



Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

GUIDELINES

Mining Proposal Guidance –

How to prepare in accordance
with Part 1 of the
*Statutory Guidelines for
Mining Proposals*

Version 6.0

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Document Hierarchy for mining proposals under the *Mining Act 1978*

Legislation	<i>Mining Act 1978</i>
Statutory Documents	Statutory Guidelines for Mining Proposals
Policy	Environmental Regulatory Strategy Environmental Objectives Policy for Mining
Guidelines	This Document Guide to the preparation of Tailing Storage Facilities Design Reports, 2015
Procedures	Environmental Applications Administrative Procedures

Version History

Version	Date	Changes
1.0	2006	Initial Publication.
2.0	2016	Introduced environmental risk assessments.
3.0	2019	Statutory requirements and guidance material published into separate documents.
4.0	2023	Updated to reflect amendments made to the Mining Rehabilitation Fund (MRF) Regulations in 2021 and other minor administrative amendments.
5.0	2023	Minor administrative changes to reflect incoming <i>Aboriginal Cultural Heritage Act 2021</i> .
6.0	2023	Minor administrative changes to reflect the reinstatement of the <i>Aboriginal Heritage Act 1972</i> .

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PURPOSE

The purpose of this Guidance document is to assist the preparation of mining proposals under Part 1 of the *Statutory Guidelines for Mining Proposals*. A glossary of definitions and acronyms is provided in Appendix 1.

OBJECTIVES

The Department of Mines, Industry Regulation and Safety (DMIRS) is responsible for regulating mineral exploration and development activities in Western Australia (WA) under the *Mining Act 1978* (Mining Act).

The objective of this Guidance document is to clearly identify DMIRS' expectations of the information to be included in a mining proposal and ensure that:

- Mining proposals received are of a high quality and provide sufficient detail on relevant factors.
- The information is targeted and proportionate to the type of activity being undertaken and the level of environmental risk posed by the activity.
- Requests for further information back to the proponent are minimised.

SCOPE

The Mining Act requires a tenement holder or authorised person to submit a mining proposal in the prescribed manner, and obtain written approval for the mining proposal from a prescribed official, prior to undertaking any mining operations on a lease granted under the Mining Act. It is also a condition of all tenements that ground disturbing activity cannot occur unless it is approved via a relevant mining proposal (or programme of work for exploration or prospecting activities).

Commencing mining operations without the written approval of the prescribed official is a breach of tenement conditions and renders the tenement(s) liable for forfeiture under the Mining Act.

The Mining Act defines a "mining proposal" as a document that:

- a. is in the form required by the guidelines;
- b. contains information of the kind required by the guidelines about proposed mining operations in, on or under the land in respect of which a mining lease is sought or granted, as the case requires; and
- c. contains a mine closure plan.

The *Statutory Guidelines for Mining Proposals* are the guidelines as defined in section 700 of the Mining Act and mandate the form and content of information required in a mining proposal.

This guidance document relates to Part 1 of the *Statutory Guidelines for Mining Proposals*. The Part 1 form and content must be used, except if the proposed activities on the tenement are categorised as small mining operations as defined in Part 2 of the *Statutory Guidelines for Mining Proposals*.

GUIDANCE ON HOW TO PREPARE A MINING PROPOSAL UNDER PART 1 OF THE STATUTORY GUIDELINES

The mandatory requirements of a mining proposal for Part 1 are set out in the *Statutory Guidelines for Mining Proposals* and are included under each section below for ease of reference. Early engagement with DMIRS and other key stakeholders is strongly encouraged throughout the development of a mining proposal and prior to submission to ensure that the preparation and assessment process runs smoothly. Appendix 2 provides a mining proposal scoping template for pre-consultation between the proponent and DMIRS. Appendix 9 provides a checklist intended to provide additional guidance to assist with the preparation of a mining proposal.

1. Cover Page(s)

As per the *Statutory Guidelines for Mining Proposals* the mining proposal cover page(s) must include:

- title;
- revision and version numbers (revisions constitute each new registration; versions constitute amendments to revisions);
- date (day month year) (must be updated with each new version);
- tenement(s); and
- tenement holder or authorised company/person.

2. Tenement holder authorisation

As per the *Statutory Guidelines for Mining Proposals* if the mining proposal is submitted by a person other than the tenement holder(s), then it must include authorisation from all tenement holders.

Mining proposals that have not been submitted by the tenement holder, or that cover tenements held by multiple tenement holders, must include an authorisation from all tenement holders.

Authorisation is best presented through a signed letter from the tenement holder(s) stating that authority is given to the applicant to submit mining proposals and conduct mining activities on those tenements.

The responsibility to comply with all obligations and tenement conditions is retained by tenement holder(s), and is not removed by allowing third parties to undertake work on a tenement.

3. Environmental Group Site details

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must include:

- site name and code (environmental group site name and code from EARS2 system or note if this is a new site);
- description of mining operation;
- phase of mining;
- commodity mined;
- estimated commencement and completion dates;
- tenement(s);
- tenement holder(s) or authorised person (if applicable);
- ACN/ABN;
- address; and
- key contact representative (name, position, phone number and email address).

An Environmental Group Site (EGS) is a grouping of tenements that make up a particular operation. An EGS should be a mine site/operation that the tenement holder wants to report on as a single entity, and will have one mine closure plan, one annual environmental report (AER) and ideally one mining proposal. For further guidance refer to Appendix 3. This section of a mining proposal is intended to capture and display information specific to the EGS for which a mining proposal is being submitted and outline the key characteristics of the EGS. Appendix 4 provides a template which can be used to submit the required information.

4. Proposal Description

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must include a description of the mining activities that are the subject of the proposal and how the mine will operate.

5. Activity Details

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must include activity details as detailed below and be in the form of the table at Appendix 1:

- A table of all proposed activities for each tenement.
- Each activity must have a description of its infrastructure or land (activity type) as defined in Schedule 1 of the Mining Rehabilitation Fund Regulations 2013 and a mine activity reference.
- For all Key Mine Activities listed below, a table that includes the proposed area (ha), current approved area (ha) (if applicable) and total area (ha) must be provided per tenement for each individual activity:
 - Dam – saline water or process liquor;
 - Evaporation pond (not associated with minerals-in-brine extraction);
 - Heap or vat leach facility;
 - Low-grade ore stockpile (class 1);
 - Mining void (depth greater than 5m – above groundwater);
 - Mining void (depth greater than 5m – below groundwater);
 - Plant site;
 - Run-of-mine pad;
 - Tailings or residue storage facility (class 1);
 - Tailings or residue storage facility (class 2);
 - Waste dump or overburden stockpile (class 1);
 - Waste dump or overburden stockpile (class 2);
 - Minerals-in-brine abstraction trench;
 - Evaporation pond (off-playa) associated with minerals-in-brine extraction;
 - Evaporation pond (on-playa) associated with minerals-in-brine extraction;
 - Halite/salt stockpile (off-playa) associated with minerals-in-brine extraction; and
 - Halite/salt stockpile (on-playa) associated with minerals-in-brine extraction.
- For all other activity types (not included in the list of Key Mine Activities) a consolidated total for the proposed area (ha), current approved area (ha) (if applicable) and total area (ha) must be provided per tenement.
- For each tenement a total proposed area (ha), total current approved area (ha), and total area (ha) for all activities must be provided.
- For the mining proposal, a consolidated total proposed area (ha), total current approved area (ha) and total area (ha) for all tenements must be provided.

The Activity Details section of a mining proposal must accurately and concisely record the individual activities for which approval is sought, and the area within which the activities will occur. This includes any amendments to previously approved activities or areas and any new activities or areas proposed. The scope and scale of the proposed activities forms the basis of the approved activities of a mining proposal.

All mine activities must be provided using the standard tables in the *Statutory Guidelines for Mining Proposals* (see Appendix 1 and 2 of the *Statutory Guidelines for Mining Proposals*) and defined as per Schedule 1 of the Mining Rehabilitation Fund Regulations 2013. For reference, the standard list of 'Activity Types' is shown in Table 1. The Activity Types reflect the description of infrastructure or land in Schedule 1 of the Mining Rehabilitation Fund Regulations 2013. For definitions of these activities, refer to the Mining Rehabilitation Fund Regulations 2013 and DMIRS Mining Rehabilitation Fund – Guidance.

5.1 Additional detail for Key Mine Activities

As per the *Statutory Guidelines for Mining Proposals*, the additional details below must be provided for any Key Mine Activities.

For any Key Mine Activity (dam – saline water or process liquor, evaporation pond (not associated with minerals-in-brine extraction), low-grade ore stockpile (class 1), run-of-mine pad, tailings or residue storage facility, waste dump or overburden stockpile, evaporation pond (off-playa) associated with minerals-in-brine extraction, evaporation pond (on-playa) associated with minerals-in-brine extraction, halite/salt stockpile (off-playa) associated with minerals-in-brine extraction and/or halite/salt stockpile (on-playa) associated with minerals-in-brine extraction), the mining proposal must include the details below and be in the form of the table at Appendix 2 of the *Statutory Guidelines for Mining Proposals*:

- mine activity reference;
- total area (ha);
- area per tenement (ha);
- design description (including maximum height/depth); and
- materials characteristics including confirmation of any:
 - fibrous materials;
 - radioactive materials;
 - materials capable of generating acid and/or metalliferous drainage, including neutral drainage and saline drainage; and
 - dispersive and/or erosive material.

For a mining void and/or minerals-in-brine abstraction trench, the mining proposal must include the details below and be in the form of the table at Appendix 2 of the *Statutory Guidelines for Mining Proposals*:

- mine activity reference;
- total area (ha);
- area per tenement (ha);
- materials characteristics including confirmation of any:
 - fibrous materials;
 - radioactive materials;
 - materials capable of generating acid and/or metalliferous drainage, including neutral drainage and saline drainage; and
 - dispersive and/or erosive material.
- design description (including maximum height/depth); and
- confirmation whether the mining void will be backfilled.

For a heap or vat leach facility the mining proposal must include the details below and be in the form of the table at Appendix 2 of the *Statutory Guidelines for Mining Proposals*:

- mine activity reference;
- total area (ha);
- area per tenement (ha);
- design description;
- materials characteristics; and
- process chemicals used.

For a plant site the mining proposal must include the details below and be in the form of the table at Appendix 2 of the *Statutory Guidelines for Mining Proposals*:

- mine activity reference;
- total area (ha);
- area per tenement (ha); and
- type/design.

The level of detail required for each mining activity is governed by the level of complexity of the activity. For activities referred to as **Key Mine Activities** in Table 1 information as to the disturbance area and scope of the activity must be provided. For **Other Activity Types** (not Key Mine Activities), the associated tenement is required and a consolidated total area (ha) for all Other Mine Activities on the tenement is required. Specific areas do not need to be provided for each individual Other Mine Activity. Actual disturbance associated with each activity is to be provided per tenement through AER and Mining Rehabilitation Fund (MRF) reporting processes.

Table 1: Summary of information requirements for each Mine Activity Type

Activity Type	Area (Ha)	Other information requirements
Key Mine Activities		
Tailings or residue storage facility (class 1) ¹	✓	Max. Height, Type/Design, Materials Characteristics
Waste dump or overburden stockpile (class 1)	✓	Max. Height, Type/Design, Materials Characteristics
Heap or vat leach facility	✓	Max. Height, Type/Design, Materials Characteristics
Evaporation pond (not associated with minerals-in-brine extraction)	✓	Max. Height, Type/Design, Materials Characteristics
Dam – saline water or process liquor	✓	Max. Height, Type/Design, Materials Characteristics
Tailings or residue storage facility (class 2)	✓	Max. Height, Type/Design, Materials Characteristics
Waste dump or overburden stockpile (class 2)	✓	Max. Height, Type/Design, Materials Characteristics
Low-grade ore stockpile (class 1)	✓	Max. Height, Materials Characteristics
Plant site	✓	Type/Design
Mining void (depth greater than 5m – below groundwater)	✓	Max. Depth, Materials Characteristics, Confirmation regarding whether the void will be backfilled.
Mining void (depth greater than 5m – above groundwater)	✓	Max. Depth, Materials Characteristics
Run-of-mine pad	✓	Materials Characteristics, Height, Design.
Minerals-in-brine abstraction trench	✓	Max. Depth, Materials Characteristics, Confirmation regarding whether the void will be backfilled.
Evaporation pond (off-playa) associated with minerals-in-brine extraction	✓	Max. Height, Type/Design, Materials Characteristics
Evaporation pond (on-playa) associated with minerals-in-brine extraction	✓	Max. Height, Type/Design, Materials Characteristics
Halite/salt stockpile (off-playa) associated with minerals-in-brine extraction	✓	Max. Height, Type/Design, Materials Characteristics
Halite/salt stockpile (on-playa) associated with minerals-in-brine extraction	✓	Max. Height, Type/Design, Materials Characteristics
Other Mine Activities		
Fuel storage facility	×	No further specific information
Workshop	×	No further specific information
Landfill site	×	No further specific information
Diversion channel or drain	×	No further specific information
Dam – fresh water	×	No further specific information
Low-grade ore stockpile (class 2)	×	No further specific information
Sewage pond	×	No further specific information
Building (other than workshop) or camp site	×	No further specific information
Transport or service infrastructure corridor	×	No further specific information

¹ The class of a tailings or residue storage facility is defined in the Mining Rehabilitation Fund Regulations 2013. This does not reflect the category of the TSF as defined in the DMIRS's Guide to the preparation of a design report for tailings storage facilities (TSFs), August 2015.

Activity Type	Area (Ha)	Other information requirements
Airstrip ²	×	No further specific information
Laydown or hardstand area	×	No further specific information
Core yard	×	No further specific information
Borrow pit or shallow surface excavation	×	No further specific information
Borefield	×	No further specific information
Processing equipment or stockpile associated with basic raw material extraction	×	No further specific information
Land that is cleared of vegetation (other cleared land)	×	No further specific information
Topsoil stockpile	×	No further specific information
Total	×	No further specific information

5.2 Disturbance envelopes for activities

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must include a disturbance envelope within which all activities will be contained, showing relevant tenement boundaries, tenement labels, and GDA (geographic latitude/longitude) coordinates. This must be provided as a figure(s) in the mining proposal and in an ESRI shape file.

The mining proposal must include coordinates in the current GDA format delineating the boundary of the disturbance envelope.

A flexible approach can be used to broadly define the maximum area within which the activities will be located (a disturbance envelope). Disturbance envelopes provide flexibility for proponents to make minor changes to the exact location of an activity within the tenement that the activity was approved, without the need for subsequent revisions to an approved mining proposal; for example when wanting to avoid, minimise or mitigate impacts to the environment, or for operational reasons.

The mining proposal assessment will consider the likely environmental impact(s) of the proposed activities within the extent of the disturbance envelope. The risk assessment will need to consider the environmental impacts of development, actions, activities or processes and mitigate against those identified environmental impacts. This may result, for example, in the requirement to survey the entire disturbance envelope area to identify environmental values that are likely to be impacted and/or require protection.

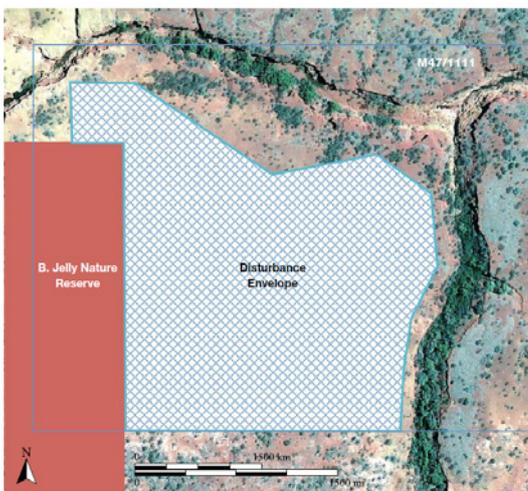


Figure 1 – Example disturbance envelope with sensitive areas intentionally excluded

All areas included in the disturbance envelope will need to be adequately addressed in the risk assessment and environmental outcomes. All land types intersected by the envelope need to be considered and their individual requirements met. For example, disturbance envelopes that intersect with reserves will need to ensure all reserve requirements (tenement conditions, external agency consent etc.) have been met.

A mining proposal may also employ the use of a disturbance envelope to illustrate areas that will be excluded from the mining proposal and within which no activities will occur (e.g. sensitive areas such as Aboriginal cultural heritage, reserves, wetlands, waterways, prominent ridges, etc.). An example of a disturbance envelope is provided in Figure 1, showing sensitive areas intentionally excluded (river, nature reserve).

It is important that any spatial data provided with the mining proposal is consistent with the Activity Details section of the mining proposal.

2 Proponents should notify Civil Aviation Safety Authority, Airservices Australia and the Local Government Authority

5.3 Site plan

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must include an indicative map of the proposed layout of the mine activities in relation to the disturbance envelope and tenement boundaries.

The site plan must include:

- all proposed and existing activities;
- tenement boundaries and labels;
- a north indication; and
- a legend or labelling of all activities.

A site plan is a map of the proposed layout of the mine that explains how the mine site will be laid out and function, and provides additional context to the disturbance envelope, activity details and risk assessment. Multiple plans can be provided to show detail at a sufficient scale.

The following aspects should also be specified on separate additional plans with reference to the mine activities:

- Other land tenure including reserves and pastoral lease boundaries.
- Major topographic features.
- Relevant information from the environmental baseline data showing areas of environmental constraint (e.g. sensitive environments, flora with conservation significance, habitats with conservation significance, threatened or priority ecological communities, acid sulphate soils risk areas, major watercourses). There is no requirement to duplicate maps that are provided in the Baseline Environmental Data section of the mining proposal as long as the project layout is shown in these figures to indicate potential impacts.

5.4 Design details for tailings storage facilities

As per the *Statutory Guidelines for Mining Proposals* if a tailing storage facility (TSF) is proposed the mining proposal must include design report(s).

