Australian Drilling Associates Pty Ltd

AUSTRALIAN DRILLING ASSOCIATES

Gippsland Basin West Triton Drilling Program

ENVIRONMENT PLAN
EXECUTIVE SUMMARY

Prepared by
Coffey Natural Systems

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SPECIALISTS IN PEOPLE AND PLACE

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WEST TRITON DRILLING PROGRAM – GIPPSLAND BASIN

Prepared for:

Australian Drilling Associates Pty Ltd

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Australian Drilling Associates Pty Ltd ADA

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1 EXECUTIVE SUMMARY

1.1 The Proponent

Australian Drilling Associates Pty Ltd (ADA) is the proponent for the Gippsland Basin West Triton Drilling Program.

ADA is acting as the proponent for a consortium of oil and gas companies. The consortium participants are Nexus energy, 3DOil and Stuart Petroleum. ADA is an international well engineering and project management company, with its head office in Melbourne.

1.2 The Proposal

ADA proposes to undertake a drilling program in the Gippsland Basin of eastern Bass Strait at five sites in Commonwealth waters (Figure ES1). Water depths in the project area range from approximately 35 m to 65 m.

The West Triton jack-up drilling rig will drill six wells at the specified locations following a drill program for Apache, also in the Gippsland Basin. Drilling will occur 24 hours per day.

Two support vessels will service the rig and there will be approximately 15 support vessel trips per month during the drilling program. Both vessels will return to port for refuelling. There will be helicopter support to the drill rig.

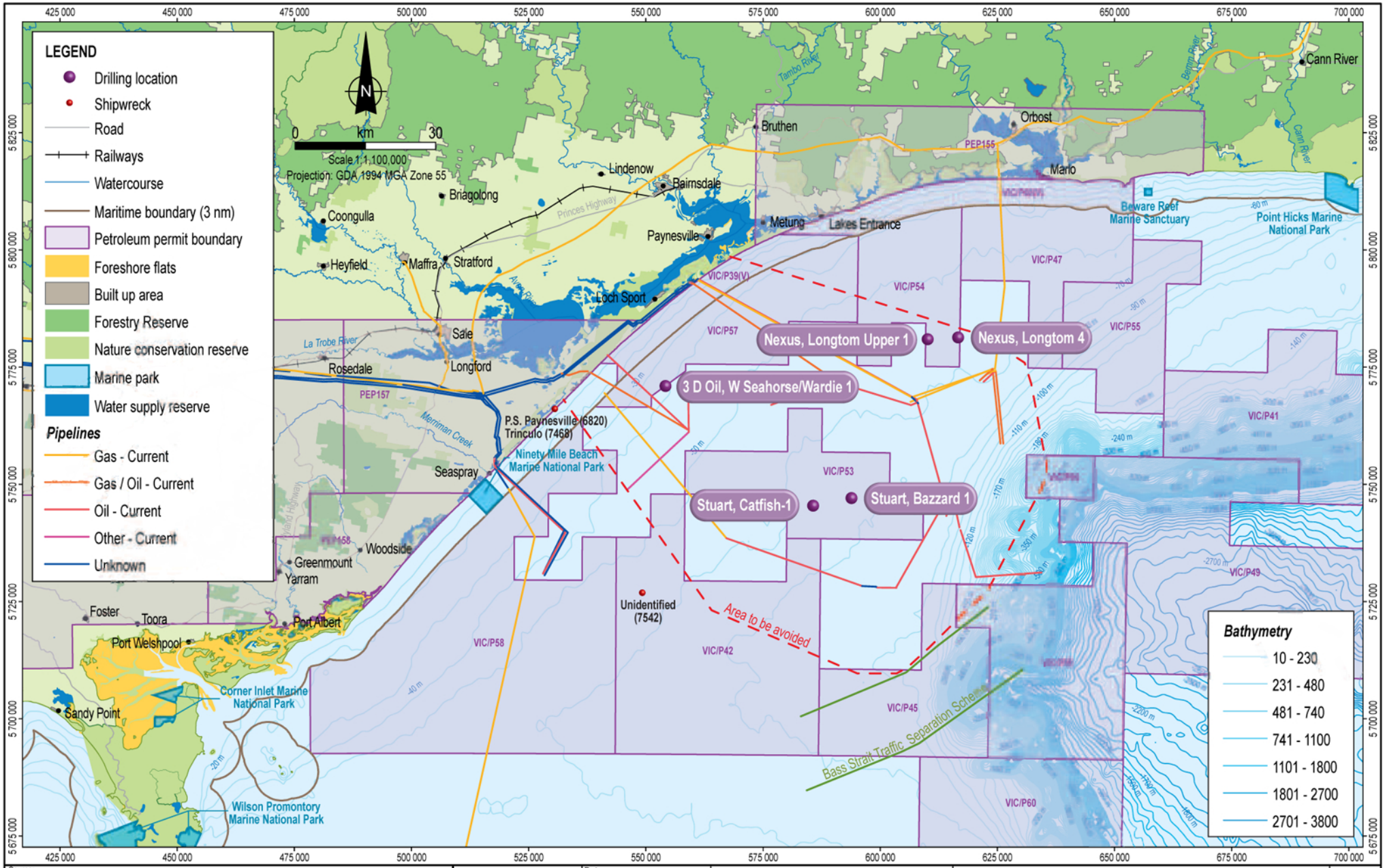
The Wardie-1 well is expected to be drilled to a depth of 1,700 m and the West Seahorse well is expected to be drilled to 2,400 m. Bazzard-1 and Catfish-1 will be drilled to a depth of approximately 3,500 m. Upper Longtom-1 will be drilled to a depth of approximately 2,800 m. These wells will be drilled using low toxicity water based mud (WBM) with the cuttings and mud discharged to sea as is standard practice. The quantity of cuttings discharged per well will be approximately 400 m^3 after separation from the WBM using industry standard equipment.

Longtom-4 well will be drilled to an estimated total depth up to 5,800 m. Drilling will commence with an initial 36” hole to 112 m, continuing with a 22” hole to 750 m, 13.5” hole to 2,440 m and additional drilling of a 9.5” hole diameter to the bottom of the high angled well. Accolade synthetic-based mud (SBM) will be required for the bottom sections of this well. It is expected that approximately 330 m^3 of cuttings plus approximately 220 m^3 SBM base fluid (equivalent to 10-15 weight per cent SBM-on-cuttings) adhered to cuttings will be discharged during drilling of the Longtom-4 well. The environmental risk of the discharge of the SBM cuttings at Longtom-4 is low.

The drilling program is scheduled to commence in the second quarter of 2008 and will continue for approximately nine months. The approximate schedule and sequencing of wells is as follows:

- Wardie-1, West Seahorse April to June.
- Longtom-4, Longtom Upper-1 June to September.
- Bazzard-1, September to October.
- Catfish-1, January 2009 (after three West Triton wells in Bass and Otway Basins).

This EP was approved by the Department of Primary Industries (DPI) 9 April 2008. The Commonwealth Department of Environment, Water, Heritage and Arts (DEWHA) assessed a referral under the Environment Protection and Biodiversity Conservation Act as ‘not a controlled action’ on 17 January 2008.



Source:
Bathymetry and Maritime boundaries from Geoscience Australia
Petroleum tenements and pipelines from DPI
Place names, roads, rail drainage, reserves and marine parks from GEODATA TOPO 250K (optimum scale 1:250,000)
'Esso Area to be Avoided' and the 'Bass Strait Traffic Separation Scheme' from Esso Australia Pty Ltd. Digitised from "Proposed Coastal Marine Parks Eastern Gippsland", accuracy may be compromised.

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Australian Drilling Associates

Environment Plan

West Triton Drilling Program - Gippsland Basin

Figure No: ES1

1.3 Stakeholder Consultation

In the course of planning the proposed drilling program, ADA has to date undertaken extensive consultation with relevant stakeholders in the region to identify regulatory processes, potential environmental issues and management requirements. Ongoing consultation wit these groups will continue up to and during the drilling program.

Stakeholders associated with the program that have been consulted are listed in Table ES1.

