September 2008

KOOLANOOKA – BLUE HILLS DIRECT SHIPPING ORE (DSO) MINING PROJECT

ENVIRONMENTAL MANAGEMENT PLAN

Midwest
Corporation Limited

MIDWEST CORPORATION LIMITED

KOOLANOOKA/BLUE HILLS DIRECT SHIPPING IRON ORE (DSO) MINING PROJECT

EPA Assessment No. 1653

ENVIRONMENTAL MANAGEMENT PLAN

August 2008

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1.0 INTRODUCTION

1.1 Purpose

Midwest Corporation Limited (Midwest) proposes the Koolanooka/Blue Hills Direct Shipping Iron Ore (DSO) Mining Project (the Project). The Koolanooka mine site is located approximately 160 km south east of Geraldton and 21 km east of Morawa, and the Mungada East & Mungada West mine site is located 60 km to the east of Koolanooka.

The project involves the recommencement of open pit mining activities at Koolanooka, with similar activities commencing 1.5 years into the project at the Mungada East and Mungada West pits at Blue Hills. This work will involve a maximum of five mining campaigns during the project. These mines were previously operated by the Geraldton Operations Joint Venture (GOJV) from 1966–1972 as Australia's first export iron ore operation. Most work will be conducted in existing disturbed areas. Midwest is currently exporting previously mined material from stockpiles at Koolanooka at the rate of 1.0 Mtpa, through the port of Geraldton.

The Koolanooka/Blue Hills DSO Mining Project is expected to run for a period of up to 5 years, with development scheduled to commence in early 2009.

Key characteristics of the DSO project are listed below:

Koolanooka Mine:

- Expansion of the existing pit, including a minor footprint increase of 4.46 ha for the south fold cutback, and a total previously cleared area disturbance of 38.2 ha with an additional 3.14 ha being impacted within the dust buffer zone, area of influence. Of the 4.46 ha of Threatened Ecological Community (TEC) disturbance required, it has been calculated that only 2.68 ha will actually involve clearance of vegetation, as a significant portion of the nominated area has already been disturbed by previously approved exploration activities, as demonstrated in Figure 6-13.
- A semi mobile crushing and screening facility, deployed at project commencement and in place for 1.5 years to process the DSO ore deposits, 1.9 ha of which is on previously disturbed land.
- Portable offices, ablutions, workshop and a first aid facility, 3.7 ha on previously disturbed areas.
- Generation of waste dumps to the west (26 ha) and south (6.6 ha) of the main pit.
- Installation of bulk diesel storage areas to store 100,000 L volume of fuel, on previously disturbed areas.
- Installation of diesel generators producing 500–1000 kW of power, to be stored on previously disturbed areas.

Blue Hills Mine:

- Expansion of Mungada East and West Pits including increase areas of waste dumps. The total area of new disturbance is 40.8 ha, and previously cleared disturbance is 11.7 ha.
- A small workshop to service the Blue Hills operation and portable offices, ablutions and a first aid facility (1 ha).
- Re-deployment of the Koolanooka crushing and screening facility 1.5 years into the project life to process the DSO ore deposits, 1.9 ha of which is on previously disturbed land.
- Midwest is in consultation with the DEC regarding the development of a new work camp at Old Karara Homestead.
- reinstatement of the existing haul road connecting the Mungada pits with Koolanooka. This will involve re-clearing an estimated 39.5 ha of previously disturbed vegetation 3 metres wide on both sides of the road.

This EMP addresses potential environmental impacts and management procedures relevant to activities of the project. It forms a part of the operational control procedures for the Midwest Environmental Management System (MEMS) which is aligned to ISO 14001:2004. The MEMS addresses aspects such as training, planning, monitoring, record keeping and continual improvement.

Compliance with commitments outlined in this document will be internally audited by Midwest and subject to external audits by the relevant regulatory authorities, including the Department of Environment and Conservation (DEC) and the Department of Industry and Resources (DoIR).

1.2 Location and Plans

The Project is located in the Mid-west region of Western Australia (Figure 1-1)

The layout of the Koolanooka site is shown in Figure 1-2 and the layout for the Blue Hills site is shown in Figure 1-3

