



MINISTER FOR THE ENVIRONMENT WESTERN

Ass # 984

Bull # 823

State # 423

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

**EXPANSION OF ALUMINA PRODUCTION FROM 2.0 TO 3.5 MILLION TONNES PER  
ANNUM AT WORSLEY REFINERY,  
AND ASSOCIATED BAUXITE MINING ACTIVITIES, BODDINGTON (1984)**

**WORSLEY ALUMINA PTY LTD**

This proposal may be implemented subject to the following 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, the proponent shall fulfil the commitments made in the Consultative Environmental Review and in response to issues raised following public submissions; provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.

The environmental management commitments (June 1996) were published in Environmental Protection Authority Bulletin 823 (Appendix 4) and a copy is attached.

**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.
- 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.

Published on

**2 JUL 1996**

### **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 Environmental Management Plan**

- 4-1 Prior to plant wet commissioning, the proponent shall formalize the environmental management commitments in an Environmental Management Plan to enable review of performance by the Environmental Management Liaison Group. (See procedures 4 to 6).

The requirements for reporting on the Environmental Management Plan may be combined with the proponent's existing reporting requirements to the State.

### **5 Decommissioning**

- 5-1 In line with commitments 100 to 104, 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.
- 5-2 To achieve the objectives of condition 5-1, at least six months prior to decommissioning, the proponent shall prepare a decommissioning and rehabilitation plan.
- 5-3 The proponent shall implement the plan required by condition 5-2.

### **6 Time Limit on Approval**

The environmental approval for the proposal is limited.

- 6-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the 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.

### **7 Compliance Auditing**

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

- 7-1 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 Where the proponent is required to provide reports to the Minister for the Environment, unless otherwise required, it will be adequate to incorporate such reports within those required under the Alumina Refinery (Worsley) Agreement Act 1973, and the Minister responsible for administering that Act will forward the relevant information to the Minister for the Environment.

### *Environmental Management Liaison Group*

The Environmental Management Liaison Group comprises representatives of state government agencies whose areas of responsibility are affected by the mining and refinery operations of the proponent.

- 4 The Environmental Management Liaison Group will continue to review the mining plans of the proponent and review the proponent's environmental performance in accordance with the Environmental Management Plan required by condition 4-1.
- 5 Where appropriate, the Environmental Management Liaison Group will advise the Minister for the Environment through the Minister for Resources Development on the proponent's compliance with the environmental conditions.
- 6 The Environmental Management Liaison Group will consult with the community on the proposed completion criteria and closure strategy, prior to finalisation.

### *Railway Transport Operations*

- 7 Westrail, in consultation with the users of its service, and in consultation with the Department of Environmental Protection, the Ministry for Planning and relevant local government authorities, will undertake a study into the current and future impacts of rail noise in the vicinity of its freight operations between Collie and Bunbury, between Wagerup and Bunbury, and around the Picton Marshalling Yards.

The study should include, but not be limited to:

- 1 identification of residences within the likely affected corridors around these areas;
- 2 identification of any land use zonings which may be incompatible with predicted noise levels, including potential residential developments within or adjacent to the corridors;
- 3 establishment of a model for prediction of noise emissions from freight operations, taking into account variables such as locomotive type, number and notch setting, and wagon speed and number;
- 4 adoption of a model for propagation of railway noise across the corridors;
- 5 consideration of accepted standards for noise emissions from freight operations; and
- 6 identification of appropriate ameliorative measures for rail operations and any residences for which such measures may be warranted.

- 8 Westrail should substantially complete the study and submit a report to the Environmental Protection Authority by 30 June 1998.

**Note**

- 1 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.

Hon Peter Foss QC MLC  
**MINISTER FOR THE ENVIRONMENT**

- 2 JUL 1996

# **Proponent's Environmental Management Commitments**

**June 1996**

**EXPANSION OF ALUMINA PRODUCTION FROM 2.0 TO 3.5  
MILLION TONNES PER ANNUM AT WORSLEY REFINERY,  
&  
ASSOCIATED BAUXITE MINING ACTIVITIES, BODDINGTON  
(984)**

**WORSLEY ALUMINA PTY LTD**

## ENVIRONMENTAL MANAGEMENT COMMITMENTS

| Topic<br>(section of<br>CER)                         | Objectives   | Proposed Management Commitments   | Phase (Timing)  | Key Agency**                                   |
|--|--|---|---|--|
| Performance Audit/Review                             |  |   |   |  |
| Environmental<br>Management<br>Approach<br><br>(5.1) | <ul style="list-style-type: none"> <li>To achieve excellence in environmental management.</li> </ul> | <ol style="list-style-type: none"> <li>Formalise Worsley's interaction with the Government expert panel (Environmental Management Liaison Group).</li> <li>Prepare environmental audit plans for the bauxite mine and refinery.</li> <li>Undertake regular internal audits of key processes.</li> <li>Prepare and submit annual environmental management reports to the State.</li> </ol> | <p>Commissioning (Expansion)</p> <p>Operational - ongoing operations</p> <p>Operational - commencing with expansion</p> <p>Operational - ongoing operations</p> | <p>DRD</p> <p>EMLG</p> <p>EMLG</p> <p>EMLG</p> |

## MINING OPERATIONS

| Topic<br>(section of<br>CER)                         | Objectives  | Proposed Management Commitments  | Phase* (Timing)  | Key Agency**   |
|--|---|--|--|--|
| Biophysical Environment                              |   |  |  |  |
| Conservation<br>of Flora and<br>Fauna<br><br>(5.2.1) | <ul style="list-style-type: none"> <li>To ensure that the biodiversity and sustainability of the eastern Darling Range forest ecosystems are maintained from adverse impacts of bauxite mining activities.</li> <li>To ensure that rare and endangered flora and fauna within the mining area are protected.</li> </ul> | <ol style="list-style-type: none"> <li>Undertake baseline flora and fauna surveys prior to mining in new areas.</li> <li>Regularly monitor the abundance and distribution of flora and fauna in forest adjacent to mined areas.</li> <li>Defer mining in areas of potentially high conservation values in the Primary Bauxite Area (PBA) until it can be shown that the biodiversity and sustainability of the ecosystem will not be adversely affected.</li> <li>Encourage recruitment of rare or priority flora and rare and endangered fauna into rehabilitated areas.</li> <li>Investigate the creation of a wildlife corridor linking the Saddleback and George forest blocks.</li> <li>Implement a feral animal and weed control program.</li> <li>Support recalcitrant plant species research applicable to Worsley Alumina's bauxite mining operations.</li> </ol> | <p>Operational - ongoing operations.</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations.</p> <p>Operational - ongoing operations</p> <p>Operational - before relinquishment to the State</p> <p>Operational - commencing with expansion</p> <p>Operational - ongoing operations</p> | <p>CALM (EMLG)</p> <p>EMLG</p> <p>EMLG</p> <p>EMLG</p> <p>EMLG</p> <p>CALM (Agric)</p> <p>EMLG</p> |

