Report and recommendations of the Environmental Protection Authority

Orebody 31 Iron Ore Mine Project

BHP Billiton Iron Ore Pty Ltd

Report 1559

September 2015

Assessment on Proponent Information
Environmental Impact Assessment Process Timelines

Date	Progress stages	Time (weeks)
13/04/2015	Level of assessment set	
17/04/2015	Scoping guideline issued by EPA	4 days
02/06/2015	Proponent's final Environmental Review (API) document received by EPA	5
16/07/2015	EPA Board Meeting	6
12/08/2015	Provision of further information	4
02/09/2015	EPA report provided to the Minister for Environment	3
07/09/2015	Publication of EPA report (3 working days after report provided to the Minister)	3 days
21/09/2015	Close of appeals period	

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

2 September 2015

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Assessment No. 2047

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1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for Environment on the outcomes of its environmental impact assessment of the proposal by BHP Billiton Iron Ore Pty Ltd to develop and operate the Orebody 31 Iron Ore Project. The Minister has nominated BHP Billiton Iron Ore Pty Ltd as the proponent responsible for the proposal.

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

- what the EPA considers to be 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 also include any other information, advice and recommendations in the assessment report as it thinks fit.

The aims of environmental impact assessment and the principles of environmental impact assessment considered by the EPA in its assessment of this proposal are set out in the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2012.*

The proponent has submitted an Assessment on Proponent Information (API) Environmental Review document and supporting documents (Appendix 3). The document describes the proposal, outcomes of consultation, environmental studies undertaken, and the proponent's assessment of impacts on environmental factors and application of the mitigation hierarchy to manage those impacts.

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

2. The proposal

The proponent, BHP Billiton Iron Ore (BHPBIO), proposes to mine a new iron ore deposit at Orebody 31 located approximately 40 kilometres (km) east of Newman in the Pilbara Region of Western Australia (Figure 1). The proposal will utilise the existing approved Orebody 18 Hub Mine ore handling facilities, including primary crusher, stockpiles and train load out facilities, located immediately west of Orebody 31. Production from Orebody 31 will replace that from Orebody 18 mine, which is intended to be decommissioned in 2018. The Orebody 31 mine will produce approximately 30 million tonnes per annum of iron ore.

The deposit is estimated to be 70 per cent below the water table and therefore the proposal will require mine dewatering of up to 16.2 gigalitres per annum (GL/a) to facilitate dry mining conditions. Surplus mine dewater management may include reuse onsite or transfer to other mining operations, discharge to Ophthalmia Dam and surrounding infiltration ponds, and surface discharge to local creek lines.

The proposed total clearing for the proposal is up to 2,500 hectares (ha) of native vegetation in 'good to excellent' condition within a development envelope of 4,075 ha.

The proponent has not referred the proposal to the Commonwealth for a decision on whether the proposal is a controlled action under the Commonwealth's *Environment Protection and Biodiversity Act 1999.*

The main characteristics of the proposal are summarised in Tables 1 and 2. A detailed description of the proposal is provided in the proponent's Assessment on Proponent Information (API) Environmental Review document (BHPBIO, 2015) which is included as Appendix 3.

Table 1: Summary of key proposal characteristics

Proposal Title	Orebody 31 Iron Ore Project
Proponent Name	BHP Billiton Iron Ore Pty Ltd
Short Description	The proposal is to develop and operate a below water table iron ore mine approximately 40 km east of Newman, Western Australia. The proposal includes the construction of an overland heavy vehicle haul road and an overland conveyor, as well as associated mine infrastructure including an overburden storage area, offices, workshops, roads, dewatering infrastructure, ore and topsoil stockpiles and associated facilities.

Table 2: Physical and Operational Elements

Element	Location	Proposed Extent
Mine pits, plant and mine infrastructure	Figure 2	Clearing of no more than 2,500 ha of native vegetation within the development envelope of 4,075 ha.
Dewatering		Abstraction of no more than 16.2 GL/yr.
Surplus dewater management		Discharge to a tributary of Jimblebar Creek during wet season or during maintenance of Ophthalmia pipeline or emergency situations for a maximum of three months per year with a maximum discharge of 4 GL/a. The wetting front to extend no further than 16 km along the designated watercourses from the discharge point (located within the development envelope) under natural no-flow conditions.

The potential impacts of the proposal identified by the proponent and their proposed management are detailed in section 6 of the Environmental Review document (Appendix 3).

In assessing this proposal, the EPA notes that the proponent has sought to avoid, minimise, and rehabilitate environmental impacts associated with the proposal by:

- revising the development envelope boundary to avoid a population of *Acacia* sp. East Fortescue (Priority 1 flora species);
- revising the mine plan to re-engineer the location of the Overburden Storage Area to avoid all known occurrences of *Acacia* sp. East Fortescue;
- avoiding the exposure and oxidation of potentially acid forming material by leaving a buffer of 20 metres (m) from the pit wall to this material; and
- minimising impacts on vegetation through progressive rehabilitation.

During the preparation of the Environmental Review document, the proponent consulted with government agencies and key stakeholders. The agencies and stakeholders consulted, the issues raised and proponent's response are detailed in Table 3 (pages 18 – 22) of the proponent's Environmental Review document (Appendix 3).

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.

