293

SALADIN OIL FIELD DEVELOPMENT

WEST AUSTRALIAN PETROLEUM PTY LTD

Report and Recommendations of the Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 293 July 1987

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CONTENTS

FIGURES

TABLE

APPENDIX

SUMMARY

West Australian Petroleum Pty Limited (WAPET) has proposed the development of the Saladin offshore oilfield close to Thevenard Island, some 25 km NNW of Onslow. Production of light crude oil from the offshore wells would be transferred by pipeline to a treatment and storage facility on the island. Tankers would be served by a loading site to the NNE of the island. Production over at least 6 years is envisaged. An Environmental Review and Management Programme (ERMP) was prepared for the proposal and released for public comment.

Major issues raised during the Authority's assessment and public review of the project included

. potential conflict between the existing tourist settlement and the proposed facilities;

. the lack of detailed terrestrial and marine biological information;

. the importance to vegetation of the thin lens of fresh ground water on the island.

The Environmental Protection Authority has concluded that the proposal is environmentally acceptable subject to:

. the commitments made by the proponent in the ERMP; and

. the Authority's recommendations in this report.

1. WAPET

1.1 Drilling of production wells should be in accordance with an approved oil spill contingency plan.

1.2 During pipeline construction care should be taken to minimize disturbance to corals. Pipeline dredging should not be carried out in March in order to avoid the coral spawning period.

1.3 An alarm system should be installed to provide a warning if total hydrocarbons in effluent from the oily water separator exceeded 50 mg/l.

1.4 The oilspill contingency plan should be supplemented with an oil sensitivity map and with information on the expected surface oil movements from spills adjacent to Thevenard Island.

1.5 An Environmental Management Programme must be prepared in consultation with relevant government departments, in particular the Environmental Protection Authority and the Department of Conservation and Land Management and submitted to the Authority for approval prior to commencement of construction. This should include matters raised in the ERMP and

. detailed monitoring programmes related to the onshore and offshore aspects of the project as identified in this report;

. a commitment that if monitoring shows any unacceptable changes then WAPET should propose means of alleviating the problems;

- a commitment to provide brief annual and comprehensive triennial reports to the Authority for review; and

- means of managing workforce environmental effects on Thevenard Island.

2. GOVERNMENT

2.1 The Departments of Mines and Tourism should facilitate discussions between WAPET and Mackerel Islands Pty Ltd to see if acceptable mutual co-existence solutions can be found.

2.2 Vacant Crown land at the eastern end of Thevenard Island should receive appropriate management status so that it can be managed in sympathy with the rest of the island while taking existing or proposed developments into account.

2.3 The lease conditions for WAPET's Thevenard Island facilities should be written to accommodate the possibility of further development of those facilities by other petroleum producers.

1. BACKGROUND

West Australian Petroleum Pty Limited (WAPET) as operator for Permit TP/3 (Part 1) has defined the Saladin offshore oilfield close to Thevenard Island, some 25 km NNW of Onslow. Recoverable oil reserves are estimated at between 2.5 and 6.4 million kl.

The Authority considered a Notice of Intent on the project in January 1986 and recommended preparation of an Environmental Review and Management Programme. The ERMP was released for public comment in March 1987 with a 10 week review period.

Other oilfields are being exploited in the area. Wesminco has defined three small offshore oilfields, Chervil, North Herald and South Pepper between Onslow and Barrow Island. Also Bond Petroleum has discovered the Harriet Oil Field north east of the WAPET Barrow Island field. Wesminco is currently developing its small fields using Airlie Island for oil storage. Bond Petroleum utilizes Varanus Island for oil storage while WAPET has developed a land based oil field with processing and storage facilities on Barrow Island. The regional setting is presented in Figure 1.

2. THE PROPOSAL

The project would involve the production of light crude oil from the Saladin field adjacent to Thevenard Island. Four small platforms would be located some 1 km to 3 km offshore from the island. Production from the wells would be carried by individual pipelines to a treatment and storage facility on the north eastern portion of the island.

Oil, gas and water would be separated in the process plant with the processed crude oil being stored in three tanks each of 39750 kl (250,000 barrels) capacity. A submarine shiploading pipeline would carry stabilized crude oil to tanker moorings located about 7 km north north east of Thevenard Island in at least 16 m of water. The proposed onshore facilities are shown on Figure 2.

The field is expected to have a productive life of at least six years and would be served by a resident workforce of 15.

A summary of various emissions and wastes from the operation is presented in Table 1.

3. ALTERNATIVES

Alternative options considered by WAPET included:

- offshore floating vessel for oil storage with either floating or platform processing and shiploading facilities;
- onshore oil storage at Barrow Island, Airlie Island or on the adjacent mainland with offshore platform processing linked by pipeline; and
- onshore oil storage and processing facilities at Thevenard Island with offshore shipping facilities.

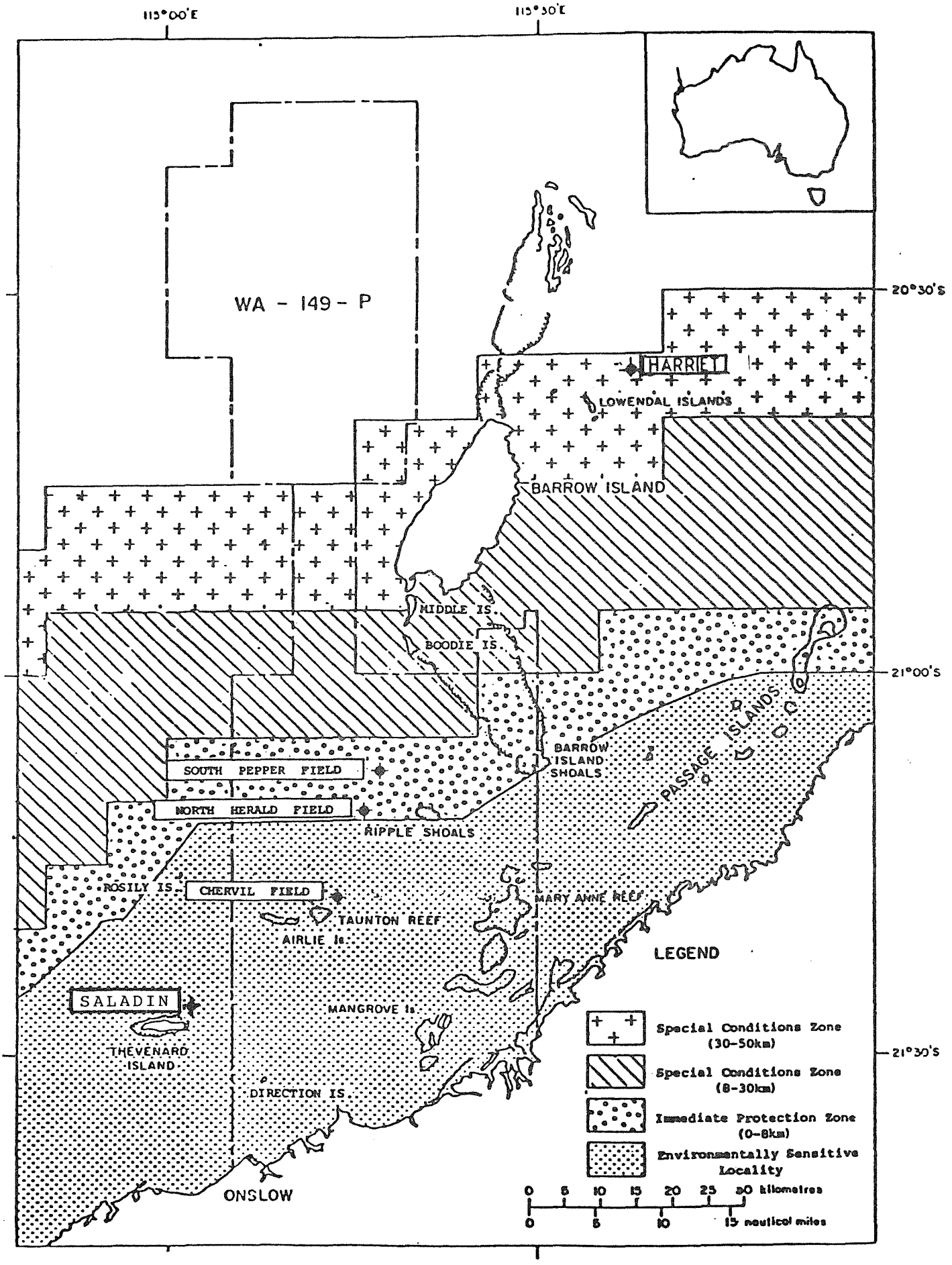

Figure 1. Location

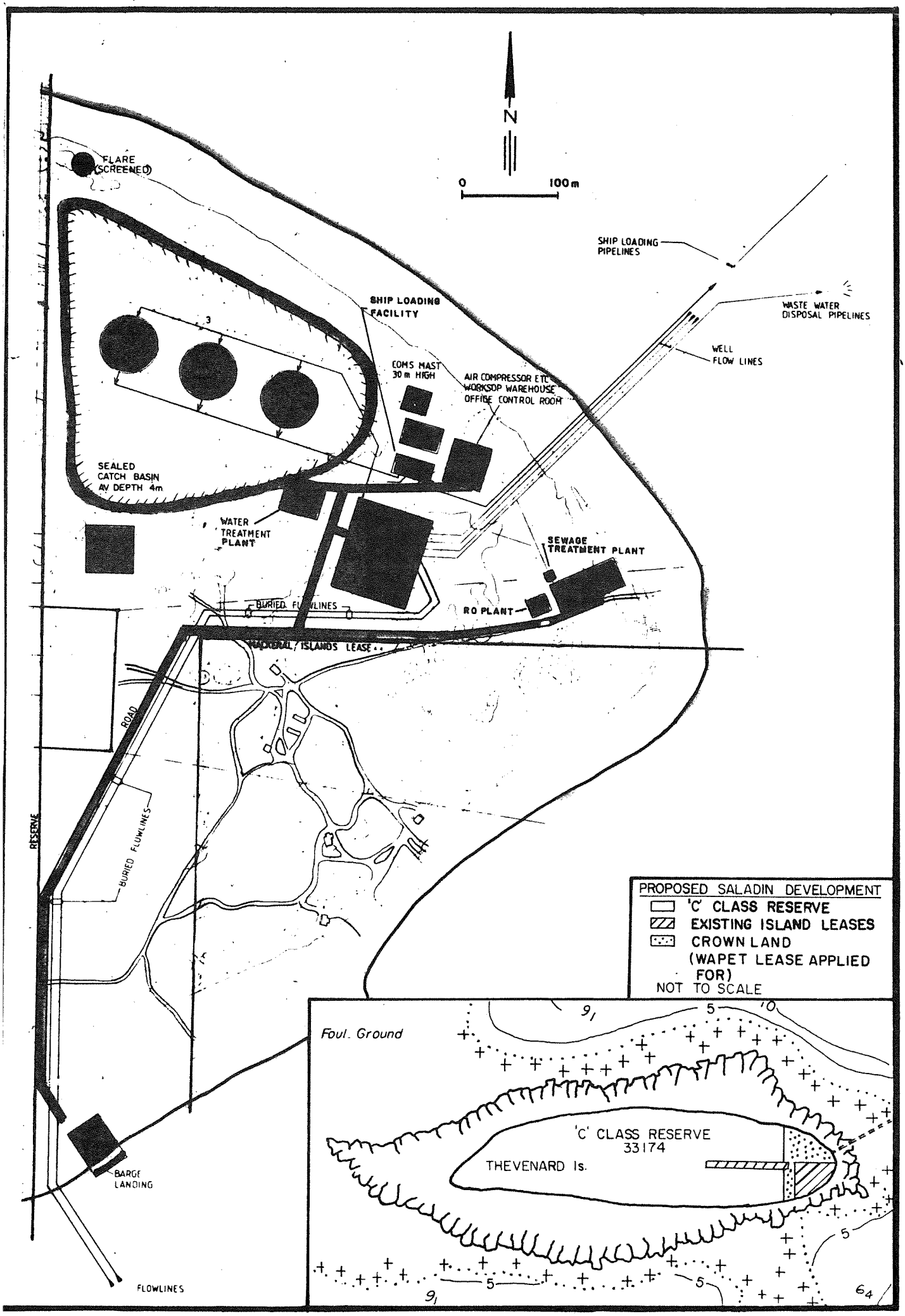

Figure 2. Preferred Development Option - Onshore Facilities (from ERMP)

Table 1. Summary of Emissions and Wastes (from ERMP)