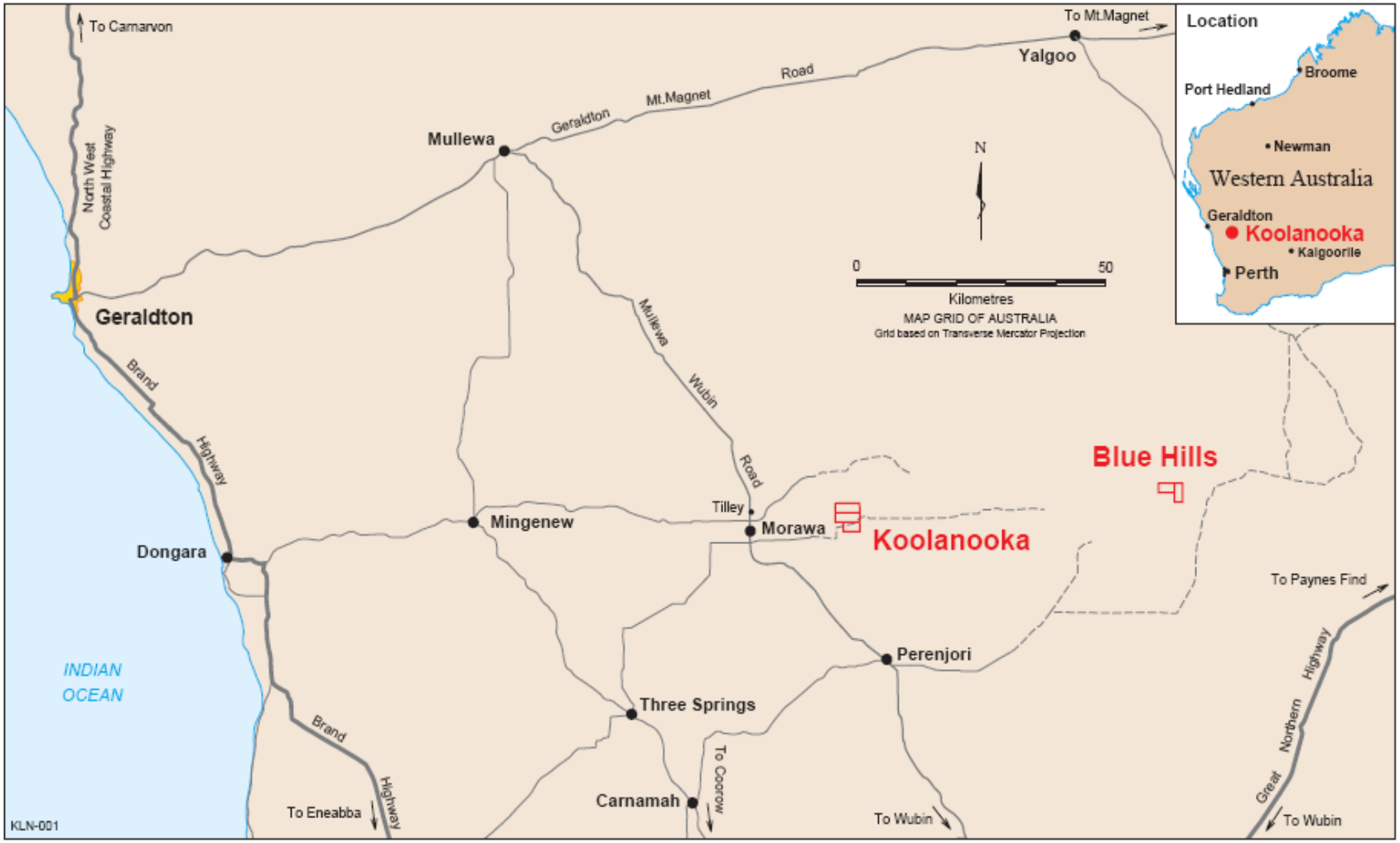


Figure 1-1: Regional Location for Koolanooka and Blue Hills

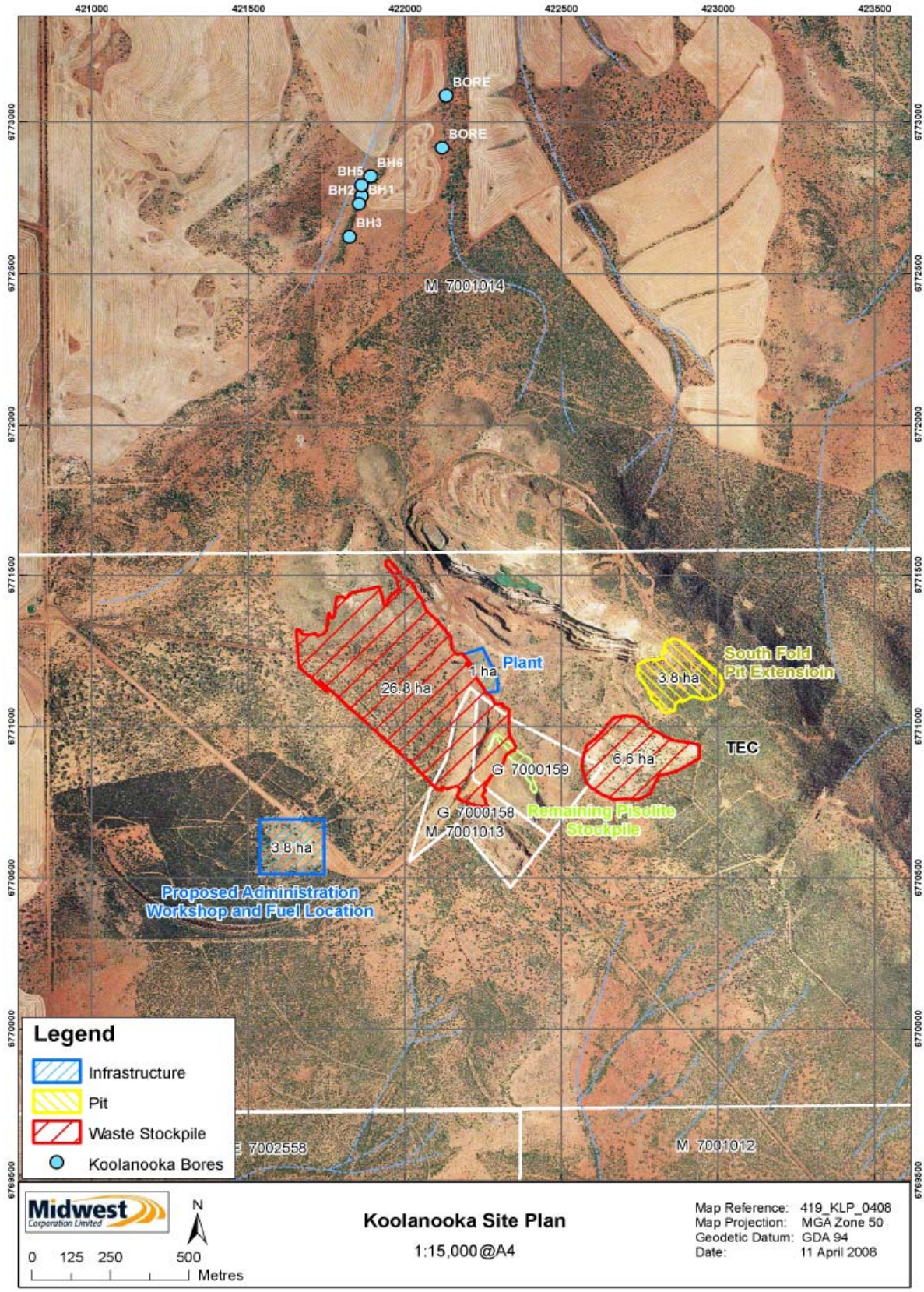
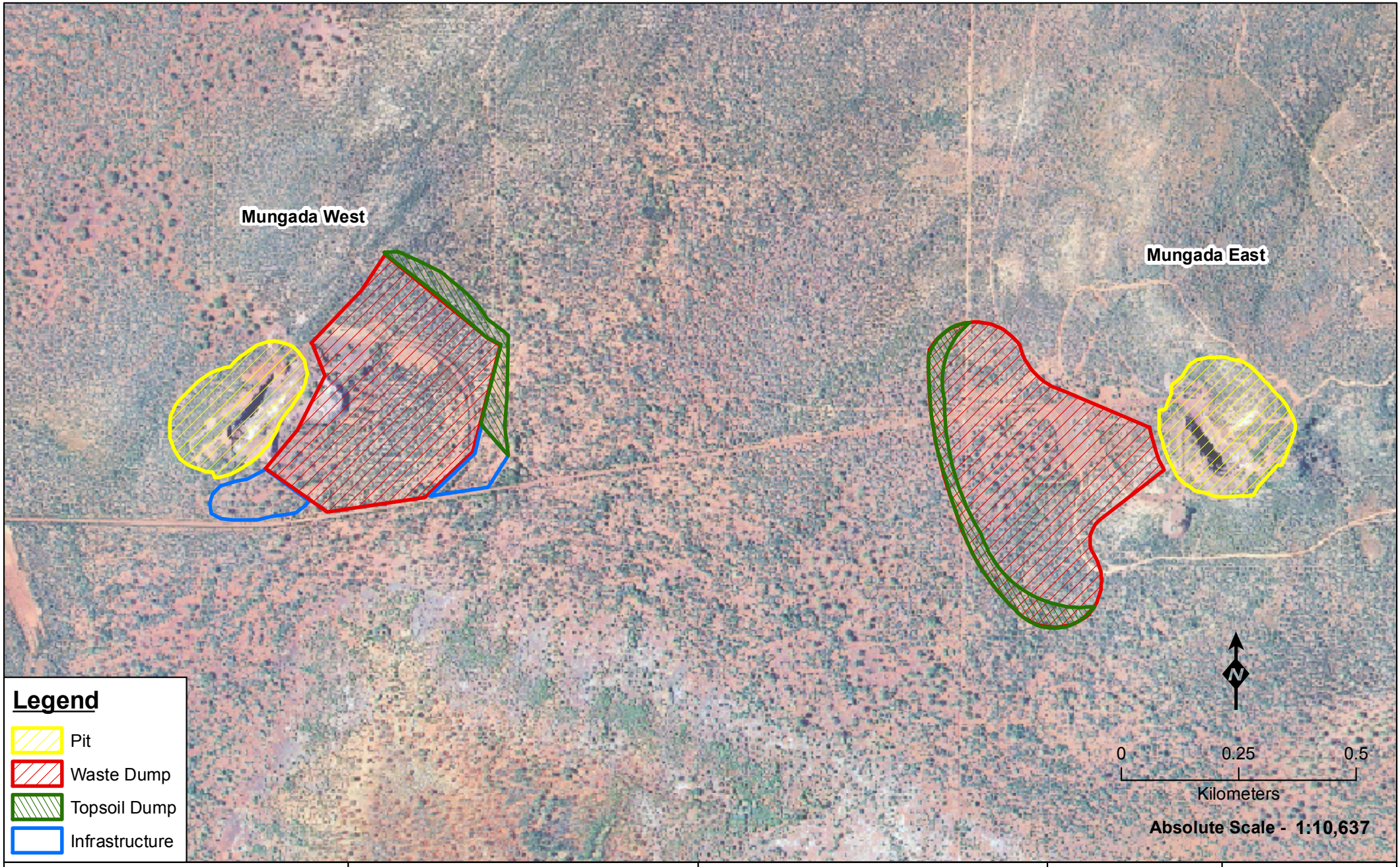


Figure 1-2 Koolanooka Site Plan



ecologia ENVIRONMENT

Midwest Corporation Limited

Blue Hills Project Area

Figure:
Project ID:

Drawn: SG
Date: 24/09/08

Coordinate System
Name: GDA 1994 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA 1994

A4

2.0 CURRENT STATUS

2.1 General

Koolanooka Mine:
The Koolanooka mine site is located within the Shire of Morawa approximately 160 km east south-east of the Port of Geraldton (Figure 1-1). Surrounding lands covered by the project mining leases are generally held freehold by local farmers and pastoralists.

The Koolanooka mine site was previously mined from 1966 to 1972 as part of the Geraldton Operations Joint Venture (GOJV) and a large proportion of the land north of Koolanooka Springs Road has been previously disturbed.

The plains surrounding Koolanooka Hills are generally used for agriculture, predominantly wheat and sheep farming.

Blue Hills Mine:
The Blue Hills mines are located on Karara Station within the Shire of Perenjori approximately 220 km east of Geraldton and 60 km east of Koolanooka (Figure 1-1).

Exploration was conducted for iron ore deposits in the area in the 1960s and 1970s and two high grade iron ore deposits, Mungada East and Mungada West, were mined between 1970 and 1972. Records show that the Mungada West mine still contained high grade ore when mining ceased following the fulfilment of the supply contracts then in place.

The area surrounding Blue Hills was formerly a pastoral lease, but is now CALM Purchased Lease (CPL) 16 (Karara Station) vested with the Conservation Commission, and is under direct management by the Department of Environment and Conservation (DEC). The entire area encompassing Karara Station, combined with other nearby CALM purchased stations (Lochada, Kadji Kadji and Warriedar) is proposed to form one contiguous conservation park. Karara station is 109,291 ha in size, and includes Windaning Hill and the Blue Hills Range.

2.2 Flora and Vegetation

Two areas of conservation sensitivity are present within the proposed project area, the DEC managed Karara conservation area at Blue Hills and the TEC bordering the Koolanooka mine pit. It is appreciated that incremental pressures on local vegetative communities form a significant concern and as such all proposed vegetation clearance associated with this project has been minimised.

Koolanooka Hills:

No Priority taxa were recorded at the Koolanooka Hills site surveyed. . However, the record of the taxon *Acacia sclerosperma* subsp. *sclerosperma* is of interest, as this represents a southerly range extension from its previously known distribution in the Pilbara, Gascoyne, Carnarvon, Murchison, Geraldton Sandplains, Yalgoo and northern Avon Wheatbelt IBRA bioregions.

Blue Hills:
Acacia woodmaniorum Declared Rare Flora

Acacia woodmaniorum ms **(DRF)** (Mimosaceae) is a species that appears to be restricted to the Blue Hills area. This species is described below by an adapted version of that provided by Bruce Maslin (*Acacia* specialist) for the Holotype specimen (PERTH 07414897) at the Western Australian Herbarium.

A. woodmaniorum is an intricately branched prickly harsh shrub 1-1.5 (-2) m tall. The bark is grey and slightly rough. The new shoots are red when first initiated. The branchlets are light green or yellow at extremities, the decurrent phyllodes are glaucous and more or less lightly pruinose. The marginal nerve of phyllodes is red (young), ageing to yellow. Three spines occur on angles of the free portion of the phyllodes, and are pale red when young, aging to brown. The dead decurrent phyllodes are grey and persist on branches below living crown. The peduncles are often ringed red and the wattle flowers are yellow.

Cryptandra imbricata Rye ms, Priority 3

Cryptandra imbricata Rye ms **(P3)** (Rhamnaceae) is a spinescent shrub growing from 0.3–1.5 m high. The flowers are white, occurring from July to September. It grows on red/brown loam or sand on flats (FloraBase, 2007).

Micromyrtus acuta Rye, Priority 1

Micromyrtus acuta is a rounded shrub growing to 0.5 – 2.5 m high. The leaves are tiny (up to 3 mm long and 1 mm wide) and shaped like a tear drop (wide at one end and narrow at the other). It produces small white flowers from around July to September and occurs on a number of different substrates, including ironstone.

Micromyrtus trudgenii Priority 3

*Micromyrtus trudgenii*is an erect, open and straggly weeping shrub growing to 0.5 – 2 m tall. This species has small, linear-oblong leaves that tend to grow in dense clusters and then fall as they begin to age. The shrub produces yellow flowers, which have been noted in July and September. The flowers are small and tubular with five lobes, cream to yellow in colour. *Micromyrtus* sp. Warriedar was previously known from about 21 populations at Karara Station and the central Tallering Land System including Blue Hills. (This taxa was recorded at Mungada East and Mungada West).

