



Statement No.

MINISTER FOR THE ENVIRONMENT AND HERITAGE

000590

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

HEDGES GOLD PROJECT, SHIRE OF BODDINGTON

Proposal: The open cut mining and processing of lateritic gold ore from the Hedges deposit located in State Forest 12 kilometres north-west of Boddington.

At the treatment plant the gold is recovered and the tailings are deposited in a tailings dam. Process water is supplied from a supply dam which is replenished from the Hotham River.

Proponent: Alcoa of Australia Ltd

Proponent Address: PO Box 252, Applecross WA 6153

Assessment Number: 1410

Previous Assessment Numbers: 148 and 1057

Previous Statement Numbers: 020 published on 25 February 1988
450 published on 26 June 1997

Report of the Environmental Protection Authority: Bulletin 1035

Previous Reports of the Environmental Protection Authority: 314 and 851

The implementation of this proposal (*other than mining*) to which the above reports of the Environmental Protection Authority relate is now subject to the following conditions and procedures which replace all previous conditions and procedures applicable to *activities other than mining* (See note 1 at the foot of this statement):

Procedural conditions

1 Implementation and Changes

- 1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

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- 1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.
- 1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is not substantial, the proponent may implement those changes upon receipt of written advice.

2 Proponent Commitments

- 2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.
- 2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of the conditions in this statement.

3 Proponent Nomination and Contact Details

- 3-1 The proponent for the time being nominated by the Minister for the Environment and Heritage under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment and Heritage has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.
- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environmental Protection of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

- 4-1 The proponent shall provide evidence to the Minister for the Environment and Heritage within five years of the date of this statement that the modified project has been substantially commenced or the approval granted in the statement of 25 February 1988 shall lapse and be void.

Note: The Minister for the Environment and Heritage will determine any dispute as to whether the modified operations have been substantially commenced.

- 4-2 The proponent shall make application for any extension of approval for the substantial commencement of the modified project beyond five years from the date of this statement to the Minister for the Environment and Heritage, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- the environmental factors of the proposal have not changed significantly;
- new, significant, environmental issues have not arisen; and
- all relevant government authorities have been consulted.

Note: The Minister for the Environment and Heritage may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the modified project.

Environmental conditions

5 Compliance Audit

- 5-1 The proponent shall prepare an audit program in consultation with and submit compliance reports to the Department of Environmental Protection which address:

- the implementation of the proposal as defined in schedule 1 of this statement;
- evidence of compliance with the conditions and commitments; and
- the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environmental Protection is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement. Usually, the Department of Environmental Protection prepares an audit table which can be utilised by the proponent, if required, to prepare an audit program to ensure that the proposal is implemented as required. The Chief Executive Officer is responsible for the preparation of written advice to the proponent, which is signed off by either the Minister or, under an endorsed condition clearance process, a delegate within the Environmental Protection Authority or the Department of Environmental Protection that the requirements have been met.

6 Jarrah Dieback

- 6-1 At all times, the proponent shall comply with hygiene measures for jarrah dieback disease to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority and the Department of Conservation and Land Management.

7 Biological Baseline Report

- 7-1 Prior to commissioning of the plant, the proponent shall prepare a biological baseline report to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.
- 7-2 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 program, and any consequent changes to management.

8 Water Quality

- 8-1 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.

9 Caustic Soda

- 9-1 The proponent shall only use low mercury caustic soda in which the mercury level does not exceed those limits set for use of caustic soda in the alumina industry in Western Australia.

10 Tailings Dam

- 10-1 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 Minister for the Environment and Heritage on advice of the Environmental Protection Authority, the Department of Mineral and Petroleum Resources and the Water and Rivers Commission.
- 10-2 The proponent shall construct the tailings dam according to the design required by condition 10-1.

11 Groundwater

- 11-1 Prior to commissioning of the tailings dam, the proponent shall prepare a groundwater monitoring program 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 Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

- 11-2 The proponent shall implement the groundwater monitoring program required by condition 11-1.

12 Hotham River

- 12-1 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 the Marradong River bridge gauging station. (See procedure 3).
- 12-2 When pumping from the Hotham River, the proponent shall not cause the remaining river flow to be reduced to below the level of 342 kilolitres per hour as measured at the Marradong River bridge gauging station. (See procedure 3).
- 12-3 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 the Environment and Heritage on advice of the Water and Rivers Commission. (See procedure 3).

13 Salinity

- 13-1 Prior to commissioning the plant, the proponent shall prepare a program of hydrological studies to determine changes in the salinity of surface water and groundwater arising from mining operations, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.
- 13-2 The proponent shall implement the hydrological studies program required by condition 13-1.

14 Noise

- 14-1 The proponent shall ensure that noise levels generated by blasting operations do not exceed 115 dB linear peak at noise-sensitive premises.

Note: Acceptable levels from machinery will be set during Works Approval and licensing under the *Environmental Protection Act 1986*.

15 Rehabilitation

- 15-1 Within twelve months following commissioning, the proponent shall prepare a rehabilitation program 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;

2. the rehabilitation of areas affected by chemical spills should they occur and monitoring of chemical concentrations until they decline to background levels;
3. the rehabilitation of haul roads in State Forest;
4. the rehabilitation of the water supply dam; and
5. the rehabilitation of the tailings dam,

to the requirements of the Minister for the Environment and Heritage, on advice of the Environmental Protection Authority, the Department of Conservation and Land Management, the Forest Products Commission, the Department of Mineral and Petroleum Resources and the Water and Rivers Commission, as appropriate.

15-2 The proponent shall implement the rehabilitation program required by condition 15-1.

16 Environmental Management Program

16-1 Prior to each separate construction or development stage being implemented, the proponent shall prepare an Environmental Management Program for that stage, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

Note: These stages shall be consolidated into a document suitable for public information and shall include information resulting from the requirements of conditions 6, 7, 8, 10, 11, 12, 13, and 15.

16-2 The proponent shall implement the various stages of the Environmental Management Program required by condition 16-1.

17 Environmental Management System

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

17-1 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 program referred to in condition 16, 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.

17-2 The proponent shall implement the environmental management system referred to in condition 17-1.

18 Decommissioning

18-1 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.

- 18-2 At least twelve months prior to decommissioning, the proponent shall prepare a final decommissioning and rehabilitation plan to achieve the objectives of condition 18-1, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority, the Department of Conservation and Land Management, the Water and Rivers Commission and the Department of Mineral and Petroleum Resources.

This plan shall address:

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

- 18-3 The proponent shall implement the plan required by condition 18-2.

Procedures

- 1 Where a condition states "to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority", the Chief Executive Officer of the Department of Environmental Protection will obtain that advice for the preparation of written advice to the proponent.
- 2 The Environmental Protection Authority may seek advice from other agencies, as required, in order to provide its advice to the Chief Executive Officer of the Department of Environmental Protection.
- 3 The Water and Rivers Commission will review the minimum flow rate of 342 kilolitres per hour referred to in condition 12 after two winter flows, and will advise the Environmental Protection Authority as to whether this rate is resulting in undesirable environmental impacts.

Note

- 1 The conditions and procedures relating to *mining* at the Hedges Gold Mine are included in a separate composite statement (which also includes conditions and procedures applicable to the Boddington Gold Mine) issued by the Minister for the Environment and Heritage.
- 2 The Minister for the Environment and Heritage will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environmental Protection over the fulfilment of the requirements of the conditions.
- 3 The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the *Environmental Protection Act 1986*.

- 4 The Minister for the Environment and Heritage will request the Minister for State 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*.

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT AND HERITAGE

- 8 MAY 2002

Schedule 1

The Proposal

The mining and processing of lateritic gold ore from the Hedges deposit located in State Forest 12 kilometres north-west of Boddington, in the eastern, low rainfall section of the Darling Range and within the catchment area of the Thirty-four Mile Brook.

Ore is extracted through an open cut mining operation and hauled to the treatment plant where the gold is recovered and the tailings are deposited in a tailings dam. Process water is supplied from a dam which is replenished by pumping from the Hotham River. The treatment plant, tailings dam and supply dam are located on private land.

The Hedges deposit is part of the same ore body being mined at the adjacent Boddington Gold Mine.

The Key proposal Characteristics are included in Table 1 below.

Table 1 - Key Proposal Characteristics

Element	Characteristic
Location	12 kilometres north-west of Boddington, in the eastern, low rainfall section of the Darling Range, and within the catchment area of the Thirty-four Mile Brook.
Open cut mining	Lateritic gold ore / Hedges deposit - part of the same ore body being mined at the adjacent Boddington Gold Mine
Processing Plant and associated infrastructure	Carbon-in-leach
River Water Dam	Replenished by pumping from the Hotham River
Tailings Water Treatment Plant	
Tailings Dam and associated infrastructure	
Access and Haul Roads	
Administration area and associated infrastructure	

Note: Activities *other than mining* consist of decommissioning and closure of:

- the processing plant and associated infrastructure;
- the residue / tailings disposal area and associated infrastructure;
- tailings water treatment plant;
- river water dam;
- access and haul road; and
- administration area and associated infrastructure.

Figures (attached)

Figure 1 - Location map.

Figure 2 - Project layout.

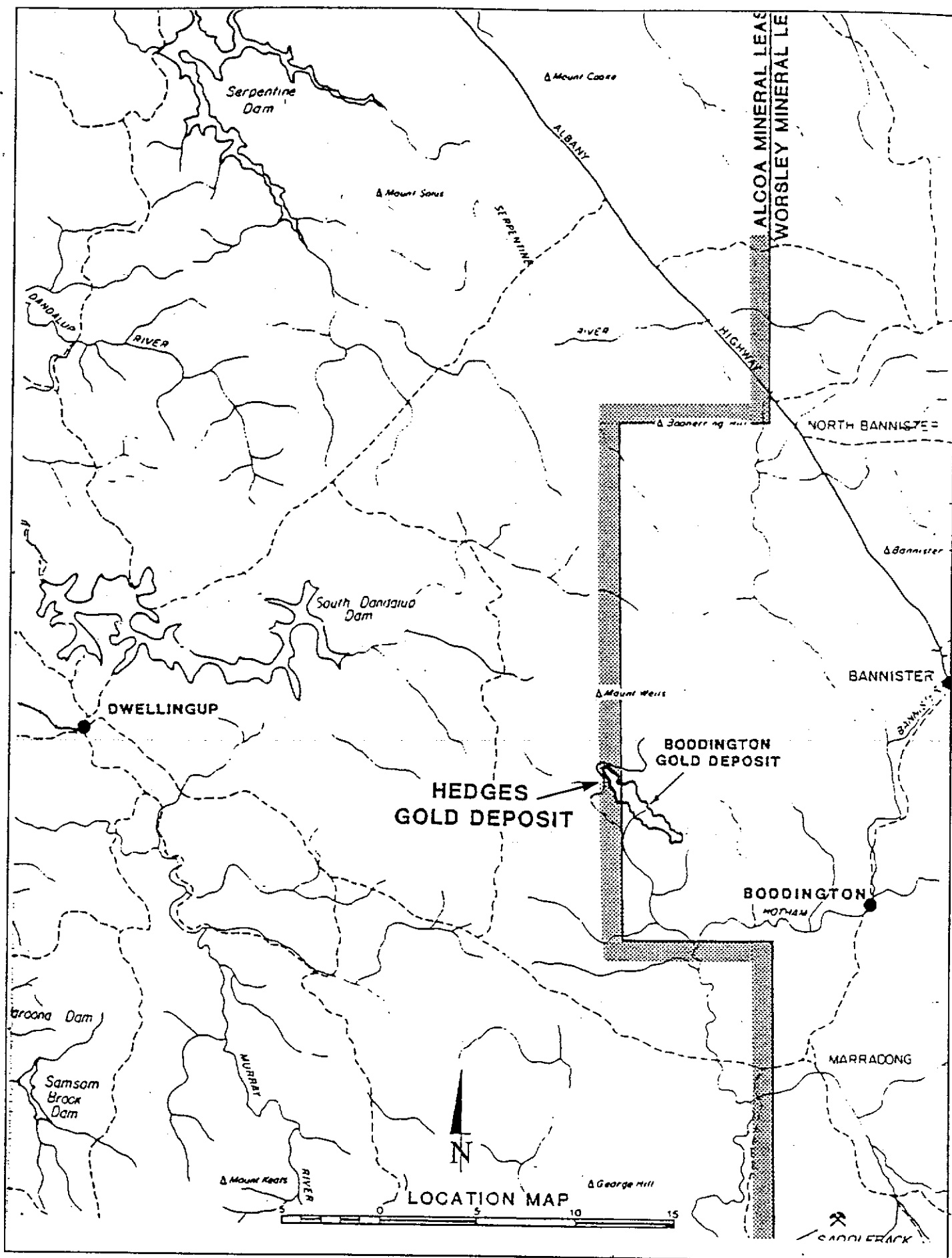


Figure 1. Location map (Source: Hedges Gold Pty Ltd, 1996).

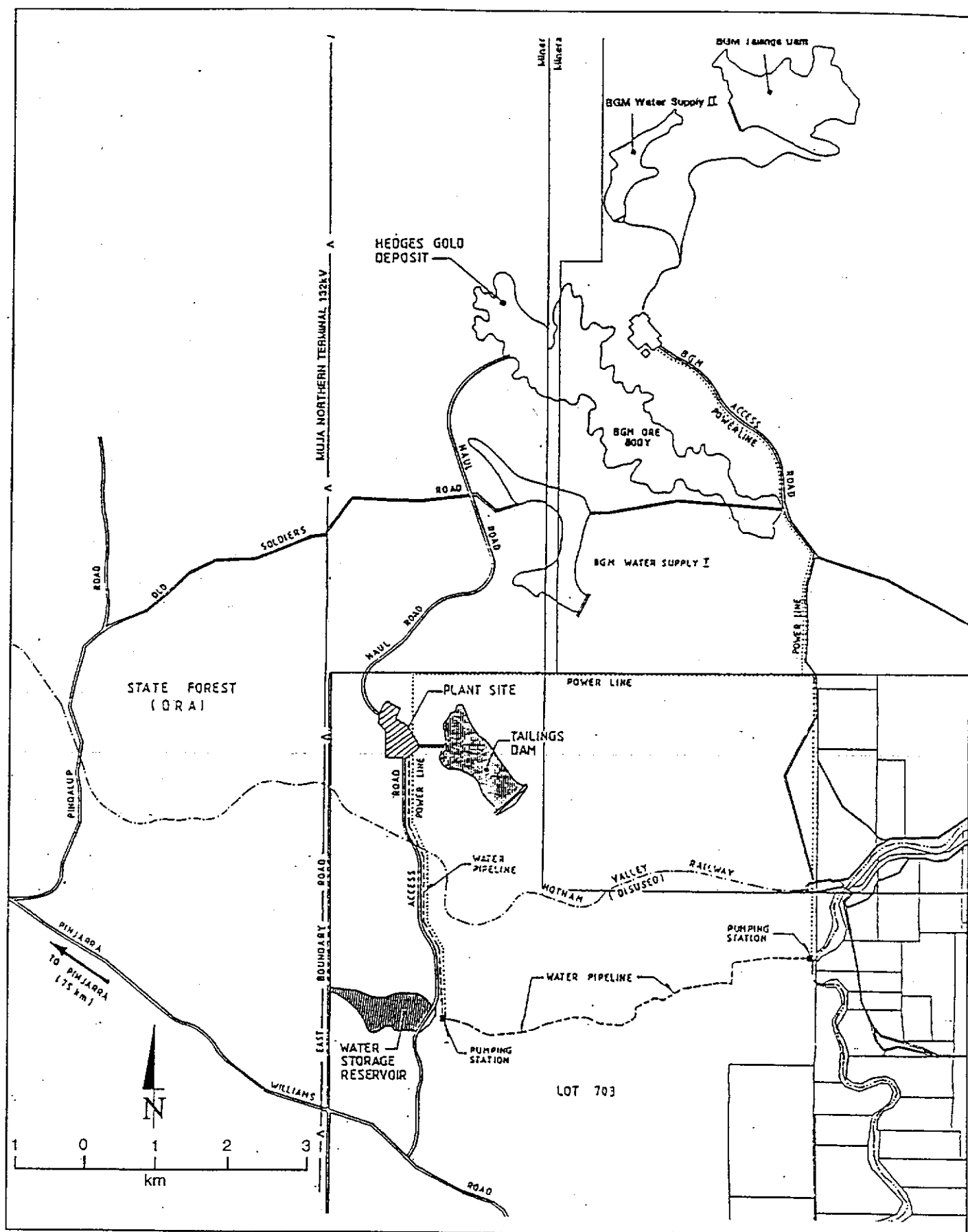


Figure 2. Hedges Gold Project layout (Source: Hedges Gold Pty Ltd, 1996).

Proponent's Environmental Management Commitments

1 October 2000

**HEDGES GOLD PROJECT
SHIRE OF BODDINGTON
(Assessment No. 1410)**

Alcoa of Australia Ltd

HEDGES GOLD PROJECT – PROPONENT'S COMMITMENTS
(Assessment No. 1410)

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. return affected areas to appropriate and achievable land uses in accordance with agreements with the State Government using prescriptions developed in consultation with relevant State Government authorities; and
6. monitor and maintain rehabilitated pits, waste stockpiles, 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.
7. 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;
8. monitor stream flow for quality and quantity in Thirty-four Mile Brook upstream and downstream of the tailings dam;
9. apply appropriate dieback management procedures to activities conducted in other forest areas; and
10. conduct forest upgrading planting in disease affected State Forest immediately adjacent to operations, if required and considered appropriate by CALM.
11. control fugitive dust from the project.
12. monitor faunal populations in the project area
13. restrict human and non-avian access to potentially hazardous areas by fencing. If necessary construct and place avifaunal deterrents in the tailings impoundment.
14. 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;
15. advise nearby populations and relevant Government officers of likely blasting times;
16. 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 cut-off features in the design of the dam wall;

17. monitor surface water quality in streams immediately downstream of the tailings 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.
18. in the event of contaminated groundwater being detected, be prepared to establish a recovery bore system downflow of the tailings area.
19. modify residue management system and operations to the reasonable satisfaction of the State if unexpected problems occur;
20. notify the Water Authority, EPA and downstream users promptly if any spillage occurs which has the potential to affect downstream water users; conduct clean-up or containment operations if necessary.
21. remove contaminated material and carry out appropriate rehabilitation if a tailings pipeline failure occurs.
22. establish surface water contouring and drainage to prevent the rise of contaminated water 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.
23. continue monitoring the water residue system until it is decided, in consultation with the State, that such activity is no longer required.
24. 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;
25. keep abreast of developments in gold tailings disposal technology for possible future application in treating contaminated seepage or runoff if it proves necessary
26. provide access for CALM and local Bush Fire Brigades.
27. submit an annual report of environmental management and monitoring programs, the content of which is to be determined by agreement with the State.
28. construct more positive cut off features or seepage collection systems for the tailings dam, if unacceptable seepage occurs.
29. design the initial tailings dam and its extensions to store runoff from a wet year with a 1:1000 year frequency;
30. carry out or sponsor studies on the interactions between tailings leachate and foundation soils after the commencement of operations;

31. 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.
32. in the event that unacceptable water pollution occurs downstream, carry out remedial action to the satisfaction of the State.
33. commence a hydrological monitoring and assessment program prior to start-up and would update it continuously.
34. monitor the water and salt balance for the tailings circuit;
35. with regard to monitoring of water quality and quantity of Thirty-four Mile Brook, co-ordinate monitoring with that of BGM and WAWA requirements;
36. ensure that domestic waste disposal within the Thirty-four Mile Brook Catchment would use self-contained toilets and enclosed garbage bins;
37. establish a correlation between the minimum flow at the Marradong Gauging Weir and the river level at pump suction. An automatic cut-off system would ensure that pumping ceases at this time.
38. transport chemicals according to standard government safety requirements;
39. provide access for fire control purposes.
40. take action to the reasonable satisfaction of the State if actual or potential risks, not adequately addressed in the ERMP, occur.

Abbreviations

BGM = Boddington Gold Mine
CALM = Department of Conservation & Land Management
EPA = Environmental Protection Authority
ERMP = Environmental Review & Management Programme
WAJV = Worsley Alumina Joint Venturers
WAWA = Water Authority of Western Australia (Water Corporation)