Assessment on Proponent Information
Environmental Impact Assessment Process Timelines

<table>
<thead>
<tr>
<th>Date</th>
<th>Progress stages</th>
<th>Time (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27/08/12</td>
<td>Level of assessment set</td>
<td></td>
</tr>
<tr>
<td>11/10/12</td>
<td>Scoping guideline issued by EPA</td>
<td>6</td>
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<tr>
<td>30/04/13</td>
<td>Proponent’s Final API document received by EPA</td>
<td>28</td>
</tr>
<tr>
<td>24/05/13</td>
<td>EPA Requested additional Information</td>
<td>3</td>
</tr>
<tr>
<td>04/06/13</td>
<td>Proponent submitted additional information requested</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>by EPA</td>
<td></td>
</tr>
<tr>
<td>12/06/13</td>
<td>Provision of EPA Report to Minister</td>
<td>1</td>
</tr>
<tr>
<td>17/06/13</td>
<td>Publication of EPA report</td>
<td>3 days</td>
</tr>
<tr>
<td>01/07/13</td>
<td>Close of appeals period</td>
<td>2</td>
</tr>
</tbody>
</table>

Timelines for an assessment may vary according to the complexity of the project and are usually agreed with the proponent soon after the level of assessment is determined.

In this case, the Environmental Protection Authority met its timeline objective in the completion of the assessment and provision of a report to the Minister.

Dr Paul Vogel
Chairman

12 June 2013
1 Introduction and background

This report provides the Environmental Protection Authority’s (EPA’s) advice and recommendations to the Minister for Environment on the proposal by Macarthur Minerals Limited (MM) to develop an iron ore mine and associated infrastructure in the Goldfields region, 450 kilometres (km) east-north-east of Perth. The proposal includes a borefield and adjoining water pipeline 60 km west of the mine site and a rail siding 130 km east of the mine site and 8 km south of Menzies (Figure 1).

Section 44 of the Environmental Protection Act 1986 (EP Act) requires the EPA to report to the Minister for Environment on the outcome of its assessment of a proposal. The report must set out:

- the key environmental factors identified in the course of the assessment; and

- the EPA’s recommendations as to whether or not the proposal may be implemented, and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

The EPA may include in the report any other advice and recommendations as it sees fit.

The proponent has submitted an Assessment on Proponent Information (API) document setting out the details of the proposal, potential environmental impacts and proposed commitments to manage those impacts (MM 2013a).

The EPA considers that the proposal, as described, can be managed to meet the EPA’s environmental objectives, subject to the EPA’s recommended conditions being made legally binding.

This report provides the EPA advice and recommendations in accordance with section 44 of the EP Act.
2 The proposal

MM propose to develop an iron ore mine and associated infrastructure in the Goldfields region, 450 km east-north-east of Perth. The proposal includes a borefield and adjoining water pipeline 60 km west of the mine-site and a rail siding 130 km east of the mine-site and 8 km south of Menzies (figures 1 and 2).

Two million tonnes per annum (Mtpa) of hematite ore will be mined from 25 open cut pits within three main deposits, namely Snark, Central and Banjo, over a period of 13 years. Mining will be carried out using conventional excavation, load and haul methods, and drill and blast techniques when necessary. It is expected that mining will occur above the watertable.

Ore will undergo crushing, screening and beneficiation at one of the two onsite Run of Mine (ROM) pads located within the Mine Operations Centre (MOC). It will then be transported by road train via the existing Evanston-Menzies Road and Goldfields Highway to the rail siding, where it will be stockpiled before being transported to the Port of Esperance via rail (figures 1 and 4).

The proposal will result in the direct disturbance of 673.6 hectares (ha) of native vegetation. Mining will take place within a project development envelope with an area of 2,818 ha. Within the project development envelope a total of 611 ha of native vegetation will be cleared. In addition to the mine, 32 ha of native vegetation will be cleared for the rail siding and 30.6 ha of native vegetation will be cleared for the development of a water supply pipeline and borefield (figures 3, 4 and 5).

The water source of 315 megalitres per year (ML/year) required for the proposal has not yet been sourced. The proponent’s preferred option is to use the dewater from the Gwendolyn Gold Project, owned by Vector Resources, which is located 60 km to the west of the Ularring Mine site (Figure 2). Currently it has not been established if the dewater from the Gwendolyn Gold Project will supply all of the required water for the Ularring project. The proponent is also investigating the availability of water from the Vector resources tenements.

The Department of Water (DoW) has advised that hypersaline water sourced from paleochannels, such as those associated with Lake Giles (Raeside Paleodrainage) could well provide a water supply but this would need to be investigated before approval would be given.

The proposed water source for the project has a salinity in excess of 30,000 milligrams per litre total dissolved solids (mg/L TDS) which will be treated in a reverse osmosis (RO) plant prior to use onsite for potable and processing requirements. MM propose to use the brine from the RO plant for dust suppression.
The main characteristics of the proposal are summarised in the table below.

**Table 1: Summary of key proposal characteristics**

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mine</td>
<td>Not more than 232 ha within the 2,818 ha Project Development Envelope.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Not more than 154 ha within the 2,818 ha Project Development Envelope. Note: The option 2 haul road alignment may replace the option 1 internal haul road.</td>
</tr>
<tr>
<td>Waste Dumps</td>
<td>Not more than 225 ha within the 2,818 ha Project Development Envelope.</td>
</tr>
<tr>
<td>Rail Siding</td>
<td>Not more than 32 ha within the Rail Siding Development Envelope.</td>
</tr>
<tr>
<td>Pipeline</td>
<td>Not more than 28.5 ha within the 530 ha Borefield and Pipeline Development Envelope.</td>
</tr>
<tr>
<td>Borefield</td>
<td>Not more than 2.1 ha within the 530 ha Borefield and Pipeline Development Envelope.</td>
</tr>
<tr>
<td>Road Haulage to Rail Siding</td>
<td>Use of existing roads only</td>
</tr>
</tbody>
</table>

The potential impacts of the proposal are discussed by the proponent in the referral document, Macarthur Minerals Limited (2013a).
Figure 1: Regional Location Map
Figure 2: Local Project Setting
Figure 3: Project Development Envelope
Figure 4: Rail Siding Development Envelope
3 Consultation

During the preparation of the API, the proponent has undertaken consultation with government agencies and key stakeholders. The agencies, groups and organisations consulted, the comments received and the proponent’s response are detailed in the proponent’s referral document, Macarthur Minerals Limited (2013a).

The EPA considers that the consultation process has been appropriate and that reasonable steps have been taken to inform the community and stakeholders on the proposed development.

4 Key environmental factors

It is the EPA’s opinion that the following key environmental factors relevant to the proposal require evaluation in this report:

(a) Flora and vegetation – Clearing for the Mine Site, Rail Siding, Pipeline and Borefield;

(b) Terrestrial fauna – Potential impacts from the development of the Pipeline and Borefield; and

(c) Subterranean fauna – Potential impacts from groundwater abstraction at the Borefield.

The key environmental factors are discussed in sections 4.1 – 4.3. The description of each factor shows why it is relevant to the proposal and how it will be affected by the proposal. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

Appendix 3 describes preliminary key environmental factors identified in the scope of the API which, at the conclusion of the assessment, were not considered to be key environmental factors warranting discussion and evaluation in the EPA’s assessment report.

1.1 Flora and vegetation

Description

The proposal has the potential to impact flora and vegetation predominantly from clearing and spread of weeds.

The proposal will result in the direct disturbance of 673.6 ha of native vegetation. Mining will take place within a project development envelope with an area of 2,818 ha. Within the project development envelope a total of 611 ha of native vegetation will be cleared for the purpose of pits (232 ha), waste dumps (225 ha) and infrastructure (154 ha). In addition to the mine site, 32 ha of native vegetation will be cleared for the rail siding and 30.6 ha for the construction of a water supply pipeline and borefield.
Mine Site and Rail Siding

The project is located within the Coolgardie 2 Bioregion (COO2 – Southern Cross subregion) and East Murchison subregion (MUR1) as defined by the Interim Biogeographical Regionalisation for Australia (IBRA) (Cowan et al. 2001; Cowan 2001).

The project is located predominantly within Unallocated Crown Land (UCL) with a small portion of the Project Development Envelope (50 ha, <2%) located within a Crown Mining Reserve (50929) vested under the Department of Mines and Petroleum (DMP) for mining purposes. The project is located adjacent to the Mount Manning Nature Reserve (36208), which is vested with the Conservation Commission and managed by the Department of Environment and Conservation (DEC) for the conservation of flora and fauna. All proposed areas of disturbance for the Project are located more than 1.5 km to the north and east of the Mount Manning Nature Reserve, as shown in Figure 3.

The geology of the Ularring Hematite Project mine site is Banded Iron Formation (BIF). BIF ranges are of very significant biodiversity value because of their unique geology, soils and relative isolation.

The BIF Strategic Review (DEC/DoIR 2007) states that ‘mining should be carried out sustainably by ensuring that critical thresholds for conservation of biodiversity are recognised in the consideration of development proposals and that best practice environmental management and mitigation programmes are committed to’.

The key principles described in the BIF Strategic Review include:

• no development should result in the increase of an International Union for Conservation of Nature (IUCN) threat category of any plant or animal taxon, or any ecological community; and

• 15-30% of the total number of BIF ranges should be preserved in their entirety where development has not significantly progressed.

The proposal will cause the removal of 42 ha of BIF surface outcropping, which is less than 8% of the overall mapped extent of the range within the Yerilgee Greenstone Belt.

A level 2 flora and vegetation survey of the Snark, Central and Banjo areas was carried out in February, March, May and September 2011 (Mattiske 2012a, 2012b and 2012c). Following the flora and vegetation surveys a targeted survey of Priority flora was conducted in April 2012 (Macarthur Minerals Limited 2012a), and a survey of Notable Taxa was conducted in November 2012 (Macarthur Minerals Limited 2012b). In addition to these surveys, a vegetation mapping extension was carried out by consolidating data from several sources (Ecologia 2012). A level 2
Flora and Vegetation survey was carried out in September 2011 (Mattiske 2012d) in the Rail Siding area.

In addition to the recent surveys, the DEC carried out a flora and vegetation survey of the Banded Iron Formations of the Yilgarn Craton: North Yerilgee Hills in 2007 (Markey and Dillon 2011), which overlays the Snark and Central development envelopes of the project area.

No Ecological Communities listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) or Wildlife Conservation Act 1950 (WC Act) have been recorded in the project area. No Threatened Ecological Communities (TECs) listed by the DEC have been identified in the project area, however the Priority 1 Priority Ecological Community (PEC) ‘Lake Giles Vegetation Complex on BIF’ has been listed and incorporates all of the vegetation within the project area. It is expected that 3% of the current mapped extent of the PEC would be directly impacted by the project.

A total of 15 shrubland and 15 woodland communities were mapped within the wider MM tenement area. Shrubland communities were dominated by a mixture of Acacia and Allocasuarina with occasional emergent Eucalypts, over a number of various shrubs. Woodland communities were more widespread and were on low lying drainage areas or mid-slopes to ridges.

It is considered that low lying communities are common in the area and are widespread throughout the region. It is also considered that upland shrubland communities, especially those restricted to rocky BIF outcrops or mid to upper slopes, will be more restricted, due to strict habitat requirements. Although many species may be common in the area, the actual associations of species are considered to vary between ranges of the great Mount Manning Region (Markey and Dillon 2011).

Five assemblages will be impacted by more than 20% of their mapped area. These are S2, S5, S10, S14 and W2 which are described in section 7.1.1.1 of the ER document, Macarthur Minerals Limited (2013a). A total of 84% of S2 lies within the development envelopes, of which 34% will be impacted. Assemblage S5 is only known from 21 ha, all of which is in the development envelopes. A total of 45% of this assemblage will be impacted by the proposal. All of assemblage W2 is also only known from within the development envelopes, and 23% is expected to be impacted.

No threatened flora listed under the EPBC Act or Declared Rare Flora (DRF) listed under the WC Act have been recorded in the project area during recent surveys or known from within the MM tenement area.

