

WA-313-P DRILLING ENVIRONMENT PLAN SUMMARY

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1. OVERVIEW

1.1 Proposed Activity

Eni Australia Limited (Eni) proposes to drill the Penguin Deep-1 exploration well in Exploration Permit WA-313-P in the Joseph Bonaparte Gulf (JBG) (Figure 1.1). The drilling campaign will be carried out using a jack-up Mobile Offshore Drilling Unit (MODU) suited to the depth, location profile and drilling objectives.

1.2 Compliance

An Environment Plan (EP) for this drilling campaign was prepared in accordance with the requirements of the Offshore Petroleum and Greenhouse Gas (Environment) Regulations 2009 (OPGGS [E] Regulations). The EP was reviewed and accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) on 13 January 2014. This EP summary document has been prepared and submitted to NOPSEMA in accordance with Regulation 11(7) of the OPGGS (E) Regulations.

1.3 Location of Activity

Penguin Deep-1 is in Permit Area WA-313-P in the JBG, approximately 110 km north-west of the West Kimberley coast and 277 km south-west of Darwin, Northern Territory (NT). The coordinates and water depth of the well are provided in Table 1.1 below.

Table 1.1: Geographical coordinates of the proposed Penguin Deep-1 well

Well Site	Latitude	Longitude	Water Depth
Penguin Deep-1	13° 35' 37.7" S	128° 28' 19.1" E	66 m

1.4 Timing

Penguin Deep-1 could be drilled as early as January 2014, however could be delayed depending on rig scheduling and other operational constraints. The well is anticipated to take approximately 40 days to drill.

1.5 Operator Contact Details

The nominated contact person for this proposal is:

Attention: Mr Rob Phillips
Senior Environmental Advisor
Eni Australia Ltd
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Perth WA 6000
Tel: (08) 9320 1541 Fax : (08) 9320 1100
Email: rob.phillips@eniaustralia.com.au

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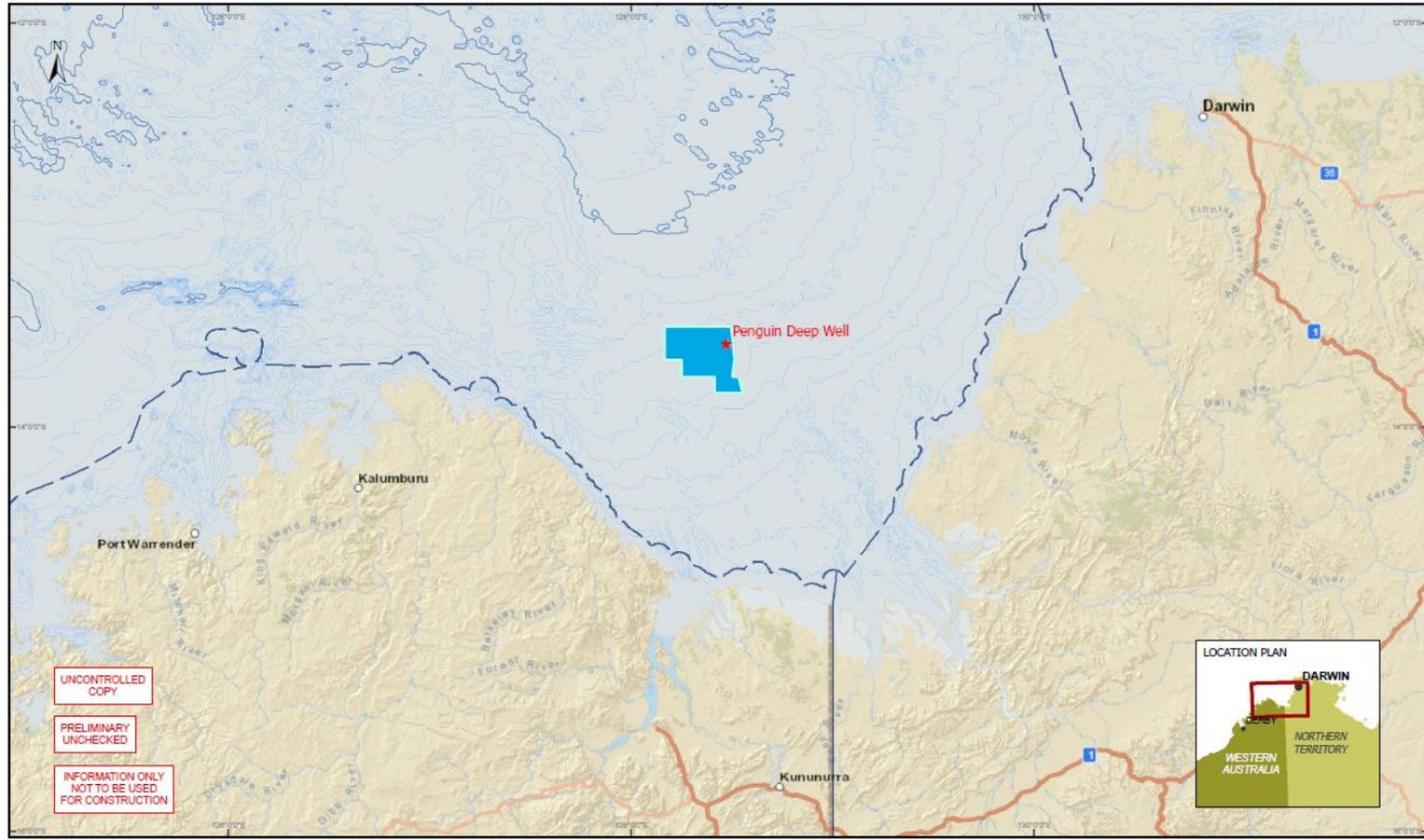


