

**Additional facilities within onshore treatment plant:
liquefied petroleum gas extraction & export, Burrup
Peninsula (851) — amendment to dredging
proposal**

Woodside Offshore Petroleum Pty Ltd

Proposed change to Environmental Condition

**Report and recommendation of the Environmental Protection Authority
(as requested under Section 46 of the Environmental Protection Act
1986)**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 724
December 1993**

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's recommendations.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

APPEALS

If you disagree with any of the assessment report recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
12th Floor, Dumas House
2 Havelock Street
WEST PERTH WA 6005

CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5.00 pm. on 17 December 1993.

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Summary and recommendation

Woodside Offshore Pty Ltd has sought approval for a change to its proposal to build and operate its Liquefied Petroleum Gas Extraction Project. This project was assessed and reported on by the EPA in July 1993 and environmental conditions set by the Minister for the Environment on in August 1993.

Following a review of details of the dredging component of the Liquefied Petroleum Gas Extraction Project, Woodside Offshore Pty Ltd has decided that it would be unable to meet its assurance to prevent significant quantities of fines being discharged from the preferred No Name Creek spoil disposal site. This assurance was given by the company in its Consultative Environmental Review on the project.

In order that environmental impacts are minimised, Woodside has indicated that it now intends to dispose of the dredge spoil in a previously used offshore site within Mermaid Sound. Nomination of this site by Woodside has been based on monitoring undertaken during earlier spoil disposal.

The Minister for the Environment decided that this change to the previously assessed proposal required advice from the Environmental Protection Authority in the form of a report under Section 46 of the Environmental Protection Act.

This report addresses this change of dredge spoil disposal site. The principal issue considered by the Authority was whether disposal at this offshore site could be undertaken without adversely affecting sensitive marine communities, especially corals. It is the Authority's view, based on the monitoring of the site, that environmental impacts could be minimal with appropriate management and that this change is environmentally acceptable. This management would be subject to separate review when the Minister considers Woodside's dredging management plan as required under Environmental Condition 4.

Recommendation 1

The Environmental Protection Authority concludes that this change to the dredging and spoil disposal plan proposed by Woodside Offshore Petroleum Pty Ltd is environmentally acceptable and could be implemented.

The proposal assessed and reported on by the Authority in Bulletin 694 should be amended to incorporate this change, and Environmental Condition 1 should now refer to the LPG extraction project as amended in this Bulletin (see Section 5).

1. Introduction

Woodside Offshore Petroleum Pty Ltd proposed the establishment within the existing onshore treatment plant of expanded facilities for the extraction and export of liquefied petroleum gas (LPG) in January 1993. This was subject to review and assessment by the Environmental Protection Authority and was reported in Bulletin 694.

One part of the proposal, and one of the main environmental issues to be considered, was the need to develop new jetty facilities for LPG export. This involved the dredging of approximately 700,000 cubic metres of spoil. This spoil was intended to be disposed of on land, within the confines of No Name Creek. As outlined in the Consultative Environmental Review (CER) prepared by Woodside for the LPG Extraction project, the option of offshore disposal of the dredge spoil was rejected on two grounds:

- " . . . *With offshore disposal it is difficult to manage the environmental impacts; and*
- The dredge spoil is a useful commodity.*" (Woodside 1993)

The Minister for the Environment issued the Statement that the project could be implemented on 24 August 1993. The Environmental Conditions applying to the project are listed in Appendix 1.

During subsequent consideration of potential dredge contractor plans, Woodside concluded that it would not be able to meet its commitment (Commitment No 8.1.1) attached to the Environmental Conditions, to develop a dredge spoil management plan to prevent significant quantities of fine sediment being carried into No Name Bay.

In response to that conclusion, Woodside sought agreement on 26 November 1993 from the Minister of the Environment to alter that portion of the project relating to dredge spoil disposal.(Appendix 2). Following that request, the Minister has requested the Authority to inquire into the proposed change and report in accordance with Section 46 of the Environmental Protection Act.