EMISSION OR WASTE	VOLUME/INTENSITY	COMMENT
Flared gas	-	Excess gas will be flared in an enclosed incinerator type flare
Produced water	1600 kl/d maximum, 480 - 950 kl normal	Marine discharge by pipeline in at least 12 m water depth following oil removal. TDS 35000-40000 ppm, pH 6-7.5, Amine corrosion inhibitor 10 ppm, oil up to 30 ppm, emulsion breaker (if required) 1 ppm.
Reverse Osmosis Plant Concentrate	130 - 180 kl/d	Marine discharge by pipeline in at least 12 m water depth TDS 35000 ppm, pH 7-8, phosphonate scale inhibitor 5 ppm.
Tanker Ballast	3 200 kl max	Marine discharge by pipeline following oil removal 20 d/y. Sea water. pH 8, oil up to 3 ppm.
Drainage and Washdown Water	200 kl max	Marine discharge by pipeline following oil removal. Inter mittent. Variable salinity, up to sea water. pH 6-8, oil up to 30 ppm.
Treated Sewerage	30 kl/d max	Marine discharge of treatment plant effluent by pipeline.
Power Generator	-	Noise within community noise regulations
Garbage	-	Domestic flammable waste would be incinerated. Other material either buried or compacted and removed from island.
Crude Tank Spills, Diesel fuel spills	-	Contained by storage bunds.

WAPET preferred the Thevenard Island development as it was the most economically attractive, the least complex to develop and operate, offered the greatest opportunities for integration with existing operations and cost effective incorporation of production from future discoveries in the area. The proposed development was also assessed by WAPET to have the least environmental impact.

Use of alternative islands would have necessitated large offshore platform construction to enable oil processing prior to pumping, with a consequent higher potential for oil spills. Further, the Wesminco Airlie Island project is expected to be of short duration and because of the presence of extensive muttonbird nest sites it would be better to minimize disturbance there, keeping the major longterm operations to Thevenard Island.

4. THE ENVIRONMENT

The Saladin oilfield is located in water depths of 10 to 15 m. The Rowley Shelf, a broad limestone platform underlies the coastal waters and extends to the vicinity of Barrow Island. This has resulted in shallow coastal seas with many small islands formed by limestone outcrops. Intertidal platforms fringe most islands.

The locality is subjected to strong easterly winds in winter and constant south westerlies in summer. An average of 1.5 tropical cyclones per year pass over the area.

Surface water movements are dominated by tidal currents modified by wind stress. Opposing flows around islands and reefs often cause complex local movements.

The islands in the area are of low relief with low shrub vegetation providing important habitats for a variety of life. Some islands only support seabirds while others have mammals, reptiles and seabirds (eg Barrow group). Mangrove communities occur on the Mangrove Islands and extensively along the mainland coast.

The marine ecosystem of the Rowley Shelf has macroalgae, seagrass and coral communities in localized areas. Most of the seabed is bare limestone covered in part with loose sand and broken rubble that supports relatively sparse biological communities. The proposed production platforms would be established on this sand and gravel covered pavement. However, the proposed pipeline corridors include a traverse of 500 m of corals and a similar traverse of algal meadow. Much of the affected coral is dead and coated with fine silt. The cause of coral death is not known but may be due to effects of flooding of the Ashburton River, or predation.

The marine fauna is very diverse, including prawns, commercial fish species, turtles, whales, dugongs and various seabirds. Major catastrophic events can occur in the local marine environment due to climatic extremes such as intense cyclones, exceedingly low tides or major flood discharge of coastal rivers. Recovery of marine organisms can be rapid, say with algal flats and seagrass meadows or could take many years as in the case of corals and mangroves.

Thevenard Island is a low relatively flat island about 5 km long, 1 km wide and 5 m high comprised of sand ridges. It is surrounded by a shallow limestone platform. The island contains a shallow freshwater lens of groundwater, underlain and confined by sea water. The island is important for breeding of turtles and some species of seabirds. It also supports

relatively large flocks of migratory waders during the year. Forrest's Mouse Leggadina forresti is the only native land mammal on the island. It is important as it is not well represented on the mainland. The occurrence of Spinifex bird on the island is also locally significant as it is known from only a few other Pilbara islands although it is widespread on the mainland.

Most of Thevenard Island is classed as a C Class Reserve for flora and fauna protection. The reserve occupies 543 ha of the island with the remaining 57 ha at the eastern limit of the island being vacant crown land (VCL). Approximately half of the VCL is leased to Mackerel Islands Pty Ltd for a tourist development and airstrip. The island is listed on the National Estate Register and has been the subject of EPA Red Book recommendations in accordance with the current reserve vesting.

The project area is within the Rowley Shelf Special Protection Locality that has defined safeguards for offshore oil exploration and production.

5. PUBLIC AND GOVERNMENT SUBMISSIONS

Two public submissions and nine responses from State and Commonwealth Government agencies were received during the public review period. A summary of the issues raised is provided in Appendix 1. The major issues included:

- potential conflict between the existing tourist settlement and the proposed facilities;
- the lack of detailed terrestrial and marine biological information; and
- the importance of the thin freshwater lens to vegetation.

The Company has addressed the issues raised in a subsequent letter to the Authority.

6. ENVIRONMENTAL ASSESSMENT

6.1 PRODUCTION WELLS

It is likely that the bulk of any drilling mud discharge from production wells will accumulate in the vicinity of each well. Some covering of the sparse but diverse epibenthos in the vicinity of the wells could occur but the ecological consequences would probably be minimal. Drilling of these wells should be in accordance with an approved oil spill contingency plan.

Drilling of production wells should be in accordance with an approved oil spill contingency plan.

Although the well structures only allow for boat access, they are designed to operate unattended with automatic safety systems and shutdown devices in addition to manually operated devices. These would be supported by a remote monitoring and control system on Thevenard Island.

6.2 PIPELINES

It is proposed that where practical all pipelines would be buried under sandy areas, trenched and buried in soft rock areas and stabilized by concrete mats, weight coating or pinning in hard rock areas. Prevention of

any movement of pipelines by bottom currents or storm induced wave and surge conditions would be essential to ensure the safety of the pipelines. The Authority is satisfied that pipeline damage would be unlikely if the proposed management techniques were adopted.

The effects of dredging on corals was raised during the review period. However, the activity would be in areas of degraded coral. Also effects on coral spawning success and recruitment should be avoided as WAPET has stated that it is unlikely that dredging would be conducted in the March spawning period.

During pipeline construction care should be taken to minimize disturbance to corals. Pipeline dredging should not be carried out in March in order to avoid the coral spawning period.

6.3 THEVENARD ISLAND TREATMENT AND STORAGE FACILITY

6.3.1 MACKEREL ISLANDS PTY LTD SETTLEMENT

Mackerel Islands Pty Ltd, lessees of land for a tourist settlement immediately to the south of the proposed treatment and storage facilities, has opposed the proposal. The concerns included the effects of both the construction and operation of the project on the concept of the settlement. It has been advertised as a quiet and secluded location where the island's flora, sandy beaches, water, corals and fishing could be enjoyed.

The storage tanks and frequent air traffic would probably be the most obvious changes experienced by the settlement. In addition, the proposed workforce of 15 would increase the numbers on the island. A total of 576 people, or an average of 12 per week, stayed at the settlement in 1986. A resident workforce for the life of project is likely to increase the impact on the island and the surrounding region, even if constraints are placed on movement outside the plant site. However the degree of impact should be minimized by active management of aspects such as strict control of vehicle useage, designated beach access, and fishing quotas. The details of management would need to be included in the Environmental Management Programme.

Mackerel Islands has requested that if a lease was granted to WAPET on the vacant crown land to the north, then the settlement should be relocated to Serrurier Island prior to construction of the petroleum facilities. WAPET has indicated its willingness to consider this proposal subject to certain conditions. Serrurier Island is a C Class Nature Reserve, important for turtle and wedgetailed shearwater breeding. The establishment of a replacement settlement and airstrip would adversely impact on these values. As a result the proposal is not an acceptable option.

Apart from relocation of the settlement, WAPET has offered to relocate the storage tanks further west on the island to reduce conflict. This would not be desirable as the area of disturbance on the island would be increased.

In addition the service corridors would create barriers to wildlife movement in the nature reserve. It would be desirable to minimize disturbance to the island, restricting developments to the existing vacant crown land.

WAPET has suggested compensation including payment for lost income, accommodation units, water, power and airstrip upgrading. Such arrangements would seem to offer sufficient scope for resolving the apparent incompatability between the two developments. There needs to be direct interaction between WAPET and Mackerel Islands Pty Ltd to see if an acceptable solution can be found. The Departments of Mines and Tourism have particular responsibilities for the proposed and existing developments respectively. Consequently these Departments should act as facilitators in the mutual co-existence issue.

The Departments of Mines and Tourism should facilitate discussions between WAPET and Mackerel Islands Pty Ltd to see if acceptable mutual co-existence solutions can be found.

6.3.2 WILDLIFE

The project would not reduce the vegetation diversity on the island and as a result it is unlikely that wildlife populations including those of Forrest's Mouse or spinifex bird would be affected significantly. However, it would be essential to conduct detailed wildlife baseline studies within the proposed island project area and in the existing nature reserve to demonstrate this.

Lights are known to attract turtle hatchlings and repel adult turtles. As a result WAPET has planned that lights on the island would not be visible from the sea particularly during the turtle breeding season. The shielded flare should not be a cause of disruption to turtles.