Mining proposals that include a TSF must include detailed design reports. Guidance on detailed design reports for TSFs can be found in the *DMIRS Guide to the preparation of a design report for tailings storage facilities (TSFs)* (2015).

6. Environmental Legislative Framework

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must include a list of environmental approvals, other than under the *Mining Act 1978*, that have been sought or are required before the proposal may be implemented and any specific statutory requirements that will affect the environmental management of the site.

DMIRS aims to remove regulatory overlap and duplication from the mining proposal assessment process where possible. For this reason, a mining proposal must contain a list of all relevant environmental approvals and statutory requirements that will affect the environmental management of the mining project. As far as practicable, DMIRS will not duplicate assessment of any component of an activity that also requires approval from another regulatory agency.

It is suggested that this information is summarised in a table (see example in Table 2). For each approval or statutory requirement listed, it is important to state the specific environmental factor(s) that will be regulated by the approval or statutory requirement. This will enable DMIRS' assessment to focus on those factors that are not directly regulated by another agency or covered by another regulatory requirement. It is important to note that Table 2 is not a complete list of environmental (or related) approvals and regulatory requirements. Legislation that may be relevant includes:

- *Aboriginal Heritage Act 1972*
- *Biodiversity Conservation Act 2016*
- *Conservation and Land Management Act 1984*
- *Contaminated Sites Act 2003*
- *Country Areas Water Supply (CAWS) Act 1947*
- *Dangerous Goods Safety Act 2004*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Environmental Protection Act 1986*

- Health Act 1911
- Heritage of Western Australia Act 1990
- Metropolitan Water Supply Sewerage and Drainage Act 1909
- Work Health and Safety Act 2020
- Native Title Act 1993
- Petroleum (Submerged Lands) Act 1982
- Petroleum and Geothermal Energy Resources Act 1967
- Petroleum Pipelines Act 1969
- Planning and Development Act 2005
- Rights in Water and Irrigation Act 1914
- State Agreement Acts
- Waterways Conservation Act 1976

Table 2: Example Environmental Legislative Framework

Relevant legislation	Environmental factor regulated/affected	Relevant approval/requirement and status of relevant approval
<i>Environmental Protection and Biodiversity Conservation Act 1999</i>	Biodiversity: Impacts to <i>Leipoa ocellata</i> (Malleefowl) and <i>Liopholis kintorei</i> (Great Desert Skink).	Controlled action – listed threatened species. Under assessment.
<i>Environmental Protection Act 1986</i> (Part IV)	Key environmental factors ³ regulated under Part IV: <ul style="list-style-type: none"> • Flora and vegetation • Terrestrial fauna • Terrestrial environmental quality • Inland waters 	Ministerial approval issued under Part IV of the <i>Environmental Protection Act 1986</i> . Conditions set in Ministerial Statement.
<i>Environmental Protection Act 1986</i> (Part V) Prescribed premises categories ⁴ : <ul style="list-style-type: none"> • (5) Processing or beneficiation of metallic or non-metallic ore • (6) Mine dewatering; • (12) Screening etc. of material • (31) Chemical Manufacturing • (44) Metals Smelting or Refining • (54) Sewage facility • (64) Class II or III putrescible landfill site • (84) Electric power generation 	Water Resources (pollution) Landforms	Works approval and licence/ registration under Part V issued.
<i>Rights in Water and Irrigation Act 1914</i>	Water resources	5C licence to take 0.5ML/year of groundwater within the Goldfields Groundwater Management Area 26D licence to construct 8 bores within the Goldfields Groundwater Management Area
<i>Aboriginal Heritage Act 1972</i>	Aboriginal heritage ⁵	Section 18 Consent to certain uses.

³ See the EPA Statement of Environmental Principles, Factors and Objectives (2018).

⁴ See Schedule 1 of the Environmental Protection Regulations 1987.

⁵ Aboriginal cultural heritage is not an environmental factor listed in DMIRS' Environmental Objectives Policy for Mining (2020); however, it is suggested this information is provided for context and to provide assurance that relevant approvals or consents have been sought, granted or provided.

While DMIRS' assessment will focus on those environmental issues not already covered by other approvals or legislation, proponents are still required to include all activities in the Activity Details section to ensure approval is obtained under the Mining Act and include all identified risks through the risk assessment process. In most circumstances, DMIRS will consider it acceptable to include the requirements of the relevant approvals as appropriate risk treatment measures (e.g. licence conditions, Ministerial conditions, etc.). However, some environmental approvals only apply during specific phases (e.g. while a site is operating), and may not be directly applicable during other phases such as mine closure or care and maintenance. In these circumstances, specific risk identification and treatment will be required to ensure all phases are appropriately addressed in the mining proposal and mine closure plan.

7. Stakeholder engagement

As per the *Statutory Guidelines for Mining Proposals*, the mining proposal must include information on the engagement that has been undertaken with stakeholders, a record of the engagement undertaken to date and include a strategy for ongoing engagement.

The mining proposal should demonstrate to DMIRS that effective and appropriate engagement has been undertaken leading up to the submission of the mining proposal and will continue to be undertaken throughout the mine life.

Community and stakeholder engagement is required to ensure that interested and affected parties are informed of proposed mining activities and provided with the opportunity to express how they may be affected. Stakeholder and community engagement is considered fundamental in determining agreed environmental outcomes. Early and continuous stakeholder engagement enables proponents to understand and manage stakeholder expectations and mitigate the potential risks associated with the mining activity.

The term "stakeholders", includes both internal and external parties who are likely to affect, to be affected by or to have an interest in the proposed mining activities. Stakeholders should be provided with sufficient information to make an informed assessment of the possible consequences of the activity on their function, interest or activities and a reasonable period of time needs to be provided for the engagement process.

In the course of preparing a mining proposal proponents are responsible for demonstrating consultation has been undertaken with each of the following:

- All relevant Decision Making Authorities, and any other relevant State or Commonwealth government departments and local government authorities.
- Any person or organisation whose functions, interests or activities may be affected by the activities carried out under the mining proposal (e.g. environmental non-government organisations, local Indigenous people and the local community).
- Any other person or organisation that the proponent considers relevant.

Consultation with government agencies includes seeking advice on each agency's specific regulatory requirements and, where relevant, agreement on matters raised, management measures, environmental standards, criteria and procedures that may apply to the proposal.

7.1 Developing a stakeholder engagement strategy

A key goal of the stakeholder engagement process is to identify the relevant environmental receptors for an operation and the environmental values that those relevant receptors hold for stakeholders. Environmental receptors are those qualities of the environment that stakeholders value for the support of particular ecosystems and/or human uses. Stakeholders will expect that environmental receptors that are of environmental value be protected from both effects and impacts (both real and potential) as a result of the mining operation (during construction, operation and mine completion).

It is essential that stakeholders have the opportunity to engage, through an iterative process, in the development of environmental outcomes (including mine closure outcomes) to ensure the identified environmental receptors are protected. The mining proposal should demonstrate how the consultation has influenced (or not) the development of the proposed environmental outcomes.

Stakeholder engagement should be inclusive, and it is not generally recommended that engagement be conducted through one forum alone (e.g. a community consultative committee or informal landowner discussions). A well prepared, resourced and implemented stakeholder consultation strategy will ensure that all stakeholders are identified and are being effectively engaged.

7.2 Principles of stakeholder engagement

The following principles are useful to formulate and implement a community and stakeholder engagement strategy. These principles have been adapted from the Ministerial Council on Mineral and Petroleum Resources (MCMPR) *Principles for Engagement with Communities and Stakeholders (2005)*.

- **Communication:** Communication must be open, accessible, clearly defined, two-way and appropriate.
- **Transparency:** The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented.
- **Collaboration:** A co-operative and collaborative approach to seek mutually-beneficial outcomes is considered key to effective engagement.
- **Inclusiveness:** Inclusiveness involves identifying and involving communities and stakeholders early and throughout the process, in an appropriate manner.
- **Integrity:** Community and stakeholder engagement should establish and foster mutual trust and respect.

Further guidance to assist with identifying key stakeholders and developing a targeted community and stakeholder engagement strategy is provided in Appendix 5.

7.3 Stakeholder engagement strategy

It is important that all stakeholders have their interests and concerns considered and where appropriate, addressed, and that stakeholders have an opportunity to provide feedback on the response or proposed action to address their interests and concerns.

The strategy for engagement is not prescribed, recognising that the type, scale and location of activities will determine the most appropriate engagement strategy to be implemented and that the process of engagement is likely to be modified according to changes in mining activities and the needs of interested parties.

To enable the accurate and appropriate assessment of stakeholder engagement undertaken on the proposed mining activities, the mining proposal is required to include a record of the engagement undertaken to date and include a strategy for ongoing engagement.

It is recommended that the stakeholder engagement register be provided in tabulated form, identifying the engagement that has been conducted leading up to the submission of the mining proposal and including:

- identity of stakeholder(s);
- date of engagement;
- a description of the nature of the engagement and level of information provided to stakeholders;
- comments and issues raised by the stakeholder(s);
- an assessment of the merits of any issues raised;
- how the proponent has responded to the concerns raised and incorporated the proposed resolution into the mining proposal (i.e. inclusion in the risk assessment and/or environmental outcomes); and
- stakeholder acceptability of proponent response to issues/concerns.

An example stakeholder engagement register and further guidance on developing a targeted community and stakeholder engagement strategy is provided in Appendix 5.

8. Baseline environmental data

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must describe the existing environment in which the site is located, including any natural (biological/physical) values and sensitivities and heritage areas that may be affected by the activities. This section must include a description of the baseline data covering the below environmental aspects as well as analysis and interpretation of the baseline data.

This section must cover the following environmental aspects:

- climate;
- landscape;
- materials characterisation;
 - soils
 - geochemical and physical characteristics of subsurface materials and mining waste
- biodiversity;
- hydrology (including surface water and groundwater);
- heritage; and
- environmental threats.

Where environmental surveys or analysis has been undertaken, the findings must be summarised in the mining proposal and all relevant technical reports must be attached as appendices.

Baseline environmental data is vital in identifying the environmental risks and potential impacts of a proposal, informing the risk treatment measures and determining appropriate environmental outcomes and performance criteria. Baseline data provides an understanding of the environmental values and beneficial uses that may be affected by the proposed activity, and establishes the environmental context in the risk management process.

It is imperative that baseline data is used to inform the mining proposal risk assessment and the risk treatment measures. The *Statutory Guidelines for Mining Proposals* have been designed so that the relevant baseline data is summarised and interpreted in the mining proposal document, with relevant technical reports attached as appendices. Digital spatial datasets for baseline data (e.g. vegetation communities, vegetation types, dieback mapping) should be provided where available.

8.1 Climate

Climate is an important environmental aspect used to inform the risk assessment as it will impact all other environmental factors, and therefore affect the success of mine closure. The mining proposal should contain adequate climatic information to adequately assess all significant climatic impacts on the project, such as:

- a description of the climatic zone;
- the range of mean monthly maximum and minimum temperatures;
- average annual rainfall;
- a description of the frequency and intensity of rainfall;
- a description of seasonal and long term climatic trends /patterns;
- average annual evaporation rates;
- predominant wind directions and wind speeds; and
- historic flood events and maximum rainfall events (duration and magnitude).

8.2 Landscape

Providing the geographic and topographical context of the mining proposal assists in the explanation and understanding of the broad environmental attributes of the area. It also assists to explain decisions that may be made for location of landforms and infrastructure, and decisions regarding mine closure. The mining proposal should include a description of where the proposal sits within the broad landscape and the landscape features of the project area e.g. ranges, valleys, plateaus, lakes. It is recommended that the description references the relevant Interim Biogeographic Regionalisation for Australia (IBRA) Bioregion and Sub-bioregion (see the Commonwealth Department of Environment and Energy's [website](#)). The description may also include the Department of Primary Industries and Regional Development's soil-landscape units that occur in the area.

8.3 Materials Characterisation

For the purpose of this document, 'materials' refers to all soils and subsurface material that will be disturbed or extracted by the mining activity, including material that has been physically or chemically processed on site (e.g. tailings). Materials characterisation identifies the physical and geochemical properties of materials and whether they have the potential to:

- cause environmental harm; and/or
- contribute to, or detract from, the success of rehabilitation and closure.

Materials characterisation is a critical component of mine planning due to the large-scale physical disturbance that is associated with most mining activities. Appropriate materials characterisation:

- helps ensure that the risk assessment is appropriately informed, and aids in responsible mine closure planning;
- assists in the cost-effective operation and closure of a mine;
- provides a basis for preventative management, appropriate use of materials and improved environmental outcomes; and
- can save on double handling and expensive remediation later in mine life.

Materials characterisation should address the following risk factors associated with the proposed mining activities, where relevant:

- acidic and/or metalliferous drainage (AMD), inclusive of:
 - acidic drainage;
 - metalliferous drainage (encompassing all metals/metalloids regardless of whether the conditions are acidic); and
 - saline materials and/or drainage.
- erosive, sodic and/or dispersive material;
- fibrous minerals;
- material with other chemical/physical properties that will affect stability or success of rehabilitation (e.g. low pH, low fertility, poor structural integrity, water holding capacity); and
- naturally occurring radioactive material (NORM) and technologically enhanced naturally occurring radioactive materials (TENORM).

The level of information required in the mining proposal will depend on the scope, location and key risks of the project.

8.3.1 Soils

In regard to soils, it is recommended that the mining proposal addresses the following aspects:

- A description of the major soils occurring in the project area including the indicative volume and characterisation of topsoil and subsoil available for rehabilitation.
- Where there are multiple soil types identified, a map showing the spatial extent of each identified soil type in the project area shall be provided. The map should include a scale bar, latitude and longitude coordinates, date of field survey, and regional map location. Soils may be classified according to the WA Soil groups outlined in Schoknecht and Pathan (2013).
- Adequate characterisation of the soils to ensure that the risk posed by adverse components can be determined.
- Reference to the characterisation methodologies used.
- Interpretation of baseline data and broad implications for risk assessment and treatments.
- Relevant technical reports attached as appendices.

8.3.2 Geochemical and physical characteristics of subsurface materials and mining waste

In regard to subsurface geology and waste, it is recommended that the mining proposal addresses the following aspects:

- a description of the geology and mineralisation of the project area;
- mineralogy of dominant and important / problematic lithologies;
- the indicative volume of ore and waste materials that will be mined;

- the predicted volume of tailings or any other processing waste, where applicable;
- the indicative tonnages and proportion of each lithology, including problematic and/or hostile materials where relevant;
- adequate characterisation of the subsurface materials and processing waste to ensure that the risk(s) posed by adverse components can be determined;
- diagram(s) and map(s) of the sampling locations sufficient to indicate, the location of mine activities and the 3D spatial distribution of samples, including in relation to the water table (where applicable);
- a description of the methodology used to characterise the materials;
- interpretation of baseline data and broad implications for risk assessment, treatments and environmental outcomes; and
- relevant technical reports attached as appendices.

8.4 Biodiversity

Baseline data is required to understand the pre-existing assemblages, diversity, condition and ecological function of flora, fauna and ecosystem(s) at the species, population and community level. It is imperative that enough information is collected to allow an appropriately informed risk assessment to be undertaken.

Where there are likely to be species or communities of conservation significance, or where land managed for the purposes of conservation may be directly or indirectly impacted, proponents are encouraged to engage with the Department of Biodiversity, Conservation and Attractions (DBCA) for specific advice on information collection and interpretation.

It is recommended the mining proposal addresses the following aspects:

- A description of the pre-existing biodiversity/flora/fauna/ecosystem values of the area affected by the proposal, including specific reference to any species or communities of conservation significance (e.g. listed species/communities under state or commonwealth legislations, including listed weed species). Surveys will usually be required to achieve the above. The level of survey(s) can range from desktop to detailed field surveys. Guidance on undertaking an appropriate survey of flora and fauna values is found within the Environmental Protection Authority (EPA) Guidelines and Technical Guidance, in particular:
 - EPA Technical Guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment (2016)*; and
 - EPA Technical Guidance – *Terrestrial Fauna Surveys (2016)*.
- Suitable maps to illustrate the existing vegetation communities and habitat descriptions, and the location and extent of any sensitive values or threats (endemic or introduced). It is suggested that the maps include an overlay of the site plan.
- Interpretation of baseline data and broad implications for risk assessment, treatments and environmental outcomes.
- Relevant technical reports attached as appendices.

Where short range endemic (SRE) species and subterranean fauna are a relevant risk, the mining proposal should address the above aspects specific to SRE species and subterranean fauna. SRE species can be particularly important to consider as part of the baseline fauna surveys as they have the potential to be spatially restricted on a small scale and are generally at a greater risk of changes in conservation status, local or taxon extinctions than other more widely distributed species.

Proponents should determine whether SRE species and/or subterranean fauna are likely to be present and whether appropriate field surveys are required (it is recommended that proponents use the EPA Technical Guidance documents to determine this). Further guidance on likely habitats for SRE and subterranean fauna, and appropriate sampling techniques, can be found within the EPA's Technical Guidance, in particular:

- EPA Technical Guidance – *Sampling of Short Range Endemic Invertebrate Fauna (2016)*.
- EPA Technical Guidance – *Subterranean Fauna Survey (2016)*.
- EPA Technical Guidance – *Sampling methods for Subterranean Fauna Survey (2016)*.

Any surveys that are undertaken should comply with the relevant EPA Technical Guidance.

Where there is the potential for impacts to SRE and subterranean fauna these must be appropriately addressed in the risk assessment.

8.5 Hydrology

Water resources have varying environmental values and beneficial uses. Protection of these values and uses relies on understanding the water resources and maintaining their quality and quantity. It is imperative that sufficient information is collected to understand the pre-existing hydrology within the project area, including an assessment of relevant storm/flood events. This will inform the risk assessment, and assist in the development of appropriate performance criteria and closure criteria.

The mining proposal should contain baseline information for all ground and surface water within the project area or potentially impacted by the project.

