

**Sodium Cyanide Plant Debottlenecking  
Australian Gold Reagents Pty Ltd**

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**Change to condition relating to the  
Kwinana Integrated Emergency Management System**

**Report and Recommendations of the  
Environmental Protection Authority**

**Environmental Protection Authority  
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# **Change to condition relating to the Kwinana Integrated Emergency Management System**

Pursuant to Section 46(1) of the Environmental Protection Act, the Minister for the Environment has requested the Environmental Protection Authority to inquire into and report on a change to Condition 5 of the Ministerial Statement, "that the proposal may be implemented" (Appendix 1). This statement refers to the timing of the debottlenecking of the existing plant (stage 1) and the approved, but as yet unbuilt, duplicate sodium cyanide plant (stage 2).

The Environmental Protection Authority has held, and does hold, the view that it is environmentally acceptable to "debottleneck" stage 1 of Australian Gold Reagent's sodium cyanide plant at Kwinana, without further constraint associated with the Kwinana Integrated Emergency Management System.

## **Recommendation**

Accordingly the Environmental Protection Authority recommends the following words be added to the end of Ministerial Condition 5:

**"The debottlenecking of the stage 1 of Australian Gold Reagent's Sodium Cyanide Plant at Kwinana from 15,000 tonnes per annum to 20,000 tonnes per annum sodium cyanide is not constrained by this condition".**

## **Appendix 1**



WESTERN AUSTRALIA  
MINISTER FOR ENVIRONMENT

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

SODIUM CYANIDE (LIQUID) PLANT-EXPANSION TO 40 000 tpa (DEBOTTLENECKING),  
KWINANA

This proposal may be implemented subject to the following conditions:

1. The proponent shall adhere to the proposal as assessed by the Environmental Protection Authority and shall fulfil the commitments made on 28 March 1990 (copy of commitments attached) and shall adhere to the assumptions made in the risk assessments.
2. The proponent shall prepare and subsequently implement a comprehensive hazard identification and risk management programme in stages, to the satisfaction of the Minister for the Environment on advice from the Environmental Protection Authority and the Department of Mines.

This programme shall include the following:

- (1) hazard and operability studies (HAZOP) of the process units, to be completed and submitted before mechanical construction commences;
  - (2) safety engineering design, during the design process;
  - (3) quantified risk assessment, prior to commissioning;
  - (4) implementation systems, prior to commissioning; and
  - (5) safety reviews during the life of the plant at intervals to be determined by the Environmental Protection Authority.
3. The proponent shall:
    - (1) maintain the process equipment, instrumentation and alarm systems consistent with the safety and reliability assessments of the plant; and

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- (2) install very high integrity instrumentation for the control of the plant and for the detection of and response to any unplanned releases;

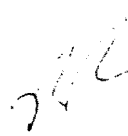
to the satisfaction of the Minister for the Environment, following advice from the Environmental Protection Authority and the Department of Mines.

4. Prior to construction of the expansion, the proponent shall revise the present site emergency plan to the satisfaction of the Environmental Protection Authority to cover the proposed expansion. The plan shall also meet the requirements of the Kwinana Integrated Emergency Management System (KIEMS).
5. No approval or licence to commence the expanded operations which will increase production from 30 000 to 40 000 tpa shall be issued by any statutory authority (nor shall the proponent commence these expanded operations beyond 30 000 tpa) until the key emergency response provisions of the Kwinana Integrated Emergency Management System are in place to the satisfaction of the Minister for the Environment on advice from the Environmental Protection Authority.
6. The proponent shall revise the previous construction and operational stage management plans to cover the proposed expansion. Each revised plan shall be submitted to, and shall be to the satisfaction of the Environmental Protection Authority following advice of the Department of Mines, before that stage of the development commences. The plans shall include the following:
  - (1) management of stormwater run-off;
  - (2) emergency response for site workers in the case of plant failure;
  - (3) storage and bunding requirements of additional sodium cyanide storage; and
  - (4) storage requirements for additional ammonia.

The proponent shall implement the approved plans to the satisfaction of the Environmental Protection Authority.

7. Prior to commissioning the expanded plant, the proponent shall revise, to the satisfaction of the Environmental Protection Authority, the present wastewater and solid waste management plan to take into account the additional effluent resulting from expansion of the plant.
8. The proponent shall install in the ammonia pipeline, remotely operated, fast action safety valves which can isolate the plants from each other and from the pipeline, to the satisfaction of the Environmental Protection Authority.
9. The proponent shall be responsible for decommissioning and removal of the plant and installations and rehabilitating the site and its environs to the satisfaction of the Environmental Protection Authority. At least six months prior to decommissioning, the proponent shall prepare and subsequently implement a decommissioning and rehabilitation plan to the satisfaction of the Environmental Protection Authority.