Table ES1 Stakeholder consultation

Stakeholder	Contact	Date	Matters Discussed
DPI	Terry McKinley Cynthia Crowe	1/6/07 meeting then ongoing. 31/3/08 meeting on SBM use and management on Longtom-4.	EP requirements.
Border Protection Command	bpliaison@customs.gov.au	To be advised 2 weeks prior.	Security advice.
AFMA	Bronwen Jones	31/8/07, 4/9/07	Locations and fisher groups contact.
AMSA	-	2 weeks prior.	Contact Rescue Co-ordination Centre.
Commonwealth Fisheries Assn	Peter Franklin	17/8/07	Advice on locations and fisher groups contact.
Seafood Industries Vic	Ross McGowan	17/8/07	Advice on locations.
		28/11/07	Status of consultation update.
Victorian Scallop Industry Association	Steve Melissakis	16/8/07	Advice on locations.
		28/11/07	Preliminary geotech coring activity request for safe clearance.
South East Trawl Fishing Industry Association (SETFIA)	Gail Richie	16/8/07	Advice on locations.
South East Fishing Association (SEFA)	Charlie Farqhar	20/8/07	Advice on locations.
Lakes Entrance Fishermens Cooperative Ltd (LEFCOL)	Peter Clark Dale Summer	16/8/07	Advice on locations.
		22/11/07	Preliminary geotech coring activity request for safe clearance.
		9/12/07 then ongoing	Preliminary geotech coring activity-start-up notification, acquisition sequence and progress updates.
VRFish	Christopher Collins	16/8/07	Advice on locations.
Lakes Entrance Fishermens Cooperative Ltd (LEFCOL)	Dale Sumner: General Manager, LEFCOL	08/01/08	Discussion of specific issues, e.g. seafloor equipment recovery, well types, anchors, site co-ordinates.

Table ES1 Stakeholder consultation (cont'd)

Stakeholder	Contact	Date	Matters Discussed
DPI Fisheries	James Andrews	17/1/08	Advised of drill program and stakeholder consultation so far.
Lakes Entrance Fishermens Cooperative Ltd (LEFCOL)	Peter Clark: Chairman; LEFCOL board member, SIV board member	08/01/08	Discussion of specific issues, e.g. seafloor equipment recovery, well types, anchors, site co-ordinates.
Lakes Entrance Fishermens Cooperative Ltd (LEFCOL)	Andrew Watts: LEFCOL board member; scallop and Danish seine fisherman	08/01/08	Discussion of specific issues, e.g. seafloor equipment recovery, well types, anchors, site co-ordinates.
Lakes Entrance Fishermens Cooperative Ltd (LEFCOL)	Arthur Allen: SIV acting chairman, LEFCOL board member and inland lakes fisherman	08/01/08	Discussion of specific issues, e.g. seafloor equipment recovery, well types, anchors, site co-ordinates.

1.4 Environmental Impact Assessment, Management and Mitigation

The main environmental hazards associated with the drilling program include:

- Presence of drilling rig and support vessels.
- Well equipment remaining on seabed after drilling.
- SBM drill cuttings discharge.
- Drilling operations (i.e., lost equipment).
- Discharge of sewage and putrescible wastes, deck drainage, oily wastes.
- Management of solid and hazardous materials and waste.
- Ballast water discharge and hull cleaning.
- Deck drainage discharge from drill rig and vessels.
- Exhaust and well testing emissions.
- Accidental spills.

The Environment Plan provides a detailed assessment of potential impacts. The key points of the assessment, and management and mitigation measures are summarised in Table ES2 below. The summary risk ranking is shown in Table ES2, there are a total of 19 environmental risk assessments, all of these were assessed as having low risk.