8.5.1 Surface Water

The mining proposal should include:

- A description of the catchment area(s), including a map identifying the project area in relation to the catchment(s).
- A description of the surface hydrology of the project area and potentially affected downstream environment (e.g. ephemeral creeks, permanent creeks/streams, playa lakes, wetlands, water holes).
- A description of the environmental values and beneficial uses of surface water.
- Details of any surface water management areas that the project intersects or may impact.
- The water quality characteristics of the surface hydrology of the area including salinity and pH.
- A description of the flooding characteristics of the area. Where flooding presents a risk to the environmental management of the proposal (including post-closure), appropriate flood modelling and mapping will be required.

8.5.2 Groundwater

The mining proposal should include:

- An overview of the regional and local hydrogeology and groundwater dynamics (flow directions, relative pressures/levels, interconnection, quality, recharge zones and size).
- A description of the environmental values (e.g. groundwater dependent ecosystems) and beneficial uses of groundwater in the area.
- Details of any groundwater management areas that the project intersects or may impact.
- The water quality characteristics of the groundwater resources. For projects with minimal interaction with groundwater or where risks are considered negligible to low, the characterisation can be limited to broad indicators (e.g. salinity and pH). Where risks are present above a low level, the characterisation should be more detailed and focus on the nature of the risks (e.g. if acid and/or metalliferous drainage is a risk then baseline levels of relevant anions and cations may be appropriate). The characterisation of pre-existing conditions needs to be adequate to enable any mining impacts to be detected.

Where groundwater will be intercepted by the operation, the following information should be provided:

- a map of the inferred groundwater resources;
- the water quality and pressure, recharge areas, aquitards, aquifer details, water gradient (include seasonal fluctuations if known), flow directions and rates, discharge areas for each aquifer potentially affected by mining activities;
- a description of the interconnectivity between the ore body, water supply aquifers, dewatered aquifers and lateral, overlying and underlying aquifers and surface water;
- interpretation of baseline data and broad implications for risk assessment and treatments; and
- relevant technical reports attached as appendices.

For further guidance refer to the Australian and New Zealand Guidelines Water Quality Management Framework and Guidelines and the Department of Water and Environmental Regulation's Water Quality Protection Guidelines No. 1-11 for Mining and Mineral Processing.

8.6 Heritage

The Mining Proposal should provide details of baseline data on the heritage values of the project area including Aboriginal cultural heritage.

8.7 Environmental threats

Environmental threats are identified risks that may further impact environmental factors as a result of proposed mining activities (e.g. weeds, pests, dieback, soil pathogens, wildfires, light, etc.). For example, the operation may impact flora and fauna through clearing of vegetation which may already be affected by dieback. These threats are required to be considered when undertaking the site specific risk assessment. The Baseline Environmental Data section of the mining proposal must identify environmental threats relevant to the mining proposal where they are an influencing factor in the risk assessment.

The mining proposal should include:

- an explanation of the main environmental threats that are relevant to the mining proposal (e.g. dieback, pathogens, weeds, feral animals, wildfires); and
- baseline data for those threats that are relevant to the environmental risk assessment

Dust, noise and other atmospheric emissions can impact on flora, fauna and other environmental factors. Where dust, noise or other atmospheric emissions will impact on environmental factors (biodiversity, water resources, land and soils and/or rehabilitation and mine closure)⁶, and the impacts are not directly regulated under the *Environmental Protection Act 1986* (EP Act), the mining proposal should include baseline data for dust, noise and/or air quality.

For mine sites that are not a 'prescribed premises' for the purposes of Part V of the EP Act, it is expected that dust, noise and air quality impacts are considered in the environmental risk assessment and environmental outcomes.

9. Environmental Risk Assessment

As per the *Statutory Guidelines for Mining Proposals*, the mining proposal must include an environmental risk assessment that:

- identifies all the environmental risk pathways affecting DMIRS Environmental Factors across all phases of the mine life and that may arise from unexpected or emergency conditions;
- includes an analysis of these risks to derive an inherent risk rating, prior to the application of treatments;
- identifies appropriate risk treatments;
- includes an evaluation of the risk pathways to derive a residual risk rating; and
- demonstrates that all residual risks are as low as reasonably practicable (ALARP).

The mining proposal must provide information on the processes and methodologies undertaken to identify the environmental risk pathways and their potential environmental impacts, including a description of the risk assessment criteria and risk evaluation techniques.

A mining proposal must identify all environmental risk pathways affecting DMIRS' environmental factors across all phases of the mine life and that may arise from unexpected or emergency conditions. DMIRS' environmental factors are established in the *Environmental Objectives Policy for Mining (2020)* and listed below.

Table 3 – Objectives for environmental factors

Factor	Objective
Biodiversity	To maintain representation, diversity, viability and ecological function at the species, population and community level.
Water Resources	To maintain the hydrological regimes, quality and quantity of groundwater and surface water to the extent that existing and potential uses, including ecosystem maintenance, are protected.
Land and Soils	To maintain the quality of land and soils so that environmental values are protected.
Rehabilitation and Mine Closure	Mining activities are rehabilitated and closed in a manner to make them physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/non-contaminating, and capable of sustaining an agreed post-mining land use, and without unacceptable liability to the State.

⁶ DMIRS Environmental Objectives Policy for Mining (2020).

The risk-based approach for environmental regulation adopted by DMIRS aligns with the risk management process outlined in the Australian Standard *AS ISO 31000:2018 Risk Management*, as illustrated in Figure 2. The mining proposal is required to transparently demonstrate that the risk assessment process has been followed to avoid, minimise, control and mitigate the potential for environmental harm.

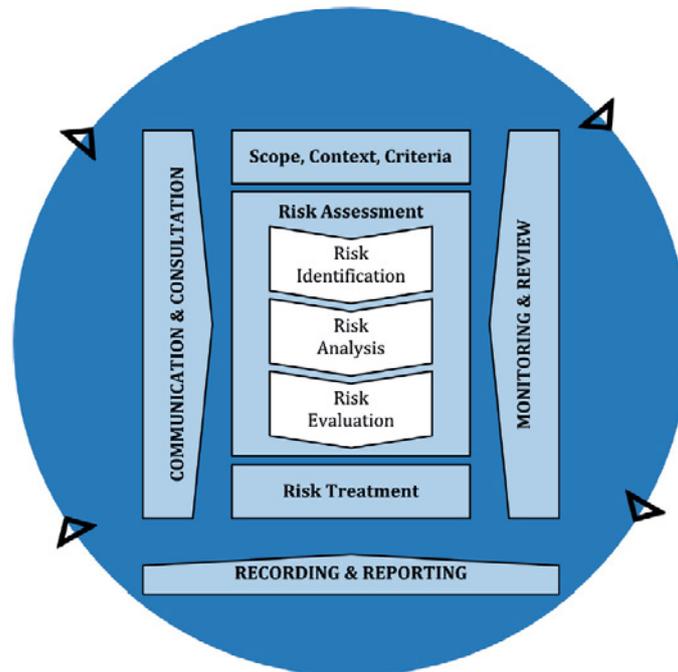


Figure 2: Risk Management Process ISO 31000:2018

The tenement holder is responsible for the identification and management of all environmental risks associated with the operation.

A number of resources exist which can assist proponents with the identification, assessment and management of environmental risks, including:

- *Standards Australia Handbook HB 203:2012 Managing Environment-related Risk (2012).*
- *Leading Practice Sustainable Development Program for the Mining Industry – Risk Management Handbook (2016).*

DMIRS expects the risk assessment for the mining proposal and mine closure plan to meet the following requirements:

- **Site specific** – the identification, assessment and management of environmental risks must be specific to each site, and use the following documented information sources as a basis:
 - baseline environmental data, including any knowledge gaps that result in increased uncertainty;
 - operation scale, design, features, processes and life of operation;
 - environmental legislative requirements; and
 - key stakeholder concerns or requirements.
- **Consider all project phases** – often the inherent risk associated with an activity, and the appropriate risk treatments required to manage the risk, change during different project phases. The risk assessment must clearly document where these instances exist (refer to Appendix 6). Project phases include construction, operation, care and maintenance, closure and post-closure.
 - Both Part 1 of the *Statutory Guidelines for Mining Proposals* and the *Statutory Guidelines for Mine Closure Plans* require a detailed risk assessment. To avoid duplication of effort and reduce the likelihood of inconsistencies, these risk assessments can be included holistically in the mining proposal.
 - Where a revised mine closure plan is submitted triennially, or other timeframe advised by DMIRS, an updated risk assessment must be included in the document to meet the requirements of the *Statutory Guidelines for Mine Closure Plans*.
- Consider risks arising from **planned actions / processes**, as well as **accidents and unplanned events**.

- **Establishes where environmental outcomes are required** – for outcome-based regulation to be risk-based, a clear link between all moderate to extreme inherent (untreated) risk pathways and the associated outcome / closure objective is required.

The risk assessment process as documented in *AS ISO 31000:2018 – Risk Management*, includes the following steps:

- Risk identification – determine plausible risk pathways and potential impacts on environmental values.
- Risk analysis – determine the consequence and likelihood of each risk pathway (or a source-pathway-receptor link occurring) to determine the inherent risk level.
- Risk evaluation – determine the treatments to be applied to each risk pathway based on the inherent risk level.
- Risk treatments – select treatments to reduce risk to As Low As Reasonable Practical (ALARP) in the context of DMIRS' objectives.

The relevant aspects of each of these steps is detailed as follows, however, proponents are referred to the references listed at the start of this section for detailed guidance.

9.1 Risk identification

Risk identification involves a systematic listing of risk pathways based on the project scope, activities and relevant environmental values. To appropriately identify risks, both the description of the unwanted event and description of the potential impact should be provided to assist in the subsequent risk assessment steps, but also demonstrate to DMIRS that risks are well understood.

Risk pathways which are not identified cannot be managed, therefore considered effort is required at this step of the process. To assist in this, DMIRS recommends proponents:

- Seek advice from experienced operators, specialists and relevant regulatory agencies.
- Research and incorporate learnings from previous environmental incidents that have occurred from similar activities around Australia and internationally.

Risk identification requires adequate and appropriate baseline data, without which the risk pathways or potential impacts may not be identified. As detailed in the Baseline Environmental Data section of this document, proponents are required to undertake surveys and assessment to meet all relevant EPA and DMIRS guidance documents and industry standards to minimise limitations of the baseline data.

One method used to determine risk pathways and potential impacts is through application of the **Source-Pathway-Receptor** model. Appendix 6 provides examples of how this model can assist in systematically identifying risks.

9.2 Identification of risks regulated by other agencies

A number of government agencies regulate environment impacts of mining under different legislation. The Environmental Legislative Framework section of the mining proposal should be clearly outlined such that DMIRS' assessment can focus on those aspects that are not directly regulated under other legislation. This aims to avoid regulatory duplication, and determines which risk pathways require environmental outcomes to be regulated by DMIRS.

The risk assessment must document all relevant environmental risks, however, if any risk pathways are directly managed via other legislation, these regulatory controls can be listed as the treatment that will be applied, with no additional information required in most circumstances.

It is important to note that some regulatory controls outside the Mining Act, such as a Part V Licence, only apply when a project is operating. Details of treatments to be applied during other phases of mining, such as care and maintenance and closure, must be provided.

9.3 Risk Analysis

Risk is analysed by determining both the consequence and likelihood of each risk pathway, firstly for the inherent (untreated) risk, and then for the residual (treated) risk. Each risk pathway can have multiple consequences and can affect more than one environmental value; it is acceptable to document the most plausible consequence and likelihood, however, they must be specific to each environmental value. Appendix 6 illustrates how to document where a risk pathway affects multiple environmental values.

As the outcome of the risk analysis step is the generation of risk levels for further evaluation, the appropriate risk criteria must be developed and presented within the mining proposal. Risk criteria include the following:

- **Consequence** levels and descriptors must be specific to the spatial and temporal scale of the project, relevant environmental values and the sensitivity of the receiving environment.

- **Likelihood** levels and descriptors must relate to the frequency of an event occurring, based on review of available industry data and experience of the risk assessment team members.
- **Risk matrix** which appropriately groups level of risk for evaluation.

Appendix 6 provides examples of risk criteria.

The mining proposal must provide information on the risk analysis process and method used, and should describe why the method was considered most suitable. Examples of appropriate methods for environmental risk assessment include:

- Semi-quantitative assessment – application of values to each consequence and likelihood level to derive a unique value which aids in ranking of risk pathways within general risk levels (Low to Extreme);
- Qualitative assessment – groups risk pathways into general levels (Low to Extreme), but does not rank within each level.

The mining proposal should describe the limitations of data and information used to inform the risk assessment; where data is incomplete or absent, the uncertainty of an impact increases. This uncertainty should be reflected in a higher inherent risk. In most cases, mining proposals will not be considered acceptable if baseline data is deemed inadequate, however, where knowledge gaps cannot be reasonably filled prior to commencement of a project, proponents should demonstrate the application of the precautionary principle, outlined in Section 4A of the EP Act, to minimise the potential for environmental harm. Appendix 6 illustrates how data uncertainty can be documented within the risk assessment.

The inherent risk level resulting from the risk assessment determines which risk pathways require environmental outcomes. Environmental outcomes determine the monitoring, auditing and reporting required to demonstrate that the outcomes have been achieved on an on-going basis for the project.

9.4 Risk Evaluation

Risk evaluation involves determining whether the inherent risk and the residual risk is acceptable in the context of DMIRS' environmental objectives⁷. Where risks are not acceptable, appropriate treatments must be determined using the hierarchy of control: eliminate, avoid, minimise or mitigate.

Generally, even a risk pathway with a low inherent risk level will require the industry best practice environmental management applied.

Where risk evaluation determines a risk pathway and its potential impact(s) are not acceptable (inherent extreme risk), the proponent is required to undertake further studies or investigate alternative options. The outcomes of this work would require revision of the risk analysis step for the relevant risk pathway.

9.5 Risk Treatment

The mining proposal must document all proposed risk treatments for each risk pathway. The proposed effectiveness of treatments will be analysed to determine the residual risk level and ensure the principle of As Low as Reasonably Practicable (ALARP) is met.

The selection of treatments should demonstrate the preferential application of the hierarchy of control:

1. Where reasonably practicable, **eliminate or avoid** the risk, by not undertaking the risky activity. For example, changing the project layout to avoid clearing of threatened flora or changing pit designs to avoid disturbance of potentially acid forming material.
2. Reduce the risk by **substituting** a different activity which poses a lower risk. For example, backfilling a pit void with mine waste instead of constructing a waste rock dump.
3. **Control** the risk with an engineered solution. For example, having a specifically designed adverse materials management cell in a waste dump, or the use of automatic (instead of manual) shut-off valves.
4. **Mitigate** the risk using administrative procedures. For example, reducing speeds on mine roads, daily checks of a TSF or warning signals/signs.

Risk treatments which eliminate an activity will remove the risk pathway. Proponents may want to include these risk pathways in the risk assessment and demonstrate they have been eliminated during the project planning phase.

Risk treatments which avoid a sensitive area or substitute a lower risk activity will result in reduction of both the consequence level and likelihood level.

⁷ DMIRS Environmental Objectives Policy for Mining (2020).

Treatments which rely on control or mitigation of the risk must not be considered as the first option, as failure of the treatment is likely to result in environmental harm. Applying these risk treatments will result in a reduction of the likelihood level.

The higher the inherent risk of an unwanted event, the more reliable and robust the selected risk treatments are required to be.

A low inherent risk, generally requires less detail of the selected risk treatments, especially if these treatments utilise existing industry standards or codes, however, these standards need to be stated.

Where an inherent risk of moderate or high requires specific management measures, the mining proposal should contain a comprehensive description of the proposed treatments e.g. encapsulation plan for potentially acid forming materials and associated diagrams of the encapsulation cell. This information may not fit within the risk assessment table and may need to be supported by details provided in an appendix; however, the key management points are required to be summarised within the risk assessment.

When considering which treatments require documented plans (which would form part of the environmental management system), proponents should consider both “high-frequency low-consequence” events, as well as “low-frequency high-consequence” events.

9.5.1 As Low As Reasonably Practicable (ALARP)

ALARP is defined as any measure which is practicable and the implementation cost (money, time, effort) is not grossly disproportionate to the benefit, the measure is considered “reasonably practicable” and implementation is expected. The criterion is not “reasonably affordable”; justifiable cost, time and effort is not determined by the financial constraints or viability of the project.

In the selection of risk treatments, the mining proposal must demonstrate that all residual risks are ALARP. In some instances, established and/or standard industry practices and procedures may meet the ALARP principle, however, in other instances more stringent risk treatments will be required. In practical terms, to demonstrate that ALARP has been achieved, the residual risk should meet all relevant DMIRS environmental objectives⁸ (Figure 3).

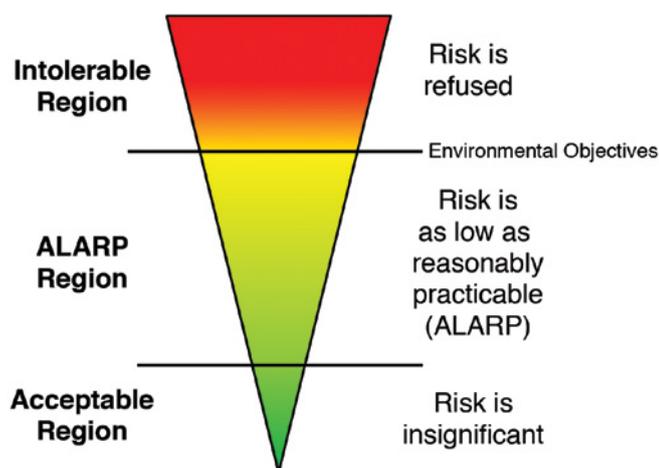


Figure 3: The relationship between level of risk, ALARP and DMIRS’ objectives

Reducing a risk to ALARP involves a balance between the cost (money, time, effort) and the resultant risk reduction. This level represents the point at which the cost required for further reduction measures becomes unreasonably disproportionate to the additional risk reduction obtained.

