



MINISTER FOR THE ENVIRONMENT;
EMPLOYMENT AND TRAINING

Ass # 1057

Bull # 851

State # 450

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

PROPOSAL: HEDGES GOLD PROJECT, SHIRE OF BODDINGTON
(148 / 1057)

CURRENT PROPONENT: ALCOA OF AUSTRALIA LTD

CONDITIONS SET ON: 25 FEBRUARY 1988

The implementation of this proposal is now subject to the following conditions which replace all previous conditions:

1 Proponent Commitments

The proponent has made a number of environmental management commitments in order to protect the environment.

- 1-1 In implementing the proposal (including the documented modifications of November 1996), the proponent shall fulfil the relevant environmental management commitments reported on in Environmental Protection Authority Bulletin 314 (December 1987) and published in the Minister for the Environment's statement of 25 February 1988 (Statement No. 20); provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.

In the event of any inconsistency, the conditions and procedures shall prevail to the extent of the inconsistency.

The environmental management commitments of 25 February 1988 are attached.

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2 Implementation

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 2-1 Subject to these conditions, 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, and reported on in Environmental Protection Authority Bulletin 314 (December 1987) and subsequently, in Environmental Protection Authority Bulletin 851, as part of further consideration under Section 46 of the Environmental Protection Act.
- 2-2 Where, in the course of the detailed implementation referred to in condition 2-1, the proponent seeks to change the designs, specifications, plans or other technical material submitted to the Environmental Protection Authority 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.

3 Proponent

These conditions legally apply to the nominated proponent.

- 3-1 No transfer of ownership, control or management of the project which would give rise to a 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.

4 Jarrah Dieback

- 4-1 The proponent shall comply with hygiene measures for jarrah dieback disease, to the requirements of the Department of Conservation and Land Management, in the detailed design and implementation of the project.

5 Haul Road

- 5-1 The proponent shall align the haul road in the State Forest to the requirements of the Department of Conservation and Land Management.

6 Biological Baseline Report

- 6-1 Prior to commissioning of the plant, the proponent shall prepare a biological baseline report to the requirements of the Environmental Protection Authority.
- 6-2 The proponent shall document and report to the Environmental Protection Authority any changes from the biological baseline, as determined by an on-going biological monitoring programme, and any consequent changes to management.

7 Water Quality

The proponent should not cause or allow surface water outside the property boundary of the project to be contaminated with cyanide.

- 7-1 The proponent shall not cause or allow surface water in which the weak acid dissociable (WAD) cyanide level exceeds 50 µg/L to be discharged beyond the property boundary of the project.

8 Caustic Soda

- 8-1 The proponent shall only use low mercury caustic soda in which the mercury level does not exceed those limits set for the use of caustic soda in the alumina industry in Western Australia.

9 Tailings Dam

- 9-1 Prior to construction of the tailings dam, the proponent shall design the tailings dam to include safety features, recovery systems and underdrain design, to the requirements of the Environmental Protection Authority on advice of the Department of Minerals and Energy and the Water and Rivers Commission.
- 9-2 The proponent shall construct the tailings dam according to the design required by condition 9-1.

10 Groundwater

- 10-1 Prior to commissioning of the tailings dam, the proponent shall prepare a groundwater monitoring programme which includes:
- 1 measurements of dissolved salts, pH and cyanide,
 - 2 monitoring results and notification to the Department of Environmental Protection of any detected seepage, and
 - 3 plans for remedial action, in the event that seepage is detected,
- to the requirements of the Environmental Protection Authority.
- 10-2 The proponent shall implement the groundwater monitoring programme required by condition 10-1.

11 Hotham River

Diversion of water from the Hotham River may have an adverse impact on the Hotham/Murray River system as well as on downstream users.

- 11-1 The proponent shall only pump water from the Hotham River when the river flow is in excess of 342 kilolitres per hour as measured at Marradong River bridge gauging station. (See procedures 3 and 4.)
- 11-2 When pumping from the Hotham River, the proponent shall not cause the remaining river flow to be reduced below the level of 342 kilolitres per hour as measured at Marradong River bridge gauging station. (See procedures 3 and 4.)
- 11-3 To ensure that overall pumping does not reduce flow below 342 kilolitres per hour, the proponent shall enter into legal agreements with other major users of water from the Hotham River, to the requirements of the Minister for Water Resources. (See procedures 3 and 4.)

12 Salinity

- 12-1 Prior to commissioning the plant, the proponent shall prepare a programme of hydrological studies to determine changes in salinity of surface water and groundwater arising from mining operations, to the requirements of the Environmental Protection Authority.

12-2 The proponent shall implement the hydrological studies programme required by condition 12-1.

13 Rehabilitation

13-1 Within twelve months following commissioning, the proponent shall prepare a rehabilitation programme which addresses:

- 1 the rehabilitation of landscape, soils and vegetation appropriate for the land use priority for that area within State Forest and to standards appropriate to bauxite mining, to the requirements of the Department of Conservation and Land Management;
- 2 the rehabilitation of areas affected by chemical spills should they occur and monitoring of chemical concentrations until they decline to background levels, to the requirements of the Department of Minerals and Energy;
- 3 the rehabilitation of haul roads in State Forest, to the requirements of the Department of Conservation and Land Management;
- 4 the rehabilitation of the water supply dam, to the requirements of the Water and Rivers Commission; and
- 5 the rehabilitation of the tailings dam, to the requirements of the Department of Minerals and Energy.

13-2 The proponent shall implement the rehabilitation programme required by condition 13-1.

14 Mine Waste

14-1 With the exception of the material used in road construction, the proponent shall return mine waste, as backfill, to mine pits during the life of the project.

14-2 If it is decided not to process marginal ore, the proponent shall also return this material to mined-out pits.

15 Bedrock

15-1 If it is intended to mine bedrock, the proponent shall notify the Environmental Protection Authority.

16 Noise

16-1 The proponent shall ensure that noise levels generated by blasting operations do not exceed 115 dB peak linear.

Note: Acceptable noise levels from machinery will be set during works approval and licensing under the Environmental Protection Act, 1986.

17 Environmental Management Programme

17-1 Prior to each separate construction or development stage being implemented, the proponent shall prepare an Environmental Management Programme for that stage, to the requirements of the Environmental Protection Authority.

These stages shall be consolidated into a document suitable for public information and include information resulting from the requirements of conditions 4, 6, 7, 9, 10, 11, 12, 13 and 14. (See procedure 5.)

- 17-2 The proponent shall implement the various stages of the Environmental Management Programme required by condition 17-1.

18 Environmental Management System

The proponent should exercise care and diligence in managing the proposal to ensure the protection of the environment.

- 18-1 In order to manage the relevant environmental factors and meet the environmental objectives in Environmental Protection Authority Bulletins 314 and 851 and fulfil the requirements of the conditions and procedures in this Statement, prior to the implementation of the proposal, the proponent shall prepare environmental management system documentation, including the environmental management programme referred to in condition 17, in accordance with recognised environmental management principles, such as those in Australian Standards AS/NZS ISO 14000 series, in consultation with the Department of Environmental Protection.

- 18-2 The proponent shall implement the environmental management system referred to in condition 18-1.

19 Decommissioning

- 19-1 The proponent shall carry out the satisfactory decommissioning of the project, removal of the plant and installations and rehabilitation of the site and its environs.
- 19-2 At least twelve months prior to decommissioning, the proponent shall prepare a final decommissioning and rehabilitation plan to achieve the objectives of condition 19-1, to the requirements of the Environmental Protection Authority on advice of the Department of Conservation and Land Management, the Water and Rivers Commission and the Department of Minerals and Energy.

This plan shall address, but not be limited to:

- 1 the tailings dam;
- 2 the water supply dam; and
- 3 the removal of waste and equipment.

- 19-3 The proponent shall implement the plan required by condition 19-2.

20 Time Limit on Approval

The environmental approval for the substantial commencement of the modified project is limited.

- 20-1 If the proponent has not substantially commenced the modified project within five years of the date of this statement, then the approval to implement the modified proposal shall lapse and be void. The Minister for the Environment shall determine any question as to whether the modified project has been substantially commenced.

Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period to the Minister for the Environment.

Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years.

21 Compliance Auditing

To help determine environmental performance and compliance with the conditions, periodic reports on the implementation of the proposal are required.

- 21-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit programme prepared by the Department of Environmental Protection in consultation with the proponent.

Procedure

- 1 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.
- 2 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.
- 3 The Water and Rivers Commission will review the minimum flow rate of 342 kilolitres per hour referred to in condition 11 after two winter flows and will advise the Environmental Protection Authority as to whether this rate is resulting in undesirable environmental impacts.
- 4 The Environmental Protection Authority may review the flow rate referred to in condition 11 upon receiving advice from the Water and Rivers Commission as referred to in procedure 3.
- 5 Following review by the Environmental Protection Authority of the monitoring and management reports prepared in connection with condition 17-1, the Environmental Protection Authority will make these reports publicly available.

Note

- 1 The Environmental Protection Authority reported on the proposal in Bulletins 314 (December 1987) and 851 (April 1997).
- 2 The proponent may be required to apply for a Works Approval and/or Licence for this project under the provisions of Part V of the Environmental Protection Act.
- 3 The Minister for the Environment will request the Minister for Mines and the Minister for Resources Development to consider how on-going review of environmental performance for Boddington and Hedges gold mines can be coordinated in respect of provisions relating to the projects under the Mining Act and relevant State Agreement Act.

CHERYL EDWARDES (Mrs) MLA
MINISTER FOR THE ENVIRONMENT

26 JUN 1997

Proponent's Environmental Management Commitments

25 February 1988

HEDGES GOLD PROJECT SHIRE OF BODDINGTON (148/1057)

Alcoa of Australia Ltd

SUMMARY OF COMMITMENTS TO ENVIRONMENTAL MANAGEMENT

The following represents a summary of commitments made by Alcoa of Australia Limited in respect of environmental management of the Hedges Gold Mine.

Alcoa of Australia Limited would:

- (1) comply with the requirements of applicable Acts and Regulations;
- (2) minimise clearing of land consistent with safe and efficient operations;
- (3) compensate the State for all clearing of State Forest;
- (4) establish environmental regulations for both construction and permanent workforces; ensure that these regulations are complied with through environmental education, supervision and enforcement; take full responsibility for the environmental performance of both permanent employees and sub-contractors;
- (5) establish ongoing liaison with Mines Department for pit safety and face stability;
- (6) progressively rehabilitate mined areas during the project, if mining sequence and production drilling data indicate that this is possible. Alternatively, rehabilitate all areas after project completion;
- (7) where practicable, return waste to mined areas. Landscape and rehabilitate the remaining waste stockpile according to principles in (8);
- (8) return affected areas to appropriate and achievable land uses in accordance with agreements with the State Government and Worsley Timber Company, using prescriptions developed in consultation with relevant State Government authorities;
- (9) monitor and maintain rehabilitated pits, waste stockpile, haul road and residue disposal areas until such time as it is agreed, with the State, that the objectives of such rehabilitation have been met;
- (10) design and operate a water quality, drainage and stormwater management system throughout the project area which will minimise the discharge of turbid water, plant chemicals or tailings spills into nearby streams, and minimise erosion.
- (11) ensure mining operations do not have a negative impact on the long term quality of water in the BGM water supply reservoir, by developing and implementing appropriate drainage control and rehabilitation programmes;
- (12) monitor stream flow for quality and quantity in 34 Mile Brook upstream and downstream of the mine;

SUMMARY OF COMMITMENTS TO ENVIRONMENTAL MANAGEMENT (contd)

