised below:

- TfNSW
  - Change all references from RMS to TfNSW;
  - Note that all drivers and contractors to site should be aware of emergency response procedures;
  - Emergency Response - Typically if 000 is called regarding an incident on a public road and depending on the scope/nature of the incident TfNSW Traffic Management Centre may be notified by the emergency service department and relevant notifications distributed to the public regarding road closures, detours etc resulting from the incident, including timeframes around such changes;
  - TfNSW supports the additional complaints management procedure (as noted in Section 9.3) as a means of ensuring all members of the public can alert the Mine of any incidence they deem a concern as a result of the mining operations and or ancillary related activities.
  - Provision of this document should be distributed (if it hasn't already) to the Local Emergency Management Committee for Bogan Shire to ensure all emergency services are aware of what is being transported.
- Cobar Shire Council
  - No Comments
- Safe Work NSW
  - No Comments
- NRAR
  - No Comments
- DPIE – RR
  - No Comments
- EPA
  - No Comments

# 3. Legal and Other Requirements

## 3.1 *PA 10_0191*

The Project Approval stipulates the required criteria that the construction and operational activities of the Mine must comply with and sets out the core requirements of this HMMP. Relevant conditions associated with this approval (including the relevant Statement of Commitments), and where they have been addressed in this document are reproduced in (**Table 1**).

Additionally, Hera Resources currently hold a Dangerous Goods Licence (35/038197) and Explosives Licence (XSTR200011) for the Hera Mine.

**Table 1 Project Approval Hazardous Material Conditions**

| Condition No. | Condition | Where addressed |
|---|---|---|
| Schedule 3, Condition 33 | **Dangerous Goods**<br>Transportation of all dangerous goods to or from the site shall be undertaken in strict accordance with Australian Code for the Transport of Dangerous Goods by Road and Rail. | Section 5.8.1 |
| Schedule 3, Condition 40 | **HAZARDOUS MATERIALS**<br>**Final Hazard Analysis**<br>The Proponent shall prepare a Final Hazards Analysis (FHA) for the project to the satisfaction of the Secretary, in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis.<br>*Note: If the project design is the same as that assessed in the Preliminary Hazard Analysis (PHA), then the Secretary may accept the PHA as the FHA.* | Section 5.1 |
| Schedule 3, Condition 41 | **Hazardous Materials Management Plan**<br>The Proponent shall prepare and implement a Hazardous Materials Management Plan for the project to the satisfaction of the Secretary. The plan must: | This document |
| | (a) be prepared in consultation with the relevant government agencies including CSC, TfNSW, EPA, DPIE Water, WorkCover NSW and RR; | Section 2 |
| | (b) be consistent with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold; | Section 5.8 |
| | (c) be submitted to the Secretary for approval prior to commencing mining operations under this approval; | Section 2 |
| | (d) describe the measures that would be implemented to:<br>(i) ensure sodium cyanide and other toxic chemicals are stored and handled on the site in accordance with AS/NZ 4452 – The Storage and Handling of Toxic Substances; and | Section 5.2 |

| Condition No. | Condition | Where addressed |
|---|---|---|
| | (ii) ensure the transportation of hazardous materials to or from the site is undertaken in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 11 – Route Selection and the Australian Code for the Transport of Dangerous Goods by Road and Rail – current version; and | Section 5.8.1 |
| | (e) detail the emergency procedures for the Project consistent with the Department's Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning. | Section 8 |
| Schedule 5, Condition 3 | **Management Plan Requirements**<br>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:<br>(a) detailed baseline data; | Not applicable |
| | (b) a description of:<br>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); | Section 3 |
| | (ii) any relevant limits or performance measures/criteria; | Section 4 |
| | (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; | Section 10 |
| | (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; | Section 5, 6, 8 |
| | (d) a program to monitor and report on the:<br>(i) impacts and environmental performance of the project;<br>(ii) effectiveness of any management measures (see c above); | Section 10 |
| | (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; | Section 8 |
| | (f) a protocol for managing and reporting any:<br>(i) incidents;<br>(ii) complaints;<br>(iii) non-compliances with statutory requirements; and<br>(iv) exceedances of the impact assessment criteria and/or performance criteria; and | Section 10.3 |
| | (g) a protocol for periodic review of the plan.<br>*Note: The Secretary may waive some of these requirements if they are unnecessary for particular management plans.* | Section 10.6 |

| Condition No. | Condition | Where addressed |
|---|---|---|
| Schedule 5, Condition 7A | **REPORTING**<br>**Incident Reporting**<br>The Proponent must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing and identify the development (including the development application number and name) and set out the location and nature of the incident. | Section 7 |
| Schedule 5, Condition 7B | **Non Compliance Notification**<br>Within seven days of becoming aware of a non-compliance, the Proponent must notify the Department of the non-compliance. The notification must be in writing and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.<br><br>***Note**: A non-compliance which has been notified as an incident does not need to also be notified as a noncompliance.* | Section 7 |
| Schedule 5, Condition 5 | **Revision of Strategies, Plans and Programs**<br>Within three months of:<br>(a) the submission of an annual review under condition 4 above;<br>(b) the submission of an incident report under condition 7 below;<br>(c) the submission of an audit under condition 9 below; or<br>(d) any modification to the conditions of this approval (unless the conditions require otherwise), the Proponent shall review, and if necessary, revise the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.<br>*Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.* | Section 10.6 |

All notification to DPIE is undertaken through the Major Projects website.

## 3.2 *EPL 20179*

Relevant conditions of EPL 20179, and where they have been addressed in this document are reproduced in (**Table 2**).

**Table 2 Project Approval Hazardous Material Conditions**

| Condition No. | Condition | Where addressed |
|---|---|---|
| Condition O4.1 | **O.4 Other operating conditions**<br>**O4.1 Bunding Requirements**<br>All above ground storage facilities containing flammable and combustible liquids must be bunded in accordance with Australian *Standard AS 1940-2004*. Sodium Cyanide and other Toxic Chemicals must be stored in accordance with the requirements of *AS/NZS 4452 - The Storage and Handling of Toxic Substances.* | Section 5.2 |
| Condition R4.1 | **R4 Other reporting conditions**<br>R4.1 The licensee must report any incident of death or injury (including bogging or miring) of fauna (avian and terrestrial) associated with the tailings impoundments or tailings runoff dams by telephoning the EPA's Pollution line on 13 15 55 as soon as the licensee becomes aware of the incident.<br>The licensee must provide written details of the notification with respect of the above condition to the EPA within 7 days of the date which the incident occurred. | Section 7.1 |
| Condition E1 | **3 Special Conditions**<br>**E1 Construction of proposed contaminated storage pond**<br>E1.1 The licensee must construct the proposed contaminated storage pond consistent with the presentation provided to the EPA and dated 26 August 2016, to meet the proposed design capacity for a contaminated structure of a 1 in 100, 72 hour storm event.<br>E1.2 The proposed storage pond referred to in Condition E1.1 must be lined to meet the EPA's permeability requirement of 1 x $10^{-9}$ m/s or less with a recompacted clay liner of at least 900 mm in thickness (or alternatively geosynthetic liner of equivalence). Where the proposed liner will not meet the required permeability or thickness of at least 900 mm, and the natural geology of the site in conjunction with constructed clay liners is considered sufficient in meeting this requirement, an appropriately qualified person must be engaged to provide sufficient evidence in support of this to demonstrate the construction will meet the requirements outlined above and be adequate to prevent pollution of groundwater.<br>E1.3 The licensee must complete the works required by Conditions E1.1 and E1.2 by 30 June 2017 and notify the EPA in writing upon completion of the works.<br>E1.4 The licensee must submit a report completed by an appropriately qualified person to certify that the contaminated storage pond has been constructed to meet the design specifications referred to in Conditions E1.1 and E1.2. The report must be submitted to the EPA by 11 August 2017. | Completed<br>Section 5.8.3<br>Completed<br>Completed |