This report is the Authority's advice on this proposed change.

2. Description of the change to proposal

The intended location for disposal of dredge spoil is proposed to be changed from land disposal in No Name Creek to marine disposal in a previously used offshore disposal ground (Figure 1). Woodside believes that offshore disposal will provide more assurance than onshore disposal in preventing any significant environmental impact to the nearshore environment.

Undertaking of this dredging and spoil disposal would remain subject to Commitment 8.1.1 as well as to the requirement under Environmental Condition 4, which states:

- "4-1 *The proponent shall minimise the impacts of dredging on the marine environment.*
- 4-2 *The proponent shall undertake dredging at appropriate times and in such a manner that there is no significant impact on coral spawning in the area, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority."*

To comply with other statutory requirements, Woodside has applied for and obtained approval from the Commonwealth Environment Protection Agency (CEPA) under the Sea Dumping Act for disposal of up to 900,000 cubic metres of dredge spoil at the offshore site.

3. Environmental implications

As mentioned above, the proposed dredge spoil site has been used previously. During 1986-89, approximately 8,900,000 cubic metres of spoil from dredging of the main channel and turning basin for the onshore treatment plant was dumped on this site.

The CER provided an outline of monitoring results carried out in the dredge and spoil disposal site. Monitoring of the marine spoil disposal during that and a subsequent dredging campaign has indicated that:

- benthic habitat near the spoil site was temporarily affected and recovered; and
- fines largely remained within the spoil and recolonisation of the spoil dump took place within months of dredging being completed

A major factor which influenced Woodside to undertake Commitment 8.1.1 resulted from the loss of fines from No Name Creek during dredging in 1986-7. This resulted in a plume of fines moving north west along the shoreline of the Burrup Peninsula. Investigations indicated that the fines blanketed a number of nearshore marine communities, including coral reef.

Previous offshore dredging operations have resulted in an increase in water turbidity as a result of increased sedimentation immediately adjacent to the dump site. It has been well documented that increased sedimentation rates can result in reductions in coral growth rates, fecundity and live coral cover. However, increased sedimentation rates from the past dumping operations resulted in only a minor reduction in coral numbers and percentage cover of live corals within a 1.5 km radius of the dump site. No impact was observed on corals outside this immediate area.

Based on previous monitoring results from the offshore disposal site and the acknowledged need to control loss of fines in sensitive environments, Woodside considers that the attainment of the environmental object can now best be met by use of the offshore site.

While the Authority would prefer dredge spoil disposal to land given the already modified state of No Name Creek, it concludes that this preference is predicated upon retention of fines from dredging. In the absence of that assurance, and given the already disturbed nature of the ocean-dumping site, the Authority has reached the conclusion which follows.

4. Conclusion

The environmental objective for disposal of dredge spoil has to be the minimisation of impacts. The Authority has highlighted the need to protect fragile components of the environment, such as coral communities in this instance, during activities like dredging. This was the reason for the the Authority recommending an environmental condition.

Taking into account the previous use of the proposed spoil dumping site, results of monitoring of the consequences of earlier use if this site, the increased risk of loss of fines from disposal in No Name Creek, and the commitment by Woodside to prepare a dredging management plan, the Authority is prepared to recommend acceptance of this change.

As reflected in Bulletin 694, dredging operations will need to be managed to avoid impacting upon the spawning of the corals around the first week in April 1994.

Recommendation 1

The Environmental Protection Authority concludes that this change to the dredging and spoil disposal plan proposed by Woodside Offshore Petroleum Pty Ltd is environmentally acceptable and could be implemented.

The proposal assessed and reported on by the Authority in Bulletin 694 should be amended to incorporate this change, and Environmental Condition 1 should now refer to the liquefied petroleum gas extraction project as amended in this Bulletin.

