

On Browse Island 2 hrs 40 mins.

ENVIRONMENTAL VALUES ASSESSMENT - BROWSE ISLAND

Nature Conservation

The major value of Browse Island is as a turtle rookery site. The observed degree of use by turtles on a high water spring tide in mid-February and the extensive evidence of nesting excavations all round the beach areas is sufficient evidence of this fact. Viability of nests made on different parts of the beach area appears likely to be quite variable, however. It seems likely that severe erosion and inundation of the beaches could easily occur with coincidence of a severe tropical storm and a high water spring tide. The south eastern tip of the island appeared particularly vulnerable in this respect.

Protection of viable nest sites and of nesting adult and hatching juvenile turtles from unnatural disturbance is a most important consideration.

Historical : Industrial and Marine Archaeology

Browse Island was the site of unlicensed guano mining prior to 1876. Mining continued after this, and during the period 1878-1887 a number of ship wrecks occurred. Two historic wrecks have been listed by the Australian Heritage Commission (Dr Mike Pearson, pers. comm. 18/2/1986), and seven wrecks in total are thought to be present. One "substantially intact", but otherwise unidentified wreck was located by the former W.A. Museum Inspector of Wrecks, Mr Scott Sledge in the early 1970s (Mike McCarthy, current office holder, pers. comm., 18/2/1986). In addition to these shipwrecks, the remains of the guano quarry and any associated artifacts still onshore have historical importance (Myra Stanbury, pers comm., 18/2/1986).

Avoidance of disturbance, prevention of unauthorized removal of any remaining artifacts, and proper site recording at a later date is necessary.

Other

The DoT navigation aid(s) and the Bureau of Meteorology installations on Browse Island together provide ongoing practical benefits.

Protection of these sites is mandatory pursuant to relevant Commonwealth legislation.

SITING AND MANAGEMENT OF SANTOS' EXPLORATORY DRILLING OPERATION - 1986

Access

There is only one practical and safe seaward access to the island. This is from the eastward onto the south eastern tip of the island. Turtle nests exist and are dug here, but the area appears more vulnerable to wave erosion than many of the other island beach areas. The DoT "Lark" also regularly traverses this area already. It can therefore be considered to provide the "least damage" access route for unloading equipment onto the island. Vehicles with low weight/tyre area loadings such as the "Lark" can readily traverse the unconsolidated seaward beach zone.

Heavy equipment such as the vehicles commonly used in oil exploration will need the assistance of "heavy-duty bog-matting" to safely traverse the beach while causing the minimum of disturbance.

Drill Site Selection

The least disruptive option is to locate the drill site on the semi-consolidated beach zone immediately adjacent to the access point. This area is in the east-south east sector adjacent to the existing helipad. Vegetation here is predominantly prostrate ground cover and low growing herbaceous species typical of this habitat on the island.

Accommodation: Operation

Santos' current thinking is to execute the test drilling work in April 1986, with plant and equipment being landed over the first spring tide period (second week), drilling work and seismic testing down-hole done over the next week to ten days, and clean up and removal of gear on next spring tides (last week).

Because this operation is small scale, it is considered unnecessary to establish a camp onshore. Drilling crew will be accommodated on the landing craft offshore. Adequate waste management procedures will be needed to prevent pollutants fouling the reef system.

Onshore, the drill site will need to accommodate the truck-based rig, one well-test unit, front-end loader, fuel dump, and associated materials and other equipment.

Immediate problems of management in regard to protection of wildlife values are seen to be the risk of introduction of plant or animal material, prevention of unnecessary disturbance in site establishment, control of fire hazard(s) associated with operation, adequate rubbish and waste control and disposal measures, minimization of interference with turtle activities on the island, and adequate site restoration on completion of the work.