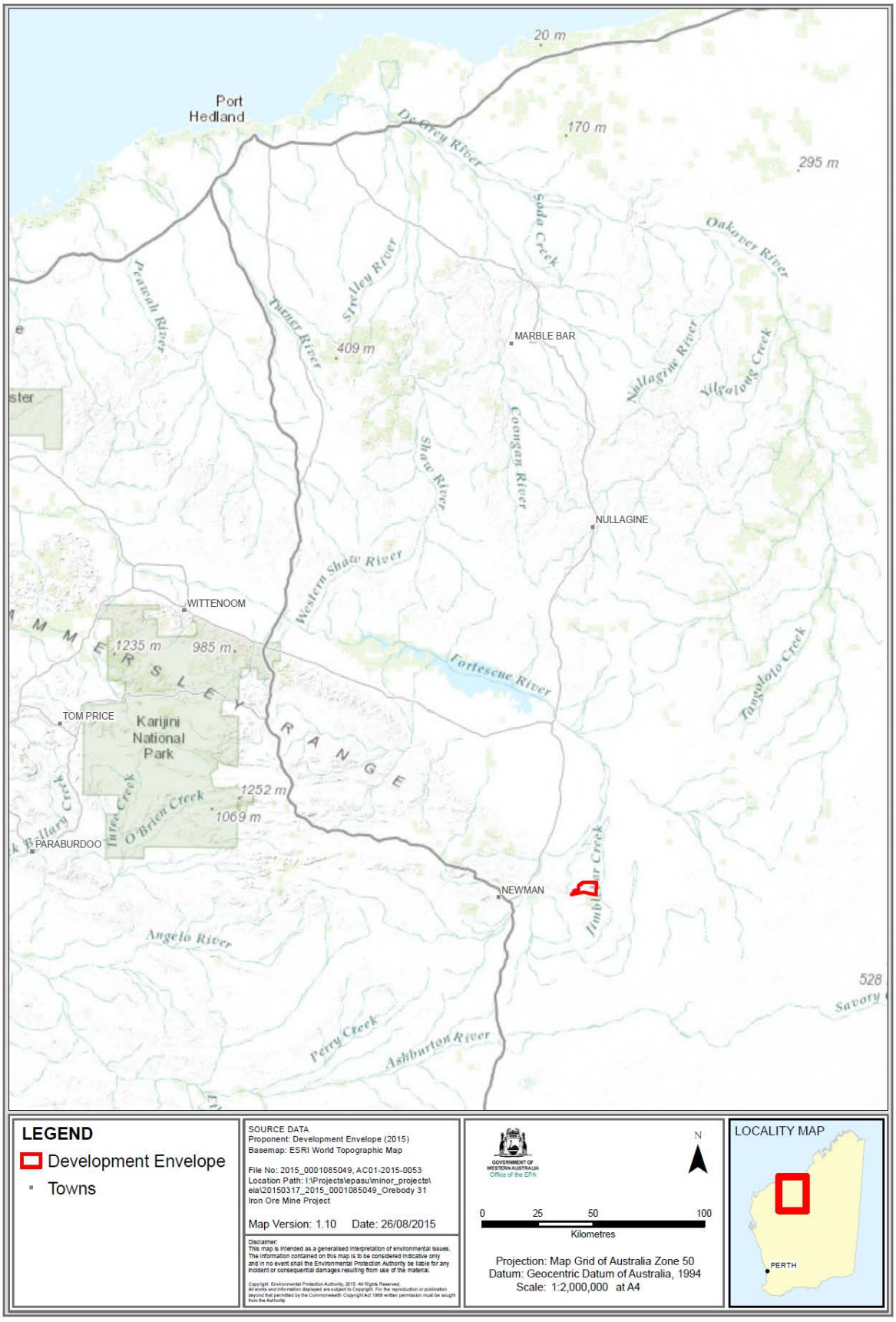

Figure 1: Proposal location

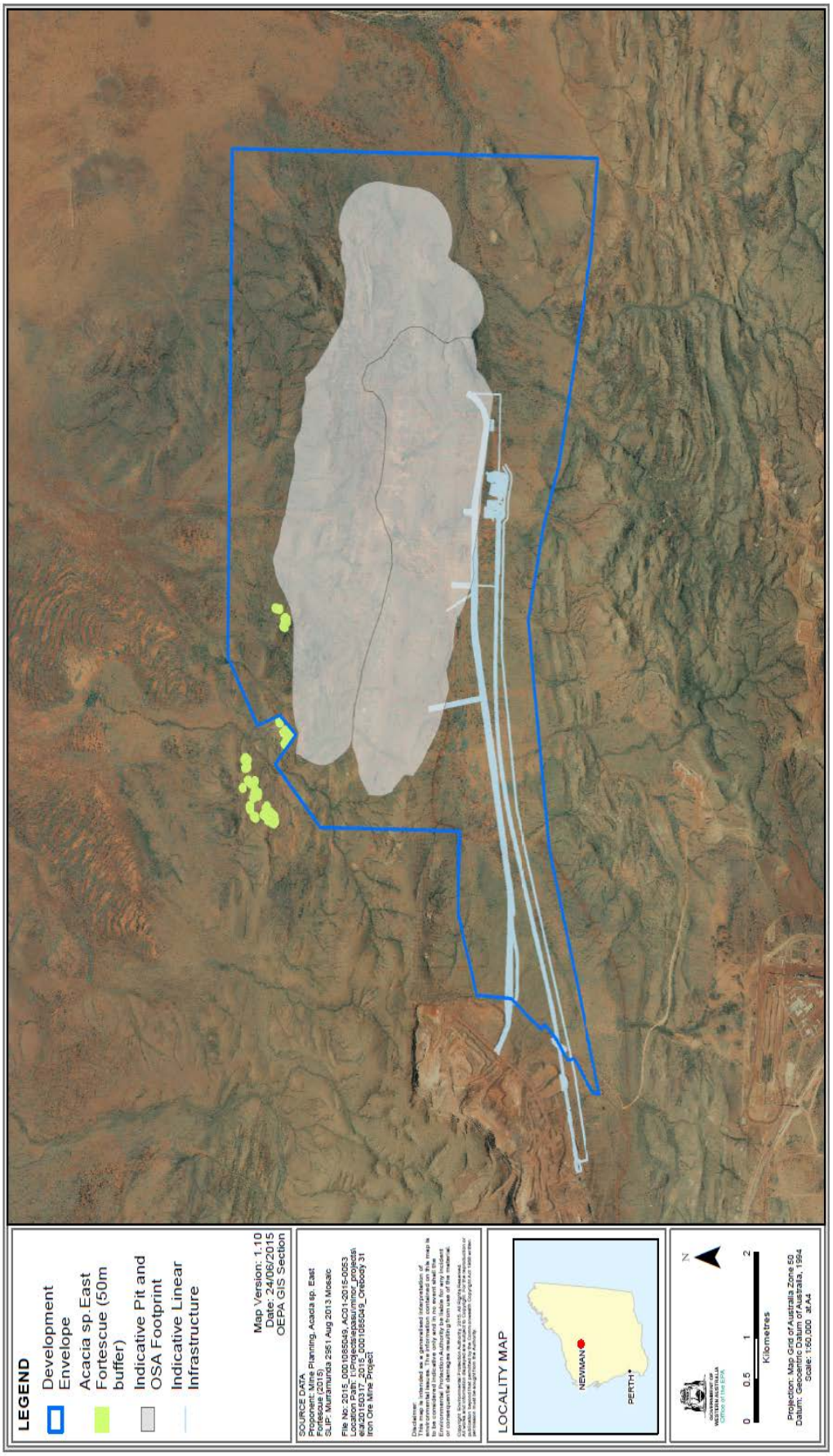

Figure 2: Development envelope

3. Key environmental factors

The EPA has identified the following key environmental factors during the course of its assessment of the proposal:

1. **Flora and Vegetation** – direct impacts from the clearing of flora and vegetation within the mine development envelope, and potential indirect impacts (particularly dust) to *Acacia* sp. East Fortescue;
2. **Hydrological Processes** – potential impacts to riparian flora and vegetation from discharge of up to 4 GL surplus mine dewater over three months per year into Jimblebar Creek;
3. **Inland Waters Environmental Quality** – potential impacts to water quality in the Ethel Gorge Threatened Ecological Community through salinity increases from discharge of surplus water to Ophthalmia Dam;
4. **Rehabilitation and Decommissioning (Integrating Factor)** – potential impacts to water quality from oxidation of potentially acid forming material from excavation; and
5. **Offsets (Integrating Factor)** – to counterbalance the significant residual impacts to native vegetation in 'good to excellent' condition.