Justification for selection of risk treatments, and how they reduce the risk to ALARP, may include details of other options which upon evaluation were rejected, as the costs were grossly disproportionate to the benefit. It should be noted that over time costs associated with some risk treatments may reduce, therefore, treatments that were initially grossly disproportionate to the benefit may become reasonably practicable.

Just as risks alter over time, so too do treatment options; therefore, proponents are required to continually review and improve environmental management to maintain residual risks at an ALARP level. The establishment and maintenance of an environmental management system (EMS) is one method proponents can use to embed continuous improvement.

8 DMIRS Environmental Objectives Policy for Mining (2020).

9.5.2 Environmental standards, codes and guidance

In circumstances where Australian Standards, code of practices and other established guidelines exist, these can be referenced in the risk treatment section where applicable. Proponents can also reference existing commitments or conditions imposed by other legislation in the risk treatment section; they will generally be accepted provided they meet the principle of ALARP and will achieve DMIRS' environmental objectives.⁹

Where there are no relevant standards or the risk is new or emerging, proposed management strategies are required to be more detailed to provide confidence to the department that the proponent understands the risk and has demonstrated that appropriate treatment can be implemented.

10. Environmental outcomes, performance criteria and monitoring

As per the *Statutory Guidelines for Mining Proposals* the mining proposal must include a table of site-specific environmental outcomes that the mining operation will achieve, along with performance criteria for each outcome. The proposal must also include a description of the monitoring that will be undertaken to measure each performance criteria.

The site-specific environmental outcomes must be provided in a table that describes the following for each individual outcome:

- Relevant DMIRS Environmental Factor
- Relevant risk pathway(s)
- Description of the environmental outcome
- Performance criteria
- Monitoring that will be completed to measure the criteria.

In a risk and outcome-based environmental assessment process, it is imperative that clear environmental outcomes are established. This is to ensure that the environmental risk assessment and setting of site-specific environmental outcomes is consistent with the expectations of DMIRS, industry and the community. DMIRS' principal objective for environmental regulation and specific environmental objectives are detailed in the *DMIRS Environmental Objectives Policy for Mining (2020)* and listed in Table 3 in section 9 above. These environmental objectives should be addressed when determining whether a site-specific environmental outcome is acceptable. DMIRS will consider these environmental objectives when determining whether a site-specific environmental outcome is acceptable.

The purpose of environmental outcomes is to establish either the acceptable level of impact that must not be exceeded, or a level of protection/performance that must be achieved for the site to be compliant. Environmental outcomes must be specific, measureable, achievable, realistic and time-bound, as do the associated performance criteria and monitoring requirements. The environmental outcome must reflect what the proponent expects to achieve by implementing the proposed risk treatments.

The results of the environmental risk assessment will determine which risk pathways require development of environmental outcomes. Generally, DMIRS require outcomes to be developed for moderate to extreme risks (pre-treatment). While specific environmental outcomes do not need to be established for risk pathways that present a low risk, it is expected that DMIRS' environmental objectives will be met for all environmental factors. In situations where a treatment is applied which adequately eliminate or avoid the risk, an environmental outcome is not required.

DMIRS recognises that determining whether a risk pathway requires an environmental outcome can be quite subjective, and may require discussion between the proponent and DMIRS on a case-by-case basis. DMIRS has developed a flow chart to assist with determining when an outcome is required (Figure 4).

In determining whether a particular outcome is required, it is important to consider whether the issue warrants targeted monitoring and reporting to DMIRS (over and above the routine monitoring and management undertaken under the site's internal environmental management system and protocols). It is important to remember that an exceedance of an environmental outcome provided in an approved mining proposal would constitute a breach of tenement conditions, and as such should be limited to the higher risk issues.

Regardless of the establishment of environmental outcomes, DMIRS will continue to monitor the environmental operation of mining project, with enforcement action possible for issues that are not specifically covered by an environmental outcome.

For further guidance refer to Appendix 7.

⁹ DMIRS Environmental Objectives Policy for Mining (2020).

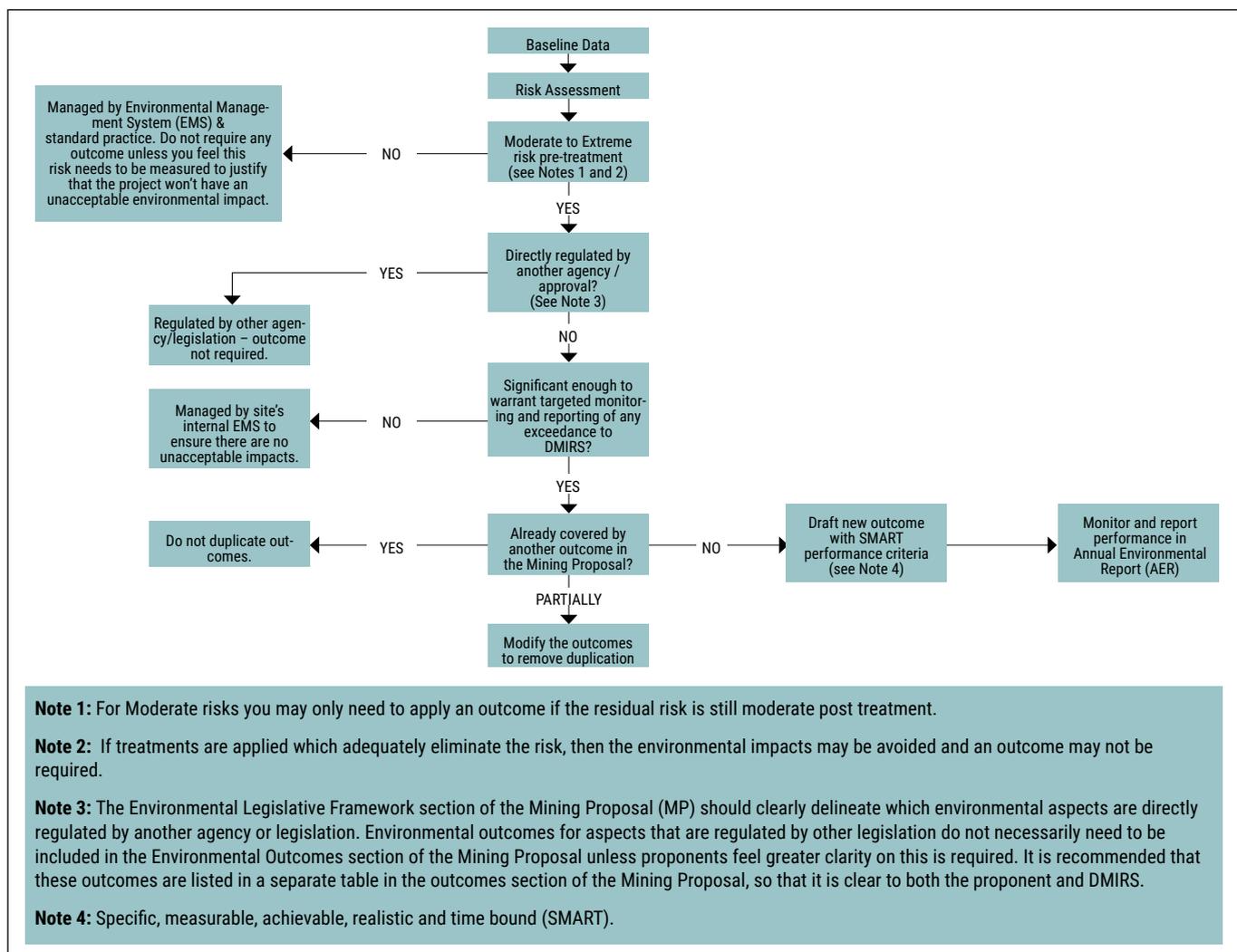


Figure 4 – Determining when an outcome is required

10.1 Writing environmental outcomes for assessment and approval

Environmental outcomes must be proposed by the proponent and will be agreed by DMIRS when the mining proposal is approved. The collection of baseline data is essential in understanding the current site-specific condition and how best to define and measure an appropriate outcome relevant to the impacts of the proposed action. Baseline data provides the benchmark which outcomes and performance criteria are compared to over time.

An outcome should:

- Be adapted to the specific environmental risks of the project site.
- Be expressed in the form of a specific outcome. Outcomes should consider:
 - an impact that will be avoided (e.g. no new weed species introduced by mining activities)
 - a level of impact that will not be exceeded (e.g. no clearing outside of the approved disturbance envelope or no impact to surface or groundwater acidity beyond the range of natural variability as a result of potentially acid forming material)
 - a level of protection that will be achieved (e.g. no impact to corridor vegetation).
- Be capable of objective monitoring, measurement and reporting.

10.2 Outcomes regulated by another agency

The Environmental Legislative Framework section of the mining proposal should clearly delineate which environmental factors are directly regulated by another agency or legislation which is not administered by DMIRS (e.g. ministerial conditions issued under Part IV of the *Environmental Protection Act 1986*, or licence conditions issued under Part V of the *Environmental Protection Act 1986*). Environmental outcomes regulated by other legislation do not

necessarily need to be included in the Environmental Outcomes section of the mining proposal unless proponents feel greater clarity on these is required. If environmental outcomes regulated by another agency/legislation are going to be included in the mining proposal, it is recommended these be listed in a separate table from that detailing the outcomes regulated by DMIRS.

For each approval or statutory requirement, it is important to state the specific environmental factor(s) that this will regulate. This will enable DMIRS' assessment to focus on the factors that are not directly regulated by another agency or covered by another regulatory requirement.

In some instances the approvals or requirements of other legislation may only be regulated during specific project phases or circumstances (e.g. only during operations) and may not be directly applicable to mine closure or care and maintenance. If potential impacts to environmental factors are also applicable during care and maintenance or post closure (e.g. groundwater level and quality) the outcomes are required to be included in the table regulated by DMIRS.

10.3 Environmental Performance Criteria

Environmental performance criteria form the basis on which performance in achieving the agreed environmental outcomes is measured and reported to the department. Performance criteria must be SMART (specific, measurable, achievable, realistic and time bound) and must consider site-specific conditions and baseline data.

- **Specific:** specify an outcome to be achieved.
- **Measurable:** include quantifiable performance measures and that can be readily compared over time.
- **Achievable:** realistic when compared with baseline performance and resources available.
- **Relevant:** to the objectives that are being measured and the risks being managed and flexible enough to adapt to changing circumstances without compromising objectives
- **Time-bound:** include specific timeframes for the completion of the outcome so that the criteria can be monitored over an appropriate time frame to ensure the results are robust.

Performance criteria are the measures used to track progress toward meeting the environmental outcomes. Performance criteria provide milestones, which can be used to assess whether the long-term outcomes are likely to be achieved. Performance criteria can also include activities undertaken during operations which support the achievement of closure outcomes.

The purpose of the performance criteria is to make sure that environmental outcomes are measurable and demonstrate that the acceptable level of impact will not be exceeded or a level of protection/ performance/ result is being achieved. Both outcomes and performance criteria form part of a proponent's approval commitments. When wording outcomes and performance criteria, proponents should ensure these are practical and achievable for the site. An example of writing SMART criteria is provided in Appendix 7.

Performance criteria should allow for the timely identification, appropriate resolution and the adaptive management of potential problems that may arise through the course of a project that could compromise the achievement of outcomes.

Monitoring site performance against the performance criteria specified in the mining proposal is necessary in order to determine the success in achieving outcomes. As per Standard Tenement Conditions, any breach of an environmental outcome or performance criteria in the approved mining proposal must be reported to the Executive Director, Resource and Environmental Compliance Division within 24 hours of the lessee or licensee becoming aware of the occurrence of the incident.

In most circumstances, actions/management measures should not be listed in the performance criteria to allow for adaptive management as required.

In situations where there is a long lag-time between environmental management actions and a potential impact (for example the management of topsoil, or materials with the potential to leach contaminants over the long-term), the performance criteria can be staged. Staged criteria could consider each phase of mining and its impact on the end outcome. Staged criteria for the management of materials with the potential to leach contaminants over the long-term could include:

- ongoing characterisation of mined materials (ongoing throughout operations);
- segregation and storage of problematic materials before adequate encapsulation (ongoing throughout operations); and
- encapsulation of problematic materials according to design provided in Appendix A (*rehabilitation/closure*).

In situations where the criteria refers to an internal procedure or management plan (e.g. Materials Handling Plan), these procedures/plans should be included as Appendices to the mining proposal or mine closure plan. In these circumstances, adherence to the procedure or plan will become an indicator of compliance.

In most circumstances, performance criteria should be outcome-based so that the environmental management required to achieve that outcome is not specified in the criteria. This is to enable environmental management to be adaptive and allow proponents flexibility in how they manage their risks, so as to achieve the required environmental outcome. In situations where there is a long lag-time between environmental management actions and a potential impact (for example the management of materials with the potential to leach contaminants over the long-term) the performance criteria may include reference to specific management actions.

10.4 Monitoring

Monitoring is undertaken to determine whether performance criteria in the mining proposal are being met and if remedial action is required. Adequate monitoring requires the establishment of baseline data and reference sites and regular monitoring after the commencement of activities. Monitoring descriptions may include the location of monitoring sites and reference sites, parameters, frequency, timing and methods for data collection and analysis.

Specific monitoring is required for each performance criteria at an agreed schedule. Monitoring should be sensitive enough to detect early changes in the environmental conditions on site, so that corrective or preventative actions can be implemented well in advance of an environmental outcome being breached. Responsive/contingency management measures should be implemented before performance criteria are breached.

It is a proponent's responsibility to monitor their own environmental performance and continually improve or adapt their management to prevent or limit environmental impacts. It is recommended that consideration be given to establishing action trigger points within the monitoring program. These triggers will provide an early warning system that allow for additional management measures or contingency plans to be implemented before any environmental outcomes are breached. Depending on the environmental risk, these triggers may be outlined in the mining proposal, or they may just form part of a proponent's internal procedures under their EMS.

11. Environmental Management System

As per the *Statutory Guidelines for Mining Proposals*, the mining proposal must include a description of the management system that will be implemented to appropriately manage all environmental risks.

A mining proposal requires proponents to demonstrate an upfront assessment and identification of risk management measures. Due to the long term nature of these activities and the potential for new risks to arise during operations, ongoing risk identification and monitoring of the success of the proposed management measures is required.

Following approval of the mining proposal, the risk management process is required to be maintained and managed throughout the life of the project via an appropriate EMS. A separate EMS is not required for each individual EGS – proponents can have an overarching EMS that is suitable for all of their sites, provided it adequately addresses the specific procedures for the EGS associated with the mining proposal.

Ongoing management can be achieved via an appropriate EMS. While certification of the system is not required under the ISO 14001 Environmental Management System standard, this standard does provide useful guidance on the ongoing management of the risks and activities.

If the proponent chooses to implement a certified ISO 14001 EMS, no further information is required in the EMS section of the Mining Proposal other than a commitment that this will be implemented. Should proponents choose not to certify their system, or implement an alternative EMS, a description of this system must be included in this section of the mining proposal.

The description of the EMS in the mining proposal should cover the following components:

- management system design (broad description);
- risk identification throughout the life of the project;
- implementing environmental management programs;
- incorporating goals and targets, and legal obligations;
- structure and responsibility;
- training;
- operational control (procedures);

- monitoring and management of performance;
- non-compliances and corrective actions;
- internal and external reporting of performance;
- keeping records;
- auditing of performance; and
- continuous improvement.

An illustration of the broad components of an EMS that meets the above requirements is provided in Figure 5.

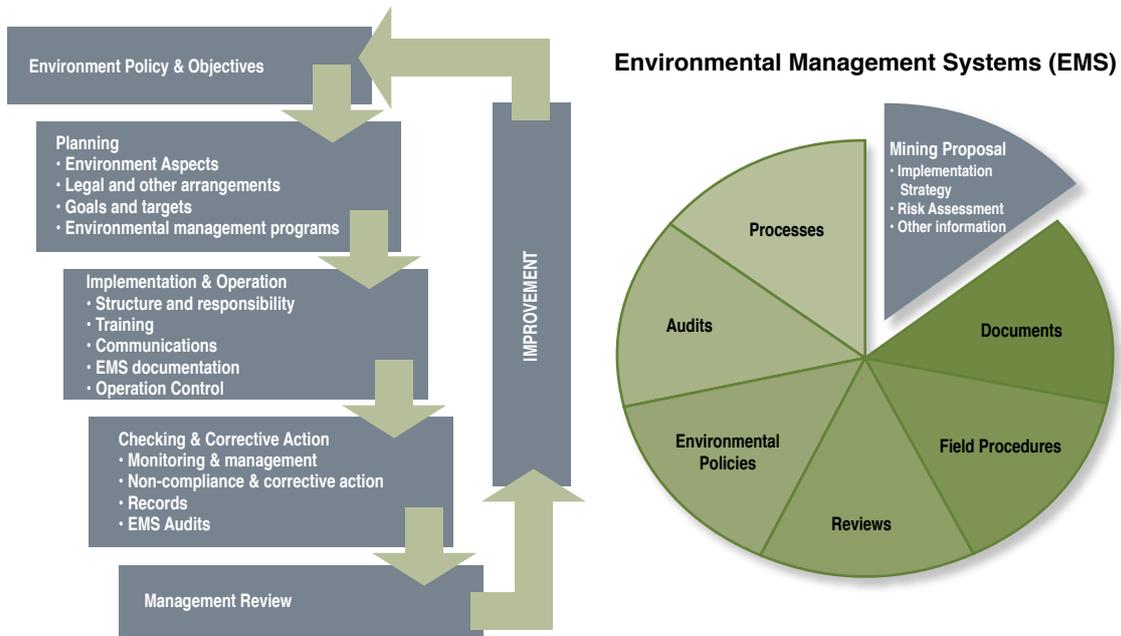


Figure 5 – Example EMS

12. Mine Closure Plan

As per the *Statutory Guidelines for Mining Proposals* all mining proposals must include a mine closure plan.