Persoonia pentasticha, Priority 3

Persoonia pentasticha is an erect, spreading shrub growing to between 0.4 to 1.8 m in height. The flowers are yellow and are produced from August to November. It grows on sandy loam at the base of granite outcrops. *Persoonia pentasticha* was previously known from about 31 populations at Koolanooka Hills and the central Tallering Land System including Blue Hills. (This taxa was recorded at Mungada East and Mungada West).

2.3 Fauna

A number of species of vertebrate fauna with conservational significance have been recorded from the greater Koolanooka area. (Alan Tingay & Associates 1996, ATA Environmental 2004).

These were the Malleefowl *Leipoa ocellata*, Slender-billed Thornbill *Acanthiza iredalei iredalei*, Carnaby's Black-Cockatoo *Calyptorhynchus latirostris*, Peregrine Falcon *Falco peregrinus*, Bush Stone-curlew *Burhinus grallarius*, Hooded Plover *Charadrius rubricollis*, White-browed Babbler (*Pomatostomus superciliosus*), Crested Bellbird (*Oreoica gutturalis*), Western Spiny-tailed Skink *Egernia stokesii badia*, the Gilled Slender Blue-tongue *Cyclodomorphus branchialis* and two invertebrates, the Tree Stem Trapdoor Spider *Aganippe castellum* and Minnivale Trapdoor Spider (*Teyl* sp.). Of these, five have been recorded at or near Koolanooka, the Malleefowl, White-browed Babbler, Crested Bellbird, *Western Spiny-tailed Skink and Gilled Slender Blue-tongue.*

A risk assessment indicated that the implementation of the project is not expected to result in significant impacts to SRE species(ecologia Environment 2007b).

Impacts to stygofauna from DSO project activities are likely to be minimal, according to current survey results, risk assessments and the lack of need for dewatering or newly developed bores. *(ecologia* Environment 2007c).

Impacts to troglofauna from DSO project activities are likely to be minimal, according to current survey results and risk assessments. However one currently unclassified species of significance, a spider, may potentially be impacted by project activities. It should be noted that this species has only been located outside of the proposed impact area at Koolanooka, and is likely to exist along the entire Koolanooka Range. *(ecologia* Environment 2007d)

2.4 Topography and Surface Drainage

Drainage is mainly weak and low-gradient, predominantly to the Mongers Lake palaeodrainage system which passes a few kilometres to the north of Koolanooka Hills and includes the Yarra Yarra Lakes to the west of Carnamah (Rockwater, 2004b).

Koolanooka Mine:

Koolanooka Spring, a near surface, ephemeral creek line that relies on recent rainfall is located 4 km to the south east of the Project between two granite hills, draining northwards. There is no surface water or flow in the dry months of the year. The spring is reported to carry water in wet seasons, which is attributed to the seepage of local rainwater through the soil and weathered bedrock from adjacent hills and slopes onto the gully floor (Rockwater, 2004a).

Blue Hills Mine:

There is an ephemeral Gilgai formation, approximately 700 m south of the west Mungada pit. This area has been previously identified as a Gilgai formation, rather than a classic wetland.

It is not anticipated that the Project will influence this feature as it is located well away from the existing pit, and is separated from the pits by the Mt Karara / Mungada haul road. Additionally, hydrocarbon and waste management at the East and West Mungada pits will fully adhere to commitments made in Section 8..9.4 of this PER and in the associated project EMP. Through effective implementation of these measures, Midwest will avoid any potential impacts of hydrocarbons and waste from entering this area.

2.5 Ground Water

Over the Yilgarn bedrock area many bores and wells exist to provide farm/pastoral water supplies. In most cases, rates of supply would be quite low (to provide stock watering) and salinities are in the range 2,000 to 5,000 mg/L TDS. Fresh groundwater is uncommon, generally being associated with hilly areas. High rates of supply may be available from the Proterozoic-age chert and dolomite of the Moora Group, located near and east of the Darling fault.

Koolanooka Mine:

The existing Koolanooka pit is reported to have been used for water when it was operated by Western Mining Corporation. Groundwater in the bottom of the existing pit is saline but personal communication with ex WMC employees suggests inflowing groundwater during previous mining operations was relatively fresh (Rockwater Pty Ltd (2004a).

Pit dewatering will not be required as the proposed extensions to the Project excavation on the Koolanooka pit will not proceed below the water table. Water from the existing pit will be used for site dust suppression and for watering of the haul roads. No water will be pumped or discharged off site.

Blue Hills Mine:

All water requirements for the Blue Hills area will be brought in by truck from Koolanooka sources

2.6 Dust

All activities conducted during the construction and operation phases of the Project have the potential to generate dust. This includes activities such as clearing, mining, hauling, crushing, screening and stockpiling of the ore. Dust modelling undertaken by Sinclair Knight Mertz Engineering, SKM (SKM, 2006) indicates that in general dust levels in this location should not become a significant issue. Residences surrounding these operations are several kilometres away and hence should experience little impact.

2.7 Noise

Mining operations are occurring at Koolanooka. No noise issues have been raised by neighbours at Koolanooka. Off-site noise impact is not considered to be an issue at Koolanooka.

Mungada is 86 kms east of Koolanooka and located on former pastoral land in a very isolated location. The underlying land at Mungada is now proposed conservation reserve managed by the Department of Environment and Conservation. The operations sites are remote from any occupied residences and as such noise is not considered to be an issue for this project.

3.0 ENVIRONMENTAL MANAGEMENT PROCEDURES

The environmental management procedures detailed in this EMP form the basis of the operational control procedures for the project.

The procedures detail the objectives, management actions, performance indicators, monitoring and reporting requirements for each relevant environmental aspect associated with the project.

A periodic review and document revision will be undertaken to ensure applicability and effectiveness of management procedures.

EMP - 01 Aboriginal Heritage

Impacts

- Disturbance to aboriginal heritage sites that is not approved.

Objectives

- To ensure activities do not adversely affect indigenous historical and cultural sites and that any site disturbances comply with relevant heritage legislation.
- Ensure compliance with relevant legislation including the *Heritage of Western Australia Act 1990* and the *Aboriginal Heritage Act 1972*.

Regulatory Permits/Approvals

- Approval for disturbance to heritages sites in accordance with Section 18 of the *Aboriginal Heritage Act 1972.*

Management

- Aboriginal heritage surveys will be undertaken by competent and appropriate persons for all areas to be impacted by the project.
- In consultation with Aboriginal custodians and Native Title claimants, a management programme for Aboriginal sites will be implemented. This programme will involve identification of sites, management of approved disturbance and cross cultural awareness programs for employees.
- Identified Aboriginal sites will not be disturbed unless approval for disturbance has been obtained. Sites found to be within the local area of the DSO project include: DIA 4496 and duplicate site DIA 5868 at Koolanooka which have Section 18 approval to be impacted, DIA 20817 and DIA 20816 at Koolanooka which are not to be impacted, and a small cave (DIA 20858) and a larger cave (DIA 20857) at Mungada which will not be impacted. Several sites also exist along the Mt Karara haul road, but these will not be impacted as their extent is not within the 3m wide strip earmarked for haul road re-instatement.
- Disturbance to sites will be in accordance to conditions of Section 18 approvals.
- Sites requiring protection will be demarcated on the ground if appropriate, and on site maps. Exclusion zones around these sites will be established and communicated to personnel.
- Employees and contractors will complete a site induction prior to commencement of work. The induction will inform personnel of nearby sites (if appropriate) and their legal obligations to protect sites and/or disturb sites according to approved procedures.
- Employees and contractors will promptly report any Aboriginal sites in the vicinity of the operations of the Company. Where sites are identified, they will be avoided.
- Qualified Anthropologists/Archaeologists will be used to assess sites as

circumstances dictate and require. • Consultations with appropriate custodians will be maintained throughout the project life.
Performance Targets • No unapproved disturbance to Aboriginal sites.
Monitoring • Periodic inspections will be undertaken to ensure compliance with the *Aboriginal Heritage Act 1972.* • Routine monitoring of known Aboriginal heritage sites will be undertaken by the Site Manager to ensure disturbance to these areas has not occurred.
Reporting • Any new suspected heritage sites will be reported immediately to the Site Manager and relevant custodians and authorities. • Unauthorised interference with identified Aboriginal sites of significance will be investigated using the Incident and Non-conformance Report Form – EMS Form 5 and reported to the relevant custodians and authorities.

EMP - 02 Social Issues and Public Access

Current Status

Public access is presently available to the lookout at the Koolanooka pit. This is considered an important tourist and cultural feature in the Shire of Morawa. Safe access will remain open during this project.

Impacts

- Possible disruption to the community.
- Possible harm to the public.

Objectives

- To ensure that existing and planned recreational uses are not compromised.

Management

Morawa Heritage Inventory

- Photographs of the Koolanooka mine will be taken prior to commencement of activities and at completion to continue the photographic record of the site.
- Housing and maintenance of the photographic record will be determined in consultation with the Shire of Morawa.

Public Access

- Public notices will be sent out prior to disruption or temporary closure of roads and public access.
- Communication channels for public comments and complaints will be established and maintained. These channels will be made known to the community.
- Any fences and tracks affected by activities will be restored on completion of mining and rehabilitation.
- Where practicable alternative access will be established for temporary disruptions to recreational use / access.
- Public access to the site will be returned at the completion of activities.
- Public notices will note the expected length of closure and anticipated re-opening of closed areas.

Operations Phase

- During the operational phase of the project no public access issues are anticipated.
- Warning signs will be placed on the Koolanooka Springs / Mungada haul road advising of use by road trains.

Performance Targets

- Minimal disruptions to the community.
- Maintain appropriate safe public access to the site.
- Prompt response to complaints and comments from the public.

Monitoring

- The Site Manager will investigate complaints, ensure they have been addressed and satisfactory remedial actions have occurred in a timely manner.

Reporting

- Community complaints will be documented and reported as required.
- All incidents will be investigated using the Incident and Non-conformance Report Form – EMS Form 5 and reported within the Annual Environmental Report (AER).