The EPA's assessment of the proposal's impacts on the key environmental factors is provided in Table 3. This table outlines the EPA's conclusions as to whether or not the proposal can be managed to meet the EPA's objective for a particular factor and, if so, the recommended conditions and procedures that should apply if the proposal is implemented.

In preparing this assessment report, the EPA has had regard for the object and principles contained in s4A of the EP Act.

Other environmental factors which the EPA determined not to be key environmental factors are discussed in the proponent's API Environmental Review document (Appendix 3). The EPA considers that impacts to these factors do not require management under Part IV of the EP Act.

Table 3: Assessment of Key Environmental Factors

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
3.1 Flora and Vegetation *To maintain representation, diversity, viability and ecological function at the species, population and community level*				
Context • The proposal is located within the Hamersley and Fortescue IBRA sub-regions. • The proponent has carried out a number of Level 2 flora and vegetation surveys since 2011 in accordance with the *EPA Guidance Statement 51 Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (2004). • The proponent is continuing to carry out targeted regional surveys for *Acacia* sp. East Fortescue. Key Survey Findings • No Declared Rare Flora (DRF), Threatened Ecological Communities (TECs), or Priority Ecological Communities (PECs) were recorded in the Mine Development Envelope. • A new *Acacia* sp. East Fortescue	Direct clearing of native vegetation for mine and infrastructure construction. Generation of dust from construction and operation of the mine. Drainage and diversion of surface runoff near the Overburden Storage Area (OSA).	Avoid The proponent has re-engineered the design of the OSA to avoid all know occurrences of *Acacia* sp. East Fortescue, reducing the direct impact from approximately 13.5 per cent to zero. Minimise The proponent has committed to a 50 m buffer from all known occurrences of *Acacia* sp. East Fortescue. In addition to the buffer, the proponent has designed the OSA to drain any surface run off away from the *Acacia* sp. East Fortescue.	A condition (6) has been recommended to maintain the viability of *Acacia* sp. East Fortescue. The condition includes provisions to: • reflect the proponent's commitment for a 50 m buffer around all known occurrences of *Acacia* sp. East Fortescue; • require an *Acacia* sp. East Fortescue Regional Survey to accurately document the distribution and population size of the species; • require the development of a management plan to monitor and manage potential indirect impacts to *Acacia* sp.	Having particular regard to the: • absence of DRF, TECs and PECs; • the proponent's measures to avoid direct impacts to *Acacia* sp. East Fortescue; and • the significant residual impact of the clearing of up to 2,500 ha of 'good to excellent' condition native vegetation within the Hamersley and Fortescue IBRA sub-regions, the EPA considers that the proposal can be managed to meet the EPA's objective for Flora and Vegetation provided that the following conditions are imposed: • condition 6 to manage the direct and indirect

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
was recorded within and around the development envelope. The species has been listed as a Priority 1 species. Three additional priority flora species were recorded in the development envelope including two Priority 3 and one Priority 4 species. • The proposal's development envelope contains vegetation in 'very good to excellent' condition. <u>Impacts</u> • Direct impacts to *Acacia* sp. East Fortescue are not expected given the proponent's commitments. The proposal has the potential to have an indirect impact to *Acacia* sp. East Fortescue. Indirect impacts are most likely to occur through dust disposition from the adjacent Overburden Storage Area (OSA). • The proposal will impact flora and vegetation through the direct clearing of an additional 2,500 ha of native vegetation.		<u>Rehabilitate</u> Disturbed areas would be progressively rehabilitated throughout the life of the proposal. <u>Offset</u> An offset would be provided for clearing of vegetation in 'good to excellent' condition.	East Fortescue, should the outcomes of the regional survey indicate the species will remain as a priority 1 flora or be declared as Rare Flora; and • require the development and implementation of a Conservation and Research Plan should the species be declared as Rare Flora and its health significantly declines from indirect impacts attributable to the proposal. Condition 10 has been recommended requiring the proponent to provide an offset for the clearing of 2,500 ha of 'good to excellent' condition native vegetation.	impacts on *Acacia* sp. East Fortescue Priority 1 species; and • condition 10 to counterbalance the significant residual impact of the clearing of up to 2,500 ha of 'good to excellent' condition native vegetation.

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
3.2 Hydrological Processes *To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected* **3.3 Inland Waters Environmental Quality** *To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected*				
<u>Context</u> • Dewatering for the proposal is expected to produce up to 16.2 GL/a of surplus water. • Ethel Gorge Stygobiont TEC occurs 20 km west of Orebody 31 but in relatively close proximity to Ophthalmia dam. The Ethel Gorge TEC is known for its high diversity of stygofauna. <u>Key Findings</u> • The proponent has undertaken a baseline flora and vegetation survey of riparian vegetation along Jimblebar Creek, extending approximately 20 km downstream of the proposed surplus water discharge point (Onshore Environmental, 2015).	Abstraction of groundwater to dewater mine. Discharge of surplus water during natural no-flow conditions.	<u>Minimise</u> The proponent will use other options for surplus water management before selecting controlled surface discharge to the surrounding environment. The proponent has advised they would only be discharging into the main channel of the creek and not causing overflow of water into the edges of the creek, i.e. riparian zone flooding. The proponent has a management strategy for	The proponent has a preference to manage water quantity and quality through a catchment scale plan. Consistent with other recent proposals, the EPA has recommended condition 7 to manage potential impacts from surplus water discharge to the Jimblebar Creek during no-flow conditions. In addition, condition 8 requires the monitoring and management of potential salinity impacts to the Ethel Gorge TEC from infiltration of water around	Having particular regard to: • the impact to the Ethel Gorge TEC buffer area which is predicted to be 0.1%; • the management strategy developed by BHP Billiton to minimise the discharge of surplus water; • the likelihood that discharge of surplus mine dewater will be localised in the main drainage channel of Jimblebar Creek; and • the potential for salinity to increase in the Ethel Gorge TEC from the discharge of water into

