

MUTINEER-EXETER DEVELOPMENT



MUTINEER-EXETER PHASE 3 DRILLING AND COMPLETIONS CAMPAIGN SUMMARY ENVIRONMENT PLAN

ME-5600-A01-F006

Introduction

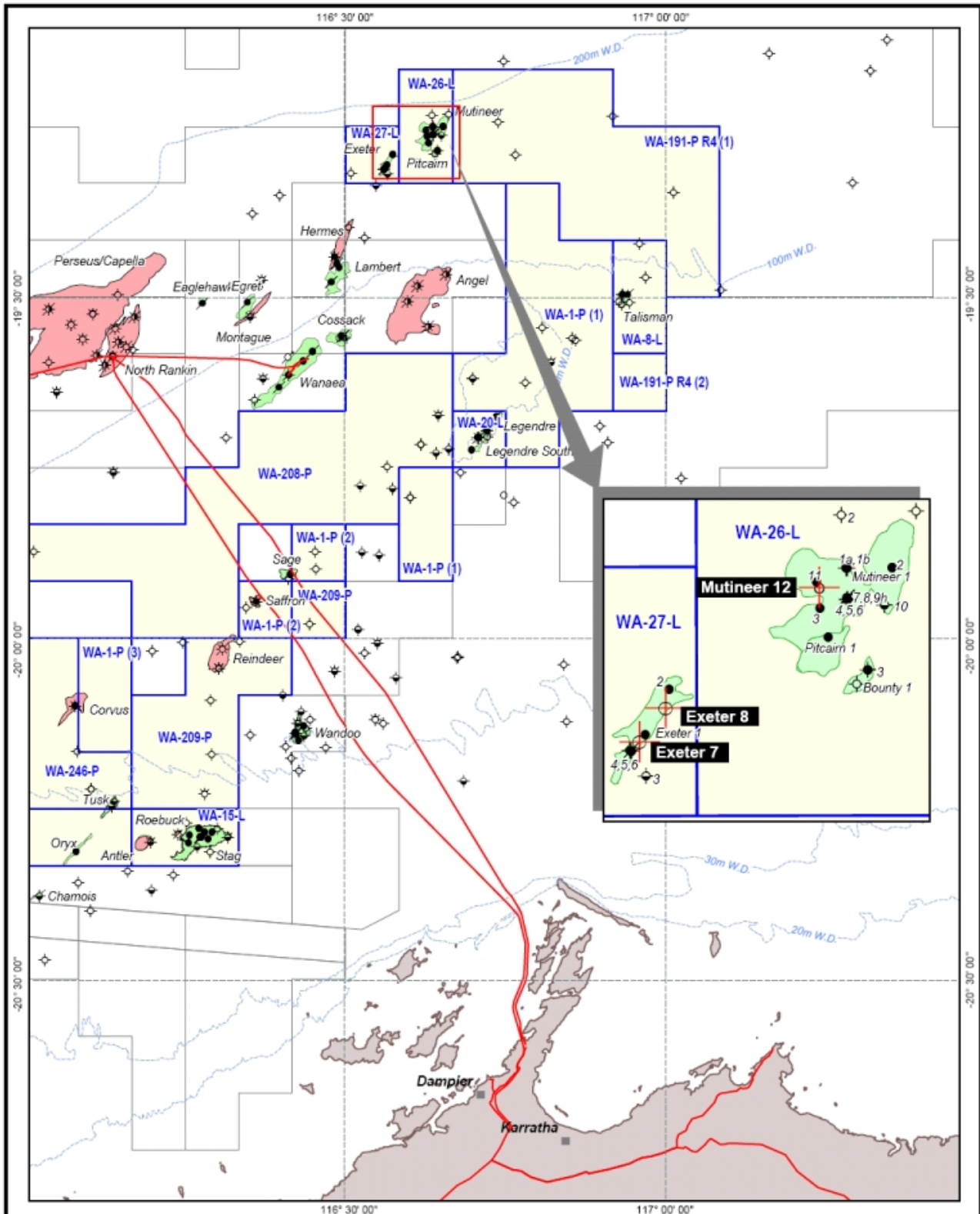
This is a summary of the Environment Plan prepared by Santos Ltd (Santos) for the Mutineer Exeter Phase III Drilling and Completions Campaign 2006.

Santos Limited (Santos) propose to drill three development wells as part of the Mutineer-Exeter Phase 3 Drilling and Completions Campaign in permit areas WA-26-L and WA-27-L within WA-191-P, commencing in May 2006 (approximately 121 day duration). Both permit areas are located in Commonwealth waters on the North West Shelf (NWS), approximately 160 km north of Dampier (Figure 1.1). The wells will be drilled by the Mobile Offshore Drilling Unit (MODU) *Ocean Bounty*, an anchored semi-submersible floating rig operated by Diamond Offshore General Company (Diamond Offshore). All wells will be drilled to a total depth of between 3,200 m and 5,100 m.

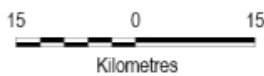
Background

The drilling activities are typical, in terms of technical methods and procedures, of standard exploration and development campaigns conducted in Australian marine waters. No unique or unusual equipment or operations are proposed. No production testing of the development wells will be conducted during the proposed Drilling Campaign, although the wells will be flowed for clean up.

The top sections of the Mutineer-12 and Exeter-8 wells have already been drilled. The top sections of the Exeter-7 well (36" and 17.5" holes) will be drilled using seawater with pre-hydrated gel 'sweeps' to flush cuttings from the hole. The cuttings and drilling fluids will be discharged at seabed level (open system). On completion of drilling of these upper sections, steel casings will be cemented into place within the hole. After casing has been set in place, a blowout preventer and marine riser will be installed over the well. The installation of the marine riser, connected to the drilling rig via a flexible joint, allows for the capture and recirculation of drilling fluids from the well bore back to the rig (closed system), during the subsequent drilling of lower hole sections. Drill cuttings will be separated from drilling fluid upon return to the rig via a variety of screening and centrifugal processes and discharged to the sea.



- Legend**
- Santos Permits
 - Oil Field
 - Gas Field
 - Gas Pipeline
 - Oil Pipeline



Santos



Dampier Sub-Basin
WA-26-L & WA-27-L
Mutineer 12,
Exeter 7 & Exeter 8
 Location Map

Key Details

Aspect		Mutineer-12	Exeter-7	Exeter-8/8H
Well Locations		19° 15' 33.7" S 116° 38' 16.435" E 461,948.1 m E 7,870,434.29 m N (GDA94 datum)	19° 18' 36.270" S 116° 33' 41.123" E 453,907.0 m E 7,864,828.0 m N (GDA94 datum)	19° 18' 35.505" S 116° 33' 40.486" E 453,925.64 m E 7,864,804.53 m N (GDA94 datum)
Well Type		Development well	Development well	Development well
Anticipated commencement date		May 06	June 06	July 06
Duration of drilling per well		37 days	41 days	18/25 days
Water depth of well		162 m	146 m	146 m
Total Depth (TD)		4,213 mRT MD*	3,246 mRT MD	Pilot 4,681 mRT MD 5,016 mRT MD
Drilling fluids	36" & 17.5" holes	Not applicable	Seawater with prehydrated gel sweeps	Not applicable
	12.25 & 8.5" holes	Syn-drill SBM (Rheosyn olefin base)	Syn-drill SBM (Rheosyn olefin base)	Syn-drill SBM (Rheosyn olefin base)
Drill fluid volumes (combined hole volumes for each section including riser)		~530 m ³	~820 m ³	~730 m ³
Drilling cutting volume	Surface hole	Not applicable	430 m ³	Not applicable
	Production hole	220 m ³	125 m ³	412 m ³
Drilling cuttings disposal method	36" & 17.5" holes	Not applicable	Directly to sea floor	Not applicable
	12.25 & 8.5" holes	Through cuttings chute	Through cuttings chute	Through cuttings chute

* mRT MD metres below rotary table, measured depth

BIOLOGICAL ENVIRONMENT

Marine Fauna

Fauna of national significance that may be encountered within the Mutineer Exeter Program area have been identified based on a search of the DEH EPBC Online Database (DEH, 2006). Complete details of the search results are contained within the Mutineer Exeter Phase III Drilling and Completions Campaign Environment Plan, copies of which can be obtained from Santos.

Commercial Fisheries

The region supports a small but valuable and diverse fishing industry. Several commercial fisheries are active off the Pilbara coast, however, fishing effort is low and operators tend to concentrate their efforts in inshore areas. The fisheries of the area include the Pilbara Trap Fishery, the North Coast Shark Fishery, the Open Access Fishery, the Pilbara Trawl Fishery, the Western Tuna and Billfish Fishery and aquaculture. Santos has contacted the WA Fishing Industry Council (WAFIC) and the Western Tuna and Billfish fisheries to outline the project activities within the WA-26-L and WA-27-L permit areas.

Complete details of the search results are contained within the Mutineer Exeter Phase III Drilling and Completions Campaign Environment Plan, copies of which can be obtained from Santos.

Environmental Hazards, Management Approach and Controls

Santos is committed to conducting our operations in a manner that is compatible with the environmental and economic needs of all communities in which we operate. The seismic survey will be conducted in accordance with the Santos EHSMS and Santos Environmental Policy. Santos developed the EHSMS based on international standards and industry best practice for application to all Santos operations. The Santos EHSMS consists of two sets of standards; "management" and "hazard".

Potential Environmental Hazards

The main environmental hazards (and main associated consequences) of the drilling program are:

Activity / Issue	Objective	Management Measure
Drilling Noise Emissions	Minimise consequences to marine fauna	Any cetacean sightings during the drilling program will be recorded on a Department of the Environment and Heritage (DEH) <i>Whale and Dolphin Sighting Report</i> sheet and forwarded to DEH at the end of the drilling program.
Physical Presence of the Rig and Support Vessels	Minimise consequences to marine fauna Minimise consequences to fisheries Minimise risk of collision with other vessels	Commercial fishing groups have been advised of the location and schedule of the drilling program. The rig shall remain vigilant for commercial fishing vessels during the operation and establish communications to avoid conflict. A record of consultation with commercial fisheries groups shall be kept and made available to regulatory authorities upon request. AMSA will be formally contacted regarding the program. Standard maritime safety procedures shall be adopted.

Activity / Issue	Objective	Management Measure
Disposal of Wastes to Sea	<p>Minimise consequences associated with discharge of putrescible wastes</p> <p>Prevent release of non-putrescible wastes to sea</p>	<p>All waste management shall comply with the PLSA and appropriate hazardous waste legislation and local government disposal guidelines.</p> <p>Putrescible Wastes</p> <p>Waste discharges shall be limited to food scraps and sewage. Sewage and food scrap disposal will conform to the requirements of MARPOL 73/78 Annex IV; macerated to less than 25 mm diameter prior to disposal.</p> <p>No sewage or putrescible waste will be discharged within 12 nm of any land.</p> <p>Sewage shall be macerated to a small particle size and is treated to neutralise bacteria.</p> <p>Solid Wastes</p> <p>All other waste shall be retained onboard for appropriate disposal on-shore (i.e. all domestic, solid, plastics and maintenance wastes).</p> <p>All waste containers will be closed to prevent loss overboard.</p> <p>Spent oils and lubricants shall be securely containerised and returned to shore upon program completion.</p> <p>Hazardous Wastes</p> <p>All hazardous wastes shall be documented, tracked and segregated from other streams of operational wastes.</p> <p>A complete inventory will be kept of all chemicals to allow sufficient and appropriate recovery materials to be on hand in the event of a spill (i.e. Material Safety Data Sheets, labelling and handling procedures).</p>
Disposal of Drill Cuttings and Fluids	<p>Minimise consequences associated with discharge of drill cuttings and fluids</p>	<p>Low toxicity WBM's and low to slightly toxic SBM's will be used for drilling.</p> <p>Drill fluids will be recycled within the drill system as practicable.</p> <p>Discharges of residual water based drill fluids occur when drill fluid requirements change during operations, when pit capacity is exceeded and/or at the end of drilling.</p> <p>Discharges, where practicable, shall be timed to occur at periods of strong currents to minimise the effects on the marine ecosystem.</p> <p>Cuttings and associated drill fluids shall be treated to achieve solids separation and meet statutory requirements for discharge.</p>
Spill of Fuel and Oil to Sea	<p>Prevention of hydrocarbon spills to sea</p> <p>Minimise consequences to the marine environment</p>	<p>Refuelling</p> <p>Transfer of diesel from support vessels should only occur in controlled circumstances.</p> <p>Specific procedures for refuelling shall be prepared and implemented. Refuelling operations shall be supervised at all times.</p> <p>Transfer hoses will be fitted with 'dry' coupling, will be fit for purpose, not outside design life limits and regularly checked for leaks.</p> <p>A vacuum system will be in place to drain the fuel left on the hose after completing transfer.</p> <p>Drip trays will be provided under all refuelling hose connections.</p> <p>Refuelling will occur during daylight hours, depending on sea conditions.</p> <p>Housekeeping</p> <p>Any conduit being drained, filled or flushed with fuel or chemicals must be contained within a drip tray area.</p>

Activity / Issue	Objective	Management Measure
		<p>Spills will be cleaned up immediately using absorbent pads. The absorbent material will be properly disposed of onshore.</p> <p>Oil and chemical spill containment and cleanup material (eg absorbent) will be available where spills are possible, including on small boats.</p> <p>Scuppers will be closed in the event of spills to ensure pollution from the deck is not discharged into the ocean.</p> <p>Bilge water and wash down will not be discharged offshore.</p> <p>Fuel and diesel will be stored in large, internal tanks/bunkers onboard.</p> <p>Lube oil will be changed during the drilling program in accordance with the vessel maintenance program.</p> <p>New lube oil will be stored onboard in large tanks. Spent oils and lubricants shall be containerised and returned to appropriately licenced facilities onshore.</p> <p>All waste containers will be closed to prevent loss overboard</p> <p>Chemical and Hazardous Materials Management</p> <p>Material Safety Data Sheets and handling procedures for hazardous chemicals and materials are in place.</p> <p>Segregated and contained storage areas will be provided.</p> <p>Use of low impact chemicals and materials as far as practicable.</p> <p>Spill Prevention</p> <p>Facilities and procedures must be in place to prevent spills including:</p> <ul style="list-style-type: none"> • Safety systems such as blowout preventers. • Contained oil and chemical packaging and storage areas. • Containment around oil- and chemical-use areas and equipment such as the pipe deck, mud tanks, pumps, etc. • The Santos Oil Spill Contingency Plan for Mutineer Exeter Operations identifies appropriate emergency response and mitigation measures and sensitive environmental locations (spatially and temporally). • AMOSC will be consulted prior to drilling commencement to ensure/confirm availability of oil spill recovery and clean up materials and equipment within the region.

Consultation

Extensive consultations have been held in the course of planning the Mutineer-Exeter development in the WA-26-L and WA-27-L permits. Santos has undertaken consultation with relevant stakeholders to identify potential environmental issues and management requirements. Relevant stakeholders include:

Stakeholders of relevance to this Program include:

Western Australia:

- Department of Industry and Resources (DOIR)
- Department of Fisheries (DOF)
- Western Australian Fishing Industry Council (WAFIC)

Commonwealth:

- Department of Environment and Heritage (DEH)
- Australian Fisheries Management Authority (AFMA)
- Australian Maritime Safety Authority (AMSA)
- Australian Marine Oil Spill Centre (AMOSOC)

Consultation and information dissemination has been undertaken and will continue to be undertaken through a range of media including:

- Meetings with regulators.
- Meetings and correspondence with key stakeholders.

Contact Details:

All queries, comments or requests for a copy of the approved Mutineer Exeter Phase III Drilling and Completions Campaign Environment Plan should be directed to:

Darren Greer
Offshore Australia Drilling Manager
Santos Ltd
GPO Box 2319
ADELAIDE SA 5001

Telephone (08) 9460 8971

Nick Fox
Environmental Adviser
Santos Ltd
GPO Box 2319
ADELAIDE SA 5001

Telephone (08) 8218 5151