|  |   |   |  |  |
|--|---|---|--|--|
| Rehabilitation Management<br><br>(5.2.2)               | <ul style="list-style-type: none"> <li>To ensure that rehabilitation of mined areas in State Forest is timely, sustainable and meets completion criteria agreed by the State.</li> <li>To ensure that rehabilitation of mined areas on private property leaves the land in an environmentally stable and sustainable condition and meets the requirements of the private property owner.</li> </ul> | 12. Trial re-creation of fauna habitats in rehabilitation.<br>13. Monitor flora establishment and development by measurement of species richness, abundance and tree growth rates.<br>14. Work with CALM to further develop rehabilitation enhancement techniques (including direct seeding).<br>15. Revegetate State forest areas with seed collected from local provenance areas.<br>16. Minimise the time between clearing for mining and rehabilitation of areas that have high visual aesthetic values.<br>17. Use vegetation screening in areas of significant visual impact where practicable. | Operational - ongoing operations<br>Operational - ongoing operations<br><br>Operational - ongoing operations<br>Operational - ongoing operations<br>Operational - ongoing operations<br><br>Operational - ongoing operations | CALM (EMLG)<br>CALM (EMLG)<br><br>CALM<br>CALM (EMLG)<br>CALM (EMLG)<br><br>EMLG |
| Forest Disease Management<br><br>(5.2.3)               | <ul style="list-style-type: none"> <li>To minimise the risk of bauxite mining activities introducing or spreading jarrah dieback or other forest diseases into areas of State and private forest.</li> </ul>  | 18. Maintain a dieback disease management strategy and hygiene procedures.<br>19. Support research relevant to forest disease management and Worsley's operations.<br>20. Rehabilitate forest project areas affected by jarrah dieback.<br>21. Monitor the rate and spread of forest disease infections in the mining area.   | Operational - ongoing operations<br>Operational - ongoing operations<br>Operational - ongoing operations<br>Operational - ongoing operations   | CALM (EMLG)<br>CALM (EMLG)<br>CALM (EMLG)<br>CALM (EMLG)                         |
| Integration with CALM Forest Management<br><br>(5.2.4) | <ul style="list-style-type: none"> <li>To minimise the impacts of bauxite mining activities on other users of the State Forest, by integrating as far as practicable Worsley's activities with CALM's forest management.</li> </ul>   | 22. Work with the State to identify areas of ML 258SA outside the PBA with potentially high conservation value that can be precluded from mining without significant impact on the life of the project.<br>23. Work with CALM to implement the integrated fire management plan with particular emphasis on protection of rehabilitation.<br>24. Work with CALM to maximise the salvage of forest products prior to clearing.<br>25. Co-operate with the Agriculture Department, CALM and the local community to develop a fox control strategy in the Primary Bauxite Area (PBA).                     | Operational - ongoing operations<br><br>Operational - ongoing operations<br>Operational - ongoing operations<br>Operational - ongoing operations   | EMLG<br><br>CALM<br><br>CALM<br>CALM (Ag Dept)                                   |

| Pollution Potential                                     |   |   |  |   |
|---|---|---|--|---|
| Water Resource Management and Protection<br><br>(5.2.5) | <ul style="list-style-type: none"> <li>To ensure that environmental values of water resources are maintained from adverse impacts of bauxite mining activities.</li> </ul>                                | 26. Investigate alternative sources of water supply.<br>27. Investigate means of increasing the effective use of water for dust suppression.<br>28. Monitor regularly the conductivity in surface waters in areas adjacent to mining activities, groundwater levels in harnessed borefields and the health of the Tunnell Road heathland.<br>29. Investigate stored salt in the soil profile in the Marradong and Hotham North areas prior to mining.<br>30. Defer mining within the Hunt A Catchment until after 1998.   | Preconstruction (expansion)<br>Operational - ongoing operations<br><br>Operational - ongoing operations<br><br>Operational - ongoing operations<br>Operational - ongoing operations  | WAWA (EMLG)<br>DOME (EMLG)<br><br>EMLG<br><br>EMLG<br>EMLG  |
| Noise and Blast Vibration Management<br><br>(5.2.6)     | <ul style="list-style-type: none"> <li>To comply with statutory requirements so that the amenity of nearby residents is protected from noise impacts resulting from bauxite mining activities.</li> </ul> | 31. Amend mining operations as necessary to comply with noise regulations.<br>32. Predict sound levels for mining operations and routinely verify the output of the ENM model.<br>33. Continue with the outlined program of sound power reduction initiatives for mining equipment and fixed plant.<br>34. Plan mine development to facilitate the management of sound levels from mining operations.<br>35. Specify low sound power levels and minimum unfavourable sound characteristics as far as practicable when selecting new mining equipment and plant.<br>36. Monitor the air blast over pressure level of each blast at the most sensitive premises and report the findings to the DEP annually.<br>37. Investigate and identify corrective action when any blast creates air blast overpressure greater than 110 dB(lin) peak at a monitoring location.<br>38. Report to the DEP any blast that creates airblast overpressure greater than 120 dB(lin) peak.<br>39. Measure ground vibration levels when new areas are opened for mining.<br>40. Investigate complaints and take corrective action where required. | Operational - ongoing operations<br><br>Operational - ongoing operations<br>Operational - ongoing operations<br>Operational - commencing with expansion<br>Operational - commencing with expansion, Preconstruction (Expansion)<br>Operational - ongoing operations<br><br>Operational - ongoing operations<br><br>Operational - ongoing operations<br>Operational - commencing with expansion<br>Operational - ongoing operations | EMLG<br>DEP (EMLG)<br>DEP (EMLG)<br>EMLG<br>DOME (EMLG)<br>DEP (EMLG)<br>DEP (EMLG)<br>DEP (EMLG)<br>DEP (EMLG)<br>DEP (EMLG) |
| Dust Management<br><br>(5.2.7)                          | <ul style="list-style-type: none"> <li>To comply with statutory requirements so that the amenity of nearby residents is protected from dust impacts resulting from bauxite mining activities.</li> </ul>  | 41. Use water on haulroads and fixed plant to suppress dust.<br>42. Trial additives to increase the efficiency water as a dust suppressant.   | Operational - ongoing operations<br>Operational - ongoing operations   | DOME<br>DOME  |



