

**Yandicoogina (Marillana) iron ore project — change
of environmental conditions due to increase in rate
of production**

BHP Iron Ore Limited

Proposed change to environmental conditions

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 738
April 1994**

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's recommendations.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

APPEALS

If you disagree with any of the assessment report recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
12th Floor, Dumas House
2 Havelock Street
WEST PERTH WA 6005

CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5pm on 13 May 1994.

Environmental Impact Assessment (EIA) Process Timelines in weeks

Date	Timeline commences from receipt of full details of proposal by proponent	Time (weeks)
17 March 1994	Proponent Document distributed by EPA for comment (to relevant Government Agencies)	2
31 March 1994	Comment Period Closed	
26 April 1994	EPA reported to the Minister for the Environment	4

ISBN. 0 7309 5673 3

ISSN. 1030 - 0120

Assessment No. 875

Contents

	Page
1. Background	1
2. The proposal.....	1
3. Environmental impacts and management.....	1
4. Conclusion and recommendations.....	3
5. Recommended environmental conditions.....	4
6. References	5

Figure

1. Yandi project location map	2
-------------------------------------	---

Appendices

1. Ministerial Statement that a proposal may be implemented, May 1988
2. Ministerial Statement to amend conditions applying to a proposal, May 1992

1. Background

BHP Iron Ore, the proponent, has proposed an increase in its rate of production at its Yandi iron ore mine from 10 million tonnes per annum (MTPA) to 15 MTPA.

Pursuant to Section 46(1) of the Environmental Protection Act, the Minister for the Environment has asked the Environmental Protection Authority to inquire into and report on the modifications to the proposal for the Yandicoogina (Marillana) Iron Ore Project. Figure 1 shows the location of the project.

BHP-Utah Minerals International submitted a Public Environmental Report (BHP-Utah, 1987) for the Yandicoogina (Marillana) Iron Ore Project to the Environmental Protection Authority in November 1987. Following assessment of the Public Environmental Report by the Environmental Protection Authority (EPA, 1988), the Minister for the Environment issued environmental approval, including conditions, on 25 May 1988 (Appendix 1).

In February, 1992, BHP Iron Ore Limited submitted a modification to the original proposal encompassing an increase in production from the original 5 MTPA to 10 MTPA (BHP, 1992). This modification to the original proposal was assessed by the Environmental Protection Authority. It was determined that the production increase would not lead to any new environmental impacts from those assessed in the original proposal (EPA, 1992). Environmental approval, including new conditions, was issued by the Minister for the Environment in May of 1992 (Appendix 2).

2. The proposal

BHP Iron Ore has submitted a further proposal to increase the rate of production from 10 MTPA to 15 MTPA (BHP, 1994). This increase would require the following modifications to the present operation:

- minor modifications to the existing processing plant to increase its capacity to 11 MTPA;
- the construction of additional processing facilities, as required, to increase capacity to 15 MTPA;
- a gradual increase in mobile mining equipment; and
- a gradual increase in the workforce, requiring some additional facilities at the minesite village.

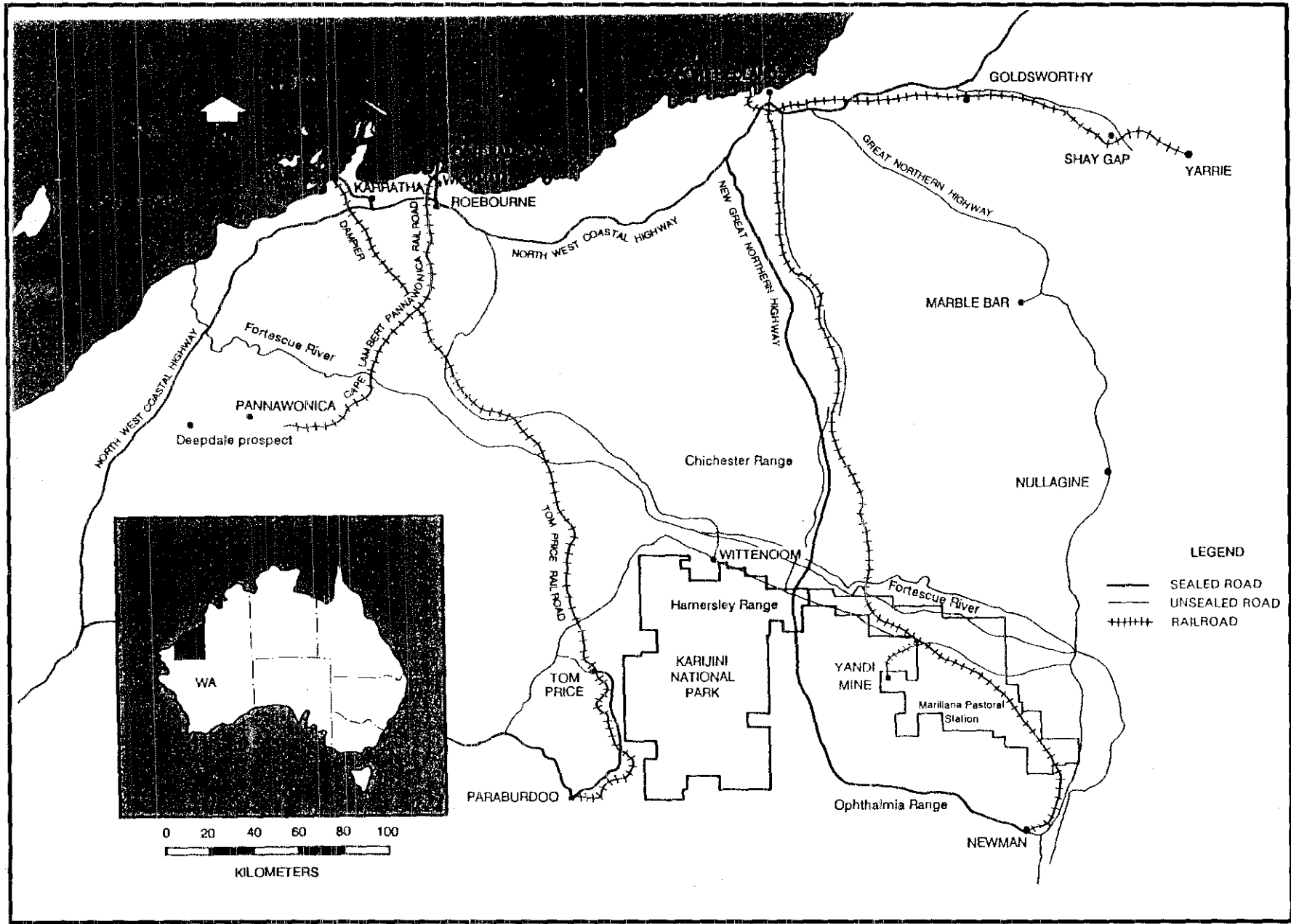
The remainder of the ore processing facilities, infrastructure and the final pit limits will not change. The increased mining rate will mean the orebody will notionally be mined out over 12 years rather than 16 years as previously envisaged at the 10 MTPA production rate.

3. Environmental impacts and management

The increased rate of production would mean that the rate of dewatering would need to increase to reduce the water level ahead of mining. The proponent proposes that this would be managed using the existing management measures to protect the Marillana Creek environment (BHP, 1991). The issue of the long term management of mining and its interaction with the groundwater system is being investigated by a committee comprising the departments of Resources Development, Minerals and Energy, Environmental Protection and the Water Authority of Western Australia.

The increase in the rate of production would also mean an increase in the volume of overburden that is stored out of the pit prior to any backfilling of the pit.

Figure 1. Yandi project location map



The proposal to increase the rate of production was referred by the Environmental Protection Authority to other government regulatory authorities for comment, including the departments of Minerals and Energy, Resources Development and the Water Authority. None of these organisations had any concerns with the environmental acceptability of the proposal.

4. Conclusion and recommendations

The Environmental Protection Authority has assessed the modifications to the proposal and concludes that they are environmentally acceptable and recommends that they may proceed subject to the recommendations in this report. It considers that the environmental management details can be adequately dealt with via the pollution control provisions of Part V of the Environmental Protection Act.

The modifications would require a change to the environmental conditions on the proposal to reflect the change in production rate from that assessed by the Environmental Protection Authority in 1988 and modified in 1992.

Recommendation 1

The Environmental Protection Authority regards the modifications to the Yandicoogina (Marillana) Iron Ore Project due to the increase in the rate of production to 15 million tonnes per year as being environmentally acceptable and recommends that Condition 1A of the Ministerial Statement for the proposal of 25 May 1988 be deleted and replaced by the following condition.

- 1 In implementing the proposal, including the increased production rate of 15 million tonnes per annum, the proponent shall fulfil the commitments made in the Public Environmental Report provided that they are not inconsistent with the conditions or procedures contained in this statement. (A copy of the commitments is attached).**

Recommendation 2

The Environmental Protection Authority recommends that the following standard conditions be added to the Ministerial Statement for the project to ensure conformity with recent statements.

The satisfactory decommissioning of the project, removal of the plant and installations and rehabilitation of the site and its environs is the responsibility of the proponent.

- At least six months prior to decommissioning, the proponent shall prepare and submit a final decommissioning and rehabilitation plan to the requirements of the Department of Minerals and Energy in consultation with the Environmental Protection Authority.**

The proponent shall implement the plan required by this condition.

In order to ensure that environmental conditions and commitments are met, an audit system is required.

- The proponent shall prepare periodic "Progress and Compliance Reports", to help verify the environmental performance of this project, in consultation with the Department of Environmental Protection.**

A number of procedural statements are now incorporated in the Minister's Statement to clarify the roles of the Minister, the Environmental Protection Authority and other government agencies in the verification of compliance and the determination of any disputes arising thereof.

- **The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of either the Minister for the Environment or any other government agency.**
- **If the Environmental Protection Authority, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.**

The proponent will be required to apply for a Works Approval and Licence for this project under the provisions of Part V of the Environmental Protection Act.

5. Recommended environmental conditions

The following Recommended Environmental Conditions would amend the Minister's Statement of 25 May 1988 (Appendix 1) and apply additional conditions to ensure a continued review of the environmental performance of this site.

PROPOSAL: YANDICOOGINA (MARILLANA) IRON ORE PROJECT (069/712/875)

CURRENT PROPONENT: BHP IRON ORE LIMITED

CONDITIONS SET ON: 25 MAY 1988

CONDITIONS AMENDED ON: 19 MAY 1992

Condition 1A is amended to read as follows:

1A Proponent Commitments

In implementing the proposal, including the increased production rate of 15 million tonnes per annum, the proponent shall fulfil the commitments made in the Public Environmental Report (1987) provided that the commitments are not inconsistent with the conditions or procedures contained in this statement. (A copy of the commitments is attached).

The following conditions and procedures are inserted following condition 6:

7 Decommissioning

The satisfactory decommissioning of the project, removal of the plant and installations and rehabilitation of the site and its environs is the responsibility of the proponent.

7-1 At least six months prior to decommissioning, the proponent shall prepare and submit a final decommissioning and rehabilitation plan to the requirements of the Department of Minerals and Energy in consultation with the Environmental Protection Authority.

7-2 The proponent shall implement the plan required by condition 7-1.

In order to ensure that environmental conditions and commitments are met, an audit system is required.

- 7-1 The proponent shall prepare periodic "Progress and Compliance Reports", to help verify the environmental performance of this project, in consultation with the Department of Environmental Protection.

Procedure

- 1 The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of either the Minister for the Environment or any other government agency.
- 2 If the Environmental Protection Authority, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.

6. References

- BHP-Utah Minerals International, 1987. *Yandicoogina (Marillana) Project*, Public Environmental Report. BHP-Utah, Perth.
- BHP Iron Ore Limited, 1991. *Yandi Mine Environmental Monitoring Programme*. Report to Environmental Protection Authority. BHP Iron Ore, Perth.
- BHP Iron Ore Limited, 1992. *Iron Ore (Marillana Creek) Agreement Act 1991 Proposal for Production Increase to 10 MTPY*. Submission to Minister for Resources Development.
- BHP Iron Ore Limited, 1994. *Iron Ore (Marillana Creek) Agreement Act 1991 Yandi Mine Proposal for Staged Increase from 10 MTPY to 15 MTPY*. Submission to Minister for Resources Development.
- Environmental Protection Authority, 1988. *Yandicoogina (Marillana) Iron Ore Project*. Bulletin 323, March 1988. Environmental Protection Authority, Perth.
- Environmental Protection Authority 1992, *Yandicoogina (Marillana) Iron Ore Project-Change of Ministerial Condition due to Increase in Rate of Production*. Bulletin 622, April 1992. Environmental Protection Authority, Perth.

Appendix 1

Ministerial Statement that a proposal may be implemented



MINISTER FOR ENVIRONMENT

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

YANDICOOGINA (MARILLANA) IRON ORE PROJECT

BHP - UTAH MINERALS INTERNATIONAL

This proposal may be implemented subject to the following conditions:

1. The proponent shall adhere to the proposal as assessed by the Environmental Protection Authority and shall fulfil the commitments made (copy of commitments attached).
2. The proponent shall undertake regular monitoring of creek bed vegetation and sediment movement in the Marillana Creek system to assess any changes that occur as a result of the mine water discharge and shall ameliorate adverse effects to the satisfaction of the Environmental Protection Authority. The monitoring programme shall be to the satisfaction of the Environmental Protection Authority and shall be prepared prior to commissioning the mine. Results of this monitoring shall be reported through regular reporting mechanisms required under the Agreement Act.
3. At least 12 months prior to the completion of this project the proponent shall prepare and implement a plan for on-going water quality management in the mined-out pit, to the satisfaction of the Environmental Protection Authority.
4. During all project phases, including construction and contract mining as well as on-going mining by the proponent, the proponent shall restrict caravans to a managed caravan park incorporating adequate sewage and other waste disposal facilities.

Published on 27 MAY 1988

YANDICOOGINA (MARILLANA) IRON ORE PROJECT

ENVIRONMENTAL MANAGEMENT COMMITMENTS

1. The Proponent will submit an environmental monitoring and management programme with the mining proposals to the State in accordance with the State Agreement Act.
2. Regular assessment of monitoring results and management effectiveness are to be reported as part of the monitoring and management programme. Reports will be submitted to the responsible Minister at intervals specified in the Act.
3. The Proponent will comply with the provisions of all relevant Government Acts and Regulations that may apply to the operations.
4. An Environmental Officer will be responsible for all environmental monitoring and management activities for the Project.
5. Environmental awareness programmes will be provided for all construction, contractor and operational workforce.
6. During the construction phase minimum alteration to the existing topography will be achieved. Once construction is complete, areas no longer required will be contoured, slopes stabilised, topsoil replaced and revegetated.
7. Borrow pits, where possible, will be located in areas not visible from the accommodation sites or access roads. The pits will be reshaped and revegetated. Drainage control will be employed to reduce surface water ponding.
8. Erosion will be managed by contouring, stabilising and vegetation.
9. Minimisation of disturbance to archeological sites will be achieved by reducing any operations on the sites. Where a site may need to be disturbed, the Proponent will comply with any conditions imposed by the Minister for Aboriginal Affairs.
10. The area of disturbance will be reduced by using overburden for bund walls, fill for borrow pits and by returning overburden and waste ore to the mined out areas of the pit.
11. Surface dumps of overburden including bund walls, refilled borrow pits and the main overburden dump area will be stabilised to minimise wind and water erosion. The final waste dump will be constructed as to conform with the existing topography.
12. Revegetation of the mine dumps will be achieved using the most successful vegetation techniques available. The revegetation programme will be monitored intensively during the mining phase, and routinely following decommissioning.
13. Mine dewatering will be affected by pumping the minimum amount of groundwater to achieve optimum mining conditions.
14. Mine dewatering discharge will be fed into Marillana Creek and used as irrigation water to support phreatophytic vegetation.

15. No contaminated process water from the operation will be allowed to discharge to the creek system or to the groundwater. A detailed water quality sampling and analysis programme will be adopted as part of the monitoring programme.
16. The removal of waste materials, ie. oils, sewage, etc. will be undertaken in accordance with Health Department and Local Authorities' requirements.
17. Monitoring of the dewatering effects on the riverine phreatophytes will be undertaken. Management will be effected by irrigation of affected areas with mine dewatering discharge.
18. Occupational and ambient dust levels will be managed by controlling dust emissions at their source. Dust monitoring programmes will be implemented, and dust emissions controlled by water spraying.
19. Seasonal vegetation surveys will be undertaken during mining.
20. During construction, caravans will be restricted to a managed caravan park.
21. As part of the general monitoring and management programme, the following mosquito control practices will be adopted:
 - . identify and control potential mosquito breeding sites;
 - . monitor mosquito species to assess disease potential; and
 - . carry out necessary fogging, spraying and baiting should it be required.
22. Management of the area following completion of mining will be undertaken:
 - . Pre-existing drainage networks will be reestablished where applicable.
 - . Revegetation activities will continue until stable communities are established.
 - . The mined out pit will be modified to minimise water quality changes caused by evapoconcentration.

Appendix 2

**Ministerial Statement to amend conditions
applying to a proposal**



WESTERN AUSTRALIA
MINISTER FOR THE ENVIRONMENT

**STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

PROPOSAL: YANDICOOGINA (MARILLANA) IRON ORE PROJECT
(069/712)

CURRENT PROPONENT: BHP IRON ORE LIMITED

CONDITIONS SET ON: 25 MAY 1988

Condition 1 has been amended to read as follows:

1A Proponent Commitments

In implementing the proposal, including the increased production rate of 10 million tonnes per year, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made in the Public Environmental Report (1987). (A copy of the commitments is attached).

1B Detailed Implementation

Subject to the conditions in this amended statement, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

The original condition 6 is deleted and a new condition 6 is inserted as follows:

6. Proponent

No transfer of ownership, control or management of the project which would give rise to the need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

Bob Pearce, MLA
MINISTER FOR THE ENVIRONMENT

Published on

19 MAY 1992

20 MAY 1992