10. 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.

  
Bob Pearce, MLA  
MINISTER FOR THE ENVIRONMENT

4 JAN 1995



## SODIUM CYANIDE PLANT - EXPANSION TO 40 000 tpa (DEBOTTLENECKING)

### SUMMARY OF MANAGEMENT COMMITMENTS

The commitments which the proponent has made to environmental management during the design, construction and operation of the expanded facilities are as follows:

1. Prior to implementing any modifications to the design of the existing plant, the following safety checks will be undertaken:
  - (1) referral of the proposed modification to the process licensor, Roehm GmbH;
  - (2) liaison with the risk consultant on the proposed changes if they are likely to affect the risk analysis; and
  - (3) HAZOP analysis of the proposed modifications to the plant design.
2. Construction of the proposed expansion will be undertaken in accordance with a Construction Stage Management Report similar to that prepared for the existing plant, but recognising the potential hazards of the existing plant, together with relevant conditions imposed by the Environmental Protection Authority.
3. All construction materials and practices will be in accordance with the relevant Australian codes and international standards where appropriate.
4. The plant design will ensure that emissions of nitrogen oxides during normal operating conditions will be within the National Health and Medical Research Council (NH&MRC) recommended guidelines and will also comply with guidelines adopted by the Victorian Environment Protection Authority.
5. Safety features incorporated in the existing plant will be incorporated in the expanded facilities.
6. Wastewater from the plant will be managed according to the wastewater management strategy approved by the Environmental Protection Authority for the existing plant.
7. The process and storage areas will be sealed and banded so that any washings, contaminated stormwater run-off or spills will be collected and directed to the wastewater treatment plant sump, and analysed and treated prior to disposal. Any discharge of treated wastewater into Cockburn Sound will comply with the criteria specified in Bulletin No. 103 or the terms of the Environmental Protection Authority licence.
8. Approval for any additional storage of sodium cyanide will be sought from the Chief Inspector, Explosives and Dangerous Goods, Department of Mines.
9. A fire protection system will be incorporated in the expanded facilities in accordance with the requirements of the plant design and the Western Australian Fire Brigades Board. CSBP works personnel will be trained in the appropriate fire-fighting techniques. In addition to the fire-fighting capability of CSBP's Kwinana works, the fire-fighting co-operative established by the industrial operators in the Kwinana district will be available for emergency assistance.

10. All employees will be trained in the safe work practices and emergency procedures appropriate to the operation of the plant and handling of all associated materials. The management structure for the expanded facilities will incorporate at least two tiers of personnel technically qualified to manage hazardous chemical operations.
11. On-site emergency facilities at CSBP's Kwinana works will continue to include a dedicated emergency response vehicle, fire tender and an ambulance at all times, and an occupational health sister will be in attendance during normal working hours.
12. A detailed operating manual has been prepared for the existing plant from information supplied by the licensor, covering all process work, including start-up, shut-down, plant testing, inspection and emergency action. The procedures manual will be amended as necessary to include the expanded facilities.
13. The proponent will arrange for observers from the licensor to be at the plant during commissioning of the expanded facilities if it is deemed necessary by the licensor and the proponent.
14. The expanded facilities and any interconnections to the existing plant will be subject to a full HAZOP study and follow-up prior to commissioning.
15. Stocks of neutralizing agent (ferrous sulphate) are located along the transport routes at agreed locations. They will be inspected regularly to ensure that they are kept in good order.
16. Emergency response practice sessions will take place on a basis agreed with the relevant authorities.
17. The plant operator will maintain a dedicated emergency response vehicle at the Kwinana works and this will be available to service any off-site incident involving the transport of sodium cyanide.
18. Upon commissioning, monitoring of the existing plant will be undertaken in accordance with a comprehensive Environmental Monitoring and Management Programme, and the proposed expansion will be incorporated into this Environmental Monitoring and Management Programme to the satisfaction of the Environmental Protection Authority.
19. Liaison with local Shires, the Environmental Protection Authority, the Department of Mines, Westrail and counter-disaster groups will occur as appropriate in regards to proposed changes to the agreed transport routes or the addition of new market areas.
20. The proponent will prepare a Total Hazard Control Plan to the satisfaction of the Chief Inspector, Explosives and Dangerous Goods, Department of Mines, for the sodium cyanide plant and the expanded facilities at Kwinana.