|  |   |   |  |   |
|--|---|---|--|---|
| Waste Management<br><br>(5.2.9)                | <ul style="list-style-type: none"> <li>To reduce as far as practicable the generation of solid and liquid wastes resulting from bauxite mining activities.</li> <li>To dispose of waste in an environmentally acceptable manner.</li> </ul> | 47. Investigate where practicable alternatives for on-site re-use / re-cycling of waste oil.<br>48. Assist the Shire of Boddington to locate an additional landfill site to meet the future waste disposal needs of the local community and Worsley.  | Operational - ongoing operations<br><br>Operational - ongoing operations   | DEP<br><br>EMLG                                 |
| Social Surrounding                             |   |   |  |   |
| Control of Public Access and Safety<br>(5.2.8) | <ul style="list-style-type: none"> <li>To restrict access by the general public to the mine operating areas in accordance with safety requirements.</li> </ul>  | 43. Maintain perimeter security fencing and signposting and gate, or otherwise block-off forest tracks by arrangement with CALM.<br>44. Clear blasting areas and post sentries prior to and during blasting.<br>45. Seek State approval of mine and public road intersections and management arrangements.<br>46. Re-establish the forest road network after mining, in consultation with CALM. | Operational - ongoing operations<br><br>Operational - ongoing operations<br><br>Operational - ongoing operations<br><br>Operational - before relinquishment to the State | CALM (EMLG)<br><br>DOME<br><br>EMLG<br><br>CALM |

## OVERLAND BAUXITE CONVEYOR

| Topic<br>(section of CER)        | Objectives  | Proposed Management Commitments  | Phase* (Timing)  | Key Agency**                                     |
|----------------------------------|---|--|--|--|
| Biophysical Environment          |   |  |  |  |
| Forest Management<br><br>(5.3.1) | <ul style="list-style-type: none"> <li>To ensure operation of the overland conveyor has minimal impact on forest ecology.</li> <li>To minimise the risk of spreading jarrah dieback in forest areas adjacent to conveyor operations.</li> </ul> | 49. Continue implementation of the Overland Conveyor Forest Disease Hygiene Prescription to minimise the risk of spread of jarrah dieback.<br>50. Conduct periodic review of the Overland Conveyor Forest Disease Hygiene prescription in consultation with CALM.<br>51. Conduct regular inspection and monitoring of forest health within and adjacent to the overland conveyor corridor in conjunction with CALM.<br>52. Continue the annual CALM Interagency Agreement for Wildfire suppression.<br>53. Conduct periodic monitoring to measure the success of fauna habitat protection. | Operational - ongoing operations<br><br>Operational - ongoing operations<br><br>Operational - ongoing operations<br><br>Operational - ongoing operations<br><br>Operational - ongoing operations | CALM<br><br>CALM<br>CALM<br><br>CALM<br><br>EMLG |

| Pollution Potential             |   |  |  |                |
|---------------------------------|---|--|--|----------------|
| Noise Management<br><br>(5.3.2) | <ul style="list-style-type: none"> <li>To ensure noise emissions from the conveyor comply with statutory requirements.</li> </ul> | 54. Investigate where practicable mitigation measures to reduce noise emissions from the conveyor in the proximity to noise sensitive areas.<br><br>55. Monitor noise emissions from the overland conveyor to ensure compliance with the prescribed limit of 60 dB (A) as prescribed under the 1995 amendments to the Agreement Act limit. | Operational - ongoing operations<br><br>Operational - ongoing operations | DRD<br><br>DRD |