Proposals for more intensive exploration work that might flow from this test program would require reassessment

NECESSARY PROCEDURES AND CONDITIONS APPLICABLE TO ENVIRONMENTAL MANAGEMENT

Background

Before commencing the drilling operation at Browse Island, SANTOS have to submit their proposed program, including environmental management procedures, to MINES and gain approval. MINES has an understanding with the EPA (administered via DCE) that mineral exploration can proceed in such areas subject to conditions agreed upon in consultation with the concerned Authority(ies).

Technically, our current involvement is as the designated agent of the EPA (discussions with Mr Bill Carr, DCE, 20/2/1986; Mr Carr agrees that this is appropriate, although he had not previously received advice of any interest). Continued involvement will put us in the role previously accepted for Adele Island (F&W 1116/81).

General agreement as to access route and drill site location on the island has been reached as a result of the visit. Other management details considered applicable have been discussed with Mr Morizow, and copies of some previous papers relevant to this operation have been provided from F&W 1116/81 (Adele Island).

Mr Morizow is to now prepare a draft environmental program for further discussion and amendment if required.

On agreement as to final content of the environmental program, SANTOS will submit their proposal to MINES for approval. MINES will seek our endorsement via DCE of the environmental program at this point. Endorsement should be a formality unless unforeseen problems arise.

Conditions

It is anticipated that the environmental management program details acceptable at this juncture and including reference to all values of Browse Island and its reef will be as follows:

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BROWSE ISLAND TEST WELL
ENVIRONMENTAL MANAGEMENT CONDITIONS

General

1. The Company and its contractors and sub-contractors shall comply with the current Australian Petroleum Exploration Association Limited (APEA) Codes of Environmental Practice for both onshore and offshore petroleum exploration.
2. The Company and its contractors and sub-contractors shall ensure that their activities do not in any way interfere with the operation of the navigation aids and remote weather station facilities installed by the Commonwealth Government on Browse Island. In particular, there is to be:
 - (i) no obstruction of the lighthouse to the sea;
 - (ii) no physical interference with or use of the lighthouse and radio facilities;
 - (iii) no radio interference.
3. The Company and its contractors and sub-contractors shall ensure that their activities do not in any way disturb historic shipwrecks and wreck sites found around Browse Island, and historic sites and remains on the island.
4. The Company shall lodge a bond or equivalent guarantee to the value of \$ with the bond to be refunded on completion of the well and abandonment procedures if, in the opinion of the all conditions have been met satisfactorily. The Department shall take advice from the Western Australian Department of Conservation and Land Management in this

regard. Part or all of the bond may be used at the Department's discretion to carry out any works necessary to meet these conditions if those works have not been carried out by the Company. Part or all of the bond may be withheld if company or contractor personnel do not abide by conditions relating to access, etc.

5. The Company shall transport free of cost to and from Perth two officers of the Department of Conservation and Land Management (and their equipment not exceeding 50 kg per person) who shall supervise the environmental conditions herein. The Company shall provide accommodation free of cost for one officer on Browse Island at all times when that officer's presence is necessary in order to discharge the inspection and supervisory responsibilities consistent with the terms of this document.

The Site

1. Access by sea to the island shall be via the south east sector, and the landing site located in accordance with marine safety requirements so as to minimize interference and necessary damage to marine turtle nest sites. This route shall be agreed on site with the Officer of the Department of Conservation and Land Management.
2. The drilling operations site shall be located as close as practicable to the landing site, but not within an area utilized by nesting marine turtles, and accessed by the most direct route across the beach zone as agreed on site with the Officer of the Department of Conservation and Land Management.
3. Care shall be taken to ensure that vehicles crossing the beach zone between the landing site and drill operations site do not bog down.

4. Necessary clearing and disturbance of the area around the operations site shall be the minimum required to operate the rig used and ensure compliance with other environmental management conditions as specified in this document. This area shall be specified by the Company in advance and approval gained.
5. Where clearing and disturbance is necessary, all vegetation and 150 mm (6 inches) of top soil shall be pushed to one side and stockpiled before levelling or compaction takes place.
6. The site for any borrow material that may be needed for the drill site shall be approved by the officer of the Department of Conservation and Land Management. Vegetation and topsoil shall be stockpiled as in (3) above.
7. All equipment, plant, accommodation and stores landed on the island shall be placed on site and not disbursed elsewhere.