# 4. Objectives and Outcomes

**Table 3** lists the objectives and the outcomes for the HMMP

**Table 3 Hazardous Material Objectives and Outcomes**

| Objective | Outcome |
|---|---|
| To ensure compliance with all relevant Project Approval and Environment Protection Licence criteria and reasonable community expectations. | Compliance with all relevant criteria and reasonable community expectations. |
| To implement effective management of hazardous waste, so as to avoid environmental pollution and adverse health effects due to its improper handling and disposal. | Appropriate and safe handling of all hazardous material. |
| To implement an appropriate monitoring program to establish compliance or otherwise with relevant criteria during all stages of the operation. | All identified monitoring undertaken in accordance with the relevant procedures and at the relevant intervals |
| To implement an appropriate incident reporting program and protocols for informing owners and occupiers of premises that may be affected. | Incidents (if any) reported in an appropriate manner. |
| To implement emergency response procedures, if required | Emergency response procedures implemented to effectively manage pollution incidents to minimise harm to people and the environment. |
| To implement appropriate corrective and preventative actions, if required. | Corrective and preventative actions implemented, if required |

# 5. Implementation of Hazardous Material Management

## 5.1 *Description and Risk Rating Of Hazards*

A Preliminary Hazard Analysis (PHA) was undertaken in accordance with *State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33)* during the preparation of the Environmental Assessment for the project (RW Corkery and Co, 2011). This PHA covered hazardous materials falling within the classification of the *Australian Code for the Transportation of Dangerous Goods by Road and Rail (Dangerous Goods Code)* (Department of Infrastructure, Transport, Regional Development and Local Government, 2009). It included the use of the risk screening method provided in the documents entitled *Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines* and *Risk Assessment – Hazardous Industry Planning Advisory Paper No 3* (DoP, 2011).

As there have been no major changes to the design of the mine since 2011, the PHA is considered by Hera Resources to be sufficient to satisfy the requirement of Schedule 3, Condition 40 of PA 10_0191 whereby a Final Hazards Analysis was to be prepared.
In summary, the following mitigated hazards were assessed:

- Discharge of hydrocarbons, chemicals, or reagents associated with:
  - an accident within the storage area;
  - operator error;
  - a spill within the storage areas;
  - a failure of infrastructure within the processing plant;
  - a failure of the tailings or decant return lines;

  - a spill within the refuelling area or workshops; or
  - a spill during transportation.
- Discharge of chemical or saline water associated with:
  - contaminated water management system; or
  - a rupture, leak or overflow from the Tailings Storage Facility or the Tailings Seepage Pond.
- Discharge of hydrocarbons, chemicals or reagents associated with a traffic accident;
- Release of hydrogen cyanide (HCN) gas; and
- Theft or sabotage.

All risks were assessed at a low and tolerable risk rating. Further details of the assessment are located within Appendix 4 of the Environmental Assessment (RW Corkery and Co, 2011).

## 5.2 *Hazardous Material Storage Facilities*

Infrastructure where hydrocarbons, chemicals, reagents or contaminated water will be used, stored or treated include the following (**Figure 4**):

- Reagent and chemical storage building;
- Tailings pipeline and decant return water;
- Flotation Tanks;
- Tailings Storage Facility;
- Concentrator;
- Temporary Waste Rock Emplacement;
- Concentrate storage building;
- Workshops;
- Gold room;
- Settling dam/s;
- Fuel tank and bay; and
- Tailings Seepage Collection Pond.

Hazardous, non-combustible and contaminated waste material will be temporarily stored in the Workshop Waste Management Area, in sealed steel or plastic drums and shipped off-site for appropriate disposal or recycling.

Storage locations and facilities will follow the protocols discussed in this HMMP. Any toxic chemicals will be stored and handled in accordance with *AS/NZ 4452:1997 – The Storage and Handling of Toxic Substances*, and all containers used to store hazardous materials will be closed and sealed when not in use. Storage facilities will comply with the EPAs standard *Storing and Handling Liquids: Environmental Protection 2007*. All storage tanks will be regularly inspected and maintained. Storage facilities will be clearly identified with proper labelling as storage facilities for hazardous materials. They will also be well ventilated in order to prevent build-up of toxic fumes or dust which could harm Hera Resources employees, contractors and/or the environment. The facilities will be secured and only authorised personnel will have access to the area.

## 5.3 *Classification and Inventory of Hazardous Materials*

The majority of the hazardous materials that will be used during mining can be grouped into the following four site categories:

- Petroleum, Oils and Lubricants (POLs);
- Explosives;
- Cyanide; and
- Other hazardous chemicals.

An up to date record of all substances stored on site, their purpose, delivery method, quantity, form and storage location are provided in **Table 4**. Safety Data Sheets (SDS') will be located with any substance posing a risk to people and/or the environment.

## 5.4 *Protective Clothing and Equipment for Handling Hazardous Materials*

All relevant personnel will be trained in the handling of hazardous materials and the use of appropriate personal protective equipment (PPE). Appropriate PPE, spill kits and SDS' will be made available to personnel responsible for the transportation, handling, storage, use and disposal of hazardous materials. These safety items will be located in vehicles that transport the hazardous materials and in facilities that store and handle hazardous materials.

## 5.5 *Disposal of Wastes*

The underlying principle for all waste management is to minimise waste generation, and to recover, re-use and recycle waste materials as much as possible. The majority of the waste generated at Hera Site will be collected and disposed of by a licensed waste contractor. Waste bins will be strategically located with appropriate signage throughout the mine site where they are most likely to be required.

It is the responsibility of all Hera Resources employees and contractors to correctly segregate, label (where appropriate) and dispose of their waste in the appropriate bins. The Hera Resources waste management contractor will then dispose of the waste according to the contractual requirements. Any issues or enquires regarding the waste management process at the Hera Mine Site, contractors and Hera Resources employees are encouraged to seek advice from their manager or contact the Environment Advisor.

## 5.6 *Petroleum, Oils and Lubricants*

Diesel will be stored at site in portable, double wall self bunded storage tanks in accordance with *AS/NZ 4452:1997 – The Storage and Handling of Toxic Substances*. Three storage tanks with a capacity of approximately 68 000 L each will be located on the Mine Site. Visual inspection of the tank will be conducted monthly or more frequently as deemed necessary.

Any release of hazardous materials will be reported immediately and appropriate measures will be taken to remediate the situation. Delivery records will be kept on site for examination or reference purposes if required.

The Production Manager will be responsible for inspecting fuel storage areas and associated equipment.

## 5.7 *Explosives*

Explosives are used during Hera mine development and throughout the life of the mine to break up material underground for haulage to the surface run of mine. The primary explosives material will be ANFO. ANFO is a mixture of ammonium nitrate and fuel oil. Refer to **Table 4** for capacity and storage information.

The transportation, storage, or use of explosives could result in significant hazardous situations and/or environmental impacts. Hera Resources are committed to implementing measures which will ensure safety and environmental responsibility is maintained during mining operations at Hera.

Explosive material will be stored at the Hera magazine in self contained storage units separated by earth bunds, as per *AS 2187.2-1993 Explosives Storage, Transport and Use, Part 2: Use of Explosives* requirements. The magazine area is fenced and locked and only be accessible by permitted employees and contractors. Care will be taken to ensure that the storage and use of explosive materials will not pose danger to personnel working on site or to the local environment.

Explosives are strictly regulated and only qualified and certified employees/contractors will be allowed to handle the explosives. The transport and storage of explosives will be managed by the Production Manager. Any release of hazardous materials will be reported immediately and appropriate measures will be taken to remediate the situation.

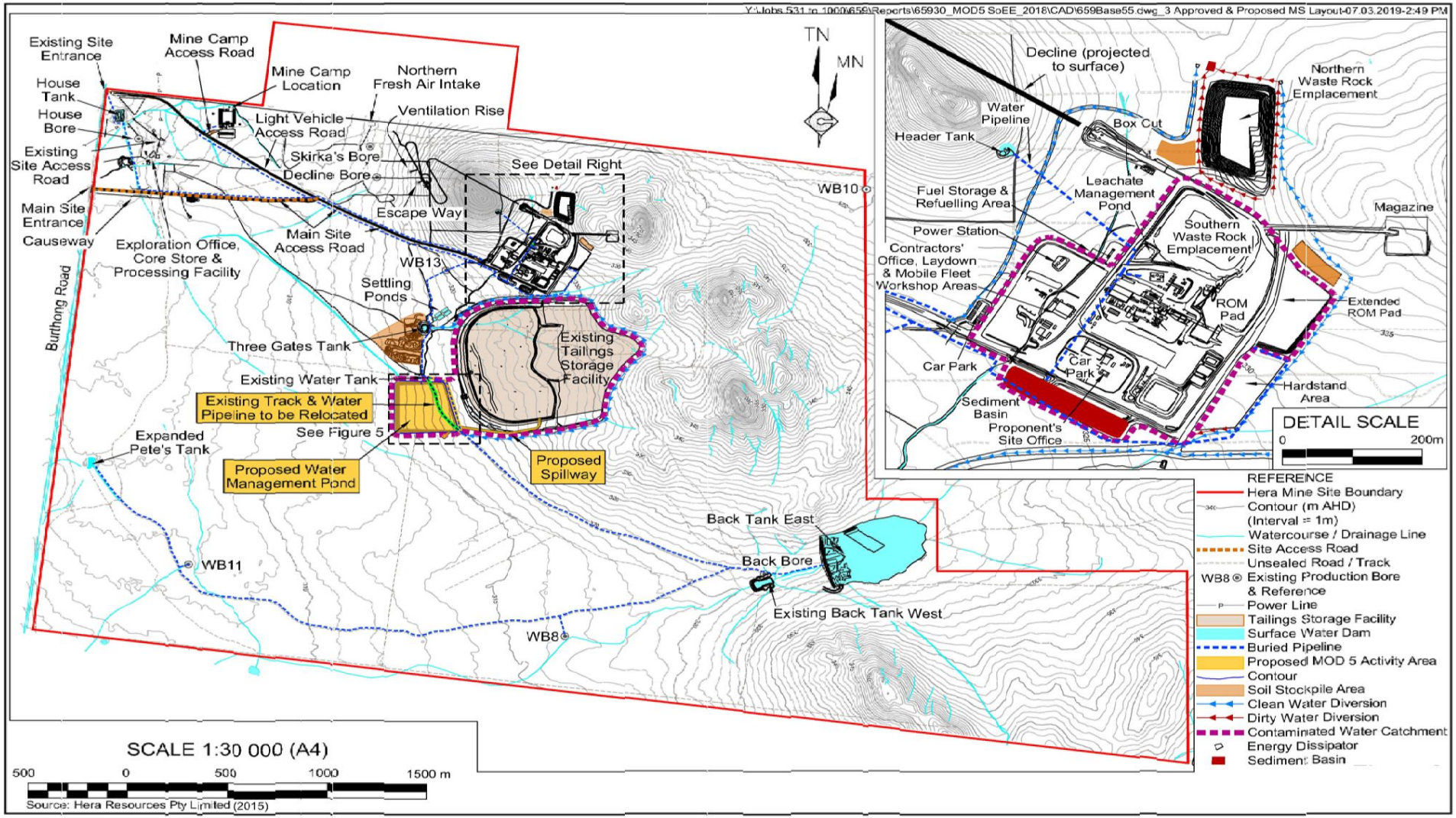



**Figure 4 Hazardous Material Infrastructure**

**Table 4 Inventory of Hazardous Materials**

| Reagent | Purpose | Delivery Method | Reagent Form | Maximum Storage | DG Class | Packing Group | Comment | Site category | Storage location |
|---|---|---|---|---|---|---|---|---|---|
| Copper sulphate pentahydrate | Flotation activator/detox reagent | 1 000kg bulk bags | Blue crystals or powder | 6t | 9 | III | Not hazardous[1] | Other Hazardous material | Reagent Store |
| Potassium amyl xanthate or equivalent | Flotation Collector | 200L drum pellets | Grey-yellow hygroscopic pellets | 10t | 4.2 (solid) 8 (solution | III | Hazardous | Other Hazardous material | Reagent Preparation Area |
| Sodium cyanide | Gold complexing agent (Merrill-Crowe) | Integrated Bulk Container (IBC) – 10,000L direct truck transfer | 30% solution | 20t | 6.1 | I | Hazardous | Cyanide | Reagent Preparation Area |
| MIBC (methyl isobutyl carbinol) or equivalent | Flotation frother | IBC–1 000L | Yellow liquid | 3 000 L (2.4t) | 3 | III | Hazardous | Other Hazardous material | Reagent Store |
| Magnafloc 10 | Flocculant | 25kg bags | White powder | 100kg | N/A | N/A | Not hazardous[1] | Other Hazardous material | Reagent Store |
| Nitric acid | Concentrate filter cleaning | IBC– 1 000 L | Liquid | 2 000L | 8 | II | Hazardous | Other Hazardous material | Reagent Store |
| Sodium hydroxide | pH controller | IBC– direct delivery in 10kg bags | White pellets | $10m^3$ of 50% w/w solution | 8 | II | Hazardous | Other Hazardous material | Reagent Preparation Area |
| Diesel | Fuel | Direct delivery | Liquid | 250 000L | 1 | N/A | Not hazardous[1] | POL | Refuelling bay (1) Power Plant (2) |
| LPG | Gold room furnace | 1tstorage vessel (Elgas) | Liquefied gas | $7.5m^3$ storage vessel (Elgas) | 2.1 | N/A | Not hazardous[1] | POL | Reagent Preparation Area |
| Lubricating oils / greases | Mobile plant and generators | 1 000L | Liquid /solid | 1 000L | 2.2 | N/A | Not hazardous[1] | POL | Workshop |
| Oxygen | Oxidising agent | VIE45000 vessel | Compressed gas | 8 – 9t | 2.2 | N/A | Not hazardous[1] | Other Hazardous material | Oxygen plant |

| Reagent | Purpose | Delivery Method | Reagent Form | Maximum Storage | DG Class | Packing Group | Comment | Site category | Storage location |
|---|---|---|---|---|---|---|---|---|---|
| Hydrogen peroxide | Oxidising agent | IBC – 1 000 L – direct delivery | Solution (50%) | 20 000L | 5.1 | II | Hazardous | Other Hazardous material | Reagent Store |
| ANFO | Explosive | 500kg bulk bags | Off-white solid prills | 15t | 1.5 | II | Hazardous | Explosives | Magazine |
| Zinc dust | Merrill-Crowe reagent | 50kg drums | Grey powder | 1t | 9 | III | Hazardous | Other Hazardous material | Reagent Store |
| Lead nitrate | Leaching aid | 50kg bags | Powder | 12t | 5.1 / 6.1 | II | Hazardous | Other Hazardous material | Reagent Store |
| Bulk Concentrate | Product | Sealed containers – 27t | Filter cake | 10 000t | 9 | III | Other Hazardous material | Other Hazardous material | Concentrate shed |
| Soda ash | Furnace flux | 25kg bags | Powder | 1 000kg | N/A | N/A | Not hazardous[1] | Other Hazardous material | Mill Store |
| Borax | Reagent | 25kg bags | Powder | 1 000kg | N/A | N/A | Not hazardous[1] | Other Hazardous material | Mill Store |
| Potassium nitrate | Furnace Flux | 25kg Bags | Powder | 1 000kg | 5.1 | III | Hazardous | Other Hazardous material | Reagent Store |

Note 1: Although not hazardous this chemical will require management.

## 5.8 *Cyanide*

Cyanide will be used at the Hera mine as sodium cyanide during the process of gold recovery from ore. Cyanide is a potentially harmful chemical, which if not handled correctly, may have serious health, safety and environmental outcomes. The controls that provide safe storage, usage and waste management of cyanide at Hera as well as the monitoring program for checking the adequacy of these controls, form the basis of this section.

This section has been prepared to be consistent with the principles of *the International Cyanide Management Code for the Manufacture, Transport and use of Cyanide in the Production of Gold* (Code).