## REFINERY OPERATIONS

| Topic<br>(section of CER)            | Objectives  | Proposed Management Commitments  | Phase* (Timing)   | Key Agency**                                    |
|--------------------------------------|---|--|---|---|
| Pollution Potential                  |   |  |   |   |
| Atmospheric Emissions<br><br>(5.4.1) | <ul style="list-style-type: none"> <li>To comply with statutory requirements so that the ecological values of off-site areas and the amenity and health of nearby residents are protected from adverse atmospheric emissions from the refinery operations.</li> </ul> | 56. Monitor gases and particulate emissions from the powerhouse and calciner stacks.<br>57. Incorporate best practicable pollution suppression equipment on new plant which discharges to the atmosphere.<br>58. Monitor ground level concentrations of SO <sub>2</sub> and NO <sub>x</sub> at nearby residences to validate dispersion modelling.<br>59. Monitor meteorological conditions suitable for prediction of plume rise and dispersion.<br>60. Quantify emissions of volatile organic compounds from the liquor purification facility. | Operational - ongoing operations<br><br>Preconstruction (Expansion), Operational - ongoing operations<br><br>Operational - commencing with expansion<br><br>Operational - ongoing operations<br><br>Operational - commencing with expansion | DEP<br><br>DEP<br><br>DEP<br><br>DEP<br><br>DEP |

|  |   |   |   |   |
|--|---|---|---|---|
| <p>Water Resource Management and Protection</p> <p>(5.4.2)</p> | <ul style="list-style-type: none"> <li>To ensure that environmental values of ground water resources are maintained from adverse impacts of refinery operations and bauxite residue disposal.</li> </ul>  | <p>61. Monitor the quality of groundwater in the refinery lease area, within and downstream from the freshwater lake.</p> <p>62. Conduct periodic ecological monitoring of the ecosystem immediately downstream of the freshwater lake.</p> <p>63. Recover or treat any contaminated groundwater.</p> <p>64. Maintain a basal summer flow of approximately 35 m<sup>3</sup>/hr from the freshwater lake.</p> <p>65. Report monitoring results annually to the Government in accordance with provisions of the Agreement Act.</p> <p>66. Continue to implement the refinery lease water management system designed to separate, contain, and where practicable, reuse contaminated wastes.</p> <p>67. Implement spills management in consultation with relevant government agencies.</p> <p>68. Monitor comprehensively the condition of plant and equipment.</p> <p>69. Evaluate and periodically update Worsley's emergency response plan for hazardous materials.</p> | <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p>         | <p>WAWA</p> <p>EMLG</p> <p>DEP</p> <p>WAWA</p> <p>DRD</p> <p>WAWA (DEP)</p> <p>EMLG</p> <p>EMLG</p> <p>DOMÉ</p> |
| <p>Management of Bauxite Residue</p> <p>(5.4.3)</p>            | <ul style="list-style-type: none"> <li>To design, construct and operate the residue areas in a manner that maintains the integrity of the containment system.</li> <li>To maximise as far as practicable the extraction of caustic soda from the bauxite residue.</li> <li>To minimise, as far as practicable, impacts on State Forest resulting from construction activities.</li> <li>To manage the residue areas in an environmentally acceptable manner until they meet the requirements of a closure and rehabilitation strategy agreed with the State.</li> </ul> | <p>70. Monitor ambient dust throughout the refinery lease area and adjacent to the bauxite residue disposal areas.</p> <p>71. Minimise fugitive dust from the bauxite residue disposal areas.</p> <p>72. Develop a rehabilitation prescription for the bauxite residue disposal areas.</p> <p>73. Develop a long term management plan for the bauxite residue disposal areas which includes a closure strategy, in conjunction with relevant Government agencies.</p> <p>74. Continue to implement a system of quality control for construction of bauxite residue disposal areas.</p> <p>75. Continue to monitor underdrainage from the bauxite residue disposal areas.</p> <p>76. Monitor alternative uses of bauxite residue.</p>  | <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - before relinquishment to the State</p> <p>Operational - before relinquishment to the State</p> <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p> <p>Operational - before relinquishment to the State</p> | <p>DEP</p> <p>DEP</p> <p>EMLG</p> <p>EMLG</p> <p>WAWA</p> <p>WAWA</p> <p>EMLG</p>                               |
| <p>Hazard Management</p> <p>(5.4.4)</p>                        | <ul style="list-style-type: none"> <li>To minimise the risk of spillage of materials which cause harm to either the environment or personnel.</li> </ul>  | <p>77. Implement a comprehensive program of safety awareness and training for identification and prevention of hazards.</p> <p>78. Periodic review of the emergency response plan for hazardous material in accordance with the Explosives and Dangerous Goods Act.</p>   | <p>Operational - ongoing operations</p> <p>Operational - ongoing operations</p>   | <p>DOMÉ</p> <p>DOMÉ</p>   |

|   |  |   |  |  |
|---|--|---|--|--|
| Waste Management<br>(Other than bauxite residue)<br><br>(5.4.5) | <ul style="list-style-type: none"> <li>To reduce as much as practicable the generation of solid and liquid waste resulting from refinery operations.</li> <li>To dispose of wastes in an environmentally acceptable manner.</li> </ul> | 79. Continue the philosophy of waste minimisation.<br>80. Promote the reuse or recycling of wastes where practicable.<br>81. Operate the refinery sanitary landfill site in a manner that protects the values of surface and groundwaters.  | Operational - ongoing operations<br>Operational<br><br>Operational - ongoing operations  | EMLG<br>DEP<br>Dept of Health                          |
| Noise Management<br>(5.4.6)                                     | <ul style="list-style-type: none"> <li>To comply with statutory requirements so that the amenity of nearby residents is protected from noise impacts resulting from refinery operations.</li> </ul>                                    | 82. Conduct periodic acoustic assessment at nearest sensitive premises to the refinery to ensure continued compliance with statutory requirements.  | Operational - ongoing operations   | DEP  |
| Greenhouse Gas Management<br><br>(5.5)                          | <ul style="list-style-type: none"> <li>To reduce as much as practicable the net emission of greenhouse gases from project operations.</li> </ul>   | 83. Preserve greenhouse sinks on Joint Venturer-owned land.<br>84. Minimise burning of forest debris.<br>85. Remove all project halon-fixed flooding fire extinguishing systems.<br>86. Reafforest an area of Joint Venturer-owned land equivalent to any sustained increase in the open area of the mine.<br>87. Investigate the potential to improve energy efficiency of calciners, power generation and steam raising facilities.<br>88. Investigate where practicable alternative fuel sources for lower greenhouse emissions. | Operational - commencing with expansion<br><br>Operational - ongoing operations<br>Operational - commencing with expansion<br><br>Operational - before relinquishment to the State<br><br>Operational - commencing with expansion<br><br>Operational - commencing with expansion | EMLG<br>CALM<br>DOME (DEP)<br><br>EMLG<br>EMLG<br>EMLG |