WAPET has recognized the potential for disruption to wildlife by the workforce and has undertaken to prepare a detailed environmental management programme similar to that applied on Barrow Island. The management plan would cover staff education, supervision, flora and fauna protection, fishing, island access, motor vehicle use and use of aircraft and boats.

6.3.3 QUARANTINE

To minimize the risk of introducing weeds and feral animals, WAPET has proposed the adoption of quarantine regulations similar to those being applied to the Bond Petroleum Varanus Island development. The effectiveness of the approach would need to be monitored.

6.3.4 PRODUCED WATER

Comparison with studies conducted for the Wesminco Airlie Island proposal has shown that oil contained within produced water discharged north of Thevenard Island at concentrations acceptable to the Department of Mines should not affect adjacent corals. Oil contaminated stormwater and process water would be similarly discharged along with treated sewerage and reverse osmosis plant brine. To ensure that pollution does not occur and to be able to assess the effectiveness of the oily water separator, the treated water should be continually monitored. Also a warning system should be installed to indicate when total hydrocarbon concentrations exceed 50 mg/l. This concentration is in accordance with Department of Mines requirements.

An alarm system should be installed to provide a warning if total hydrocarbons in effluent from the oily water separator exceeded 50 mg/l.

6.3.5 NOISE

WAPET has planned to design project facilities and machinery to ensure that the Noise Abatement (Neighbourhood Annoyance) Regulations are adhered to.

6.3.6 PIPELINE STRINGING

It has been proposed that pipeline stringing could be conducted offshore. This would be desirable in order to minimize disturbance on the island.

6.3.7 FIRE FIGHTING

It is proposed that sea water would be used for fire fighting. This would be suitable for installation fires but would kill vegetation if used for scrub fires. WAPET has stated that limited fresh water would be available for small scrub fires. Further, it would cooperate in any fire fighting programme initiated by the Department of Conservation and Land Management and involving Mackerel Islands Pty Ltd for fires outside the proposed facilities. This approach would be acceptable to the Authority.

6.3.8 REHABILITATION

Once no further production was possible from Saladin or other fields in the area WAPET would abandon the field and remove all its facilities. Rehabilitation work has been proposed to stabilize areas disturbed during construction and at decommissioning. Topsoil and cleared vegetation from disturbed areas would be stored for this purpose. The vegetation would be chipped to simplify storage and respreading. Details of rehabilitation would need to be resolved with the Department of Conservation and Land Management prior to commencement of restoration work.

6.3.9 LAND TENURE

For efficient management of the WAPET activities on Thevenard Island, it would be desirable for the vacant Crown land to receive appropriate management status so that it can be managed in sympathy with the rest of the island but without precluding changes to existing or proposed land uses. It is understood that action to achieve this end is in progress.

Vacant Crown land at the eastern end of Thevenard Island should receive appropriate management status so that it can be managed in sympathy with the rest of the island while taking existing or proposed developments into account.

WAPET's lease conditions should be written so as to accommodate the possibility of further petroleum developments if additional fields are discovered nearby.

The lease conditions for WAPET's Thevenard Island facilities should be written to accommodate the possibility of further development of those facilities by other petroleum producers.

6.5 OIL SPILLS

Oil spills are recognized as the most common cause of environmental pollution associated with offshore activity. However, statistics indicate that the vast majority of spills are small.

It would be important to contain any oil or chemical spills on Thevenard Island to protect the fresh groundwater resource. The ERMP summarizes the range of activities planned to minimize the risk of pollution. It would be necessary to seal the various bunded areas around storage containers to allow for clean up and to prevent infiltration. A series of monitoring bores should be installed prior to plant commissioning to enable regular inspection of groundwater quality.

Offshore spills may result from pipeline accidents, oil well blowouts, explosions and fire, severe storms and tanker accidents and operations. However, studies for the nearby Wesminco oilfield development have shown that there is a very low probability of a large spill (eg spills of less than 4 m^3 would almost certainly happen but for spills of more than 50 000 m^3 the probability is 1 in 600 000).

The very light crude oil or diesel fuel that may be spilt would very rapidly evaporate, particularly when considering the seawater temperature range of 20^o to 30^o. As a consequence the major area of risk from marine oil spills is the subtidal and intertidal zone surrounding Thevenard Island. The Company has taken this into account in its oilspill contingency plan. However, there is a need to supplement the plan with detailed information about expected surface oil movements from any spills adjacent to the island.

Further, the plan should include detail of the sensitivity to oil spills of the various sub tidal and intertidal environments that may be affected by oil spills. This would assist decision-making during oil spill control activity.