Figure 1.1: Location of Permit Area WA-313-P

-  PENGUIN DEEP WELL
-  Coastal Waters Limit
-  Permit Area (WA-313-P)
- BATHYMETRY**
-  CONTOUR 10m
-  INDEX 100m

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2. DESCRIPTION OF THE ACTIVITY

2.1 Drilling Operations

The drilling program will comprise the following activities:

- Mobilisation to Permit Area WA-313-P.
- Position the MODU (jack-up rig), water depth ~66 m lowest astronomical tide (LAT).
- Drill 914 mm (36") hole to depth of ~228 m (measured from the drilling rig rotary table (RT). RT is 35 m above LAT). Drilling fluid: seawater. Returns: to seabed.
- Run and cement 17 joints of 762 mm (30") conductor.
- Nipple up low pressure riser and diverter.
- Drill 311 mm (12¼") hole to depth of ~2,892 m (measured from the drilling rig RT). Drilling fluid: water based mud (WBM) (KCl polymer). Returns: to drilling rig.
- Run and cement 231 joints of 244 mm (9⅝") casing.
- Drill 216 mm (8½") hole to depth of ~3,300 m (measured from the drilling rig RT). Drilling fluid: WBM (KCl polymer). Returns: to drilling rig.
- Wireline logs.
- Plug and abandon.
- Contingent – if hydrocarbons are discovered:
 - Well test.
 - Plug and abandon.

The rig will be supported by a minimum of two offshore support vessels (OSVs) for the duration of the drilling campaign. Another third vessel may be spot-hired as a standby vessel to provide operational support.

2.2 Penguin Deep-1 Hydrocarbon

The Penguin Deep-1 is on trend with the Blacktip gas field to the south, and Tern and Petrel gas fields to the north, and the structure is expected to be gas charged. The well is targeting the same reservoir formation which is gas bearing at the Blacktip gas field. The analogue for Penguin Deep reservoir is therefore Blacktip reservoir, which is at similar depth and same regional pressure.

The Blacktip gas composition is predominantly methane with heptane and higher fractions of 0.39%. The condensate-gas-ration (CGR) is 2.5-3.0 stb/MMscf (measured from production data).

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3. DESCRIPTION OF THE RECEIVING ENVIRONMENT

3.1 Physical Environment

The Permit Area falls within the Northwest Shelf Transition bioregion which is divided into the North-west Marine Region in Western Australia (WA), and the North Marine Region in the NT (DEWHA 2008).

The region has a tropical monsoon climate with two distinct seasons, a wet summer season from October to March, followed by a dry winter season from April to September. Winds during the wet summer season are predominantly from the west and during the dry winter season from the south-east. The wet is characterised by monsoonal thunderstorms and tropical cyclones bringing heavy rainfall to the region, while south-easterly trade winds bringing hot dry conditions during the dry season (DEWHA 2008). Average temperatures in the region range from 14.5°C up to 33.9°C (BOM 2012).

3.2 Biological Environment

JBG is a large embayment on the north-western continental margin of Australia. It is approximately 300 km east-west and 120 km north-south with a broad continental shelf to seaward. Maximum width from the southern-most shore of JBG to the edge of the continental shelf is 560 km. Several large rivers enter the gulf along its shoreline.