### 5.8.1 Purchase and Transportation

During the development of the *Environmental Assessment* (RW Corkery and Co, 2011), a detailed study was undertaken to assess the condition of the principal transportation routes to the Hera Mine site. As a consequence of this assessment, it was determined that all materials were to be transported to the Mine by bitumen road as illustrated in **Figure 5**. This route is in accordance with the *Department's Hazardous Industry Planning Advisory Paper No.11. – Route Selection* and the *Australian Code for the Transport of Dangerous Goods by Road and Rail.*

Hera Resources has prepared a *Traffic Management Plan* to the satisfaction of the Cobar Shire Council, Bogan Shire Council, and the DPIE. Additionally, Hera Resources engaged a suitably qualified independent expert to undertake a review and design of pavement condition for the Burthong Road and Priory Tank Road south of Nymagee (refer Traffic Management Plan).

Hera Resources will purchase cyanide only from Code certified companies that supply and transport cyanide. A clear line of responsibility will be established for the accountability of training in safety, spill and emergency response procedures through a written agreement with producers, distributors and transporters. Cyanide transporters will be required to implement appropriate emergency response plans and capabilities and other measures for cyanide management.

### 5.8.2 Handling and Storage

Hera Resources operate an engineered approved automated cyanide transfer system designed to extract solution from isotainer, coupled mini-sparge systems used by Code certified transporters of cyanide. This system eliminates the potential for spills and manual handling of the product. This transfer will be undertaken within a designated bunded area within the Processing Plant. Storage containers and associated transfer pipes will be located within the bunded areas. Bunds will be inspected daily and if required, pumped into the Process Water Dam.

### 5.8.3 Operational Management

Hera Resources will implement management and operating systems designed to protect human health and the environment. This will be by the way of procedures that clearly define the responsibilities of personnel in the management of cyanide during the processing and disposal

stages for the Mine. These procedures will address monitoring, inspections and maintenance checks on tanks, bunds, machines, instruments, metering pumps and the Tailings Storage Facility.

All cyanide facilities will be operated in accordance with all relevant standards and specification. In addition tailings pipeline infrastructure connecting the Processing Plant and the Tailings Storage Facility has been bunded to contain spills from potential line ruptures.

Detailed cyanide monitoring and management measures are described in the Water Management Plan. In summary, these include the following.

- Construction of the Tailings Storage Facility to achieve a permeability of no less than 1 x $10^{-8}$m/s to a depth of at least 600 millimetres of clay (or equivalent).
- Construction of lined Tailings Seepage Pond to achieve a permeability of no less than 1 x $10^{-9}$m/s.
- Construction of clean water diversion structures around the Tailings Storage Facility that have been designed for a Probable Maximum Flood Event.
- Use of a cyanide destruction process using hydrogen peroxide prior to tailings disposal to the Tailings Storage Facility.
- Thickening tailings to reduce ponding in Tailings Storage Facility.
- Maintaining concentration of Weak Acid Dissociable (WAD) cyanide in tailings discharged from the discharge point to the tailings storage facility not greater than 10mg/L (10 ppm).
- Maintaining concentration of WAD cyanide at the discharge point to the process water dam not greater than 20mg/L (90$^{th}$ percentile) or 30mg/L (maximum).
- Monitoring of cyanide levels for both surface and ground water.

Additionally, a Safety Management Plan has been implemented detailing risk assessments and procedures to ensure the safety of personnel and contractors working within the Mine Site.

The TSF has minimal ponding areas as the water from these ponds is automatically pumped to the Process Water Dam. Netting will be used in the Process Water Dam to deter bird life accessing the dam. Ground dwelling fauna will not be able to access the Process Water Dam as the dam is located within a fenced area. The Process Water Dam will be inspected by the Environmental Advisor on a monthly basis. The Process Water Dam will be daily monitored by the Processing plant personnel and any fauna concerns will be reported to the Environmental Advisor .

### 5.8.4 Emergency Response

Emergency response procedures for cyanide, together with other hazardous materials, are detailed in **Section 8** of this document. Additionally, trigger response actions are detailed in the Water Management Plan.

## 5.9 *Other Hazardous Chemicals*

Other hazardous chemicals are mainly used in the different processes for the extraction of gold and lead/zinc concentrate. Safe storage, handling, transportation and use of hazardous materials will be coordinated through standardized operating procedures, and the application of all legislation and SDS related to the hazardous material. A summarised description of processing chemicals is provided as follows.

**Sodium Hydroxide**
Sodium hydroxide is delivered to site as liquid in IBC containers. This container is connected to a smaller changeover tank which feeds the dosing pumps. Dedicated metering pumps deliver the solution to the batch ILR and agitated leaching tanks.

**Frother**
The frother is delivered to site in 1,000 L bulk containers. These containers will be used as the holding tank and a small changeover tank will allow for containers to be changed out without affecting the continuous delivery required. No dilution is required. The liquid will be delivered to the Rougher and Cleaner flotation circuit by two metering pumps.

**Collector**
The solid collector is delivered to the site in 44 gallon drums. The preparation area includes a drum handling device, electric gantry crane, fume extraction and automatic emptying of the drums. The collector is expected to be mixed to a reagent strength of 20%w/w. The solution in the mixing tank will be transferred to a holding tank. The liquid will be delivered to the Rougher and Cleaner flotation cells by dedicated metering pumps.

**Copper Sulphate**
The solid Copper Sulphate is delivered to the site in 1,000 kg bulk bags. The bags are mixed in a mixing tank and pumped to a holding tank. The solution is available for use in the Rougher and Cleaner flotation cells and also at the detoxification tank. A dedicated metering pump is used for each duty.

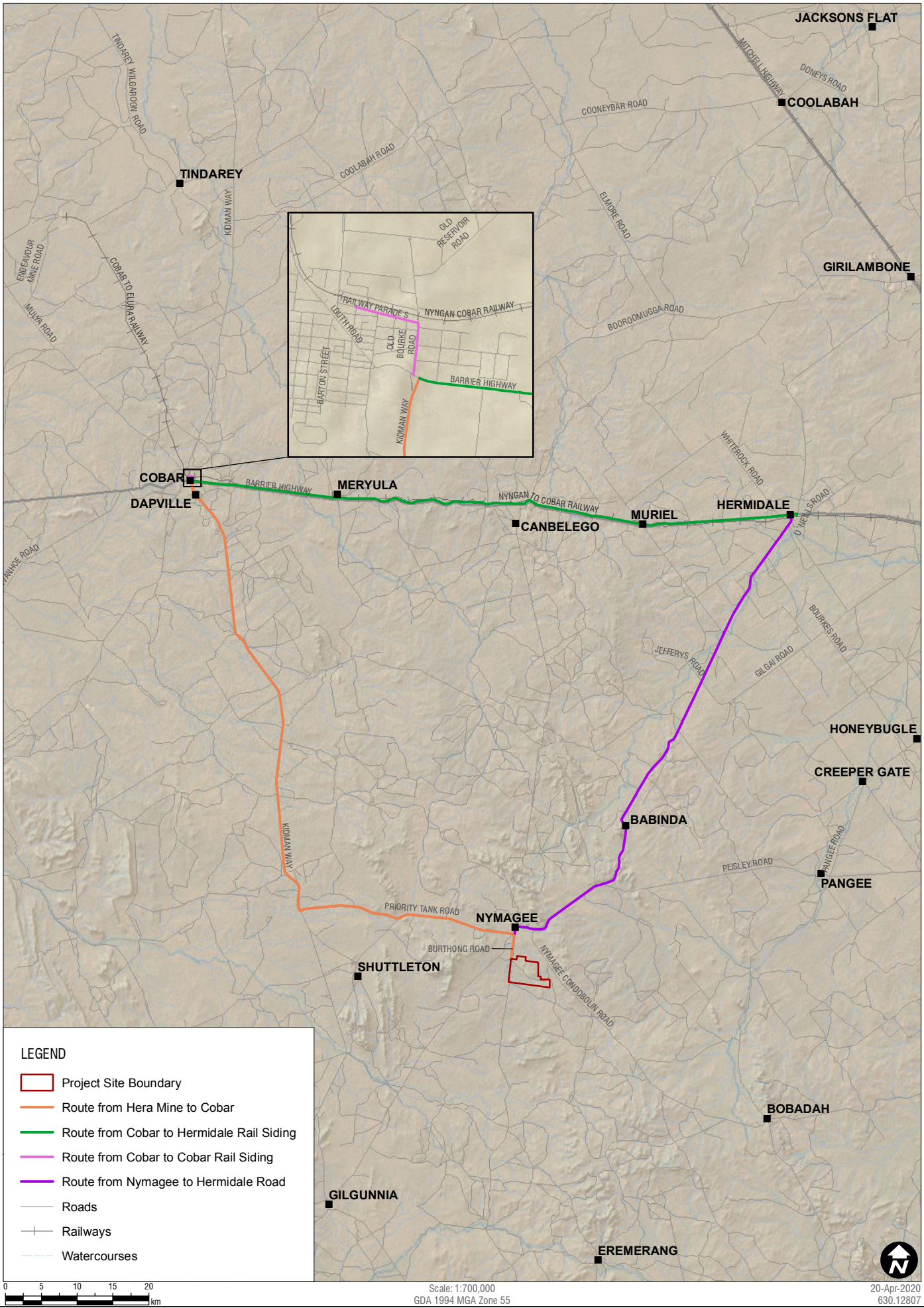
**Lead Nitrate**
The solid Lead Nitrate is delivered to the site in 1,000 kg bulk bags. The bags are mixed in a mixing tank and pumped to a holding tank. The solution is available for use in the leach and Merrill Crowe circuits. A dedicated metering pump is used for each duty.