EMP - 03 Flora and Vegetation

Impacts

- Clearing of 2.68 ha of TEC constituting 0.044% of the total TEC area of the Plant Assemblages of the Koolanooka System.
- Clearing of 40.8ha of vegetation in the Blue Hills region.
- 39.5 ha of regrowth on the Mt Karara / Mungada Haul road.
- An additional 3.14 ha at Koolanooka TEC being within the buffer zone, potential area of influence of dust impacts.
- Possible disturbance or loss of the four species of conservational significance recorded at the Mungada East and West proposal impact areas;

  Acacia woodmaniorum (DRF), Micromyrtus acuta Rye (P1), Micromyrtus trudgenii (P3), and Persoonia pentasticha (P3).

Objectives

- To maintain the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels through the avoidance or management of adverse impacts from all activities and through improvement in knowledge.
- No net loss of environmental values. Where possible, achieve a net environmental gain.
- Minimise the loss and adverse impacts to native vegetation and plant habitats.
- Protect Priority Flora species that occur within the proposal area.

Regulatory Permits/Approvals

- Approval from the Department of Environment and Conservation and the Department of Industry and Resources will be obtained prior to clearing of significant flora or vegetation of conservation significance.
- Approval from the Department of Environment and Heritage will be obtained prior to significant impacts on species protected under the *Environmental Protection and Biodiversity Conservation Act* 1999.

Management

- The Department of Environment and Conservation will be consulted regarding the management of Rare, Priority or significant flora on site.
- The project design will incorporate the principles of avoiding and minimising clearing of significant flora and vegetation units.
- Where appropriate Midwest will prepare and implement a Threatened Flora Management and Conservation Plan for the Project area to address management of Threatened Flora impacted by the proposed development.
- Designated “no-entry” sites at the boundary of the TEC and working areas will be incorporated into a site / project map and communicated to project personnel.

- A two strand wire fence will be constructed to separate Threatened Ecological Communities (TEC) from disturbance areas. This fence shall be constructed to prevent accidental penetration into the area and will be adequately signposted with warnings to not impact the area beyond the fence.
- Personnel will be provided with training and tools to assist in their general awareness and understanding of species of conservation significance and the TEC .
- Midwest will purchase and protect, or otherwise contribute towards the protection of the TEC areas of similar conservation value to that being impacted by the Project. Where possible, Midwest will achieve a net environmental benefit in this regard.

Performance Targets

- No unapproved impacts to flora and vegetation of significance.
- Net environmental gain for the project.

Monitoring

- The Site Manager will regularly inspect the site to ensure:
  - Only authorised clearing is being undertaken.
  - All areas cleared correspond to those on the internal **Site Disturbance Permit** (Appendix 1).
  - Significant flora and vegetation is not impacted without prior written approval from the Department of Environment and Conservation.
- Personnel induction and training will be recorded at the project site.

Reporting

- Unauthorised impact to Significant Flora will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Unauthorised impacts to species or communities of significance will be reported to regulatory authorities.
- Incidents and monitoring will be reported as part of the AER.

EMP - 04 Terrestrial Fauna

Impacts

- Loss of individuals from road kill.
- Introduction of exotic fauna species resulting in predation.
- Loss of individuals and habitat from vegetation clearance.
- Loss of genetic biodiversity.

Objectives

- To maintain the abundance, diversity, geographic distribution and productivity of fauna at species and ecosystem levels through the avoidance or management of adverse impacts from all activities and through improvement in knowledge.
- Minimise the impact to fauna.

Regulatory Permits/Approvals

- Approval from the Department of Environment and Conservation will be obtained prior to impacts to significant fauna.
- Approval from Department of Environment and Heritage will be obtained prior to significant impacts on species protected under the *Environmental Protection and Biodiversity Conservation 1999* Act (EPBC Act).

Management

- The Department of Environment and Conservation will be consulted regarding the management of Rare, Priority and Significant Fauna.
- Where practicable, project design will incorporate the principles of avoiding and minimising impacts to fauna and their habitats.
- Rare and significant fauna species may be relocated where required.
- Where appropriate a Threatened Fauna Management and Conservation Plan will be developed and implemented for the project.
- Designated “no-entry” sites will be incorporated into a site / project map and communicated to project personnel.
- Wherever possible barbed wire will not be used on the project, to minimise harm to bats.
- Foundation holes, drill holes and trenches will be covered, fenced, bunded or otherwise capped to prevent fauna entrapment. Where appropriate fauna egress matting will be installed.
- Holes and excavations will be inspected regularly for trapped fauna. Uninjured trapped fauna will be released by a competent person with the appropriate Department of Environment and Conservation permits.
- Native fauna will not be captured, taken, fed or harmed without the appropriate permits.
- Midwest will investigate installing high pitched whistles on the front of road trains

working the Blue Hills haul road, in an attempt to scare away fauna and reduce fauna road kills.
- Domestic pets will not be allowed on the project footprint.
- Sightings of feral animals will be reported to the Site Manager and records maintained.
- Trapping and removal of feral pests will be conducted by a competent person where required.
- Personnel will be provided with training and tools to assist in their general awareness and understanding of species of conservation significance.
- A Malleefowl Management Plan will be developed in conjunction with the DEC.
- Midwest will join the Malleefowl Preservation Society.
- Record sightings of Malleefowl nests both active and inactive.
- Limit speeds on haul roads to 90 km /hr.
- At locations of known active malleefowl mounds, vehicle speed limits will be a maximum of 50 km/hr.
- Disturbed areas will be rehabilitated as soon as practicable to facilitate fauna habitat restoration.
- Environmental offsets for unavoidable impacts to fauna of significance will be investigated and implemented in consultation with stakeholders.
- Progressive rehabilitation will be undertaken.

Performance Indicators

- No preventable fauna fatalities.
- No unapproved impacts to fauna of conservation significance.

Monitoring

- Disturbed areas will be checked for rehabilitation potential on a routine and ongoing basis by the Site Manager.
- Inspections of pit boundary fences and trenches will be undertaken regularly by the Site Manager.
- Sightings of Mallee Fowl nests both active and inactive will be recorded.
- Sightings of Malleefowl - time/number/location – will be recorded.
- Personnel induction and training will be recorded using the Training Record form – EMS Form 3.

Reporting

- Fauna deaths as a result of site activities will be recorded and reported as required.
- All fauna road kills will be reported to the Site Manager through incident reporting procedures.
- Mallee fowl deaths will be reported to National and State Malleefowl monitoring databases.
- All incidents and monitoring will be reported in the AER.

EMP - 05 Weed Management

Impacts

- Habitat degradation with the introduction of exotic species.
- Increased susceptibility to fire.

Objectives

- To maintain the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels through the avoidance or management of adverse impacts from all activities and through improvement in knowledge.
- To prevent the introduction and spread of weeds within the project area.

Management

Prevention

- Prior to land disturbance, surveys will be undertaken to determine the types and extents of existing weed infestations of the area.
- Weed maps, with relevant status boundaries, will be produced for the project. This information will be superimposed on the site plan.
- Where required, intra-project hygiene boundaries will be established to prevent the spread of weeds within the project area. These boundaries will be clearly demarcated on site and equipped with clean down facilities.
- A list and means of identification (including photographs) of significant weed species will be made available to relevant personnel.
- Equipment will be cleaned to remove soil, vegetation, rock and debris prior to arrival to site. Records of this process will be maintained by completing a **Mobilisation Hygiene Certificate** (Appendix 1).
- Approval for earth moving equipment to mobilise to site will be dependent on completion of hygiene requirements.
- Environmental induction of all employees/contractors will include awareness of weed impacts, identification of weed species/reporting of infestations and hygiene procedures.

Weed Control

- Weed dispersal will be controlled through establishment of weed hygiene procedures, and with staff being trained on the presence of established weeds within the Project areas, and within the local area.
- Midwest will remove and manage the Priority 1 weed *Echium plantagineum (Paterson's Curse) and apply the appropriate management controls for this weed. Recommended herbicides for use to control this weed include Chlorsulfuron, Metsulfuron methyl, Logran® and Glyphosate + 2,4-D ester and more details can be found on the Department of Agriculture and Food website at *http://agspsrv34.agric.wa.gov.au/dps/version02/01_plantview.asp?page=6&conten*

tID=48.

- Ruby Dock plants will have a suitable glyphosate herbicide, (e.g. Roundup ®, applied; and
- Where practicable, the appropriate herbicide will be applied once Ruby Dock (**Acetosa vesicaria*) is in full foliage and actively growing, and before it sets seed.
- Where practicable, the Project design will incorporate the principles of avoiding and minimising clearing of significant flora and vegetation units.
- Spot spraying will be undertaken on areas within freehold land boundaries only if prior consent is obtained from the relevant landowner. The Site Manager will authorise the implementation of any control programme within freehold land boundaries, on the basis of consultation with the landowner.
- Any new weed populations that arise in the project area as a result of project related activities will be removed.
- Weed infestation quarantine areas will be demarcated by the Site Manager, and access will be prohibited.
- Any equipment or vehicle considered to have been working in a weed risk area will be cleaned down before remobilising.
- Mobile clean-down facilities will be provided.

Performance Targets

- There are no persistent new introductions or spread of weeds as a result of the project.
- There is no impact to DRF or priority flora or flora of conservation significance.

Monitoring

- Weed infestation status surveys will be conducted by the Site Manager.
- The Site Manager will monitor weed hygiene compliance as per the MEMS.
- A targeted weed survey will be conducted at the completion of construction in each work area and repeated in the following growing season.

Reporting

- New infestations of weeds will be reported by personnel and investigated by the Site Manager.
- Incidents relating to a failure in hygiene processes will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Weed status and management will be reported in the AER.

EMP - 06 Topsoil Management

Current status

There is little harvestable topsoil available at all three mining areas.

Impacts

- Vegetation does not return due to lack of topsoil.
- Loss of seed bank and genetic variability.

Objective

- To maintain the integrity, ecological functions and environmental values of soil and landform.
- To ensure that rehabilitation achieves an acceptable standard compatible with the intended land use and consistent with appropriate criteria.