5. Recommended amended Environmental Condition

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

PROPOSAL: Additional Facilities within onshore treatment plant,
liquefied petroleum gas extraction & Export, Burrup
Peninsula

CURRENT PROPONENT: Woodside Offshore Petroleum Pty Ltd

CONDITIONS SET ON: 24 August 1993

Condition 1 of the statement is to read as follows:

1. Proponent Commitments

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

- 1-1 In implementing the proposal, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made by the proponent in Environmental Protection Authority Bulletin 694 (a copy of the commitments is attached) and reported upon in this Bulletin 724.

Appendix 1

Existing Environmental Conditions



WESTERN AUSTRALIA

MINISTER FOR THE ENVIRONMENT

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

ADDITIONAL FACILITIES WITHIN ONSHORE TREATMENT PLANT
LIQUEFIED PETROLEUM GAS EXTRACTION & EXPORT
BURRUP PENINSULA (782)

WOODSIDE OFFSHORE PETROLEUM PTY LTD

This proposal may be implemented subject to the following conditions:

1 Proponent Commitments

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

- 1-1 In implementing the proposal, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made in the Consultative Environmental Review and included in Environmental Protection Authority Bulletin 694. (A copy of the commitments is attached).

2 Implementation

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 2-1 Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material 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 Hazards Control Plan

- 3-1 The proponent shall amend the Hazards Control Plan for the existing Gas Treatment Plant facilities to incorporate the proposed liquefied petroleum gas and condensate facilities, in stages and at times to the requirements of the Minister for the Environment. The amendments to the Hazards Control Plan shall include, but not be limited to, the following:

- (1) safety engineering design;
- (2) a full Process Hazard Review of the facilities;
- (3) implementation systems;

Published on
24 Aug 93

- (4) a safety management system which includes an emergency response system, fire fighting facilities and pro-active control systems; and
 - (5) annual auditing, to ensure compliance with the Hazards Control Plan, and to ensure the on-going relevance of the Hazards Control Plan.
- 3-2 The proponent shall forward the auditing results arising from condition 3-1(5) to the Environmental Protection Authority and the Department of Minerals and Energy.

4 Dredging

- 4-1 The proponent shall minimise the impacts of dredging on the marine environment.
- 4-2 The proponent shall undertake dredging at appropriate times and in such a manner that there is no significant impact on coral spawning in the area, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

5 Ballast Disposal

- 5-1 Prior to the commencement of ship loading operations for this proposal, the proponent shall submit a report to the Environmental Protection Authority on the environmental impacts of the disposal of ballast water by ships loading Liquified Petroleum Gas and condensate.

6 Proponent

These conditions legally apply to the nominated proponent.

- 6-1 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.

7 Time Limit on Approval

The environmental approval for this proposal is limited.

- 7-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced. Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period, to the Minister for the Environment by way of a request for a change in the condition under Section 46 of the Environmental Protection Act. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority.)

8 Compliance Auditing

In order to ensure that environmental conditions and commitments are met, an audit system is required.

- 8-1 The proponent shall prepare periodic "Progress and Compliance Reports", to help verify the environmental performance of this project, in consultation with the Environmental Protection Authority.

PROPONENT'S CONSOLIDATED COMMITMENTS

LPG EXTRACTION & EXPORT
BURRUP PENINSULA (782)

Woodside Offshore Petroleum Pty Ltd

The proponent has made the following environmental management commitments:

Procedure

- 1 The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of either the Minister for the Environment or any other government agency.
- 2 If the Environmental Protection Authority, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.
- 3 Further to condition 2, any substantial changes to the proposal, including changes that lead to a substantial change in risk levels, shall be referred to the Environmental Protection Authority.

Note

Where required, the Environmental Protection Authority will address issues such as noise, dust, odour and, solid and liquid waste management, associated with the construction and operation of additional facilities for liquefied petroleum gas extraction and export through Works Approval and/or Licence conditions set under Part V of the Environmental Protection Act.



