



Hon Mark McGowan MLA  
Minister for Environment;  
Racing and Gaming

Statement No.

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000728

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

**WAGERUP ALUMINA REFINERY – PRODUCTION TO A MAXIMUM CAPACITY OF  
4.7 MILLION TONNES PER ANNUM AND ASSOCIATED BAUXITE MINING**

**Proposal:** The construction and operation of the Wagerup Alumina Refinery to a maximum production capacity of 4.7 million tonnes per annum and its associated bauxite mining, as documented in Schedule 1 of this Statement.

**Proponent:** Alcoa World Alumina Australia

**Proponent Address:** PO Box 252, APPECROSS WA, 6953

**Assessment Numbers:** 1527-1, 1366, 895 and 317

**Reports of the Environmental Protection Authority:** Bulletins 1215, 1006, 779 and 423

**Previous Implementation Statements:** Statement Nos. 564, 390 and 95.

The conditions and procedures of this statement supersede those conditions and procedures of statements 564, 390 and 95 in accordance with section 45B of the *Environmental Protection Act 1986*.

**A. REVISED PROPOSAL: REPORTS OF THE ENVIRONMENTAL PROTECTION  
AUTHORITY - BULLETINS 1215, 1006, 779 AND 423.**

The revised proposal to which the Reports of the Environmental Protection Authority – Bulletins 1215, 1006, 779 and 423 relate may be implemented by the proponent subject to the following conditions and procedures.

**1 Implementation**

- 1-1 The proponent shall implement the proposal as documented and described in schedule 1 of this statement and previous Assessment Bulletins, subject to the conditions and procedures of this Implementation Statement.

Published on

14 SEP 2006

## **2 Proponent Environmental Management Commitments**

- 2-1 The proponent shall fulfil the environmental management commitments contained in schedule 2 of this statement.

## **3 Proponent Nomination and Contact Details**

- 3-1 The proponent for the time being nominated by the Minister for the Environment 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 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 under section 38(6a) and provide the name and address of the person who will assume responsibility for the proposal, together with a letter from that person which states that the proposal will be carried out in accordance with the conditions and procedures of this statement, and documentation on the capability of that person to implement the proposal and fulfil the conditions and procedures.
- 3-3 The nominated proponent shall notify the Department of Environment and Conservation of any change of the name and address of the proponent within 30 days of such change.

## **4 Time limit of approval to commence**

- 4-1 The proponent shall provide evidence to the Department of Environment and Conservation that the revised proposal has been substantially commenced within five years following the date of this statement or the approval granted in this statement shall lapse and be void.
- 4-2 The proponent shall make an application for any extension of approval for the substantial commencement of the proposal to the Minister for the Environment within four years and six months following the date of this statement, which shall demonstrate that:
1. the environmental factors of the proposal reported in Bulletin 1215 have not changed significantly;
  2. new, significant, environmental factors have not arisen; and
  3. all relevant government authorities and stakeholders have been consulted.

## **5 Compliance Reporting**

- 5-1 The proponent shall submit annually an audit compliance report, for the previous twelve-month period.

The audit compliance report shall:

1. be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the proponent's Managing Director's behalf;
2. include a statement as to whether the proponent has complied with the conditions, procedures, commitments and actions within the Environmental Management Plans;
3. identify all non-compliances and describe the related corrective and preventative actions taken;
4. review the effectiveness of all corrective and preventative actions taken;
5. provide verifiable evidence of compliance with the conditions, procedures and commitments;
6. describe the state of implementation of the proposal; and
7. be prepared in accordance with an audit program and in a format acceptable to the Department of Environment and Conservation.

5-2 The proponent shall make the audit compliance report publicly available in a manner approved by the Department of Environment and Conservation.

## **6 Performance Review**

6-1 The proponent shall submit a Performance Review Report to the Environmental Protection Authority every five years after commissioning of the revised proposal, which addresses:

1. the major environmental issues associated with implementing the project; the environmental objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives;
2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;
3. significant improvements gained in environmental management, including the use of external peer reviews;
4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
5. the proposed environmental objectives over the next five years, including improvements in technology and management processes.