Management

- Areas from which topsoil will be removed will be indicated on site plans prior to commencement of stripping using the Site Disturbance Permit – EMS Form 8.
- The top 150 mm of topsoil will be stripped prior to land disturbance, wherever it is present.
- Topsoil will not be stripped when wet as this can lead to compaction and loss of soil structure.
- Where no topsoil exists and rehabilitation is required, topsoil will be sourced from previously disturbed areas or substituted with suitable material.
- Waste rock characterisation tests will be conducted to identify suitable materials as alternatives to topsoil where required and to determine waste placement for best rehabilitation outcome.
- Topsoil will be applied promptly to areas being rehabilitated. If stripped topsoil exceeds rehabilitation requirements at that time, excess topsoil will be stockpiled for later use.
- Topsoil stockpiles will be constructed no higher than 2 m and managed to preserve its biological activity.
- Topsoil stockpiles will be located within the same weed status area as the source of the material.
- If possible, stockpiles will be spread and scarified to encourage germination and seed bank enrichment while stockpiled.
- To minimise airborne dust from topsoil stockpiles /or areas where topsoils are sourced from, non-saline water will be applied when required. Surfaces will be monitored to ensure crusting does not inhibit seed germination, which also serves to reduce wind erosion.

Performance Targets

- All available topsoil and vegetation directly returned or stockpiled for later use.
- Restore the condition of "topsoil" to areas where no topsoil exists where possible.

Monitoring

- Regular inspections will be undertaken by the Site Manager to ensure that topsoil is being removed and stockpiled in the appropriate locations and that topsoil/topsoil substitute is only being sourced from approved areas.
- Topsoil stockpiles will be monitored for weed infestation.

Reporting

- Information on areas disturbed and volume of topsoil stripped and stockpile locations will be recorded by the Site Manager.

EMP - 07 Land Disturbance Control

Impacts

- Possible loss of habitat from unapproved clearing.
- Possible loss of Priority, endangered or Declared Rare Flora from unauthorised clearing.

Objectives

- To prevent unapproved land disturbance.
- To minimise the extent and significance of impacts from land disturbance.

Regulatory Permits/Approvals

- Native Vegetation Clearing Permit in compliance with *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* or as part of PER approval.
- Approved DoIR Mining Proposal and payment of performance bonds.
- Section 18 Approvals for disturbance to Aboriginal sites.
- Department of Environment and Conservation approvals for removal of Significant Flora and Fauna.

Internal Permits/Approvals

- Internal approval using the **Site Disturbance Permit** – EMS Form 8, prior to any clearing activities.

Management

- Only the minimum area required by the project will be disturbed.
- Personnel will undergo environmental induction training which discusses the importance of minimising vegetation clearing and disturbance.
- Locations of Aboriginal sites, significant flora, significant vegetation units, significant fauna habitats, and quarantine boundaries will be demarcated on site plans as part of the internal land disturbance approval. These areas will be managed according to relevant permits and management plans.
- Topsoil management for the land disturbance will be described as part of the internal approval process.
- Prior to commencement of works, areas to be disturbed will be demarcated by survey pegs in the field with reference to design / site plans. This will constitute a hold point requiring written approval from the Site Manager on the internal **Site Disturbance Permit**.
- Vehicles and machinery will only use designated tracks/roads.
- A copy of the **Mobilisation Hygiene Certificate** and any vegetation clearing

plans will be kept within the cab of all clearing equipment.
- Vegetation when removed will either be directly placed on rehabilitation areas or mulched and stockpiled for use during later rehabilitation.
- Vegetation will not be burnt without written approval of the Site Manager.
- Rehabilitation will be undertaken as soon as practicable after land disturbance.

Performance Targets

- No unapproved land disturbance.

Monitoring

- Personnel induction and training will be recorded using the Training Record – EMS Form 3.
- The Site Manager will regularly inspect construction areas to ensure:
  - Land Disturbance Plans and Permits are followed.
  - Disturbance limits are adequately demarcated.
  - Only authorised disturbance is being undertaken.

Reporting

- Unauthorised clearing will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Areas of clearing (in ha) will be reported in the AER.
- Land disturbance outside of approved project areas will be reported to the relevant local and state authorities.

EMP - 08 Haul Roads and Access Tracks

Impacts

- Loss of habitat from clearing for roads.
- Possible loss of individuals from road kills.

Objective

- To minimise direct adverse impacts on flora, fauna, vegetation and natural surface water systems.

Management

Planning

- Existing roads and tracks will be utilised in preference to clearing new areas.
- Haul roads and access tracks will be re-established on previously utilised areas.
- Disturbance to vegetation will be minimised and in accordance with approvals.
- Use Site Disturbance Permit – EMS Form 8.

Construction

- Erosion will be minimised by breaking windrows to allow drainage.
- Haul roads will be cambered to channel surface water run-off from the road and allow surface water flow through the existing area by using culverts and floodways.
- Clearing will not be carried out for tracks which are intended for 'once-only use'.
- Grading of tracks will be minimised and used only on rough, long sections of cleared tracks.
- Access tracks will be re-established to the minimum width possible without impacts to driver safety.
- Deep cutting into the soil profile will be avoided.

Operation

- Use of haul roads and access tracks is only permitted for authorised vehicles.
- Access tracks and haul roads will be signposted as private roads and warn other users that entry is only permitted if permission is granted by Site Manager.
- Procedures for obtaining access to Hauls roads and Access tracks will be communicated to stakeholders prior to commencement of operations.
- Site contact details will be provided at points of entry.
- Limit speeds on haul roads to 90 km/hr or 50 km/hr near known active mallefowl mounds.

Performance Targets

- No evidence of unnecessary access tracks or unapproved access tracks.

Monitoring

Regular inspections by the Site Manager will be undertaken to verify the haul roads and access tracks are used and maintained to the requirements above.

Reporting

- Major erosion events of the haul roads and access tracks will be reported and remedied.
- Unapproved access and tracks will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Unapproved activity and incidents will be reported in the AER.

EMP - 09 Borrow Pits and Quarries (Non-mineralised)

Impacts

- Loss of habitat from clearing for borrow pits.
- Interruption to surface water flows.

Objective

- To maintain the integrity, ecological functions and environmental values of soil and landform.
- To ensure that aesthetic values are considered and measures adopted to reduce visual impacts on the landscape to as low as reasonably practicable.

Management

- Prior to construction a borrow pit plan will be developed, this shall include:
  - Borrow Pit Checklist – EMS Form 9;
  - a map showing location;
  - intended size;
  - volume of material to be extracted; and
  - proposed rehabilitation.
- Borrow pits will be created on appropriate tenure and will have all necessary surveys and approvals. Sites selection will also consider all available biological and heritage survey knowledge.
- Where possible, borrow pits and quarries will be located behind physical terrain and/or vegetation belts or otherwise in areas that would reduce its visual impact.
- Where possible, borrow pits and quarries will not be located in areas where their presence would impact on surface drainage patterns.
- Where possible, trees and heavy stands of vegetation will be avoided.
- Topsoil and vegetation will be stockpiled for rehabilitation. This material shall be pushed to the longitudinal sides of the borrow pit.
- Batter angles will not exceed a 3 horizontal:1 vertical ratio.
- Where possible, each borrow pit and quarry will not exceed 1 ha in surface area.
- Access to borrow pits and quarries will be from a single track only.
- The removal of borrow material will be limited to inside the designated pit area.
- Drainage and erosion control structures will be developed around the pit to control the impact of substantial rainfall events.
- Borrow pits and quarries will be rehabilitated as soon as possible after use, and will be landscaped to best fit into the existing environment.
- The final depth of borrow pits and quarries will not be more than 2 m or as otherwise approved.

Performance Targets

- Minimal visual impact from borrow pits and quarries.
- Free draining and safe structures are achieved as part of borrow pit and quarry rehabilitation (excepting the iron ore pits).

Monitoring

- Monitoring will be undertaken using the Environmental Inspection Form – EMS Form 7;
- Monitoring of rehabilitation will occur as noted in the **Rehabilitation EMP (EMP-19)**.
- The Site Manager will verify compliance with this procedure as part of routine site inspections.

Reporting

- Non-compliance with borrow pit and quarry specifications will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Non-compliance and incidents will be reported in the AER.

EMP - 10 Overburden Stockpiles

Impacts

- Contamination by sulphidic waste materials is highly unlikely to be an issue on this project.
- Changes to the visual landform of the area.

Objective

- To maintain the integrity, ecological functions and environmental values of soil and landform.
- To ensure that aesthetic values are considered and measures adopted to reduce visual impacts on the landscape to as low as reasonably practicable.

Management

Design

- Design of overburden structures will meet all DoIR guidelines and include:
  - a final outslope that is stable and no greater than 20 °;
  - provision of adequate drainage of surface water; and
  - provision for erosion stabilisation.
- Overburden stockpiles will be constructed in accordance with specified criteria and to conform with surrounding natural landforms.
- Overburden stockpiles located near drainage channels will be monitored and rock armoured if necessary to prevent scouring and erosion.
- Where required, windrows will be used along the toe and crest of slopes to prevent erosion of the face from surface water run-off. Toe windrows will help contain eroded material.
- Where practicable, overburden stockpiles will be constructed with a rounded footprint and blended into existing landform.

Performance Targets

- Overburden stockpiles comply with design criteria.
- Minimal visual impact of overburden stockpiles.

Monitoring

- Monitoring of rehabilitation will occur as noted in the **Rehabilitation EMP (EMP-19)**.
- The Site Manager will inspect and maintain drainage and erosion control structures.

Reporting

- Overburden stockpile plans will be approved by the Site Manager prior to the commencement of construction.
- Major erosion occurrences are to be investigated using the Environmental Inspection Form – EMS Form 7.

EMP - 11 Surface Water

Impacts

- The potential impacts of the Project on surface and ground waters, with appropriate management, are likely to be negligible.
- Potential for contamination of surface and ground waters from hydrocarbon and chemical handling and waste management practices.
- Potential to influence the Gilgai formation at Mungada.

Objectives

- Minimise impacts to surface resources during mining.
- Control and contain contaminated water on site to prevent entry into the natural drainage system and surrounding vegetation.
- Maintain the quality and quantity of surface so that existing and potential environmental values, including ecosystem maintenance, are protected.
- Maintain the integrity, ecological functions and environmental values of the adjacent Gilgai formation at Blue Hills.