The oilspill contingency plan should be supplemented with an oil sensitivity map and with information on the expected surface oil movements from spills adjacent to Thevenard Island.

The Authority notes that hazard risk analyses are proposed for both accidental fires in the onshore facilities and offshore oil spills. However, the ERMP shows that there is a low probability of such incidents occurring and the Company has proposed satisfactory management approaches to minimize their effects. Consequently such detailed information would not be necessary for environmental impact assessment of the project.

6.6 MONITORING

WAPET has not provided any detail of the monitoring proposed for its Environmental Management Programme, although it has made a commitment to developing the necessary programmes in conjunction with the relevant government departments.

Onshore monitoring would need to include studies within and outside the project area to determine the effectiveness of quarantine measures. Regular sampling would be required of groundwater and water from the oily water separator. The offshore programme should cover subtidal and intertidal locations that may be affected by oil spills. Control locations would also be necessary. There is a need to predict oilspill movements adjacent to Thevenard Island through the use of simulated spills under varying tide, sea and weather conditions.

If the monitoring shows any unacceptable biological or physical changes then it would be necessary for alternations to be made to the operation.

6.7 REPORTING

The Company has proposed making regular reports on its management activity in accordance with its Environmental Management Programme. It is considered that comprehensive triennial reports on the environmental management programme covering work carried out and plans for the next triennium should be provided for review by the Authority. These reports should be supplemented by brief annual reports outlining progress with the environmental work, any notable results and any notable changes to the programme. The first report should be prepared following commencement of production. This should summarize the results of baseline studies and discuss progress with the environmental management programme. The last report should follow decommissioning and contain triennial report detail.

An Environmental Management Programme must be prepared in consultation with relevant government departments, in particular the Environmental Protection Authority and the Department of Conservation and Land Management prior to commencement of construction. This should include: matters raised in the ERMP and:

- *detailed monitoring programmes related to the onshore and offshore aspects of the project;*
- *a commitment that if monitoring shows any unacceptable changes then WAPET should propose means of alleviating the problems;*
- *a commitment to provide brief annual and comprehensive triennial reports to the Authority for review; and*
- *means of managing workforce environmental effects on Thevenard Island.*

7. CONCLUSIONS

The low risk of oil pollution from the production well heads, pipelines and tanker loading indicates that the offshore aspects of the proposal are environmentally acceptable.

WAPET's proposed Thevenard Island operations are environmentally acceptable subject to being carried out in accordance with the Company's ERMP and the Authority's recommendations. The alternative of supplementing the Wesminco facilities on Airlie Island is not desirable because of both the greater risks of offshore oil spills from a processing platform and the increased disturbance to bird nesting sites.

APPENDIX 1

SUMMARY OF COMMENTS

OIL STORAGE SITE OPTIONS

One submission indicated support for the ERMP preferred option of using Thevenard Island for oil storage. Another submission favoured the option of using Airlie Island for oil storage due to its remoteness and because any spill or discharge would have less consequences on inshore primary producers. The submission indicated that the reasons given to preclude the option could not be justified substantially on environmental grounds.

OIL SPILL PLAN

One submission suggested that a model study on tidal currents in the region should be prepared as with present data, predictions of the flow of oil in the event of a spill could not be predicted. It recommended that the results of this model study should be included in the oil spill contingency plan for the Saladin oilfield.

OILFIELD CHARACTERIZATION

A submission indicated that the report did not correctly characterize the Saladin oil. It pointed out that the material was more like gasoline containing a percentage of kerosene.

OIL SPILL TRAJECTORY

One submission saw the methodology of the oil spill trajectory as reasonable.

One submission saw the computer modelling as of little value due to the fact that the nature of the oil had been incorrectly characterized. It mentioned that an oil spill would not be the conventional (oil slick) situation but that the material would disperse rapidly with rapid evaporation and most likely it would be difficult to locate any residue after twenty four hours.

CONSERVATION SIGNIFICANCE

Submissions had the view that the conservation significance of the island was understated in the report.

It was mentioned that little attention had been paid to the importance of turtles, waderbirds protected by the Japan-Australia Treaty and seabirds which breed in the area.

BIOLOGICAL SURVEY

Submissions expressed the view that the biological survey of the area was inadequate.

TERRESTRIAL FAUNA

It was mentioned that collecting methods ie the observation and field identification of fauna were inadequately described and hence it was not possible to evaluate the comprehensiveness of the list.