Kevin Minson MLA
MINISTER FOR THE ENVIRONMENT

24 AUG 1993

COMMITMENTS

The following commitments are made by Woodside with respect to this project:

1 PRECONSTRUCTION

- 1.1 Develop and implement a dredge spoil management plan in consultation with EPA. The dredge spoil management plan will address the causes for the escape of fines that occurred from the impoundment area in No Name Creek during the dredging for the LNG shipping channel and propose methods to assure that a similar accident does not occur during the dredging for the LPG jetty.
- 1.2 Specify insulating materials that do not use CFCs as the foaming agent.
- 1.3 Develop a plan in consultation with the EPA for treatment (if required) and disposal of the hydrostatic test water.
- 1.4 Jetty design will be in accordance with Department of Marine and Harbours regulations.
- 1.5 Dredging operations will be conducted at all times to the satisfaction of the Dampier Harbour Master and the EPA.

2 DURING CONSTRUCTION

- 2.1 Monitor the environmental impacts of the proposed dredging operation to the satisfaction of the EPA through the existing CHEMMS programme.
- 2.2 Exercise due care in planning the site layout and during construction to preserve the archaeological sites in the development area and to consult with the Western Australian Museum and appropriate Aboriginal custodians should site disturbance be required or new sites identified.
- 2.3 If the construction noise levels prove to be a problem to the adjacent residential areas, Woodside recognises its obligation to devise corrective action under the noise abatement statutes of Western Australia. This will be to the satisfaction of the EPA.
- 2.4 Consult with the local authorities and follow local guidelines in the landfill disposal of inert construction waste.
- 2.5 Consult with local authorities and follow local guidelines in the disposal of insulating waste.
- 2.6 Work with its suppliers and subcontractors to minimise the quantity of waste and assure that the wastes generated are disposed of in an environmentally friendly manner.

2.7 Upon acceptance of the hydrostatic test water disposal plan, Woodside will seek authorisation from EPA for the discharge of these waters.

2.8 Work with its subcontractors to assure that spent pickle liquor is either recycled or disposed of in an environmentally friendly manner. This will be conducted to the satisfaction of the EPA.

3 POST CONSTRUCTION

3.1 Results of the CHEMMS programme will be forwarded for review to EPA in accordance with existing reporting procedures.

3.2 Operate the new equipment using established practices and procedures including those for environmental management and safety to the satisfaction of the Department of Minerals and Energy and the EPA.

3.3 Continue the monitoring programme (CHEMMS) to assess the impact of Woodside's activities in Mermaid Sound.

3.4 The new jetty and infrastructure will be incorporated into Woodside's emergency response plan.

3.5 The exclusion zone around the existing LNG jetty is 500m and the new LPG jetty will have a similar exclusion zone.

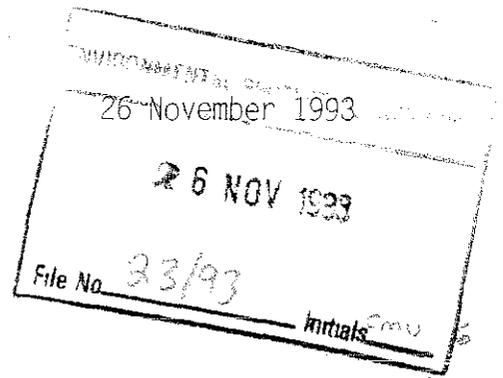
Appendix 2

**Request from Woodside Offshore Pty Ltd to
amend the Dredging Proposal**



Our reference: DE:RAW-4911 6.9.1

Your reference:



The Deputy Chairman
Environmental Protection Authority
Westralia Square Building
141 St George's Terrace
PERTH WA 6000

Dear Sir

ADDITIONAL FACILITIES WITHIN ONSHORE TREATMENT PLANT:
LIQUEFIED PETROLEUM GAS EXTRACTION AND EXPORT, BURRUP PENINSULA (782)

I refer to the Minister for the Environment's letter of 24 August 1993 granting approval for the above project from an environmental viewpoint. One of the conditions of the approval is that the timing and method of dredging shall be performed in such a manner that there is no significant impact on coral spawning in the area, to the requirements of the Minister for the Environment on the advice of the Environmental Protection Authority (EPA). We are also committed to developing a dredge spoil management plan in consultation with the EPA.