Management

Design

- Obtain a 5C Licence to Take Groundwater under the *Rights in Water and Irrigation Act 1914* for all disturbance of a prescribed creek.
- An investigation to determine storm / surface water management requirements will be completed as part of project design.
- Obtain a bed and banks permit for all construction that will interfere with prescribed creeks.
- Drainage structures will be designed and constructed to ensure minimal alteration to existing surface drainage patterns.
- Existing bridges and culverts will be used where practicable.
- Appropriate design standards will be applied to allow for the provision of scour protection measures.
- Pre-existing haul roads and access tracks will be used to minimise interference to natural drainage.
- Drainage areas and settling basins will be suitably designed to minimise contamination of surface water.
- Any new disturbance areas will be located to avoid drainage lines and designed for minimal impact on surface drainage as far as practicable.

Watercourses and Water Quantity

- Existing culverts will be re-established where possible under roads, embankments and formations to allow free flow of drainage water and to assist in water shedding from the site.

- Cleared vegetation and topsoil will be stockpiled away from watercourses and in discrete stockpiles to avoid any interference to surface flows.

Water Quality

- Contaminated water from work areas will be kept separate from clean storm water.
- Water interfacing with work areas will be directed to oil water separators.
- Oily materials will be removed prior to reuse of the water.

Performance Targets

- No significant erosion or sedimentation due to project activities.
- No significant disruption to natural drainage flows.
- No evidence of impacts from saline or contaminated water.

Monitoring

- Regular inspections of drainage structures and erosion control measures will be carried out as soon as possible after periods of heavy rainfall.
- Regular inspections of working areas and machine maintenance facilities will be undertaken to ensure hydrocarbon management facilities are operating correctly, eg. Oil/water separators.

Reporting

- Pollution and erosion events and 'near-miss' situations will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Incidents and non-conformance will be reported in the AER.

EMP - 12 Groundwater

Impacts

- Impacts on groundwater sources through use are unlikely to present an issue on this project.

Objectives

- Minimise impacts to ground water resources during mining.
- To maintain the quality and quantity of groundwater so that existing and potential environmental values, including ecosystem maintenance, are protected.
- To maintain the integrity, ecological functions and environmental values of wetlands and drainage systems.
- To ensure that emissions do not adversely affect environmental values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards.

Management

Design

- A Ground Water Management Plan will be developed and implemented prior to operations commencing.
- Wherever possible, the project will review options to reduce water requirements and utilise alternative sources of water.
- An investigation to determine groundwater characteristics and management requirements will be completed as part of project design.
- The extent of dewatering and its associated impacts to groundwater dependent ecosystems and stygofauna will be determined.
- Impact reduction measures will be implemented where required. This may include design of extraction bore fields and rates of extraction.
- A **Groundwater Management Plan** will be developed and implemented as part of Licence (5C) conditions. This plan will include appropriate trigger values, a monitoring program, and impact management strategies.

Groundwater Quality

- Groundwater contamination will be prevented by appropriate secondary containment and management of waste and hazardous materials, and management of surface water quality.
- Trigger values for groundwater quality will be developed. These will reflect parameters that affect the health of ecosystems including remnant vegetation, and stygofauna.

Groundwater Quantity

- Rate and volume of groundwater extraction will be in accordance with Licence to take water # GWL159255(1) issued by the Department of Water for the period 31 May to 1 June 2011 and other licences which may be required.
- Trigger values for groundwater levels will be developed to reflect conservation of the health of ecosystems including remnant vegetation and stygofauna, where applicable.

Performance Targets

- No exceedence of trigger values as specified in the **Groundwater Management Plan**.
- No breach of licence conditions.

Monitoring

- Groundwater extraction rates will be recorded and documented.
- A program will be established to monitor groundwater quality and quantity on and adjacent to the project area. This will include a network of monitoring bores at appropriate locations to be determined in consultation with the Department of Environment and Conservation on advice from the Department of Water.
- The program will include an assessment of impacts to relevant ecosystem indicators, eg. Stygofauna or vegetation communities.
- The monitoring program will be implemented to the satisfaction of the Department of Environment and Conservation and the Department of Water.

Reporting

- Compliance and performance reports will be provided to the Department of Environment and Conservation and Department of Water as required and details included in the AER.

EMP - 13 Dust Management

Impacts

- Generation of dust causing respiration difficulties and affecting the health of individuals.
- Possibly cause a health impact to such vegetative species within the TEC area.

Objectives

- To ensure that emissions do not adversely affect environmental values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards.
- Ensure that emissions do not adversely affect environmental values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards;
- Minimise dust associated with the construction and operation of the mines; and
- Minimise exposed surfaces through clearing minimisation, staged clearing and progressive rehabilitation.

Management

General

- minimisation of vegetation clearing;
- staged clearing and progressive rehabilitation to minimise exposed areas;
- regular inspections to visually assess dust generation; and
- halting of operations during of weather conditions which have the potential to generate excessive and uncontrolled levels of dust, particularly toward the recognised Threatened Ecological Community.

Mine

- During construction and operations activities, dust will be minimised by:
  - using water sprays (where appropriate);
  - using covered and skirted conveyors at ore transfer points;
  - sealing of relevant joints and installation of a dust collection system; and
  - ensuring correct equipment design, operational procedures and adequate operator training occurs.
- Dust modelling will be conducted as part of project design to determine potential impacts to sensitive receptors. This includes impacts of dust deposition on vegetation, as well as PM_{10} levels at nearby residences.
- Information from the modelling will be used to determine required management practices.
- The crushing and screening plant will be fitted with dust suppression features that may include but are not limited to:
  - containment apparatus on conveyor transfer points;
  - belt scrapers on the conveyor belt;

- collection trays under the belt plough on the return belt;
- dust suppression sprinklers at transfer points and stockpiles; and
- deluge sprays at the ROM area and the hopper.

- Staged clearing and progressive rehabilitation to minimise exposed areas.

Haul Roads

- Water tankers will be used to moisten areas which have the potential to generate dust, including areas that receive heavy traffic, unsealed roads and access tracks.
- Lignosulphonate binders will be used to surface treat the haul road where necessary.
- Vegetation clearing and exposed surfaces will be kept to a minimum wherever practicable.
- The performance of dust suppression equipment will be monitored and equipment will be maintained in an efficient operating condition.
- Where unacceptable dust levels occur, further dust suppression controls will be implemented.
- Dust suppression methods will be developed in consultation with the DEC to maintain the integrity of neighbouring DEC land if required.

Performance Targets

- No dust complaints from the community during development, operation and closure of the site.
- No impact to DEC land.
- No adverse impacts on vegetation.
- No dust samples to exceed statutory requirements.

Monitoring

- Periodic visual dust assessments are to be implemented by the Site Manager as part of routine site inspection.
- Ambient Dust sampling regime will be established in consultation with regulatory authorities.
- Dust incidents will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Dust monitoring will occur through stationary dust samplers at the Koolanooka pit. Dust management methods will be audited on at least an annual and as needs basis.
- Personnel induction and training will be recorded.

Reporting

- Community complaints will be investigated and reported to the Department of Environment and Conservation as required.
- All incidents of dust complaints will be reported in the AER.
- All monitoring data will be reported in the AER.

EMP - 14 Noise Management

Impacts

- Generation of vibration and noise reducing habitat utilisation.
- Possible disturbance to local residence.

Objectives

- Minimise the noise and vibration associated with the construction and operation of the proposal.
- Protect the amenity of nearby residents from noise and vibration impacts resulting from activities associated with the proposal by ensuring the noise and vibration levels meet statutory requirements and acceptable levels.

Management

- Plant and equipment selection and design will consider potential noise impact.
- Low-noise equipment will be used as far as practicable.
- Silencers, mufflers and noise barriers will be used where necessary.
- Blasting conducted during daylight hours only.

Performance Targets

- No noise complaints.
- Compliance with Noise Regulations.

Monitoring

- Monitoring will may be undertaken to verify complaints.
- Noise monitoring will occur in accordance with statutory requirements.
- Incidents of noise complaints will be maintained via the incident reporting procedure.

Reporting

- Complaints will be investigated using the Incident and Non-conformance Report Form – EMS Form 5, and reported to the Department of Environment and Conservation as required.
- All incidents of noise complaints will be reported in the AER.

EMP - 15 Waste and Hazardous Material Management

Impacts

- Spills resulting in loss of habitat through contamination.
- Possible contamination of local soil, groundwater or surface waters.

Objectives

- Minimise the environmental impacts of hydrocarbons, chemicals (solvents, cleaning fluids etc.) and explosives through appropriate storage, handling and disposal.

Management

Stormwater catchments

- Storm / surface water management requirements will be implemented eg. sediment ponds and hydrocarbon traps in appropriate places.
- Stormwater interacting with the facilities and work areas described below will be contained within an enclosed catchment through design of roads and drainage diversion channels.
- Oily materials and sediments will be removed prior to reuse of the water.

Bulk Storage Facilities

- Bulk hydrocarbons containers will be stored and managed in accordance with *Australian Standard 1940 – The Storage and Handling of Flammable and Combustible Liquids (AS 1940-1993).*
- Containers that are self bunded (double skinned) will be protected against collision by equipment and/or vehicles by the placement of appropriate barriers or bollards.
- Containers that are not self bunded will be secondarily contained in facilities with impervious floors and bunds, with a capacity to contain 110 % of the volume of the largest tank or 25 % of the total volume stored in the compound.
- Containers will be appropriately labelled as required by the relevant legislation.
- Areas adjacent to secondary storage facilities will be contoured to drain away from the facilities to prevent impact and flooding.
- Water or other liquids that collect in the storage facilities will be removed and treated. This is to maintain the containment capacity and integrity of the facility.
- All hazardous materials will be stored as directed on the Materials Safety Data Sheet (MSDS).
- A copy of the MSDS will be kept with the stored item and on file with the HSE Representative.

Minor Storage

- Drums and small containers of hydrocarbon products will be stored upright with fitted lids, in secondarily contained facilities.
- Storage facilities will have impervious floors and bunds, with a capacity to contain 110% of the volume of the largest container or 25% of the total volume stored in the compound.
- Drums and containers will be checked regularly for signs of corrosion and leaks.
- Containers will be labelled as directed by the MSDS
- All hazardous materials will be stored as directed on the Materials Safety Data Sheet (MSDS).
- A copy of the MSDS will be kept with the stored item and on file with the HSE Representative.
- Fuel filled equipment will be earthwork or drip tray bunded where necessary.