Table ES2 Summary of environmental impact assessment results

Impact Assessment	Management and Mitigation	Risk Ranking
Presence of drilling rig and support vessels: rig positioning and anchoring. Disturbance to seabed habitat.	Pre-mobilisation survey of drill locations. Adherence to anchoring procedures to minimise chain and anchor drag.	Low
Presence of drilling rig and support vessels: interference with other activities. Interference with commercial fishing and shipping, cumulative affects of offshore oil and gas activities and risk of collision with other vessels leading to oil spills.	Implementation of measures discussed in consultation with commercial fisheries, including avoidance of conflict and complaints procedures. Consortium approach avoids fragmented and multiple communication channels by minor companies. Liaison and communication with commercial fishing operators regarding schedules and work plans during the drilling program. Offshore distance, short duration will reduce the extent of activity. All support vessel operations will be conducted in compliance with the AMSA OSV Code (e.g., radar monitoring, vessel communications). 500m safety zone to protect rig infrastructure. Navigation light present on West Triton. Continuous support vessel surveillance. Commercial shipping lanes distant (60 km) from well sites. Drilling occurring in or adjacent to 'area to be avoided'.	Low
Presence of drilling rig and support vessels: artificial lighting. Attraction of seabirds and other marine life and the safety need to other vessels visibility at night.	Standard maritime safety procedures will be adopted (AMSA). Lighting selected to meet safety requirements. Minimise unnecessary lights directed towards water. Crew to record observations of whales and other megafauna and provided to DEWHA.	Low
Presence of drilling rig and support vessels: impact to visual amenity. Visual impact in nearshore areas.	No active measures: program is of short duration and distant from shoreline (13 km from the nearest drill site).	Low
Presence of drilling rig and support vessels: noise from drill rig, drilling vessels and support vessels, helicopters. Behavioural changes to marine mammals.	Application of DEW guidelines for cetacean observation and recording on rig and support vessels. Program will be undertaken during migratory periods for whale species that are likely to occur in the area but not at locations where there is breeding, calving. Program of short duration (approximately one month per well site). Noise produced from the drilling rig (low-level, low-frequency tones), and accompanying support vessels in the order of magnitude of noise produced by commercial shipping without impact. Adoption of encroachment distances from whales by service vessels (300 m) and helicopters (500 m) (Australian National Guidelines for Whale and Dolphin Watching 2005).	Low

Table ES2 Summary of environmental impact assessment results (cont'd)

Impact Assessment	Management and Mitigation	Risk Ranking
Presence of drilling rig and support vessels: noise from drill rig, drilling vessels and support vessels, helicopters. Behavioural changes to marine mammals.	Due to the size and speed of the vessel, the noise generated by engines and the acoustic array, it is considered that animals would be able to easily avoid the vessel. Department of Environment, Water, Heritage and Arts management guidelines for seismic vessels (DEW 2007a) will be implemented.	Low
Vessel travelling through permit area: physical presence of the vessel. Damage to fishing gear.	Pre-discussion with affected fishing groups. Advise fishing groups on location of protruding seabed well equipment. Safety zone declaration and inclusion on official maps of well equipment locations.	Low
Drilling discharges: discharge of water based drilling cuttings and muds to sea. Disturbance to water column and benthic communities in immediate area of discharge.	Drill cuttings are treated on the shale shaker and by centrifuges prior to disposal to maximise recovery and reuse of drill muds. WBM is low toxicity and rapidly disperses.	Low
Drilling discharges: discharge of synthetic based drilling cuttings and muds to sea. Temporary change in sediment characteristics and impacts to benthic fauna.	Drill cuttings are treated on the shale shaker and by centrifuges prior to disposal to maximise recovery and reuse of drill muds. No bulk SBM discharge at end of drilling (Longtom-4). Education of rig crew in all aspects of SBM handling and monitoring compliance with procedures. Daily analyses of residual SBM on cuttings to verify quantities discharged, and reporting. SBM rapidly biodegradable such that impacts from smothering and biodegradation are temporary and localised to the area of cuttings deposition beneath the rig. The SBM Longtom-4 site has no particular environmental sensitivity, some distance from marine protected areas. Only the bottom well sections of the Longtom-4 well will use SBM, the upper well sections will use WBM. Environmental risk less than previous SBM development drilling programs at adjacent locations (shown to have minimal impact).	Low
Drilling operations: lost equipment. Disruption to commercial fishing operations and a higher perception of consequences	Equipment retrieval at end of drilling program. Record to be kept of lost equipment overboard. Consultation to explain drilling program to stakeholders and means to avoid/record/retrieve equipment.	Low
Discharge of sewage and putrescible wastes, deck drainage, oily wastes: waste discharge to sea. Disturbance to marine life.	Solid waste discharges to sea will be limited to food scraps and sewage. Sewage will be treated through an on-board effluent treatment plant prior to being discharged to sea in accordance with MARPOL regulations (Annex IV). Macerated to < 25 mm diameter prior to disposal.	Low

Table ES2 Summary of environmental impact assessment results (cont'd)