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
• Survey work found no significant flora present and the 19 vegetation associations described and mapped were not affiliated with any TEC or PEC (Onshore Environmental, 2015). • As one of the surplus dewater management options, the proponent may discharge up to 4 GL/a of surplus mine dewater over three months per year into Jimblebar Creek. This may occur in some cases when the creek is dry. • The proponent estimates that the wetting front will extend up to maximum distance of 16 kilometres (km) downstream of the discharge point under no flow conditions, and remain localised within the main drainage channel of Jimblebar Creek. • Water from Ophthalmia dam and surrounding infiltration ponds has been found to infiltrate into the groundwater systems that feed the Ethel Gorge TEC.		the surplus dewater which includes: • re-used onsite in mining operations and transfer to other nearby operations for use onsite; • discharge to Ophthalmia Dam and surrounding infiltration ponds; or • discharge into the nearby environment. The proponent has developed a water catchment scale management designed to manage and minimise salinity increases in the Ethel Gorge TEC.	Ophthalmia Dam.	Ophthalmia dam and surrounding infiltration ponds, the EPA considers that the proposal can be managed to meet the EPA's objective for Hydrological Processes and Inland Waters Environmental Quality provided the following conditions are imposed: • condition 7 requiring the proponent to prepare a management plan, in consultation with the Department of Water, to minimise the impacts of surplus mine dewater discharge into Jimblebar Creek; and • condition 8 requiring the proponent to prepare a management plan, in consultation with the Department of Parks and Wildlife and the Department of Water, to manage water quality in Ophthalmia Dam and

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
<u>Impacts</u> • The predicted drawdown area will extend 22 km into the regional aquifer and will impact 0.1% of the Ethel Gorge buffer area (BHP Billiton, 2015 Figure 12). • Discharge of surplus water under no-flow conditions may cause tree health decline in the riparian zone of the creek, the spread of weeds and influx of feral animals during dry periods. • A salt and water balance study identified that salinity has the potential to increase in the Ethel Gorge TEC from the discharge of water into Ophthalmia dam and surrounding infiltration ponds if not managed properly. • Infiltration of high salinity water into the Ethel Gorge TEC has the potential to reduce the diversity of stygofauna.				any associated impacts to the Ethel Gorge TEC.

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
3.4 Rehabilitation and Decommissioning (Integrating Factor) *To ensure that premises are decommissioned and rehabilitated in an ecologically sustainable manner*				
<u>Context</u> The proposal is subject to the *Iron Ore (Mount Newman) Agreement Act 1964* and therefore would not be subject to regulation under the *Mining Act 1978*. In accordance with the *Guidelines for Preparing Mine Closure Plans* (DMP/EPA, May 2015), Rehabilitation and Decommissioning is assessed by the EPA. <u>Key Findings</u> • The acid mine drainage assessment by Earth Systems (2015) identified that the south eastern area of the deposit contains potentially acid forming (PAF) materials. • The Mine Closure Plan indicates that there is the potential for a pit lake to form post-closure with the current preferred closure strategy.	Direct clearing of native vegetation. Alteration of land forms to create a mine pit.	<u>Avoid</u> The proponent has proposed that they would maintain a buffer of 20 m of rock between the PAF in the south eastern area of the deposit and the pit surface. This should avoid or substantially decrease oxidation of the PAF and acid generation. In relation to the mine pit lake, the proponent notes that further studies will be required during operations and decommissioning to evaluate the potential issues, however the proponent has committed to backfilling the mine pit if water quality becomes problematic.	The proponent submitted a Mine Closure Plan during the assessment. A condition (9) has been recommended for the proponent to implement the Mine Closure Plan and update this plan every three years during operations. This is consistent with the current *Guidelines for Preparing Mine Closure Plans* (DMP/EPA, May 2015).	Having particular regard to: • the proposal occurring on State Agreement Act tenements; • up to 2,500 ha of disturbed native vegetation requiring rehabilitation; and • and the potential for exposure of PAF materials and a pit lake to form post-closure, the EPA considers that the proposal can be managed to meet the EPA's objective for Rehabilitation and Decommissioning provided that the following condition is imposed: • condition 9 requiring the proponent to implement the Mine Closure Plan every three years during operations.

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
<u>Impacts</u> • There is a potential for acid mine drainage to occur if potentially acid forming materials are not managed on the site. This could lead to poor water quality within the pit if a pit lake forms and a poor quality of the surrounding groundwater. • There will be clearing of vegetation during construction of the mine. There will be the development of overburden storage areas and pit voids during operation of the mine. These could remain without vegetation and with lower soil stability if not properly revegetated.		<u>Minimise</u> The proponent would develop a PAF Management Plan to further address risks of exposure should additional PAF material be encountered, or it is anticipated it would be encountered, during operations. The proponent has committed to progressive rehabilitation of the site.		
3.5 Offsets (Integrating Factor) *To counterbalance any significant residual environmental impacts or uncertainty through the application of offsets*				
<u>Context</u> The clearing of native vegetation in 'good to excellent condition' in the Pilbara IBRA bioregion is considered to be significant when considered in a cumulative context (EPA 16e advice on cumulative impacts of development in the Pilbara Region).	Clearing of up to 2,500 ha of 'very good to excellent' condition native vegetation.	The proponent has committed to providing an offset in line with current policies and guidelines.	A condition (condition 10) has been recommended to require the proponent to provide an offset for the additional clearing of up to 2,500 ha of 'good to excellent' native vegetation.	The EPA considers that the proposal can be managed to meet the EPA's objectives for Flora and Vegetation and Offsets provided a condition (condition 10) is imposed to counterbalance the significant residual impact of the additional clearing of

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
The proposal is located within both the Fortescue and Hamersley IBRA Subregion. Only 0.55% of the Fortescue subregion and 13% of the Hamersley subregion are currently reserved for conservation. Following the implementation of all mitigation measures, the proposal would have a significant residual impact of clearing of up to 2,500 ha of 'good to excellent' condition native vegetation. Consistent with the WA *Environmental Offsets Guidelines* (2014), a significant residual impact relating to cumulative impacts may require an offset. Conservation areas in the Pilbara bioregion total approximately eight per cent of the area, with the remainder mostly Crown Land, covered with mining tenements and pastoral leases. As such, the potential for traditional land acquisition and management offsets are limited. The EPA has determined that a possible solution is the establishment of a strategic regional conservation initiative for the Pilbara. The State Government is currently considering how to establish				up 2,500 ha of 'good to excellent' condition vegetation.

Inherent Impact	Environmental Aspect	Mitigation actions to address residual impacts	Proposed regulatory mechanisms for ensuring mitigation	Outcome to demonstrate that the proposal meets EPA objective
this conservation initiative. The current EPA position is to apply an offset of $1,500 per hectare for clearing of 'good to excellent' condition vegetation in the Fortescue IBRA subregion, and an offset of $750 for clearing of 'good to excellent' condition vegetation in the Hamersley IBRA subregion. <u>Impacts</u> Loss of up to 2,500 ha of 'very good to excellent' condition native vegetation.				