Inaccuracy was noted in naming of fauna and some misspellings were found.

TURTLES

A submission said that the island was a major turtle hatchery and expressed that the reference to turtles in the document was too brief.

One submission advised that adult turtles and hatchlings could be disorientated by lights and recommended that the lighting in the oil base should be shaded.

BIRDS

It was mentioned that the terrestrial and seabird lists were incomplete.

FLORA

There was concern that the seed of the species of Tribulus occurring on the island, could be spread into disturbed areas and cause workforce problems of sticking to feet and shoes.

It was mentioned that the ERMP did not consider how to prevent the spread of exotic plants during construction of the facility on the island.

MARINE ENVIRONMENT

One submission indicated that the descriptions of the marine environment and biota were not covered in sufficient detail and that the report did not mention a monitoring programme for the marine environment.

CORALS

Submissions were concerned about the effects of oil spills and dredging operations on corals.

It was mentioned that corals breed in March and therefore extra precaution was necessary to prevent low levels of hydrocarbons from interfering with this process which was vulnerable to surface pollutants.

One submission pointed out that coral spawn is sensitive to mud plumes resulting from dredging and suggested that the operation be conducted outside the spawning.

It was also suggested that tunnelling oil flow lines under the reef rather than cutting and dredging may be environmentally less damaging.

ABORIGINAL SITES

One submission said that the report did not indicate whether consultation had taken place with Aboriginal people in coming to the conclusion that there was no Aboriginal interest in the island.

ENVIRONMENTAL MANAGEMENT

A submission said that CALM should be involved in all aspects of the management of impact of the development on the terrestrial (and to a lesser extent the marine) environment.

FIREFIGHTING

It was mentioned that freshwater should be used for firefighting rather than seawater as seawater retarded regrowth of vegetation after fire.

CROWN LAND AND NATURE RESERVE

It was favoured that the vacant Crown Land be added to the nature reserve and a lease for the oil base issued to WAPET by CALM and that the reserve be extended to the low water mark to protect intertidal flora and fauna.

TOURISM

Comment was made that the ERMP did not cover impact of the development on the holiday camp adequately.

Submissions commented that however well designed an industrial plant was, it seemed incompatible with a tourist camp marketed in terms of its privacy and isolation. There was a strong objection to the proposed development on this basis.

FACILITIES/SERVICES

The question was asked as to what extent facilities/services associated with the project would be available to lessees of the Islands and the public.

COMPENSATION

Submissions mentioned compensation by WAPET in the event that the tourist resort's viability was significantly affected.

ONSLOW SERVICES/FACILITIES

A submission said that no indication was given of the extent of use of Onslow for logistics and transport purposes.

One submission was concerned that the limited holiday accommodation at Onslow would be used for worker accommodation during the construction and operation phase of the project.

THE PROPONENT

In relation to WAPET's environmental management experience in the region, submissions expressed confidence in their ability to manage the project to ensure minimal disturbance to the island.

ERMP

Submissions indicated that some aspects were covered in insufficient detail to enable comment.

Omissions and incorrect statements, and inconsistencies within the main document and between the main document and appendices were noted.

One submission mentioned that the document indicated that a number of aspects would be covered in the EMP but which according to the EPA guidelines should have been included in the ERMP in as much detail as

possible. It referred to the aspects of monitoring and monitoring locations and assigning of responsibility for environmental management as not being covered sufficiently.

THE PROPOSAL

One submission indicated that it had no objection to the proposal.

Another submission said that the contents of the report were acceptable.

One submission recommended that no facilities be established on Thevenard Island.

ISSUE	NO OF SUBMISSIONS
Oil Storage Site Options	2
Oilspill Plan	1
Oilfield characterization	1
Oilspill trajectory	2
Conservation significance	3
Biological Survey	3
Terrestrial Fauna	2
Turtle	2
Birds	1
Flora	1
Marine Environment	1
Corals	3
Aboriginal Sites	1
Environmental management	1
Firefighting	1
Crown Land and Nature Reserve	1
Tourism	4
Facilities/services	2
Compensation	2
Onslow Services/Facilities	2

LIST OF RESPONDENTS

Department of Marine and Harbours
The Royal Australian Chemical Institute (WA Branch)
Department of Arts, Heritage and Environment
Department of Conservation and Land Management
Division of Natural Science, WA Museum
Department of Aboriginal Sites, WA Museum
Department of Land Administration
Department of Resources Development
WA Tourism Commission
Mackerel Islands Pty Ltd
Australian Heritage Commission