The Consultative Environmental Review (CER) which we prepared for the project described the dredge spoil as being disposed onshore at No Name Creek. We gave a commitment to develop a dredge spoil management plan to prevent significant quantities of fine sediment being carried out into No Name Bay.

In the course of developing our plans with prospective contractors, it was realised that we would be unable to give assurance that this would not be the case. We now propose to dispose of the dredge spoil offshore in a previously used offshore disposal ground. Offshore disposal will provide more assurance in preventing any significant environmental impact to the nearshore and we therefore propose that this change to the project is considered as not substantial. We would seek your concurrence that this is the case in accordance with Condition 2 of the abovementioned Minister's letter.

We are now in a position to plan for the dredging operation which we would like to perform in the period 1 February to 30 September 1994. We need to have completed the dredging as early as possible so as to minimise interference with the schedule for jetty construction. Dredging earlier than 1 February 1994 is constrained by the lack of availability of suitable dredgers.

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WOODSIDE OFFSHORE PETROLEUM PTY. LTD.

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Box D188 G.P.O. Perth, Western Australia, 6001. Telephone: (09) 224 4111. Cables: Wooddev. Telex: AA92326. Facsimile: (09) 325 8178. (Incorporated in Western Australia)

We intend to carry out the dredging operation using both a trailer dredge and a cutter dredge. The trailer dredge will be fitted with an Anti-Turbidity Overflow System (ATOS) which comprises an onboard stilling basin with discharge from the bottom of the vessel's hull (approximately 8m below surface). The cutter dredge also involves discharge from a similar depth below the water surface. These measures will assist in minimising turbidity caused by the operation. More details are provided in the Dredge Spoil Management Plan (Attachment 1).

As previously mentioned and discussed with your officers, it is now proposed that the dredge spoil will be discharged to the seabed at a previously used dredge spoil disposal ground. A permit has been obtained from the Commonwealth EPA (see Attachment 2) under the terms of the Sea Dumping Act for disposal of up to 900,000 m³ of spoil to take place in Areas A and B (see Attachment 3).

This is the same spoil ground that was used for disposing of 8.9 million m³ of spoil from the dredging of the main LNG channel during the period October 1986 to June 1987 and in May 1989. A coral monitoring programme was undertaken at that time and no adverse effects were noted to corals on the neighbouring coastlines (refer to CER for references). Despite the smaller volumes to be disposed, Woodside will carry out further ecological effects monitoring in the vicinity of the currently proposed operation. A copy of the proposed monitoring programme is provided as Attachment 4.

We are aware that coral spawning takes place in early April and that the success of spawning depends upon a suite of environmental conditions (eg sea temperature, water turbidity etc) which are subject to considerable natural variation dependent upon climatic conditions. We are confident that our proposed dredging operations (as noted above) will not have a significant additional impact on coral spawning. Nevertheless, if practical, we will endeavour to avoid scheduling specific operations in this particular period as a precautionary measure.

In accordance with Condition 4 of the abovementioned Minister's letter, we would appreciate the Minister's approval of our proposed timing and method of dredging as soon as possible. We will then be in a position to finalise contractual arrangements and ensure that we have secured the dredgers for the required period. As agreed at our meeting with your Colin Murray on 24 November, please advise the Minister regarding the environmental acceptability of this dredging operation. We would appreciate receiving his approval before Friday, 10 December in order to meet the project award deadline which has been agreed with the prospective contractor. Delay to this award date could result in significant extra expenditure for the project.

We look forward to hearing from the Minister.

Yours faithfully



Dr R A D WRIGHT
Environment Manager

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