- (13) in consultation with CALM, plan and apply appropriate disease control strategies for the haul road alignment through, and mining operations in, State Forest;
- (14) apply appropriate dieback management procedures to activities conducted in other forest areas;
- (15) conduct forest upgrading planting in disease affected State Forest immediately adjacent to operations, if required and considered appropriate by CALM;
- (16) develop a sanitary landfill area for the disposal of office and domestic wastes generated by the project;
- (17) if necessary, provide accommodation for the construction workforce following discussions with local authorities;
- (18) control fugitive dust from the Project Area;
- (19) monitor faunal populations in the Project Area;
- (20) restrict human and non-avian faunal access to potentially hazardous areas by fencing. If necessary, construct and place avifaunal deterrents in the tailings impoundment;
- (21) monitor noise levels in the Project Area and its surrounds; use Blast Acoustic Modelling procedure developed at Alcoa's bauxite mine sites to predict and reduce noise impact on Boddington town site and neighbours;
- (22) advise nearby populations and relevant Government officers of likely blasting times;
- (23) utilise requisite safety equipment and procedures in the handling and storage of hazardous chemicals;
- (24) carry out detailed investigations and design of tailings impoundment in accordance with Government requirements. Minimise seepage from the tailings dam by provision of an underdrainage system, by selection of suitable low permeability materials for dam wall construction, and inclusion of seepage cutoff features in the design of the dam wall;
- (25) monitor surface water quality in streams immediately downstream of the tailing dam (and plant site) and the water supply dam. Monitor groundwater quality downstream of the tailings dam and implement a detailed monitoring, recovery and recycle/treatment strategy if elevated pollutant levels are detected in seepage or groundwater;
- (26) in the event of contaminated groundwater being detected, be prepared to establish a recovery bore system downflow of the tailings area;
- (27) modify residue management system and operations to the reasonable satisfaction of the State if unexpected problems occur;

SUMMARY OF COMMITMENTS TO ENVIRONMENTAL MANAGEMENT (contd)

- (28) notify the Water Authority, EPA and downstream users promptly if any spillage occurs which has potential to affect downstream water users; conduct clean-up or containment operations if necessary;
- (29) remove contaminated material and carry out appropriate rehabilitation if a tailings pipeline failure occurs;
- (30) establish surface contouring and drainage to prevent the rise of contaminated waters in residue areas during rehabilitation, and permit vegetation establishment. Establish a drainage collection system to retain runoff so that it can be monitored and if necessary treated prior to discharge;
- (31) continue monitoring the water residue system until it is decided, in consultation with the State, that such activity is no longer required;
- (32) carry out investigations in conjunction with WAJV, or independently, on residual process chemicals in the gold tailings and their possible effects on underlying soils and groundwater. Include a comprehensive survey after the first 12 months operation of the chemical status of the tailings deposit;
- (33) keep abreast of developments in gold tailings disposal technology for possible future application in treating contaminated seepage or runoff if it proves necessary;
- (34) provide access for CALM and local Bush Fire Brigades;
- (35) submit an annual report of environmental management and monitoring programmes, then content of which is to be determined by agreement with the State;
- (36) construct more positive cut off features or seepage collection systems for the tailings dam, if unacceptable seepage occurs;
- (37) design the initial tailings dam and its extensions to store runoff from a net year with a 1:1000 year frequency;
- (38) carry out or sponsor studies on the interactions between tailings leachate and foundation soils after the commencement of operations;
- (39) carefully monitored water quality changes prior to and following start-up and if adverse trends develop then measures will be taken to protect downstream uses;
- (40) in the event that unacceptable water pollution occurs downstream, carry out remedial action to the satisfaction of the State;
- (41) process make-up water would be drawn from the Hotham River during the winter months when salinities can be in the range 1000-9000 mg/l;
- (42) commence a hydrogeological monitoring and assessment programme prior to start-up and would update it continuously;

SUMMARY OF COMMITMENTS TO ENVIRONMENTAL MANAGEMENT (contd)

- (43) monitor the water and salt balances for the tailings circuit;
- (44) ensure that mining of the stream zone orebody only took place during summer months and that rehabilitation of this part of the pit would commence immediately mining was completed;
- (45) with regard to monitoring of water quality and quantity of 34 Mile Brook, coordinate monitoring with that of BCM and WAWA requirements;
- (46) ensure that domestic waste disposal within the the 34 Mile Brook Catchment would use self contained toilets and enclosed garbage bins;
- (47) establish a correlation between the minimum flow at the Marradong Gauging Weir and the river level at pump suction. An automatic cutoff system would ensure that pumping ceases at this time;
- (48) transport chemicals according to standard government safety requirements;
- (49) provide access for fire control purposes; and
- (50) take action to the reasonable satisfaction of the State if actual or potential risks, not adequately addressed in this ERMP, occur.