## **7 Decommissioning Plan**

- 7-1 Within two years following the date of this Statement, the proponent shall prepare a Preliminary Decommissioning Plan for approval by the Department of Environment and Conservation, which describes the framework to ensure that the site is left in an environmentally acceptable condition, and provides:
1. the rationale for the siting and design of plant and infrastructure as relevant to environmental protection;
  2. a conceptual description of the final landform at closure;
  3. a plan for a care and maintenance phase; and
  4. initial plans for the management of noxious materials.
- 7-2 At least six months prior to the anticipated date of closure, or at a time agreed by the Environmental Protection Authority, the proponent shall submit a Final Decommissioning Plan designed to ensure that the site is left in an environmentally acceptable condition prepared on advice of the Environmental Protection Authority, for approval of the Department of Environment and Conservation.
- The Final Decommissioning Plan shall address:
1. removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;
  2. rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and
  3. identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.
- 7-3 The proponent shall implement the Final Decommissioning Plan required by condition 7-2 until such time as the Minister for the Environment determines, on advice of the Department of Environment and Conservation, that the proponent's decommissioning responsibilities are complete.
- 7-4 The proponent shall make the Final Decommissioning Plan required by condition 7-2 publicly available in a manner approved by the Department of Environment and Conservation.

## **B. REVISED PROPOSAL: REPORTS OF THE ENVIRONMENTAL PROTECTION AUTHORITY - BULLETIN 1215.**

The revised proposal to which the Report of the Environmental Protection Authority – Bulletin 1215 relates may be implemented by the proponent subject to the following conditions and procedures.

### **8 Best Practice Pollution Control Measures to be Applied**

- 8-1 Prior to submitting a Works Approval application (under Part V of the *Environmental Protection Act 1986*) for works included in the revised proposal, as documented and described in Schedule 1, the proponent shall prepare and submit a Detailed Design Report that details the best practice pollution control measures employed to minimise emissions from the Refinery, to the requirements of the Minister for the Environment, on the advice of the Environmental Protection Authority.

The Detailed Design Report shall set out the base emission rates for major sources for the Refinery and the design emission targets for the expanded works. In particular, the Detailed Design Report shall demonstrate that the design of the expansion works will reasonably achieve the following reductions from base emission rates:

1. at least a 75% reduction in peak and average emission rates of Volatile Organic Compounds (VOCs) and odour from the 25A slurry tank vents;
2. at least a 50% reduction in peak and average emission rates VOCs and odour from clarification tanks – 35A green liquor;
3. reduction to negligible emissions of VOCs and odour from clarification tanks – 35J causticisation;
4. at least a 50% reduction in peak and average emission rates VOCs and odour from cooling towers;
5. reduction to negligible emissions of VOCs and odour from calciner low volume vent emissions (vacuum pumps, Dorrco and Filter Scroll Hoods);
6. the mass of VOCs discharged to the cooling pond shall not increase by more than 50%; and
7. no increase in particulate emissions from the Residue Disposal Area.

Note: the term “base emission rates” means emission rates determined from monitoring from July 2002 to March 2004.

- 8-2 The Detailed Design Report shall address how the design emission targets in condition 8-1 will be met during stable operations. The Detailed Design Report shall also address how best practice will be applied to minimising emissions during unstable operating conditions such as during shut-down, start-up, and equipment failure.

- 8-3 In the case where best practice pollution control measures do not achieve the individual reductions in base emission rates in condition 8-1, the Detailed Design Report shall provide alternative measures to achieve equivalent overall reductions.
- 8-4 The Detailed Design Report referred to in condition 8-1 shall be subject to independent peer review (refer to Procedure 1).
- 8-5 Notwithstanding the requirements of conditions 8-1, 8-2, 8-3 and 8-4, the proponent may implement individual works of this proposal, as described in schedule 1 of this statement, subject to the requirements of a Works Approval and Licence under Part V of the *Environmental Protection Act 1986*, on the *proviso* that the individual works:
- (i) have effect in reducing or offsetting emissions from the existing refinery, where possible; and
  - (ii) do not significantly increase the production capacity of the refinery.

## **9 Air Dispersion Model Validation**

- 9-1 Prior to submitting a Works Approval application (under Part V of the *Environmental Protection Act 1986*) for works included in the revised proposal, as documented and described in Schedule 1, the proponent shall carry out data acquisition and investigations for the purpose of validation of air dispersion model predictions of ground level concentrations in the Environmental Review and Management Program (May 2005) and associated documents, to the requirements of the Minister for the Environment, on advice of the Environmental Protection Authority.

