# Chemical batching and packaging plant, Pinjarra

Napier Road, Pinjarra

Rhone-Poulenc Chimie Australia Pty Ltd

Report and recommendation of the
Environmental Protection Authority

Environmental Protection Authority
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# Summary and recommendation

Rhone-Poulenc Chimie Australia Pty Ltd (Rhone-Poulenc), a wholly-owned subsidiary of the French company Rhone-Poulenc Chimie, operates a Gallium Plant at Pinjarra, 88km south of Perth. The Gallium Plant site has been developed on a 20 ha area within its 500 ha property. Recently, the plant was put on care and maintenance due to an over-supply of gallium on the world market. The company proposes to use a small portion of the site to establish a chemical batching and packaging plant in which it has extensive operating experience in the eastern states.

The batching plant will formulate a range of polymers and herbicides currently being formulated at other Rhone-Poulenc sites in Queensland and New South Wales.

A Consultative Environmental Review (CER) was referred to the Environmental Protection Authority in August 1990. The Authority released the CER for public comment beginning on 1 September 1990 and ending on the 29 September 1990. The proponent discussed the project with representatives of the Shire of Murray and circulated the CER to surrounding landowners and other interested persons. Additionally, the proponent offered to meet any interested persons if requested.

The Authority has assessed the potential environmental impacts of the proposal described in the CER, and utilizing additional information supplied by the proponent, the public and Government agencies.

In consultation with the Authority's officers the proponent has developed a comprehensive list of commitments covering the environmental issues raised during the assessment (Appendix 1).

Whilst there is no potential major environmental problem with this proposal, issues such as integrity of transport, containment and collection of spillage and wastewater, evaporation pond management and monitoring, and storage of raw materials and products will need to be managed carefully. Other issues such as dust, noise and odour would need also to be managed properly.

As the proposal is to be located on a site designed with high environmental integrity including state-of-the-art bunding, sealed surfaces and evaporation ponds, the Authority considers that it is highly unlikely that an adverse environmental impact will occur due to this proposal.

Given the Ministerial Conditions already set on the proponent for the Gallium Plant operation, managing and monitoring of the evaporation pond and monitoring the groundwater beneath, it is extremely unlikely that leakage would take place into the surrounding environment if the pond was used to contain a spillage.

The Authority considers the project to be environmentally acceptable subject to the proponent being required to fulfil commitments given both in the CER and in responses to subsequent questions raised during the public review.

## Recommendation 1

**The Environmental Protection Authority concludes that the proposal, as described in the Consultative Environmental Review and in the proponent's responses to questions raised resulting from public review, is environmentally acceptable and recommends that the proposal could proceed subject to the commitments given by the proponent in Appendix 1 of this Report which address the important environmental impacts, including:**

- **transport;**
- **construction and management of a fully integrated**
- **spillage and wastewater system;**
- **solid waste disposal;**
- **noise and dust control;**
- **construction of the plant;**
- **fire security;**

- **monitoring;**
- **remedial action if waste management procedures fail;**
- **rehabilitation;**
- **decommissioning;**
- **reporting to EPA; and**
- **transfer of ownership.**

The Authority notes that, during the final design and works approval stages it will give particular attention to the size and construction of the collection sump to ensure that every effort is made to contain and recycle spillage if it were to occur.

The Authority notes also that during the detailed implementation of proposals, it is often necessary or desirable to make minor and non-substantial changes to the design and specification which have been examined as part of the Authority's assessment. The Authority believes that subsequent statutory approvals for this proposal could make provision for such changes, where it can be shown that the changes are not likely to have a significant effect on the environment.

The Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Authority.

# 1. Introduction

Rhone-Poulenc Chimie Australia Pty Ltd (Rhone-Poulenc), a wholly-owned subsidiary of the French company Rhone-Poulenc Chimie, operates a Gallium Plant at Pinjarra, 88km south of Perth (Figure 1). The Gallium Plant site has been developed on a 20 ha area within its 500 ha property (Figure 2). Recently, the plant was put on care and maintenance due to an over supply of gallium on the world market. The company proposes to use a small portion of the site to establish a chemical batching and packaging plant which it has extensive experience in operating in the eastern states.

Rhone-Poulenc, under its subsidiary name Bevaloid Australia Pty Ltd formulates a number of silicone, acrylic and other polymers at Brookvale, Sydney whilst its other subsidiary Rhone-Poulenc Rural, formulates a number of insecticides and herbicides at Pinkenba, Queensland. Due to market expansion, lack of expansion facilities at the above sites and advantages in transport costs when moving products from Western Australia to the eastern states and Asia, the proponent has proposed to establish this facility in Western Australia. Additionally, this plant would continue to serve the herbicide market in the southern regions of Australia.

The proposed site was chosen as market growth and existing site constraints in the eastern states require that further expansion be undertaken at a new site. Additionally, the environmental integrity of the gallium plant is well established and meets all government regulations.

The proponent referred the Consultative Environmental Review (CER) to the Environmental Protection Authority for environmental assessment in August 1990. The Authority released the CER for public comment beginning on 1 September 1990 and ending on the 29 September 1990. The proponent made a representative available for discussion with all interested parties including surrounding landowners.

# 2. Description of proposal

## 2.1 Location

Figure 3 shows the existing site and the area to be used for the proposal. No further development of the Rhone-Poulenc property would be necessary. The undeveloped area will continue to be farmed with approximately 200 hectares dedicated to a Department of Conservation and Land Management hardwood plantation. No additional roadworks, stormwater drainage or effluent storages will be required. The properties adjacent to the Rhone-Poulenc property are rural properties. The nearest private residence is approximately 600 metres away from the plant.

## 2.2 Description of process

### 2.2.1 Transport

Part of the overall proposal is to transport raw materials to the plant and products to the consumers. Due to a wide market distribution network, transport routes will include many roads to various grain growing areas. However the most utilised roads in the vicinity of the plant will be South West Highway, Pinjarra Road, Williams Road and Napier Road. Raw materials (3,500 tonnes per annum (tpa)) will be transported mainly on these roads. Other manufacturers and distributors use similar routes and distribution systems.

Raw materials are fully listed in the CER. The products (4,500 tpa.) are blends of these materials and have proprietary names such as Bevaloid 225, Agritox, Embutox, etc. Except for isoproturon Rhone-Poulenc has been marketing the products in WA and other states for many years. Additionally, other chemical companies such as Nufarm, ICI and Hoechst market and formulate similar products in WA Davison Chemicals formulates and sells a similar range of the herbicide products from Pinjarra.

The Department of Mines is responsible for implementing the Explosives and Dangerous Goods Act. Rhone-Poulenc has stated that it will continue to comply with all these regulations.

The company will fully comply with the code for the transport of dangerous goods. Under this code all vehicles will carry hazard identification which will enable emergency response groups such as the Fire

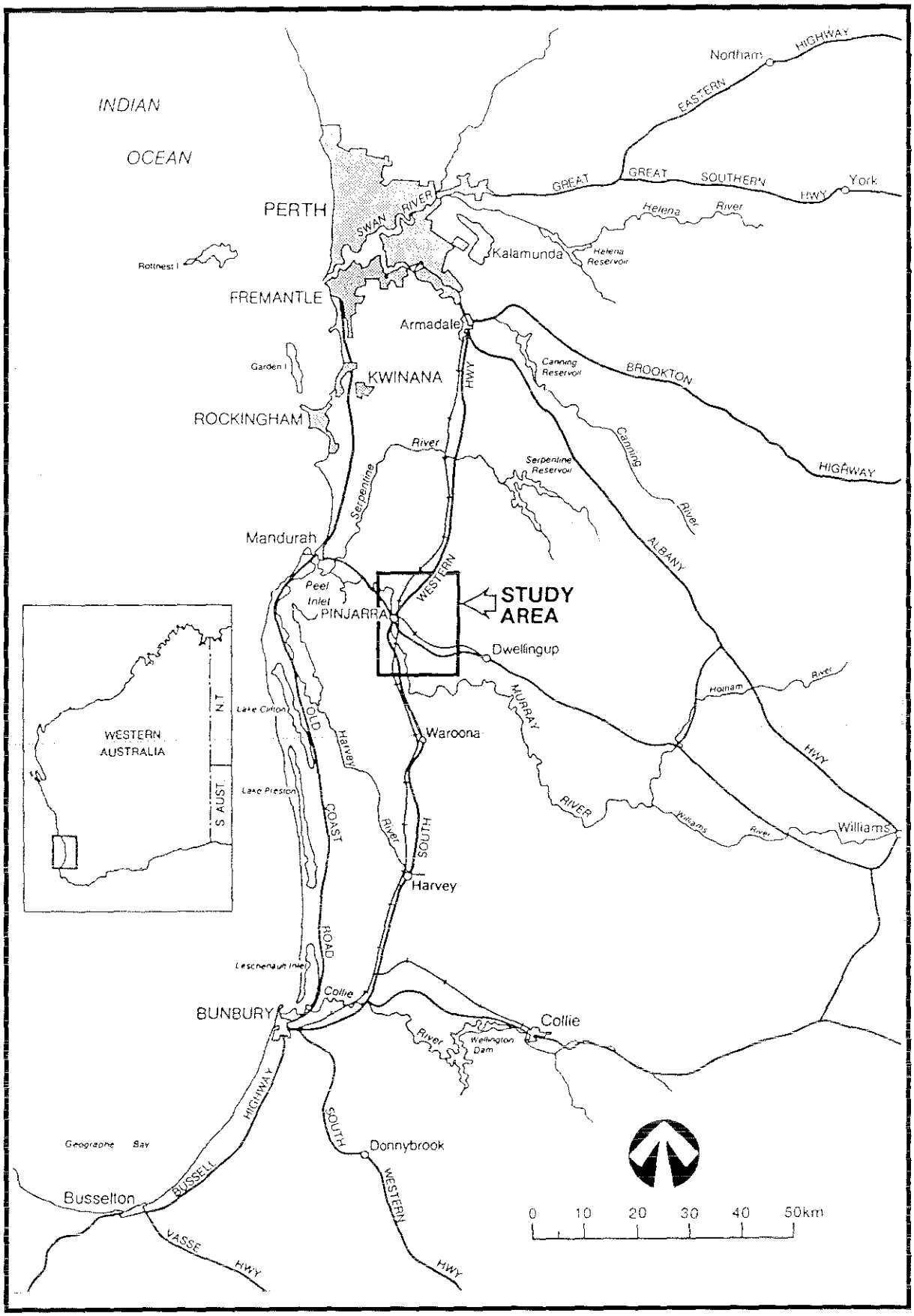


***Figure 1: Location of project***

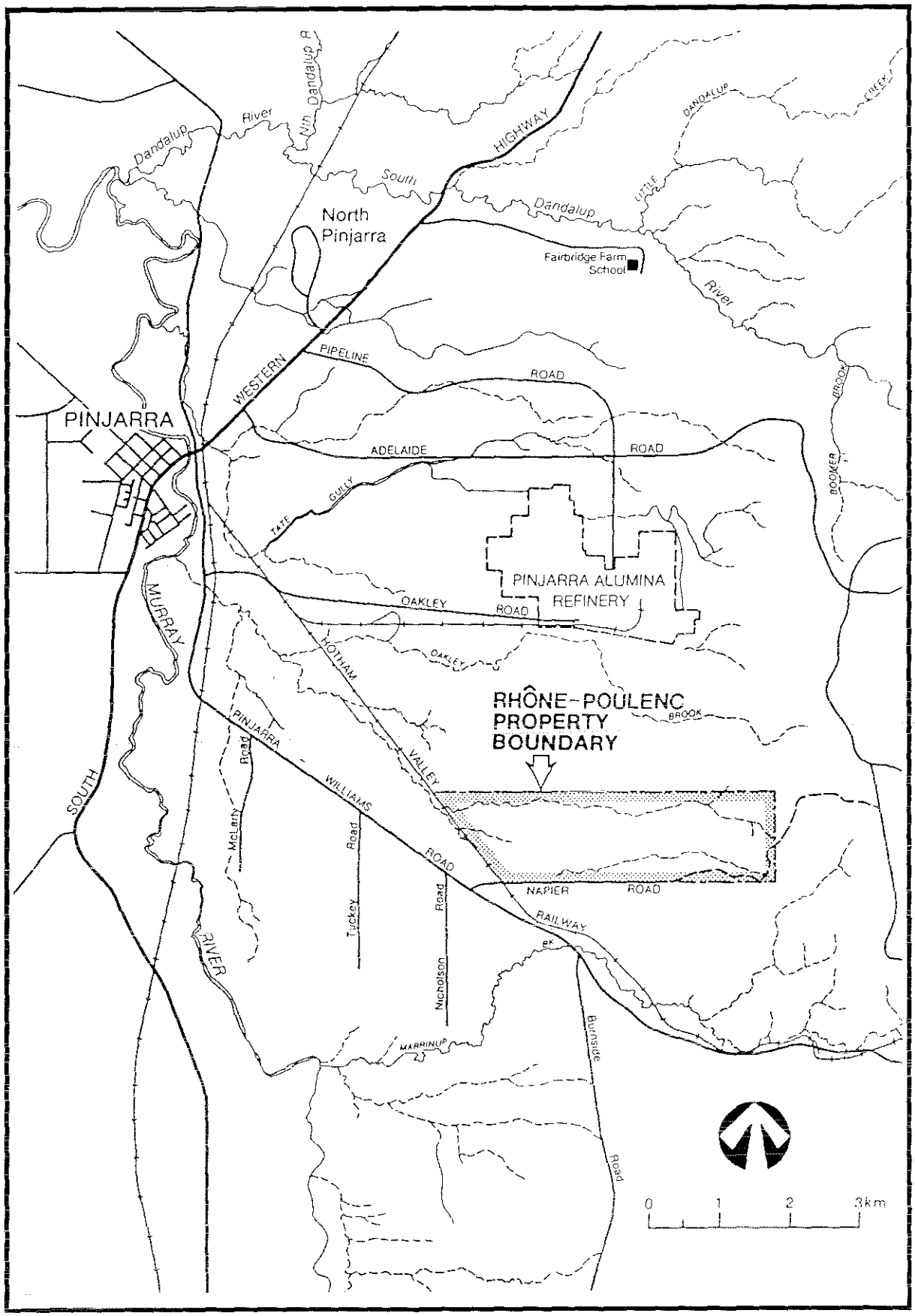


***Figure 2: Locality plan***

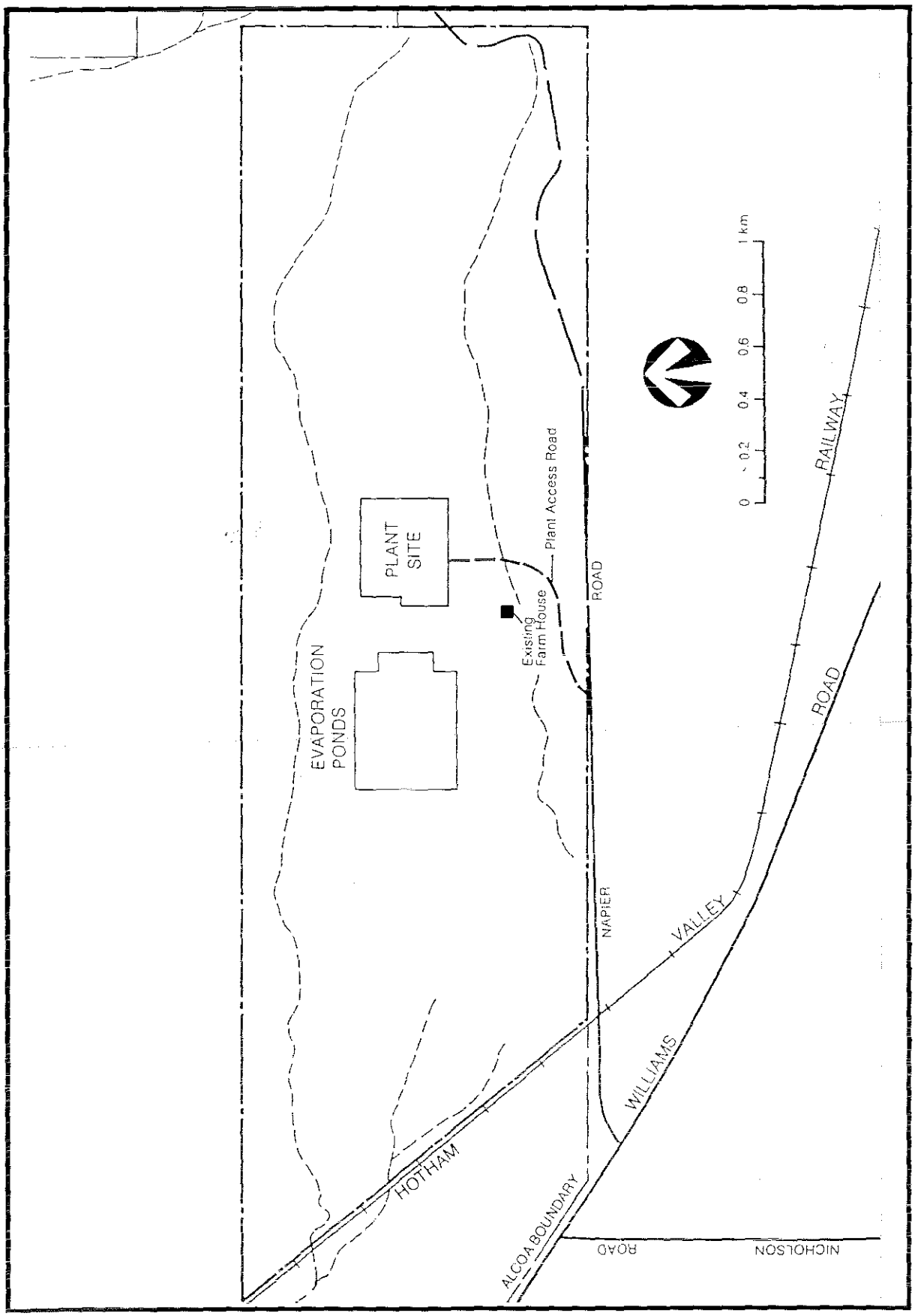


***Figure 3: Site plan***

Brigade, State Emergency Service and the Police to put into effect appropriate measures. The HAZCHEM identification and material safety data sheets will provide readily available procedures and information for all emergencies. In addition the Company provides a 24 hour telephone contact to provide information to emergency groups including hospitals and medical personnel for toxicity and treatment data.

The Company, of it's own initiative, has introduced a "stewardship programme" which is a technical education service to distributors, users and agents on the proper handling, storage and application of it's products.

### 2.2.2 Handling and storage

Both the polymer and herbicide operations will involve the receival and storage of raw materials. From these, a range of products will be formulated, blended and packaged generally in 200 litre or 20 litre plastic or steel containers. All containers will comply with Australian and, if appropriate, international standards.

The formulations will take place in vertically mounted stainless steel tanks fitted with agitators and circulating pumps. Dry or solid ingredients will be top loaded into the tanks which will be exhausted and vented through dust collectors.

Formulation will consist of dissolving ingredients in an oil or water diluent with dispersants or emulsifying agents. Only Government approved products will be produced at the plant. All products have been formulated by Rhone-Poulenc and used throughout Australia over many years.

To avoid contamination there will be separate facilities for the polymers and herbicides. Some polymers will require heating or cooling during formulation and this will be done in pressure kettles. There will be no effluents from the plant during normal operations. Washdown water and spillage will be collected in a sump and recycled into the plant. In the very unlikely case of a spillage where the sump could not cope, some water may be discharged to the evaporation ponds. However, this highly unlikely event would not cause an environmental problem, however, because the ponds are impermeable and are designed and licensed to the satisfaction of the EPA, following advice from the Water Authority of Western Australia.

Empty containers used for receiving raw materials and ingredients will be either flushed cleaned or drained and will be recycled or disposed of at a Government approved refuse site.

Uncontaminated stormwater from the batching and packaging areas will be drained into the existing stormwater system which discharges into the evaporation ponds. Storage areas, where appropriate, will be bunded in accordance with appropriate codes and standards.

### 2.2.3 Hours of operation

The plants will operate 8 hours per day, 5 days per week and have a workforce of approximately 15 persons.

Due to the small scale of the proposed operation and the extensive buffer areas surrounding the plant site there should be no impact on adjacent neighbours or the local community.

The total volume of production of both polymers and herbicides will require approximately two truck movements per working day.

# 3. Potential environmental impacts and management as given in Consultative Environmental Review

The proponent believes that all potential environmental impacts are covered by suitable commitments (Appendix 1).

The CER points out that the potential for an environmental impact to take place is minimal because of the high environmental integrity of the existing site and proposed modifications, the process is self contained, the company's experience in this industry and the nature of the processes proposed.

## 3.1 Spillage during transport

Transport of ingredients and products will be by road, rail and ship in packages and container complying with the relevant Government regulations. All raw materials and products to be transported are presently transported around Western Australia including in the Shire of Murray. The proponent will utilise only carriers fully licensed and approved under the Code for the Transport of Dangerous Goods. The proponent will not move products or receive goods without first having Material Safety Data Sheets (MSDS) and proper Hazchem identification.

The market distribution network and transport routes already exist and will include many roads to various grain growing areas. The proponent is not proposing anything significantly new with respect to transport of chemicals within the State of Western Australia. With respect to the Shire of Murray, the proponent will utilise roads in the vicinity of the plant which will include the South West Highway, Pinjarra Road, Williams Road and Napier Road. Raw materials will be transported mainly on these roads. Other manufacturers and distributors use similar routes and distribution systems.

The Mines Department regulates the Explosives and Dangerous Goods Act, and Rhone-Poulenc is committed to complying with all these regulations as it does currently.

The proponent has not, to the best of its knowledge, ever been involved in a major spill of its products in Australia. Some leakage from packages has occurred on rare occasions but this has never caused a serious environmental impact. The proponent considers that the establishment of another formulating plant will greatly reduce the distribution routes of its products, thereby reducing the potential for leakages and spillages to the State overall.

All products and raw materials have flash points above that of petrol. Further, packages and containers of the proponent's materials and products will comply with the requirements of the Dangerous Goods Act as administered by the Mines Department of Western Australia. The proponent therefore considers that the danger from spillage or from a turnover or crash of a petrol tanker is greater that from a vehicle carrying products or raw materials.

As the purpose of the proposal is to batch and package chemicals, it follows that the products will be contained in small containers. In the event of a spill, the small size of the containers would help to ensure that the materials could be contained in a manner which would minimise an environmental impact.

In case of spillage into a water course some contamination would be inevitable. However, the extent of this contamination or it's seriousness would depend on the quantity of spillage and the degree of dilution in the water course. In an earlier study the Company assessed the probability of accidental spillage of other waste in a water course as approximately 1 in 500 years. The probability of a spillage of it's herbicides or polymers would be of the same order of magnitude.

## 3.2 Spillage on site and solid waste disposal

There is some potential for accidental spillage at the plant site. Such spillage would not impact on the environment as all spillage would drain directed towards a sump. This sump will be built in accordance with works approvals issued by the EPA. The materials collected in the sump will be recycled into the process. If in the highly unlikely event a major spill were to take place and the sump could not cope, overflow may take place to the existing evaporation ponds which are more than adequate to cope with such spillage. The proponent has made several commitments regarding wastewater, spillage and contaminated stormwater runoff (Appendix 1). Under these commitments the proponent will manage all aspects of spillage to the satisfaction of Environmental Protection Authority. Additionally, Rhone-Poulenc's own emergency response ability will ensure that spillage will not impact on the surrounding environment.

The only solid waste from this process is empty containers. The proponent will wash them clean before disposal. The wash water will be recycled back into the process and the clean containers will be recycled or disposed of at an approved landfill site. The proponent has made a commitment to this effect (Appendix 1).

## 3.3 Dust, noise and odour

Under normal working conditions there should be no visible trace of dust around the buildings or ventilation system. Given that the proposed plant is 600 metres away from the nearest resident, there

is no reason to believe that dust would be a problem. The proponent is committed to ensuring that no dust will be visible around the plant let alone at the plant boundary or at nearest neighbours (Appendix 1).

With regards to noise, the proponent points out that the process will not generate much noise, and noise will only be generated within buildings. Given the distance of the nearest resident, there should be no public disturbance due to noise during construction or operation. The proponent is committed to complying with the EPA's regulations on noise at the boundary of its site (Appendix 1).

Some of the chemicals to be batched or packaged may be odorous within the buildings. From the proponent's experience such odour is only mild within the building. Given that similar plants operate, without complaint, in metropolitan areas and rural towns around Australia, and given the distance of the operation from the nearest resident, it is reasonable to deduce that odour will not be an environmental problem.

## 3.4 Wastewater evaporation pond leakage

All wastewater will be collected in a sump and recycled back into the process. Uncontaminated stormwater from around the plant will be collected in existing stormwater drains and will be discharged to the evaporation ponds. In the highly unlikely event of a spillage which could not be contained by the collection sump, overflow could be discharged to the evaporation ponds. However this would be a highly irregular occurrence as the evaporation ponds were built to be impermeable and constructed and licensed to the satisfaction of the Environmental Protection Authority following advice from the Water Authority. The proposal is sufficiently self-contained so as to pose no environmental threat. Additionally, the proponent has made several commitments regarding containment of spillage, monitoring, and management of the ponds (Appendix 1).

The existing plant site and evaporation ponds have a series of monitor bores and sumps which are required to be monitored to the satisfaction of the Environmental Protection Authority. These monitoring points will continue to be monitored for leakage. The proponent has made commitments on monitoring and one general commitment on reporting to Environmental Protection Authority(Appendix 1). This will ensure that the proposal is managed properly.

## 3.5 Solid waste disposal

The only solid waste will be empty containers. The proponent intends to wash them out and recycle them or dispose of them to an Environmental Protection Authority approved landfill site. The proponent has made a commitment to dispose of all solid waste to the satisfaction of the Environmental Protection Authority .

# 4. Summary of public and government agencies' submissions

## 4.1 Public consultation

During the period of public review Rhone-Poulenc made itself available for consultation with neighbours and interested groups. Near neighbours were notified of the proposal. The local press was advised and there was consultation with the Shire of Murray. Additionally, the Environmental Protection Authority has had a two day open period, outside the prescribed public review period, for public to interact with the Environmental Protection Authority on this project and formulate additional questions they wanted the proponent to answer.

The proponent also consulted all Government Authorities which approached it, including the Social Impact Unit so that maximum public involvement could take place, if requested.

## 4.2 Specific issues raised in submissions by the public and government agencies and proponent's response

A total of 92 public and Government submissions on this proposal were received by the Environmental Protection Authority. Names of contributors who put in submissions are given in Appendix 2.

The Authority notes that two sets of submissions were submitted in replicate (pro forma). One pro forma from 43 people supported the project without reservation. The other pro forma from 21 people expressed concern on identical issues including acceptability of the CER, toxicity of raw materials and products, transport, safety procedures for spills, water availability and quality, and use evaporation ponds.

The CER states that the proponent would be available for public consultant in the Shire of Murray during the public review period. Few people contacted the proponent to find out details of the proposal. Comments from submissions can be broadly classified as follows:

- CER
  - inadequacy of CER
  - length of the public review period
  - reliability of proponent and commitment
- Hazards
  - toxicity testing
  - composition and hazards of chemicals to be transported and used and produced on site
  - emergency plans for spillage, fire and floods on site
  - availability of Hazchem information
  - exposure of, or risk to the public from chemicals
  - proponent's performance elsewhere
- Traffic, transport routes and emergency plans
  - transport routes to and from the proposed plant
  - transport routes which minimise public and environmental risk;
  - procedures for handling and transport of chemicals
  - emergency plans for spillage during transport
  - road and rail transport
  - materials presently transported on Western Australian roads and in the Shire of Murray
  - relative hazard of the chemical
  - transport regulation
  - road spills and risk to public
  - security of transport vehicles
  - emergency plans in the case of an accident
- Composition of raw materials and products
  - volumes and concentrations of raw materials and products
- Effluent, spillage, evaporation ponds
  - source, salinity and volume of water to be used
  - bunding
  - disposal of effluent
  - security of evaporation ponds

- accumulation of chemicals in ponds
- degradation of chemicals in ponds
- disposal of contaminated slurry
- waste management plan
- adequacy of volume of ponds in winter
- contaminated dust
- life of pond and its design
- depth of groundwater beneath ponds
- leachate and contamination of groundwater and catchment area
- management
- decommissioning
- integrity of evaporation ponds after decommission
- monitoring and rehabilitation

• Public interaction
  - circulation of CER and public meeting
  - availability of proponent to public
• Neighbours
  - noise, dust and odour problems
  - proximity of neighbours
  - contamination of roof water
  - traffic
• Manufacturing
  - proponents future plans
  - other manufactures
• Labelling of containers and packages
  - requirements by law
• Use of products
  - who uses the products and why
  - known environmental impacts
  - public acceptability of products
• Decommissioning
  - plant and evaporation pond management
  - disposal of chemicals

The Authority points out that several questions raised do not directly relate to the scope of the Environmental Protection Authority's functions. During the public review period the Social Impacts Unit made itself available to the proponent, the public and the Shire of Murray to advise on social issues of concern.

The proponent has submitted an extensive list of commitments covering all the environmental issues raised which can be reasonably monitored and has addressed all the issues relating to potential environmental impacts in its extensive response to questions raised during the public review (Appendix 2). The proponent is also committed to managing the project to the satisfaction of the Environmental Protection Authority.

# 5. Potential environmental impacts identified by Environmental Protection Authority

## 5.1 General introduction

In considering the CER, Environmental Protection Authority gave particular consideration to all of the issues raised during the public review. Emphasis was placed on ensuring that materials transported to and from the plant would conform with the "Transport of Dangerous Goods Regulations", emergency procedures. In the case of a spill on the road or at the plant, bunding, and integrity and management of the waste disposal methods, would ensure that no environmental impacts (noise, dust, odour and contamination) on neighbours would take place. The proponent has made commitments covering all issues which can be measured and monitored and these are to the satisfaction of Environmental Protection Authority. Hence problems are not anticipated and the Authority believes that the proposal is manageable.

Should the Minister for Environment approve this proposal, that approval should be conditional on the proponent adhering to these commitments. The commitments would thereby become legally-binding on the proponent.

### Recommendation 1

**The Environmental Protection Authority concludes that the proposal, as described in the Consultative Environmental Review and in the proponent's responses to questions raised resulting from public review, is environmentally acceptable and recommends that the proposal could proceed subject to the commitments given by the proponent in Appendix 1 of this Report and which include:**

- **transport;**
- **construction and management of a fully integrated spillage and wastewater system;**
- **solid waste disposal;**
- **noise and dust control;**
- **construction of the plant;**
- **fire security;**
- **monitoring;**
- **remedial action if waste management procedures fail;**
- **rehabilitation;**
- **decommissioning;**
- **reporting to Environmental Protection Authority; and**
- **transfer of ownership.**

## 5.2 Transport

The transport of chemicals throughout Australia is common place especially in agricultural areas where many of the proposed chemicals are to be used. The transport of chemicals by road is regulated by the "Transport of Dangerous Goods Regulations" which are administered by the Department of Mines. Whilst road transport of chemicals has the potential for accidents, the transport regulations minimise this to an acceptable level. All chemicals transported require appropriate transport security including vehicle specification, packaging (containers where necessary), amounts that can be carried, and groups of chemicals which can be carried on the same vehicle, and all chemicals must be labelled. The regulations specify the emergency procedure which the transporter must follow in the case of an accident. The proponent has made a commitment to adhere to all the transport regulations and emergency procedures.

During the assessment it has been pointed out that the transport routes proposed by the proponent will cross rivers and consequently pose an environmental threat. The Authority has been given expert advice that there will be no significant increase in risk from the proposal as the proponent will comply with all the regulations governing the transport of chemicals.

As a consequence, the Environmental Protection Authority finds transport of raw materials to the plant and the products from the plant to be acceptable.

## 5.3 Spillage, contaminated wastewater or runoff

The proposal will use the existing Gallium Plant site. This site was designed to a very high environmental integrity because the proponent intended to establish a rare earth plant there. Consequently much of the plant is either sealed or bunded already. It is not intended to use the evaporation ponds for normal operations, although they have been designed to impermeable standard and constructed to the satisfaction of the Environmental Protection Authority. If in the unlikely case that spillage could not be contained by the sump collection system, overflow to the ponds could take place. Given the dilution effect of stormwater in the ponds on spillage, the impermeable nature of the ponds and the biological, chemical, and physical decomposition rates of the materials involved in a spillage, it is highly unlikely that an environmental impact could take place. Additionally, the site and ponds have existing bores which will provide for adequate monitoring so the whole process can be monitored and managed properly.

The proponent has made a commitment that in the very unlikely event of pond leakage that it would recover the leachate and rehabilitate any environmental impact to the satisfaction of the Environmental Protection Authority.

## 5.4 Dust, noise, odour and solid waste disposal

Dust should not be a problem as worker safety is paramount. Batching and packaging will be carried out in buildings and all approach roads are sealed already. Dust will not arise from the evaporation ponds as they will always contain water and will be sprayed if necessary. Additionally the proponent would be licensed to control dust at all time to the satisfaction of the Environmental Protection Authority.

Most machinery with a potential to cause noise will be contained within buildings. Given the distance of dwellings from the proposed plant and its times of operation, it is highly unlikely that noise would be a problem. The proponent has made a commitment to control noise at its site boundary to comply with Environmental Protection Authority noise requirements.

Odour may occur in the immediate surroundings of the plant. However, because of the buffer zone between the proposed plant and the closest dwelling, odour is very unlikely to be a problem.

The only solid waste will be empty containers. The proponent intends to wash them out and recycle or dispose them to an Environmental Protection Authority approved landfill site. The proponent has made a commitment to dispose of all solid waste to the satisfaction of the Environmental Protection Authority.

## 5.5 Storage and fire

The proponent has addressed these issues in its response to questions raised during the public submission (Appendix 2). Whilst several of the materials handled by the proponent are flammable, their flash points are below or similar to petrol. Given the proposed location and the small quantities of the materials, their flammability presents no risk to public. The proponent has made commitments to store all dangerous or flammable materials in a manner complying with all relevant Government regulations.

## 5.6 Water supply

When the Authority assessed the proposal to build a Gallium Plant the issue of water supply and quality was address and the Environmental Protection Authority found the proposal to extract groundwater to be acceptable.

The estimated annual water consumption for this proposal is 1,000 cubic metres. This will be obtained from the underground aquifer. Rhone-Poulenc has a licence to extract approximately 300,000 cubic metres of groundwater per annum for the Gallium plant. Water quality typically varies from 140 to 250 ppm of sodium chloride salt with a pH of 6.3 to 7.5.

Given the small volume of additional groundwater required for this proposal, the Authority does not consider it to be significant.

The Authority points out that the proponent may need a groundwater extraction licence from the Water Authority to do so for this new proposal.

## 5.7 Decommissioning

On completion of any operations on the plant site Rhone-Poulenc commits itself to satisfactorily decommission and rehabilitate the site so that there will be no potential for an impact on the environment at that time or subsequently (Appendix 1).

# 6. Conclusions

Based on the information supplied in the CER and additional information supplied by the proponent during the assessment, the Environmental Protection Authority has concluded that the project could proceed subject to the commitments given by the proponent in the CER and in response to questions raised during the assessment, and to the Authority's recommendation in this report.

The proposed chemical batching and packaging plant is technically sound. Given the proponent's commitments to management, monitoring and correct any detected faults, there should be no impact on the environmental or surrounding land owners.

The Authority notes that, during the final design and works approval stages it will give particular attention to the size and construction of the collection sump to ensure that every effort is made to contain and recycle spillage if it were to occur.

The Authority notes also that during the detailed implementation of proposals, it is often necessary or desirable to make minor and non-substantial changes to the design and specification which have been examined as part of the Authority's assessment. The Authority believes that subsequent statutory approvals for this proposal could make provision for such changes, where it can be shown that the changes are not likely to have a significant effect on the environment.

The Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Authority.

# Appendix 1

## Proponent's list of environmental management commitments

The Proponent makes the following commitments to the Environmental Protection Authority relating to its proposal to establish a Chemical Batching and Packaging Plant at its existing Gallium Plant site, Pinjarra.

## General commitments

1. The proponent will adhere to the proposal as assessed by the Environmental Protection Authority and will fulfil the commitments made below.
2. Any additional construction, to the already Environmental Protection Authority approved Gallium Plant, will be carried out in compliance with the Environmental Protection Act 1986.

## Transport

3. The proponent will, at all times, comply with all regulations, as set down by the Department of Mines for the labelling, packaging and transport of all its raw materials and products under the "Transport of Dangerous Goods Regulations".

## Wastewater/spillage and contaminated stormwater runoff

4. The proponent will maintain its wastewater/spillage and drainage system and evaporation ponds at all times, to the satisfaction of Environmental Protection Authority.
5. The facility will be constructed and operated to contain any liquid spillages, contaminated runoff within the site boundaries to the satisfaction of the Environmental Protection Authority.
6. In the case of leakage to the surrounding environment, the proponent will immediately clean up such leakage to the satisfaction of the Environmental Protection Authority.
7. Above-ground storage tanks areas, if any, will be bunded or otherwise provided with means of preventing escape of liquids either to the ground or as surface runoff. All contained spillages, wash-water and contaminated runoff within the sealed and bunded areas will be diverted to the evaporation ponds. All this will be done to the satisfaction of Environmental Protection Authority.

## Monitoring

8. Prior to commissioning, the proponent will submit and subsequently implement a monitoring programme to the satisfaction of the Environmental Protection Authority. The monitoring programme will include:
    - parameters to be measured;
    - sampling sites and times;
    - pre-operational baseline data;
    - reporting times to Environmental Protection Authority; and,
    - a commitment to modify the environmental management programme, if necessary, to reduce any impact of pollution, to the satisfaction of the Environmental Protection Authority.
9. All samples taken in the monitoring programme will be analysed in a laboratory acceptable to Environmental Protection Authority.

## Solid waste

10. The proponent will dispose of all solid wastes including spent containers in a manner satisfactory to the Environmental Protection Authority.

## Fire security

11. The plant equipment, process, and storage area will be made and kept safe from explosion or fire by flammable constituents to the satisfaction of the Environmental Protection Authority.

## Noise

12. The proponent will operate the plant so as to minimise noise generation and noise levels at the boundary of its site at all times and in compliance with the Environmental Protection Act.

## Dust

13. Dust will be controlled at all times and during normal operations will not be visible.

## Other commitments

14. The proponent will take immediate remedial action should failure of the spillage collection system or evaporation pond system occur and this will be done immediately to the satisfaction of the Environmental Protection Authority.

15. If spillage or leakage were to cause an environmental impact, the proponent will rectify that impact as soon as possible to the satisfaction of the Environmental Protection Authority.

16. The proponent will control insects and weeds around the evaporation pond to the satisfaction of the Environmental Protection Authority.

17. The proponent will modify its pollution control operations, if necessary, so the potential for an environmental impact is reduced to a level acceptable to the Environmental Protection Authority.

18. The proponent will be responsible for decommissioning the plant and rehabilitating the site and its environs, to the satisfaction of the Environmental Protection Authority.

19. The proponent will, at least six months prior to decommissioning, prepare a decommissioning and rehabilitation plan to the satisfaction of the Environmental Protection Authority.

## General reporting

20. Reports will be provided to the Environmental Protection Authority, as requested by Environmental Protection Authority, on the operation of the facility after the plant is commissioned. Reporting will include advice to the Environmental Protection Authority on the fulfilment of any Ministerial Conditions and Commitments given by the proponent at relevant project stages.

## Other

21. The proponent will not transfer ownership of the Chemical Batching and Packaging plant without first advising the Environmental Protection Authority.

# Appendix 2

## Proponent's response to issues raised during the public review period

## Preamble

The proponent points out that because many of the questions raised during the public review period were variations of the same theme, the proponent has decided to address the questions issue by issue. The proponent also points out that it is very important to read the answers to the questions in conjunction with reference to the commitments given in Appendix 1. The proponent believes it has covered every issue raised in the questions by commitments where possible. If this project is deemed acceptable by the Minister for Environment, these commitments will be converted into legally-binding commitments in the Ministerial Statement of Conditions.

# Questions raised during the public review period

## Hazards

Q1. Is the proposed plant hazardous to humans and if not, explain why you believe it is not?

Q2. Will the proponent provide the the Hazchem sheets to the public on 2 4 D, PVA, acrylic acid and MCPA and explain why they do not constitute a hazard to the public?

Q3. Why were the safety data sheets and hazardous of chemicals given to the EPA only, but not the public?

Q4. Why has the proponent not included references to LD50 data for fish and marine life in its CER?

Most chemicals are hazardous if not handled, stored or applied in the correct way. The plant will not be hazardous to operating personnel who will be trained in the correct handling procedures for all chemicals utilised on the plant. Where appropriate dust suppression and collecting equipment will be employed, materials of construction will be resistant to chemical attack and employees will be provided with adequate protective working clothes. A safety programme and safety protection system will be implemented. The plant will comply with the appropriate safety and health regulations. Given that the plant employees will not be exposed to unnecessary risks then it follows that the public will be exposed to much less risk.

Trifluralin, a constituent of the Rhone-Poulenc proprietary herbicide, Tridan, readily decomposes when subject to natural ultraviolet rays. Rhone-Poulenc advises users of this product to plough into the land after application so as to improve it's effectiveness and to retard the U.V. degradation. Hence any spillage of this material into the effluent ponds will readily breakdown due to U.V. exposure.

All MSDS' are available for public inspection if so required. These can be inspected at the EPA or company offices however, appointments will need to be made to ensure availability of the manuals. These documents are comprehensive and detailed. Data includes chemical and physical properties, toxicity to various forms of plant and animal life, safety precautions to be employed in handling emergency procedures in case of spillage or contamination, medical advice/treatment for accidental contact with humans etc. Because of the extensive details provided the documents are of limited interest to the public other than those actively involved in handling these materials. They were lodged with the EPA along with the CER and have always been available to the public during the review period.

The MSDS' provide toxicity data such as LD50 for various forms of animal and insect life including marine animals and organisms. However this may not be relevant as there will be no discharge to the environment.

## Traffic, transport and transport routes

Q5. Why have the transport routes to and from the proposed plant not been specified. What are the proposed routes?

Q6. Will the proponent supply detailed transport routes within the Shire of Murray?

Q7. What raw materials will be transported to the site and what products will leave the site?

Q8. Are the proposed raw materials and products transported presently on Western Australian Roads. If so, do they move through Pinjarra and or the Shire of Murray?

Q9. Who regulates the transport of chemicals in the State and does the proponent need to meet special WA requirements to transport its raw materials and products?

Q10. Has the proponent ever been involved with a road chemical spill resulting from its other batching and packaging operations in Australia.

Q11. Does 2,4 D presently pass through the Shire of Murray and or Pinjarra and does the proponent intend to transport it through the Shire of Murray and Pinjarra?

Q12. Will the raw materials or product transported around the Pinjarra area be as explosive or flammable as petrol?

Q13. Would a container of raw materials or product pose as much a risk to the people of Pinjarra as a truck of petrol?

Q14. Would a container full of raw materials, or product, withstand the forces of a crash (or turnover) more adequately than a petrol tanker given that petrol tanker have several exposed valves and outlets?

## Emergency plans in the case of a spill

Q15. What are the proponent's emergency plans for spillages on roads or their site and why has it not been presented in the CER?

Q16. What would happen if a chemical spill occurred near a water course on a wet day?

Q17. Will all bunded areas in the plant be impervious?

## Composition and quantities of raw materials and products

Q18. Why have the compositions and quantities of the raw materials and products not been presented in the CER?

Q19. What are the quantities and concentrations of the materials to be shipped to and from the plant?

Q20. Will the proponent be using or processing 2,4 D?

Due to a wide market distribution network transport routes will include many roads to various grain growing areas. However the most utilised roads in the vicinity of the plant will be South West Highway, Pinjarra Road, Williams Road and Napier Road. Raw materials will be transported mainly on these roads. Other manufacturers and distributors use similar routes and distribution systems.