**Hydrogen Peroxide**
Hydrogen peroxide is delivered to site as liquid at 50%w/w in IBC containers. These containers will be used as the holding tank and a small changeover tank will allow for containers to be changed out without affecting the continuous delivery required. Dosing to the cyanide destruction circuit is by a metering pump.

**Flocculent – low pH**
A packaged flocculent preparation system from MechProTech has been specified. This is a fully automatic system that makes up the bulk flocculent solution. Metering pumps are included in this system and they supply flocculent to each thickener in the process.

**Flocculent – high pH**
This is a manual system that consists of mixing/holding tank, agitator and flocculent mixing funnel. An air powered diaphragm pump delivers flocculent to the batch ILR.

**Figure 5 External Road Network**

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## External Road Network

**FIGURE 5**

### 5.10 *Transportation of Hazardous Materials*

Transportation of hazardous materials to Hera will only be undertaken by contractors who are certified to carry dangerous goods and have been trained in the *Australian Code for the Transport of Dangerous Goods by Road and Rail* using the defined routes as illustrated in **Figure 5**. Delivery receipts will be kept as a record for all hazardous materials.

## 6. Pollution Incident Response Management Plan

In the event of a hazardous materials spill trained personnel will implement the Pollution Incident Response Management Plan (PIRMP) as illustrated in **Figure 6**.

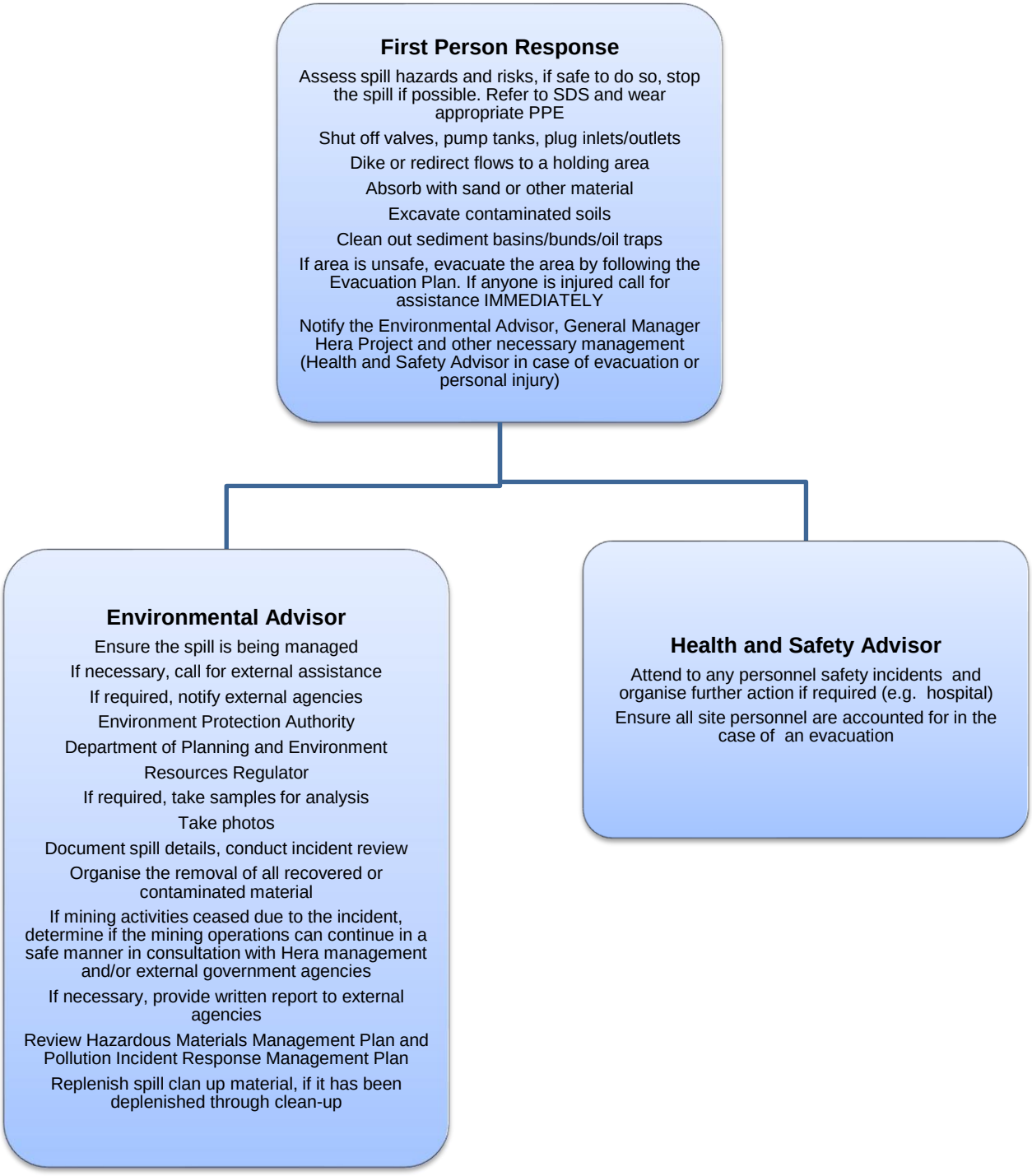


**Figure 6 Spill Action Plan**

# 7. Emergency Response

This section describes the communication plan to be undertaken with the relevant agencies and community in the event of a notifiable pollution incident that has the potential to cause harm to people or the environment. Emergency procedures have been developed in accordance with *Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning* (DoP, 2002).

## 7.1 *Reporting Of Incidents*

**Table 5** describes the incidents that will be reported to the relevant Government agencies.

**Table 5 Spill Volumes Reportable to Government Agencies**

| Description of Contaminant | Reportable | Reporting Authority |
|---|---|---|
| Explosives | Unaccountable explosive material | SafeWork NSW<br>DPIE – RR<br>Relevant Council |
| Petroleum, Oils and Lubricants | Spill of more than 20L | EPA<br>DPIE - RR |
| Sodium cyanide | All incidents | EPA (including any animal deaths in the TSF)<br>DPIE - RR |
| Concentrate (if spilt during transport) | All incidents | EPA<br>DPIE - RR<br>Relevant Council |
| Other Hazardous Material | Potential to cause harm to people or the environment | EPA<br>DPIE - RR |

Hera Resources will notify the DPIE, and any other relevant agencies of any incident associated with the project as soon as practicable after becoming aware of the incident. Within seven days of the date of the incident, Hera Resources will provide the DPIE, and any relevant agencies with a detailed report on the incident. If required, this HMMP will be updated in consultation with the relevant government agencies.

### 7.1.1 Government Agencies

**Table 6** presents the agencies to be contacted in order and what stage in the event of a notifiable pollution incident.