The data acquisition and investigations shall include:

1. twelve months of meteorological data from an escarpment meteorological station;
2. twelve months of vertical profile temperature and wind velocity measurements using methods acceptable to the Department of Environment and Conservation;
3. twelve months of meteorological data (wind speed, direction and temperature) from up to two additional meteorological stations located on the coastal plain, using methods and at locations acceptable to the Department of Environment and Conservation;
4. investigation into the validity of the building wake dispersion scheme used in the air dispersion model, by a suitably qualified modeller;
5. investigation into the validity of modelled multiflue plume rise behaviour, in light of recent findings reported in literature, by a suitably qualified modeller;
6. twelve additional months of base case emission rate data for key sources; and
7. any revised emission rates from the Detailed Design Report referred to in condition 8-1.

Note: the "key sources" referred to in condition 9-1 are the liquor burner, calciners, 25A tank vents, 35A tanks, 35J tanks and cooling towers.

9-2 The proponent shall make use of the results of the data acquisition and investigations, referred to in condition 9-1, to:

1. validate the performance of the dispersion model; and
2. provide detail on whether ground level concentrations achieve the predictions presented in the Environmental Review and Management Program (May 2005) and associated documents, both in the near field and the far field, up to ten kilometres from the multiflue stacks.

This work shall be carried out to the requirements of the Minister for Environment on advice from the Department of Environment and Conservation.

9-3 In the case that the validation of the dispersion modelling, referred to in condition 9-2, does not reasonably demonstrate that ground level concentrations similar to that predicted in the Environmental Review and Management Program (May 2005) and associated documents will be achieved, the proponent shall make revisions to the detailed engineering design and repeat the air dispersion modelling until reasonable achievement is demonstrated.

9-4 Notwithstanding the requirements of conditions 9-1, 9-2 and 9-3, the proponent may implement individual works of this proposal, as described in schedule 1 of this statement, subject to the requirements of a Works Approval and Licence under Part V of the *Environmental Protection Act 1986*, on the proviso that the individual works:

- (i) have effect in reducing or offsetting emissions from the existing refinery, where possible; and
- (ii) do not significantly increase the production capacity of the refinery.

## 10 Operational Performance Verification

10-1 Prior to submitting a Works Approval application (under Part V of the *Environmental Protection Act 1986*) for works included in the revised proposal, as documented and described in Schedule 1, the proponent shall prepare and submit a revised Air Quality Management Plan to the satisfaction of the Minister for the Environment on advice from the Environmental Protection Authority.

The revised Air Quality Management Plan shall include:

1. an Emissions and Ambient Air Quality Monitoring Program, for performance verification monitoring, that addresses Point Source Emissions (for the key emission sources, refer to condition 9-1), Diffuse Source Emissions and Ambient Air Quality, including where practicable and appropriate, continuous monitoring, and

2. management procedures with the objective of achieving the design emission targets referred to in condition 8-1 under stable operating conditions, and minimising emissions during unstable operating conditions such as during startup, shut down and equipment failure as referred to in condition 8-2; and
3. a program for independent audit and review of the results of monitoring undertaken in accordance with the Air Quality Management Plan.

Note 1: In the preparation of advice to the Minister for the Environment, the Environmental Protection Authority expects that the advice of the following agencies will be obtained:

- Department of Environment and Conservation (Air Quality Management Branch); and
- Department of Health.

2: During the development of the Emissions and Ambient Air Quality Monitoring Program, the proponent must consult with community and stakeholders.

- 10-2 The Air Quality Management Plan referred to in condition 10-1 shall be subject to independent peer review (refer to Procedure 1).
- 10-3 The proponent shall implement the Air Quality Management Plan referred to in condition 10-1 throughout the commissioning and operational phase of the expanded Refinery to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.
- 10-4 The proponent shall make the Air Quality Management Plan referred to in condition 10-1 publicly available to the requirements of the Minister for the Environment on advice from the Environmental Protection Authority.
- 10-5 In the case that the performance monitoring referred to in condition 10-1 indicates that the design emission targets referred to in conditions 8-1 and 8-2 and the management procedures referred to in condition 10-1 are not being reasonably achieved, the proponent shall make revision to the operational procedures and/or engineering design to ensure compliance with the design emission targets.
- 10-6 The proponent shall regularly review and, where appropriate, employ adaptive management practices to facilitate continuous improvement in key source emissions management at the refinery in line with current best practice management.

Note: It is expected that the outcomes of condition 10-6 will be implemented through Part V of the *Environmental Protection Act 1986*.



10-7 Notwithstanding the requirements of conditions 10-1, 10-2, 10-3, 10-4, 10-5 and 10-6 the proponent may implement individual works of this proposal, as described in schedule 1 of this statement, subject to the requirements of a Works Approval and Licence under Part V of the *Environmental Protection Act 1986*, on the proviso that the individual works:

- (i) have effect in reducing or offsetting emissions from the existing refinery, where possible; and
- (ii) do not significantly increase the production capacity of the refinery.

## 11 Noise

11-1 Prior to issue of any Works Approval (under Part V of the *Environmental Protection Act, 1986*) for works included in the revised proposal, as documented and described in Schedule 1, the proponent shall revise the Noise Management Plan submitted in Section 10 of the Wagerup Refinery Unit Three Expansion ERMP (May 2005) to provide detail on all reasonable and practicable measures to control noise emissions incorporated in design and construction of the expansion works, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Plan shall include details of:

1. all significant noise sources, options considered for noise control, noise control measures proposed to be adopted and design target Sound Power Levels;
2. acoustic modelling of noise emission levels in the surrounding environment utilising the design target Sound Power Levels;
3. procedures for verifying that the design target Sound Power Levels have been achieved and total noise emissions from the works meet those predicted in the acoustic modelling undertaken in respect of 2;
4. procedures for approval of noise emissions during construction and commissioning under noise regulation 13; and
5. parties engaged in the design, acoustic modelling and noise verification as covered by conditions 11-1(1) to 11-1(4).

11-2 The proponent shall make the Noise Management Plan required by condition 11-1 publicly available to the requirements of the Minister for the Environment on advice from the Environmental Protection Authority following approval of the report required by condition 11-1.

11-3 The proponent shall implement the Noise Management Plan required under condition 11-1 to the requirements of the Minister for the Environment on advice from the Environmental Protection Authority.

11-4 Notwithstanding the requirements of conditions 11-1, 11-2 and 11-3, the proponent may implement individual works of this proposal, as described in schedule 1 of this statement, subject to the requirements of a Works Approval and Licence under Part V of the *Environmental Protection Act 1986*, on the *proviso* that the individual works:

- (i) have effect in reducing or offsetting emissions from the existing refinery, where possible; and
- (ii) do not significantly increase the production capacity of the refinery.

## **12 Water Use**

12-1 Prior to the commencement of construction, the proponent shall prepare a Water Use Management Plan to the requirements of the Minister for the Environment on the advice of the Environmental Protection Authority. The Water Use Management Plan shall describe the water use minimisation and re-use practices that will be employed so as to achieve the minimum practicable water use at the refinery.

12-2 The proponent shall implement and comply with the Water Use Management Plan referred to in condition 12-1.

12-3 The proponent shall make the Water Use Management Plan referred to in condition 12-1 publicly available.

## **13 Residue Disposal Areas**

13-1 Prior to the commencement of construction, the proponent shall revise the Long Term Residue Management Strategy, which addresses the potential impacts of emissions from the Residue Disposal Areas, in particular the management of emissions and protection of groundwater, in consultation with the Residue Planning Liaison Group, to the requirements of the Minister for the Environment on advice from the Environmental Protection Authority.

13-2 The revised Long Term Residue Management Strategy referred to in condition 13-1 shall be subject to an independent peer review to ensure that the monitoring and management is undertaken in accordance with international best practice.

Note 1: During the development of the Long Term Residue Management Strategy, the proponent must consult with community and stakeholders.

13-3 The proponent shall make the Long Term Residue Management Strategy required by condition 13-1 publicly available.

13-4 The proponent shall implement the Long Term Residue Management Strategy required under condition 13-1.

## **14 Transport Related Noise**

- 14-1 The proponent shall demonstrate participation in a detailed review (refer Note 2) of logistical aspects of the rail transport activities associated with its operations to ensure that these activities are managed in a manner which minimises impacts on residential amenity.

### **PROCEDURES**

#### **1. Independent Design Review Team**

The Department of Environment and Conservation, in consultation with the proponent, will establish an Independent Design Review Team (IDRT) including specialists in design, construction, commissioning and monitoring of large industrial plants and pollution control equipment. The IDRT shall also seek specialist input from international experts where required.

The IDRT will review the engineering design details for the Wagerup Unit 3 Expansion leading to the Works Approval application to advise the Department of Environment and Conservation on whether the design meets international best practice in terms of pollution control, predicted emissions and emissions management and is reasonably likely to achieve the emissions performance levels specified in condition 8.

The IDRT will also review the Air Quality Management Plan required in condition 10 to ensure that the monitoring and management is undertaken in accordance with international best practice.

#### **2. Inter-agency Working Group – Rail Noise Impacts**

Within 12 months following the date of this statement, the Department of Industry and Resources, will arrange for the establishment of an inter-agency working group to further define rail noise impacts, and identifying practicable operational measures, infrastructure improvements and residential noise amelioration measures that may be necessary to mitigate the noise impacts.

### **NOTES**

1. Where a condition states "on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment and Conservation for the preparation of written notice to the proponent.
2. It is expected that the Environmental Protection Authority will seek advice from other agencies or organisations including the Department of Health, as required, in order to provide its advice to the Department of Environment and Conservation.
3. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment and Conservation over the fulfilment of the requirements of the conditions.

4. 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*. The Works Approval application is to include the Detailed Design Report referred to in condition 8-1 and the Air Quality Management Plan referred to in condition 10-1, which will be considered in preparation of the Works Approval and Licence.

### **C. REVISED PROPOSAL: REPORTS OF THE ENVIRONMENTAL PROTECTION AUTHORITY - BULLETINS 1006, 779 AND 423.**

The revised proposal to which the Reports of the Environmental Protection Authority – Bulletins 1006, 779 and 423 relate may be implemented by the proponent subject to the following conditions and procedures.

#### **15 Community Consultation**

- 15-1 In the preparation of mining plans, the proponent shall consult with the affected local government authorities and report the results to the Mining and Management Programme Liaison Group.
- 15-2 The proponent shall consult with residents of private properties whose amenity (dust, noise, vibration, visual) or hydrology are likely to be affected by the mining operations, and report the results to the Mining and Management Programme Liaison Group. In the first instance the proponent shall consult with those residents within the predicted 35 dB(A) noise contour (worst case) for the mining operations (refer Procedure 4).

#### **16 Long-term Bauxite Residue Management**

- 16-1 The proponent, in consultation with the Residue Planning Liaison Group, shall periodically review and revise its "closure strategy" for the residue storage areas at Wagerup, to the requirements of the Minister for the Environment on advice from the Environmental Protection Authority.

Note 1: In reviewing and revising the "closure strategy", the proponent must consult with community and stakeholders.

Note 2: The proponent shall submit its revised closure strategy to the Residue Planning Liaison Group for approval and submission to the Minister for the Environment through the Minister responsible for administering the Alumina Refinery (Wagerup) Agreement and Acts 1978

- 16-2 The proponent shall implement the "closure strategy" required by condition 16-1 to the requirements of the Minister for the Environment, at a timing to be determined by the Minister for the Environment on advice of the Minister responsible for administering the Alumina Refinery (Wagerup) Agreement Act 1978.

Note: a "closure strategy" means that the bauxite residue storage areas at Wagerup shall either no longer require management at the time the proponent ceases refining operations, or if the Minister for the Environment determines that further management is necessary, the proponent shall make adequate provision for future management with no liability to the State.

## **17 Social Impacts**

- 17-1 To reduce social disruption to the Waroona and Yarloop districts, the proponent shall maintain formal liaison and monitoring processes at appropriate times with the Shire of Waroona and the Shire of Harvey.
- 17-2 The proponent shall provide details on formal liaison and monitoring processes with the Shire of Waroona and the Shire of Harvey in its annual reporting of environmental research and operations.

## **Procedures**

### **3 Final rehabilitation completion criteria:**

- (1) The proponent and the Mining and Management Programme Liaison Group shall regularly review and revise the final rehabilitation completion criteria, using procedures 4(2) and 4(3).
- (2) The review of the final rehabilitation completion criteria shall include public consultation.
- (3) The revised final rehabilitation completion criteria shall be made publicly available.
- (4) Best practice principles shall be applied.

### **4 Mining and Management Planning Liaison Group**

The Mining and Management Programme Liaison Group comprises representatives of State Government agencies whose areas of responsibility are affected by the mining operations of the proponent. This group will continue to review the mining plans of the proponent and manage issues relating to its mining operations. The group will co-ordinate environmental auditing of the proponent's Mining and Management Programme.

In reviewing mining plans, the Mining and Management Planning Liaison Group shall take into account local agreements and issues that concern local property owners, including:

- (i) likely noise, vibration and dust impacts on residents and property from the type of mining proposed;
- (ii) aesthetic and conservation values of the forest affected in relation to the properties; and
- (iii) potential hydrological impacts on private properties.

**HON MARK MCGOWAN MLA**  
**MINISTER FOR THE ENVIRONMENT;**  
**RACING AND GAMING**

**14 SEP 2006**

## Schedule 1

### The Proposal (Assessment No. 1527)

The proponent proposes to expand the Wagerup Alumina Refinery by construction of a third production unit. The production increase to approximately 4.7 million tonnes per annum alumina is to be achieved by a combination of new equipment and the upgrade of existing equipment to achieve an increase in both capacity and efficiency. As the Wagerup Refinery has been the subject of previous assessments, this represents a revised proposal pursuant to section 45B of the *Environmental Protection Act 1986*.

Although the expansion will result in an increase in the rate of bauxite mining, there is no proposed increase to the approved mining area.

The main characteristics of the expansion proposal are summarised in Table 1 below.

Table 1: Key Proposal Characteristics

Element	Units	Current Refinery	4.7 Mtpa Expansion
<b>Refinery Area</b>			
Refinery footprint	hectares	183	183
<b>Production</b>			
Alumina production	Mtpa	Approximately 2.4	Approximately 4.7
<b>Raw Materials</b>			
Bauxite mining rate	Mtpa	9	16
Caustic Soda (dry)	tpa	141,000	282,000
Lime	tpa	110,000	200,000
Water	MLpa	4,800	9,600
<b>Residue Disposal</b>			
Bauxite residue	Mtpa	4.8	9.6
<b>Main Equipment Components</b>			
Milling		<ul style="list-style-type: none"> <li>• 3 SAG mills</li> </ul>	<ul style="list-style-type: none"> <li>• Increased milling capacity</li> </ul>
Ore stockpiles		<ul style="list-style-type: none"> <li>• Stockpile reclaimer and conveyor</li> <li>• 2 stockpiles plus one emergency</li> </ul>	<ul style="list-style-type: none"> <li>• New reclaimer and conveyors</li> <li>• New dust suppression and cleaning system for conveyor</li> </ul>
Slurry storage		<ul style="list-style-type: none"> <li>• 4 slurry tanks</li> </ul>	<ul style="list-style-type: none"> <li>• New slurry tanks</li> </ul>
Digestion		<ul style="list-style-type: none"> <li>• Digester banks and flash vessels</li> <li>• Vapour condenser</li> </ul>	<ul style="list-style-type: none"> <li>• Increased digestion capacity</li> <li>• New and upgraded pumps</li> </ul>
Evaporation		<ul style="list-style-type: none"> <li>• Evaporation units</li> <li>• Heat interchange units</li> </ul>	<ul style="list-style-type: none"> <li>• New evaporation units</li> <li>• New heat interchanger</li> </ul>
Lime		<ul style="list-style-type: none"> <li>• 1 lime silo</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrade lime storage and associated equipment</li> </ul>
Clarification		<ul style="list-style-type: none"> <li>• Sand removal units</li> <li>• Washers, thickeners</li> <li>• Filter tanks and presses</li> </ul>	<ul style="list-style-type: none"> <li>• New filter presses</li> <li>• New and upgraded washer facilities</li> <li>• New cyclone system</li> </ul>

<b>Main Equipment Components</b>			
Residue Disposal Area (RDA)		<ul style="list-style-type: none"> <li>• Approx. 180 hectares required for drying and storing residue</li> </ul>	<ul style="list-style-type: none"> <li>• Dry stacking area not to exceed 275 hectare drying area</li> <li>• New sand separation</li> <li>• Sand Lake wet sand area not to be increased by more than 50%</li> <li>• No wet stacking area</li> <li>• Oxalate pond not to increase by more than 1 hectare</li> <li>• Upgrade RDA sprinkler system</li> </ul>
Precipitation		<ul style="list-style-type: none"> <li>• Precipitators and seed filters</li> <li>• Thickeners and liquor tanks</li> <li>• Cooling towers and cyclone clusters</li> </ul>	<ul style="list-style-type: none"> <li>• New precipitators and seed filters</li> <li>• New thickeners and liquor tanks</li> <li>• Additional cooling capacity</li> <li>• New cyclone clusters</li> </ul>
Oxalate removal		<ul style="list-style-type: none"> <li>• Decommissioned oxalate kiln</li> </ul>	<ul style="list-style-type: none"> <li>• Oxalate kilns with regenerative thermal oxidizer (RTO)</li> </ul>
Liquor Burning		<ul style="list-style-type: none"> <li>• liquor burner</li> </ul>	<ul style="list-style-type: none"> <li>• Install a RTO</li> </ul>
Calciners		<ul style="list-style-type: none"> <li>• 4 calciner units</li> <li>• 100 metre multiflue for calciners 1, 2, 3.</li> </ul>	<ul style="list-style-type: none"> <li>• 2 new calciners with multiflue</li> <li>• No.4 calciner connection to new multiflue</li> </ul>
Alumina Storage		<ul style="list-style-type: none"> <li>• 2 alumina storage bins and alumina conveyors</li> </ul>	<ul style="list-style-type: none"> <li>• Additional alumina storage</li> <li>• Upgrade or additional conveyor</li> </ul>
Powerhouse (optional) <sup>1</sup>		<ul style="list-style-type: none"> <li>• Turbo-alternators and boilers</li> <li>• Gas turbine with steam generator</li> </ul>	<ul style="list-style-type: none"> <li>• 2 new 270 tph boilers</li> <li>• 2 new turbo alternators</li> </ul>
Port Facilities		<ul style="list-style-type: none"> <li>• Alumina storage and handling facilities</li> <li>• Caustic storage</li> </ul>	<ul style="list-style-type: none"> <li>• Upgraded alumina handling facilities</li> </ul>
Water Supply		<ul style="list-style-type: none"> <li>• Licenced surface water sources</li> </ul>	<ul style="list-style-type: none"> <li>• Increased surface water supply</li> </ul>

**Abbreviations:**

Mtpa: million tonnes per annum  
 tpa: tonnes per annum  
 tph: tonnes per hour  
 Mlpa: million litres per annum  
 MW: megawatts

**Note:**

1: An option for 2 new 270 tph boilers providing electricity and steam for the Refinery. This option will cease if the Wagerup Cogeneration Plant referred to in EPA Bulletin 1215, Appendix 5 is implemented.



**Proponent  
Environmental Management Commitments**

**December 2005**

**WAGERUP ALUMINA REFINERY  
PRODUCTION TO A MAXIMUM CAPACITY OF 4.7 MILLION  
TONNES PER ANNUM AND ASSOCIATED MINING  
(Assessment No. 1527)**

**ALCOA WORLD ALUMINA AUSTRALIA**

# Proponent's Environmental Management Commitments – December 2005

## Wagerup Alumina Refinery Production to a Maximum Capacity of 4.7 Million Tonnes Per Annum and Associated Mining (Assessment No. 1527)

**Note:** The term "commitment" as used in this schedule includes the entire row of the table and its six separate parts as follows:

- a commitment number;
- a commitment topic;
- the objective of the commitment;
- the 'action' to be undertaken by the proponent;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment.

No.	Topic	Objective	Action	Timing	Advice
1	Separation Distance	To provide residents near to the Refinery with an option to relocate.	Continue to support and implement the Wagerup Land Management Strategy (January 2002) as enhanced by correspondence with individual residents in Area A and B (letters dated 24 February 2005 and 21 April 2005) or any subsequent revisions agreed in consultation with the community and relevant stakeholders.	Ongoing	

## Consolidated list of proponent's commitments (refer Bulletin 779)

### **Mine planning and forest management**

- (2) In addition to the 10-year mining plans to be submitted to the State under Clause 5 of the Wagerup Agreement, Alcoa will also prepare and submit to the State mining and management programmes which will specify such matters as the areas which it is proposed to mine, the method of mining, and the proposed methods of rehabilitation in accordance with the procedures to be agreed between Alcoa and the State. Alcoa undertakes to consult closely with the State on the preparation of these programmes and not to implement these programmes until agreement to them has been reached with the State or they have been determined by arbitration.
- (3) Alcoa will plan and manage its mining operations to minimise disturbance to biologically diverse areas fringing major rock outcrops and stream zones. Appropriate buffers will be maintained between these areas and minepit boundaries. Stream crossings will be constructed in a manner which facilitates their removal and rehabilitation after use, unless required for ongoing forest management or other purposes agreed with the State's Mining and Management Programme Liaison Group (MMPLG).
- (4) Alcoa will continue its programme of biological surveys and support of activities contributing to the conservation of rare, endangered and priority species existing within the vicinity of its mining operations.

### **Water resources**

- (5) Bauxite mining will not take place in the eastern, lower rainfall portion of Alcoa's lease, until research shows that mining operations can be conducted without significantly increasing the salinity of water resources with exception of the Trial Mining Project in the intermediate rainfall zone which commenced in 2005 to test modelling predictions and mining and rehabilitation methods developed from the 25 years of research to date. This trial was approved by the Mining and Management Programme Liaison Group. Results from the trial mining and continuing hydrology research and modelling will form the basis for future approval by the Mining and Management Programme Liaison Group of Alcoa's plans for mining in the intermediate rainfall zone. These plans will be presented in Alcoa's annual Mining and Management Programme submission at an appropriate date.

### **Mine rehabilitation**

- (6) Alcoa will monitor the success of all its rehabilitated mined areas in consultation with the Department of Environment and Conservation.

### **Forest conservation**

- (7) Alcoa will forego the bauxite resources in the jarrah forest conservation areas agreed in consultation with the State's Reserves Review Committee and specified in the Alumina Refinery Agreement Amendment Act, No 99 of 1986, for as long as their conservation values remain. Mining adjacent to the conservation areas will utilise site-specific environmental management procedures agreed in consultation with the MMPLG. These will include particular consideration of dieback management and mine rehabilitation requirements.
- (8) Alcoa will defer mining indefinitely the bauxite resources in the facilities section of the recreation zone of the Lane Poole Reserve as defined in Figure 10 of the 1994 Consultative Environmental Review. Ore extraction in the remaining areas of the recreation zone will exclude the steep slopes of the Murray River valley and will be undertaken in accordance with site-specific environmental management procedures agreed with the State's MMPLG after consultation with Department of Environment and Conservation and the Lane Poole Reserve Advisory Committee.

### **Dieback management**

- (9) Alcoa will implement a comprehensive dieback management programme designed specifically for its mine operations in the jarrah forest. This will include the rehabilitation of dieback-affected areas adjacent to its mine operating areas, in accordance with procedures agreed with State agencies, and irrespective of the cause of introduction of the disease.

### **Environmental research**

- (10) Alcoa is committed to an ongoing research programme into all aspects of its operation that have the potential to adversely affect the environment, and into those environmental characteristics that could be adversely affected by its operations.
- (11) Alcoa will submit a brief review of its research and management programme to the Department of Industry and Resources on an annual basis. Copies will be made available to relevant State agencies and the Shire of Waroona. A more detailed review will be prepared on a triennial basis.

### **Noise monitoring**

- (12) Noise monitoring undertaken for assessment purposes will be undertaken by a recognised acoustical consultant, in consultation with the Department of Environment and Conservation. Ongoing monitoring will be undertaken by Alcoa personnel, or consultants, appropriately trained in the measurement of environmental noise.
- (13) Noise levels will be monitored periodically at designated reference points and reported in the Review of Environmental Research and Operations submitted annually to the Department of Industry and Resources, and distributed to relevant state and local government agencies.

## **NOTICE OF INTERIM IMPLEMENTATION CONDITIONS**

section 46A  
*Environmental Protection Act 1986*

**Proposal:** Wagerup Alumina Refinery – Production to maximum capacity of 4.7 million tonnes per annum and associated bauxite mining, as documented in Schedule 1 of Ministerial Statement 728 and condition 4 as amended in Statement 897

**Proponent:** Alcoa of Australia  
Australian Company Number 004 879 298

**Proponent Address:** 181 – 205 Davey Street  
BOORAGOON WA 6154

**Statement to which this notice relates:** Statement 728 dated 14 September 2006 as amended by Statement 897 dated 9 May 2012

Pursuant to section 46A(1) of the *Environmental Protection Act 1986*, the following Interim Implementation Conditions in this Notice are to have effect instead of implementation condition 4 of Statement 728 dated 14 September 2006, and replaces condition 4 of Statement 897.

These Interim Implementation Conditions are to be read in conjunction with Statement 728 and are to have effect until a further statement is published under section 45(5) as applied by section 46(8) of the *Environmental Protection Act 1986*. All other conditions of Statement 728 continue to have effect.

### **4. Time Limit of Authorisation**

- 4-1 The proponent shall not commence implementation of the proposal after the expiration of twelve (12) months from the date of this Notice, and any commencement, within this twelve (12) month period, must be substantial.
- 4-2 Any commencement of implementation of the proposal, within twelve (12) months from the date of this Notice, must be demonstrated as substantial by providing the CEO\* with written evidence, on or before the expiration of twelve (12) months from this Notice.

[Signed 27 September 2016]

**HON ALBERT JACOB MLA**  
**MINISTER FOR ENVIRONMENT; HERITAGE**

\* The Chief Executive Officer of the Department of the Public Service which is responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate.