



MINISTER FOR THE ENVIRONMENT; SCIENCE

Statement No.

000604

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

**GAS-FIRED CO-GENERATION FACILITY  
WORSLEY, SHIRE OF COLLIE**

**Proposal:** The construction, operation and maintenance of a co-generation facility of 120 megawatts electrical output and 210 megawatts of steam output at Worsley, Shire of Collie, as documented in schedule 1 of this statement.

**Proponent:** Worsley Alumina Pty Ltd

**Proponent Address:** PO Box 344  
COLLIE WA 6225

**Assessment Number:** 1584

**Report of the Environmental Protection Authority:** Bulletin 1189

The proposal referred to above 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 in schedule 1 of this statement subject to the conditions and procedures of this statement.

**2 Proponent Commitments**

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

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19 OCT 2001

### **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 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 Environment 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 substantially commence the proposal within five years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

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

The application shall demonstrate that:

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

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

### **5 Compliance Audit and Performance Review**

- 5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

1. the status of implementation of the proposal as defined in schedule 1 of this statement;
2. evidence of compliance with the conditions and commitments; and
3. 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 Environment is empowered to monitor 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.

5-2 The proponent shall submit a performance review report every five years after the start of operations, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, which addresses:

1. the major environmental issues associated with implementing the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;
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 targets over the next five years, including improvements in technology and management processes.

## **6 Greenhouse Gas Abatement**

6-1 Prior to commencement of construction, the proponent shall develop a Greenhouse Gas Abatement Programme to:

- ensure that the plant is designed and operated in a manner which achieves reductions in “greenhouse gas” emissions as far as practicable;
- provide for ongoing “greenhouse gas” emissions reductions over time;
- ensure that through the use of best practice, the total net “greenhouse gas” emissions and/or “greenhouse gas” emissions per unit of product from the project are minimised; and

- manage “greenhouse gas” emissions in accordance with the *Framework Convention on Climate Change 1992*, and consistent with the National Greenhouse Strategy;

to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This Programme shall include:

1. calculation of the “greenhouse gas” emissions associated with the proposal, as advised by the Environmental Protection Authority;

Note: The current requirements of the Environmental Protection Authority are set out in: *Minimising Greenhouse Gas Emissions, Guidance for the Assessment of Environmental Factors, No. 12* published by the Environmental Protection Authority (October 2002). This document may be updated or replaced from time to time.

2. specific measures to minimise the total net “greenhouse gas” emissions and/or the “greenhouse gas” emissions per unit of product associated with the proposal using a combination of “no regrets” and “beyond no regrets” measures;

Note: The following definitions apply:

1. “no regrets” measures are those which can be implemented by a proponent and which are effectively cost-neutral.
  2. “beyond no regrets” measures are those which can be implemented by a proponent and which involve additional costs that are not expected to be recovered.
3. consideration of the implementation of “greenhouse gas” offset strategies;
  4. estimation of the “greenhouse gas” efficiency of the project (per unit of product and/or other agreed performance indicators) and comparison with the efficiencies of other comparable projects producing a similar product, both within Australia and overseas;
  5. implementation of thermal efficiency design and operating goals consistent with the Australian Greenhouse Office Technical Efficiency guidelines in design and operational management;
  6. actions for the monitoring, regular auditing and annual reporting of “greenhouse gas” emissions and emission reduction strategies;
  7. a target set by the proponent for the progressive reduction of total net “greenhouse gas” emissions and/or “greenhouse gas” emissions per unit of product and as a percentage of total emissions over time, and annual reporting of progress made in achieving this target. Consideration should be given to the use of renewable energy sources such as solar, wind or hydro power;

8. a program to achieve reduction in “greenhouse gas” emissions, consistent with the target referred to in (7) above;
9. entry, whether on a project-specific basis, company-wide arrangement or within an industrial grouping, as appropriate, into the Commonwealth Government’s “Greenhouse Challenge” voluntary cooperative agreement program.

Components of the agreement program include:

1. an inventory of emissions;
  2. opportunities for abating “greenhouse gas” emissions in the organisation;
  3. a “greenhouse gas” mitigation action plan;
  4. regular monitoring and reporting of performance; and
  5. independent performance verification.
10. Review of practices and available technology; and
  11. “Continuous improvement approach” so that advances in technology and potential operational improvements of plant performance are adopted.
- 6-2 The proponent shall implement the Greenhouse Gas Abatement Programme required by condition 6-1.
- 6-3 Prior to the commencement of construction, the proponent shall make the Greenhouse Gas Abatement Programme required by condition 6-1 publicly available.

## **7 Stack Emissions**

- 7-1 Prior to commencement of construction, the proponent shall prepare a Stack Emissions Management Plan, to ensure that best available practicable and efficient technologies are used to minimise total air emissions from the co-generation facility, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This Plan shall address:

1. specific measures to minimise total air emissions from the co-generation facility to meet emission limits consistent with best practicable technology and current industry standards;
  2. monitoring of air emissions, including nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs); and
  3. public reporting of air emissions and any complaints about air emissions.
- 7-2 The proponent shall implement the Stack Emissions Management Plan required by condition 7-1.

- 7-3 The proponent shall make the Stack Emissions Management Plan required by condition 7-1 publicly available.

### **Procedures**

1. Where a condition states “to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority”, the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.
2. The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.
3. Where a condition lists advisory bodies, it is expected that the proponent will obtain the advice of those listed as part of its compliance reporting to the Department of Environment.

### **Notes**

1. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.
2. 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*.
3. Within this statement, to “have in place” means to “prepare, document, implement and maintain for the duration of the proposal”.

Dr Judy Edwards MLA  
MINISTER FOR THE ENVIRONMENT; SCIENCE

19 OCT 2005

**The Proposal (Assessment No. 1584)**

The proposal is to construct and operate two natural gas-fired co-generation facilities, each with a nominal generation capacity of 120 megawatts electrical output and 210 megawatts of steam output on a site located at the Worsley alumina refinery, Shire of Collie (location shown in figures 1 and 2).

**Table 1 – Key Proposal Characteristics**

<b>Element</b>	<b>Description for each stage (i.e. x 2)</b>
Project Purpose	To supply steam to the Worsley alumina refinery and electricity to the south-west integrated system
Life of the Project	25 years (nominal)
Power Generating Capacity	120 megawatts (nominal)
<b>Fuel</b> Type Gas Transportation	natural gas Dampier to Bunbury Natural Gas Pipeline
<b>Plant Facilities</b> Gas turbine specifications  Heat recovery steam generator (HRSG)  Number of stacks Height of HRSG stack	1 × gas turbine of 120 megawatts nominal generating capacity fitted with dry low NO <sub>x</sub> burners  1 × HRSG with a capacity of 210 megawatts  one 55 metres
<b>Thermal Efficiency</b> Thermal Efficiency based on net higher heating value	approximately 77%
<b>Operation Hours</b>	24 hours per day, 365 days per year (with an availability of approximately 95%)
<b>Inputs</b> Natural Gas Process water	approximately 12.8 petajoules per annum approximately 0.5 gigalitres per annum, integrated with refinery water supply
<b>Outputs</b> Waste water	directed to existing refinery catchment lake
<b>Air Emissions</b> Carbon dioxide equivalent (CO <sub>2e</sub> ) Oxides of nitrogen (NO <sub>x</sub> ) Carbon monoxide (CO)	767 000 tonnes per annum 575 tonnes per annum 9.9 tonnes per annum

**Figures (attached)**

Figure 1 – Regional location

Figure 2 – Site layout

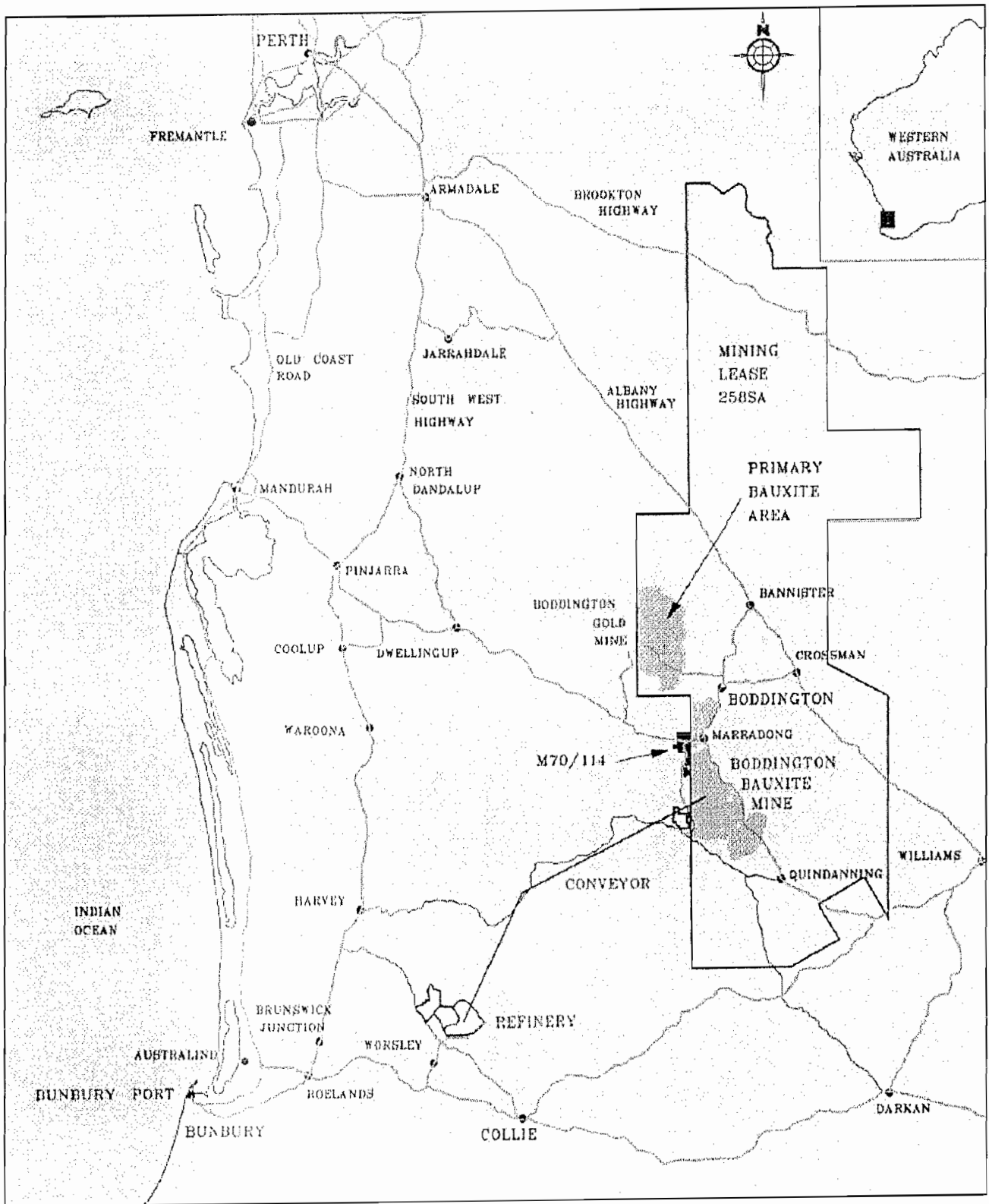


Figure 1: Regional location



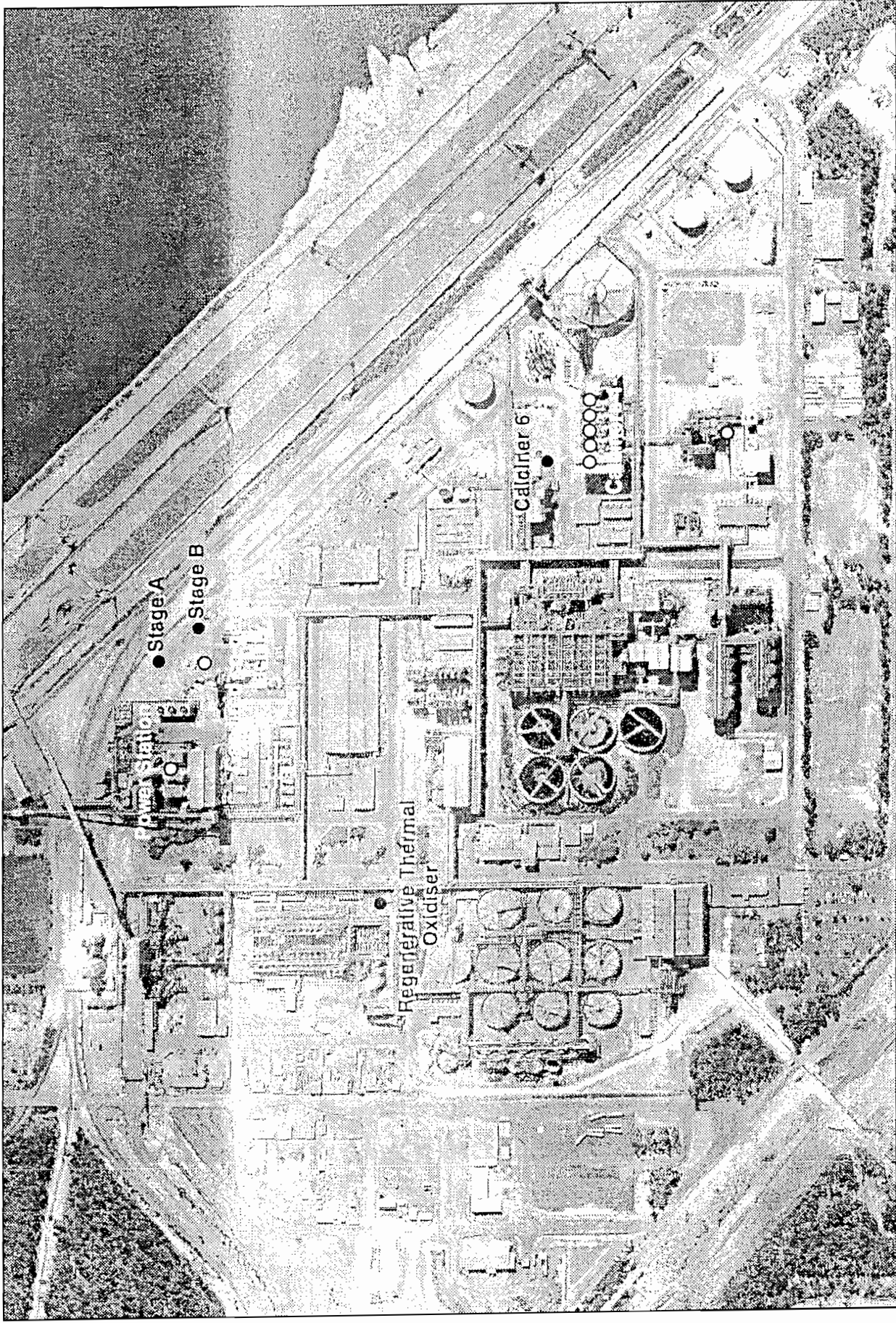


Figure 2: Site layout

PROPONENT'S ENVIRONMENTAL MANAGEMENT COMMITMENTS

August 2005

**GAS-FIRED CO-GENERATION FACILITY  
WORSLEY, SHIRE OF COLLIE**

(Assessment No. 1584)

Worsley Alumina Pty Ltd

## Schedule 2

### PROPONENT'S ENVIRONMENTAL MANAGEMENT COMMITMENTS GAS-FIRED CO-GENERATION FACILITY, WORSLEY, SHIRE OF COLLIE (Assessment No. 1584) - August 2005

**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	Air Quality	To comply with national standards.	Incorporate Best Practicable Technology in the gas co-generation facilities with the installation of low NO <sub>x</sub> burners of a standard equivalent to other Western Australian facilities, and as a minimum comply with national standards.	Prior to commissioning and during operation.	
2	Air Quality	To confirm modelling results.	Conduct monitoring of NO <sub>x</sub> and CO emissions.	During the commissioning phase.	
3	Air Quality	To include the operation of the gas co-generation facilities.	Update the Refinery Air Quality Management Plan.	Prior to commissioning and during operation.	
4	Greenhouse Gases	To include the gas co-generation facilities.	Update the Greenhouse Gas Management Plan (proposed for expansion).	Ongoing.	Australian Greenhouse Office