**Table 6 Government Agency Contacts**

| Trigger | Agency | Contact Details |
|---|---|---|
| An incident that presents an immediate threat to human health or property. | Fire and Rescue NSW<br>NSW Police<br>NSW Ambulance Service | Call 000 |
| An incident that<br>• does not require an initial combat agency or<br>• once the 000 call has been made.<br>Notify the relevant authorities in the following order. | Environment Protection Authority | Environment Line 131 555 |
| | NSW Health | Dubbo Base Hospital<br>Phone (02) 6809 6809 |
| | SafeWork NSW | Phone 13 10 50 |
| | Cobar Shire Council | Business Hours (02) 6836 5888 |
| | Department of Planning and Environment | (02) 9228 6333 or 1300 305 695 |

| | | |
|---|---|---|
| | DPIE Resources Regulator | 02 4931 6666 or 1300 736 122 |
| Note: | Complying with these notification requirements does not remove the need to comply with any other obligations for incident notification, for example, those that apply under other environment protection legislation or legislation administered by SafeWork NSW. | |

### 7.1.2 Community

**Table 7** presents a summary of the methods of communication, the general warning that may be provided and what phase would apply under that circumstance if a notifiable pollution incident occurs (see **Section 9** for description of phases). Surrounding residences in relation to the site are shown on **Figure 3**.

**Table 7 Community Communication Plan**

| Source of Risk | Method of Communication[1] | Warning Provided | Stage |
|---|---|---|---|
| Discharge of Hydrocarbons, Chemicals or Reagents. | Telephone<br>Text message<br>Email<br>Letter box drop<br>Door knocking<br>Community Representatives. | General warning to downstream residents to avoid the use of water in creeks. | Alert phase if pollution incident involves onsite discharge only.<br>Operational phase if pollution incident involves offsite discharge.<br>Stand down phase when the incident has been controlled and there is no harm present. |
| Discharge of chemical or saline-laden water. | Telephone<br>Text message<br>Email<br>Letter box drop<br>Door knocking<br>Community Representatives. | General warning to downstream residents to avoid the use of water in creeks (depending on scale of discharge). | Alert phase if pollution incident involves onsite discharge only.<br>Operational stage if pollution incident involves offsite discharge.<br>Stand down phase when the incident has been controlled and there is no harm present. |
| Discharge of sediment-laden water | Telephone<br>Text message<br>Email<br>Letter box drop<br>Door knocking<br>Community Representatives. | General warning to downstream residents to avoid use of water in creeks if water appears cloudy | Alert phase if pollution incident involves onsite discharge only.<br>Operational stage if pollution incident involves offsite discharge.<br>Stand down phase when the incident has been controlled and there is no harm present. |
| Discharge of Tailings material associated with a catastrophic failure of the Tailings Storage Facility. | Public announcements<br>- Radio<br>- Television<br>- Loudspeaker<br>Telephone<br>Text Message<br>Email<br>Letter box drop<br>Door knocking<br>Community Representatives. | General warning to downstream residents to avoid the use of water in creeks.<br>Specific warning to evacuate high risk properties (if required). | Standby phase if evidence of failure of Tailings Storage Facility.<br>Callout phase if actual failure of Tailings Storage Facility.<br>Clean-up phase once discharge stabilised. |
| Discharge of gaseous material to air as a result of a failure of the gold room furnace scrubbing system. | Telephone<br>Text message<br>Email<br>Letter box drop<br>Door knocking<br>Community Representatives. | General Warning to Nymagee residents to keep windows and doors closed and report any respiratory symptoms. | Alert phase if pollution incident involves harm to people.<br>Operational stage if pollution incident involves risk of harm to people.<br>Stand down phase when the incident has been controlled and there is no harm present. |

| Source of Risk | Method of Communication[1] | Warning Provided | Stage |
|---|---|---|---|
| Discharge of particulate material to air as a result of the failure or under performance of the proposed dust control measures. | Telephone<br>Text message<br>Email<br>Letter box drop<br>Door knocking<br>Community Representatives. | General Warning to Nymagee residents regarding higher dust levels within the vicinity of the Project. | Alert phase if pollution incident involves potential harm to people.<br>Operational stage if pollution incident involves harm to people.<br>Stand down phase when the incident has been controlled and there is no harm present. |
| Note [1]: The Company has established a communication database identify individuals preferred method of communication. | | | |

# 8. Phases, Roles and Responsibilities

This section identifies the phases and responsibilities for the Mine personnel for the implementation of the emergency response procedures in the event of a notifiable pollution incident. In summary, the Phases to be implemented include the following.

- **Alert Phase** – Monitor reported incident that does not require notifying.
- **Stand By Phase** – Prepare state of readiness if incident has the potential to escalate.
- **Call Out Phase** – Activate the emergency response procedures.
- **Clean Up Phase** - Clean-up when area declared safe.
- **Stand Down Phase** – Deploy response and implement a de-briefing and review of the HMMP and emergency response procedures.

**Table 8** presents the anticipated key management positions that will be responsible for any pollution incident response. All Health and Safety issues will be managed by the Health and Safety Advisor.

## 8.1 *Evacuation Plan*

The following evacuation procedures will be implemented in the event of an incident that will cause harm to the environment and people.

1. Employers will be given notification either verbally or by mobile / two way radio.
2. All employees will be evacuated to the carpark outside the surface facility area gate (**Figure 4**).
3. An employee will be assigned to the front of the property to keep out unauthorized persons.
4. The surface facility area gate will be locked after all employees have been accounted for.
5. A sign will be placed on the front gate declaring the area contaminated.

**Table 8 Key Management Responsibilities**

| Roles | Phase | Responsibility |
|---|---|---|
| Position: General Manager<br>24 Hr Contact Details:<br>0427 971 462 | **Alert** | Must ensure adequate resources are available to enable implementation of emergency response procedures.<br>Review and monitor reported incident. |
| | **Stand-By** | Give direction to notify the responsible personnel of the incident and prepare for a state of readiness if incident has the potential to escalate or is a notifiable incident. |

| Roles | Phase | Responsibility |
|---|---|---|
| | **Call Out** | Give direction to activate the emergency response procedures in the event of a pollution incident response.<br>Monitor the situation and approve additional resources as required. |
| | **Clean Up** | Give direction to clean up the incident following advice that the area is declared safe. |
| | **Stand Down** | Give direction to Stand Down following satisfactory management of the incident. |
| Position: Process Manager or Delegate<br>24 Hr Contact Details:<br><br>0418 149 579 | **Alert** | As soon as aware, advise the General Manager of a pollution incident.<br>Monitor reported incident. |
| | **Stand-By** | Notify the responsible personnel of the incident and prepare for a state of readiness if incident has the potential to escalate or is a notifiable incident. |
| | **Call Out** | If the General Manager cannot be contacted, activate the emergency response procedures in the event of a pollution incident.<br>Notify all relevant agencies, as identified in Section 8.1.2 of the detail of the pollution incident.<br>Activate the community communication plan as identified in Section 8.1.3.<br>Control the overall situation including and coordinate activities and resources.<br>Determine the priority of actions of employees until agencies and emergency services arrive and then liaise with relevant agencies as required.<br>Ensure that perimeters are established and access to the site is controlled. |
| | **Clean Up** | Monitor the situation and following confirmation that the area is safe advise the General Manager. |
| | **Stand Down** | Give direction for a de-briefing and review of the emergency response procedures. |
| | **General** | Ensure that this Emergency Management Response is tested every 12 months.<br>Ensure this HMMP is reviewed as identified in Section 10.6.<br>Ensure a hard copy is retained on site. |
| Position: Environmental Advisor<br>24 Hr Contact Details:<br>0488 065 144. | **Alert** | As soon as aware, advise the Mining Manager or, in their absence, the General Manager of a pollution incident.<br>Monitor the reported incident. |
| | **Stand-By** | Prepare for state of readiness when directed to by the Mining Manager. |
| | **Call Out** | If neither the General Manager nor Mining Manager can be contacted, activate the emergency response procedures in the event of a pollution incident response.<br>Contact the community and implement the required warning system as identified in Section 8.<br>Provide owners and occupiers of land updates of any spill incidents as required. |
| | **Clean Up** | Assist with clean up of the incident when advised that area is declared safe. |
| | **Stand Down** | Coordinate and manage de-briefing and review as directed by the Mining Manager. |
| | **General** | Ensure employees are competent in Environmental Management through training and awareness programs.<br>Ensure visitors and contractors are inducted and aware of emergency pollution incident management procedures.<br>Ensure that all accidents, incidents and potential incidents are appropriately investigated. |
| All personnel | **All** | As soon as aware, advise supervisor of a pollution incident. In the absence of the supervisor, advise the Environmental Advisor. In their absence advise the Mining Manager, or if absent the General Manager. If none can be contacted then notify the relevant authorities as identified in Section 8.1.2 |

| Roles | Phase | Responsibility |
|---|---|---|
| | | Ensure training has been undertaken in the event of a pollution incident as identified in this HMMP.<br>Ensure compliance with this HMMP.<br>If safe to do so, undertake spill response procedures as outlined in Section 6. |