4. Conclusion and recommended conditions

The EPA has concluded that the proposal can be managed to meet the EPA's objectives and recommends that the proposal may be implemented. The EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by BHP Billiton Iron Ore to develop and operate the Orebody 31 Iron Ore Project is approved for implementation (Appendix 2).

Matters addressed in the conditions include:

- a condition (6) requiring the proponent to:
  - maintain a 50 m buffer around individuals of *Acacia* sp. East Fortescue;
  - undertake a regional survey for *Acacia* sp. East Fortescue, to determine its population size and extent;
  - monitor and manage indirect impacts to *Acacia* sp. East Fortescue should it remain as a Priority 1 species or be declared as Rare Flora*;* and
  - develop and implement a conservation and research plan should *Acacia* sp. East Fortescue become declared rare flora and shows a significant decline in health from indirect impacts from the project;
- a condition (7) requiring the proponent to manage surplus discharge of water into Jimblebar Creek;
- a condition (8) requiring the proponent to monitor and manage potential impacts from salinity on the Ethel Gorge TEC;
- a condition (9) requiring the implementation of and update of a Mine Closure Plan in alignment with the *Guidelines for Preparing Mine Closure plans (DMP/EPA 2015)*; and
- an offset condition (10) requiring the proponent to contribute funds to a government established conservation offset fund to mitigate for significant residual impacts on vegetation in 'good to excellent' condition.

5. Recommendations

That the Minister for Environment notes:

1. that the proposal being assessed is for the proposal by BHP Billiton Iron Ore Pty Ltd to develop and operate the Orebody 31 Iron Ore Project;
2. the key environmental factors identified by the EPA in the course of its assessment set out in Section 3; and
3. the EPA has concluded that the proposal may be implemented to meet the EPA's objectives, provided the implementation of the proposal is carried out in accordance with the recommended conditions and procedures set out in Appendix 2 and summarised in Section 3.

Appendix 1

References

BHP Billiton Iron Ore (2014) *Eastern Pilbara Water Resource Management Plan*, prepared by BHP, 2014

BHP Billiton Iron Ore (2015) *Orebody 31 Iron Ore Mine – Environmental Review Document*, prepared by BHP, March 2015

BHP Billiton Iron Ore (2015a) *Orebody 31 Iron Ore Mine - Additional information*, Prepared by BHP, May 2015

DMP/EPA (2015) *Guidelines for Preparing Mine Closure Plans*, prepared by the Department of Mines and Petroleum and the Environmental Protection Authority, May 2015

Earth Systems (2014) *Preliminary acid and metalliferous drainage risk assessment for the OB 31 deposit*, October 2014

Onshore Environmental (2015) *Riparian Flora and Vegetation Baseline Survey*, prepared for BHP Billiton Iron Ore, January 2015

Appendix 2

Identified Decision-making Authorities
and
Recommended Environmental Conditions

Identified Decision-making Authorities

Section 44(2) of 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:

Decision-making Authority	Approval
1. Minister for Environment	*Wildlife Conservation Act 1950*
2. Minister for Water	*Rights in Water and Irrigation Act 1914* - Water abstraction licence
3. Minister for State Development	*Iron Ore (Mount Newman) Agreement Act 1964*
4. Minister for Lands	*Land Administration Act 1997*
5. Minister for Aboriginal Affairs	*Aboriginal Heritage Act 1972* - s18 approval
6. Director General, Department of Environment Regulation	*Environmental Protection Act 1986* - Works approval and licence *Environmental Protection Regulations 1987* Ore processing
7. Department of Mines and Petroleum	*Mines Safety and Inspection Act 1994* Mines safety District Inspector – North

Note: In this instance, agreement is only required with DMA 1 to 5 since these DMAs are Ministers.

Statement No. xxx

RECOMMENDED ENVIRONMENTAL CONDITIONS

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
***(Environmental Protection Act 1986*)**

OREBODY 31 IRON ORE MINE

Proposal:	The proposal is to construct and operate an open-cut iron ore mine, and associated infrastructure, approximately 40 kilometres (km) east of Newman.
Proponent:	BHP Billiton Iron Ore Pty Ltd Australian Company Number 008 700 981
Proponent Address:	125 St Georges Terrace Perth Western Australia 6000
Assessment Number:	2047

Report of the Environmental Protection Authority: 1559

Pursuant to section 45 of the *Environmental Protection Act 1986* it has been agreed that the proposal described and documented in Table 1 of Schedule 1 may be implemented and that the implementation of the proposal is subject to the following 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 Table 2 in Schedule 1, unless amendments to the proposal and the authorised extent of the proposal have 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 twenty eight (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 five (5) years from the date on this Statement, and any commencement, prior to this date, must be substantial.

3-2 Any commencement of implementation of the proposal, on or before five (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 five (5) years from the date of this Statement.

4 Compliance Reporting

4-1 The proponent shall prepare, submit and maintain a Compliance Assessment Plan to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 4-6, or prior to implementation, whichever is sooner.

4-2 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 After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 4-2 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 (7) days of a potential non-compliance being known.

4-6 The proponent shall submit to the CEO the first Compliance Assessment Report on 1 October following the date of issue of this Statement and then subsequent Compliance Assessment Reports on 1 October thereafter or as otherwise agreed in writing by the CEO.

The Compliance Assessment Report shall:

(1) be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive 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;

(4) be made publicly available in accordance with the approved Compliance Assessment Plan; and

(5) 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 these data publicly available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publicly available.

6 *Acacia* sp. East Fortescue flora species (Flora and Vegetation)

6-1 The proponent shall ensure that the implementation of the Orebody 31 Iron Ore Mine proposal does not affect the viability of *Acacia* sp. East Fortescue at the population level, through the implementation of condition 6-2 to 6-15.

6-2 The proponent shall ensure that there is no disturbance within the *Acacia* sp. East Fortescue the 50 m buffer as defined in Figure 1 of Schedule 1 and defined by the geographic coordinates in Schedule 2.

6-3 Prior to ground disturbance the proponent shall prepare and submit an *Acacia* sp. East Fortescue Regional Survey Plan on advice of Department of Parks and Wildlife to the satisfaction of the CEO. The *Acacia* sp. East Fortescue Regional Survey Plan shall define the methodology and timing for a Regional Survey to accurately detect and document the distribution and population size of the species.

6-4 Within six months of receiving notice in writing from the CEO that the *Acacia* sp. East Fortescue Regional Survey Plan satisfies the requirements of condition 6-3, the proponent shall undertake the *Acacia* sp. East Fortescue Regional Survey in accordance with the requirements of the *Acacia* sp. East Fortescue Regional Survey Plan.

6-5 Within three months of completion of the *Acacia* sp. East Fortescue Regional Survey the proponent shall report to the CEO and the Department of Parks and Wildlife the results of the *Acacia* sp. East Fortescue Regional Survey.

6-6 In the event that advice from the Department of Parks and Wildlife following a review of the survey report of condition 6-5 indicates that the conservation status of *Acacia* sp. East Fortescue meets Priority 1 flora or higher, the proponent shall, within six months of ground disturbing activities related to the development of the Overburden Storage area, prepare a Plan, in consultation with the Department of Parks and Wildlife, and to the satisfaction of the CEO. The Plan shall for the Orebody 31 Iron Ore Mine:

(1) specify management actions that will be implemented to ensure the management objective in condition 6-1 is achieved;

(2) identify and spatially define the proposed monitoring sites and rationale for the location of these sites to assess plant health;

(3) detail the proposed frequency and timing of monitoring;

(4) develop an appropriate monitoring methodology and measurable indicators of plant health;

(5) specify appropriate plant health criteria that will trigger the implementation of management actions to ensure condition 6-1 is being met; and

(6) specify trigger management actions to be implemented in the event that the trigger criteria specified by condition 6-6(5) are reached.

6-7 After receiving notice in writing from the CEO that the Plan satisfies the requirements of condition 6-6, the proponent shall:

(1) implement the requirements of the Plan specified by condition 6-6; and

(2) continue to implement the requirements of the Plan until the CEO has confirmed by notice in writing that it has been demonstrated that the objective in condition 6-1 is being and will continue to be met and therefore implementation of the Plan is no longer required.

6-8 In the event that the monitoring specified in the Plan, indicates that the trigger criteria specified in the Plan have been exceeded, the proponent shall:

(1) immediately implement the trigger management actions specified in the Plan and continue implementation of those actions until the trigger criteria are not exceeded, or until the CEO has confirmed by notice in writing that it has been demonstrated that the outcome in condition 6-1 is being and will continue to be met and implementation of the trigger management actions is no longer required;

(2) investigate to determine the likely cause of the trigger criteria being exceeded and to identify any additional trigger management actions required to prevent the trigger criteria being exceeded in the future; and

(3) provide a report to the CEO within 30 days of an event, referred to in condition 6-8, occurring. The report shall include:

(a) details of trigger management actions implemented; and

(b) the findings of the investigation required by condition 6-8(2).

6-9 The proponent may review and revise the Plan.

6-10 The proponent shall review and revise the Plan, as and when directed by the CEO.

6-11 The proponent shall implement the latest revision the Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 6-6.

6-12 In the event that *Acacia* sp. East Fortescue is declared Rare Flora under the *Wildlife Conservation Act 1950* and the implementation of the Plan required by condition 6-7 shows a significant decline in plant health of *Acacia* sp. East Fortescue attributable to the proposal, as determined by the CEO on advice from the Department of Parks and Wildlife, the proponent shall, within six months or as agreed in writing from the CEO prepare and submit a *Acacia* sp. East Fortescue Conservation and Research Plan on advice from Department of Parks and Wildlife to the satisfaction of the CEO.

6-13 The *Acacia* sp. East Fortescue Conservation and Research Plan identified in Condition 6-12 shall include:

(1) details of suitable conservation measures such as seed collection and germplasm storage, seeding or translocation trials to be undertaken to determine the likelihood of successful establishment, during mine site rehabilitation or other suitable measures, for conservation of the species;

(2) details on research to be undertaken into the habitat, biology and conservation of the species;

(3) timeframes and responsibilities for the implementation of proposed conservation measures; and

(4) a monitoring programme and criteria for determining the efficacy of the proposed conservation measures.

6-14 The proponent shall implement the *Acacia* sp. East Fortescue Conservation and Research Plan.

6-15 The proponent shall submit a report to the CEO documenting the results of the *Acacia* sp. East Fortescue Conservation and Research Plan, identifying the success of the conservation measures required by condition 6-13(1) and the findings of the research required by condition

6-13(2) within 6 months of completion of the measures set out in the approved plan.

7 Surplus Water Discharge (Hydrological Processes)

7-1 The proponent shall manage the discharge of surplus mine dewater from the Orebody 31 Iron Ore Mine in a manner that minimises impacts to the riparian vegetation along Jimblebar Creek.

7-2 Prior to discharge of surplus mine dewater, the proponent shall prepare a Plan in consultation with the Department of Water to the satisfaction of the CEO. The Plan shall include:

(1) descriptions of reference sites, including physical attributes, geographic locations and details of the baseline condition of what is to be monitored; rationale for the location of the sites;

(2) descriptions of biological and physical environmental indicators to be monitored;

(3) monitoring methodologies that will be implemented to measure the physical and biological indicators;

(4) criteria that will trigger the implementation of management actions; and

(5) trigger management actions to be implemented in the event that the trigger criteria required by condition 7-2(4) have been reached.

7-3 After receiving notice in writing from the CEO that the Plan satisfies the requirements of condition 7-2, the proponent shall:

(1) implement the requirements of the Plan specified by condition 7-2; and

(2) continue to implement requirements of the Plan until the CEO has confirmed by notice in writing that it has been demonstrated that the objective in condition 7-1 is being and will continue to be met and therefore implementation of the Plan is no longer required.

7-4 In the event that the monitoring specified in the Plan indicates that the trigger criteria specified in the Plan has been exceeded, the proponent shall:

(1) immediately implement the trigger management actions specified in the Plan and continue implementation of those actions until the trigger criteria are not exceeded or until the CEO has confirmed by notice in writing that it has been demonstrated that the objective in condition 7-1 is being and will continue to be met and implementation of the trigger management actions is no longer required;

(2) investigate to determine the likely cause of the trigger criteria being exceeded and to identify any additional trigger

management actions required to prevent the trigger criteria being exceeded in the future; and

(3) provide a report to the CEO within 30 days of an event, referred to in condition 7-4, occurring. The report shall include:

(a) details of trigger management actions implemented; and

(b) the findings of the investigation required by condition 7-4(2).

7-5 The proponent may review and revise the Plan.

7-6 The proponent shall review and revise the Plan as and when directed by the CEO.

7-7 The proponent shall implement the latest revision of the Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 7-2.

8 Surplus Water Discharge (Inland Waters Environmental Quality)

8-1 The proponent shall manage the discharge of surplus mine dewater from the Orebody 31 Iron Ore Mine in a manner that minimises impacts to the Ethel Gorge Threatened Ecological Community.

8-2 Prior to discharge of surplus mine dewater, the proponent shall prepare a Plan in consultation with the Department of Parks and Wildlife and the Department of Water to the satisfaction of the CEO, to demonstrate that condition 8-1 has been met. The Plan shall include:

(1) descriptions of reference sites, including physical attributes, geographic locations and details of the baseline condition of what is to be monitored; rationale for the location of the sites;

(2) descriptions of biological and physical environmental indicators to be monitored;

(3) monitoring methodologies that will be implemented to measure the physical and biological indicators;

(4) criteria that will trigger the implementation of management actions; and

(5) trigger management actions to be implemented in the event that the trigger criteria required by condition 8-2(4) have been reached.

8-3 After receiving notice in writing from the CEO that the Plan satisfies the requirements of condition 8-2, the proponent shall:

(1) implement the requirements of the Plan specified by condition 8-2; and

(2) continue to implement requirements of the Plan until the CEO has confirmed by notice in writing that it has been demonstrated that the objective in condition 8-1 is being and will continue to be

met and therefore implementation of the Plan is no longer required.

8-4 In the event that the monitoring specified in the Plan indicates that the trigger criteria specified in the Plan has been exceeded, the proponent shall:

(1) immediately implement the trigger management actions specified in the Plan and continue implementation of those actions until the trigger criteria are not exceeded or until the CEO has confirmed by notice in writing that it has been demonstrated that the objective in condition 8-1 is being and will continue to be met and implementation of the trigger management actions is no longer required;

(2) investigate to determine the likely cause of the trigger criteria being exceeded and to identify any additional trigger management actions required to prevent the trigger criteria being exceeded in the future; and

(3) provide a report to the CEO within 30 days of an event, referred to in condition 8-4, occurring. The report shall include:

(a) details of trigger management actions implemented; and

(b) the findings of the investigation required by condition 8-4(2).

8-5 The proponent may review the Plan.

8-6 The proponent shall review and revise the Plan as and when directed by the CEO.

8-7 The proponent shall implement the latest revision of the Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 8-2.

9 Rehabilitation and Decommissioning

9-1 The proponent shall ensure that the proposal is decommissioned and rehabilitated in an ecologically sustainable manner, through the implementation of the Mine Closure Plan required by condition 9-2.

9-2 The proponent shall implement the Mine Closure Plan (Revision No. 0, dated 12 August 2015).

9-3 The proponent shall review and revise the Mine Closure Plan required by condition 9-2, on the advice of DMP and to satisfaction of the CEO, in accordance with the *Guidelines for Preparing Mine Closure Plans*, (DMP/OEPA, May 2015) and any updates, at intervals not exceeding three years, or as otherwise specified by the CEO.

9-4 The proponent shall implement the latest revision of the Mine Closure Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 9-3.

10 Offsets

10-1 In view of the significant residual impacts and risks as a result of implementation of the proposal, the proponent shall contribute funds for the clearing of 'good to excellent' condition native vegetation in the Hamersley and Fortescue IBRA subregions, and calculated pursuant to condition 10-2. This funding shall be provided to a government-established conservation offset fund or an alternative offset arrangement providing an equivalent outcome as determined by the Minister.

10-2 The proponent's contribution to the initiative identified in condition 10-1 shall be paid biennially, the first payment due two years after the commencement of ground disturbance. The amount of funding will be made on the following basis in accordance with the approved Impact Reconciliation Procedure required by 10-3:

(1) $750 AUD (excluding GST) per hectare of 'good to excellent' condition native vegetation cleared within the development envelope (delineated in Figure 1 and defined by the geographic coordinates in Schedule 2) within the Hamersley IBRA subregion; and

(2) $1,500 AUD (excluding GST) per hectare of 'good to excellent' condition native vegetation cleared within the Development Envelope (delineated in Figure 1 and defined by the geographic coordinates in Schedule 2) within the Fortescue IBRA subregion.

10-3 Within twelve months of the date of this Statement, the proponent shall prepare an Impact Reconciliation Procedure to the satisfaction of the CEO.

10-4 The Impact Reconciliation Procedure required pursuant to condition 10-3 shall:

(1) require the proponent to submit spatial data identifying areas of 'good to excellent' condition native vegetation that has been cleared;

(2) include a methodology for calculating the amount of clearing undertaken during each biennial time period;

(3) include a methodology for calculating the amount of temporary vegetation clearing for the access road that has commenced rehabilitation within twelve months of final commissioning of the haul road;

(4) state dates for the commencement of the biennial time period and for the submission of results of the Impact Reconciliation Procedure, to the satisfaction of the CEO.

10-5 The real value of contributions described in condition 10-2 will be maintained through indexation to the Perth Consumer Price Index (CPI), with the first adjustment to be applied to the first contribution.

Schedule 1
Table 1: Summary of the Proposal

Proposal Title	Orebody 31 Iron Ore Project
Short Description	The proposal is to develop and operate a below water table iron ore mine approximately 40 km east of Newman, Western Australia. The proposal includes the construction of an overland heavy vehicle haul road and an overland conveyor, as well as associated mine infrastructure including an overburden storage area, offices, workshops, roads, dewatering infrastructure, ore and topsoil stockpiles and associated facilities.

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

Column 1	**Column 2**	**Column 3**
Element	**Location**	**Authorised Extent**
Mine pits, plant and mine infrastructure	Figure 2	Clearing of no more than 2,500 ha of native vegetation within a Mine Development Envelope of 4,075 ha.
Surplus dewater management		Dewater discharge to extend no further than 16 km from the discharge point and remain in the main drainage channel of Jimblebar Creek under natural no-flow conditions.

Table 3: Abbreviations and Definitions

Acronym or Abbreviation	**Definition or Term**
CEO	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*, or his delegate.
EP Act	*Environmental Protection Act 1986*
ha	Hectare
Acacia sp. East Fortescue	*Acacia* sp. East Fortescue (J. Bull and D Roberts ONS A 27.01)

Figure (attached)

Figure 1 Orebody 31 Development Envelope (This figure is a representation of the coordinates referred to in Schedule 2)

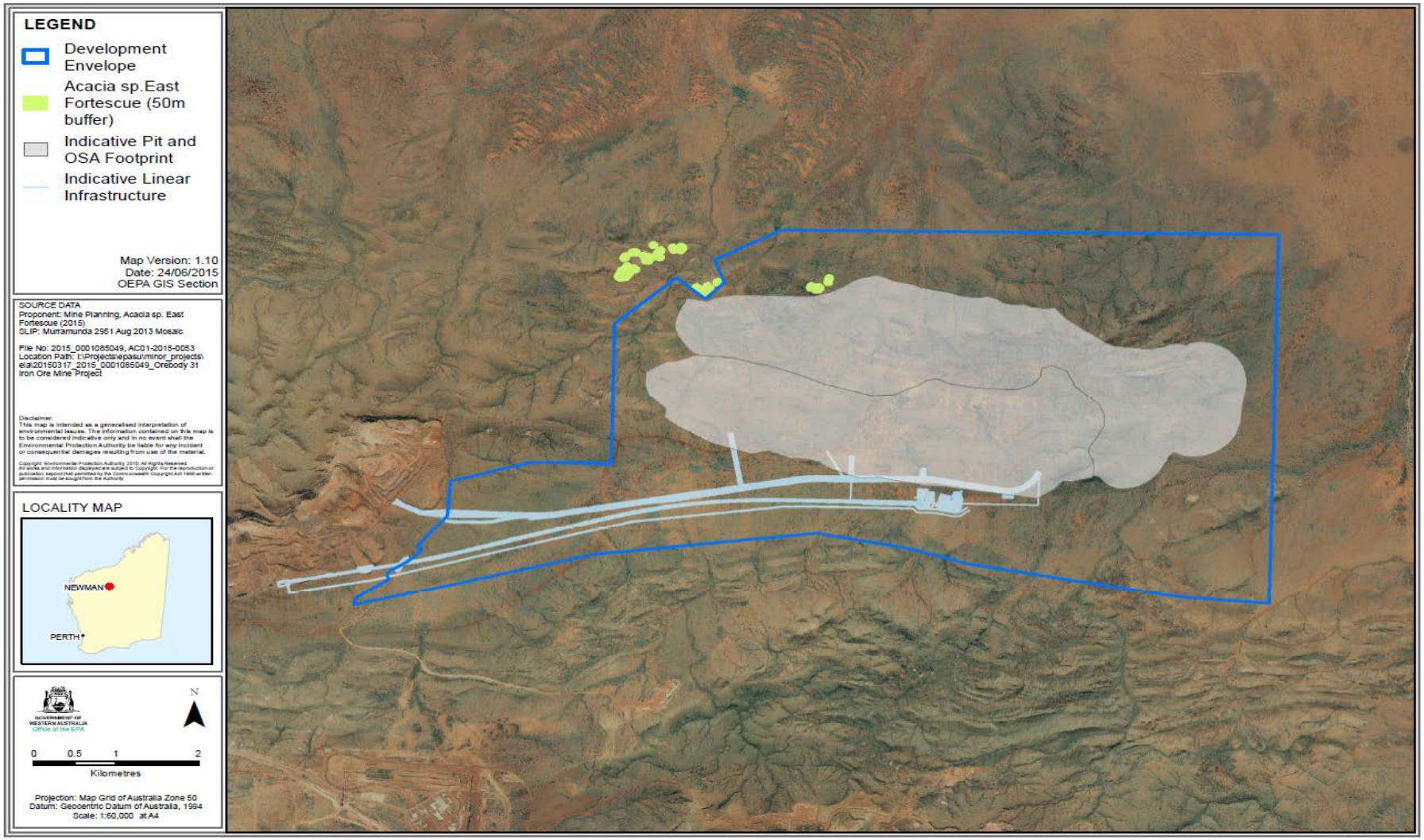

Figure 1 Orebody 31 Development Envelope and *Acacia* sp. East Fortescue Buffer

Schedule 2

Geographic spatial data coordinates

Coordinates defining the Orebody 31 Development Envelope are held by the Office of the Environmental Protection Authority, Document reference Number 2015-0001237160, dated 27 August 2015.

All coordinates are in metres, listed in Map Grid of Australia Zone 50 (MGA Zone 50), datum of Geocentric Datum of Australia 1994 (GDA94).

Mine Development Envelope Coordinates

Coordinate Number	Easting	Northing
1	209642	7417179
2	209658	7416324
3	209667	7415865
4	209648	7415868
5	208570	7415914
6	206098	7416270
7	205967	7416288
8	205299	7416467
9	205292	7416468
10	204717	7416556
11	204577	7416577
12	204128	7416645
13	203813	7416597
14	203799	7416595
15	203055	7416482
16	202831	7416448
17	202193	7416350
18	202076	7416332
19	201435	7416235
20	201276	7416188
21	201263	7416184
22	200385	7415926
23	200343	7415913
24	199610	7415697
25	199401	7415636
26	198808	7415461
27	198645	7415413
28	198537	7415382
29	198537	7415383
30	198544	7415423
31	198546	7415436
32	198549	7415477

Coordinate Number	Easting	Northing
33	198614	7415524
34	198658	7415558
35	198676	7415571
36	198679	7415574
37	198690	7415581
38	198697	7415587
39	198709	7415596
40	198716	7415601
41	198802	7415665
42	198858	7415707
43	198865	7415713
44	198867	7415714
45	198876	7415721
46	198893	7415734
47	198949	7415776
48	198922	7415856
49	198974	7415908
50	198975	7415909
51	199031	7415946
52	199073	7415973
53	199120	7416004
54	199160	7416030
55	199192	7416064
56	199195	7416067
57	199204	7416076
58	199210	7416082
59	199217	7416090
60	199323	7416201
61	199332	7416210
62	199270	7416253
63	199487	7416542
64	199608	7416703

Coordinate Number	Easting	Northing
65	199623	7416723
66	199624	7416750
67	199638	7417215
68	199873	7417284
69	200198	7417391
70	200280	7417419
71	200650	7417528
72	201583	7417539
73	201583	7417542
74	201582	7417576
75	201581	7417615
76	201578	7417805
77	201577	7417828
78	201569	7418213
79	201569	7418213
80	201569	7418213
81	201568	7418268
82	201558	7418793

Coordinate Number	Easting	Northing
83	201554	7418956
84	201542	7419573
85	201568	7419599
86	202263	7420256
87	202628	7419972
88	202848	7420205
89	202715	7420535
90	203207	7420820
91	203512	7420997
92	205192	7421049
93	206406	7421086
94	209514	7421182
95	209563	7421182
96	209584	7420103
97	209589	7419877
98	209604	7419091
99	209609	7418842
100	209625	7418030
101	209630	7417773

Acacia sp. East Fortescue Buffer Coordinates

50 metre radius surrounding each of the below coordinates.

Coordinate Number	Easting	Northing
1	204121	7420309
2	204116	7420272
3	204124	7420325
4	202788	7420213
5	202628	7420044
6	202572	7420078
7	204014	7420180
8	204002	7420191
9	203997	7420176
10	203997	7420160
11	203980	7420169
12	203967	7420157
13	203964	7420179
14	203903	7420184
15	203911	7420200

Appendix 3

Proponent's API Environmental Review documentation

Provided on CD in hardcopies of this report and on the EPA's website at www.epa.wa.gov.au