



Report and recommendations of the Environmental Protection Authority



Balla Balla Magnetite Mining Project – inquiry under section 46 of the *Environmental Protection Act 1986* to amend Ministerial Statement 985

Forge Resources Swan Pty Ltd

Report 1670

March 2020

Inquiry under section 46 of the *Environmental Protection Act 1986*

The Minister for Environment has requested that the Environmental Protection Authority (EPA) inquire into and report on the matter of changing the implementation conditions 3-1 and 3-2 (Time Limit of Authorisation) in Ministerial Statement 985 relating to the Balla Balla Magnetite Mining Project.

Section 46(6) of the *Environmental Protection Act 1986* requires the EPA to prepare a report that includes:

1. a recommendation on whether or not the implementation conditions to which the inquiry relates, or any of them, should be changed
2. any other recommendations that it thinks appropriate.

The following is the EPA's report to the Minister pursuant to s. 46(6) of the *Environmental Protection Act 1986*.



Dr Tom Hatton
Chairman

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1. The proposal

The Balla Balla Magnetite Mining Project is to undertake mining and processing of up to 129 million tonnes of magnetite iron ore in the Central and Western deposits at the Balla Balla mine site, and to construct and operate a pipeline to convey the magnetite slurry to Utah Point, Port Hedland. The proponent is Forge Resources Swan Pty Ltd.

The Environmental Protection Authority (EPA) assessed the proposal at the level of Environmental Protection Statement, and published its Report and Recommendations (Report 1309) in 2009. In this report, the EPA considered the following key environmental factors required detailed evaluation:

- Flora and Vegetation
- Fauna
- Surface Water and Groundwater
- Aboriginal Heritage
- Mine Closure and Rehabilitation.

In applying the *Statement of Environmental Principles, Factors and Objectives* (EPA 2018c) these factors are now represented by:

- Flora and Vegetation
- Terrestrial Fauna
- Inland Waters
- Social Surroundings.

The EPA concluded in Report 1309 that it was likely the EPA's objectives would be achieved, provided there was satisfactory implementation by the proponent of the EPA's recommended conditions.

The then Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial Statement 794 (28 April 2009).

Previously approved changes to the conditions and proposal

Ministerial Statement 794 was updated by Ministerial Statement 985 to amend conditions applying to the proposal, which extended the time limit of authorisation to 28 April 2019.

There have been no changes to the proposal approved under the *Environmental Protection Act 1986*.

2. Requested changes to conditions

Condition 3-1 of Ministerial Statement 985 states that the proponent shall not commence implementation of the proposal after the expiration of five years from the date of the statement (being 17 October 2014), and any commencement, within this five year period, must be substantial.

The proposal has not yet substantially commenced. In February 2019, the proponent requested a change to condition 3-1 to extend the authorised timeframe for substantial commencement of the proposal by a further five years.

In response to the proponent's request, in September 2019, the Minister for Environment requested that the EPA inquire into and report on the matter of changing the implementation conditions of Ministerial Statement 985 for the Balla Balla Magnetite Mining Project. This report satisfies the requirements of the EPA's inquiry.

3. Inquiry into changing conditions

The EPA typically recommends the Minister sets conditions on significant proposals that require them to be substantially commenced within a specified timeframe. Extending this timeframe requires the Minister to change the relevant conditions under s. 46 of the *Environmental Protection Act 1986*, and provides for the EPA to review and consider the appropriateness of the implementation conditions relating to the proposal. The s. 46 inquiry provides the EPA the opportunity to consider:

- any changes in environmental, scientific or technological knowledge that may have arisen since the initial assessment
- whether the proposal is being implemented using best practice and contemporary methods so that the EPA objectives for the key environmental factors are met.

The EPA has discretion as to how it conducts this inquiry. In determining the extent and nature of this inquiry, the EPA had regard to information such as:

- the currency of its original assessment (EPA Report 1309) and the previous s.46 inquiry (EPA Report 1525)
- Ministerial Statements 794 and 985
- information provided by the proponent
- advice from relevant decision-making authorities
- any new information regarding the potential impacts of the proposal on the environment.

EPA procedures

In conducting this inquiry the EPA followed the procedures in the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016* (State of Western Australia 2016) and the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual* (EPA 2018b).

4. Inquiry findings

The EPA considered the following are the key environmental factors relevant to the change to the conditions:

- Flora and Vegetation
- Terrestrial Fauna
- Inland Waters
- Social Surroundings.

4.1 Flora and Vegetation

The EPA's environmental objective for this factor is *to protect flora and vegetation so that biological diversity and ecological integrity are maintained.*

Conclusions from EPA Report 1309

The mine site is located on the Abydos Plain within the Fortescue Botanical District (Pilbara Region) of the Eremaean Province. The majority of vegetation within the project area consists of hummock grasslands dominated by *Triodia* species, with occasional shrublands and woodlands. The Horseflat land system on which the project area lies is well represented from Regnard Bay to Balla Balla.

The proposal would impact on about 1,010 hectares (ha) of vegetation through clearing for mining activities and associated infrastructure. The slurry and return water pipeline corridor construction would require vegetation clearing of 505 ha located alongside the existing Pilbara Energy Pipeline. The proposal could also impact flora and vegetation through the potential introduction or spread of weed species, and lowering of the watertable through dewatering activities.

Two vegetation communities considered "locally significant" are present within the proposed mine site area. The major channel community MC1 which is present along the two watercourses that run through the project area (Balla Balla River and Salt Creek) is considered locally significant because a small population of the Priority 2 species *Themeda* sp. Hamersley Station has been recorded in this community. The woodland community DZw8 is also considered locally significant because it is restricted to one isolated population in the study area and is floristically different to the other communities defined. Impacts to these two local communities from the proposal are minimal (MC1 impact is 0.1 ha, 2.9 per cent; and DZw8 impact is 0.5 ha, 20 per cent).

The Clay Plains communities located in the project area may support a few species in common with the Roebourne Plains Grassland Communities, identified by the then Department of Environment and Conservation, as Priority Ecological Communities (PECs). This could not be established for certain as these communities have been subjected to grazing and burning resulting in modification of species composition. The proposal will impact 25 per cent of these communities identified in the project area. However, these communities are relatively widely represented in the area from Forty Mile Beach to Sherlock Station. The EPA considered the relatively small area

of clearing of the local Clay Plains communities is unlikely to change or impact the conservation status of the Roebourne Plains Coastal Grasslands.

No Threatened Ecological Communities (TECs) or declared rare flora were identified in any of the surveys. Three Priority species were identified in the project area (one Priority 2 *Gomphrena cucullata*, two Priority 3 *Acacia glaucocaesia* and *Themeda sp.* Hamersley Station).

Mine layout was designed to minimise disturbance to locally significant communities, potential PECs and Priority species.

To manage these impacts, the EPA recommended the following conditions:

- condition 6, which addresses the impacts of groundwater drawdown to vegetation
- condition 9, mine closure and rehabilitation.

Assessment of the proposed change to conditions

The EPA considers the following current environmental policy and guidance is relevant to its assessment of the proposal for this factor:

- *Environmental Factor Guideline – Flora and Vegetation* (EPA 2016a).

Updates to Priority Flora

Gomphrena cucullata was listed as Priority 2 and is now Priority 3. *Acacia glaucocaesia* was listed as Priority 3 and is now delisted. *Themeda sp.* Hamersley Station, remains a Priority 3.

No new Priority Flora species or TECs within the proposal area were noted during desktop studies in January 2019.

The proponent is not proposing any changes to the proposal that would change the extent or location of clearing of native vegetation. The EPA is satisfied that its objectives for flora and vegetation can be met, and the potential impacts of the proposal can be managed through existing implementation conditions 6 and 9.

4.2 Terrestrial Fauna

The EPA's environmental objective for this factor is to *protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*

Conclusions from EPA Report 1309

Rainbow bee-eater (*Merops ornatus*) was recorded in the mine site area. The species is widespread in grassland and open woodland and not expected to be impacted by the proposal.

Four species of land snails were identified during the mine site survey. These species occur within and outside the project area and are widely distributed throughout the region.

Stygofauna surveys ascertained the stygofauna taxa identified are widely distributed outside the project impact areas. The EPA acknowledged that the geomorphology of the Balla Balla project site does not appear to be suitable for troglifauna.

The EPA acknowledged the proponent's management measures to reduce the potential for native fauna to be adversely impacted by open trenches associated with the pipeline construction.

To manage these impacts, the EPA recommended the following conditions:

- condition 7, which requires construction of the pipeline corridor to be managed in an environmentally acceptable manner.

Assessment of the proposed change to conditions

The EPA considers the following current environmental policy and guidance is relevant to its assessment of the proposal for this factor:

- *Environmental Factor Guideline – Terrestrial Fauna* (EPA 2016c).

Updates to listed fauna

The rainbow bee-eater (*Merops ornatus*) has since been delisted.

The ghost bat (*Macroderma gigas*) was the only species identified from the recent desktop searches that was noted to have increased in conservation status since the original assessment, being upgraded from Priority 4 to Vulnerable under the *Biodiversity Conservation Act 2016*. Previous surveys did not locate any caves or old mines suitable for roosting in the project area or along the pipeline corridor. Any occurrences were therefore expected to be bats flying over the area.

The proponent is not proposing any changes to the proposal that would change the potential impacts to terrestrial fauna, and the EPA is satisfied that its objectives for this factor can be met, and the potential impacts of the proposal can be managed through existing implementation of condition 7.