## SOCIAL ENVIRONMENT AND MANAGEMENT

| Topic<br>(section of<br>CER)              | Objectives  | Proposed Management Commitments  | Phase* (Timing)  | Key Agency** |
|---|---|--|--|--------------|
| <b>Social Surroundings</b>                |   |  |  |              |
| Community Support<br>6                    | <ul style="list-style-type: none"> <li>To reasonably assist local communities to manage social impacts arising from the construction and operational stages of Worsley's expansion.</li> <li>Ensure that the local community is adequately consulted in relation to the expansion and any subsequent changes to the proposal.</li> <li>To reduce as much as practicable the impacts of road and rail resulting from the project on the affected communities.</li> </ul> | 89. If required construct new Joint Venture-owned accommodation in the town of Boddington.   | Operational - commencing with expansion                    | EMLG         |
| 6.1                                       |   | 90. Take into account as far as practicable the concerns of local residents when considering shift arrangements for expanded mining activities.  | Operational - commencing with expansion                    | EMLG         |
| 6.2.4, 6.3.4 & 6.3.5                      |   | 91. Participate in any appropriate Government co-ordinated consultative forum to address issues of workforce accommodation.  | Construction (expansion)                                   | EMLG         |
|   |   | 92. Provide construction camp accommodation near the refinery if alternate accommodation is unavailable in the region.   | Construction (expansion)                                   | EMLG         |
|   |   | 93. Liaise with the Shire of Harvey prior to and during the construction phase of the project on the impact of construction traffic on Mornington Road.  | Preconstruction (expansion), Construction (expansion)      | EMLG         |
|   |   | 94. Require contractors to access the Worsley Refinery via the Coalfield and Gastaldo Roads with vehicular traffic of 12 tonnes or more.   | Construction (expansion)                                   | EMLG         |
|   |   | 95. Participate in any Government co-ordinated working party to investigate and address issues of road safety and the upgrading of Mornington Road arising from the existing use and major regional construction projects. | Construction (expansion), Operational - ongoing operations | EMLG         |
|   |   | 96. If required, stagger start and finish times of construction and operations workforce shifts at the refinery.   | Construction (expansion)                                   | EMLG         |
|   |   | 97. Subject to periodic review, continue existing programs to support community groups, infrastructure and services.   | Operational - ongoing operations                           |              |
|   |   |  |  |              |
| Maintenance of Separation Distance<br>6.5 | <ul style="list-style-type: none"> <li>To maintain appropriate separation distances between project operations and sensitive areas in conjunction with relevant planning authorities.</li> </ul>  | 98. Retain Joint Venturer ownership of land within buffer areas.   | Operational - ongoing operations                           | EMLG         |
|   |   | 99. Pursue if required retention or establishment of buffer areas surrounding project locations through local town planning schemes and in consultation with the State.  | Operational - ongoing operations                           | EMLG         |
| Aboriginal Heritage<br>6.6                | <ul style="list-style-type: none"> <li>To comply with statutory requirements for the protection of aboriginal heritage.</li> </ul>  | 100. Ensure project operations do not adversely affect sites identified as having potential archaeological significance.   | Operational - ongoing operations                           | EMLG         |

## DECOMMISSIONING AND RETURN OF REHABILITATED AREAS

| Topic<br>(section of<br>CER)   | Objectives   | Proposed Management Commitments   | Phase* (Timing)  | Key Agency**                 |
|--|--|---|--|------------------------------|
| Biophysical Environment  |  |   |  |                              |
| Decommissioning and<br>Return of<br>Rehabilitated<br>Land<br><br>(7) | <ul style="list-style-type: none"> <li>To decommission the refinery and associated infrastructure in an environmentally acceptable manner that leaves no financial liability to the State and is in accordance with statutory requirements.</li> <li>To progressively return areas of rehabilitation to the State (or where appropriate - private) management</li> </ul> | 101. Prepare decommissioning plans in accordance with land use objectives.<br>102. Develop closure plans in consultation with key agencies.<br>103. Undertake regular review of decommissioning plans to take into account emerging issues and the findings of research.<br>104. Develop completion criteria for rehabilitation in consultation with CALM and other key agencies. | Operational - before relinquishment to the State<br>Operational - before relinquishment to the State<br>Operational - before relinquishment to the State<br>Operational - before relinquishment to the State | EMLG<br>EMLG<br>EMLG<br>EMLG |

\* Phase (Timing) Code:

1. Preconstruction (Expansion)
2. Construction (Expansion)
3. Commissioning (Expansion)
4. Operational
  - (a) ongoing operations
  - (b) commencing with expansion
  - (c) before relinquishment to the State
5. Post operational

\*\* Environmental Management Liaison Group (EMLG) comprises expert representatives of:

Department of Environmental Protection (DEP);  
 Department of Conservation and Land Management (CALM);  
 Water Authority of Western Australia (WAWA);  
 Department of Minerals & Energy (DOME); and  
 Department of Resource Development (DRD)

<sup>4</sup> The group may also include, by invitation, representatives of Department of Agriculture, Department of Health (Environment), Local Government, Main Road Department and other representatives as may be required.

## ADDITIONAL COMMITMENTS

105. Worsley will individually assess any unlogged areas in the Saddleback Timber Reserve in relation to mine planning with the view to minimising any unavoidable disturbance.
106. Worsley will set inhouse targets (particularly in regard to completion criteria) as appropriate to facilitate the achievement of objectives in consultation with EMLG.
107. Worsley is committed to applying the environmental strategies to meet the environmental objectives, as described in the CER.
108. Worsley will monitor and audit its performance in meeting the environmental objectives.
109. Worsley will advise EMLG if any objective is not being met, and is committed to make appropriate changes to environmental management strategies, taking into account advice from EMLG.