



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

PROPOSAL: SYNTHETIC RUTILE PLANT, MUCHEA
(169/967)

CURRENT PROPONENT: TIWEST JOINT VENTURE

CONDITIONS SET ON: 27 FEBRUARY 1989

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

1 Proponent Commitments

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

- 1-1 In implementing the proposal, including the increase in production documented in October 1995, the proponent shall fulfil the relevant environmental management commitments made in connection with modifications described in the document "Synthetic Rutile Plant at Chandala, Production Debottlenecking to 200 000 tonnes per annum" (October 1995) and reported on in Environmental Protection Authority Bulletin 799, in the Public Environmental Report (1988), and in subsequent documents and listed in Environmental Protection Authority Bulletin 369 as Appendix 3, 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 (December 1995) were published in Environmental Protection Authority Bulletin 799 (Appendix 7) 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, including the increase in production rate/capacity to 200 000 tonnes per annum, 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.

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- 2-2 Where, in the course of the detailed implementation referred to in condition 2-1, the proponent seeks to change the designs, specifications, plans or other technical material submitted to the Environmental Protection Authority in any way that the Minister for the Environment determines, on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3 Proponent

These conditions legally apply to the nominated proponent.

- 3-1 No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

4 Groundwater Extraction

- 4-1 Prior to the commencement of groundwater extraction, the proponent shall include in the Environmental Management Programme (required by condition 13-1) specific proposals for the protection of the groundwater resource and provision for the protection of wetlands and native vegetation in the area, to the requirements of the Department of Environmental Protection on advice of the Water and Rivers Commission.

5 Dieback Fungus

- 5-1 The proponent shall undertake reasonable measures to prevent the introduction of the dieback fungus *Phytophthora cinnamomi* into the borefield area or along the pipeline and access route.
- 5-2 To achieve the objective of condition 5-1, prior to construction of the borefield, the proponent shall prepare a dieback management programme, to the requirements of the Department of Environmental Protection on advice of the Department of Conservation and Land Management.
- 5-3 Prior to construction of the borefield, the proponent shall implement the dieback management programme required by condition 5-2, to the requirements of the Department of Environmental Protection on advice of the Department of Conservation and Land Management.

6 Drainage and Wastewater Disposal

- 6-1 The proponent shall prepare in stages the following plans:

- 1 A detailed drainage plan for the site; and
- 2 Design plans for the construction of the wastewater disposal system,

to the requirements of the Department of Environmental Protection on advice of the Swan River Trust and the Water and Rivers Commission.

- 6-2 The proponent shall implement the plans required by condition 6-1, to the requirements of the Department of Environmental Protection on advice of the Swan River Trust and the Water and Rivers Commission.

7 Landscaping

7-1 Prior to construction, the proponent shall prepare a detailed landscaping and planting programme designed to :

- 1 Screen the plant from neighbouring properties and roads;
- 2 Lower the water table on the site; and
- 3 Improve the fringing river vegetation.

7-2 The proponent shall implement the landscaping and planting programme required by condition 7-1.

8 Dust

8-1 The proponent shall minimise the wind-blown dust nuisance from the plant and prevent spillage of residue onto roads during transport of residue back to the mine site.

8-2 Prior to commissioning, the proponent shall prepare a plan to achieve the objectives of condition 8-1.

8-3 Prior to commissioning, the proponent shall implement the plan required by condition 8-2.

9 Noise

9-1 The proponent shall minimise noise impacts during construction and operation of the plant.

9-2 Subject to conditions 9-3 and 9-4, and exemption under the Noise Abatement (Neighbourhood Annoyance) Regulations 1979, the proponent shall manage and operate the premises such that the noise emissions from the premises do not cause or contribute to noise levels in excess of:

- (1) 50 dB(A) Slow between 0700 hours and 1900 hours Monday to Saturday inclusive;
- (2) 45 dB(A) Slow between 1900 hours and 2200 hours Monday to Saturday inclusive;
- (3) 45 dB(A) Slow between 0700 hours and 2200 hours Sundays and Public Holidays; and
- (4) 40 dB(A) Slow between 2200 hours and 0700 hours always;

when measured:

- (1) at any point on or adjacent to other premises not occupied by the licensee and used for residential or other noise-sensitive purposes; and
- (2) at a height between 1.2 metres and 1.5 metres above ground level and greater than 3.5 metres from any reflecting surface other than the ground.

9-3 Where the combined level of the noise emissions from the premises and the normal ambient noise exceeds the levels specified in condition 9-2, this condition shall be considered to be contravened only when the following criteria are also met at the measurement point:

- (1) The noise emissions from the premises are audible to an Inspector appointed under Section 88 of the Environmental Protection Act 1986; and
- (2) The noise emissions from the premises are identifiable by an Inspector, appointed under Section 88 of the Environmental Protection Act 1986, as emanating from the premises.

9-4 The proponent shall conduct operations such that noise emissions do not cause unacceptable annoyance due to tonal or impulsive components. These characteristics will be assessed by an Inspector appointed under Section 88 of the Environmental Protection Act 1986.

9-5 The proponent shall conduct noise surveys (including baseline measurements) and assessments (including the impact of tonal noise) in consultation with the Department of Environmental Protection.

9-6 The proponent shall manage traffic noise to protect the amenity of residences by ensuring that heavy construction traffic related to deliveries and commercial vehicle movements are limited to between 0700 hours and 1800 hours on Monday to Friday inclusive.

9-7 Within three months of the commissioning of the modified plant permitting the increase in production rate/capacity to 200,000 tonnes per annum, the proponent shall provide a report to the Minister for the Environment detailing measurements and assessments made to confirm that compliance with conditions 9-2, 9-3 and 9-4 is being achieved, and that the noise levels do not increase above the levels prior to the commissioning of the modifications.

9-8 The proponent shall subsequently conduct operations in a manner consistent with the report required by condition 9-7.

10 Chandala Brook Crossing

10-1 The proponent shall design the bridges crossing the Chandala Brook to minimise disruption to the banks of the Brook, to the requirements of the Department of Environmental Protection on advice of the Swan River Trust.

11 Brand Highway Entry

11-1 In addition to any Main Roads of Western Australia requirements, the proponent shall design the entry to the Brand Highway so as to facilitate the containment and recovery of any spill which may occur.

12 Spill Contingency Plans

12-1 Prior to commissioning, the proponent shall prepare contingency plans for spills occurring within and outside the plant boundary, to the requirements of the Department of Environmental Protection on advice of the Department of Minerals and Energy.

13 Environmental Management Programme

- 13-1 The proponent shall prepare in stages an Environmental Management Programme which addresses all aspects of environmental monitoring and management associated with the plant.

This programme shall include, but not be limited to the following:

- 1 monitoring for noise emissions;
- 2 monitoring for air emissions (particulates, including fugitive dust emissions, gases and odours);
- 3 surface and ground water monitoring; and
- 4 detailed management procedures for disposal of liquid (waste ponds) and solid wastes.

The programme shall also include submission of annual and comprehensive triennial reports to the Department of Environmental Protection.

- 13-2 The proponent shall implement the Environmental Management Programme required by condition 13-1.

14 Time Limit on Approval

The environmental approval for the proposal is limited.

- 14-1 If the proponent has not substantially commenced the modified project within five years of the date of this statement, then the approval to implement the modified proposal shall lapse and be void. The Minister for the Environment shall determine any question as to whether the modified project has been substantially commenced.

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

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

15 Decommissioning

- 15-1 The proponent shall achieve the satisfactory decommissioning of the project, removal of the plant and installations and rehabilitation of the site and its environs.

- 15-2 At least six months prior to decommissioning, the proponent shall prepare a decommissioning and rehabilitation plan to achieve the objectives of condition 15-1.

- 15-3 The proponent shall implement the plan required by condition 15-2.

16 Compliance Auditing

To help determine environmental performance, periodic reports on progress in implementation of the proposal are required.

- 16-1 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.

Note

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

- 4 APR 1996

Proponent's Environmental Management Commitments

December 1995

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(169/967)**

TIWEST JOINT VENTURE

N.B. Numbers in brackets are the original commitment numbers in the Department of Environmental Protection's Audit Table of 27 November 1995.

Environmental Management Programme/Plan (EMP)

1. Within three months of approval of the 200,000 tpa debottlenecking project, Tiwest will submit a revised Environmental Management Plan (EMP) to the Minister for the Environment. The programme will include management procedures for noise and air emissions (particulates including fugitive dust emissions, gases and odours), surface and ground water monitoring, and disposal of liquid (waste ponds) and solid wastes, and monitoring where appropriate.
2. Tiwest will implement the EMP for the Chandala plant site, and will revise the EMP as necessary, in consultation with the Department of Environmental Protection (DEP).

Radiation Management Plan (RMP)

3. Within three months of approval of the 200,000 tpa project, Tiwest will revise the existing Radiation Management Plan (RMP) to the requirements of the Radiological Council of WA, Department of Minerals and Energy and the DEP.
4. In the revised RMP, Tiwest will include an inspection schedule to check for build-up of radionuclides in pipes, tanks, filters etc.
5. Tiwest will implement the RMP for the Chandala Plant site and will revise the RMP as necessary in consultation with the DEP, on advice from the Department of Minerals and Energy and the Radiological Council of WA.