Six Priority flora species listed by the DEC were recorded within the project development envelope and surrounding MM tenements. Of these, four species are expected to be impacted by the current mine layout. A total of 45% of the local population of Banksia arborea (P4), 31.2% of
the local population of *Hibbertia lepidocalyx* subsp. *tuberculata* (P3), 8.8% of the local population of *Grevillea georgeana* (P3) and 0.2% of the local population of *Mirbelia ferricola* (P3), will be impacted by the current project layout. *Grevillea erectiloba* (P3) and *Spartothamnella* sp. Helena and Aurora Range (P3) are present within the project development envelope but will not be impacted directly by the proposed mine layout.

*Banksia arborea* (P4) is considered to be endemic to the greater Mount Manning region with known locations within a 200 km diameter. Significant populations of this species are known to occur outside the project area and within the adjacent Mount Manning Nature Reserve.

*Hibbertia lepidocalyx* subsp. *tuberculata* (P3) is a small erect shrub which typically occupies yellow-orange loams and ironstone gravels. Regionally, populations exist within the Helena and Aurora Range and the Hunt Range. Several populations have also been recorded within the wider MM tenement area.

*Grevillea georgeana* (P3) and *Mirbelia ferricola* (P3) are known from within a 200 km radius, and up to 400 km respectively from the mine site and are both known from within the Mount Manning Nature Reserve.

One introduced species, *Erodium botrys*, was recorded at the rail siding. This species is not a declared plant species pursuant to section 37 of the *Agriculture and Related Resources Protection Act 1976*.

**Water Pipeline and Borefield**

Flora and vegetation surveys have not been carried out within the Borefield and Pipeline Development Envelope (Figure 5).

The proponent proposes to construct a 60 km water pipeline from the Vector Resources tenement to the mine site. The pipeline and maintenance track will be five metres (m) wide, and will be constructed adjacent to the Evanston-Menzies Road. The Borefield and Pipeline Development Envelope cuts through the DEC-managed ex Mount Elvire Pastoral Lease (Figure 2). Given the linear nature of the pipeline and expected extent of clearing, the construction of the pipeline is not expected to significantly impact vegetation communities. However, the clearing for the pipeline has the potential to impact on DRF and Priority flora species. In view of the above, the proponent has designed a pipeline envelope which extends 20 m either side of the Evanston-Menzies Road between the Vector Resources tenements and the mine-site. This is to allow flexibility in the final alignment and to ensure that conservation significant flora are avoided.

The water pipeline has the potential to impact flora and vegetation by leakage of saline water.

The proponent is currently developing a Land Disturbance Management Plan (LDMP), Topsoil Management Plan (TMP), Weed Management Plan
and a Dust Management Plan (DMP) to ensure that only agreed areas are cleared and to minimise the impacts of mining on flora and vegetation.

**Assessment**

The EPA’s environmental objective for this factor is to maintain representation, diversity, viability and ecological function at the species, population and community level.

**Mine Site and Rail Siding**

The EPA notes that the proposal requires the clearing of 673.6 ha of native vegetation, of which 611 ha is for pits, waste dumps and infrastructure within a project development envelope, 32 ha is for the rail siding and 30.6 ha is for the construction of a water supply pipeline and borefield.

No ecological communities were recorded in the project area, however the Priority 1 PEC ‘Lake Giles Vegetation Complex on BIF’ has been listed and incorporates all of the vegetation within the project area. The EPA notes that the proposal will cause the loss of 3% of the current mapped extent of the PEC. The EPA expects that once further mapping has been carried out it is highly likely that the PEC will extend further south of the project along the range.

The EPA considers that the loss of 3% would not significantly impact the viability and ecological function of the PEC and the proposal can be managed to meet the EPA’s objective. It is recommended that the location and authorised extent of clearing be limited to a total disturbance area of 611 ha within the development envelope as described and spatially defined in the recommended statement that the proposal can be implemented (see Appendix 2).

The EPA notes that there are some locally significant assemblages which will be impacted by more than 20% of their mapped area. Assemblage S5 is only known from 21 ha, all of which is in the project development envelope. A total of 45% of this assemblage will be impacted by the proposal. Assemblage W2 is also only known from within the project development envelope and 23% is expected to be impacted. A total of 84% of assemblage S2 lies within the project development envelope, of which 34% will be impacted.

While there remains a locally significant impact, the flora and fauna species found within these assemblages are widespread.

The EPA notes that the impacts to these assemblages are due to the location of pits and that waste dumps and infrastructure have been sited to avoid priority flora and BIF outcrops.

The EPA has recommended condition 6 ‘Vegetation’ in order to restrict the impacts to these vegetation assemblages to that required for the proposal.
to ensure the proposal is managed to meet the EPA’s objectives for this factor.

Six Priority flora species were recorded in the project area, of which four species are expected to be impacted by the current mine layout. The EPA considers that, as the Priority flora recorded within the project area are widespread throughout the region, the proposal can be managed to meet the EPA’s objectives for this factor noting that location and authorised extent of clearing is limited to the project development envelope.

It is also noted that the development would not result in the increase of an IUCN threat category of any plant or animal taxon, or any ecological community; and that less than 8% of the BIF range would be impacted by mining. This is consistent with the key principles outlined in the BIF strategic review.

As the mine area is currently weed free, the EPA recommends that the proponent implements recommended condition 7 ‘Weeds’ to protect the project area from the introduction and spread of weeds.

**Water Pipeline and Borefield**

Flora and vegetation surveys have not been carried out within the Borefield and Pipeline Development Envelope. The EPA recommends that the proponent implements condition 8 ‘Pipeline and Borefield flora and fauna’, prior to ground disturbing activities in order to identify the location of any conservation significant flora and ensure that the final approved alignment of the pipeline and maintenance track avoids these.

The EPA notes that the water pipeline travels through the DEC-managed ex Mount Elvire Pastoral Lease and has the potential to impact flora and vegetation by leakage of saline water. The EPA also notes that the proponent has committed to using a telemetry system for the pipeline with a leak detection system in place. This will automatically close the pipeline should a leak occur. The use of the leak detection system has been included in Table 2 (Elements of the proposal) of Schedule 1 of the recommended conditions. The EPA has also provided other advice to the DMP to ensure that the proponent undertakes regular inspections of the vegetation along the pipeline.

**Summary**

Having particular regard to:

- the layout of the mine infrastructure and waste dumps being designed to reduce the impacts to conservation significant flora and restricted vegetation communities;
- the project not causing a decline in the threat status of conservation significant flora under the IUCN categories;
- a direct impact of no more that 3% of the PEC;
• the use of a telemetry system for the pipeline with a leak detection system in place; and
• the pipeline alignment being designed to avoid conservation significant flora,

it is the EPA’s opinion that the proposal can be managed to meet the EPA’s environmental objective for this factor provided that conditions 6 ‘Vegetation’, 7 ‘Weeds’ and 8 ‘Pipeline and borefield Flora and Fauna’ are imposed.

1.2 Terrestrial fauna – pipeline and borefield

Description
The proposal has the potential to impact fauna by clearing and the creation of trenches for the construction of the water pipeline.

Fauna surveys have not been carried out within the Borefield and Pipeline Development Envelope.

The pipeline and maintenance track will be five metres wide, and will be constructed adjacent to the Evanston-Menzies Road. Given the linear nature of the pipeline and expected extent of clearing, the construction of the pipeline has the potential to impact Malleefowl mounds, however it is not expected to significantly impact fauna habitat or species. In view of the above, the proponent has designed a Borefield and Pipeline Development Envelope which extends 20 m either side of the Evanston-Menzies Road between the Vector Resources tenements and the mine-site, in order to allow flexibility in the final alignment to ensure that Malleefowl mounds are avoided.

Assessment
The EPA’s environmental objective for this factor is to maintain representation, diversity, viability and ecological function at the species, population and assemblage level.

The EPA considers that given the linear nature of the pipeline it is not expected to impact significantly on fauna populations or species. Clearing for the pipeline may impact Malleefowl mounds and the trenching activities may trap fauna. Recommended condition 8 ‘Pipeline and Borefield Flora and Fauna’, will require the proponent to survey and identify Malleefowl mounds prior to ground disturbing activities and ensure that the alignment of the pipeline and maintenance track avoids these mounds.

The EPA also recommends that the proponent implements condition 9 ‘Trapped Fauna’ to ensure that the trenches are cleared of fauna on a regular basis.

The EPA considers that with the implementation of condition 8 ‘Pipeline and Borefield Flora and Fauna’ and 9 ‘Trapped Fauna’ the proposal can be managed to meet the EPA’s objective for this factor.
Summary
Having particular regard to the pipeline alignment being designed to avoid Malleefowl mounds, it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor provided that condition 8 'Pipeline and Borefield Flora and Fauna' and condition 9 'Trapped Fauna' are imposed.

1.3 Subterranean fauna - borefield

Description
The proposal has the potential to impact subterranean fauna (stygofauna) by the abstraction of groundwater.

The proponent is currently undertaking investigations to find a water supply in the tributaries of the paleochannels and a fractured rock borefield in Vector Resources tenements. These types of habitat are known to support stygofauna.

As the location of the water supply has not been finalised, stygofauna surveys for the borefield have not been carried out.

The DoW will regulate and manage the sustainable abstraction of groundwater under the Rights in Water and Irrigation Act 1914. However, a decision on the preferred site for groundwater abstraction should have regard to potential impacts on stygofauna.

Assessment
The EPA's environmental objective for this factor is to maintain representation, diversity, viability and ecological function at the species, population and assemblage level.

The EPA recommends that the proponent implements condition 10 'Stygofauna' prior to the abstraction of groundwater in order to identify whether any stygofauna will be impacted by the proposal and to avoid and minimise adverse impacts.

The EPA considers that with the implementation of condition 10 'Stygofauna' the abstraction of groundwater can be managed to meet the EPA's objective for this factor.

Summary
Having particular regard to the proponent locating a borefield to avoid and minimise impacts to stygofauna, it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor provided that condition 10 'Stygofauna' is imposed.
2. Recommended conditions

Having considered the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by MM to develop an iron ore mine and associated infrastructure, borefield, pipeline and a rail siding is approved for implementation. These conditions are presented in Appendix 2.

5 Other advice

Rehabilitation

A large proportion of the water pipeline which will carry saline water to the mine site will be primarily located on the DEC-managed ex Mount Elvire Pastoral Lease. Small scale leakages of saline water from the pipeline are inevitable and, as the pipeline is buried, it will be difficult to detect small leaks. The EPA recommends that the vegetation along the pipeline be inspected regularly by air and/or road for evidence of changes in vegetation health to identify potential leaks from the pipeline.

The proponent plans to use the brine from the RO plant for dust suppression. It is expected that the brine will have a salinity of 52,000 mg/L TDS and that, post-mining, the soil will have a high salt component. The EPA recommends that the mine closure plan should have regard to the salt component of the soil and the need to strip the contaminated areas before rehabilitation.

The EPA expects that these issues will be addressed more fully in the mining proposal and mine closure planning process regulated by the DMP.

Offsets

The EPA has considered offsets for this proposal in line with its Offsets policy. The EPA has determined that the limited area of loss, coupled with a 3% impact on the known PEC does not justify offsets for this proposal as it is unlikely to cause a significant residual environmental impact.

6 Conclusions

The EPA has considered the proposal by MM to develop an iron ore mine and associated infrastructure in the Goldfields region, 450 km east-north-east of Perth. The proposal includes a borefield and adjoining water pipeline 60 km west of the mine-site and a rail siding 130 km east of the mine-site and 8 km south of Menzies.

The EPA has concluded that the proposal can be managed to meet the EPA’s environmental objectives, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2.
7 Recommendations

The EPA submits the following recommendations to the Minister for Environment:

1. That the Minister notes that the proposal being assessed is for the development of an iron ore mine and associated infrastructure in the Goldfields region, 450 km east-north-east of Perth. The proposal includes a borefield and adjoining water pipeline 60 km west of the mine-site and a rail siding 130 km east of the mine site and 8 km south of Menzies;

2. That the Minister considers the report on the key environmental factors as set out in Section 3;

3. That the Minister notes that the EPA has concluded that the proposal can be managed to meet the EPA’s environmental objectives, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2; and

4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.
Appendix 1

References


Appendix 2

Identified Decision-making Authorities and Recommended Environmental Conditions
Identified Decision-making Authorities

Section 44(2) of the EP Act specifies that the EPA’s report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This Appendix contains the EPA’s recommended conditions and procedures.

Section 45(1) requires the Minister for Environment to consult with decision-making authorities, and if possible, agree on whether or not the proposal may be implemented, and if so, to what conditions and procedures, if any, that implementation should be subject.