Spills

- Spill response equipment will be readily accessible in each work area to enable quick response to spills. As a minimum, spill response equipment will be located at fuel storage and transfer facilities, work areas, near open water bodies, and at maintenance workshop areas.
- Spills will be controlled at the source, contained and cleaned up as soon as they occur. Contaminated material will be removed and bio-remediated (if biodegradable) or disposed at a licensed facility.
- The environment Induction will include a component on spill response.
- Required personnel will receive spill kit training.
- Personnel will be competent in spill management.

Waste Disposal

- Storage of waste oil on site will be in accordance with the *Dangerous Goods Regulations 1992*.
- Waste oil will be managed in accordance with the bulk storage and / or minor storage management requirements described above.
- Where practicable, waste materials will be minimised by reuse and recycling.
- Oily waste materials (filters, rags, spill clean up materials) will be segregated from general waste, contained and disposed of off site at a licensed facility.

Bio-remediation Facility

- Soil and biodegradable materials contaminated by hydrocarbons will be disposed in a designated site for bioremediation in accordance with the Environmental Protection Authority Guidelines for Oil Farming of Oily Wastes.
- The bio-remediation facility will be vertically separated from the groundwater table.
- Materials in the facility will be placed at depths of less than 30 cm, aerated

through periodic tilling and kept moist to encourage bacterial activity.

- When remediated materials contain acceptable levels of hydrocarbons (to be determined in consultation with the Department of Environment and Conservation), the materials will be used in rehabilitation.

Workshop / Servicing Areas

- Where practicable, a dry workshop policy will be implemented. Spills will be picked up by absorbent materials.
- Vehicles and mobile equipment will be washed down on a concrete surface that drains to a sump. Oils and sediments will be separated from the wash down water, prior to the water being re-used on site.

Explosives

- Storage of explosives will be in a remote magazine in accordance with the *Explosives and Dangerous Goods Act 1961* and *Explosives and Dangerous Goods (Explosives) Regulations 1963.*
- Explosives will be stored in a secondarily contained magazine remote from the mine site and process plant, and managed in compliance with Department of Consumer and Employment Protection license.
- Spills of nitrate based explosives will be removed by being hosing with water.

Performance Targets

- No evidence of spills on site (spills cleaned up on occurrence).
- Compliance with secondary containment and risk abatement procedures.

Monitoring

- The Site Manager will regularly inspect work areas to ensure that hazardous material and waste management systems are effective and in accordance with relevant procedures.
- Monthly site audits of waste management and procedures will be undertaken by the Site Manager.
- Personnel induction and training will be recorded using the Training Record form – EMS Form 3.

Reporting

- Spills and non-compliance with procedures will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.
- Performance will be reported to the Department of Environment and Conservation and/or Department of Consumer and Employment Protection as required.
- All incidents will be reported in the AER.

EMP - 16 Fire Management

Impacts

- Possible habitat loss and mortality of individual flora and fauna.

Objectives

- To prevent and minimise the risk of a bushfire as a result of activities.

Internal Permits/Approvals

- Internal approval for Hot Works will be issued by the Site Manager.

Management

- All employees and contractors will undergo a site environmental induction that includes bushfire prevention and emergency response procedures.
- Select site personnel will undergo advanced training in fire suppression.
- Hot work and workshop areas will be at least 3m from bordering vegetation.
- Fire breaks will be established around the site in agreement with the Fire and Emergency Services Authority (FESA) and the Department of Environment and Conservation.
- Mobile plant and light vehicles will be equipped with appropriate fire suppression equipment that complies with relevant Australian Standards and staff will be trained in its use.
- Internal hot work permits will be required for work that has the potential to create ignition sources. Hot works will not occur within 3 m of vegetation without a prior risk assessment and written approval from the Site Manager.
- Fire extinguishing equipment will be available at each work area where hot works occur, and will be maintained in accordance with Australian Standards.

Performance Targets

- No bush fires caused by mining related activities.

Monitoring

- Routine inspections of housekeeping, fire fighting equipment and fire breaks will be undertaken by the Site Manager.
- Personnel induction and training will be recorded.

Reporting

- Fires will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.

Incidents will be reported to DoIR and the Department of Environment and Conservation as required and in the AER.

EMP - 17 Sewage Management

Impacts

- Leaching of contamination to the ground water.

Objectives

- To ensure that sewage is managed to acceptable standards and criteria.

Management

- Sewage and grey water from the mine operations will be treated on-site using approved septic tank and leach drain systems.
- Septic tanks and leach drains will be constructed and maintained in accordance with Department of Health and Local Council requirements.
- No licence is required.

Performance Targets

- Compliance with design and maintenance requirements.

Monitoring

- As required by the Department of Environment and Conservation and Shire Health Inspector.

Reporting

- As required by the conditions of the Department of Environment and Conservation Pollution Prevention Licence and the Shire Health Inspector.

EMP - 18 Housekeeping and General Waste Management

Impacts

- Visual amenity may be impacted by inadequately managed waste.
- Feral animals may be encouraged to the area.

Objectives

- To ensure that general wastes created by the project are managed to acceptable standards and criteria.

Management

- Waste generation, where practicable, will be minimised through the adoption of efficient designs, reduction of materials required, and reuse and recycling where practicable.
- All general waste will be managed by a licensed Contractor and removed from site for disposal in an approved landfill.
- Waste receptacles will be available at the appropriate locations to enable waste segregation and containment.
- Waste will be segregated into general waste, recyclable wastes and hazardous waste.
- As a minimum batteries and scrap metal will be recycled.
- A Bellan Cage will be utilised to prevent the spread of windblown litter on site.
- Cigarette butts will be disposed of appropriately.
- Waste will be secured against wind blown litter and animal foraging.
- Littering will be prohibited.
- Work areas will be kept neat and tidy.
- On decommissioning of a work area, non-permanent structures and facilities will be removed and disposed of appropriately in accordance with the **Closure Plan** (separate plan).

Performance Targets

- High standard of general house keeping on site.
- Wastes are segregated and recycling opportunities have been maximised.

Monitoring

- Monthly audits of all areas will be undertaken.
- Waste production will be audited periodically to identify new opportunities for reduction, re-use and recycling

Reporting

- Non-compliance with this procedure will be investigated using the Incident and Non-conformance Report Form – EMS Form 5.

Waste management will be reported in the AER.

EMP - 19 Rehabilitation

Impacts

- Inappropriate/inadequate rehabilitation, which does not establish suitable habitat and resources.

Objectives

- Ensure, as far as practicable, that rehabilitation achieves a long term safe, stable and functioning landform which is consistent with the surrounding landscape and other environmental values.
- Fulfil commitments made to stakeholders and regulators regarding closure outcomes.

Management

- All rehabilitation will be completed in accordance with the **Conceptual Closure Plan and the Final Closure Plan.**

Removal of Infrastructure and Landscaping

- Temporary infrastructure will be removed, divested or otherwise disposed of appropriately.
- Soil contaminated with hydrocarbons will be removed and bioremediated.
- Borrow pits and other excavations, other than the iron ore pits, will be rehabilitated directly after close of mining. Slopes will be battered to an angle of 15 º or less. The maximum final depth of borrow pits and other small excavation structures will be 2 metres from natural ground level other than the iron ore pits.
- Disturbed areas will be land formed to achieve free draining status and blend in with the surrounding environment.
- Pre-existing drainage networks will be re-established.
- Erosion and sedimentation will be minimised by the construction of erosion control berms, bunds or contour banks as appropriate.
- Windrows that interfere with natural drainage will be breached as a minimum, and completely removed if possible.
- Compacted surfaces no longer required for operations will be contour ripped to promote water penetration and the catchment of seeds.
- Waste dumps will be constructed to blend with the surrounding landscape and have the following structural criteria:
  - Maximum height 25 m above natural ground level at the structure site;
  - 8 metre wide berms every 10 m of height;
  - Berms to be sloped at 5 º into body of dump;
  - Berms to have cross bunds placed every 30 m;
  - Top surface and berms to have crestal bunds.

Revegetation

- Disturbed areas will be progressively rehabilitated.
- Topsoil (150 mm, if available) or a suitable growth medium and vegetation (if available) will be spread over the area.
- Where appropriate and if required, to provide an adequate revegetation outcome, native provenance seeds will be used to enhance revegetation.
- Dieback and weed boundaries and hygiene requirements will be maintained during rehabilitation.
- Rehabilitated areas will be sign-posted and protected from disturbance.
- Areas where revegetation is not successful will receive remedial attention as necessary.

Waste Dumps

- Maximum height 25 m above natural ground level at the structure site;
- 8 metre wide berms every 10 metre of height;
- Berms to be sloped at 5º into body of dump;
- Berms to have cross bunds placed every 30m; and
- Top surface and berms to have crestal bunds.

Performance Targets

- Progressive rehabilitation opportunities have been maximised.
- Rehabilitation meets agreed closure and sign-off criteria.

Monitoring

- Site inspections will be undertaken to ensure progressive rehabilitation is undertaken where feasible.
- Decommissioning of temporary construction facilities will be monitored for compliance with procedures.
- Success of rehabilitation will be monitored and remedial actions undertaken where necessary.

Reporting

- Compliance with this procedure will be reported to the Department of Environment and Conservation and the Department of Industry and Resources during and at the end of operations in the AER.

EMP - 20 Continuous Improvement

Objective

- To continually seek improvements in performance.

Management

- Use of the Environmental Meeting Minutes Template – EMS Form 4.
- Personnel will be encouraged to continually improve their performance through incentive and recognition schemes, new information and internal "toolbox" meetings.
- Improvement ideas will be actively shared with the project team.
- Work practices and procedures will be revised as a result of ideas or corrective actions. These changes will be communicated to relevant personnel.

Monitoring

- Improvements in performance and targets will be documented.

Performance Targets

- Performance targets will be established during operations and reviewed annually to provide goals for improvement.

EMP - 21 Reporting General

Objective

- Compliance with statutory reporting requirements.

Management

- Annual Environmental Reports (AER) will be compiled addressing all aspects of environmental impact and management.
- Information gathered in the reports stated in this EMP will be included in the AER.

Performance Targets

- AER submitted to regulators by required date.

4.0 CONTINGENCIES

An Incident Contingency Plan is provided, Figure 4. In the event of non-compliance immediate action will be taken to rectify the issue followed by a review of procedures.

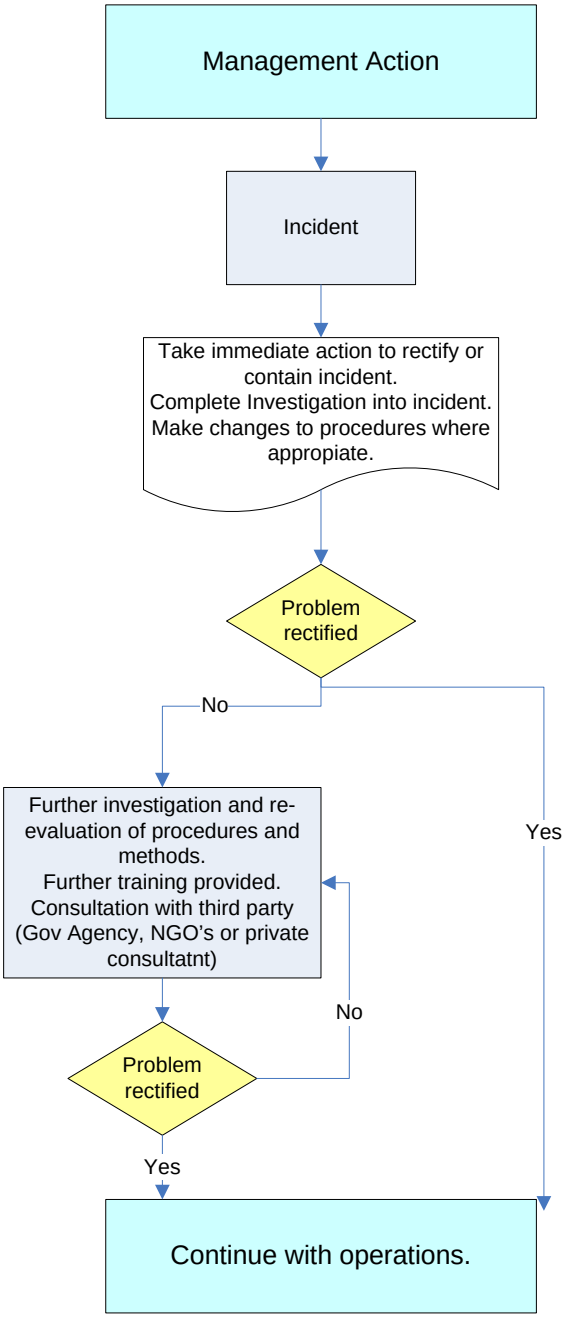


Figure 4-1: Contingency Plan

5.0 STAKEHOLDER CONSULTATION

Consultation with relevant stakeholders was required as part of the environmental approval process for the Project and is ongoing. A number of methods have been used to engage the public on the proposed Project, depending on the issue or information required.

Two public consultation meetings were held at Morawa on 22 June 2004 and 6 December 2006 and one in Perenjori on 7 December 2006. During these consultation meetings Project information was presented to the communities and the public were given an opportunity to raise queries or concerns.

Midwest has also undertaken ongoing consultation and liaison with the Shires of Morawa and Perenjori. Two local council special sessions were held on 6 and 7 December 2006 respectively, to discuss the Project scope. The Shires of Morawa and Perenjori support the recommencement of operations at the mine site. Other issues raised included benefits to the town and district and alternative employment opportunities.

A briefing session similar to the public meetings in Morawa and Perenjori was held in Perth on 24 January 2007. Invitees to this meeting included representatives from government agencies and Non-Government Organisations (NGO's), including the Conservation Council of WA and the Wildflower Society. Discussions revolved around the scope of Project works and the types of investigations being conducted

Midwest has undertaken ongoing consultation and liaison with the landowners in the vicinity of the mine site. As required by the Mining Act, 1978, Midwest is entering into agreements with each of the landowners that own freehold land subject to Mining Leases owned by Midwest.

Briefings, meetings and discussions have been held with a range of state and regional agencies and advisory bodies. Discussions have been held with:

- Department of Environment and Conservation (DEC Perth).
- Department of Environment, Water, Heritage and the Arts (DEWHA, Canberra).
- Department of Indigenous Affairs (DIA, Perth).
- Department of Industry and Resources (DoIR, Perth).
- Department of Planning and Infrastructure (DPI, Perth).
- Department of Premier and Cabinet (DPC, Perth).
- Environmental Protection Authority (EPA, Perth).
- Environmental Protection Authority Services Unit (EPASU, Perth).

These agencies have been involved in Project discussions and invited to comment on relevant aspects of the scope and adequacy of investigation methodologies. Accordingly, Midwest has refined and expanded the scope of environmental investigations.

Midwest will continue consultation with regulators throughout the Project planning, construction and operation to ensure that issues regarding the Project are managed appropriately.

Specific consultation undertaken with agencies and individuals is further detailed in the PER.

Table 5-1 Project Consultation

Stakeholder Group	Stakeholder Contact
Shire of Morawa	CEO and President of the Shire of Morawa
Shire of Perenjori	CEO and President of the Shire of Perenjori
DEC Environmental Protection Branch	Joe Grehan, Nick Woolfrey.
DEC Threatened Species Unit	John Blyth, Rosemary Rees, John Riley.
DEC Midwest Region	Beth MacKernan
DoIR	Eugene Bouwhuis, Ana Mesquita, Tammie Webb
DEC EPASU	Danielle Griffiths
Morawa Agricultural College	
Morawa High School	
Landowners	Lindsay, Noeline, Dean and Tonia Clarslake, David and Jodie Baxter, John and Rebecca Cunningham, Robert and Susie Moore, Colin and Carol Malcolm, Trevor and Shirley Tapscott.
Conservation Council of WA	Chris Talentyre
Wildflower Society of WA	Brian Moyle
Native Title Claimants	The Widi Mob, Pandawn Descendants, Yamatji Marlpa Barna Baaba Aboriginal Corporation, Amangu Mob.

6.0 CHECKING AND CORRECTIVE ACTION

6.1 Environmental Incident Reporting

Midwest views an environmental incident as any one of the following:

- A situation that is non-compliant with EMP, legislative or Contractual requirements;
- Any event that results in environmental damage or pollution; and
- Any unauthorised activity (eg clearing outside of approved areas).

To manage incidents and reduce the risk of recurrence, Midwest will:

- Communicate to project personnel the need to report environmental incidents to the Environmental Manager;
- Ensure incidents are recorded on appropriate Incident Report Forms;
- Implement immediate corrective actions to minimise the extent of environmental impact;
- Notify the Client of an incident within 12 hours of the incident occurrence;
- Conduct incident investigations appropriate to the actual and potential severity of the event. A full investigation will be conducted to determine root causes of the significant events such as regulatory non-compliances, complaints and significant pollution;
- Submit an environmental incident report to the Client within 24 hours of the incident occurrence or as directed based on incident severity (within 12 hours for significant events);
- Reduce the risk of incident recurrence through preventative actions; and
- Depending on the nature of the incident the client may need to notify DIA, DoE, CALM or DoIR

6.2 Non Conformance, Corrective and Preventative Action

Non-conformances may be identified in inspections, audits, incidents and complaints. These non-conformances will be addressed with preventative actions to reduce the risk of recurrence. To facilitate this process, Midwest will:

- Determine the root causes of non-conformances;
- Implement corrective and preventative actions that are appropriate to the nature and scale of the non-conformance;

- Assign and communicate actions to a nominated person who will be responsible for its completion within and agreed timeframe;
- Record and track these actions in a Continuous Improvement Action Plan;
- Ensure that documentation is updated if work procedures are changed as part of the preventative actions;
- Review and update the risk register if required;
- Communicate changes to personnel; and
- Verify that actions have been completed and are effective (part of weekly inspection program).

7.0 REVIEW

This management plan will be reviewed every two years or at such time as the project scope changes. A review will be undertaken within 6 months of approvals or licence conditions being granted. The revision status will be recorded as directed by the Midwest Document Control Procedure.

The review will seek to incorporate any new investigations, information and new working techniques.

7.1 Continuous Improvement Action Plan

A Continuous Improvement Action Plan (CIAP) will be maintained for each project to document and track corrective and preventative actions, as well as proactive initiatives to improve environmental performance.

The Safety Risk Register may be utilised by the Site NRW HS&E Advisor in preference to the CIAP register, to prevent doubling up of risk recording, so long as all elements of the CIAP register are used, as listed below:

Midwest will maintain a CIAP which documents:
- Actions required;
- Schedule for completion;
- Description of resources required;
- Nomination of responsibilities; and
- A flag to review risk ranking.

The Environmental Manager will be responsible for the management of the CIAP and will:
- Review outstanding action items on a weekly basis;
- Review the effectiveness of corrective and preventative actions on a weekly basis;
- Organise resources to complete action items;
- Check that action items are completed within the nominated time frame; and
- Verify that action items are completed satisfactorily.

GLOSSARY

AER - Annual Environmental Report
CALM - Conservation and Land Management
DEC - Department of Environment and Conservation
DOIR - Department of Industry and Resources
DOW - Department of Water
DSO - Direct Shipping (Iron) Ore
EMP - Environmental Management Plan
EPBC - Environmental Protection and Biodiversity Act
FESA - Fire and Emergency Services Association
ISO - International Standards Organisation
MEMS - Midwest Environmental Management System
PM_{10} - Unit for measuring Particulate Matter
ROM - Run of Mine

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9.0 APPENDICIES

Appendix 1

Mobilisation Hygiene Certificate

Page 1 of 1	**MOBILISATION HYGIENE CERTIFICATE**	**Midwest Corporation**

Date:		**Contractor**					
Contract Number		**Address**					
Purchase Number		**Phone Number**		**Fax Number**		**Site Contact**	
Location of Equipment Usage							

UNIT NO.	**EQUIPMENT DESCRIPTION** (Please complete as comprehensively as possible for each unit)	**Registration No.**	**Location of last works undertaken by equipment**	**Date Cleaned**

Certified	
Signature	
Position	
Date	