

# Report and recommendations of the Environmental Protection Authority



Marillana Creek (Yandi) life-of-mine proposal
- inquiry under section 46 of the
Environmental Protection Act 1986
to amend Ministerial Statement 679

BHP Billiton Iron Ore Pty Ltd

**EPA R&R No: 1577** 

ENVIRONMENTAL PROTECTION AUTHORITY
REPORT AND RECOMMENDATIONS TO THE MINISTER FOR ENVIRONMENT

MARILLANA CREEK (YANDI) LIFE-OF-MINE PROPOSAL - INQUIRY UNDER SECTION 46 OF THE ENVIRONMENTAL PROTECTION ACT 1986 TO AMEND IMPLEMENTATION CONDITIONS OF MINISTERIAL STATEMENT 679

The Minister for Environment has requested that the Environmental Protection Authority (EPA) inquire into and report on the matter of changing the implementation conditions relating to the Marillana Creek (Yandi) Life-of-Mine proposal.

The following is the EPA's Report and Recommendations (No. 1577) to the Minister pursuant to section 46(6) of the *Environmental Protection Act 1986* (EP Act).

Section 46(6) requires the EPA report include:

- a) a recommendation on whether or not the implementation conditions to which the inquiry relates, or any of them, should be changed; and
- b) any other recommendations that it thinks fit.

## **Background**

The Marillana Creek (Yandi) Life-of-Mine proposal involves the mining of iron ore within Mining Leases 270SA and 47/292, 90 kilometres north-west of Newman in the Shire of East Pilbara. The EPA assessed the proposal at the level of Environmental Protection Statement (contemporarily considered an Assessment on Proponent Information) and considered the following key environmental factors relevant to the proposal required detailed evaluation in its report and recommendations to the Minister:

- Surface water:
- Groundwater; and
- Riparian vegetation and conservation significant flora and fauna.

Applying the current Environmental Assessment Guideline for *Environmental Principles, Factors and Objectives* (EAG 8, January 2015), these factors are now represented by:

- Flora and vegetation;
- Terrestrial fauna:

- Hydrological processes; and
- · Rehabilitation and decommissioning.

The EPA concluded in EPA Report 1166 that, provided conditions are applied to the proposal, the factors of surface water, groundwater and riparian vegetation and conservation significant flora and fauna can be managed to meet the EPA's objectives.

The Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial Statement 679 (6 July 2005).

Although 'Rehabilitation and decommissioning' was not considered a factor in the EPA's original assessment, it was addressed in conditions 5 and 6 of Ministerial Statement 679, and has therefore been included for consideration as part of this assessment.

## Requested changes to conditions

The proponent for the proposal, BHP Billiton Iron Ore Pty Ltd, has requested the following changes to the implementation conditions of Ministerial Statement 679:

- change to condition 5 (Rehabilitation and Decommissioning) with a condition reflecting contemporary wording relating to this factor; and
- change to condition 7, amending the timeframe for the submission of a Marillana Creek Diversion Management Plan (MCDMP) from at least 12 months to at least six months prior to diversion construction of any section of Marillana Creek.

In May 2016, the proponent received authorisation under section 45C of the EP Act to change the disturbance area from 4,050 hectares (ha) to 4,558 ha. The authorised changes will result in an increase in clearing of native vegetation within the Hamersley and Fortescue Interim Biogeographical Regionalisation for Australia (IBRA) subregions (within the Pilbara IBRA region). The proponent has acknowledged that a condition requiring an offset of the clearing of vegetation would be required.

## Relevant EPA policies and guidelines

The EPA, in making this recommendation and providing its advice to the Minister has given due consideration to the relevant published EPA policies and guidelines (see Appendix 1), noting that other published policies and guidelines were considered but determined not to be relevant.

The following EPA policies and guidelines relevant to the proposal were applied:

- a) Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2012;
- b) Environmental Assessment Guideline (EAG 1) Defining the key characteristics of a Proposal, 2012;
- c) EAG 2 Changes to Proposals after Assessment Section 45C of the Environmental Protection Act 1986, 2011
- d) EAG 8 Environmental principles, factors and objectives, 2015;

- e) EAG 9 Application of a significance framework in the environmental impact assessment process, 2015;
- f) EAG 11 Recommending environmental conditions, 2015; and
- g) Environmental Protection Bulletin (EPB No.11) Consultation on conditions recommended by the EPA, 2010.

The following policies and guidelines relevant to *environmental factors* were considered:

## a) Flora and vegetation

No changes to the proposal relate to this factor, therefore no policies or guidelines are considered relevant for the purposes of this assessment.

## b) Terrestrial fauna

No changes to the proposal relate to this factor, therefore no policies or guidelines are considered relevant for the purposes of this assessment.

## c) Hydrological processes

No changes to the proposal relate to this factor, therefore no policies or guidelines are considered relevant for the purposes of this assessment.

## d) Rehabilitation and decommissioning

 Guidance Statement No. 6 – Rehabilitation of Terrestrial Ecosystems - June 2006

The purpose of Guidance Statement No. 6 is to ensure the return of biodiversity in rehabilitated areas by increasing the quality, uniformity and efficiency of standards and processes for rehabilitation of native vegetation in Western Australia and to allow more effective monitoring and auditing of outcomes.

The relevant considerations in Guidance Statement No. 6 for this assessment are:

- 1. Information about the diversity of plants and their capacity to recruit from seeds;
- 2. The setting of rehabilitation objectives that take into account the complexity of constraints to effective rehabilitation;
- The setting of completion criteria that are attainable in realistic timeframes and ensure rehabilitation objectives have been met;
- 4. The use of similar rehabilitation objectives and completion criteria within particular industries and within geographical regions when appropriate; and
- 5. Life of mine approaches required where financial and logistical planning required for effective rehabilitation occurs early in the life of projects (ANZMEC 2000).

 Environmental Protection Bulletin No. 19 – EPA involvement in mine closure – January 2015

The relevant consideration in Environmental Protection Bulletin No. 19 for this assessment is that the EPA will assess all mining projects that are not subject to the *Mining Act 1978*.

• Guidelines for Preparing Mine Closure Plans – May 2015

The relevant considerations in the Guidelines for preparing mine closure plans for this assessment are:

- Proponents should prepare a Mine Closure Plan in accordance with these guidelines to meet Western Australian regulatory requirements; and
- Where the EPA concludes that Rehabilitation and Decommissioning is a Key Integrating Factor in its EPA report on the proposal, the EPA will recommend a condition requiring a Mine Closure Plan to be prepared that is consistent with these guidelines.

## e) Offsets

WA Environmental Offsets Policy – September 2011

The relevant considerations in the Offsets Policy for this assessment are:

- Environmental offsets will take account of, and contribute towards, broader State Government conservation objectives through existing programs, policies, initiatives and strategic funds:
- 2. Environmental offsets are to be applied in specified circumstances in a transparent manner to engender certainty and predictability.
- 3. Environmental offsets will only be considered after avoidance and mitigation options have been pursued;
- 4. Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted;
- 5. Environmental offsets will be applied within a framework of adaptive management; and
- 6. Environmental offsets will be focussed on longer term strategic outcomes.
- WA Environmental Offsets Guidelines August 2014

The relevant considerations in the Offsets Guidelines for this assessment are:

 Environmental offsets will only be applied where the residual impacts of a project are determined to be significant, after avoidance, minimisation and rehabilitation have been pursued;

- 2. Proponents must apply the mitigation hierarchy (avoid, minimise, rehabilitate and offset) to reduce the potential impacts of a proposal on the environment;
- Significant residual impacts that may require an offset: Any significant residual impact to potentially threatened species and ecosystems, areas of high environmental value or where the cumulative impact is already at a critical level; and
- 4. Strategic approaches to offsets, such as a fund, provide a coordination mechanism to implement offsets across a range of land use tenures and can achieve better environmental outcomes by considering offsets at a landscape scale.
- Environmental Protection Bulletin No. 1 Environmental Offsets
   August 2014

The relevant considerations in Environmental Protection Bulletin No. 1 for this assessment are:

- 1. The EPA adopts the WA Environmental Offset Policy and WA Environmental Offset Guidelines for application through the environmental impact assessment process;
- 2. Where the EPA is of the view that a significant residual impact remains after avoidance, minimisation and rehabilitation efforts, the EPA will ensure that any offsets are recommended as conditions of approval in the EPA's report to the Minister for Environment, as well as including details on the rationale for the offset.; and
- As part of an Environmental Review document, proponents must include a section discussing how it has applied the mitigation hierarchy to its proposal. Offsets should be addressed in a separate section of the document, after the assessment of environmental factors.

## Assessment of the requested change to conditions

The EPA considers the rewording of condition 5 to reflect contemporary language used to manage the decommissioning and rehabilitation of mine sites to be appropriate. The EPA also considers the change to condition 7, which amends the timeframe for the submission of the MCDMP from at least 12 months prior to diversion construction of any section of Marillana Creek to at least six months prior to diversion construction of any section of Marillana Creek, to be acceptable.

As stated in its advice to the Minister for Environment under section 16(e) of the EP Act (August 2014), the EPA has identified a substantial increase in the number of applications for, and the amount of clearing of, native vegetation occurring within the Pilbara IBRA region. The EPA is concerned that, without intervention, the increasing cumulative impacts of development and land use in the region will significantly impact on biodiversity and environmental values.

The EPA has taken a proactive approach to limiting these potential cumulative impacts, consistent with the WA Environmental Offsets Guidelines (August 2014), by recommending the Minister for Environment set offset conditions on new proposals involving clearing of native vegetation in the IBRA subregions where extensive clearing has already occurred.

Although the additional clearing authorised for the Marillana Creek (Yandi) Lifeof-Mine proposal does not in itself represent a significant additional impact to the original proposal, it will contribute to the cumulative impacts of clearing of native vegetation within the Pilbara IBRA region.

The EPA considers it appropriate that additional clearing authorised for existing proposals, such as that authorised for the Marillana Creek (Yandi) Life-of-Mine proposal, be subject to similar offset requirements as new proposals.

The recommended offsets condition (condition 13) is consistent with recent conditions approved for iron ore proposals requiring offsets within the Hamersley IBRA subregion (such as Statement 1012 for the Orebody 18 Iron Ore Mine and Statement 1029 for the Jimblebar Iron Ore Project), and will apply to the clearing authorised under section 45C in May 2015 and any subsequent clearing authorised for the proposal.

## **EPA conclusions and recommendations**

Having inquired into this matter, the EPA submits the following recommendations to the Minister for Environment:

- 1. That it is appropriate to change condition 5 in order to contemporise the conditions relating to decommissioning and rehabilitation;
- 2. That it is appropriate to change condition 7 to allow for the amendment of the timeframe for the submission of the MCDMP from at least 12 months prior to the diversion construction of any section of Marillana Creek to at least six months prior to diversion construction of any section of Marillana Creek:
- That it is appropriate to add an offsets condition (condition 13) in order to offset the impact from additional clearing in the Hamersley IBRA subregion; and
- 4. That, after complying with section 46(8) of the *Environmental Protection Act 1986*, the Minister issues a statement of decision to change the conditions of Statement 679 in the manner provided for in the attached recommended statement.