### 8.2 *Safety Equipment*

The Hera Mine will be maintained and operated to minimize the possibility of a fire, explosion or release of polluting materials. The following communications, fire protection, spill control and clean up equipment are available on site in case of an emergency.
This equipment will be inspected and maintained as necessary to assure its proper operation if a pollution incident should occur.

- Absorbents / spill kits (replenish supply as needed);
- Pumping equipment (inspect as needed);
- PPE;
- Telephone/Intercom (maintenance as required);
- Two Way Radio (maintenance as required);
- Portable Fire Extinguishers (inspect six monthly or as needed);
- Water hose;
- Hand shovels;
- Eye wash (inspect monthly as needed); and
- Shower (inspect monthly as needed).

## 9. Management Plan Monitoring and Review

### 9.1 *Evaluation of Compliance*

Compliance with all environmental laws, regulation and guidelines, as well as PA 10_0191 will be monitored using the following mechanisms:

- Environmental inspections; and
- Independent Environmental Audits.

Hazardous material data will be documented and reported in the Annual Review. Reviews of the delivery, handling, storage, use and disposal of all hazardous materials to ensure that compliance with the relevant standards and guidelines will be undertaken by audit every 12 months by Hera Resources, or if required, following any incidents. Independent audits are carried out every three years. Any recommendations following the audit will be reviewed by management and the necessary actions implemented to ensure hazardous materials are managed appropriately. **Appendix 1** lists the procedures for the environmental inspections.

### 9.2 *Publication of Management Plan, Audits and Reports*

This HMMP, as well as any audits and reports, will be uploaded and maintained on the Aurelia Metals website (www.aureliametals.com).

### 9.3 *Complaints Management*

The *Environmental Management System* includes a detailed complaints management procedure. This sub-section records the procedures that would be implemented following the receipt of a hazardous material spill related complaint. Hazardous material complaints may be received either via one of the following methods:

- Directly via telephone line (1300 016 240). This number will be advertised widely in the local media, on signage at the Mine site entrance and on the Aurelia Metals web site;
- Email to complaints@aureliametals.com.au;
- Directly via the Aurelia Metals web site; or
- Indirectly via the relevant government agencies.

Investigation of the complaint will include the following:

- Inspect, if safe to do so, spill or contaminated area;
- Determine the cause of the incident and whether it is mine related;
- If mine related, implement the necessary spill or emergency response procedures; and
- If transport related, determine if it is materials that are mine related, and if so, cordon off the area and contact the relevant company and implement the necessary spill or emergency response procedures.

## 10. Roles and Responsibilities

The roles and responsibilities for Hera Resources personnel in relation to this HMMP are listed in **Table 9.**

**Table 9 Roles and Responsibilities**

| Position | Accountable Task |
|---|---|
| General Manager | Ensure the resources are available for the implementation of this HMMP.<br>Accountable for the overall environmental performance of the Project, including the outcomes of this HMMP.<br>Negotiation with relevant landowners to achieve acceptable outcomes for issues that arise. |
| Environmental Advisor | Ensure staff have been made aware of their environmental responsibilities.<br>Ensure hazardous material storage is appropriately managed.<br>Ensure wastes are being separated into the appropriate waste streams.<br>Make sure all waste removal contractors are appropriately licensed. |
| All personnel | Ensure correct segregation and disposal of wastes to the correct waste stream.<br>Report all waste management issues to the Environmental Advisor.<br>Contact the Environmental Advisor if unsure how to dispose of items appropriately. |

## 11. Training and Awareness

All site personnel shall undergo hazardous material management awareness training. Hazardous material management shall be a component of the competency based site induction program. The following areas shall be covered in the induction.

- Awareness of the hazardous materials held on-site, and their potential to cause harm to people and the environment;

- Information on the sensitivity of the environment surrounding the site;
- Hera Resources environmental responsibilities;
- Use of the correct PPE and any appropriate and/or necessary health and safety training;
- Reporting procedures if there's a risk of surface water, groundwater or land contamination;
- Safe and correct use of all spill clean-up equipment or pollution prevention structures and/or devices on site;
- Safe handling and legal disposal of contaminated materials and wastes resulting from an incident, including arrangements for using specialist contractors and services; and
- Emergency management procedures.

The Environmental Advisor shall be responsible for ensuring the appropriate hazardous material management training is included in the induction.
The Emergency Response Team will be trained in transporting, handling and transferring petroleum products and emergency response. Specific procedures for training employees in environmental safety and health are included in the *Emergency Preparedness and Response Safety Management Plan.*

# 12. Review

In accordance with Schedule 5, Condition 5 of PA 10_0191, this HMMP will be reviewed and, if required, revised within 3 months of:

- The submission of an annual review under *Condition 4;*
- The submission of an incident report under *Condition 7*;
- The submission of an independent audit report under *Condition 9;* and
- Any modification to the conditions of Project Approval.

This review will include the adequacy of strategies, plans and programs as required under the Project Approval. Recommendation for appropriate measures or action to improve the environmental performance of the Mine and or any assessment, plan or program will be incorporated into this HMMP.

Any revisions to this HMMP will be developed in consultation with the DPIE - RR and DPIE - Water, EPA, Council, TfNSW and SafeWork NSW.

# Appendix 1

# Environmental Inspection Checklist

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## Site Inspection Environmental Checklist

Date: _____

Inspected by: _____

Designation: _____

**Instructions:** This checklist is to be completed by the Environmental Advisor (or approved representative) at the time of making the site inspection. A tick (✓) should be placed in the applicable **Yes/No** box as appropriate.

Where an item is not applicable, the notation **N/A** should be placed in the **Comments and Actions** box.

Where a non-conformance is identified, a brief explanation is to be provided in the corresponding **Comments and Actions** box.

The completed checklist and details of any corrective actions must be placed on the project file.

**Weather conditions** (tick appropriate boxes):

Fine ☐ Light rain ☐ Heavy rain ☐ Light wind ☐ Strong wind ☐

Other (provide description): _____

| General | Yes | No | Comments & Actions |
|---|---|---|---|
| Is the site is in a generally tidy condition? | | | |
| Is all equipment, materials, etc. contained within work area boundary? | | | |
| Are there any obvious signs of mining or construction-related disturbance outside of construction area(s)? | | | |
| **Documents** | **Yes** | **No** | **Comments & Actions** |
| Is the Hazardous Materials Management Plan readily accessible? | | | |
| Is there documentary evidence of compliance with any previously issued Comments and Actions? | | | |
| Is the environmental incident response plan and emergency response procedures displayed in prominent position? | | | |
| Is there documentation of any training undertaken since last inspection? | | | |
| Is there appropriate documentation for delivery of hazardous materials to the site. | | | |
| Is there appropriate documentation for quantity and location of hazardous materials stored on site. | | | |
| Is there appropriate documentation of maintenance checks for the Processing Plant and Furnace Facility. | | | |
| Is there appropriate documentation of maintenance checks for the Tailings Storage Facility. | | | |
| Is there appropriate documentation for any waste material disposed of offsite | | | |

| **Storage and Use of Hazardous Materials** | **Yes** | **No** | **Comments & Actions** |
|---|---|---|---|
| Are all hazardous materials (e.g. fuels, chemicals, etc.) stored in an impervious bund which can contain 110% of the volume of the largest container stored in that bund? | | | |
| Are all hazardous materials stored in a covered area more than 20m away from drainage lines or flood prone areas? | | | |
| Is a spill kit readily accessible? | | | |
| Is the wash-down of construction plant/vehicles restricted to a designated area (e.g. truck wash out area)? | | | |
| Are there any obvious signs of fuel spills, oil leakage, etc. (workshop, processing plant, fuel storage, pumps)? | | | |
| Are the relevant Safety Data Sheet(s) (SDS') available onsite? | | | |
| Is onsite wastewater being managed correctly?<br>Are there any foul odours at the treatment system?<br>If it's being disposed on-site is the irrigation infrastructure OK and is the effluent management area being maintained? Are signs in place?<br>Is there any sign of concentrated runoff? | | | |
| **Soil Disturbance and Erosion Control** | **Yes** | **No** | **Comments & Actions** |
| Have required erosion control measures been correctly installed and are they functional?<br>Check that there are/is:<br>▪ no gaps in silt fences/barriers<br>▪ groundcover<br>Any areas of concentrated flow that do not flow to sediment basins/traps? | | | |
| Are there any obvious signs of uncontrolled drainage leaving the site? | | | |
| Are drainage inlets protected by sediment trapping measures? | | | |
| Are any materials, temporary structures/works in drainage lines? | | | |
| Where required, are drainage outlets provided with energy dissipaters to minimise erosion? | | | |

| | | | |
|---|---|---|---|
| Have works been scheduled to minimise areas exposed at any one time? | | | |
| Are areas where construction activities have ceased being stabilised and rehabilitated? | | | |
| Is there minimal dirt on adjacent public roads? | | | |
| **Surface Water Management** | **Yes** | **No** | **Comments & Actions** |
| Are the clean water diversion banks and drains stable and free of obstruction? | | | |
| Are the dirty water drains stable and free of obstruction?<br>Do they drain to the sediment basin? | | | |
| Is the bund surrounding the WREA pad stable and intact?<br>Does it drain to the WREA leachate dam? | | | |
| Are the pumps at the Leachate Dams working? | | | |
| Are all drain or basin outlets stable and free of obstruction? | | | |
| Are the bunds around any contaminated water pipelines stable? | | | |
| Are flow meters operational? | | | |
| **Stockpile Management** | **Yes** | **No** | **Comments & Actions** |
| Do stockpiles appear adequately maintained and managed (measures in place to prevent dust and soil run-off)? | | | |

| | | | |
|---|---|---|---|
| Is the stockpile height is less than 2m for top soil and 3m for subsoil? | | | |
| Is there dust control required for the stockpile? | | | |
| **Water Quality** | **Yes** | **No** | **Comments & Actions** |
| Does water quality in downslope areas appear to be unaffected by construction/mining works? | | | |
| Are the sediment basin markers clearly visible? | | | |
| Is the water level at or below the maximum water storage level? | | | |
| If yes, then is the sediment level below the maximum sediment storage level? | | | |
| If no, has there been significant rain recently (last 5 days?) and is flocculation being done? | | | |
| Any there any apparent illegal discharges to receiving waters | | | |

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# Appendix 2

# Consultation with Government Agencies

Natural Resources Access Regulator

Contact Tim Baker
Phone 0428 162 097
Email Tim.Baker@nrar.nsw.gov.au

Liam Richards
Aurelia Metals
GPO Box 7
BRISBANE QLD 4001

Email: liam.richards@aureliametals.com.au

Our ref V15/3875-3#68

28 April 2020

Dear Liam,

**RE: Hera Mine – Hazardous Materials Management Plan revision**

I refer to the request for the Natural Resources Access Regulator (NRAR) to review a revised Hazardous Materials Management Plan for the Hera Mine Project. It is understood this consultation is in accordance with Condition 41(a), Schedule 3 of Project Approval PA 10_0191 and follows approval of Modification 5. NRAR has reviewed the revised plan and has no comment. The consultation requirement is deemed to be met.

Should you have any further queries in relation to this submission please do not hesitate to contact Tim Baker on 0428 162 097.

Yours sincerely

**Tim Baker**
**for**
**David Finnimore**
**A/Manager Licensing and Approvals Regional Water Regulation – West**
**Natural Resources Access Regulator**
**Department of Planning, Industry and Environment**

Dear Liam,

Apologies for my delay in offering comments to the attached *Hazardous Materials Management Plan Edition 4, Revision 3.*

Having reviewed this document I make the following comments:

- Please ensure all references made to RMS are amended to TfNSW accordingly.

- It was noted that …"the transportation of hazardous materials to Hera will only be undertaken by contractors who are certified to carry dangerous goods and have been trained in the *Australian Code for the Transport of Dangerous Goods by Road and Rail* using the defined routes as illustrated in **Figure 5**. Delivery receipts will be kept as a record for all hazardous materials".

    - This is supported by TfNSW however ensuring all contractors not just those engaged for the purposes of transporting hazardous materials are aware of Aurelia Metals/Hera Gold's other related procedures under this plan is key. This may include Emergency Response procedures as well as extending the Roles and Responsibilities and any relevant Training and Awareness to contractors as well as those directly employed by Hera Gold.

- **Emergency Response**

  This section describes the communication plan to be undertaken with the relevant agencies and community in the event of a notifiable pollution incident that has the potential to cause harm to people or the environment. Emergency procedures have been developed in accordance with *Hazardous Industry Planning Advisory Paper No. 1 – Emergency Planning* (DoP, 2002).

    - Typically if 000 is called regarding an incident on a public road and depending on the scope/nature of the incident TfNSW Traffic Management Centre may be notified by the emergency service department and relevant notifications distributed to the public regarding road closures, detours etc resulting from the incident, including timeframes around such changes.

- **Community Communication Plan**
    - TfNSW supports the additional complaints management procedure (as noted in Section 9.3) as a means of ensuring all members of the public can alert the Mine of any incidence they deem a concern as a result of the mining operations and or ancillary related activities.

Thank you for the opportunity to review this document.
Regards,
Ainsley

**Ainsley Bruem**
A/Manager Land Use Assessment – Western
Regional & Outer Metropolitan Division |
**T** 02 6861 1449 **M** 0408 571 088
Level 1 51-55 Currajong Street Parkes NSW 2870



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Our reference: SF18/73934; DOC20/136802-3
Contact : Mr Joshua Loxley; (02) 6883 5326

Aurelia Metals Ltd
Suite 5, Level 2
60-62 McNamara Street
ORANGE NSW 2800

27 February 2020

Dear Mr Thompson

**Request to Review Hera Mine Hazardous Materials Management Plan (PAE-2071)**

I refer to your request via the NSW Planning Portal for the Environment Protection Authority (EPA) to review Aurelia Metals Ltd's hazardous materials management plan for the Hera Gold Mine (the premises) dated 16 February 2020.

As part of the regulatory process, the EPA encourages the preparation of strategies, programs and plans as useful tools for industry to detail how they will meet their statutory obligations and environmental objectives.

The EPA does not usually review management plans, as its role is to set conditions for environment protection and management, rather than be directly involved in the development of strategies to comply with those conditions.

If you have any questions regarding this matter, please contact Mr Joshua Loxley at the Central West (Dubbo) Office of the EPA on (02) 6333 3800 or via e-mail to central.west@epa.nsw.gov.au.

Yours sincerely

**DUNCAN MCGREGOR**
**Acting Unit Head Central West Region**
**Environment Protection Authority**

**Phone** 131 555
**Phone** +61 2 6333 3800
(from outside NSW)
**Fax** +61 2 6333 3809
**TTY** 133 677
**ABN** 43 692 285 758
PO Box 1388
Bathurst NSW 2795
Australia
L102,346 Panorama Avenue
Bathurst NSW 2795
Australia
**info@epa.nsw.gov.au**
**www.epa.nsw.gov.au**