For activities that already have an approved mine closure plan or mine closure plan currently under assessment by DMIRS, that mine closure plan can be included in the mining proposal where the mining proposal will not result in increased closure risks or change the closure strategy or outcomes. Where an update to an existing mine closure plan is required, the updates to the mine closure plan should be commensurate to the nature and scale of the change.

13. Expansions and/or alterations to an approved mining proposal

As per the *Statutory Guidelines for Mining Proposals*, in addition to the above information, revised mining proposals for the expansion and/or alteration to approved activities must also include:

- An updated document revision number to indicate that the document is a revision to a previously approved mining proposal.
- A revision summary table that clearly outlines all changes made in the revised mining proposal.

A revised mining proposal or new mining proposal needs to be submitted to DMIRS for assessment in the following circumstances:

- When any disturbance is proposed outside the approved disturbance envelope;
- The characteristics of any 'Key Mine Activities' detailed in an approved mining proposal need to be altered; or
- A new activity, or change to an activity type, beyond that listed in an approved mining proposal is proposed.

DMIRS may also request a revised mining proposal where the environmental outcomes agreed in the approved mining proposal need to be modified or will not be able to be achieved.

If modification and resubmission of a mining proposal is required, an existing approved mining proposal may be revised and resubmitted to DMIRS for assessment. DMIRS may also request modification and resubmission of a document during assessment, in which case the version number must be updated prior to resubmission. DMIRS may request the modifications in the revised and resubmitted document during assessment to be highlighted to assist in finalising the assessment process.

Early consultation is encouraged to ensure appropriate approvals are sought for changes to operations. To aid in this consultation, a 'Pro forma for Notification of Minor Changes to a Mining proposal' is available (Appendix 8). This will allow proponents to detail proposed minor changes and seek confirmation on whether a revised mining proposal is required or not. If the Department considers that the change does trigger the requirement for a revised Mining proposal, the tenement holder will be requested to submit a new or revised mining proposal for assessment and approval.

References

Australian Government (2016), *Risk Management*, Leading Practice Sustainable Development Program for the Mining Industry.

Department of Mines and Petroleum (2015), Guide to the preparation of a design report for tailings storage facilities (TSFs), Resources Safety and Environment Divisions, Department of Mines and Petroleum.

Department of Mines and Petroleum (2013), Tailings storage facilities in Western Australia – code of practice, Resources Safety and Environment Divisions, Department of Mines and Petroleum

Standards Australia (2018).AS/NZS ISO 31000: 2018 Risk Management – Guidelines.

MCMPR (2005), Principles for Engagement with Communities and Stakeholders, Ministerial Council on Mineral and Petroleum Resources.

DITR (2006), *Community Engagement and Development*, Leading Practice Sustainable Development Program for the Mining Industry produced by the Department of Industry, Tourism and Resources, Canberra.

APPENDICES

Appendix 1	Definitions and Acronyms
Appendix 2	Mining Proposal Scoping Document Template
Appendix 3	Projects and Environmental Group Sites
Appendix 4	Environmental Group Site Details
Appendix 5	Developing a Stakeholder Engagement Strategy
Appendix 6	Additional Risk Assessment Guidance and Examples
Appendix 7	Example Environmental Outcomes, Performance Criteria and Monitoring
Appendix 8	Pro forma for Notification of Minor Changes
Appendix 9	Mining Proposal Checklist

APPENDIX 1 – DEFINITIONS AND ACRONYMS

When preparing a Mining Proposal, it is suggested that the following definitions are used. If you require further clarification, please contact your Regional Environmental Officer.

Activity	Elements of the organisations activities or products or services that can interact with the environment. These include routine and non-routine activities.
As low as reasonably practicable (ALARP)	Any measure which is practicable and the implementation cost (money, time, effort) is not grossly disproportionate to the benefit, the measure is considered “reasonably practicable” and implementation is expected
Authorised company/person	A company or person authorised by the tenement holder to submit a mining proposal or mine closure plan to DMIRS.
Design report	<p>The design report is a more complex and detailed report that presents an analysis of the background conditions and investigations undertaken when planning a tailings storage facility (TSF). The design report is expected to evaluate:</p> <ul style="list-style-type: none"> • variations in the surface and sub-surface profile, and their impact on physical and engineering properties • specified design and operational parameters, including relevant tolerances and their impact on the integrity and performance of the TSF • monitoring and inspection requirements • the proposed closure approach to be adopted. <p>For further guidance on the information expected in a design report refer to the DMIRS <i>Guide to the preparation of a design report for tailings storage facilities (TSFs)</i> (2015).</p>
Disturbed	Area where vegetation has been cleared and/or topsoil (surface cover) removed.
DMIRS Environmental Objectives	The related environmental objective for each environmental factor is the desired goal that, if met, will indicate that the proposed activities are not expected to have a significant impact on that factor of the environment. DMIRS objectives are identified in the <i>Environmental Objectives Policy for Mining</i> (2020).
Domain	A group of landform(s) or infrastructure that has similar rehabilitation and closure requirements and objectives.
Earthworks	Reshaping, capping, water/wind erosion control, rock armouring, ripping.
Environmental Factor	A part of the environment that may be impacted by an activity
Environmental Group Site (EGS)	A grouping of individual tenements for the purposes of further distinguishing the operations which make up a particular Project. Multiple Environmental Group Sites can be created within one Project. Each Environmental Group Site will contain a separate set of tenements, which collectively will make up all the tenements for the Project.
Environmental Outcome	Environmental outcome is the acceptable level of impact that must not be exceeded, or a level of protection/performance/result that must be achieved, for the mine site to be considered compliant.
Environmental Value	A beneficial use and/or an ecosystem health condition.
GDA Coordinates	Map coordinates as per the Geocentric Datum of Australia reference system.
Key Mine Activities	Defined as the following categories: a tailings or residue storage facility, waste dump or overburden stockpile, evaporation pond (not associated with minerals-in-brine extraction), dam – saline water or process liquor, mining void, low-grade ore stockpile (class 1) or run-of-mine pad, heap or vat leach facility, plant site, evaporation pond (off-playa) associated with minerals-in-brine extraction, evaporation pond (on-playa) associated with minerals-in-brine extraction, halite/salt stockpile (off-playa) associated with minerals-in-brine extraction, halite/salt stockpile (on-playa) associated with minerals-in-brine extraction and minerals-in-brine abstraction trench.

Key Stakeholder	Post mining land owners/managers and relevant regulators.
Legal Obligations Register	A register of legally binding conditions and commitments relevant to rehabilitation and closure at a given mine site.
Level of Risk	Magnitude of a risk or combination of risks, expressed in terms of the combination of consequences and their likelihood.
Life Of Mine	Expected duration of mining and processing operations.
Likelihood	Description of probability or frequency of an event occurring.
Maintain	To keep in existence or continuance; preserve; retain: or To keep in a specified state, position, etc.
Mine Activity Reference	Name given to a particular activity at the mine for ease of identification, for example “Western Waste Dump” or “Tailings Storage One”.
Mine Closure Plan	A document defined under section 700(1) of the <i>Mining Act 1978</i> and containing the information required by the relevant statutory guidelines about the rehabilitation and closure of a mine.
Mining Disturbances	Features created during mining activities e.g. waste dumps, haul roads, plant site, tailings storage facilities, stockpiles accommodation village, etc.
Mining Proposal	A document defined under section 700(1) of the <i>Mining Act 1978</i> and containing the information required by the relevant statutory guidelines.
Phase of mining	These phases include yet to commence, construction, operation, care and maintenance, active, rehabilitation and closure.
Post-mining land use	A land use that occurs after the cessation of mining operations.
Precious stone	Gemstones and decorative stones such as emerald, opal, agate, chalcedony, organic gems, jasper etc.
Problematic materials	Materials that have the potential to detrimentally impact on humans and the environment, and require careful and appropriate management (e.g. Potential Acid Forming (PAF) materials, metalliferous materials, radioactive materials, asbestiform materials, dispersive materials, etc.
Processed materials	Waste materials generated from the onsite processing of ores.
Project	The total integrated mining operations in which a number of sites contribute to the overall operation to supply ore, processing facilities and disposal of waste products.
Rehabilitation	The return of disturbed land to a safe, stable, non-polluting/ non-contaminating landform in an ecologically sustainable manner that is productive and/or self-sustaining consistent with the agreed post-mining land use.
Rehabilitation obligations	Commitments, objectives, criteria, conditions or obligations relating to rehabilitation that apply to the mining disturbances whether under a tenement condition, mining proposal, mine closure plan or otherwise.
Residual Risk	Risk remaining after risk treatment.
Revision	A numerical identifier of an approved mining proposal. If modification and resubmission of a mining proposal is required, the revision number must be updated prior to resubmission.
Risk	The chance of something happening that will have an impact on objectives. It is measured in terms of consequences, and their likelihood of occurrence
Risk Analysis	Process to comprehend the nature of risk and to determine the level of risk.
Risk Assessment	Overall process for risk identification, risk analysis and risk evaluation

Risk Identification	Process of finding, recognizing and describing risks.
Risk Management	Coordinated activities to direct and control an organization with regard to risk.
Risk Management Framework	Set of components that provide the foundations and organizational arrangements for designing, implementing, monitoring, reviewing and continually improving risk management.
Risk Treatment	Process to modify risk.
Source of Risk	Source of potential harm, or situation with the potential to cause loss or adverse impact. These should also include sources which may only have potential unplanned interactions with the environment (i.e. accidents/incidents).
Stakeholder	A person or representatives of an organisation that can affect, be affected by, or perceive themselves to be affected by, a decision or activity. A decision maker can be a stakeholder.
Short range endemic species	Short Range Endemic (SRE) species are defined as terrestrial and freshwater invertebrates that have naturally small distributions of less than 10,000 km ² . Within this distribution, the actual areas occupied may be small, discontinuous or fragmented.
Subterranean Fauna	Subterranean fauna are defined as fauna that live their entire lives (obligate) below the surface of the earth. They are divided into two groups: <ul style="list-style-type: none"> • stygofauna – aquatic and living in groundwater • troglofauna – air-breathing and living in caves and voids
Tailings Storage Facility	An area used to store and consolidate tailings.
Version	An identifier that reflects a change to a mining proposal that occurs during assessment. If DMIRS requests modification and resubmission of a document during assessment, the version number must be updated prior resubmission (e.g. 4.0 updated to 4.1).
Waste Landform	Areas associated with the storage of unprocessed waste material resulting from a mining operation.
Water table	The level below which the ground is saturated with water.

APPENDIX 2 – MINING PROPOSAL SCOPING DOCUMENT TEMPLATE

The purpose of a Mining Proposal Scoping Document (MPSD) is to:

- provide a framework for pre-consultation with DMIRS to discuss the scope and key aspects of the mining proposal;
- delineate regulatory agency responsibilities; and
- identify issues that are to be addressed prior to submission of the mining proposal and/or required studies/work that need to be carried out.

A blank template is available on the DMIRS website for potential applicants to complete to ensure necessary information is available or information gaps identified prior to meeting with DMIRS. This document is provided for further guidance to proponents intending to submit Mining Proposals and is not a statutory document for approval.

1. KEY PROPOSAL CHARACTERISTICS¹⁰

Summary of proposal

Proposal title¹¹	[Emily Gold Mine]
Proponent name	[Safe Hands Mining Pty Ltd]
Short description	[This proposal is to mine ore from Emily deposit, 25 km north of the town of Coolgardie WA, including the construction of associated mine infrastructure (plant, offices, workshop, accommodation and roads), construct a waste rock landform and discharge waste to a Tailings Storage facility]

Physical elements

Activity Type/ Element¹²	Location	Proposed extent
Mining void (depth greater than 5m – below ground water)	[Attached Figure]	[Up to 33 ha in area. Up to 80m depth.]
Waste dump or overburden stockpile (class 1)	[Attached Figure]	[Up to 60 ha in area. Max height of 35m. Potential for acid-forming material.]
Plant site	[Attached Figure]	[Up to 8 ha in area. CIP gold extraction.]
Tailings or residue storage facility (class 1)	[Attached Figure]	[Up to 25 ha in area. Paddock-style, 2 cells, perimeter discharge, max height of 15m. Up-stream lifts. Potential for acid-forming material.]
Run-of-mine pad	[Attached Figure]	[Up to 18 ha in area]
Miscellaneous mine activities	[Attached Figure]	[Up to 100 ha in area. Includes fuel storage facility, workshop, landfill, accommodation village, airstrip, laydown area.]

¹⁰ This table is aligned with the EPA's *Instructions on how to define the key characteristics of a proposal*. You can copy the table across from any existing EPA assessment documents.

¹¹ If the project has been assessed by the EPA, use the same project name as that stated in the 'Key Proposal Characteristics Table' included in the EPA assessment documents.

¹² Use activity types from Table 2 of the *Statutory Guideline for Mining Proposals*.

Operational elements¹³

Element	Location	Proposed extent
Dewatering	[Attached Figure]	[Pit dewatering up to 0.5 GL per year. Temporary storage and then used for processing and dust suppression. No discharge to environment.]
Ore processing	[Attached process flow diagram]	[Up to 500,000 tonnes of ore processed per year]
Ore processing (waste)	[Attached process flow diagram] [Attached Figure]	[Up to 300,000 tonnes of tailings produced per year]

2. CONSIDERATION OF ENVIRONMENTAL FACTORS AND SCOPE OF WORK

The purpose of this section is to discuss how the project will impact on DMIRS' environmental factors,¹⁴ and what further work will be undertaken.

Environmental Factors	Studies undertaken/ proposed	Comments
Biodiversity	[Level 2 flora and fauna surveys, stygofauna survey.]	[Two priority flora species identified – Acacia westerosii, Eucalyptus pawneeus] [Threatened fauna habitat present, none identified in targeted surveys.] [Karsten Ranges PEC in proximity, however not directly impacted.] [Stygofauna survey still to be completed]
Water resources	[Hydrogeological study] [Hydrological study – surface] [Flood mapping]	[Pit dewatering up to 0.5 GL per year required. Groundwater is saline – 30,000mg/l TDS] [No major drainage lines impacted.] [1 in 100 year ARI flood mapping to be undertaken.]
Land and Soil	[Physical and chemical characterisation of waste] [Soils survey] [Erosion modelling]	[Approx. 8% of waste rock is potentially acid forming (PAF). Tailings has PAF material but should be adequately buffered by the net neutralising capacity of the tailings.] [Lateritic materials suitable as rehabilitation material. Competent fresh rock available for TSF construction and rock armouring. Oxide zone wastes present risks to rehabilitation – erodible and dispersive.] [Topsoil and subsoils are nutrient poor, and can be dispersive, however suitable as rehabilitation material if used appropriately.] [Erosion modelling to be completed to predict levels of erosion from waste rock landform and tailings embankments.]

¹³ Include any operational elements that are not clearly explained by the list of physical elements

¹⁴ As defined in DMIRS *Environmental Objectives Policy for Mining* (2020).

Environmental Factors	Studies undertaken/ proposed	Comments
Rehabilitation and Mine Closure	[Closure designs] [Rehabilitation trials]	[TSF closure design – store and release cover. Waste rock landform closure design – bench and berm, 14 degree slopes, contain drainage on top surface and berms, combined topsoil/rock mulch.] [Rehabilitation trials proposed.]

3. STAKEHOLDER ENGAGEMENT

The purpose of this section is to outline what stakeholder engagement has been undertaken, what further engagement is proposed, and how this has affected the proposal.

Stakeholder engagement to date indicates the post-mining land use will be: [insert land use e.g. pastoral, conservation]

DE Mining – Stakeholder Engagement Register 2020					
Date	Description of Engagement	Stakeholders	Stakeholder comments/ issue	Proponent Response and/ or resolution	Stakeholder Response
2015 – ongoing	[Quarterly meetings]	[Traditional owners]	[Concern that water in a nearby spring may be being contaminated with lead]	[Identifying and securing lead contaminated materials. Monitoring quality and quantity of the spring water. Remedial action as required. Health testing and keeping the traditional owners informed]	[Acceptable]
12 July 2017	[Meeting to discuss potential post-mining land uses]	[Pastoralist neighbour]	[Concerns about any hole or pit to be left behind after mining]	[Will include in closure design and provision practical measures to make safe (to human and animal) any hole or pit left after mining]	[Acceptable]
2015 – ongoing	[Periodic meetings to discuss post-mining opportunities]	[Local Shire]	[Ongoing relationship with regular communication to explore potential uses of rehabilitated mine feature or infrastructure to be left after mining that would be of benefit to community]	[Continued open dialogue]	[N/A]

4. ENVIRONMENTAL LEGISLATIVE FRAMEWORK

The purpose of this section is to outline what other environmental approvals (or other relevant approvals) have been granted or will be applicable, and what aspects of the proposal they will regulate.

Relevant legislation	Environmental factor regulated/affected	Relevant approval/requirement and status of relevant approval
<i>Environmental Protection and Biodiversity Conservation Act 1999</i>	Biodiversity: Impacts to <i>Leipoa ocellata</i> (Malleefowl) and <i>Liopholis kintorei</i> (Great Desert Skink).	Controlled action – listed threatened species. Under assessment.
<i>Environmental Protection Act 1986</i> (Part IV)	Key environmental factors regulated under Part IV: <ul style="list-style-type: none"> • Flora and vegetation • Terrestrial fauna • Terrestrial environmental quality • Inland waters 	Ministerial approval issued under Part IV of the <i>Environmental Protection Act 1986</i> . Conditions set in Ministerial Statement.

Relevant legislation	Environmental factor regulated/affected	Relevant approval/requirement and status of relevant approval
<i>Environmental Protection Act 1986</i> (Part V) Prescribed premises categories ¹⁵ : <ul style="list-style-type: none"> • (5) Processing or beneficiation of metallic or non-metallic ore • (6) Mine dewatering; • (12) Screening etc. of material • (31) Chemical Manufacturing • (44) Metals Smelting or Refining • (54) Sewage facility • (64) Class II or III putrescible landfill site • (84) Electric power generation 	Water Resources (pollution) Landforms	Works approval and licence/registration under Part V issued.
<i>Rights in Water and Irrigation Act 1914</i>	Water resources	5C licence to take 0.5ML/year of groundwater within the Goldfields Groundwater Management Area 26D licence to construct 8 bores within the Goldfields Groundwater Management Area
<i>Aboriginal Heritage Act 1972</i>	Aboriginal heritage	Section 18 Consent to certain uses.

5. ATTACHMENTS

Attachment 1 – Regional location

Attachment 2 – Proposed site plan

Attachment 3 – Proposed disturbance envelope

Attachment 4 – Processing flow diagram

¹⁵ See Schedule 1 of the Environmental Protection Regulations 1987.

APPENDIX 3 – PROJECTS & ENVIRONMENTAL GROUP SITES

1. Projects

A Project is a common term used to describe a mineral deposit identified in Western Australia. Often these deposits are linked to tenements granted under the Mining Act in order to further define their spatial extent. Projects are assigned a unique identifier known as a J-code.

The Geological Survey of Western Australia (GSWA) maintains a comprehensive database of mines, mineral deposits and prospects in Mines and Mineral Deposits (MINEDEX) System. The initial determination of Projects and their associated tenements was undertaken as part of developing the EARS2 system. The original groupings were based on the information contained within MINEDEX and have been continually refined over time.

2. Environmental Group Sites

An **Environmental Group Site** refers to a grouping of individual tenements for the purposes of further distinguishing the operations which make up a particular Project. In most circumstances a Project only consists of one Environmental Group Site. However, in circumstances where the proponent wishes to distinguish between operations which make up a Project (generally because they are on spatially separated tenements), multiple Environmental Group Sites can be created within one Project. Each Environmental Group Site will contain a separate set of tenements, which collectively will make up all the tenements for the Project.

An illustration showing the relationship between Projects, Environmental Group Sites and Tenements is provided below.

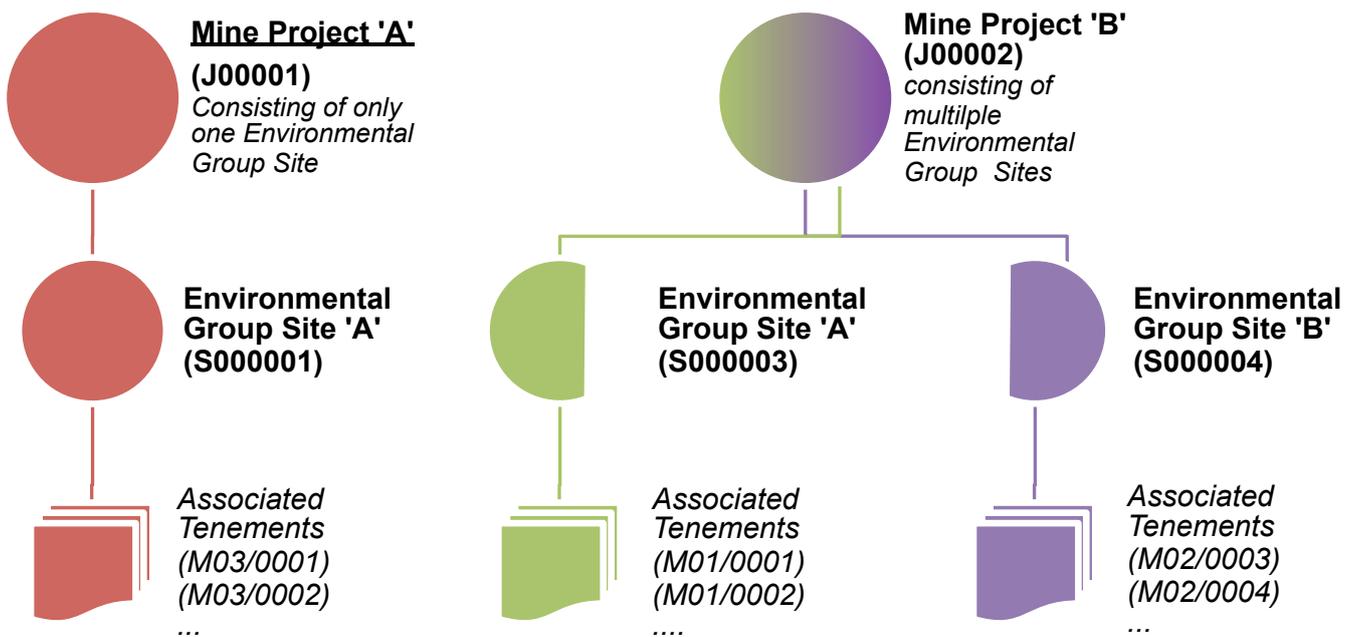


Figure 1 – Tenement Grouping Relationship (Projects, Environmental Group Sites, Tenements)

If the groupings listed in EARS2 are believed to be incorrect, users should contact the department via EARS Manager (EARSManager@DMIRS.wa.gov.au) with a request and reason for change.

APPENDIX 4 – ENVIRONMENTAL GROUP SITE DETAILS

The 'Environmental Group Site' details section is intended to capture and display information specific to the mine site (Environmental Group Site) for which a mining proposal is being lodged. The information can be submitted using the table below.

ENVIRONMENTAL GROUP SITE DETAILS		
EGS Name		
EGS Code Code is derived from the EARS2 system. (Leave blank if new project)		
Description of Operation		
Phase of mining:		
Commodity mined		
Estimated commencement date		
Estimated completion date		
Tenement Details	Tenement	Tenement Holder
PROPONENT DETAILS		
Company or Individual Name		
ACN/ABN		
Address		
Postal Address		

Key Contact Representative Key contact for any enquires regarding the operation of the mine site. This may be different from the key contact associated with the Mining Proposal.	Name	
	Position	
	Phone Number	
	Email	

APPENDIX 5 – DEVELOPING A STAKEHOLDER ENGAGEMENT STRATEGY

DMIRS requires proponents to undertake and demonstrate appropriate and effective community and stakeholder engagement.

In order to satisfy DMIRS that sufficient community and stakeholder engagement has been undertaken, proponents must demonstrate that the principles of stakeholder engagement: communication, transparency, collaboration, inclusiveness and integrity, have been addressed.

It is not intended for DMIRS to prescribe the approach or strategy for engagement and proponents are encouraged to use a range of styles that they determine appropriate through different stages of the process or when certain issues need to be addressed.

This guidance provides a framework that encompasses the principles of stakeholder engagement. It aims to assist proponents with the following:

- identification of priority periods for consultation;
- identification of community and stakeholders; and
- development of an engagement strategy.

1. Priority periods of consultation

Stakeholder engagement is a continuous process that must be conducted throughout the life of mine – from mine planning through to relinquishment.

During the mine planning process and prior to submission of the Mining proposal, DMIRS requires proponents to engage with the community and stakeholders:

- during the planning and risk assessment process¹⁶; and
- while determining environment outcomes.

Ongoing community and stakeholder engagement during construction and operations will be required for the following components of the project:

- on high risk activities (as determined by the risk assessment), as required;
- prior to any major changes to proposed activities; and
- on any other new area of concern identified by stakeholders.

Although this guideline specifically addresses community and stakeholder engagement for mine planning and operations, engagement for mine closure must be integrated throughout the process. Community and stakeholder engagement for mine closure is described in the Statutory Guidelines for Mine Closure Plans.

2. Identification of stakeholders and interested parties

The core principle of inclusiveness is satisfied through the identification of stakeholders and interested parties, including the community.

A formal stakeholder identification process should be undertaken early in the planning stage, and regularly reviewed as stakeholders may change as mine life progresses.

For the purpose of this paper, the term “**stakeholders**” includes both internal and external parties who are likely to affect, to be affected or to have an interest in mine activities and outcomes.

The **external stakeholders** typically include:

- Government (such as regulatory agencies, local authorities);
- land owners/managers (such as private land holders, indigenous/traditional land owners, lease holders, Pastoral Lands Board, State land managers);
- local community members or groups;
- interested Non-Government Organisations (NGOs);
- adjacent landholders; and
- downstream (or down-gradient) users of surface or groundwater resources.

¹⁶ Further information on Stakeholder Engagement in the context of Risk Assessment can be found in the Standards Australia AS ISO 31000:2018 Risk Management Guidelines (2018).

Information in the Mining proposal is only required to focus on information relating to engagement with external stakeholders. Engagement with internal stakeholders is important; however records of this are more relevant to a proponent's EMS rather than the Mining proposal.

3. Targeted community and stakeholder engagement strategy

Proponents are responsible for developing their own targeted engagement strategy. A framework for developing an engagement strategy is described below. By following this framework, the principles of communication, transparency and collaboration will be met.

DMIRS does not intend to prescribe the approach or strategy for engagement and proponents are encouraged to use a range of styles that they determine appropriate through different stages of the process or when certain issues need to be addressed¹⁷.

It is recognised that various factors such as type, scale and location of activities will determine the most appropriate engagement strategy to be implemented and that the process of engagement is likely to be modified according to changes in mining activities and the needs of the interested parties.

3.1 Scope of the targeted community and stakeholder engagement strategy

Effective engagement strategies are open, transparent and mutually beneficial to both the proponent and interested parties. In order to facilitate effective engagement, it is critical that all parties articulate and understand:

- objectives of the engagement process
- objectives of the proponent
- objectives of the interested parties.

By identifying the objectives of all parties involved as early in the process as possible, a clearer pathway for the scope of the engagement strategy will be established.

Limitations and boundaries (such as timeframes, non-negotiable issues, resources and modes of communication) must also be articulated to ensure that expectations are realistic and accurate.

It is important that all interested parties have their interests and concerns considered and, where appropriate, addressed. An effective consultation process will also provide opportunity for feedback on the response or proposed action by the proponent.

A review of the scope may be required regularly as new 'interested parties' are identified and concerns/issues change with the progression of the mine life.

3.2 Methods of communication

Effective community and stakeholder engagement requires that communication is symmetric (both parties are equal in the process) and reciprocal.

To promote symmetric and reciprocal communication, the lines of communication must be clearly defined and articulated as early on in the process as possible. For effective communication to be achieved the needs and characteristics of the interested parties must be considered and communication must be:

- accessible – consideration to minority and marginalised groups and geographic restrictions;
- appropriate – the nature of the information and the delivery of information must be culturally, technically and logistically appropriate; and
- respectful – people must be treated honestly, fairly and without discrimination.

3.3 Adequate resourcing

It is important that resourcing for engagement is understood and considered early in the planning process and detailed in the stakeholder engagement strategy. Resources may include financial, human and technological support, and can also include stakeholder-related expenses.

¹⁷ For further information, the International Association of Public Participation (IAP2) has developed a public participation spectrum which includes: informing, consulting, involving, collaborating, and empowering. For further guidance, refer to the *Community Engagement and Development*, Leading Practice Sustainable Development Program for the Mining Industry produced by the Department of Industry, Tourism and Resources, Canberra. (DITR 2006) and AccountAbility's *AA1000 Stakeholder Engagement Standard* (2015).

3.4 Timeliness

Ongoing and frequent engagement is an important mechanism for building relationships with community and stakeholders. In addition, each phase of the mine life brings with it different challenges which need to be considered in the engagement process.

In order for interested parties to effectively receive, review and respond to information, adequate time must be allowed for by the proponent when planning and implementing the engagement strategy.

Sufficient, realistic and clear timeframes for feedback and response must be established between the parties.

3.5 Documentation

As a component of the strategy, certain aspects of the engagement process should be documented to facilitate openness and transparency during the process. Based on the Ministerial Council on Mineral and Petroleum Resources (MCMPR) *Principles for Engagement with Communities and Stakeholders (2005)*, it is necessary to maintain documentation for:

- the engagement process undertaken;
- objections/claims made by interested parties;
- assessment of merit of objection or claims about activities undertaken by the proponent
- response provided by the proponent to the interested parties (including any mitigation or control measures to address concerns); and
- the outcomes of meetings and decisions.

This documentation described above is separate to regulatory reporting requirements.

4. Evaluation

In order to measure the effectiveness of stakeholder and community engagement, proponents should undertake an evaluation of their engagement strategy. In most cases, the overall purpose of evaluation is to test whether the engagement activities has met its objectives. The end of each 'priority periods of consultation' may be an appropriate time for this to occur.

Table 1: Stakeholder Engagement Register

Safe Hands Mining – Stakeholder Engagement Register 2019					
Date	Description of Engagement	Stakeholders	Stakeholder comments/ issue	Proponent Response and/or resolution	Stakeholder Response
2015 – ongoing	Quarterly meetings	Traditional owners	Concern that water in a nearby spring may be being contaminated with lead	Identifying and securing lead contaminated materials. Monitoring quality and quantity of the spring water. Remedial action as required. Health testing and keeping the traditional owners informed	Acceptable
27/06/2019	Meeting to discuss potential post-mining land uses	Pastoralist neighbour	Concerns about any hole or pit to be left behind after mining	Will include in closure design and provision practical measures to make safe (to human and animal) any hole or pit left after mining	Acceptable

APPENDIX 6 – ADDITIONAL RISK ASSESSMENT GUIDANCE AND EXAMPLES

The information in this Appendix provides additional guidance and examples for risk assessments. The following examples are intended to provide additional guidance and are not meant to be prescriptively applied.

Below is an example Risk Matrix, along with the corresponding descriptions of consequence and likelihood levels.

Likelihood Descriptors

Descriptor	Frequency	Probability
Almost Certain	Twice or more per year	Event will occur during the Project / period under review.
		High number of known incidents.
Likely	Once per year	Event likely to occur during the Project / period under review.
		Regular incidents known.
Possible	Once in 5 years	Event may occur in some instances during the Project / period under review.
		Occasional incidents known.
Unlikely	Once in 10 years	Event is not likely to occur during the Project / period under review.
		Some occurrences known.
Rare	Once in 20 years	Event will occur in exceptional circumstances during the Project / period under review.
		Very few or no known occurrences.

Consequence Descriptors

Factor	Insignificant	Minor	Moderate	Major	Severe
Biodiversity	Alteration or disturbance to an isolated area with no effect on habitat or ecosystem. Loss of an individual plant / animal of conservation significance.	Alteration or disturbance to <10% of a habitat or ecosystem resulting in a recoverable impact within 2 years. Loss of multiple plants / animals of conservation significance.	Alteration or disturbance to 10-40% of a habitat or ecosystem resulting in a recoverable impact within 2-5 years. Loss of <50% known local population of plant / animal of conservation significance.	Alteration or disturbance to 40-70% of a habitat or ecosystem resulting in a recoverable impact within 5-15 years. Loss of >50% known local population of plant / animal species with possible loss of entire local population.	Alteration or disturbance to >70% of a habitat or ecosystem resulting in a recoverable impact >15 years. Local loss of conservation significant or listed species. Extinction of a species.
Water Resources	Negligible change to hydrological processes, water availability or water quality.	Short-term modification of hydrological processes, water availability and quality within project tenure, but no change in beneficial use.	Medium-term modification of hydrological processes, water availability and water quality within project tenure, but no change in beneficial use. Short-term modification of hydrological processes, water availability and water quality outside project tenure, but no change in beneficial use.	Long-term modification of hydrological processes, water availability and water quality within project tenure, but no change in beneficial use. Medium-term modification of hydrological processes, water availability and water quality outside project tenure, with change in beneficial use	Long-term or permanent modification of hydrological processes, water availability or water quality outside project tenure, with impacts to a water-dependent environmental value and/or change in beneficial use.
Land and Soils	Clean-up by site personnel, rectified immediately. Confined to immediate area around source.	Clean-up by site personnel, remediation within 1 year. Confined to operational area.	Clean-up by site personnel, remediation within 1-3 years. Minor impact outside disturbance envelope or minor impact to soil stockpiles.	Clean-up requiring external specialist, remediation within 3-10 years. Impact has migrated outside the disturbance envelope or contamination of soil stockpiles.	Clean-up requiring external specialist. Remediation >10 years, or permanent residual impact. Impact outside the tenement boundary.
Rehabilitation and Mine Closure	Site is safe, stable and non-polluting. Post mining land use is not adversely affected.	Site is safe, all major landforms are stable, and any stability or pollution issues are contained and require no residual management. Post mining land use is not adversely affected.	Site is safe, and any stability or pollution issues require minor, ongoing maintenance by end land-user. Post mining land use cannot proceed without some management.	Site cannot be considered safe, stable or non-polluting without long-term management or intervention. Post mining land use cannot proceed without ongoing management.	Site is unsafe, unstable and/or causing pollution or contamination that will cause an ongoing residual affect. Post mining land use cannot be achieved.

Example Risk Matrix

1. Qualitative Risk Assessment

Risk Matrix		Most Credible Consequence Level					
		Insignificant	Minor	Moderate	Major	Severe	
Likelihood	Almost Certain	M	H	H	E	E	<div style="background-color: red; color: white; padding: 2px;">Extreme</div> <div style="background-color: orange; color: white; padding: 2px;">High</div> <div style="background-color: yellow; color: black; padding: 2px;">Medium</div> <div style="background-color: green; color: white; padding: 2px;">Low</div>
	Likely	M	M	H	H	E	
	Possible	L	M	M	H	H	
	Unlikely	L	L	M	M	H	
	Rare	L	L	L	M	M	

2. Semi-Quantitative Risk Assessment

Risk Matrix			Most Credible Consequence Level					
			6	7	8	9	10	
			Insignificant	Minor	Moderate	Major	Severe	
Likelihood	5	Almost Certain	M-11	H-16	H-20	E-23	E-25	<div style="background-color: red; color: white; padding: 2px;">Extreme</div> <div style="background-color: orange; color: white; padding: 2px;">High</div> <div style="background-color: yellow; color: black; padding: 2px;">Medium</div> <div style="background-color: green; color: white; padding: 2px;">Low</div>
	4	Likely	M-7	M-12	H-17	H-21	E-24	
	3	Possible	L-4	M-8	M-13	H-18	H-22	
	2	Unlikely	L-2	L-5	M-9	M-14	H-19	
	1	Rare	L-1	L-3	L-6	M-10	M-15	

Level of Certainty

Descriptor	Explanation
Low	Risk rating is based on subjective opinion or relevant past experience. Baseline data/information has limitations, with only general conclusions possible and further work is required.
Medium	Risk rating is based on similar conditions being observed previously. Baseline data/information has some gaps or minor further work required.
High	Risk rating is based on testing, modelling or experiments. Baseline data/information is complete and analysis appropriate for level of data.

Acceptability of Risk Level (Inherent)

Risk Level	Acceptability	Treatment
Extreme	Unacceptable	Risk will not be tolerated. Modification of activity required and Mining Proposal amended.
High	May be acceptable, with specific risk treatments	Risk may be tolerated with application of high reliability risk treatments. Environmental outcome / Closure objective required.
Moderate	Acceptable, with relevant risk treatments	Risk is tolerable with application of appropriate risk treatments. Environmental outcome / Closure objective required.
Low	Acceptable	Risk is acceptable, but still requires industry best practice environmental management.

Example Risk Assessment

Risk Pathway / Unwanted Event	Description of Impact	Phase(s) Unwanted Event likely to occur	Inherent Risk				Risk Treatments	Phase(s) Treatments to be implemented	Residual Risk		
			Consequence	Likelihood	Risk Rating	Data Certainty			Consequence	Likelihood	Risk Rating
Clearing results in removal of conservation significant flora and vegetation communities	Loss of priority / significant flora, including reduction in riparian vegetation. Fragmentation of vegetation communities' results in deterioration of populations allowing weed invasion.	Construction Operations	Moderate	Almost Certain	High	High	<ul style="list-style-type: none"> - Clearing of Groundwater Dependent Vegetation associated with Silver Creek will only occur for the main access road. - Clearing Permit CPS 5985/1 condition 3 requires approval prior to removal of <i>Acacia besleyi</i> or riparian vegetation. - Activities to be conducted in accordance with the Flora and Fauna Management Plan. - Land disturbance procedure, requiring site walkover by environmental personnel prior to issue of permit. - Delineation of disturbance boundaries in key areas, including delineation of significant species and vegetation communities. 	Planning Construction Operation	Moderate	Likely	High
Project results in removal of denning and foraging habitat for conservation significant fauna	Loss and/or fragmentation of key habitat results in decline in health and population size of Northern Quoll	Construction Operations	Major	Likely	High	High	<ul style="list-style-type: none"> - No mining or disturbance to key denning and foraging habitat identified on Mesa B. - Activities to be conducted in accordance with the Flora and Fauna Management Plan. - Activities to be conducted in accordance with the Land disturbance procedure, detailing site walkover by environmental personnel prior to internal permit issued. - Delineation of disturbance boundaries in key areas, including delineation of sensitive habitat. 	Planning Construction Operation	Minor	Possible	Moderate
Project development results in the introduction or spread of weeds	Introduction of new weed species or spreading of existing weed species adversely affects vegetation quality and composition.	Construction Operations Care & Maintenance Closure Post Closure	Moderate	Likely	High	Medium	<ul style="list-style-type: none"> - Activities to be conducted in accordance with the Weed Management Plan, including annual weed survey, management and eradication. - Activities to be conducted in accordance with the Weed Hygiene Procedure, including visual inspection of vehicles / machinery mobilised to site prior to use. - Activities to be conducted in accordance with the Soil Management Plan, detailing weed inspection prior to clearing, in soil stockpiles and prior to use for rehabilitation. 	Construction Operations Care & Maintenance Closure Post Closure	Moderate	Possible	Moderate

Risk Pathway / Unwanted Event	Description of Impact	Phase(s) Unwanted Event likely to occur	Inherent Risk				Risk Treatments	Phase(s) Treatments to be implemented	Residual Risk		
			Consequence	Likelihood	Risk Rating	Data Certainty			Consequence	Likelihood	Risk Rating
Operational failure of TSF embankment results in exposure and release of tailings (Assumes failure registered within timeframe no greater than 6 hours)	Inundation of vegetation within flow path of failure. Removal of vegetation for clean-up activities. Deterioration of Groundwater Dependent Vegetation (GDV) along Silver Creek.	Operations	Moderate	Unlikely	Moderate	High	<ul style="list-style-type: none"> - TSF design based on ANCOLD (2012) risk category. - ANCOLD (2012) Guidelines on Tailings Dams – Planning, Design, Construction, Operation and Closure. - (2013) Tailings Storage Facilities in Western Australia – Code of Practice. - TSF Operating Manual, detailing inspection requirements. - Annual TSF audit by independent Geotechnical Engineer. - Embankment piezometers to monitor phreatic surface. - Survey pins to monitor movement. - Water Management Plan, detailing surface water and groundwater monitoring requirements. 	Planning Construction Operations	Moderate	Rare	Low
	Contamination of soils within flow path of failure. Contamination of soil stockpiles.		Moderate	Unlikely	Moderate	High			Moderate	Rare	Low
	Inundation of ephemeral waterways down gradient of TSF and into Silver Creek.		Major	Unlikely	Moderate	High			Major	Rare	Moderate
Failure of TSF embankment results in exposure and release of tailings	Inundation of vegetation within flow path of failure. Longer term vegetation loss associated with soil contamination. Deterioration or loss of GDV along Silver Creek.	Post Closure	Major	Possible	High	High	<ul style="list-style-type: none"> - Approved decommissioning and closure strategy for TSF. - TSF Decommissioning Report and TSF Closure Report detailing works undertaken to specification. - Post closure stability / erosion and rehabilitation monitoring until completion criteria met. 	Operations Closure Post Closure	Major	Unlikely	Moderate
	Contamination of soils within flow path of failure.		Moderate	Possible	High	High			Moderate	Unlikely	Moderate
	Inundation and contamination of ephemeral waterways down gradient of TSF and into Silver Creek.		Major	Possible	High	High			Major	Unlikely	Moderate

Risk Pathway / Unwanted Event	Description of Impact	Phase(s) Unwanted Event likely to occur	Inherent Risk				Risk Treatments	Phase(s) Treatments to be implemented	Residual Risk		
			Consequence	Likelihood	Risk Rating	Data Certainty			Consequence	Likelihood	Risk Rating
Groundwater abstraction results in drawdown within the alluvial aquifer	Decline in groundwater availability to local existing users.	Construction Operations	Major	Possible	High	High	<ul style="list-style-type: none"> - Borefield for water supply placed 4km north of Silver Creek to avoid impacts to GDV species. - Activities to be conducted in accordance with the Groundwater Supply Operating Strategy, detailing abstraction limits and maximum pumping rates for bores, monitoring requirements and trigger levels. - Activities to be conducted in accordance with the Flora and Fauna Management Plan, detailing monitoring of GDVs. 	Planning Construction Operations	Major	Unlikely	Moderate
	Decline in groundwater levels results in deterioration or loss of GDV associated with Silver Creek.		Major	Likely	High	High			Minor	Unlikely	Low
Mine dewatering results in drawdown within the fractured bedrock aquifer (Limitation: additional aquifer testing is pending)	Decline in groundwater availability to local existing users.	Operations	Major	Unlikely	Moderate	Medium	<ul style="list-style-type: none"> - Activities to be conducted in accordance with the Groundwater Supply Operating Strategy, detailing abstraction limits and maximum pumping rates for bores, monitoring requirements and trigger levels. - Flora and Fauna Management Plan, detailing monitoring of GDVs. 	Planning Operations	Major	Rare	Moderate
	Decline in groundwater levels results in deterioration or loss of GDV associated with Silver Creek.		Moderate	Unlikely	Moderate	Medium			Moderate	Rare	Low
Final void pit lake forms a groundwater sink resulting in permanent drawdown within the fractured bedrock aquifer (Limitation: revised final void model is pending, awaiting additional aquifer testing results)	Decline in groundwater availability to existing users.	Post Closure	Moderate	Unlikely	Moderate	Low	<ul style="list-style-type: none"> - Final void groundwater model, predicting expected groundwater rebound and extent of drawdown post mining. - Activities to be conducted in accordance with the Flora and Fauna Management Plan, detailing monitoring of GDVs. - Post closure monitoring of groundwater levels and GDVs. 	Planning Operations Closure Post-Closure	Moderate	Unlikely	Moderate
	Suppressed water levels result in impact to GDV along Silver Creek.		Moderate	Possible	Moderate	Low			Minor	Unlikely	Low

Risk Pathway / Unwanted Event	Description of Impact	Phase(s) Unwanted Event likely to occur	Inherent Risk				Risk Treatments	Phase(s) Treatments to be implemented	Residual Risk		
			Consequence	Likelihood	Risk Rating	Data Certainty			Consequence	Likelihood	Risk Rating
<p>Exposure of sulphides in final pit walls generates acidic, metalliferous and saline drainage which evapo-concentrate in the pit lake over the long term</p> <p>(Limitation: final void and solute transport model require periodic validation)</p>	Alteration of groundwater quality within the disturbance envelope resulting in a change in the beneficial use of groundwater.	Post Closure	Moderate	Unlikely	Moderate	Low	<ul style="list-style-type: none"> Install surface water controls (e.g. bunds, diversion channels and drains) to limit pit void catchment area. Characterise lithologies exposed in final pit shell to determine likely load and flux of metals / metalloids in drainage reporting to the pit lake. Final void groundwater model, including solute transport model for key elements of concern. Determine fauna toxicity levels for key elements of concern to establish monitoring trigger levels. Post closure groundwater monitoring. 	<p>Planning</p> <p>Operations</p> <p>Closure</p> <p>Post-Closure</p>	Moderate	Rare	Low
	Decline in health of migratory bird species from exposure / ingestion of acidic, metalliferous and saline water.		Minor	Unlikely	Low	Low			Minor	Rare	Low
Poor management of rehabilitation materials (soils, growth medium and rock armour) results in ineffective identification, stockpiling or use	<p>Delays to effective rehabilitation of some areas results in unsafe, unstable or polluting landforms with impacts to downstream environmental receptors.</p> <p>Inability to meet post mining land use for the entire site.</p>	<p>Operations</p> <p>Closure</p> <p>Post Closure</p>	Major	Likely	High	High	<ul style="list-style-type: none"> Activities to be conducted in accordance with the Soil Management Plan, detailing soil harvesting, stockpiling, monitoring, amendments and respreading. Mapping of soil units prior to harvesting to allow separate stockpiling. Competent NAF waste rock identified as separate material type in mine plan for stockpiling. Rehabilitation materials stockpiles placed as close as possible to final footprint but away from contamination sources. Application of more competent gravelly soil units on landform slopes, with more erosive soil units restricted to flat surfaces. Identification and stockpiling of benign competent mine waste for rock armour. Rehabilitation materials balance. 	<p>Planning</p> <p>Construction</p> <p>Operations</p> <p>Closure</p> <p>Post Closure</p>	Major	Possible	Moderate

Risk Pathway / Unwanted Event	Description of Impact	Phase(s) Unwanted Event likely to occur	Inherent Risk				Risk Treatments	Phase(s) Treatments to be implemented	Residual Risk		
			Consequence	Likelihood	Risk Rating	Data Certainty			Consequence	Likelihood	Risk Rating
Poor management of mine waste during operations results in ineffective identification, segregation and encapsulation (Limitation: kinetic test work of high-sulphide lithologies pending)	Delays to effective rehabilitation of some areas results in unstable or polluting landforms with impacts to downstream environmental receptors. Inability to meet post mining land use for the entire site.	Operations Closure Post Closure	Major	Almost Certain	Extreme	Medium	<ul style="list-style-type: none"> – AMD block model input into mine plan and verified annually. – Kinetic test work study to determine rate(s) of sulphide oxidation of dominant lithologies. – Activities to be conducted in accordance with the Waste Rock Management Plan, detailing management for PAF and dispersive waste lithologies. – Operational characterisation during grade control and identification of dispersive units by Mine Geologist. – Quarterly reconciliation of PAF and NAF waste volumes and dumping location. 	Planning Operations Closure	Major	Likely	High

Practical Examples for Environmental Risk Assessment

Example 1: Link between baseline data and risk assessment; considering all mine phases.

Project Phase	Activity	Risk Pathway	Likelihood	Consequence	Raw Risk	Treatment	Likelihood	Consequence	Treated Risk
Construction/ Operation	Vegetation clearing or other ground disturbing activities.	Unauthorised clearing / ground disturbing activities resulting in impacts to conservation significant flora.	Possible	Major	High	No known conservation significant flora located in the Project site area or broader vicinity.	Rare	Major	Moderate

Project Phase: Adding a 'Project Phase' column to the risk assessment table is a useful way of ensuring all phases of mining are considered.

Treatment: The environmental baseline data does not appear to have adequately informed the identification of risks for this site. The baseline studies have indicated that there are no conservation significant flora located in the project site area or broader vicinity, however the risk assessment indicates the impact on conservation significant flora is possible. Although the risk is high, no treatment is offered for the risk, just a statement to explain that there is no reasonable risk present. Only risks that are actually relevant to the project site should be included in the risk assessment, and an appropriate level of treatment should be applied to each of these risks.

Example 2: Fully describing the risk

Project Phase	Activity	Risk Pathway and Impact	Likelihood	Consequence	Raw Risk	Treatment	Likelihood	Consequence	Treated Risk
Operation	Pit dewatering.	<p>Discharge of dewater into Blackadder Creek.</p> <p>-----</p> <p>Discharge of dewater into Blackadder Creek leading to increased salinity, turbidity and heavy metal levels within the creek and broader catchment, resulting in negative impacts to the ecological function of the creek.</p>	Likely	Moderate	High	Adherence to Department of Water and Environmental Regulation (DWER) licence conditions.	Unlikely	Moderate	Moderate

This example considers the impact to ecological function of Blackadder Creek. The description of the risk in the top (red) version is quite limited. The bottom version (green) describes in more detail the specific environmental elements of the risk. This makes it easier for a reviewer to determine whether all the environmental risks for the project have been identified in the risk assessment, and to ensure the treatments appear appropriate.

Adding a column for 'impact' can be used to clearly differentiate the impact from the risk pathway. For the above example, the risk pathway is 'discharge of dewater from Blackadder Creek' and the impact is 'increased salinity, turbidity and heavy metals within the creek and broader catchment'. The risk treatment should address the causes of the risk event. Refer to the below.

Project Phase	Activity	Risk Pathway	Impact	Likelihood	Consequence	Raw Risk	Treatment	Likelihood	Consequence	Treated Risk
Operation	Pit dewatering.	Discharge of dewater into Blackadder Creek.	Increased salinity, turbidity and heavy metal levels within creek and broader catchment.	Likely	Moderate	High	Adherence to Department of Water and Environmental Regulation (DWER) licence conditions.	Unlikely	Moderate	Moderate

Example 3: Using the ALARP principle

Project Phase	Activity	Risk Pathway	Likelihood	Consequence	Raw Risk	Treatment	Likelihood	Consequence	Treated Risk
Construction, Operation, Care and Maintenance, Closure	Incidental mining and exposure of PASS ¹⁸ material within the mine void.	Oxidation of PASS material causing lowering of pH and release of metals to the soil profile, groundwater, and surface water.	Possible	Major	High	Place any mined PASS material within a lined and bunded area prior to backfilling within the mine void. Groundwater quality monitoring to detect any reductions in pH or elevations in heavy metals.	Unlikely	Major	Moderate
Project Phase	Activity	Risk Pathway	Likelihood	Consequence	Raw Risk	Treatment	Likelihood	Consequence	Treated Risk
Construction, Operation, Care and Maintenance, Closure	Incidental mining and exposure of PASS material within the mine void.	Oxidation of PASS material causing lowering of pH and release of metals to the soil profile, groundwater, and surface water.	Possible	Major	High	Mining levels set to avoid PASS; 5m buffer maintained above mapped PASS layer. Groundwater quality monitoring to detect any reductions in pH or elevations in heavy metals.	Rare	Moderate	Low

The top table has not demonstrated that the risk has been treated to ALARP in comparison to the bottom table. The bottom table has applied an avoidance strategy to avoid the risk, as opposed to just control and mitigation strategies.

Note: DMIRS acknowledges that avoidance may not always be possible in every circumstance, however this scenario is provided as an example.

18 PASS – Potentially acid sulphate soils

Example 4: Providing adequate information on treatments for higher risk issues

Phase	Activity	Risk Pathway	Likelihood	Consequence	Raw Risk	Treatment	Likelihood	Consequence	Treated Risk
Operation, Care and Maintenance, Closure	Storage of potentially hostile materials in the waste landform.	Exposure of the highly reactive black shale causing acid and/or metalliferous drainage, contaminating the soil and groundwater and preventing revegetation of the waste landform.	Likely	Major	Very High	<p>Implementation of the XY Project Black Shale Management Plan (Appendix X) to ensure:</p> <ul style="list-style-type: none"> • All material capable of generating acid mine drainage is identified as it is mined. • All PAF material is temporarily stored on the PAF holding pad. • The material is dumped within the PAF cell. <p>Encapsulation of all PAF material within an engineered containment in accordance with the design report (Appendix X).</p>	Unlikely	Major	Moderate

The raw (untreated) risk in this example is very high and requires specific and detailed treatments to lower the risk to moderate. Therefore additional details regarding these treatments will be supplied as technical appendices to the Mining Proposal and/or Mine Closure Plan.

APPENDIX 7 – EXAMPLE ENVIRONMENTAL OUTCOMES, PERFORMANCE CRITERIA AND MONITORING

Broad examples of environmental outcomes, performance criteria and monitoring

Environmental Factor	DMIRS Objective	Risk Pathways	Environmental Outcome	Performance Criteria ¹⁹	Monitoring
Biodiversity	To maintain representation, diversity, viability and ecological function at the species, population and community level.	Clearing and loss of habitat, dewatering, invasive pest introduction, pit lakes.	No impact to vegetation beyond the mine disturbance boundary.	No clearing beyond mine disturbance boundary.	Quarterly survey of disturbance areas.
			Native fauna impacts minimised within mine disturbance boundary and avoided outside of mine disturbance boundary.	No death of native fauna of conservation significance through entrapment in mine facilities.	Daily TSF and evaporation pond checks. Daily checks of all open trenches.
Water Resources	To maintain the hydrological regimes and quality of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected.	Blocking and diverting of surface water flows, Contamination of ground and surface water, Potential pit lakes.	Water quality and quantity downstream of the mine disturbance boundary is maintained within the range of variance of pre-mining background levels.	Water quality (TDS, pH and presence/absence of hydrocarbons) is within 10% of background levels when measured at 500m downstream from mine disturbance boundary (Surface water monitoring points X, Y, Z shown on Map A). Groundwater level change less than 1m (maximum level of pre-mining natural variance) beyond mine disturbance boundary (bores X, Y and Z shown on Map A).	Monthly sampling at surface water monitoring points X, Y, Z, when there is water flow. Regional groundwater levels monitored quarterly.

¹⁹ These performance criteria are only intended as generic examples, and are not to be used as examples of what is acceptable across WA. Specific criteria must be based on the existing environmental conditions on site, and usually refer to baseline conditions, analogue sites or environmental standards/guidelines.

Environmental Factor	DMIRS Objective	Risk Pathways	Environmental Outcome	Performance Criteria ²⁰	Monitoring
Land and Soils	To maintain the quality of land and soils so that environmental values are protected.	Hydrocarbon contamination, erosion, loss of topsoil, unstable manmade landforms.	Contamination of land minimised, and actively remediated if occurs.	No hydrocarbon spills greater than 50 litres. Any hydrocarbon spills remediated so that there is no residual impact from the spill.	Site spills reporting, remediation and auditing procedure.
			All mine areas and landforms are non-polluting.	Groundwater quality within 10% of background levels (groundwater monitoring points X, Y, Z shown on Map A). No problematic material present on outer mine landform surfaces. Water quality (TDS, pH and presence/absence of hydrocarbons) is within 10% of background levels when measured at 500m downstream from mine disturbance boundary (Surface water monitoring points X, Y, Z shown on Map A).	Quarterly groundwater monitoring program. Visual assessment followed by targeted soil testing of any areas of concern. Monthly sampling at surface water monitoring points X, Y, Z, when there is water flow.
			Landform stability is appropriate for the stage of mine life.	No erosion or sediment discharge noted outside the mine disturbance boundary. No impacts (sediment smothering, loss of topsoil, sink holes etc.) outside the mine disturbance boundary from unstable mine landforms.	Quarterly survey of disturbance areas. Annual erosion and stability survey of mine landforms.

²⁰ These performance criteria are only intended as generic examples, and are not be used as examples of what is acceptable across WA. Specific criteria must be based on the existing environmental conditions on site, and usually refer to baseline conditions, analogue sites or environmental standards/guidelines.

Environmental Factor	DMIRS Objective	Risk Pathways	Environmental Outcome	Performance Criteria ²¹	Monitoring
Rehabilitation and Mine Closure	Mines are closed in a manner to make them physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/non-contaminating, and capable of sustaining an agreed post-mining land use, and without unacceptable liability to the State.	Poor planning, inappropriate handling of mine materials, poor placement of mine waste, contamination during operations, Lack of topsoil.	*closure objectives.	*closure criteria.	*detailed in mine closure plan.

Broad examples of environmental outcomes, performance criteria and monitoring for a proposal within a sensitive environment

Environmental Factor	DMIRS Objective	Risk Pathways	Environmental Outcome	Performance Criteria ²²	Monitoring
Biodiversity	To maintain representation, diversity, viability and ecological function at the species, population and community level.	Clearing and loss of habitat, dewatering, invasive pest introduction, pit lakes.	Adverse impacts to TEC as a result of mining activities are avoided.	<p>0% of TEC is cleared.</p> <p>No change in water level at bores X, Y, Z (located at the edge of TEC closest to mine) beyond the background variance of 'X' metres, due to mining activities.</p> <p>No introduction of new weeds species across the mine site activity envelope.</p> <p>No change in water level at bores X, Y, Z beyond the background variance of 'X' metres, due to mining activities.</p> <p>Less than 10% reduction in vegetation cover and health in areas of groundwater dependent vegetation within drawdown areas when compared to pre-mining condition.</p>	<p>Quarterly survey of disturbance areas.</p> <p>Monthly regional groundwater levels.</p> <p>Monthly weed surveys.</p> <p>Quarterly vegetation health survey of groundwater dependent ecosystem within 1km of mine.</p>

²¹ These performance criteria are only intended as generic examples, and are not be used as examples of what is acceptable across WA. Specific criteria must be based on the existing environmental conditions on site, and usually refer to baseline conditions, analogue sites or environmental standards/guidelines.

²² These performance criteria are only intended as generic examples, and are not be used as examples of what is acceptable across WA. Specific criteria must be based on the existing environmental conditions on site, and usually refer to baseline conditions, analogue sites or environmental standards/guidelines.

Examples of Writing Smart Performance Criteria

Specific enough to reflect a unique set of environmental, social and economic circumstances. Is the goal explained with enough detail that it can be well understood by those involved in its completion and by any stakeholders?

Measurable to demonstrate that goals are trending towards analogue indices. How will those involved in completing the goal know it has been accomplished and how will stakeholders determine its success?

Achievable or realistic so that the criteria being measured are attainable.

Relevant to the outcomes that are being measured and the risks being managed and flexible enough to adapt to changing circumstances.

Time-bound so that the criteria can be monitored over an appropriate timeframe to ensure the results are robust and trending toward or meeting the outcome.

Environmental Factor	DMIRS Objective	Risk Pathway	Environmental Outcome	Performance Criteria	Monitoring
Land and Soils	To maintain the quality of land and soils so that environmental values are protected.	Contamination of soils as a result of hydrocarbon leakages or spillages.	No contamination of soils as a result of hydrocarbon spills/leaks.	No hydrocarbon spills outside of bunded/contained areas greater than 1,000 litres in one incident. All hydrocarbon spills are controlled, contained and cleaned up within 24 hours.	<ul style="list-style-type: none"> Site spills reporting, remediation and auditing procedure. Environmental Incident Management System reviewed monthly and confirms that there has been no spills above criteria limit. Daily inspections of plant and workshops for spills. Groundwater monitoring in accordance with the Groundwater Management Plan Surface water monitoring in accordance with the Surface Water Management Plan.

Specific: Yes, the objective of “No contamination of soils resulting from hydrocarbon spills/leaks” is clear, well defined and unambiguous.

Measurable: Yes, no spills outside contained facilities greater than 1,000 litres. All spills are cleaned up within 24 hours.

Achievable: Yes, it is up to the proponent to determine what is achievable.

Relevant: Yes, again it is up to the proponent to determine what is relevant, although justification for any specifics will need to be detailed and explained to DMIRS. Remember that all outcomes and performance criteria need to be agreed to by DMIRS.

Time-bound: Yes, spills cleaned up within 24 hours.

Example Environmental Outcomes, Performance Criteria and Monitoring

Environmental Factor	DMIRS Objective	Risk Pathway	Environmental Outcome	Performance Criteria	Monitoring
Biodiversity	To maintain representation, diversity, viability and ecological function at the species, population and community levels.	Unauthorised clearing / ground disturbing activities resulting in the removal of conservation significant flora species outside of the disturbance envelope.	No unauthorised clearing of conservation significant flora species.	No clearing of native vegetation outside of the disturbance envelope.	GPS survey of disturbance areas on a quarterly basis for inclusion with AER/MRF.
Land and Soils	To maintain the quality of land and soils so that environmental values are protected.	Improper encapsulation of potentially acid forming (PAF) material during operations leading to acid metalliferous drainage (AMD).	No contamination of land or soil caused by AMD as a result of mining activities.	<p>Material to be excavated tested to validate or update block model.</p> <p>Ongoing waste characterisation in rock units which require greater certainty.</p> <p>Handling and tracking of deleterious material in accordance with Materials Handling procedure.</p> <p>Deleterious materials are not used as construction material.</p> <p>PAF cell is constructed as per design specifications in Attachment X.</p> <p>No PAF materials within the WRL are present outside the PAF containment cell.</p> <p>All material capable of generating AMD are covered during periods of Care and Maintenance.</p>	<p>Records of tests undertaken during resource drilling</p> <p>Results from testing of uncertain lithologies – reports of samples taken, test results, lab certifications and QAQC results.</p> <p>High-Precision GPS material tracking reviewed monthly to record volumes and confirm correct placement of potentially AMD material.</p> <p>Records of construction material source confirm no deleterious materials used in construction.</p> <p>PAF cell as-built report.</p> <p>Sulphur content monitoring of waste material.</p> <p>Audit undertaken during first month of Care and Maintenance to confirm that no AMD generating material is left exposed.</p>

Environmental Factor	DMIRS Objective	Risk Pathway	Environmental Outcome	Performance Criteria	Monitoring
Rehabilitation and Mine Closure	Mines are closed in a manner to make them physically safe to humans and animals, geotechnically stable, geo-chemically non-polluting/non-contaminating, and capable of sustaining an agreed post-mining land use, and without unacceptable liability to the State.	Exposure of sodic / dispersive materials in the waste dump leading to increased gully erosion and tunnelling, resulting in an unstable landform that disperses sediment into the surrounding environment.	All waste landforms and Tailings Storage Facilities (TSF) are safe, stable, non-polluting and non-contaminating.	Final landforms have been constructed according to approved design specifications including slopes, surface water and drainage design parameters, and erosion rates. ²³ Erosion rates on rehabilitated landforms within X% of the modelled erosion rates identified in 'Landform Modelling Report (Appendix Z).	Audit of constructed landforms for compliance with design specifications/ required standards. Annual monitoring of erosion rates on rehabilitated landforms.

Regulated by other agency

Environmental Factor	DMIRS Objective	Risk Pathway	Environmental Outcome	Performance Criteria	Monitoring
Water Resources	To maintain the hydrological regimes and quality of groundwater and surface water so the existing and potential uses, including ecosystem maintenance, are protected.	Discharge of dewater into Blackadder Creek leading to increased salinity, turbidity and heavy metal levels within creek and broader catchment, resulting in negative impacts to the ecological function of the creek.	Water quality within Blackadder Creek is not adversely impacted.	Adherence to Department of Water and Environmental Regulation (DWER) Licence Conditions	Monthly water quality monitoring at agreed locations in accordance with DWER licence requirements.

²³ These performance criteria are only intended as generic examples, and are not be used as examples of what is acceptable across WA. Specific criteria must be based on the existing environmental conditions on site, and usually refer to baseline conditions, analogue sites or environmental standards/guidelines.

APPENDIX 8 – PRO FORMA FOR NOTIFICATION OF MINOR CHANGES

To:
Team Leader Name: _____

Resource and Environmental Compliance Division
Department of Mines, Industry Regulation and Safety

This pro forma is designed to allow proponents to notify Department of Mines, Industry Regulation and Safety (DMIRS) of minor changes to a Mining Proposal that they consider to not require approval via a revised Mining Proposal.

This form should only be used where the minor changes relate to a Mining Proposal submitted in accordance with Statutory Guidelines for Mining Proposal 2020 or the Guidelines for Mining Proposals in Western Australia 2016.

ENVIRONMENTAL GROUP SITE (EGS) DETAILS	
EGS Name	
EGS Code Code is derived from the EARS2 system	
APPLICANT DETAILS	
Company or Individual Name	
Tenement Holder(s) (if different from above)	
MINING PROPOSAL DETAILS	
Registration ID ID is derived from the EARS system.	
MP date Application Lodgement Date	
DETAILS OF PROPOSED CHANGES (e.g. minor changes to environmental management practices, environmental monitoring, location of infrastructure, etc.)	

TENEMENT DETAILS		
Tenements subject to the change State 'all' if relevant to all tenements of the EGS	Tenement	Tenement Holder

CHECKLIST TO CONFIRM WHETHER OR NOT A REVISED MINING PROPOSAL IS REQUIRED

	Yes/No	Explanation/Justification
Is disturbance proposed outside of the disturbance envelope in the approved mining proposal (e.g. a project expansion)?		
Do any aspects of any 'Key Mine Activities' detailed in the approved Mining Proposal need to change?		
Is a new activity or change to an activity type proposed from that approved in the Mining Proposal?		
Is an increase in area required for any key mine activity or total activity area on any tenement?		

Corporate Endorsement:

"I hereby certify that to the best of my knowledge, the information within this form is true and correct"

Name: _____

Signed: _____

Position: _____

Date: _____

APPENDIX 9 – MINING PROPOSAL CHECKLIST

This checklist is intended to provide additional guidance to assist with the preparation of a mining proposal.

Q No	Mining Proposal (MP) Checklist	Y/N/NA	Comments	Changes from previous Version (Y/N)	Page No.	Summary
1	Has the checklist been endorsed by a tenement holder(s) or a senior representative authorised by the tenement holder(s), such as a Registered Manager or Company Director?					
2	Are you the tenement holder of all tenements associated with the Mining Proposal /group site? Mining Proposals which have not been submitted by the tenement holder must include an authorisation from the tenement holder or an explanation of the company linkage to the tenement holder (e.g. for subsidiary companies).					
3	For tenements with multiple tenement holders, have all of the other holders consented to this proposal being submitted? Mining Proposals which have not been submitted by the tenement holder must include an authorisation from the tenement holder or an explanation of the company linkage to the tenement holder (e.g. for subsidiary companies).					
4	Have contact details for questions on the Mining Proposal been provided?					
5	Are all mining operations within granted tenement boundaries or does this Mining Proposal support a lease application?					
6	Is this the first Mining Proposal submitted for these tenements? If No , the version number of the revised Mining Proposal must be stated on the cover and a summary of changes included					
7	Have all tenement conditions been reviewed to ensure activities proposed in the Mining Proposal are in compliance?					

Q No	Mining Proposal (MP) Checklist	Y/N/ NA	Comments	Changes from previous Version (Y/N)	Page No.	Summary
8	Has a Mine Closure Plan been provided? It is a requirement that every mining proposal include a mine closure plan.					
PUBLIC AVAILABILITY						
9	Are you aware that this Mining Proposal is publicly available?					
10	Is there any information in this Mining Proposal that should not be publicly available? If Yes , refer to Appendix B, section 7 of the guidelines for more information. Note: A non-confidential version of all mining proposals will be made available to the public					
11	If 'Yes' to Q10, has confidential information been submitted in a separate document?					
MINING PROPOSAL DETAILS						
12	Does the Mining Proposal cover page include: <ul style="list-style-type: none">• Environmental Group Site name• Environmental Group Site code• company name (including telephone numbers and email addresses)• contact details• version number• date of submission.					
13	Has information regarding the Environmental Group Site (EGS) been provided in accordance with the requirements of Appendix G of the guidelines?					
14	Has a disturbance table been provided in accordance with the requirements of Appendix G of the guidelines?					
15	Has spatial data for all Mine Activity Types been provided in accordance with the specified properties and allowances (see section 3.5.3)?					

Q No	Mining Proposal (MP) Checklist	Y/N/NA	Comments	Changes from previous Version (Y/N)	Page No.	Summary
16	Has a site plan, consistent with all spatial data and activity details, been provided? The site plan must show existing and proposed activities and other relevant information including tenement boundaries and other land tenure (e.g. Reserves and pastoral lease boundaries).					
17	Do you have and maintain an Environmental Management System?					
ENVIRONMENTAL LEGISLATIVE FRAMEWORK						
18	Does the Mining Proposal include a list of all relevant environmental approvals that have been sought or are required before the proposal may be implemented?					
19	Does the Mining Proposal trigger any criteria for referral to the EPA within the DMP/EPA Memorandum of Understanding?					
20	Has the Mining Proposal been referred to the EPA? If Yes , indicate date of referral in comments					
21	Has the proposal been deemed to not warrant formal assessment under Part IV of the EP Act, is currently under assessment by the EPA, or has been approved via a Ministerial Statement? If Yes , ensure details of Ministerial Statement, assessment level and/or assessment number are provided within the Mining Proposal					
22	Is a clearing permit required? If 'No' then explain why in space below					
23	If 'Yes' at Q22 then has a clearing permit been applied for?					
24	Is the Mining Proposal located on reserve land? If "Yes" state reserve types					
25	Is the Mining Proposal wholly or partially within Department of Parks and Wildlife (DPaW) managed areas?					

Q No	Mining Proposal (MP) Checklist	Y/N/ NA	Comments	Changes from previous Version (Y/N)	Page No.	Summary
26	If 'Yes' at Q25 has DPaW been consulted?					
27	Will any threatened or protected flora and/or fauna be impacted by this proposal?					
28	Has an enquiry/search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Cultural Heritage Inquiry System for the area subject to this proposal been undertaken?					
29	If any Aboriginal heritage sites will be impacted, has appropriate consent been sought under the <i>Aboriginal Heritage Act 1972</i> ?					
30	Does the Mining Proposal include a tailings storage facility? Mining Proposals that include tailings storage facilities must include the relevant design reports outlined in the <i>Guide to the preparation of a design report for tailings storage facilities (TSFs), August 2015</i> .					
31	Does the Mining Proposal include the backfilling of mine voids? If Yes, the Mining Proposal must include a Sterilisation Report.					
32	Is the mining proposal located on pre-1899 Crown Grant lands? (not subject to the Mining Act)					
33	Has the construction of an airstrip been proposed? If Yes, indicate the date when Civil Aviation Safety Authority, Airservices Australia and the Local Government Authority were advised (in writing) of the proposal to construct an airstrip.					

Government of Western Australia

**Department of Mines, Industry Regulation
and Safety**

8.30am – 4.30pm

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