OEPAMIN5012840

## Appendix 1

# **EPA Policy and Guidance - change to conditions for the Marillana Creek** (Yandi) Life of Mine Proposal

The following EPA Policies and Guidelines were considered relevant and were applied during this assessment:

Process/ Factor	Policy or Guidance			
Change to conditions and change to proposal	Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2012			
	Environmental Assessment Guideline (EAG 1) for Defining the key characteristics of a proposal, 2012			
	EAG 2 for Changes to Proposals after Assessment – Section 45C of the Environmental Protection Act 1986 (EAG 2), 2011			
	EAG 8 for Environmental principles, factors and objectives, 2015			
	EAG 9 for Application of a significance framework in the environmental impact assessment process, 2015			
	EAG 11 for Recommending environmental conditions, 2015			
	Environmental Protection Bulletin (EPB No. 11) for Consultation on Conditions Recommended by the EPA, 2010			
Rehabilitation and Closure	EPB 19 for EPA involvement in mine closure, 2013			
	DMP and EPA Guidelines for Preparing Mine Closure Plans, 2015			
	GS 6 for Rehabilitation of Terrestrial Ecosystems, 2006			
Offsets	WA Environmental Offsets Policy, 2011			
	WA Environmental Offsets Guidelines, 2014			
	EPB No. 1 Environmental Offsets, 2014			

## RECOMMENDED ENVIRONMENTAL CONDITIONS

## STATEMENT TO CHANGE THE IMPLEMENTATION CONDITIONS APPLYING TO A PROPOSAL

(Section 46 of the Environmental Protection Act 1986)

MARILLANA CREEK (YANDI) LIFE-OF-MINE PROPOSAL MINING LEASES 270SA & 47/292, 90 KM NORTH-WEST OF NEWMAN SHIRE OF EAST PILBARA

**Proposal:** Life-of-mine proposal to mine iron ore within Mining Leases

270SA and 47/292 at a rate of approximately 45 million tonnes per annum, and subsequent rehabilitation and

decommissioning of the site.

**Proponent:** BHP Billiton Iron Ore Pty Ltd

Australian Company Number 008 700 981

**Proponent Address:** 125 St Georges Terrace

Perth Western Australia 6000

Report of the Environmental Protection Authority: 1577

Preceding Statements Relating to this Proposal: 029, 259, 357, 405 and 679

Pursuant to section 45 of the *Environmental Protection Act 1986*, as applied by section 46(8), it has been agreed that implementation conditions set out in Ministerial Statement No. 679 be changed as specified in this Statement.

## 1. Condition 5 changed

Condition 5 of Ministerial Statement 679 is deleted and replaced with:

## 5 Rehabilitation and Decommissioning

- 5-1 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 5-2.
- 5-2 The proponent shall implement the Mine Closure Plan (Revision No. 3, November 2011).
- 5-3 The proponent shall review and revise the Mine Closure Plan required by condition 5-2, on the advice of the Department of Mines and Petroleum and to the

satisfaction of the CEO, in accordance with the *Guidelines for Preparing Mine Closure Plans*, *May 2015* and any updates, at intervals not exceeding three years from the issue of this Statement, or as otherwise agreed in writing by the CEO.

5-4 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 5-1.

## 2. Condition 7 changed

Condition 7 of Ministerial Statement 679 is deleted and replaced with:

## 7 Marillana Creek Diversion

7-1 At least six (6) months prior to diversion construction of any section of Marillana Creek, the proponent shall prepare a Marillana Creek Diversion Management Plan to the requirements of the CEO on advice of the Department of Parks and Wildlife and the Department of Mines and Petroleum.

The objective of this Plan is to ensure that diverted sections of Marillana Creek function as a fluvial system in a similar manner to the existing creek system.

This Plan shall include:

- 1. design details and specifications of the planned diversion(s), associated diversion cut-off levee(s) and high flow by-pass spill-out channel(s);
- 2. design details for creating appropriate transitional gradients to minimise the potential for scouring at the confluence of tributaries and the creek diversion;
- 3. design options for the section of Marillana Creek to be diverted. Independent technical peer review will be required:
  - to compare the various design options;
  - to ensure that the option selected is the most suitable and practicable, consistent with current best practice; and
  - to ensure that at each diversion there is continuous improvement, based on adaptive management and benchmarking against similar projects in Australia and internationally;
- 4. the construction programme for the creek diversion, including how the work is to be staged and progressively integrated with the mining operations and mine void overburden infill programme;
- 5. baseline information on water flow, water quality, geomorphology, fauna, vegetation and flora on the section of Marillana Creek to be diverted;
- 6. revegetation for the diversion channel using suitable riparian species and alluvial sediment sourced from the diverted section of Marillana Creek;
- 7. management of Aboriginal heritage matters within the planned disturbance area and vicinity of the planned diversion;

- 8. weed management within the planned disturbance area and vicinity of the planned diversion;
- 9. performance criteria for water flow, water quality, ecology and geomorphology for the creek diversion;
- 10. monitoring of water flow, water quality, vegetation, flora, fauna and ecological and geomorphologic integrity of the creek diversion and downstream of the creek diversion during operations and post-closure;
- 11. inspection and maintenance of the creek diversion and revegetation works during operations and until the objective is met;
- 12. findings of hydrological and hydraulic modelling, groundwater modelling, research programmes, and monitoring results to show whether the planned diversion satisfies the objectives of the Mine Closure Plan required under condition 5-2;
- 13. water quality management of Marillana Creek which is consistent with the State Water Quality Management Strategy, 2000 or the approved equivalent; and
- 14. reporting procedures and schedule.
- 7-2 The proponent shall implement the Marillana Creek Diversion Management Plan required by condition 7-1, employing the most suitable design option referred to in 7-1 (3).
- 7-3 The proponent shall make the Marillana Creek Diversion Management Plan required by condition 7-1 publicly available.

#### 3. Condition 13 is added

## 13 Offsets

- 13-1 The proponent shall contribute funds to offset clearing of 'good to excellent' condition native vegetation in the Hamersley IBRA subregion, and calculated pursuant to condition 13-3. 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.
- 13-2 Condition 13-1 does not apply to the 4,050 hectares of clearing of native vegetation previously authorised on 1 April 2015, as detailed in Attachment 5 to Ministerial Statement 679.
- 13-3 The proponent's contribution to the offset fund or alternative offset arrangement identified in condition 13-1 shall be paid biennially, the first payment due two years after commencement of the additional ground disturbance authorised for the proposal under section 45C of the *Environmental Protection Act 1986* on 4 May 2016, as detailed in Attachment 6 to Ministerial Statement 679.

The amount of funding will be made on the following basis and in accordance with the Impact Reconciliation Procedure required by condition 13-5.

- \$750 AUD (excluding GST) per hectare of 'good to excellent' condition native vegetation within the Hamersley IBRA subregion.
- 13-4 The proponent shall prepare and submit an Impact Reconciliation Procedure to the satisfaction of the CEO within six months of the date of this Statement, or as approved by the CEO.
- 13-5 In the event that additional clearing is authorised for the proposal, the proponent shall revise the Impact Reconciliation Procedure required by condition 13-6 to the satisfaction of the CEO within twelve months of that clearing being authorised.
- 13-6 The Impact Reconciliation Procedure required by condition 13-4 shall:
  - (1) include a methodology to identify clearing of 'good to excellent' condition native vegetation within the Hamersley IBRA subregion;
  - (2) include a methodology for calculating the area of 'good to excellent' condition native vegetation cleared within the Hamersley IBRA subregion for each biennial time period, and for which contributions shall be made to the offset fund or alternative offset arrangement as required by condition 13-1:
  - (3) include the submission of spatial data identifying areas of 'good to excellent' condition native vegetation that has been cleared within the Hamersley IBRA subregion for each biennial time period; and
  - (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.
- 13-7 The proponent shall implement the Impact Reconciliation Procedure required by condition 13-4.
- 13-8 The real value of contributions described in condition 13-3 will be maintained through indexation to the Perth Consumer Price Index (CPI), with the first adjustment to be applied to the first contribution.