4.3 Inland Waters

The EPA's environmental objective for this factor is *to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected*.

Conclusions from EPA Report 1309

The project requires 7.80 gegalitres per annum (GL/a) of fresh to brackish water for the processing plant operations on-site. An additional 0.56 GL/a is required for dust suppression and other mining uses. This water supply would be sourced from a combination of mine dewatering and groundwater abstracted from 38 bores.

Hydrogeological studies indicate that drawdown along most of the length of the Balla Balla River is predicted to be four metres or less at the completion of mining and generally less than two metres, five years after mining ceases. Studies also indicate

that while the impact to the Coorinjinna Pool is expected to be minimal, a number of stock watering bores close to the project area may be affected.

There will be no discharge of excess or disturbed water to the environment and project infrastructure is located away from major drainage lines. Indirect impacts through changes to the catchment are nominal and were not considered significant.

At the cessation of mining the formation of pit void lakes is expected to occur due to groundwater seeping into the pit void. Pit void modelling from 2008 predicted salinity would increase by two to three times from pre-mining levels.

Surface water and groundwater at the mine site may also be impacted by potentially acid forming materials. Six waste landforms would be developed following construction and they are designed to be safe, stable, non-erodible and integrated into the surrounding environment. There would be sufficient waste rock available for encapsulation.

Seepage from the Tailings Storage Facility (TSF) has the potential to affect both water quality and groundwater levels. Modelling studies from 2008 based on a seepage rate of 43 cubic metres per day from the TSF indicated that groundwater levels would not be affected. Testing of tailings leachate indicated it was unlikely to exceed the guideline values recommended by Australian Water Quality Guidelines for Fresh and Marine Waters (ANZECC) for water used for watering livestock. The location of the TSF is also low risk.

To manage these impacts, the EPA recommended the following conditions:

- condition 8 to protect surface and groundwater quality
- condition 9 which sets outcomes for rehabilitation and addresses mine pit lakes to ensure that final pit voids do not impact groundwater quality.

Assessment of the proposed change to conditions

The EPA considers the following current environmental policy and guidance is relevant to its assessment of the proposal for this factor:

- *Environmental Factor Guideline – Inland Waters* (EPA 2018a).

Updates to Inland Waters

There has been no new information since the assessment, or significant change in water usage in the area. Forge Resources Swan Pty Ltd holds a groundwater licence (GWL16456) for 6.50 GL which is current until 8 April 2025.

The proponent is not proposing any changes to the proposal that would change the potential impacts to Inland Waters. The EPA is satisfied that its objectives for this factor can be met, and the potential impacts of the proposal can be managed through existing implementation conditions 8 and 9.

4.4 Social Surroundings

The EPA's environmental objective for this factor is *to protect social surroundings from significant harm*.

Conclusions from EPA Report 1309

The local native title claimant groups for the project area are the Ngarluma and the Yinjibarndi. On-ground surveys identified a number of heritage sites and the mine plan and pipeline corridor was designed to ensure the sites would not be directly impacted. The proponent committed to further surveys for potential cultural heritage sites prior to project construction as well as the development and implementation of a cultural heritage plan.

It was the EPA's opinion the proposal can be managed to meet the EPA's environmental objectives for this factor and it did not require any conditions.

Assessment of the proposed change to conditions

The EPA considers the following current environmental policy and guidance is relevant to its assessment of the proposal for this factor:

- Environmental Factor Guideline – *Social Surroundings* (EPA 2016b).

Updates to Social Surroundings

There has been no new information since the assessment, or significant change in social surroundings since the assessment.

The proponent is not proposing any changes to the proposal that would change the potential impacts to Social Surroundings, and the EPA is satisfied its objectives for this factor can be met.

5. Conclusions and recommendations

Change to conditions 3-1 and 3-2

The proponent has requested to extend the timeframe for commencement. The EPA considers it is appropriate to extend this to 28 April 2024.

Conclusions

In relation to the environmental factors, and considering the information provided by the proponent and relevant EPA policies and guidelines, the EPA concludes that:

- there are no changes to the proposal
- there is no significant new or additional information that changes the conclusions reached by the EPA under any of the relevant environmental factors since the proposal was assessed by the EPA in Report 1309 (January 2009) and Report 1525 (September 2014)
- no new significant environmental factors have arisen since the EPA's original assessment of the proposal
- the impacts to the key environmental factors are considered manageable, based on the requirements of existing conditions of Ministerial Statements 794
- the authorised timeframe for substantial commencement of the proposal may be extended by five years as requested.