Noise

6. Tiwest will continue with its noise monitoring programme and a programme of continuous improvement to reduce plant noise levels, in consultation with the DEP. The planned activities and results of these programmes will be reported in the annual and triennial reports.
7. Tiwest will conduct a survey of noise emissions from the Chandala site following the debottlenecking project, and will ensure that noise emission levels from the site do not increase as a result of the project, in consultation with the DEP.
8. Tiwest will ensure that all the measures stated and assumptions made in Appendix E of the S46 Public Review Document (October 1995) are appropriately implemented.

Atmospheric Emissions (gases, particulates and odours)

9. Tiwest will continue to monitor the atmospheric conditions of the Muchea area for temperature, humidity, rainfall, evaporation, wind speed and wind direction, in accordance with the Meteorological Monitoring Plan as approved by the DEP (59:P2.1:5).
10. In the event of a process upset, Tiwest will undertake remedial action, as outlined in the EMP to the requirements of the DEP (59:P4.1:2).
11. The approved system of waste gas incineration and associated scrubbing equipment will be operated and maintained to reduce emissions of airborne contamination from the site to the requirements of the DEP.

Surface and ground water monitoring

12. Tiwest will include bicarbonate analysis in the existing surface and ground water monitoring programme at Chandala to enable the calculation of Total Dissolved Solids (TDS).

Liquid wastes

13. Tiwest will monitor the neutralisation of the acid effluent stream routinely prior to disposal of the evaporation pond, to the requirements of DEP. Measurements of water quality parameters will include pH, TDS, and select samples for specific contaminants (59:P5.2:3).
14. Tiwest will monitor stormwater runoff quality routinely to determine if any water quality changes have occurred in passing through the plant site, to the requirements of the DEP (59:P5.2:4).

Waste ponds

15. Tiwest will monitor the pond underdrain system routinely, in conjunction with shallow ground water monitoring, to differentiate the pond liquors from the underlying ground water, and monitor the quality of effluent stored within the iron oxide ponds for routine pond management to the requirements of DEP (59:P5.2:6).
16. Tiwest will construct evaporation ponds, to be underlain with a collector pipe network to intercept any leakage through the liner to the requirements of DEP (59:P5.2:5).

Management of Site Discharge

17. Tiwest will implement the approved Contingency Programme for the recovery of polluted ground water and the containment of chemical spills to the requirements of DEP (59:P5.3:8).

Solid wastes

18. Tiwest will continue with research into productive uses of the plant solid wastes, in conjunction with other synthetic rutile producers in WA, University of WA and Murdoch University in consultation with the DEP (59:P4.3:2).
19. Tiwest will dispose of synthetic rutile solid waste at the Cooljarloo mine site, as detailed in the approved Rehabilitation plan (refer Cooljarloo Mineral Sands Project ERMP) to the requirements of DEP (59:P4.3:1)
20. Tiwest will continue the transport and disposal methods for the plant solid wastes as approved by the DEP and Department of Minerals and Energy.

Site Hydrology Monitoring

21. Following commencement of plant operations, Tiwest will determine site hydrology changes that have occurred during plant construction, to the requirements of DEP (59:P5.2:9).
22. Following the commencement of plant operations, Tiwest will monitor water quality and flows of Chandala Brook as detailed in the approved plan, to the requirements of the DEP (59:P5.2:11).
23. Tiwest will report monitoring results in conjunction with all other hydrological monitoring data as required by EPA, to the requirements of DEP (59:P5.2:12).

24. Tiwest will implement contingency plans so as to recover or correct detrimental changes in water quality, to the requirements of the DEP (59:P5.2:13).
25. Tiwest will construct a "cutoff" drain so as to stop any surface water flows entering the plant site by diverting water to Chandala Brook, to the requirements of DEP (59:P5.2:14).
26. Tiwest will monitor redirected water (in P 5.2:14) including routine sampling and chemical analysis, and report results in conjunction with all other hydrological monitoring data as required by EPA, to the requirements of DEP (59:P5.2:15).

Water consumption

27. Tiwest will minimise water consumption as appropriate, including incorporating water recycle loops, to the requirements of the DEP (59:P4.2:1)

Aboriginal sites

28. Tiwest will protect aboriginal sites of significance by maintaining fencing and declaration of out of bounds areas (59:P3.1:2).