The following decision-making authorities have been identified for this consultation:

<table>
<thead>
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<th>Decision-making Authority</th>
<th>Approval</th>
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</thead>
<tbody>
<tr>
<td>1. Minister for Environment</td>
<td><em>Wildlife Conservation Act 1950</em></td>
</tr>
</tbody>
</table>
| 2. Minister for Water                            | *Rights in Water and Irrigation Act 1914*  
Water extraction licence | |
| 4. Minister for Aboriginal Affairs               | *Aboriginal Heritage Act 1972*   
s18 approval                                      |
| 5. Department of Environment and Conservation   | *Environmental Protection Act 1986*  
works approval and licence                        |
Dangerous Goods Safety Act 2004*  
Storage and handling of hazardous materials and mine safety |

Note: In this instance, agreement is only required with DMAs 1 to 4 inclusive since these DMAs are Ministers.
RECOMMENDED ENVIRONMENTAL CONDITIONS

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
(PURSUANT TO THE PROVISIONS OF THE
ENVIRONMENTAL PROTECTION ACT 1986)

ULARRING HEMATITE PROJECT

Proposal: The proposal is to develop an iron ore mine and associated infrastructure in the Goldfields region, 450 kilometres (km) east-north-east of Perth. The proposal includes a borefield and adjoining water pipeline 60km west of the mine site and a rail siding 130km east of the mine site and 8km south of Menzies.

Proponent: Macarthur Minerals Limited
Australian Company Number 103 011 436

Proponent Address: Level 2
220 St George’s Terrace
PERTH WA 6000

Assessment Number: 1939

Report of the Environmental Protection Authority Number: 1480

This Statement authorises the implementation of the Proposal described and documented in Columns 1 and 2 of Table 2 of Schedule 1 and Schedule 2. The implementation of the Proposal is subject to the following implementation conditions and procedures and Schedule 3 details definitions of terms and phrases used in the implementation conditions and procedures.

1 Proposal Implementation
1-1 When implementing the proposal, the proponent shall not exceed the authorised extent of the proposal as defined in Column 3 of Table 2 in Schedule 1, unless amendments to the proposal and the authorised extent of the Proposal has been approved under the EP Act.

2 Contact Details
2-1 The proponent shall notify the CEO of any change of its name, physical address or postal address for the serving of notices or other correspondence within 28 days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.
3 Time Limit for Proposal Implementation

3-1 The proponent shall not commence implementation of the proposal after the expiration of 5 years from the date of this statement, and any commencement, within this 5 year period, must be substantial.

3-2 Any commencement of implementation of the proposal, within 5 years from the date of this statement, must be demonstrated as substantial by providing the CEO with written evidence, on or before the expiration of 5 years from the date of this statement.

4 Compliance Reporting

4-1 The proponent shall prepare and maintain a compliance assessment plan to the satisfaction of the CEO.

4-2 The proponent shall submit to the CEO the compliance assessment plan required by condition 4-1 at least six months prior to the first compliance assessment report required by condition 4-6, or prior to implementation, whichever is sooner.

The compliance assessment plan shall indicate:

(1) the frequency of compliance reporting;
(2) the approach and timing of compliance assessments;
(3) the retention of compliance assessments;
(4) the method of reporting of potential non-compliances and corrective actions taken;
(5) the table of contents of compliance assessment reports; and
(6) public availability of compliance assessment reports.

4-3 The proponent shall assess compliance with conditions in accordance with the compliance assessment plan required by condition 4-1.

4-4 The proponent shall retain reports of all compliance assessments described in the compliance assessment plan required by condition 4-1 and shall make those reports available when requested by the CEO.

4-5 The proponent shall advise the CEO of any potential non-compliance within seven days of that non-compliance being known.

4-6 The proponent shall submit to the CEO the first compliance assessment report 15 months from the date of issue of this Statement addressing the 12 month period from the date of issue of this Statement and then annually from the date of submission of the first compliance assessment report.

The compliance assessment report shall:

(1) be endorsed by the proponent’s Chief Operating Officer or a person delegated to sign on the Chief Operating Officer’s behalf;
(2) include a statement as to whether the proponent has complied with the conditions;
(3) identify all potential non-compliances and describe corrective and preventative actions taken;
be made publicly available in accordance with the approved compliance assessment plan; and

indicate any proposed changes to the compliance assessment plan required by condition 4-1.

5 Public Availability of Data

5-1 Subject to condition 5-2, within a reasonable time period approved by the CEO of the issue of this statement and for the remainder of the life of the proposal the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps) relevant to the assessment of this proposal and implementation of this Statement.

5-2 If any data referred to in condition 5-1 contains particulars of:

(1) a secret formula or process; or

(2) confidential commercially sensitive information;

the proponent may submit a request for approval from the CEO to not make this data publically available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publically available.

6 Vegetation

6-1 To ensure adequate representation of vegetation assemblages S2, S5 and W2, the proponent shall ensure that clearing of these vegetation assemblages does not exceed the following extents within the project development envelope defined in Figure 3 of Schedule 1 and geographic coordinates in Schedule 2:

(1) 31 ha of vegetation assemblage S2;

(2) 10 ha of vegetation assemblage S5; and

(3) 7 ha of vegetation assemblage W2.

6-2 Prior to ground disturbing activities the proponent shall prepare and submit a Vegetation Monitoring Plan to the requirements of the CEO. This Vegetation Monitoring Plan shall include the provision of spatial data to substantiate how condition 6-1 will be met.

6-3 Prior to ground disturbing activities the proponent shall implement the Vegetation Monitoring Plan required by condition 6-2;

6-4 Revisions to the Vegetation Monitoring Plan may be approved by the CEO.

6-5 The proponent shall implement revisions of the Vegetation Monitoring Plan approved under condition 6-4.

7 Weeds

7-1 The proponent shall prevent the establishment of any new species of weeds within the project area as defined in Figure 3, 4 and 5 of Schedule 1.
7-2 The proponent shall ensure there is no increase in weed cover, extent or diversity of weeds in the project area as defined in Figure 3, 4 and 5 of Schedule 1.

7-3 Prior to ground-disturbing activities in the project area, the proponent shall undertake a baseline weed survey to identify the presence, extent, species diversity and invasive characteristics of weeds and weed cover, to the satisfaction of the CEO.

7-4 The proponent shall repeat the surveys undertaken pursuant to condition 7-3 following the commencement of ground disturbance activities in the project footprint annually or at a frequency agreed by the CEO.

7-5 Where the results of monitoring undertaken pursuant to condition 7-4 indicate an increase in the presence, extent, species diversity and invasive characteristics of weeds and weed cover, the proponent shall:

(1) immediately implement, and/or propose appropriately timed weed control measures in affected areas to the satisfaction of the CEO;

(2) submit details of weed control measures that have or will be implemented pursuant to condition 7-5 (1) and any proposed rehabilitation measures to be implemented to the CEO, within 21 days of becoming aware of an increase in the presence, extent, species diversity and invasive characteristics of weeds and weed cover; and

(3) implement weed control and rehabilitation measures detailed pursuant to condition 7-5 (2) until such time as the CEO agrees implementation may cease.

8 Pipeline and Borefield Flora and Fauna

8-1 The proponent shall ensure that the pipeline and borefield are constructed within the borefield and pipeline development envelope defined in Figure 5 of Schedule 1 and geographic coordinates in Schedule 2, to avoid impacts to Declared Rare Flora and Malleefowl mounds and minimise impacts to Priority Flora.

8-2 Prior to any ground disturbing activities for pipeline and borefield construction the proponent shall prepare and submit a Flora and Fauna Survey to the requirements of the CEO on the advice of the DEC.

This Flora and Fauna Survey shall:

(1) identify and spatially define the locations of Declared Rare Flora and Priority flora within the pipeline and borefield development envelope; and

(2) identify and spatially define the locations of Malleefowl mounds within the pipeline and borefield development envelope.

8-3 Prior to any ground disturbing activities for pipeline and borefield construction the proponent shall undertake the Flora and Fauna Survey referred to in condition 8-2 and submit the results of that survey as part of the Pipeline Alignment Plan pursuant to condition 8-4 to the CEO and the DEC.
8-4 Prior to any ground disturbing activities for pipeline and borefield construction the proponent shall prepare a Pipeline Alignment Plan to the requirements of the CEO on the advice of the DEC.

The Pipeline Alignment Plan shall:

(1) detail and provide the spatial alignment of the pipeline and borefield within the borefield and pipeline development envelope defined in Figure 5 of Schedule 1 and geographic coordinates in Schedule 2 demonstrating the avoidance of Declared Rare Flora and Malleefowl mounds and minimising the impacts to Priority flora; and

(2) when implemented, manage the construction of the pipeline and borefield to meet the requirements of condition 8-1.

8-5 Prior to ground disturbing activities for pipeline and borefield construction the proponent shall implement the Pipeline Alignment Plan required by condition 8-4.

8-6 Revisions to the Pipeline Alignment Plan may be approved by the CEO on the advice of the DEC.

8-7 The proponent shall implement revisions of the Pipeline Alignment Plan approved under condition 8-6.

9 Trapped Fauna

9-1 The proponent shall ensure that open trenches associated with construction of the water supply pipeline are cleared of trapped fauna by fauna-rescue personnel at least twice daily. Details of all fauna recovered shall be recorded, consistent with condition 9-5. The first daily clearing shall be completed prior to any construction or backfilling or no later than three hours after sunrise, whichever event occurs first, and shall be repeated between the hours of 3:00pm and 6:00pm of that same day.

The open trenches shall also be cleared, and fauna details recorded, by fauna-rescue personnel no more than one hour prior to backfilling of trenches.

Note: “fauna-rescue personnel” means employees of the proponent who meet the requirements of condition 9-2 and whose responsibility it is to walk the open trench to recover and record fauna found within the trench.

9-2 The fauna-rescue personnel shall obtain the appropriate licences required for fauna rescue under the *Wildlife Conservation Act 1950* and be trained in the following:

(1) fauna identification, capture and handling (including specially protected fauna and venomous snakes likely to occur in the area);

(2) identification of tracks, scats, burrows and nests of conservation-significant species;

(3) fauna vouchering (of deceased animals);

(4) assessing injured fauna for suitability for release, rehabilitation or euthanasia;
familiarity with the ecology of the species which may be encountered in order to be able to appropriately translocate fauna encountered; and performing euthanasia.

9-3 Open trench lengths shall not exceed a length capable of being inspected and cleared by the fauna-rescue personnel within the required times as set out in condition 9-1.

9-4 Ramps providing egress points and/or fauna refuges providing suitable shelter from the sun and predators for trapped fauna are to be placed in the trench at intervals not exceeding 50 metres.

9-5 The proponent shall produce a report on fauna management within the open trenches associated with construction of the water supply pipeline at the completion of pipeline construction. The report shall include the following:

(1) details of all fauna inspections;
(2) the number and type of fauna cleared from trenches;
(3) fauna mortalities; and
(4) all actions taken.

The report shall be provided to the CEO and the DEC 21 days after the completion of pipeline construction or at a timeframe agreed by the CEO, and shall be made publicly available in a manner approved by the CEO.

10 Stygofauna

10-1 The proponent shall locate the borefield to avoid and minimise impacts to stygofauna.

10-2 Prior to abstraction of groundwater from the borefield the proponent shall undertake a Stygofauna Survey to the requirements of the CEO.

The Stygofauna Survey shall:

(1) identify and map the predicted drawdown zone as a result of groundwater abstraction from implementation of the borefield;
(2) survey for stygofauna in accordance with the EPA Draft Guidance Statement No. 54a Technical Appendix to Guidance Statement No.54: Sampling Methods and Survey Considerations for Subterranean Fauna in Western Australia or its revisions;
(3) record the presence of Stygofauna inside and outside of the drawdown zone; and
(4) identify the species and number of individuals recorded both within and outside the drawdown zone.

10-3 Prior to any groundwater abstraction the proponent shall undertake the Stygofauna Survey referred to in condition 10-2 and submit the results of that survey as part of the Stygofauna Management Plan pursuant to condition 10-4.
10-4 Prior to groundwater abstraction the proponent shall prepare and submit a Stygofauna Management Plan.