Animals and Plants (Wildlife)

1. No animals or plants shall be taken to or removed from Browse Island.

Equipment, machinery, etc.

1. All equipment, machinery, etc., taken to the island shall be free of soil and vegetable (plant) material.
2. The rig and all vehicles shall be washed down at the point of embarkation on the mainland using high pressure hoses employing sea water.

3. The number of vehicles taken to the island shall be the minimum necessary for effective safe operation of the rig, and shall not include recreational vehicles.
4. All containers, accommodation, etc. shall be fumigated with methyl bromide at embarkation and before landing on the island.
5. The landing vessel shall be rodent-free on arrival at the island.

Aircraft

1. No further aircraft landing facilities may be constructed on Browse Island.
2. The existing helipad shall be used.

Vehicle and Personnel Restrictions

1. The Officer of the Department of Conservation and Land Management shall prescribe limits beyond which vehicles, including earthmoving machinery, may not move except in an emergency.
2. Recreational access for personnel to areas beyond the immediate area of the rig shall be controlled and is allowed as set out below:
 - (i) on the reef and surrounding ocean, provided that each Company or Contractor employee may take no more than one giant clam and two of each other species of Mollusc from the reefs surrounding the island, and that they do not disturb historic shipwrecks;
 - (ii) on all beaches during daylight hours, provided that turtle nest sites are not disturbed, and after dark,

provided that there is no interference with nesting or hatching turtles;

(iii) to other vegetated parts of the island provided that activity is restricted to use of pre-existing tracks or pathways, and that personnel do not interfere with established facilities, or disturb sites of previous human activity on the island.

Collection and removal of artifacts is prohibited.

Lighting

1. Lighting shall be kept to the minimum required for safe operations.
2. Lighting on the rig shall be directed inwards toward operational areas and shall not point towards beach areas.
3. Emergency lighting on the helipad or barge landing shall be fitted with diffusers.

Wastes Management

1. Food scraps, sewage and inert inorganic material shall not be deposited on or over the reef, but may be dumped at sea at least one kilometre beyond the reef edge while the tide is falling.
2. Detergents used shall be biodegradable.
3. All toxic wastes shall be collected as produced and returned to the mainland and disposed of in a manner approved by the relevant Local Authority.

4. Combustible inert waste material such as wood and paper shall be collected and removed from the island for disposal on the mainland.
5. The drilling mud shall use a chrome-free lignosulfonate. Disposal of the mud may be either:
 - (i) by pumping into rock formations at least 50 metres below ground level, or
 - (ii) by dumping in a suitably lined mud pit to facilitate dewatering and removal of residues from the island on completion of the job.
6. Water produced from the well shall be cleaned or filtered of hydrocarbons before disposal into the ocean.
7. Waste oils and hydrocarbons

Abandonment

1. The site shall be restored to its original profile.
2. All compacted areas shall be ripped to a depth of 50 cm.
3. The stockpiled topsoil and vegetation shall be spread evenly over the site.
4. Drilling mud residues (if any remain) shall be collected for removal and disposal and the mud pit site reinstated as in (1) above.
5. All containers, accommodation, etc. shall be fumigated with methyl bromide on or after leaving the island and before disembarkation on the mainland.

Miscellaneous

1. No open fires may be lit on the island, except for barbecue fires in a properly secured site.
2. Recreational drinks shall be in steel cans, not aluminium cans or bottles.
3. No wildlife may be disturbed except as provided in the above conditions relating to construction of the rig site.

Department of
CONSERVATION & LAND MANAGEMENT
WESTERN AUSTRALIA



With Compliments

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