Impact Assessment	Management and Mitigation	Risk Ranking
Discharge of solid and hazardous materials and waste: waste discharge to sea. Disturbance to marine environment.	All vessels will comply with international conventions and equivalent Commonwealth legislation for the control of pollution and dumping at sea. Solids will be returned to shore for disposal. All hazardous materials will be stored in appropriately bunded areas. All use of chemicals will follow instructions of Material Safety Data Sheets, which must be held on the vessel by the contractor for all chemicals used. Waste register will be maintained to record waste management practices and audited to verify compliance.	Low
Ballast water discharge and hull cleaning: introduction of marine pests. Marine species will compete for food.	Ballast water will be exchanged as per vessel procedures as per AQIS requirements. Vessel masters will be made aware of the AQIS 'Maritime Awareness Kit'. West Triton route to Gippsland Basin drill sites will avoid known abalone virus infected areas by travelling in deeper waters.	Low
Deck drainage discharge from drill rig and vessels: waste discharge to sea. Disturbance to marine environment.	In the event of a chemical or oil spill, absorbent materials will be used to remove spill material prior to any washing activities. The absorbent material will be containerised and sent to shore as hazardous waste to ensure that no contaminated waste streams are routinely discharged from the deck drainage system. MSDS forms available for all hazardous chemicals Deck treatment systems (separators) for oily wastes and discharge of separated water.	Low
Exhaust and well testing emissions: emission to atmosphere. Pollution of atmosphere.	Emissions will be minimised by ensuring that all engines and generators are serviced to manufacturer's specifications. Fuel consumption routinely monitored. Well cleanup and testing in accordance with approval conditions.	Low
Accidental spill: fuel spill. Disturbance to marine environment.	Drill rig and service vessels have Oil Spill Contingency Plan (OSCP) in place and staff (including subcontractors, service vessels, etc.) appropriately trained in its execution. Ensure that all necessary fuel spill equipment is functional and accessible on the vessel. A maintenance program will be in place for oil spill equipment.	Low

Table ES2 Summary of environmental impact assessment results (cont'd)

Impact Assessment	Management and Mitigation	Risk Ranking
Accidental spill: fuel spill (cont'd). Disturbance to marine environment.	Ensure that fuel will not be transferred during inappropriate weather conditions. Ensure that equipment and procedures used for transferring fuel from vessel to rig (e.g., 'Dry-Break' hose couplings), conform to the AMSA Code for the safe working of support vessels. Supply vessels will cease operating and seek safe harbour (or deep water) where conditions make it unsafe, in the view of the Vessel Master, to continue drilling operations. Ensure that all vessel operations are conducted in compliance with the AMSA OSV Code (e.g., radar monitoring, vessel communications; communications shall be maintained with other vessels operating in the area to advise of the project area and avoid collision. Spill modelling undertaken to enable oil spill contingency planning.	
Accidental spill: spills of SBM during transfer, drilling operations error, or riser malfunction during drilling. Impacts to seabed, water column.	Specialist SBM contractor for duration of SBM drilling to ensure relevant personnel are inducted in SBM handling, transfer, mixing and spill response procedures. Containment strategies between SBM areas and sea. Transfer of SBM to and from rig by trained and supervised personnel according to industry standards. Monitoring and recording of all mud used and losses of residual mud on cuttings.	Low
Accidental spill: chemical spill. Impacts to water quality and marine life.	Minimisation of chemical usage and generation of waste. Education in waste handling procedures during transfer and operational usage for relevant personnel.	Low
Accidental spill: blow out, uncontrolled release of reservoir fluids. Impacts to marine fauna.	Prior site survey analysis and understanding of likelihood of intersecting over-pressured strata. Maintenance of all well control equipment. Installation of blow-out preventers. Routine monitoring of pressure of drilling fluid system. Oils spill and emergency response plan. Spill modelling undertaken to enable oil spill contingency planning.	Low

In summary, the drilling is located in eastern Bass Strait (Gippsland Basin) Commonwealth waters. The duration of the program is nine months, is distant from marine protected areas and has low impact to the marine environment.

Stakeholders have been consulted especially fishing groups and mitigation measures have been put in place to manage whale interaction.

Management and mitigation measures that will be followed during the project are provided in the Environment Plan. The implementation strategy for the Environment Plan specifically details the

measures needed to ensure that the environmental performance objectives and standards are met, and identifies:

- Systems, practices and procedures.
- Specific roles and responsibilities.
- Employee training.
- Monitoring, auditing and recording requirements.
- Emergency response planning.
- Consultation with government and stakeholders.

1.5 Contact Details

Please direct all queries, comments or request for a copy of the approved West Triton Drilling Program Environment Plan to:

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