3.2.1 Open Water Benthic Habitat

Most of the seabed of the JBG is flat and comprises soft sediments with occasional rock outcrops and scattered epifauna. Biota is dominated by infauna. The dominant offshore features in the lower JBG are the elongated parallel sand shoals extending out from the Victoria River and the extensive sand shoals on either side of the entrances to the Cambridge Gulf, known as the King Shoals and Medusa Banks. Depth increases gradually out to the continental shelf; however, the continental shelf is dissected by numerous paleo-channels. Habitat complexity and species richness are variable in offshore areas of JBG.

3.2.2 Intertidal Shorelines

The lower part of JBG, to the south of the Penguin Deep-1 field, is relatively shallow with a coastline dominated by sand banks, extensive mudflats, mangrove systems, tidal creeks and the estuaries of the Victoria River system and Cambridge Gulf. Waters are extremely turbid in this part of the Gulf due to the large tides and periodic flow of sediment-laden water from the Victoria River system and Cambridge Gulf.

The western coastline of the JBG extends into WA's Kimberley region and the predominant coastline features are limestone cliffs with shallow sand and/or mud bays and pockets of mangroves. By contrast, the coastline to the east between Cape Hay and Pearce Point is predominantly sand flats and long sandy beaches, separated by rocky headlands and rocky platforms and a few mangrove-lined inlets.

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Coastal habitats in the Gulf include beaches, rocky coastlines and mangroves. The JBG is not considered to be a significant mangrove area, although mangroves occur throughout the Gulf and there are locally important groups, mainly on the southern coast of the Gulf. The significant mangrove conservation area, the Ord River Floodplain, is located inside the Cambridge Gulf.

Given the nature of the proposed activity and distance to these locations, it is considered unlikely that there will be any impact on these intertidal shorelines.

3.2.3 Matters of National Environmental Significance

A review of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) database (Protected Matters Search Tool) (October 2013) identified a number of listed threatened and migratory species could occur in the offshore waters surrounding the Permit Area, including:

- seven species of birds, with one listed as vulnerable (Australian lesser noddy);
- ten species of marine mammals, including six whale and three dolphin species and the dugong, with one listed as endangered (blue whale) and one vulnerable (humpback whale);
- seven species of marine reptiles, including the saltwater crocodile and three marine turtles listed as endangered (loggerhead, leatherback and Olive Ridley turtles) and three listed as vulnerable (hawksbill, flatback and green turtles); and
- five species of sharks, with three listed as vulnerable (whale shark, dwarf sawfish and green sawfish).

A number of other matters protected under the EPBC Act, but not considered to be threatened, may also occur in Permit Area WA-313-P. These include listed species of fish (predominantly pipefish and seahorses), reptiles (sea snakes) and species of whales and dolphins.

3.3 Socio-economic Environment

3.3.1 Commercial Fisheries

A number of State and Commonwealth commercial fisheries exist in the JBG. Of those identified, only one was determined to be present and active in the vicinity of the Permit Area.

3.3.2 Commercial Shipping

OSVs involved in the drilling program will most likely travel to the Permit Area from Darwin. There are no major commercial shipping lanes through the Permit Area WA-313-P. Traffic is limited to infrequent visits by fisheries whose boats are typically 13-25 m in length.

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3.3.3 Tourism/Recreational Fishing

JBG is a very isolated area with very few population centres and only limited access to the coast. Consequently, recreational boating and fishing in the region is limited to areas near coastal access points. There is not expected to be any non-Indigenous recreational boating or fishing activity in the immediate vicinity of the Permit Area.

3.3.4 Defence Activities

There are two defence training areas in the North Marine Region. An 'all military operation training area' is situated south-west of the Darwin port down past Wadeye and just over the WA border. An all military operations training area and a military flying training area is located north to north-east of Darwin to the limit of the Exclusive Economic Zone. Eni have consulted the Department of Defence for the proposed drilling program.

3.3.5 Petroleum Activities

The North-west Marine Region and North Marine Region are highly prospective petroleum regions and contain a number of known oil and gas fields. Production areas in the Bonaparte Basin include:

- PTTEP Australia operated facilities at Montara;
- Woodside Energy Ltd operated FPSO facility at Laminaria-Corallina oil fields commencing in 1999;
- Eni operated Kitan oil field commenced in 2011;
- ConocoPhillips Australia Pty Ltd operated Bayu-Undan gas field commenced in 2004; and
- Eni operated Blacktip gas field.

Additionally there are liquefied natural gas (LNG) developments being planned in the Bonaparte Basin. These include:

- Frigate Deep, Petrel and Tern gas fields;
- Sunrise and Troubadour gas fields undertaken by Woodside and ConocoPhillips, Shell and Osaka Gas; and
- Cash-Maple and Oliver gas field floating LNG facility by Linde Group and SBM Offshore, PTT FLNG Ltd and PTTEP Australasia.

3.4 Conservation Interests

3.4.1 National Heritage Place

There are no National Heritage Places within the Permit Area.

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3.4.2 Commonwealth Marine Area

Penguin Deep-1 drilling will be carried out in Commonwealth Marine Area. A Commonwealth Marine Area is any part of the sea, including the water, seabed, and airspace, within Australia's exclusive economic zone and/or over the continental shelf of Australia, that is Not State or NT waters.

3.4.3 Marine Protected Areas

The North Commonwealth Marine Reserves Network includes eight Commonwealth Marine Reserves. Marine protected areas identified from the EPBC Protected Matter Search Tool are summarised in Table 3.1.

Table 3.1: Marine protected areas

Marine protected area	Type of Presence - Well Blowout	Type of Presence - Permit Area
North Commonwealth Marine Reserve Network		
Oceanic Shoals Commonwealth Marine Reserve	Not present.	Not present.
JBG Commonwealth Marine Reserve	Present.	Not present.
North-west Commonwealth Marine Reserve Network		
Kimberly Commonwealth Marine Reserve	Present.	Not present.

3.4.4 Indigenous and Non-Indigenous Heritage

There are no known Indigenous or non-Indigenous sites of significance or heritage sites within Permit Area WA-313-P or its surrounds.

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4. ENVIRONMENTAL RISK ASSESSMENT

All risks were assessed using Eni's Risk Management and Hazard Identification procedure (ENI-HSE-PR-001) and associated environmental risk matrix. With controls in place, all risks were ranked as Low and therefore deemed acceptable. The following table summarises key aspects associated with the proposed drilling program and the control measures that will be implemented to prevent or reduce impacts to as low as reasonably practicable (ALARP).

The environmental hazards and control measures to be applied are summarised in Table 4.1.

Table 4.1: Summary of environmental hazards and control measures to be applied

Source of Risk	Potential Impact	Control Measures
<i>Planned Activities</i>		
R1 – MODU positioning	<ul style="list-style-type: none"> Temporary loss of benthic habitat over a small area of the seabed. 	<ul style="list-style-type: none"> No controls identified.
R2 – Lighting	<ul style="list-style-type: none"> Localised or temporary attraction of fauna to MODU and OSVs during the survey. 	<ul style="list-style-type: none"> MODU and OSVs to comply with maritime guidelines and standards associated with safety and navigational requirements.
R3 – Ballast water	<ul style="list-style-type: none"> Establishment of non-Indigenous marine species causing displacement and/or loss of native species and reduction in biodiversity. 	<ul style="list-style-type: none"> All vessels will comply with DAFF Ballast Water Requirements. Ballast water from a foreign port will not be discharged into Australian waters less than 200 m deep or within 12 nm from land. Ballast water records will be maintained on board all vessels.
R4 – Hull biofouling and antifouling paints	<ul style="list-style-type: none"> Release of persistent compounds into the environment, resulting in contamination of sediment and the water column and possible bioaccumulation. 	<ul style="list-style-type: none"> Vessel contractor adheres to the International Maritime Organisation (IMO) Guidelines for the Control and Management of Ships' Biofouling 2012. Biofouling records will be maintained on board all vessels. OSVs compliant with the National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (DAFF 2009).
R5 – Atmospheric emissions	<ul style="list-style-type: none"> Localised effect on air quality. Contribution to global atmospheric concentrations of greenhouse gases. Depletion of stratospheric ozone. 	<p>All OSVs will:</p> <ul style="list-style-type: none"> Comply with the MARPOL 73/78 Annex VI. Use low sulphur fuel (to minimise SO_x emissions) where available. Hold a current International Air Pollution Prevention (IAPP) Certificate. Have a routine inspection/maintenance schedule of combustion equipment. <p>The MODU to:</p> <ul style="list-style-type: none"> Have a routine inspection/maintenance schedule of combustion equipment. The rate of gas flared will be controlled by surface equipment and the volume will be determined at the time by the reservoir engineer consistent with Well Operations

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Source of Risk	Potential Impact	Control Measures
		Management Plan (WOMP) (ENI-DRL-PL-017). <ul style="list-style-type: none"> Vulcan Burner Heads (or equivalent) will be used in event of well testing.
R6 – Vessel movements and their interaction with marine megafauna	<ul style="list-style-type: none"> Collision resulting in death to turtles or cetaceans, or disruption to behaviour patterns by increased activity in the area. 	<ul style="list-style-type: none"> Comply with the EPBC Act 1999 and the Australian National Guidelines for Whale and Dolphin Watching (DEH 2006). Should any cetaceans or relevant megafauna be observed in the vicinity of operational vessels, all necessary care to avoid collisions will be taken.
R7 – Underwater noise from drilling, OSVs and vertical seismic profiling (VSP).	<ul style="list-style-type: none"> Potential physiological effects or disruption to behaviour patterns of cetaceans, turtles, and avifauna. Behavioural change in marine fauna (localised avoidance/attraction). Hearing impairment and pathological damage to marine fauna. 	<ul style="list-style-type: none"> Vessels will not approach within 300 m of a cetacean, in accordance with the EPBC Act 1999 and the Australian National Guidelines for Whale and Dolphin Watching (DEH 2006). All opportunistic sightings of whales will be recorded and forwarded to the Department of the Environment (DotE). Vessels will implement the mitigation measures outlined consistent with EBPC Policy Statement 2.1—Interaction between Offshore Seismic Exploration and Whales.
R8 – Noise caused by helicopters	<ul style="list-style-type: none"> Potential physiological effects or disruption to behaviour patterns of cetaceans, turtles, and avifauna. Behavioural change in marine fauna (localised avoidance/attraction). Hearing impairment and pathological damage to marine fauna. 	<ul style="list-style-type: none"> Cetacean interaction guidelines for aircraft as it refers helicopters, i.e. no flying lower than 500 m within a 500 m radius of a whale or dolphin (DEH 2006).
R9 – Deck drainage discharge	<ul style="list-style-type: none"> Toxicity or physical effects on marine biota. Adverse effects on water quality. 	<ul style="list-style-type: none"> Any spill on board vessel will be managed in accordance with the Shipboard Oil Pollution Emergency Plan (SOPEP). Spill response kits are available on board all vessels and are kept fully stocked. Use of low toxicity, biodegradable detergents. All vessels hold a current International Oil Pollution Prevention (IOPP) Certificate. Deck drains on all vessels routed to a holding tank for onshore disposal or an oil-water separator and monitored for oil-in-water content prior to discharge. Discharge oil-in-water content of <15 mg/l or less in accordance with MARPOL 73/78 Annex I and vessel Waste Management Procedures. Oil-in-water alarmed and discharge ceases if this limit is breached. Vessel Chemical Handling Procedures and Material Safety Data Sheet (MSDSs) adhered to and chemicals stored in banded areas.
R10 – Sewage, grey water and putrescible waste discharge	<ul style="list-style-type: none"> Localised reduction in water quality. Localised nutrient enrichment of the receiving water. 	<ul style="list-style-type: none"> The vessels shall comply with MARPOL 73/78 Annex IV and V (prevention of pollution by garbage from ships). Comply with Annex IV, <i>Navigation Act 1912</i> Part IV Division 12C and <i>Protection of the Sea (Prevention of Pollution by Ships) Act 1983</i> Part IIIB - Division 2.

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Source of Risk	Potential Impact	Control Measures
		<ul style="list-style-type: none"> International Sewage Pollution Prevention (ISPP) certificates are valid for each vessel. The ISPP certificate verifies the sewage systems on board comply with MARPOL 73/78 requirements.
R11 – Solid and hazardous and non-hazardous waste	<ul style="list-style-type: none"> Toxicity effects on marine fauna through ingestion or physical contact. Physical effects on fauna through entanglement or ingestion. Adverse effects on water quality. 	<ul style="list-style-type: none"> Wastes designated as hazardous or dangerous goods will be identified, packaged, segregated, handled, stored, transported and tracked in accordance with MARPOL 73/78 and applicable International Maritime Dangerous Goods (IMDG) requirements. All solid and hazardous wastes will be returned to the Australian mainland for appropriate onshore disposal. Induction of all personnel includes information on waste management procedures. Good housekeeping practices, including segregation of wastes, will be in place. Effective containment of wastes using segregated containers. Netting and/or covers for open waste containers. Waste to be managed in accordance with the MODU Waste Management Plan (ENI-LOG-PL-002). MSDSs are available for hazardous wastes.
R12 – Drill cuttings and water-based drilling mud discharge	<ul style="list-style-type: none"> Increased turbidity in the water column. Disturbance to pelagic marine fauna. Localised adverse impacts to benthic habitats, benthic and epibenthic fauna as a result of smothering from drill cuttings. Toxicity effects on marine biota. 	<ul style="list-style-type: none"> Cuttings/muds from deeper sections of the well will be discharged 3-5 m below the surface of the ocean, when circulating infrastructure is installed, cuttings and fluids will be returned to the rig for separation and recycling. Use of low toxicity WBM. WBMs shall be CHARM GOLD rated or OCNS ranking E. If GOLD CHARM or OCNS E ranking chemicals are selected, no further actions are required; however if these are not available, a risk assessment is to be undertaken to choose an alternative and signed off by the drilling engineer.
R13 – Cement discharge	<ul style="list-style-type: none"> Localised impacts to benthic habitats as a result of smothering from cement disposal. Localised toxicity effects on marine biota. 	<ul style="list-style-type: none"> Eni have selected benign cement and associated chemicals using Chemical Hazard and Risk Management system, which do not pose a risk the environment. A remotely operated vehicle will be used to assist in detecting returns of cement to the seabed (only during the cementing of the conductor pipe).
R14 – Cooling water and reject water discharge	<ul style="list-style-type: none"> Temporary and localised increase in sea surface water temperature and salinity. 	<ul style="list-style-type: none"> Engines and associated equipment that requires cooling by water will be maintained in accordance with the MODU preventative maintenance system so that they are running within specified operating parameters.
<i>Non-routine Activities</i>		
N1 – Interference with other marine users	<ul style="list-style-type: none"> Disturbance to commercial shipping vessel routes. Disruption to commercial fishing vessel activities. Entanglement of trawling equipment on seabed infrastructure. Dropped objects. 	<ul style="list-style-type: none"> Consultation with relevant stakeholders conducted in accordance with OPGGS (E) Regulations. Ongoing consultation with relevant stakeholders. The designation of a 500 m Petroleum Safety Zone (PSZ) around the MODU. Appropriate navigation lights and markers are displayed. Australian Maritime Safety Authority (AMSA) Marine Orders Part 30: Prevention of Collisions applies. Notices to Mariners issued.

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Source of Risk	Potential Impact	Control Measures
		<ul style="list-style-type: none"> The distress channel will be communicated to mariners prior to the commencement of operations. On completion of the well, the casings will be cut below the sea floor to ensure nothing remains above the seabed level. Two OSVs will be contracted to provide support to the MODU, including maintaining watch of surrounding vessel activity, warning vessels and enforcing the PSZ and providing emergency response if required. As far as feasible and practical, all dropped objects that are considered to pose a potential risk to navigation and fishing activities will be recovered.
N2 – Unignited flare gas during well testing	<ul style="list-style-type: none"> Temporary decrease in surface water quality. 	<ul style="list-style-type: none"> Well flows will be initiated during suitable weather conditions as defined by pre-start checks. A Vulcan Burner Head (or equivalent high efficiency burner) will be used to reduce liquid dropout rates. The early flow will be directed to separator tanks to remove liquids prior to flaring. A flare watch will be used for immediate system shutdown in the event of a drop out being observed.
N4 – Loss of well integrity	<ul style="list-style-type: none"> Acute and chronic toxic effects to pelagic marine biota. Release of hydrocarbon gasses to the atmosphere contributing to GHG load and associated impacts. Loss of natural resource. 	<ul style="list-style-type: none"> Well design and completion plan details the drilling specifications. Eni Barrier verification. Develop a Well Control Response Plan. Develop a Well Relief Plan. Blow-out Prevention (BOP) systems for wells installed and not removed unless well is suspended or abandoned. An independent specialist will inspect the BOP system prior to the rig acceptance as part of the WOMP (ENI-DRL-PL-017). BOP is pressure tested on surface prior to connection and is pressure tested following installation to test the connection with the well head. Eni Drilling Supervisors shall be well control school certified. Senior drilling crew members shall be well control school certified trained in the well shut in procedure for the rig. Continual monitoring of well information. Implement a 500 m PSZ around the MODU.
N5 – Vessel collision	<ul style="list-style-type: none"> Toxic effects to marine biota. Disruption to other activities. Decline in sediment and water quality. 	<ul style="list-style-type: none"> Vessels must seek approval from the MODU to enter the 500 m PSZ. Vessels >400 gross tonne must have an approved SOPEP and associated resources. Vessels within the 500 m PSZ must operate under the MODU Safety Management System. IMO International Regulations for Preventing Collisions at Sea (COLREGS). Issuance of Notice to Mariners. Vessels navigation aids and competent crew maintaining 24 hour visual, radio and radar watch for other vessels. Radio warnings to mariners as required.

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Source of Risk	Potential Impact	Control Measures
		<ul style="list-style-type: none"> The distress channel shall be communicated to mariners prior to the commencement of operations. All vessels will have suitably qualified vessel operators and crew.
N6 – Spill during MODU refuelling	<ul style="list-style-type: none"> Localised toxic effects to marine biota. Disruption to other activities. Decline in sediment and water quality. 	<ul style="list-style-type: none"> Transfer hoses will be fitted with 'dry break' couplings. Toolbox meetings. Vessels >400 gross tonne must have an approved SOPEP and associated resources. Bunkering as per vessel specifications. Refuelling operations shall be overseen by the vessel's Master or First Officer. Watchman will visually monitor the loading hose and connections for leaks during the entire operations. Radio communications will be maintained.
N7 – Leaks from fittings and connections	<ul style="list-style-type: none"> Localised toxic effects to marine biota. 	<ul style="list-style-type: none"> Preventative maintenance and testing system and schedule. Vessels have a SOPEP. Closed deck drainage system directed to oil-water separator. The BOP will be a closed loop hydraulic system.
N8 – Bulk transfer spill	<ul style="list-style-type: none"> Toxic effects to marine biota. 	<ul style="list-style-type: none"> Transfer operations will be overseen by the Vessel Master or First Officer to ensure transfer of material to the rig from the supply vessels is undertaken in accordance with MODU Marine Operations Manual. Bulk chemicals are stored in tote tanks and 'pods' (built in storage) on board the MODU. Toolbox meetings. Transfer hoses will be fitted with 'dry break' couplings and hose tested with air up to 40 psi prior to transfer.
N9 – Implementation strategy delivery	<ul style="list-style-type: none"> Increased number of incidents and/or severity. Lack of appropriate response. Breach of environmental legislation. 	<ul style="list-style-type: none"> Eni will internally report all accidental releases as per the Eni Hazard, Near Miss and Incident Reporting (ENI-HSE-PR-003) and detailed in the Eni Incident Report. All external reporting will be provided to regulators within defined timeframes. Induction records shows attendance of all crew. Training records show environmental competency of crew. Environmental audits planned, undertaken and documented. Environmental performance data recorded and reported throughout the drilling programme. Evidence of non-conformances entered and managed through the auditing database.
N10 – Oil Spill Response Preparedness	<ul style="list-style-type: none"> Increased incident severity. Lack of appropriate response. 	<ul style="list-style-type: none"> Oil Spill Contingency Plan (OSCP) prepared and tested in accordance with the OPGGS (E) Regulations. Spill response training for key response personnel to ensure they have the required experience and competency for their role. Training and oil spill response exercises. Maintenance of associate membership with oil spill

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Source of Risk	Potential Impact	Control Measures
		response agencies.
<i>Oil Spill Response Strategies</i>		
N11 – Disturbance to the natural habitat	Shorelines and nearshore habitat disturbed from: <ul style="list-style-type: none"> booms; trampling of habitat from response personnel; shoreline and nearshore habitat disturbance from landing vessels; removal of vegetation; mechanical tillering of stranded shorelines; alteration of beach profiles can lead to erosion; and waste storage and decontamination. 	<ul style="list-style-type: none"> Defined waste areas established. Trained operators undertaking assessments and overseeing activities. Appropriate equipment available to undertake clean-up. Natural collection points targeted during shoreline clean-up. Foot traffic from the access points to response sites will be managed to minimise disturbance to sensitive areas.
N12 – Oiled fauna displacement and handling	<ul style="list-style-type: none"> Range from minor behavioural changes to injury or fatality of marine fauna. 	<ul style="list-style-type: none"> Comply with the EPBC Regulations 2000 (Regulation 8.05) and the Australian National Guidelines for Whale and Dolphin Watching (DEH 2006). Should any cetaceans or relevant megafauna be observed in the vicinity of operational vessels, all necessary care to avoid collisions will be taken. Treatment of oiled fauna will involve teams, with at least one familiar with the behaviour of the animal and oiled wildlife response techniques. No additional impact to fauna whilst hazing.

Note: Items in italics are not controls; however are considered herein to assess the consequence of an activity.

5. OIL SPILL PREPAREDNESS AND RESPONSE

The Penguin Deep-1 Drilling OSCP (accepted within the EP) is the primary document to be used in the event of a large-scale hydrocarbon spill (>10 tonnes) (e.g. spill of diesel or blowout of gas condensate).

Strategies for oil spill responses outlined in the OSCP are focused on the vulnerable habitats (i.e. shorelines) located within the trajectory of the oil spill modelling for the drilling programme (or the 'Zone of Potential Impact') rather than open oceanic waters. These strategies are specifically tailored to the nature of the oil (a light, highly evaporative gas condensate) and take into account the environmental sensitivity of the region.

Eni has determined (through the production of a Net Environmental Benefit Analysis, NEBA) that in the event of a large-scale diesel or gas condensate spill, the order of preference for spill response is primarily natural recovery and monitoring and evaluate. Arrangements are also in place for containment and recovery strategies, protection and deflection strategies, shoreline clean-up, oiled wildlife and waste management if required.

Factors taken into consideration in determining these strategies include:

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- The long distance between the proposed drill site and sensitive environments.
- The light, high evaporative nature of gas condensate and diesel, especially in warm waters.
- The nature of the weathered oil.

6. OVERALL MANAGEMENT APPROACH

Eni is committed to achieving the highest practicable standard of environmental protection and this commitment is documented in the Eni Health, Safety and Environment (HSE) Policy. This policy is supported by Eni's ISO14001:2004 certified HSE Integrated Management System (IMS) which provides audited assurance of a best practice environmental management system based on continual improvement. The following plans have been developed to manage the risks described in this summary:

- WA-313-P Drilling Environment Plan (PD1_HSE_W_WE.0002);
- WA-313-P Drilling Oil Spill Contingency Plan (PD1_HSE_C_CS.0003); and
- ENSCO 104 2013-2014 Drilling Campaign Incident Management Plan (ENI-DRL-PL-015).

Eni conducts operations in accordance with the above internal policies and management systems. In addition to implementing risk controls, the operation will comply with key requirements and legislation, including (but not limited to):

- *Offshore Petroleum and Greenhouse Gas Storage Act 2006* and the associated OPGGS(E) Regulations;
- IMO Guidelines for the Control and Management of Ships' Biofouling 2012;
- MARPOL 73/78, as enacted under *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*; and
- APPEA Code of Environmental Practice.

Specific responsibilities identified with respect to environmental management arrangements (i.e. control implementation) are assigned in the accepted EP's implementation strategy. This will help ensure that the environmental risks associated with the drilling program are maintained at a level which is ALARP.

Environmental performance objectives are defined for each environmental aspect. These objectives are monitored and reviewed against key performance standards to ensure environmental outcomes are achieved during the drilling program.

Monitoring of environment performance will be undertaken in a number of ways, including the use of the following tools and systems:

- internal reporting, including daily (e.g. fuel inspection logs) and as required (e.g. waste manifest, incident reports etc.);
- external reporting, such as regulatory reporting (e.g. Well Environmental Report);

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- scheduled inspections; and
- auditing and assurance of operating facilities.

Environment incidents will be investigated to identify prevention measures. Incidents will be reviewed to promote on-going environmental awareness. The relevant Regulator (i.e. NOPSEMA or AMSA) will be notified of all reportable incidents.

All Eni and contractor personnel will receive training on their environmental responsibilities in connection with the drilling program. The environmental induction will instruct personnel on the issues and management actions identified in the EP.

7. CONSULTATION

Stakeholder assessment was undertaken to identify potentially affected and interested stakeholders based on the well location, proposed activities and timing. A consultation fact sheet was sent electronically to all identified stakeholders prior to lodgement of the EP to NOPSEMA for assessment and approval. This was supported by engagement with potentially affected stakeholders, relevant regulators and industry associations.

Eni has not received any material concerns from stakeholders prior to or after lodgement of the Environment Plan for assessment and approval. Eni will continue to accept feedback from stakeholders during the drilling program. During the activity, regular Communications Bulletin will be issued to AMSA, defence and fisheries.

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- [2] DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY (DAFF) 2009. NATIONAL BIOFOULING MANAGEMENT GUIDANCE FOR THE PETROLEUM PRODUCTION AND EXPLORATION INDUSTRY.
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