Raw materials are fully listed in the CER The products are blends of these materials and have proprietary names such as Bevaloid 225, Agritox, Embutox etc. See Appendix B of CER.

Except for isoproturon Rhone-Poulenc has been marketing the products in WA and other states for many years. As well other chemical companies such as Nufarm, ICI and Hoechst market and formulate similar products in WA Davison Chemicals formulates and sells a similar range of the herbicide products from Pinjarra.

The Mines Department regulates the Dangerous and Explosives Goods Act - Rhone-Poulenc will comply with these regulations as it currently does with it's gallium operation.

To the best of our knowledge there has never been any action or prosecution against the company by a Government agency in relation to a discharge or environmental impact at its existing operations. Rhone-Poulenc has not had a major spill of it's products in Australia although some leakage from packages has occurred on rare occasions. This is inevitable with the transport of approximately 25,000 packages per annum. Leakage from an individual package has never been a serious event. The proponent considers that the establishment of another formulating plant will greatly reduce the distribution routes of it's products and thereby reducing the potential for leakages and spillages. On 21 August, 1990, at the Brookvale plant, there was a minor emission from one of the processing

vessels. Despite the proximity of this plant to neighbouring residences there was no environmental damage or personal injury as a result of this accident.

Rhone-Poulenc, Nufarm and Davison already transport 2,4D through Pinjarra and the Murray Shire. This will continue.

All products and raw materials have flash points well above that of petrol thus making them safer than petrol from a fire point of view. Further, packages and containers of the proponents materials and products will comply with the requirements of the Dangerous Goods Act. The proponent therefore considers that the danger from spillage or from a turnover or crash of a petrol tanker is greater that from a vehicle carrying the products or raw materials.

The company will fully comply with the code for the transport of dangerous goods. Under this code all vehicles will carry hazardous materials identification which will enable emergency response groups such as Fire Brigade, SES, Police etc to put into effect appropriate measures. The HAZCHEM identification and MSDS system will provide readily available procedures and information for all emergencies. In addition the Company provides a 24 hour telephone contact to provide information to emergency groups including hospitals and medical personnel for toxicity and treatment data.

It should be noted that the Company of it's own initiative introduced it's stewardship programme which is a technical education service to distributors, users and agents on the proper handling, storage and application of it's products.

In case of spillage into a water course some contamination would be inevitable. However, the extent of this contamination or it's seriousness would depend on the quantity of spillage and the degree of dilution in the water course. In an earlier study the Company assessed the probability of accidental spillage of it's proposed monazite waste in a water course as approximately 1 in 500 years. The probability of a spillage of it's herbicides or polymers would be of the same order of magnitude.

The areas used for the formulating and batching will be bunded or sealed so spillage can be collected in a sump and be recycled.

As listed on page 10 of the CER total production of polymers and herbicides will be approximately 4,500 tonnes per annum (tpa). This will require about 3,500 tpa of raw materials. Annual tonnage of products and raw materials cannot be given with accuracy as they are subject to market variations and seasonal fluctuations. However, the approximate quantities are as follows:

| | | | |
|---|---|---|---|
| Product: | Herbicides | : | 2,000 tpa |
| | Polymers | : | 2,500 tpa |
| Raw Materials: | Water | : | 1,000 tpa |
| | Caustic soda | : | 200 " |
| | Mineral oils | : | 800 " |
| | Acrylic Acids | : | 800 " |
| | MCPA | : | 500 " |
| | Other actives (approximately 25 | : | average 50t each 1,200 " |

## Treatment of effluent or spillage

Q21. What are the proponent's emergency plans for spillages on roads or their site and why has it not been presented in the CER?

Q22. Will all bunded areas in the plant be impervious?

The operations at the proposed plants consist of mixing and formulating processes. As such there will be no discharge from the plants under normal operations. All ingredients or raw materials are fully utilised in the products. The only possible discharges likely are accidental spillages. Washings from the plant equipment will be recycled in subsequent batches. This is because the washings will contain some residual but costly materials. Spillages of materials will be retained in the process areas and will be recycled back into the storage tanks or processing equipment. This will be achieved by bunding

and sealing of the storage and process areas which will contain sumps to enable recovery of any spillages into the process. In the unlikely event of any overflow from these bunded areas then such discharges will be directed to the ponds.

## Public meeting or conference

Q23. Did the proponent hold a public to discuss to issues of concern to the public, during the public review period? If not, why not?

Q24. Did the proponent circulate copies of the CER to neighbours and those people that requested copies?

Q25. Did the proponent answer all questions that the public asked personally (in writing) to address or over the phone ?

Q26. Did the Shire of Murray ask the proponent to talk to the public over issues of concern and if yes did that happen?

## Length of public review

Q27. Why has the proponent not given the public a longer time to respond to the CER?

The proponent advised the Shire of Murray of the proposed project on 3 August, 1990. This was four weeks prior to the proponent issuing it's CER. At the time of first advising the Shire the proponent offered and suggested that it was prepared at any time to meet with and discuss the project with interested groups or individuals. At the same time the proponent advised by mail it's immediate neighbours of the project and later provided each neighbour with a copy of the CER. Each Murray Shire Councillor was provided with a copy of the CER plus copies for the local library. Only two persons obtained individual copies of the CER from the Company. The only contact after 3 August with the Shire was on 15 October, 1990 when two employees of the proponent met with the Shire's Planning Committee. At this meeting some additional information was requested of the proponent which was supplied on the next day.

There were two persons requesting information directly from the proponent. One was by telephone and the other by visitation to the plant. The proponent understands it answered satisfactorily the information requested.

The period for public review is not determined by the proponent but by EPA. In this case the review period of four weeks is the maximum period required for a CER. The proponent is not aware of any appeal against the review period or the level of assessment.

## Treatment of effluent or spillage

Q28. Will the effluent treatment pond contain toxic materials? If so, will those toxic materials be volatile or will they build up in the ponds?

Q29. Are those chemicals which could spill and collect in the evaporation ponds, biodegradable?

Q30. Is it likely that sunshine (UV light) will degrade the spillage which ends up in the evaporation ponds?

## Leakage from evaporation pond

Q31. What will happen to the effluent and sludge in the evaporation pond if the evaporation pond leaks?

Q32. Will the evaporation ponds be monitored for leaks?

Q33. If leakage is detected, to whose satisfaction will leakage be recovered and remedial action be under taken?

## Evaporation pond and management

Q34. What will be done with the solid waste build up in the evaporation ponds when the ponds fill up?

Q35. Will toxic chemical volatilise in the evaporation pond and will there be a threat to human health. If not, can the proponent explain why not?

Q36. Will toxic chemical form an oily sludge in the evaporation pond and if so what threat will it pose to the environment and human health?

Q37. Is the existing evaporation pond in the watertable at any time. If not, how far is the watertable below the pond in winter?

Q38. Will the evaporations ponds be able to cope with spillage or rainfall surplus during periods of high rainfall in winter?

Q39. Will toxic dust be blown from the surface of the ponds in summer?

## Decommissioning

Q40. How will the under drainage of the evaporation pond system work when the pond is decommissioned?

As discussed in a previous section there will be no discharges from the plants as all spillages and washings will be recycled under normal operations. In the unlikely event of a discharge to the ponds any raw materials or product will be diluted by the entire rainwater runoff from the plant. These residual chemicals will be rendered inert by one or more of the processes of oxidation, photo-decomposition, bio-degradation or chemical degradation. Evaporation losses will be negligible and sludge accumulation will be minuscule compared to the residue from the gallium plant.

The evaporation ponds are monitored for leakage and annual reports are submitted to the EPA. The proponent has committed to rectifying any leakage to the satisfaction of the EPA as well as rehabilitating the ponds after use. These commitments are adequately covered in the diagrams and text of the CER.

The proponent will operate the evaporation ponds at all times in a wet state so there will be no possibility of wind blown dust from these ponds.

The ponds have been designed so that there is no possibility of overtopping occurring even in abnormally high precipitation periods. One of the ponds is constructed so that a section of the bottom clay seal is in the water table for a short period of winter only. The other pond is always above the water table for the whole year. The distance above the water table varies from about 2 to 5 metres.

It should be noted that these ponds have been designed and approved to the satisfaction of the WA Water Authority, E.P.A., D.R.D. and Mines Department. The design and construction represents the highest degree of application of the best available technology.

## Contamination at other batching plants

Q41. Has Rhone-Poulenc caused environmental contamination elsewhere with respect to its chemical batching and packaging operations. If it has, where and what were its environmental impacts?

## Neighbours

Q42. Can the proponent explain why neighbours will not be subject to unacceptable noise, dust and odour problems when the winds are blowing from the north or north-west?

Q43. Is the nearest resident 500-600m away from the plant? If so, why does the CER indicate a longer distance?

Q44. Will airborne dust affect the neighbours water supply collected from roofs?

Q45. What will the proponent do if airborne dust contaminates the neighbours water supply?

Q46. How will the proponent ensure that airborne dust will not contaminate the neighbours water supply?

Q47. Are neighbouring properties considered as the buffer zone for the proposal? If so, why should neighbouring properties be subject to any form of pollution?

Q48. Will the proponent make a commitment that neighbours around the plant will not be subject to noise, dust or odour problems. If they are subject to these problems, will the proponent take remedial action to the satisfaction of the EPA?

Q49. Why will the increased traffic not cause an increased noise problem?

The proponent does not expect the proposed plants to cause dust, noise or odour problems to it's neighbours. This is because the plants are quite small, contained within enclosed buildings and will utilise dust control and collection equipment. The proponent has not caused such problems to neighbours at it's existing plants even though distances to neighbours at these locations are much closer. With a separation distance of 500 metres (plant to property boundary) and even further to the nearest residence (approximately 800 metres) there can be no possibility of a nuisance to neighbours at the Pinjarra location.

The proponent considers that the 500 metre buffer zone of it's own hardwood and farming operations is more than adequate for the proposed plants and will ensure that there will be no pollution or contamination of adjoining properties and water supplies.

Traffic to and from the plant will be minimal (approximately 2 trucks per working day) and will be mostly during daylight hours. This compares with the present heavy traffic density on Williams Road of approximately 650 vehicles per day.

## Water use and quality

Q50. What is the estimated water use, its quality and source.

The estimated annual water consumption for this proposal is 1,000 cubic metres. This will be obtained from the underground aquifer. Rhone-Poulenc has a licence to extract approximately 300,000 cubic metres of groundwater per annum for the Gallium plant. Water quality typically varies from 140 to 250 ppm of sodium chloride salt with a pH of 6.3 to 7.5.

## Manufacturing

Q51. Will the proponent manufacture chemicals at this site in the future?

## Labelling

Q52. Is the proponent required by law to name the contents of its products on the labels of the containers or packages?

## Use of products

Q53. Are the proposed products used in Western Australia at present and if so by whom?

Q54. If these products are used in Western Australia at present, have they caused environmental problems elsewhere?

Q55. What is the proposed use of the insecticides and herbicides and where will they be used?

Q56. Does the Department of Agriculture or any Government Agency object to the use of the proposed products in WA. If so, which Department?

Q57. Has the use of any of the proposed products been banned in WA? If so, which one?

Q58. Do any Government Departments use these chemicals, albeit, batched by another company?

Q59. Will the proponents products be similar or the same as those presently batched or packaged by another company in the Pinjarra area?

Q60. What fire prevention plans does the proponent intend to put in place.

Q61. Will the proponent be discharging ammonia, nitrate or any other nitrogen-rich substance to the environment.

The proponent does not currently have any plans to manufacture chemicals at the site.

All labelling of dangerous and toxic materials must comply with the Australian Standards for such goods. The proponent will comply with these requirements.

The herbicide products are currently used in WA by farmers, (particularly in grain growing areas), Government Authorities (C.A.L.M., Agriculture Dept, Agricultural Protection Board, WA Water Authority etc.), Sporting clubs (golf greens, turf tracks etc) and some similar competitor products are used by householders for private gardens. All products are registered and approved for use by the Department of Agriculture.

Similar products are batched or sold by a number of competitors such as Nufarm, Davison, Hoechst and ICI There are no known environmental problems with any of these products. Currently there is limited use of the polymers in WA but this is expected to increase in the future particularly in the mineral processing industries.

The proponents existing plant has adequate fire protection and fire fighting facilities. These include fire alarms and smoke detection in offices, warehouse, laboratory and processing areas.

Fire fighting equipment includes a 250 cubic metre water tank, electric and diesel driven pumps, underground ring system water mains, foam generating equipment and B.C.F. installations in electrical rooms and substations. Fixed and portable hydrants, hoses and extinguishers are located throughout the plant. The proponent's facilities will be designed and constructed to comply with all appropriate codes and regulations for fire protection including the WA Fire Brigade's Regulations. As well, operating personnel will be fully trained in fire fighting and emergency procedures.

Ammonia or nitrate emissions to the underlying aquifers will not be possible due to the low usage of these materials (approximately 7 t.p.a.) and due to the proponents intention to recycle spillages and washings. In the unlikely event of a nitrate discharge to the ponds then the aquifers have the protection of a dual clay seal and intercepting underdrain system. These ponds have been built to the satisfaction of the EPA and are licensed as impermeable.

# Appendix 3

## Government agencies and public who made submissions

The Authority notes that apart from the names given below, others made pro forma submissions but their names were illegible, consequently their names cannot be include in the list below.

Mines Department
Department of Resources Development
Councillor G Steward
Conservation Council of WA
D E Trainor (River Districts Association)
B Davis (Greenforce)
E Horne (Statewide Network of Action Groups)
J Portman (Murray Conservation Group)
R Siewert (Conservation Council)
N Bate
R Brirley
J Bradshaw
L Bradshaw
M Burkett
G Corp
S Cox
M Corby
R Crossly
R Crossly
R M Curry
D Custerd
I L Davis
B L Dixon
M A Duff
E M Ewing
C Florides
K Francis
D I Gill
S Glenn
K L Grice
C F Gunn
W Garey
S Gunn
C F Gunn
K L Grice
D Hall
C J Hall
D Hamilton
A Harke
J B Horner
W Hustech
A Q Kinslow
A Larke
G Larke
N Larke
S Lawerence
I Lee

D J Loeffler
Dr M A Loeffler
J P Mackin
A Mac Quareth
C McDuff
A McQuarith
B McGarey
E R Manhall
G E Paverd
P Paterson
A Pritchard
P B Thomas
F L Treppi
L M Tyrell
A S Rohr
L J Sanders
G Scarlett
I Shepley
J Spurge
G Stewart
M Stirling
E R Sullivan
E B Sullivan
D E Trainor
L M Tyrell
B J Watt
L C Worman
H C Worman
Y A Wren
D K Wyllie
M J Yadfrey
T Young