The Stygofauna Management Plan shall:

(1) when implemented, manage the drawdown of groundwater as a result of implementation of the proposal to meet the requirements of condition 10-1;

(2) demonstrate that the stygofauna habitat extends outside the drawdown zone where stygofauna species are only recorded inside the drawdown zone;

(3) provide mitigation and management measures to be implemented should it be demonstrated that condition 10-1 is not being met; and

(4) identify criteria to trigger implementation of contingency measures to prevent the drawdown zone being greater than predicted to ensure the protection of stygofauna species outside the drawdown zone.

10-5 Prior to groundwater abstraction the proponent shall implement the approved Stygofauna Management Plan required by condition 10-4.

10-6 Revisions to the Stygofauna Management Plan may be approved by the CEO.

10-7 The proponent shall implement revisions of the Stygofauna Management Plan approved under condition 10-6.
Table 1: Summary of the Proposal

| Proposal Title          | Ularring Hematite Project |

**Short Description**

The proposal is to develop an iron ore mine and associated infrastructure in the Goldfields region, 450 km east-north-east of Perth. The proposal includes a borefield and adjoining water pipeline 60 km west of the mine-site and a rail siding 130 km east of the mine site and 8 km south of Menzies. Ore will be transported to the rail siding using the existing Evanston-Menzies Road and Goldfields Highway.

Table 2: Location and authorised extent of physical and operational elements

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element</strong></td>
<td><strong>Location</strong></td>
<td><strong>Authorised Extent</strong></td>
</tr>
<tr>
<td>Mine</td>
<td>Figure 3 and geographic coordinates of the Project Development Envelope as detailed in Schedule 2.</td>
<td>Not more than 232 ha within the 2,818 ha Project Development Envelope.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Figure 3 and geographic coordinates of the Project Development Envelope as detailed in Schedule 2.</td>
<td>Not more than 154 ha within the 2,818 ha Project Development Envelope. Note: The option 2 haul road alignment may replace the option 1 internal haul road.</td>
</tr>
<tr>
<td>Waste Dumps</td>
<td>Figure 3 and geographic coordinates of the Project Development Envelope as detailed in Schedule 2.</td>
<td>Not more than 225 ha within the 2,818 ha Project Development Envelope.</td>
</tr>
<tr>
<td>Rail Siding</td>
<td>Figure 4 and geographic coordinates of the Rail Siding Development Envelope as detailed in Schedule 2.</td>
<td>Not more than 32 ha within the Rail Siding Development Envelope.</td>
</tr>
<tr>
<td>Pipeline Controlled by a remote telemetry system with a leak detection system in place</td>
<td>Figure 5 and geographic coordinates of the Borefield and Pipeline Development Envelope as detailed in Schedule 2.</td>
<td>Not more than 28.5 ha within the 530 ha Borefield and Pipeline Development Envelope.</td>
</tr>
<tr>
<td>Borefield</td>
<td>Figure 5 and geographic coordinates of the Borefield and Pipeline Development Envelope as detailed in Schedule 2.</td>
<td>Not more than 2.1 ha within the 530 ha Borefield and Pipeline Development Envelope.</td>
</tr>
<tr>
<td>Road Haulage to Rail Siding</td>
<td>Figure 1</td>
<td>Use of existing roads only</td>
</tr>
</tbody>
</table>
Figures
Figure 1 Regional Location Map
Figure 2 Local Project Sitting
Figure 3 Project Layout Development Envelope
Figure 4 Rail Siding Development Envelope
Figure 5 Borefield and Pipeline Development Envelope
Figure 2 Local Project Setting
Figure 3 Project Development Envelope
Figure 4 Rail Siding Development Envelope
Figure 5 Borefield and Pipeline Development Envelope
ULARRING HEMATITE PROJECT, SHIRE OF MENZIES

Coordinates that define the Project Development Envelope

Coordinates that define the Borefield and Pipeline Development Envelope

Coordinates that define the Rail Siding Development Envelope

Coordinates defining the Project Development Envelope, Borefield and Pipeline Development Envelope and Rail Siding Development Envelope are held by the Office of the EPA, dated 4 June 2013.
## Schedule 3

<table>
<thead>
<tr>
<th>Term or Phrase</th>
<th>Abbreviations and definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO</td>
<td>The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the <em>Environmental Protection Act 1986</em>, or his delegate.</td>
</tr>
<tr>
<td>DEC</td>
<td>Department of Environment and Conservation</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Authority</td>
</tr>
<tr>
<td>EP Act</td>
<td><em>Environmental Protection Act 1986</em></td>
</tr>
<tr>
<td>ha</td>
<td>hectare</td>
</tr>
<tr>
<td>km</td>
<td>kilometre</td>
</tr>
</tbody>
</table>
Notes
The following notes are provided for information and do not form a part of the implementation conditions of the Statement:

- The proponent for the time being nominated by the Minister for Environment under section 38(6) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal unless and until that nomination has been revoked and another person is nominated.

- If the person nominated by the Minister, ceases to have responsibility for the proposal, that person is required to provide written notice to the Environmental Protection Authority of its intention to relinquish responsibility for the proposal and the name of the person to whom responsibility for the proposal will pass or has passed. The Minister for Environment may revoke a nomination made under section 38(6) of the *Environmental Protection Act 1986* and nominate another person.

- To initiate a change of proponent, the nominated proponent and proposed proponent are required to complete and submit *Post Assessment Form 1 – Application to Change Nominated Proponent*.

- The General Manager of the Office of the Environmental Protection Authority was the Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986* at the time the Statement was signed by the Minister for Environment.
Appendix 3

Preliminary key factors not requiring further evaluation in the EPA report.

The EPA identified the following preliminary key environmental factors in the scope of the API which, at the conclusion of the assessment, were not considered to be key environmental factors warranting discussion and evaluation in the EPA's assessment report.
<table>
<thead>
<tr>
<th>Factor and EPA objective</th>
<th>Activities and potential impacts</th>
<th>Relevant legislation and policy</th>
<th>Assessment, management and mitigation of impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Terrestrial Fauna</strong></td>
<td><strong>Mine Site and Rail Siding</strong></td>
<td></td>
<td>Terrestrial fauna surveys have been carried out in the Snark project area only. A habitat mapping exercise has been carried out to show that fauna habitat inside the impact area is also present outside the impact area, however as the fauna survey has been based on inferred data a level of uncertainty exists, but it is not considered so great as to cause a risk to terrestrial fauna populations or individual species.</td>
</tr>
<tr>
<td>To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.</td>
<td>The following terrestrial fauna have been recorded in the Snark project area and may be impacted by clearing and disturbance associated with mining: Crested Bellbird (P4); and Rainbow Bee-eater (Schedule 3 and Migratory)</td>
<td><strong>Wildlife Conservation Act 1950 (WC Act). Environment Protection and Biodiversity Conservation Act (EPBC Act 1999)</strong></td>
<td><strong>Malleefowl</strong></td>
</tr>
<tr>
<td><strong>Malleefowl</strong></td>
<td><strong>Mine Site and Rail siding</strong></td>
<td></td>
<td>The potential impacts on the Malleefowl mounds in the project area are not considered to be significant and can be regulated and managed by the DEC. In the event an active Malleefowl mound is unable to be avoided, a DEC-approved Regulation 15 licence under the WC Act is required; and the proponent also has obligations to report Malleefowl injuries or deaths directly to the DEC. The Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DoSEWPaC) has declared</td>
</tr>
<tr>
<td>Factor and EPA objective</td>
<td>Activities and potential impacts</td>
<td>Relevant legislation and policy</td>
<td>Assessment, management and mitigation of impacts</td>
</tr>
<tr>
<td>--------------------------</td>
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</tr>
<tr>
<td>Short Range Endemics (SREs)</td>
<td>Mining of BIF ranges has the potential to remove SRE habitat. No species were classed as definitely or probably SREs. Of 19 potential SREs found, 13 were found only within the impact area, of which 12 were found in habitat A (Low woodlands on rocky undulating plains).</td>
<td></td>
<td>that this proposal is not a controlled action.</td>
</tr>
<tr>
<td>Short Range Endemics (SREs)</td>
<td>Five of the 12 species found in habitat A were found in multiple sites indicating connectivity within the habitat. A total of 3% of habitat A will be impacted by the proposal; hence the impact to SREs is not expected to be significant. However, the EPA does not support Table 24 of the API document (MM 2013a), which outlines a likelihood assessment framework for SREs. In particular this table establishes consequence criteria which have not been endorsed. The clearing of a 5 m by 60 km linear area for the pipeline is unlikely to have a significant impact on SREs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pipeline and Borefield</td>
<td>Clearing of 28.5 ha within a 40 m wide and 60 km long pipeline development envelope and 2.1 ha for the development of a borefield.</td>
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</tr>
</tbody>
</table>

### Subterranean Fauna

**Stygofauna**

**Mine Site**

Mining of BIF ranges has the potential to remove stygofauna habitat.

Stygofauna sampling within the disturbance footprint yielded no stygofauna.

Mining will occur above the water table and therefore it is unlikely that Stygofauna will be significantly impacted by mining.
<table>
<thead>
<tr>
<th>Factor and EPA objective</th>
<th>Activities and potential impacts</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Troglofauna</strong></td>
<td><strong>Mine Site and Rail Siding</strong></td>
<td></td>
<td><strong>Troglofauna</strong></td>
</tr>
<tr>
<td></td>
<td>Mining of 232 ha of BIF ranges has the potential to remove troglofauna habitat.</td>
<td></td>
<td>In accordance with the Draft 'Environmental Assessment Guidelines for Consideration of Subterranean fauna in Environmental Impact Assessment in Western Australia', the identification of the same species in multiple BIF deposits across the range has demonstrated the continuity of the BIF habitat. It is expected that 92% of troglofauna habitat in the Macarthur tenements will remain after mining. Mining is not expected to significantly impact populations or species of troglofauna.</td>
</tr>
<tr>
<td></td>
<td>A total of seven troglofauna species were recorded from the project area, of which four species were recorded in the mine pits. Two of the four restricted species were found at multiple deposits in the project area, separated by distances of 7 km and 17 km, showing the possible extent and connectivity of the troglofauna habitat.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Habitat characterisation was carried out and demonstrated that the types of geologies in which troglofauna were found at Snark, Central and Banjo were widespread outside the impact area. It is expected that 92% of troglofauna habitat in the Macarthur tenements will remain after mining.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Pipeline and Borefield</strong></td>
<td></td>
<td>The clearing of a 5 m by 60 km linear area for the pipeline is unlikely to have a significant impact on Subterranean Fauna.</td>
</tr>
<tr>
<td></td>
<td>Clearing of 28.5 ha within a 40 m wide and 60 km long pipeline development envelope and 2.1 ha for the development of a borefield.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor and EPA objective</td>
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<td>--------------------------</td>
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<tr>
<td>Hydrological Processes</td>
<td>The proposal will require approximately 328,500 kL of water per year. Water for mining has not yet been sourced, however Macarthur Minerals propose to use dewater from the Gwendolyn Gold Mine, operated by Vector Resources, and transport it to the mine via a 60 km pipeline, or identify other sources of water in the tributaries of the paleochannels.</td>
<td>Rights in Water and Irrigation Act 1914 (RIWI Act)</td>
<td>The water required for mining operations can be regulated and managed by the Department of Water (DoW) under the provisions of the RIWI Act and in accordance with DoW’s water in mining guidelines noting that the EPA has recommended a condition to address potential impacts of groundwater abstraction on stygofauna.</td>
</tr>
<tr>
<td>Heritage</td>
<td>Potential impact to archaeological and ethnographic sites.</td>
<td>Aboriginal Heritage Act 1972.</td>
<td>The potential impacts on Aboriginal heritage can be managed and regulated by the Department of Aboriginal Affairs.</td>
</tr>
<tr>
<td>Rehabilitation and closure</td>
<td>Following mining the mining pits and other disturbed areas will require rehabilitation.</td>
<td>Mining Act 1978</td>
<td>The proponent is required under the Mining Act 1978 to submit a Mining Proposal and a Mine Closure Plan. Rehabilitation and Closure can be regulated and managed by the Department of Mines and Petroleum (DMP) to meet the EPA’s objectives in accordance with DMP/EPA joint guidelines, Guidelines on Preparing Mine Closure Plans (2011).</td>
</tr>
</tbody>
</table>
Appendix 4

Proponent’s API documentation

Provided on CD in hardcopies and available on the EPA’s website