Recommendations

Having inquired into this matter, the EPA submits the following recommendations to the Minister for Environment under s. 46 of the *Environmental Protection Act 1986*:

1. While retaining the environmental requirements of the original conditions of Ministerial Statement 794, it is appropriate to change implementation conditions 3-1 and 3-2, as approved in Ministerial Statement 985, and replace them with new implementation conditions, extending the authorised timeframe for substantial commencement of the proposal by five years, to 28 April 2024.
2. After complying with s. 46(8) of the *Environmental Protection Act 1986*, the Minister may issue a statement of decision to change conditions 3-1 and 3-2 of Statement 985 in the manner provided for in the attached recommended Statement (Appendix 1).

References

EPA 2009, *Balla Balla Magnetite Project, Report and Recommendations, Report 1309*, Environmental Protection Authority, Perth, WA.

EPA 2014, *Balla Balla Magnetite Project, Report and Recommendations, Report 1525*, Environmental Protection Authority, Perth, WA.

EPA 2016a, *Environmental Factor Guideline – Flora and Vegetation*, Environmental Protection Authority, Perth, WA.

EPA 2016b, *Environmental Factor Guideline – Terrestrial Fauna*, Environmental Protection Authority, Perth, WA.

EPA 2016c, *Environmental Factor Guideline – Social Surroundings*, Environmental Protection Authority, Perth, WA.

EPA 2018a, *Environmental Factor Guideline – Inland Waters*, Environmental Protection Authority, Perth, WA.

EPA 2018b, *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual*, Environmental Protection Authority, Perth, WA.

EPA 2018c, *Statement of Environmental Principles, Factors and Objectives*, Environmental Protection Authority, Perth, WA.

State of Western Australia 2016, *Western Australian Government Gazette*, No. 223, 13 December 2016.

Appendix 1: Identified decision-making authorities and recommended environmental conditions

Identified Decision-Making Authorities

The following decision-making authorities (DMAs) have been identified for the purposes of s. 45 as applied by s. 46(8) of the *Environmental Protection Act 1986*:

Decision-Making Authority	Legislation (and Approval)
1. Minister for Aboriginal Affairs	<i>Aboriginal Heritage Act 1972</i> (s. 18 clearances)
2. Minister for Environment	<i>Biodiversity Conservation Act 2016</i> (taking of flora and fauna)
3. Minister for Lands	<i>Lands Administration Act 1997</i>
4. Minister for Mines and Petroleum	<i>Mining Act 1978</i>
5. Minister for Water	<i>Rights in Water and Irrigation Act 1914</i> (groundwater abstraction licence)
6. Chief Executive Officer, Department of Water and Environment Regulation	<i>Environmental Protection Act 1986</i> (works approval and licence)
7. Chief Health Officer, Department of Health	<i>Health Act 1911</i> Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 (sewage treatment permit)
8. Department of Mines, Industry Regulation and Safety Chief Dangerous Goods Officer State Mining Engineer	<i>Dangerous Goods Safety Act 2004</i> (dangerous goods) <i>Mines Safety and Inspection Act 1994</i> (mine safety)
9. Chief Executive Officer, City of Karratha	<i>Planning and Development Act 2005</i> <i>Building Act 2011</i> (building permit for worker accommodation)
10. Chief Executive Officer, Town of Port Hedland	<i>Planning and Development Act 2005</i>

Note: In this instance, agreement is only required with DMAs 1-4 since these DMAs are Ministers.

Recommended Environmental Conditions

STATEMENT TO CHANGE THE IMPLEMENTATION CONDITIONS APPLYING TO A PROPOSAL

(Section 46 of the *Environmental Protection Act 1986*)

BALLA BALLA MAGNETITE MINING PROJECT

Proposal: To undertake mining and processing of up to 129 million tonnes of magnetite iron ore in the Central and Western deposits at the Balla Balla mine site and to construct and operate a pipeline to convey the magnetite slurry to Utah Point, Port Hedland

Proponent: Forge Resources Swan Pty Ltd
Australian Company Number 149 783 068

Proponent Address: Level 3, 20 Shape Ave, Karratha, WA 6714

Report of the Environmental Protection Authority: 1670

Preceding Statements Relating to this Proposal: 794 and 985

Pursuant to section 45 of the *Environmental Protection Act 1986*, as applied by section 46(8), it has been agreed that the implementation conditions set out in Ministerial Statement No. 985, be changed as specified in this Statement.

Condition 3 of Ministerial Statement 985 is deleted and replaced with:

3 Time Limit for Proposal Implementation

3-1 The proponent shall not commence implementation of the proposal after 28 April 2024, and any commencement, prior to this date, must be substantial.

3-2 Any commencement of implementation of the proposal, on or before 28 April 2024, must be demonstrated as substantial by providing the CEO* with written evidence, on or before 28 April 2024.

* "CEO" means the Chief Executive Officer of the Department of the Public Service which is responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate.