WA-472-P and WA-473-P Exploration Drilling Environment Plan Summary

Exploration, Drilling and Completions
Rev 1
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1. INTRODUCTION

Woodside Energy Ltd (Woodside), as titleholder, under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (referred to as the Environment Regulations), proposes to undertake exploration drilling within permit areas WA-472-P and WA-473-P; hereafter referred to as the Petroleum Activities Program. The wells are being drilled to explore for potentially commercial hydrocarbon resources and are a commitment under Exploration Permit Area requirements, issued under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act).

This Environment Plan (EP) Summary has been prepared to meet the requirements of Regulations 11(3) and 11(4) of the Environment Regulations, as administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). This document summarises the WA-472-P and WA-473-P Exploration Drilling Environment Plan, accepted by NOPSEMA under Regulation 10A of the Environment Regulations.

2. LOCATION OF THE ACTIVITY

The proposed Petroleum Activities Program is located in permit areas WA-472-P and WA-473-P which are located in Commonwealth waters approximately 65 km and 200 km respectively, north-east of the Dampier township (**Figure 2.1**).

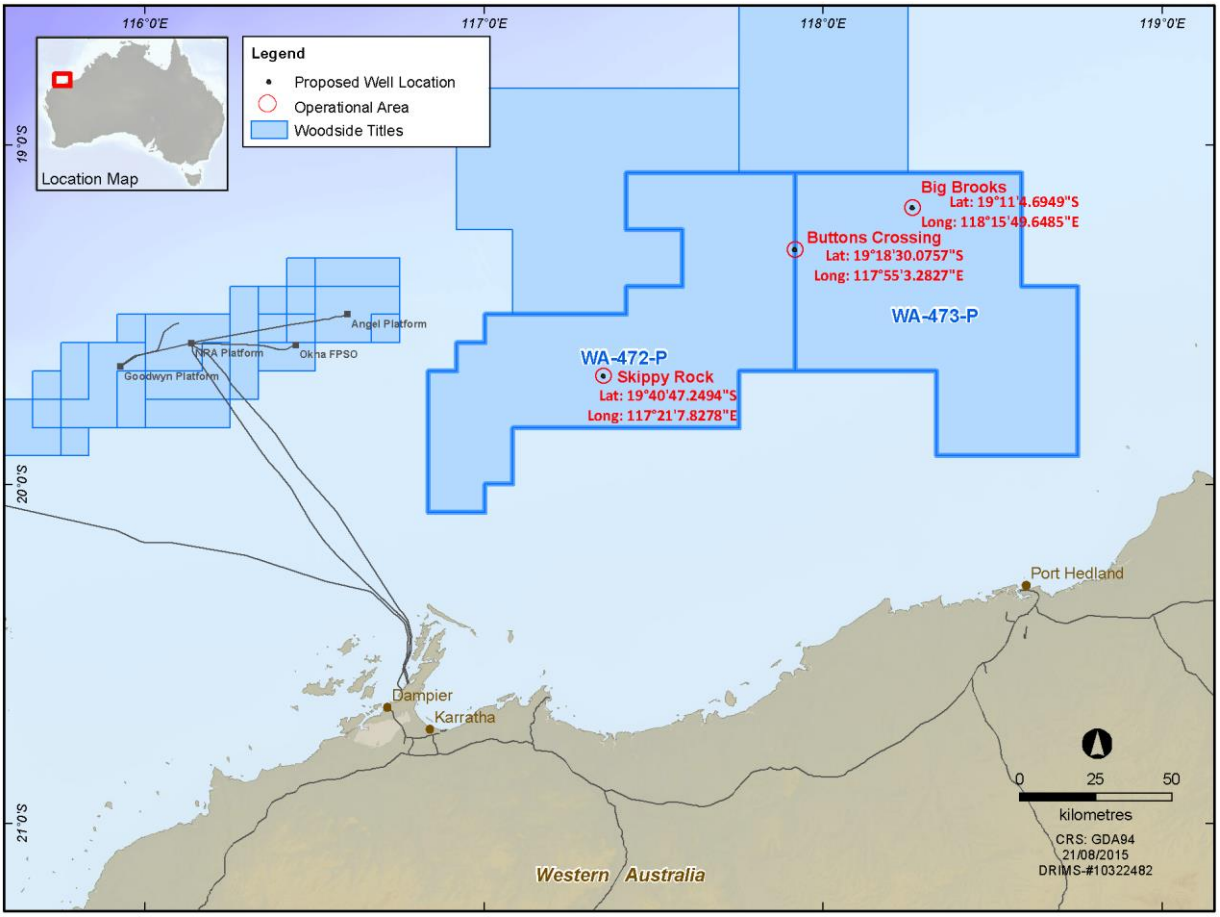

Figure 2.1: Location of the proposed well locations and Operational Areas

The Petroleum Activities Program ranges in water depth from 60 – 90 m. The approximate location details for the Petroleum Activities Program are provided in **Table 2.1**. The planned 'Skippy Rock' and 'Buttons Crossing' exploration wells are located in WA-472-P and the 'Big Brooks' exploration well is in WA-473-P. These wells are all located in shipping fairways (**Section 4.3**).

The area in which the Petroleum Activities Program can occur is defined by the Operational Area which encompasses a radius of 2500 m from each proposed well centre. The Operational Area defines the spatial boundary of the Petroleum Activities Program, as described, risk assessed and managed by the EP, including vessel related petroleum activities within the Operational Area. Transit to and from an Operational Area by vessels is not within the scope of the EP.

Table 2.1 Approximate location details for the Petroleum Activities Program

Activity	Water Depth (approx. m LAT)	Latitude	Longitude	Production Licence
Skippy Rock well	60 m	19°40'47.249"S	117°21'07.827"E	WA-472-P
Buttons Crossing well	85 m	19°18'28.726"S	117°55'04.381"E	WA-472-P
Big Brooks well	90 m	19°11'06.095"S	118°16'24.548"E	WA-473-P

3. DESCRIPTION OF THE ACTIVITY

Woodside proposes to drill up to three exploration wells to explore for potentially commercial hydrocarbon resources. The Petroleum Activities Program is targeting new oil and gas reserves. Two of the three wells are primary commitment wells, under Exploration Permit Area requirements issued under the OPGGS Act (Commonwealth).

The exploration wells will be drilled by a semi-submersible moored mobile offshore drilling unit (MODU).The key activities proposed for within the Operational Area are::

- Anchor holding testing, if required
- Top hole section drilling
- Installation and testing of Blow-out Preventer (BOP) on the wellhead
- Connection of marine riser between the BOP and the MODU to provide a closed loop system for the recirculation of drilling fluids and drill cuttings from the well to the MODU.
- Bottom hole section drilling to the planned depth
- Formation evaluation, which may include extracting cores, wireline logging and vertical seismic profiling (VSP) as required.
- Well abandonment at the end of the drilling activity, utilising cement plugs.

Drill cuttings generated during drilling of the top hole sections will be discharged at the seabed. For the bottom hole sections, once the marine riser has been installed, drill cuttings will be returned to the MODU and discharged at the sea surface below the water line.

During the Petroleum Activities Program, the MODU will be supported by other vessels, such as, anchor handling and general support vessels. The support vessels will primarily be used to transport equipment and materials between the MODU and port and assist during anchor handling activities. During the Petroleum Activities Program, crew changes will be undertaken using helicopters. Helicopter operations are limited to the landing and take-off and refuelling of the helicopter on the heli-deck of the MODU.

Unplanned contingent activities may be required if operational or technical issues occur during the Petroleum Activities Program, these could include:

- Respudding – may involve moving the MODU to a suitably close location to recommence drilling
- Well suspension - where suitable barriers are established prior to disconnecting the MODU from the well (e.g. prior to a cyclone)

- Well abandonment and sidetrack - may be required to abandon the lower section of a well, prior to side-tracking, where a new lower well section is drilled
- Wellhead assembly left *in situ* - On completion of a well, the wellhead assembly may be left in place if recognised removal techniques are ineffective
- Emergency disconnect sequence (EDS) – may be implemented if the MODU is required to rapidly disengage from the well. The EDS closes the BOP (i.e. shutting in the well) and disconnects the riser to break the conduit between the wellhead and MODU.

3.1 Timing of the Activities

The first part of the proposed Petroleum Activities Program is scheduled to commence in Q1 2016 with drilling at Skippy Rock. Subsequent drilling will occur at a later date, not yet determined, but anticipated to be post-2016. Drilling is expected to take up to approximately 80 days (including mobilisation, demobilisation and contingency) to complete. A 500 m radius designated exclusion/safety zone will be in place around the MODU for the duration of drilling at each of the drilling locations. There are no planned concurrent drilling activities under the EP.

Timing and duration of these activities is subject to change due to project schedule requirements, MODU/vessel availability, unforeseen circumstances and weather. The EP has assessed the environmental impacts and risks for exploration well drilling throughout the year (all seasons) to provide operational flexibility for operational requirements and schedule changes and vessel / MODU availability.

4. DESCRIPTION OF THE EXISTING ENVIRONMENT

4.1 Physical

The Operational Areas are located in Commonwealth waters within the North West Shelf (NWS) Province, in water depths of approximately 60 to 90 m.

The NWS Province is part of the wider North West Marine Region (NWMR), as defined under the Integrated Marine and Coastal Regionalisation of Australia (IMCRA v4.0). The NWS Province encompasses the continental shelf between North West Cape and Cape Bougainville, and varies in width from approximately 50 km at Exmouth Gulf to greater than 250 km off Cape Leveque and includes water depths of 0 to 200 m.

The climate within the NWS Province is tropical monsoon, exhibiting a hot, wet summer season from October to April and a milder, dry winter season between May and September. Rainfall predominantly occurs during the wet season (summer), with highest rains observed during late summer, often associated with the passage of tropical low pressure systems and cyclones. Rainfall outside this period is typically low. There are often distinct transition periods between the summer and winter regimes, which are characterised by periods of relatively low winds.

The large-scale ocean circulation of the NWS Province is primarily influenced by the Indonesian Throughflow (ITF) and the Leeuwin Current. The ITF and the Leeuwin Current are strongest during late summer and winter with flow reversals occurring when associated with strong south-westerly winds. These flow reversal events may be associated with weak, shelf upwellings. Tides in the region are semi-diurnal have a pronounced spring-neap cycle, with tidal currents flooding towards the south-east and ebbing towards the north-west.

The bathymetry of the NWS Province gradually slopes from the coastline to the shelf break at the edge of the NWMR and includes water depths of 0 to 200 m. The NWS Province includes a number of seafloor features including submerged banks and shoals, and morphologically distinct valley features. There is limited bathymetry data available specific to the Operational Areas; however, recent data derived from the Polly 3D seismic survey indicates that the seabed is relatively flat with no obvious topographic features.

The submerged shoals of Glomar Shoals are the nearest, complex bathymetry feature to the Operational Areas (approximately 53 km). The largest shoal rises on all sides from 80 m depth and

gradually levels off to include a plateau region situated within 40 m of the surface. Glomar Shoals are recognised as a Key Ecological Feature (KEF) under the *Environmental Protection and Biodiversity Conservation Act* (Cth) (EPBC Act) for its high regional biodiversity and productivity.

4.2 Biological

The offshore environment of the NWS Province contains environmental assets (such as habitat and species) of high value or sensitivity including Commonwealth marine waters, as well as the wider regional context including coastal waters and habitats of the Dampier Archipelago, Glomar shoals and offshore islands such as the Montebello Island group. Furthermore, the region is noted for resident, temporary or migratory marine life including EPBC Act listed threatened and migratory species such as marine mammals, turtles and birds. The marine environment of these offshore locations is largely pristine and many sensitive receptor locations are protected as part of Commonwealth and State managed areas.

There are no environmental values and sensitivities (protected areas or KEFs) located within the Operational Areas. The nearest sensitive habitat to the Operational Areas are the Glomar Shoals (KEF), located approximately 53 km away (**Figure 4.1**). Values and sensitivities of the established marine protected areas and other sensitive areas in the wider regional setting are listed in **Table 4.1**.

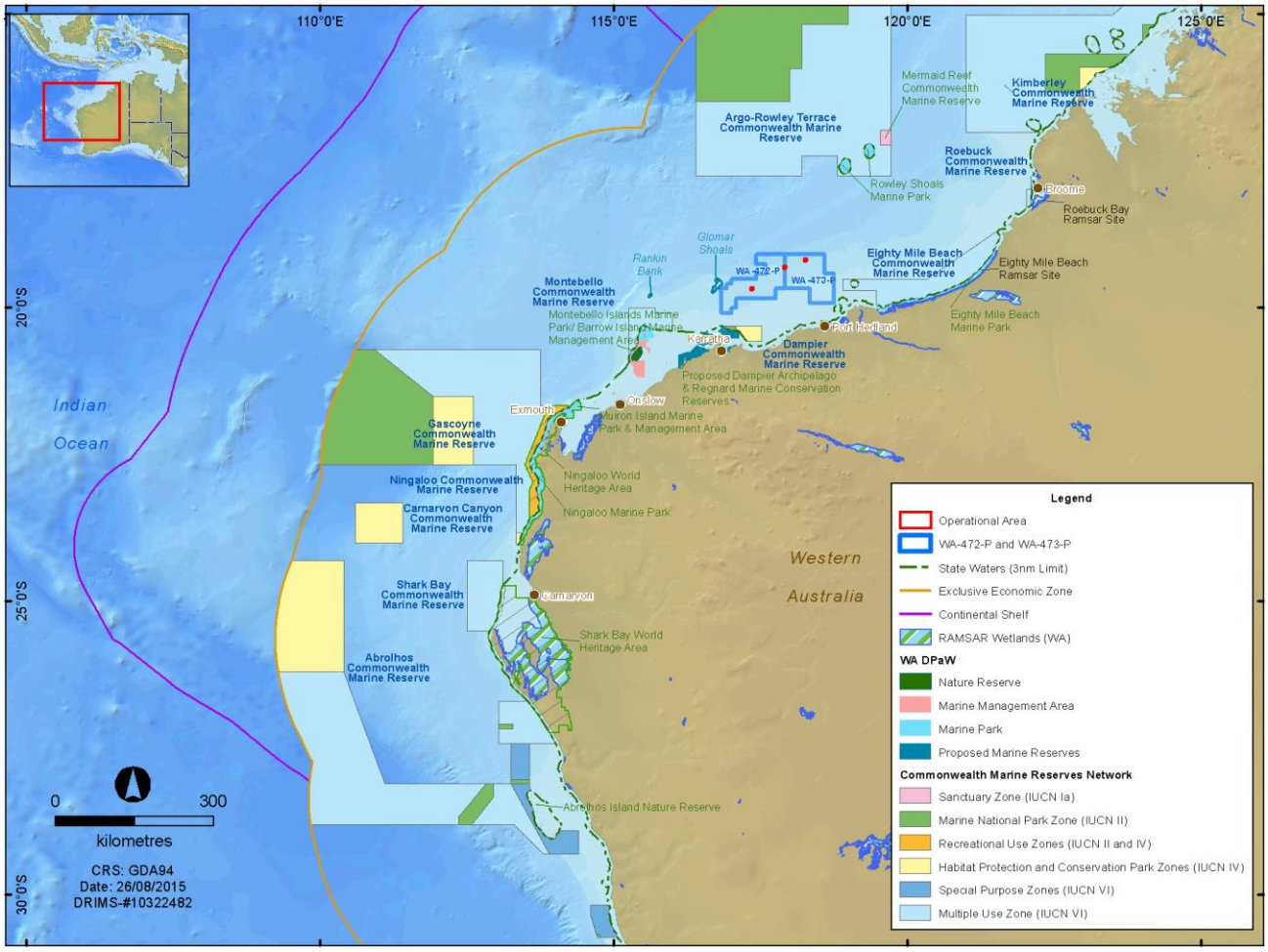

Figure 4.1 Established and proposed Commonwealth and State marine protected areas

Table 4.1 Summary of Established and Proposed Marine Protected Areas (MPAs) and other sensitive locations in the region relating to the Operational Areas.

	Closest Point from Operational Areas over water(km)	IUCN Protected Area Category
Nearest habitat of significant conservation value		
Glomar Shoals	53	Not Applicable (N/A)
Commonwealth Marine Reserves (CMRs)		
Dampier CMR	69	II – Marine National Park Zone IV – Habitat Protection Zone
Montebello CMR	151	VI – Multiple Use Zone
Eighty Mile Beach CMR	75	VI – Multiple Use Zone
Argo-Rowley Terrace CMR	159	II – Marine National Park Zone VI – Multiple use Zone
Mermaid Reef CMR	169	Ia – Sanctuary Zone
Ningaloo CMR	394	II – Recreational Use Zone
Gascoyne CMR	417	II – Marine National Park Zone IV – Habitat Protection Zone VI – Multiple use Zone
Kimberley CMR	543	II – Marine National Park Zone IV – Habitat Protection Zone VI – Multiple use Zone
Roebuck Bay CMR	414	VI – Multiple use Zone
Shark Bay CMR	720	VI – Multiple use Zone
Carnarvon Canyon CMR	739	IV – Habitat Protection Zone
Abrolhos CMR	885	II – Marine National Park Zone IV – Habitat Protection Zone VI – Multiple use Zone VI – Special Purpose Zone
Perth Canyon CMR	1558	II – Marine National Park Zone IV – Habitat Protection Zone VI – Multiple use Zone
State Marine Parks, Nature Reserves and Management Areas		
Established		
Dampier Archipelago Nature Reserves	89	Ia – Sanctuary Zone II – Marine National Park Zone
Pilbara Islands - Northern Island Group (Passage Islands chain including Great Sandy Islands and North Sandy Island – State Nature Reserves)	162	Ia – Sanctuary Zone
Eighty Mile Beach Marine Park	157	II – Marine National Park Zone
Lowendal Islands Nature Reserve	211	Ia – Sanctuary Zone

	Closest Point from Operational Areas over water(km)	IUCN Protected Area Category
Montebello Islands Marine Park / Barrow Island Marine Park / Barrow Island Marine Management Area	137	Ia – Sanctuary Zone
Barrow Island Nature Reserve (including the Boodie, Double, and Middle Islands Nature Reserve)	195	Ia – Sanctuary Zone
Shark Bay Marine Park	779	II – Marine National Park Zone
Rowley Shoals Marine Park	177	II – Marine National Park Zone
Pilbara Islands - Southern Island Group (Serrurier, Thevenard & Bessieres Islands Nature Reserves)	289	Ia – Sanctuary Zone
Pilbara Islands - Middle Island Group (Mary Anne Group)	221	VI – Multiple use Zone
Ningaloo Marine Park*	400	Ia – Sanctuary Zone (islands) II – Marine National Park Zone
Muiron Islands Marine Management Area*	371	Ia – Sanctuary Zone (islands) II – Marine National Park Zone
Houtman Abrolhos Nature Reserve	1182	II – Marine National Park Zone
Lacepede Islands Nature Reserve	482	Ia – Sanctuary Zone
Lalang-garram / Camden Sound Marine Park	659	Ia – Sanctuary Zone (islands)
Proposed		
Proposed Dampier Archipelago Marine Park and Regnard Marine Management Area	116	N/A
Heritage Areas		
The Ningaloo Coast WHA	393	N/A
Shark Bay WHA	761	N/A
National Heritage Places		
West Kimberley	449	N/A
Ramsar Wetlands		
Eighty Mile Beach	177	N/A
Roebuck Bay	421	N/A
Key Ecological Features (KEFs)		
Ancient Coastline at 125 m depth contour	25	N/A
Continental Slope Demersal Fish Communities	200	N/A
Glomar Shoals	53	N/A
Exmouth Plateau	311	N/A
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	348	N/A

	Closest Point from Operational Areas over water(km)	IUCN Protected Area Category
Commonwealth waters adjacent to Ningaloo Reef	393	N/A
Mermaid Reef and Commonwealth Waters surrounding Rowley Shoals	169	N/A
Wallaby Saddle	897	N/A
Demersal slope and associated fish communities of the Central Western Province	850	N/A
Commonwealth marine environment surrounding the Houtman Abrolhos Islands	1000	N/A
Perth Canyon and adjacent shelf break, and other west coast canyons	1558	N/A
Meso-scale eddies	910	N/A
Other		
Rankin Bank	179	N/A
Southern Pilbara Shoreline	370	N/A
Exmouth Gulf	413	N/A
Adele Island	660	N/A
Dampier Peninsula Coast	434	N/A

* Muiron Islands (Marine Management Area) is managed under the same management plan as the State Reserve of Ningaloo (MPRA 2005)

Habitats

No Critical Habitats or Threatened Ecological Communities, as listed under the EPBC Act, are known to occur within the Operational Areas.

Benthic Habitats in the Operational Area

Benthic primary producers such as coral reef, seagrasses and macroalgae do not occur within the Operational Areas given the water depth and resultant low levels of photosyntethically active radiation reaching the seabed. Benthic communities are expected to consists of infauna and filter feeding epifauna, which are widely distributed and well represented throughout the NWMR.

Marine sediment sampling at the Angel Platform, located approximately 81 km from the Operational Areas in similar depths, describe sediments as comprising of coarse silts to fine sands. Marine sediment in the Operational Areas is expected to be similar to those in proximity to the Angel Platform.

Benthic grab sampling undertaken in depths of approximately 100 m around the GWA facility, located approximately 149 km from the Operational Areas, has revealed infauna communities that are in low abundance, highly variable and diverse. Polychaetes and crustaceans were identified as dominating the infauna composition and being associated with soft, unconsolidated sediment. There are no known significant filter feeder communities within the Operational Areas.

Habitats in the Wider Region

The wider region, including Glomar Shoals and the Dampier Archipelago, comprise important benthic primary producer habitats such as coral reefs, seagrass beds, macroalgae communities, and mangroves. Coral reefs habitats in the region have a high diversity of corals and associated species of both commercial and conservational importance, and are an integral part of the marine environment. Seagrass beds represent a key food source for many species and provide key habitats and nursery grounds, and mangrove habitats provide complex structural habitats as well as nurseries and feeding

sites for many marine species. Glomar Shoals are the nearest coral reef habitat, located approximately 53 km from the Operational Areas. Other significant coral reef, seagrass and macroalgal, and mangrove habitats include the Montebello/Barrow/Lowendal Islands Group Exmouth Gulf and Rankin Bank.

The NWMR has been identified as a sponge diversity hotspot with a high variety of areas of potentially high and unique sponge biodiversity, particularly the Commonwealth waters of the Ningaloo Marine Park and the Dampier Archipelago. The area between Dampier and Port Hedland is also considered a sponge diversity hotspot. Filter feeders at Glomar Shoals make up minor components of the benthic communities, with sponges being among the most abundant filter feeders.

A seabed survey conducted in the NWS Province along the export pipeline route from the Angel platform to the North Rankin A platform identified polychaetes and crustaceans as dominating the infauna communities. These results supported the findings of other NWS sampling programs which indicated a widespread and well represented infauna assemblage along the continental shelf and upper slopes. Additionally, it is expected that these infauna communities will be widely represented within the wider region.

Resident/Demersal Fish Populations

Fish species in the NWMR comprise small and large pelagic fish as well as demersal species. Large pelagic fish include commercially targeted species such as mackerel, wahoo, tuna, swordfish and marlin. Large pelagic fish are typically widespread, found in mainly offshore waters and often travel extensively.

Demersal fish species in the region also include commercially important species such as grouper, cod and snapper. Fish species richness has been shown to correlate with habitat complexity, with more complex habitat supporting greater species richness and abundance than bare areas. Within the NWS Province, Glomar Shoals is the closest area identified as supporting high demersal fish richness and abundance despite its isolated location. Within the wider region, key demersal fish biodiversity areas are likely to occur in other complex habitats (e.g. coral reefs), and therefore likely include the Montebello/Barrow/Lowendal Islands and Dampier Archipelago.

Protected Species

A total of 60 EPBC Act listed marine species were identified as potentially occurring within the Operational Area. Of those listed, 15 are considered threatened marine species and 21 migratory species under the EPBC.

Operational Area

Transitory humpback whales (*Megaptera novaeangliae*) may traverse the Operational Areas between June and October, during both their northern and southern migrations. The migration corridor for humpback whales has been defined as a BIA by the DoE. A review of the Conservation Values Atlas confirmed that the BIA lies outside the Operational Areas. However, distribution maps indicate that the operational areas are within the 'species core range'; an area humpback whales travel through as part of their migratory movements. The Operational Areas are not located in or adjacent to any known critical habitat areas for this protected migratory whale species. Observed whales are most likely to be transiting between the known aggregation areas of Camden Sound (approximately 680 km north-east) and Exmouth Gulf (approximately 413 km south-west), rather than feeding, resting or breeding.

The general distribution of pygmy blue whales (*Balaenoptera musculus*) is known to occur in water depths over 200 m and commonly over 1000 m, considerably deeper than water depths in the Operational Areas. The Operational Areas do not represent any critical habitat (feeding, resting or breeding aggregation areas) for the pygmy blue whale however it is acknowledged that that Pygmy Blue Whales 'distribution' for 'known to occur area' overlaps with the operational areas as documented in the Conservation and Management Plan for Blue Whales. The Operational Area may be visited by other cetacean species, but it is likely to be in infrequent and of a transitory nature.

There is the potential for five species of marine turtle (listed as threatened and migratory) to occur within the Operational Area. These are the loggerhead turtle (*Caretta caretta*), green turtle (*Chelonia mydas*), leatherback turtle (*Dermochelys coriacea*), hawksbill turtle (*Eretmochelys imbricata*) and the flatback turtle (*Natator depressus*). The Operational Area does not contain any known critical habitat for any species of marine turtle. It is possible that marine turtles forage at Glomar Shoals, and primary

nesting locations (e.g. Dampier Archipelago) are approximately 89 km at their closest point from the Operational Areas.

The nearby Glomar Shoals provide habitat that may be suitable for seasnakes. Although seasnake species have the potential to be found in the Operational Area, the distance offshore, depth range of offshore waters of the Operational Area and absence of potential nesting and foraging sites indicates that individual turtles and sea snakes are not expected to be encountered in the Operational Area in high densities.

Whale sharks (*Rhincodon typus*) are listed as Migratory and Vulnerable and are likely to traverse the vicinity of the Operational Area during their migrations to and from Ningaloo Reef (March – July). The DoE has defined a BIA for foraging whale sharks (post aggregation at Ningaloo) centred on the 200 m isobath from July to November. This area extends northward from the Ningaloo aggregation area and intersects the Operational Areas. Whale shark presence within the Operational Areas would likely be of a relatively short duration and not of significant numbers given the main aggregations are recorded in coastal waters, particularly the Ningaloo Reef edge.

Four other shark/ray species, including the great white shark (*Carcharodon carcharias*) (listed as vulnerable and migratory), shortfin mako (*Isurus oxyrinchus*), longfin mako (*I. paucus*) and giant manta ray (*Manta birostris*) (listed as migratory) may be present within the Operational Areas for short durations when individuals transit the area.

Two species of sawfish, dwarf (*Pristis clavata*) and green (*P. zijsron*), were identified as potentially occurring within the Operational Areas. However, considering the distance from preferred shallow coastal habitats and the water depth of the Operational Areas (approximately 60 to 90 m), sightings of sawfish are considered unlikely within the Operational Areas. However, both species may be found within the wider region.

The Operational Areas may be occasionally visited by migratory birds between July and December and again between March and April as they complete migrations between Australia and offshore locations. Two BIAs defined by the DoE for (1) the migratory wedge-tailed shearwater (*Ardenna pacifica*) during its breeding period (August – April) and (2) the lesser frigate bird (*Fregata ariel*) during its breeding season (March to September) overlap with the Operational Area. The Endangered southern giant petrel (*Macronectes giganteus*) and Vulnerable Australian fairy tern (*Sternula nereis*) and the migratory eastern osprey (*Pandion cristatus*) were also identified as potentially occurring within the Operational Area. The Operational Areas do not contain any emergent land that could be utilised as roosting or nesting habitat and contain no known critical habitats (including feeding) for any species.

Wider Region

The Antarctic Minke whale (*Balaenoptera bonaerensis*), Bryde's whale (*Balaenoptera edeni*) and Sperm whale (*Physeter macrocephalus*) migrate up the West Australian coast, however their occurrence within the Operational Area is considered to be unlikely and limited to a few individuals transiting the area. Dugong (Dugong dugon) occurrence within the Operational Area is considered unlikely due to lack of seagrass habitat.

Four of the turtle species (green, loggerhead, flatback and hawksbill) have significant nesting rookeries on beaches along the mainland coast and islands in the wider region, including the Montebello/Barrow/Lowendal Islands Group and the Dampier Archipelago.

Whale sharks are known to aggregate annually (from March to July) in areas off Ningaloo and North West Cape and these areas are also important for manta rays in autumn and winter. The Dampier Archipelago (approximately 89 km from the Operational Areas) is the closest important seabird and shorebird nesting and foraging habitat.

4.3 Socio-Economic and Cultural

There are no known sites of Indigenous or European cultural or heritage significance, or historic shipwrecks, within the vicinity of the Operational Areas.

A number of Commonwealth and State fisheries are located within, adjacent to, or in the region of the Operational Areas. None of these fisheries have significant catches within or adjacent to the Operational Area.

Commonwealth fisheries operating within or adjacent to the Operational Areas include the North West Slope Trawl Fishery, Western Tuna and Billfish Fishery, Southern Bluefin Tuna Fishery and the Western Skipjack Tuna Fishery. The majority of fishing effort for these fisheries occurs outside of the Operational Area.

State fisheries that may operate within or adjacent to the Operational Area include the West Australian Mackerel Fishery, Nickol Bay Prawn Fishery and North Coast Demersal Scalefish Fisheries (comprised of the Pilbara Trawl, Trap and Line Fisheries). There are no aquaculture activities within or adjacent to the Operational Areas.

There are no designated traditional, or customary, fisheries recorded within or adjacent to the Operational Area as these are typically restricted to shallow coastal waters and/or areas with structure such as reef.

No known tourism activities take place specifically within or adjacent to the Operational Areas, however, the wider regional context includes recreational beaches and tourist spots. The Dampier Archipelago (approximately 89 km from the Operational Areas) and the Montebello Islands (202 km from the Operational Areas) are the closest location, with tourism potential, to the Operational Areas. Both the Dampier Archipelago and Montebello Islands are popular locations for tourist activities, including recreational fishing, diving, surface water-sports and wildlife viewing. Occasional recreational fishing occurs at Glomar Shoals (located approximately 53 km from the Operational Areas).

The region supports significant commercial shipping activity, the majority of which is associated with the mining, oil and gas industry. Major shipping routes in the area are associated with entry to the ports of Port Hedland, Cape Lambert, Dampier and Barrow Island. A network of marine fairways has been established to reduce risk of vessel collisions. These shipping fairways are not mandatory, but the Australian Maritime Safety Authority (AMSA) strongly recommends commercial vessels remain within the fairways when transiting the region. The location of each Operational Area (including a 500 m exclusion/safety zone around the MODU) intersects a shipping fairway. Data collected from AMSA indicates that between one and three bulk carriers a day may use the shipping fairways and therefore transit through the Operational Areas.

The Operational Areas are located within an area of established oil and gas operations with additional infrastructure in the broader NWMR. There are no existing oil and gas facilities within or adjacent to the Operational Areas.

The Jasuras submarine communication cable links Australia with Indonesia, travelling north out of Port Hedland for approximately 210 km before heading north-west toward Jakarta, Indonesia. The cable is located approximately 32 km from the Operational Areas.

There are no designated defence practice areas in the offshore marine waters of the Operational Areas.

5. ENVIRONMENTAL IMPACTS AND RISKS

5.1 Risk Identification and Evaluation

Woodside undertook an environmental risk assessment to identify the potential environmental impacts and risks associated with the proposed Program and identification of the control measures to manage the identified environmental impacts and risks to as low as reasonably practicable (ALARP) and an acceptable level. This risk assessment and evaluation was undertaken using Woodside's Risk Management Framework.

The key steps of Woodside's Risk Management Framework are shown in **Figure 5-1**. A summary of each step and how it is applied to the proposed Program is provided below.

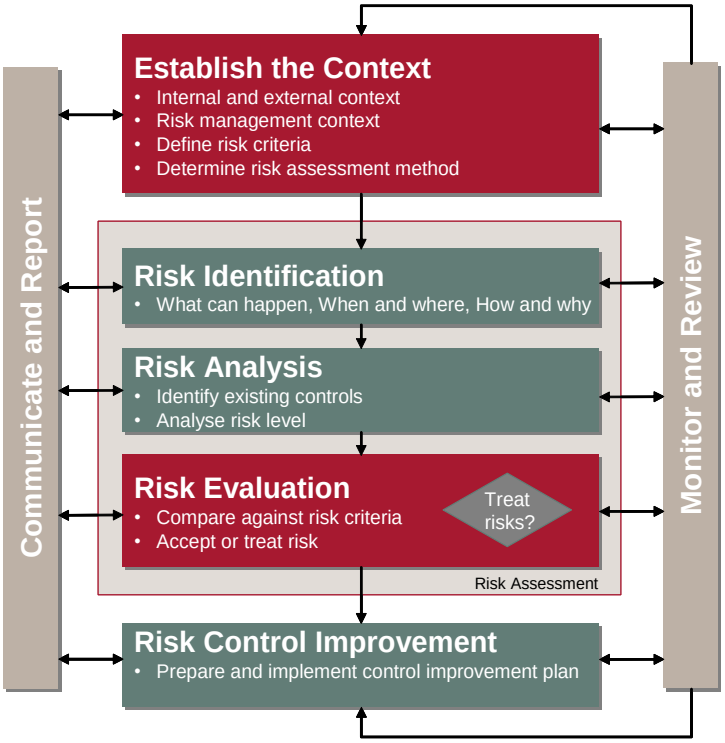

Figure 5.1: Key steps in Woodside's Risk Management Framework

1. Establish the Context

The objective of a risk assessment is to assess identified risks and apply appropriate control measures to eliminate, control or mitigate the risk to ALARP and to determine if the risk is acceptable.

Hazard identification workshops (ENVID) aligned with NOPSEMA's Hazard Identification Guidance Note (N-04300-GN0107) were undertaken by multidisciplinary teams made up of relevant personnel with sufficient breadth of knowledge, training and experience to reasonably assure that risks and associated impacts were identified and assessed.

2. Risk Identification

The hazard identification workshop for the proposed Petroleum Activities Program was used to identify risks with the potential to harm the environment. Risks were identified for both planned (routine and non-routine) and unplanned (accidents/incidents) activities.

3. Risk Analysis (Decision Support Framework)

Risk analysis further develops the understanding of a risk by defining the impacts and assessing the appropriate controls. Risk analysis for the proposed Program considered previous risk assessments for the facility, review of relevant studies, review of past performance, external stakeholder consultation feedback and review of the existing environment.

To support the risk assessment process, Woodside applied the UKOOA (1999) Industry Guidelines on a Framework for Risk Related Decision Support (HS006) during the workshops to determine the level of supporting evidence that may be required to draw sound conclusions regarding risk level and whether the risk is acceptable and ALARP.

This is to ensure:

- Activities do not pose an unacceptable environmental risk;
- Appropriate focus is placed on activities where the risk is anticipated to be tolerable and demonstrated to be ALARP; and

- Appropriate effort is applied to the management of risks based on the uncertainty of the risk, the complexity and risk rating.

Identification of Control Measures

Woodside applies a hierarchy of control measures when considering Good Practice and Professional Judgement. The hierarchy of control is applied in order of importance as follows; elimination, substitution, engineering control measures, administrative control measures and mitigation of consequences/impacts.

Risk Rating Process

The risk rating process is undertaken to assign a level of risk to each impact measured in terms of consequence and likelihood. The assigned risk level is the residual risk (i.e. risk with controls in place) and is therefore undertaken following the identification of the decision type and appropriate control measures.

The Consequence Level is selected by determining the worst case credible outcomes associated with the selected event assuming some controls (prevention and mitigation) have failed. Where more than one impact applies (e.g. environmental and legal/compliance), the consequence level for the highest severity impact is selected. The Likelihood Level is selected by determining the description that best fits the chance of the selected consequence actually occurring, assuming reasonable effectiveness of the prevention and mitigation controls.

The ENVID for the Petroleum Activities Program identified 19 sources of environmental risk. These risks are divided into two broad categories: planned (routine and non-routine); and unplanned (accidents/incidents) activities. The 19 sources of environmental risk comprised ten planned and nine unplanned sources of risk.

Generally, the sources of risk from planned activities present a lower environmental consequence compared to the potential impact from unplanned accident or incident events. The EP contains a variety of mitigation and control measures which ensure potential impacts and risks will be reduced to ALARP and will be of an acceptable level. A summary of the key environmental risks and control measures have been presented in **Appendix A**.

4. Risk Evaluation

Environmental risks, as opposed to safety risks, cover a wider range of issues, differing species, persistence, reversibility, resilience, cumulative effects and variability in severity. The degree of environmental risk and the corresponding threshold for whether a risk/impact has been reduced to ALARP and is acceptable has been adapted to include principles of ecological sustainability (given as an objective in the Environment Regulations and defined in the EPBC Act), the Precautionary Principle and the corresponding environmental risk threshold decision-making principles are used to determine acceptability.

Demonstration of ALARP

In accordance with Regulation 10A(b) of the Environment Regulations, Woodside demonstrates risks are reduced to ALARP where:

The residual risk is low:

- Good industry practice or comparable standards have been applied to control the risk, because any further effort towards risk reduction is not reasonably practicable without sacrifices grossly disproportionate to the benefit gained.

The residual risk is medium or high:

- Good industry practice is applied for the situation/risk
- Alternatives have been identified and the control measures selected reduce the risks and impacts to ALARP. This may require assessment of Woodside and industry benchmarking, review of local and international codes and standards, consultation with stakeholders etc.

Demonstration of Acceptability

In accordance with Regulation 10A(c) of the Environmental Regulations, Woodside applies the following process to demonstrate acceptability:

- Low residual risks are 'Broadly Acceptable', if they meet legislative requirements, industry codes and standards, regulator expectations, Woodside Standards and industry guidelines.
- Medium and High residual risks are 'Acceptable' if ALARP can be demonstrated using good industry practice and risk based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.

  In undertaking this process for medium and high residual risks, Woodside evaluates the following criteria:

  - Principles of Ecological Sustainable Development (ESD) as defined under the EPBC Act
  - Internal context - the proposed controls and residual risk level are consistent with Woodside policies, procedures and standards
  - External context – consideration of the environment consequence and stakeholder expectations
  - Other requirements – the proposed controls and residual risk level are consistent with national and international standards, laws and policies.
- Severe residual risks are 'Intolerable' and therefore unacceptable. These risks require further investigation and mitigation to reduce the risk to a lower and more acceptable level. If after further investigation the risk remains in the severe category, the risk requires appropriate business sign-off to accept the risk.

5.2 Planned (Routine and Non-routine) Activities

The sources of environmental risk identified for the proposed Petroleum Activities Program for planned (either routine or non-routine) activities include:

- Proximity of MODU and project vessels to third party vessels (commercial shipping and fishing) and shipping fairway
- Disturbance to seabed from drilling, MODU anchoring and remotely operated underwater vehicle (ROV) operations
- Generation of noise from MODU, project vessels and ROV during normal operations
- Generation of acoustic signals from VSP
- Internal combustion engines on MODU and support vessels
- Routine discharge of sewage, grey water and putrescible wastes to the marine environment
- Routine discharge of deck and bilge water to marine environment
- Routine discharge of cooling water or brine to the marine environment.
- Routine discharge of water based muds (WBM) drill cuttings and non-routine discharge of non-water based muds (NWBM) drill cuttings and wash water from mud pits discharge to the seabed and the marine environment.
- Routine discharge of cement, cementing fluids and subsea control fluids to the seabed and the marine environment.

5.3 Unplanned (Accidents/Incidents) Activities

During the risk assessment process a number of potential environmental impacts which may occur from unplanned activities were also identified. These sources of risk range from small scale chemical spills with a low environmental consequence to large scale hydrocarbon spill events with high environmental consequence. These sources of risk include:

- Loss of well integrity (well blowout) resulting in loss of hydrocarbons to the marine environment

- Loss of hydrocarbons to marine environment due to a vessel collision (e.g. project vessels or other marine users)
- Loss of hydrocarbons to marine environment during bunkering activities
- Accidental discharge of other hydrocarbons / chemicals from MODU or support vessel deck activities and equipment (e.g. cranes) including subsea ROV hydraulic leaks.
- Accidental discharge of drilling fluids (WBM/NWBM) to marine environment due to failure of slip joint packers or emergency disconnect system.
- Accidental loss of hazardous or non-hazardous wastes to the marine environment (excludes sewage, grey water, putrescible waste and bilge water)
- Unplanned venting of has during drilling (well kick)
- Accidental collision between project vessels and threatened and migratory marine fauna.
- Dropped objects overboard.

6. ONGOING MONITORING OF ENVIRONMENTAL PERFORMANCE

The Petroleum Activities Program will be managed in compliance with the WA-472-P and WA-473-P Exploration Drilling Environment Plan accepted by NOPSEMA under the Environment Regulations, other relevant environmental legislation and Woodside's Management System (e.g. Woodside Environment Policy).

The objective of the EP is to identify, mitigate and manage potentially adverse environmental impacts associated with the Petroleum Activities Program, during both planned and unplanned operations, to ALARP and an acceptable level.

For each environmental aspect (risk), and associated environmental impacts (identified and assessed in the Environmental Risk Assessment of the EP) a specific environmental performance outcome, environmental performance standards and measurement criteria have been developed. The performance standards are control measures (available in **Appendix A**) that will be implemented to achieve the environmental performance outcomes. The specific measurement criteria provide the evidence base to demonstrate that the performance standards (control measures) and outcomes are achieved.

The implementation strategy detailed in the WA-472-P and WA-473-P Exploration Drilling Environment Plan identifies the roles/responsibilities and training/competency requirements for all personnel (Woodside and its contractors) in relation to implementing controls, managing non-conformance, emergency response and meeting monitoring, auditing, and reporting requirements during the activity.

Woodside and its Contractors undertake a program of periodic monitoring during the proposed Petroleum Activities Program, starting at mobilisation of each activity and continuing through the duration of each activity until activity completion. This information is collected using appropriate tools and systems, developed based on the environmental performance outcomes, performance standards and measurement criteria in the EP. The tools and systems collect, as a minimum, the data (evidence) referred to in the measurement criteria. The collection of this data (and assessment against the measurement criteria) forms part of the permanent record of compliance maintained by Woodside and the basis for demonstrating that the environmental performance outcomes and standards are met, which is then summarised in a series of routine reporting documents.

Monitoring of environmental performance is undertaken as part of the following:

- Annual Environmental Compliance and Performance Reports which are submitted to NOPSEMA to assess and confirm compliance with the accepted environmental performance objectives, standards and measurement criteria outlined in the EP
- Activity based inspections undertaken by Woodside's environment function to review compliance against the WA-472-P and WA-473-P Exploration Drilling Environment Plan, verify effectiveness of the EP implementation strategy and to review environmental performance
- Environmental performance is also monitored daily via daily progress reports during the proposed Program; and

- Senior management regularly monitors and reviews environmental performance via a monthly report which detail environmental performance and compliance with Woodside standards.

Woodside employees and Contractors are required to report all environmental incidents and non-conformance with environmental performance outcomes and standards in the EP. Incidents will be reported using an Incident and Hazard Report Form, which includes details of the event, immediate action taken to control the situation, and corrective actions to prevent reoccurrence. An internal computerised database is used for the recording and reporting of these incidents. Incident corrective actions are monitored to ensure they are closed out in a timely manner.

The EP is supported by an assessment of the environmental impacts and risks associated with potential oil spill scenarios and oil spill preparedness and response measures in relation to the risk assessment and the identified oil spill scenarios. A summary of Woodside's response arrangements in the oil pollution emergency plan is provided in **Appendix B**.

6.1 Environment Plan Revisions

If required, revision of the WA-472-P and WA-473-P Exploration Drilling Environment Plan will be undertaken in accordance with the requirements outlined in Regulations 17, Regulation 18 and Regulation 19 of the Environment Regulations. Woodside will submit a proposed revision of the WA-472-P and WA-473-P Exploration Drilling Environment Plan to NOPSEMA including as a result of the following:

- When any significant modification or new stage of the activity that is not provided for in the EP is proposed
- Before, or as soon as practicable after, the occurrence of any significant new or significant increase in environmental risk or impact not provided for in the EP
- At least 14 days before the end of each period of five years commencing on the day in which the original and subsequent revisions of the EP is accepted under Regulation 11 of the Environment Regulations; and
- As requested by NOPSEMA.

7. CONSULTATION

7.1 Engagement Activities

Woodside conducted a stakeholder assessment based on the proposed activity location, timing and potential impacts, and engaged with relevant stakeholders to inform decision-making and planning for the Petroleum Activities Program.

For the purposes of the WA-472-P and WA-473-P Exploration Drilling Environment Plan and consistent with Section 11A of the Environment Regulations, Woodside considers relevant stakeholders as those that undertake normal business or lifestyle activities in the vicinity of the existing facility (or their nominated representative) or have a State or Commonwealth regulatory role.

Woodside also made available advice about the Petroleum Activities Program to other stakeholders who have previously expressed an interest in being kept informed about Woodside's activities in the region.

Woodside provided information about the Petroleum Activities Program to the following stakeholders:

Stakeholder
Department of Industry
Department of Mines and Petroleum
Australian Maritime Safety Authority (maritime safety)
Australian Hydrographic Service
Department of Fisheries (Western Australia)

Commonwealth fisheries • Western Tuna and Billfish Fishery • North West Slope Trawl Fishery • Western Skipjack Fishery • Southern Bluefin Tuna Western Australian Fisheries • Mackerel Fishery • Pilbara Trawl Fishery • Pilbara Line Fishery • Pilbara Trap Fishery • Gascoyne Demersal Scalefish
Department of Defence – Defence Property Services Group
Australian Maritime Safety Authority (marine pollution)
Department of Transport (marine pollution)
Department of Parks and Wildlife
Australian Customs Service – Border Protection Command
Commonwealth Fisheries Association
Western Australian Fishing Industry Council
Pearl Producers Association
Recfishwest
WWF
Australian Conservation Foundation
Wilderness Society
International Fund for Animal Welfare
APPEA
AMOSC

Woodside received feedback on the proposed Petroleum Activities Program from a range of stakeholders, including government agencies. Issues of interest or concern included the location of the proposed activities across shipping fairways. A summary of feedback and Woodside‘s response is presented in **Appendix C.**

7.2 Ongoing consultation

A consultation fact sheet was sent electronically to all stakeholders identified through the stakeholder assessment process prior to lodgement of the EP with NOPSEMA for assessment and acceptance. This fact sheet was supported by engagement with potentially affected stakeholders. Consultation activities for the proposed Petroleum Activities Program build upon Woodside’s extensive and ongoing stakeholder consultation for offshore petroleum activities in this area.

Woodside considered this feedback in its development of control measures specific to the proposed Petroleum Activities Program.

Feedback received through community engagement and consultation will be captured in Woodside’s stakeholder database and actioned where appropriate through the proposed Petroleum Activities Program Project Manager. Implementation of ongoing engagement and consultation activities for the proposed Petroleum Activities Program will be undertaken by Woodside Corporate Affairs consistent with Woodside’s External Stakeholder Engagement Operating Standard.

8. TITLEHOLDER NOMINATED LIAISON PERSON

For further information about this activity, please contact:

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APPENDIX A: ENVIRONMENTAL IMPACTS AND RISKS

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
Planned (routine and non-routine) Activities				
1	Proximity of MODU and support vessels causing interference with or displacement of third party vessels (commercial shipping and fishing).	Short-term, localised interference with or displacement of other sea users (e.g. fishing and shipping).	Low	Vessels compliant with Marine Order 30 (Prevention of Collisions) 2009 & Marine Order 21 (Safety of navigation & emergency procedures) 2012: Use of standard maritime safety procedures (including radio contact, display of navigational beacons & lights). Notify AHS to generate Maritime Safety Information Notifications (MSIN) and Notice to Mariners (NTM) – navigation warning. AMSA RCC is notified of the Petroleum Activities Program. Send consultation Fact Sheet to State and Commonwealth fisheries. Establish and enforce a 500 m safety/ exclusion zone around the MODU in which only vessels authorised by the MODU are permitted to enter and operate. Support vessel on continuous standby during drilling activities to assist in third party vessel interactions (including warning to vessels approaching the vicinity of the rig) and emergencies as required Install and operate an Automatic Identification System (AIS) tracking device on the MODU Installation of an AIS Aid to Navigation (AtoN) device to transmit MODU position to electronic navigation systems (once license obtained) Installation of RACON unit on MODU as an additional navigation aid for commercial shipping traffic utilising shipping fairways
2	Disturbance to seabed from activities including: • Drilling operations • MODU anchoring (including anchor holding testing) • ROV operation	Temporary and localised disturbance to the seabed composed of soft sediments from anchoring and ROV activities. Permanent, localised disturbance to benthic habitats of the well sites.	Low	*Woodside Well Location & Site Appraisal Data Sheet* will be completed for each drilling scope that requires MODU anchoring (i.e. DP MODU not available) which informs the MODU mooring locations selection Mooring Analysis Report completed & implemented during anchor deployment (consistent with industry best practice -

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
				American Petroleum Institute RP 2SK) as per Woodside Standards In the event that the wellhead assembly cannot be removed consultation with the AHO will be undertaken to establish any requirements associated with recording the location of the wellhead on maritime charts.
3	Generation of noise from MODU, vessel and ROV during normal operations (excluding VSP).	Temporary and minor behavioural disturbance (e.g. avoidance or attraction) to fauna, including protected species	Low	Woodside will comply with *EPBC Regulations 2000 – Part 8 Division 8.1* Interacting with cetaceans: Project vessels will not travel greater than 6 knots within 300 m of a whale (caution zone) and not approach closer than 100 m from a whale; and a vessel will not approach closer than 50 m for a dolphin and/or 100 m for a whale (with the exception of animals bow riding). The above requirements provided to the vessel masters.
4	Generation of acoustic signals from VSP.	Temporary and minor behavioural disturbance (e.g. avoidance of local area) and physiological impacts (e.g. temporary threshold shifts) to fauna, including listed threatened or migratory species. Permanent physiological impacts (e.g. hearing damage) to fauna, including listed threatened or migratory species.	Low	Crew undertake cetacean observation training for undertaking cetacean observations when VSP is being undertaken. Woodside approved VSP procedure to be implemented to manage potential impacts to threatened and migratory cetacean species listed under the EPBC Act. Procedure will include: • Pre-start visual observations • Soft start procedures • Low visibility operating procedures
5	Internal combustion engines on MODU and support vessels.	Reduced local air quality from atmospheric emissions	Low	Compliance with Marine Order 97 (marine pollution prevention – air pollution) as required by vessel class
6	Routine discharge of sewage, grey water and putrescible wastes to the marine environment	Localised and temporary eutrophication of the water column and localised and temporary adverse effect to marine biota in the water column only (e.g. plankton)	Low	Compliance with MARPOL73/78 Annex IV, Marine Order 96 (Pollution prevention – sewage), as required by vessel class. Compliance with MARPOL73/78 Annex IV, Marine Order 95 (pollution prevention – garbage), as required by vessel class.
7	Routine discharge of deck and bilge water to marine	Localised and temporary effects to	Low	Vessel/MODU sewerage system shall be capable of servicing

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
	environment	water quality and marine biota biota in the water column only (e.g. plankton)		the full complement of crew on board the vessel. and holding tanks shall be sized appropriately to contain all generated waste (black and grey water) for the necessary duration prior to planned and acceptable discharge operations. Bilge water contaminated with hydrocarbons must be contained and disposed of onshore, except if the oil content of the effluent without dilution does not exceed 15 ppm or an IMO approved oil/water separator (as required by vessel class) is used to treat the bilge water.
8	Routine discharge of cooling water or brine to the marine environment	Localised and temporary effects to water quality and water column marine biota	Low	
9	Routine discharge of WBM drill cuttings and non-routine discharge of NWBM drill cuttings and wash water from mud pits discharge to the seabed and the marine environment.	Localised and temporary effects to water quality (e.g. turbidity increase) and marine biota in the water column. Localised sediment deposition affects on benthic habitats.	Low	Drill cuttings returned to the MODU will be processed using SCE equipment prior to discharge. Cuttings must be discharged below the water line. WBM shall be used as the first preference in all cases; and where WBM cannot meet required specifications, NWBM may be used following a formal written technical NWBM justification process. NWBM system set up as per the following checklists and audited *Woodside NWBM Start-up Checklist Part 1 – Rig* (focus areas include mud tanks, mud tank room, transfer hoses, NWBM base fluid transfer lines, NWBM base fluid transfer station, base fluid storage, pit cleaning on completion of use of NWBM and health and safety. NWBM oil on cuttings (average for the well) shall not exceed 10% by weight for overboard disposal. Discharge of mud pit wash residue is less than 1% by volume oil content. All samples after NWBM pit clean out will be measured and recorded Woodside procedure used to assess and select chemicals (in standard discharge scenarios) which can fall into the following assessment types: no further assessment (good OCNS environmental performance); further assessment required (lower OCNS environmental performance or not OCNS registered); or ALARP justification required (if an environmentally sound alternative cannot be found).

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
10	Routine discharge of cement, cementing fluids and subsea control fluids to the seabed and the marine environment.	Localised and temporary effects to water quality and water column marine biota..		Woodside procedure used to assess and select chemicals (as described in row 9) Bulk operational discharges conducted under MODU's PTW system (to operate discharge valves/pumps) or risk assessed using the MODU contractors risk assessment prompt cards
Unplanned (accidents or incidents) Activities				
11	Loss of hydrocarbons to marine environment due to loss of well integrity	Contamination of water leading to toxic effects to marine biota, particularly sessile benthos in the shallow sub-tidal and intertidal zone of the coral reefs. Oiling of marine mammals, reptiles and seabirds. Potential medium-term interference with or displacement of other sea users (e.g. fishing and shipping). Potential interference with activities of other regional petroleum operators	High	Well design and construction will be managed and controlled by Woodside's Well Lifecycle Management Process (WLMP). *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011*: Accepted Well Operations Management Plan (WOMP) and application to drill. As per Woodside Standards: • all permeable zones penetrated by the well bore, containing hydrocarbons or over-pressured water, shall be isolated from the surface environment by a minimum of two barriers (a single fluid barrier may be implemented during the initial stages of well construction if appropriateness is confirmed by a shallow hazard study) • discrete hydrocarbon zones shall be isolated from each other (to prevent cross flow) by a minimum of one barrier • all normally pressured permeable water-bearing formations shall be isolated from the surface by a minimum of one barrier • barriers shall be effective over the lifetime of well construction or production • effectiveness of primary & secondary barriers shall be verified (physical evidence of the correct placement & performance) • Cement minimum specifications for cementing

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
				conductor, casings & liners to maintain well integrity As per Woodside procedures: Fluid barrier comprising of drilling fluid of a suitable weight, composition & volume to counter pore pressure & over pressure zones when drilling Subsea BOP specification & function/pressure testing in accordance with: • Original Equipment Management (OEM) Standards • Woodside Standards and procedures • API Standard 53 4th Edition (API RP53 Subsea first response toolkit and capping stack available for use. Mutual Aid MoU (for relief well drilling) is in place. An approved Blowout Contingency Plan shall exist prior to drilling each well. Well specific barrier elements, and the specified verification requirements, are identified in accordance with *Well Acceptance Criteria Procedure* See Appendix B for controls for spill response activities.
12	Loss of hydrocarbons to marine environment due to a vessel collision (e.g. project vessels or other marine users)	Minor and temporary disruption to protected species such as oiling of marine mammals, reptiles and seabirds. Minor and/or temporary contamination of water which may lead to toxic effects on marine biota in the water column in offshore waters.	Low	Comply with Marine Order 30 and 21 (as in row 1) Notify AHS and AMSA RCC (as in row 1) Send consultation Fact Sheets to fisheries (as in row 1) Establishment and enforcement of a 500 m safety zone for MODU (as in row 1) Support vessel on standby during drilling activities (as in row 1) Install and operate an Automatic Identification System (AIS) tracking device on the MODU (as in row 1) Installation of an AIS Aid to Navigation (AtoN) device to transmit MODU position to electronic navigation systems (as in row 1)

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
				Installation of RACON unit on MODU as an additional navigation aid for commercial shipping traffic utilising shipping fairways (as in row 1) *Woodside Marine – Charters Instructions* • Support vessel becomes designated as standby vessel for over the side and moon pool operations within the MODU area and is under the control of the MODU PIC. • Maintain safety/exclusion zones by maintaining continuous surveillance through visual, radar, and radio watches, providing warning to approaching vessels, intercepting vessels that enter within the safety/exclusion zone and documenting incursions. See Appendix B for controls for spill response activities.
13	Loss of hydrocarbons to marine environment from bunkering	Minor and temporary disruption to protected species such as oiling of marine mammals, reptiles and seabirds. Localised minor and/or temporary contamination of water which may lead to toxic effects to marine biota in offshore waters.		Compliance with MARPOL 73/78 Annex I. As per Woodside Standards: • all hoses that have a potential to cause an environmental risk due to damage or failure shall be placed on a hose register that is linked to the MODU's preventative maintenance system • there shall be dry-break couplings and floatation on fuel hoses and procedures to ensure that hose integrity is checked • save-alls shall be installed around loading stations • adequate/appropriate spill kits all bulk transfer hoses shall be tested for integrity before use Contractor bunkering procedure to be implemented during all bunkering activities, and must be assessed by Woodside as meeting at least the following requirement (controls): undertaken under the MODU PTW system; bunkering to start during daylight hours (can continue into the night); and requires visual monitoring of gauges, hoses, fittings and the

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
				sea surface. See Appendix B for controls for spill response activities.
14	Accidental discharge of other hydrocarbons / chemicals from MODU or support vessel deck activities and equipment (e.g. cranes) including subsea ROV hydraulic leaks.	Localised and minor temporary effects to water quality and marine biota in the water column in offshore waters.	Low	Marine Order 91 (Marine pollution prevention – oil) 2006 (as in row 13) Compliance with *Woodside's Environment Procedure Offshore Chemical Assessment* (as in row 9) Compliance with Compliance with *Woodside's Storage Requirements* Compliance with the Australian Government Civil Aviation Authority CAP 92-4 Guidelines. Drum and paint storage shall be bunded with drains directed to a holding tank; all deck drainage in areas where there is potential for loss of primary containment of oil and chemicals must be collected via a closed deck drainage system and directed to a settling and separation tank; drill floor drainage system shall have the capacity to be isolated to prevent discharge to the sea; and all drill floor drainage shall be collected and oil separated prior to draining overboard; and no direct overboard drainage from sludge/drain/dirty oil/bilge water collecting tanks. Spill response bins/kits are maintained and located in close proximity to hydrocarbon storage areas and vessel deck equipment / bunkering areas for use to contain and recover deck spills.
15	Accidental discharge of drilling fluids (WBM/NWBM) to marine environment due to failure of slip joint packers or emergency disconnect system.	Localised and temporary effects to water quality and water column marine biota.	Low	*As per Woodside standards* (as described in row 14) *Woodside NWBM Start-up Checklist* (as described in row 9) Deck areas on the MODU are bunded and bunged. (as described in row 14) North West European Area (NWEA) Guidelines: • Emergency shutdown systems for stopping losses of containment (e.g. burst hoses)

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
				• Break-away dry-break couplings for oil based mud hoses • Constant monitoring of the offloading process • Direct radio communications • Managed under Permit to Work system • Additional operator will be used to monitor and manage NWBM operations and volumes (with suitable communication equipment Mud pits dump valve will be locked closed and operated through the MODU's PTW. At the transition of WBM to the use of NWBM, MODU personnel will 'walk the line' and ensure the valve line-up for the use of NWBM is correct prior to the re-commencement of drilling.
16	Accidental loss of hazardous or non-hazardous wastes to the marine environment (excludes sewage, grey water, putrescible waste and bilge water)	Pollution and contamination of the marine environment and secondary impacts to marine fauna (e.g. ingestion, entanglement)	Low	Comply with Marine Order 95 (as described in row 6) Compliance with Marine Order 94 (pollution prevention – packaged harmful substances), as required by vessel class: no disposal overboard. The Contractor Waste Management Plan is consistent with the *Woodside D&C Waste Management Plan Dampier, Broome and Darwin* Equipment and materials dropped to the marine environment are recovered where safe and practicable to do so.
17	Unplanned venting of gas during drilling (well kick).	Localised and temporary reduction in air quality as the gas vents to the atmosphere. Contribution to global greenhouse gas emissions.	Low	*As per Woodside standards and procedures* (as described in row 11) Subsea BOP specification & function/pressure testing in accordance with: • Original Equipment Management (OEM) Standards • Woodside Standards and procedures • API Standard 53 4th Edition (API RP53)

	Source of Risk (Hazard)	Potential Environmental Impact	Residual Risk	Control Mitigation Measures
				Well specific barrier elements, and the specified verification requirements, are identified in accordance with *Well Acceptance Criteria Procedure*
18	Accidental collision between project vessels and threatened and migratory marine fauna.	Injury or fatality of an individual or a number of fauna (including listed threatened or migratory species)	Low	Woodside will comply with *EPBC Regulations 2000 – Part 8 Division 8.1* (as in row 3)
19	Dropped objects overboard	Localised short-term disturbance of benthic habitat localised to the dropped object. Pollution and contamination of the marine environment and secondary impacts to marine fauna (e.g. ingestion, entanglement, toxicity)	Low	MODU Safe Work Procedures developed and followed for bulk transfer to prevent objects being dropped Equipment and materials dropped to the marine environment are recovered where safe and practicable to do so. Personnel will be trained with regard to the prevention of dropped objects during relevant meetings and the appropriate inductions.

APPENDIX B: SUMMARY OF RESPONSE ARRANGEMENTS FROM OIL POLLUTION EMERGENCY PLAN

Woodside's Oil Spill Planning Arrangements

Woodside's Oil Pollution Emergency Plan (OPEP) for the proposed Petroleum Activities Program consists of the following documents:

Woodside Corporate Oil Spill Emergency Arrangements (Australia)

This document outlines the emergency and crisis management incident command structure (ICS) and Woodside's response arrangements to competently respond to and escalate an oil spill event. The document interfaces externally with Commonwealth, State and industry response plans and internally with Woodside's ICS.

Woodside's Oil Pollution Emergency Arrangements (Australia) details the following support arrangements:

- Master services agreement with Australian Marine Oil Spill Centre (AMOSC) for the supply of experienced personnel and equipment;\
- Access to Wild Well Control's capping stack, SFRT equipment and experienced personnel for the rapid deployment and installation of a capping stack, where feasible.
- Participating membership with Oil Spill Resources Limited (OSRL), which allows access to OSRL's international holding of response equipment and response capabilities, including incident management expertise and specialist personnel;
- The Woodside and Australian Maritime Safety Authority (AMSA) Memorandum of Understanding (MoU) whereby AMSA, as managers of the National Plan for Maritime Environmental Emergencies, will provide support to Woodside such as response equipment from national stockpiles. The equipment stockpiles are located around Australia in strategic locations such as the ports of Dampier, Darwin and Fremantle
- Other support services such as 24/7 oil spill trajectory modelling and satellite monitoring services as well as 'on-call' aerial, marine, logistics and waste management support.
- Mutual Aid Agreements with other oil and gas operators in the region for the provision of assistance in an oil spill response.

WA-472-P and WA-473-P Exploration Drilling Oil Pollution First Strike Plan

The WA-472-P and WA-473-P Exploration Drilling Oil Pollution First Strike Plan is an activity specific document which provides details on the tasks required to mobilise a first strike response for the first 24 hours of a hydrocarbon (oil) spill event. These tasks include key response actions and regulatory notifications. The intent of the document is to provide immediate oil spill response guidance to the Incident Management Team until a full Incident Action Plan specific to the oil spill event is developed.

Woodside's oil spill arrangements are tested by conducting periodic exercises. These exercises are conducted to test the response arrangements outlined in the WA-472-P and WA-473-P Exploration Drilling Oil Pollution First Strike Plan and to ensure that staff are familiar with spill response procedures, in particular, individual roles and responsibilities and reporting requirements.

Oil Spill Preparedness and Response Mitigation for WA-472-P and WA-473-P Exploration Drilling

Woodside has developed an oil spill preparedness and response position in order to demonstrate that risks and impacts associated with loss of hydrocarbons from the Petroleum Activities Program can be mitigated and managed to as low as reasonably practicable (ALARP) and be of an acceptable level.

Woodside's response approach is intended to ensure that the level of preparedness would be in place with the timely implementation of the range of identified feasible responses:

1. Monitor and Evaluate - To gain an understanding of the spill event, its movement and to direct mitigation activities to the optimal locations, the following operational monitoring programs are available for implementation:
    - Predictive modelling of hydrocarbons to assess resources at risk;
    - Surveillance and reconnaissance to detect hydrocarbons and resources at risk;

- Monitoring of hydrocarbon presence, properties, behaviour and weathering in water;
- Pre-emptive assessment of sensitive receptors at risk; and
- Monitoring of contaminated resources and the effectiveness of response and clean-up operations.

2. Source Control (Well intervention) - Woodside's strategy is to minimise the volume of hydrocarbons released from an oil spill event. Woodside plans to deploy the following controls specific to well loss of containment scenarios, if required for the proposed Petroleum Activities Program:
    - Subsea dispersant application (includes subsea first response toolkit);
    - Source control (well capping)
    - Well intervention (relief well drilling).
3. Surface Dispersant Application - Surface dispersant application may reduce surface oil and therefore prevent, or reduce the scale of, shoreline contact. Priority would be placed on treating surface oil which could contact receptor areas in the shortest timeframe.
4. Containment and Recovery – Involves the physical containment and mechanical removal of hydrocarbons from the marine environment. Suitable vessels would be drawn from Woodside's integrated fleet, other operators in the region and from the charter market. Open water containment and recovery equipment (e.g. booms and skimmers) would be sourced from Woodside's own equipment, AMSA, AMOSC and OSRL stockpiles.
5. Oiled Wildlife Response – Staging sites will be established for shoreline or vessel based oiled wildlife response teams. Once recovered to a staging site, wildlife will be transported to the designated oiled wildlife facility for stabilisation and treatment.
6. Shoreline Protection and Deflection– Shoreline protection and deflection equipment would be deployed either from a vessel or from the shore, depending on the prevailing conditions, shoreline type and access. Additional resources would be mobilised depending on the scale of the event to increase the number of shorelines being protected.
7. Shoreline Cleanup - Shoreline cleanup may be undertaken to remove hydrocarbons and monitor effectiveness of cleanup activities. There are different manual and mechanical shoreline cleanup techniques and the appropriate techniques will be selected based on the different shoreline types and conditions.
8. Waste Management – The objectives of Woodside's waste management response are:
    - To mobilise waste storage and transport resources on day one of a potential oil spill event to support containment and recovery and shoreline protection responses; and
    - Arrange for sufficient waste storage, handling, transport and disposal capability to support continuous response operations.

    To achieve these objectives, Woodside has access to waste management contractor's facilities as well as waste storage equipment from AMOSC, AMSA and OSRL.

    Scientific Monitoring

    In addition to the above response strategies, a scientific monitoring program (SMP) will be activated following a significant oil spill (defined as a level 2 or 3 spill). The nature and scale of the spill event would dictate the implementation and operational timing of the SMP. Ten targeted scientific monitoring programs may be implemented to address a range of physical-chemical (water and sediment) and biological receptors (species and habitats) including EPBC Act listed species, environmental values associated with Protected Areas and socio-economic values such as fisheries. The SMPs available to be activated if required are as follows:

    - SM01 - Assessment of the presence, quantity and character of hydrocarbons in marine waters (linked to OM01 to OM03)
    - SM02 - Assessment of the presence, quantity and character of hydrocarbons in marine sediments (linked to OM01 and OM05)

- SM03 - Assessment of impacts and recovery of subtidal and intertidal benthos
- SM04 - Assessment of impacts and recovery of mangroves/saltmarsh habitat
- SM05 - Assessment of impacts and recovery of seabird and shorebird populations
- SM06 - Assessment of impacts and recovery of nesting marine turtle populations
- SM07 - Assessment of impacts to pinniped colonies including haul-out site populations
- SM08 - Desk-top assessment of impacts to other non-avian marine megafauna
- SM09 - Assessment of impacts and recovery of marine fish (linked to SM03)
- SM10 - Assessment of physiological impacts to important fish and shellfish species (fish health and seafood quality/safety) and recovery.

A summary of the control mitigation measures for risk associated with response activities is provided in Table 8.1.

Table 8.1 WA-472-P and WA-473-P Exploration Drilling control mitigation measures for potential environmental impacts associated with response activities

	Source of Risk / Response Activity	Potential Environmental Impact	Control Mitigation Measures
1	Monitor and evaluate (Operational Monitoring) and Scientific Monitoring	Air and noise emissions Vessel operational discharges, presence and anchoring Proximity to other vessels (shipping and fisheries) Lighting for night work/ navigational safety Invasive Marine Species (IMS) Collisions with marine fauna	Potential impacts of the response activities will be monitored and reported back for input into the daily planning and operational net environmental benefit analysis (NEBA) process. Operational NEBAs will be undertaken to determine if there is net environmental benefit to continuing the response activity. SMP documentation including an SMP Operational Plan, SMP Implementation Plan and SMP Process and Methodology Guideline will be used to steer the SMP planning and execution. The SMP will be continually reviewed and updated based on the situational awareness information generated by the OMPs.
2	Source Control (Well intervention)	Air and noise emissions Vessel operational discharges, presence and anchoring Proximity to other vessels (shipping and fisheries) Lighting for night work/ navigational safety Invasive Marine Species (IMS) Collisions with marine fauna Disturbance to seabed	Deployment of the SFRT would be controlled under Woodside's existing offshore construction management system and the relevant SFRT operating procedures. Deployment of the capping stack would be controlled under the service provider's management system with overall control of the construction vessel(s) controlled by Woodside. The intervention well would be drilled under a specific approved well delivery management plan with relevant regulatory approvals. The following controls apply to the implementation of the subsea dispersant strategy: Application following an "in-situ field test' on the oil indicating dispersant effectiveness (i.e. visual observations

	Source of Risk / Response Activity	Potential Environmental Impact	Control Mitigation Measures
			from ROV at the spill source together with aerial and other observations provided by OM02). Initiation of Operational and Scientific Monitoring, particularly OM02 (spill surveillance) and OM03 (characterisation of hydrocarbon concentrations in the water column and on the water surface) Daily operational NEBA undertaken (utilising results of OM02 and OM03) to determine if there is net environmental benefit to continuing subsea dispersant application. Dispersants "approved" or "listed" (transitional) on the Oil Spill Control Agents Register will be preferentially applied. Alternative dispersants may also be used subject to: 1. Toxicity testing being undertaken in a NATA (or equivalent) accredited laboratory to demonstrate compliance with AMSA National Plan 'Protocol for the register of oil spill agents' (or equivalent international toxicity standards). 2. Efficacy testing being conducted to confirm effectiveness of alternative dispersants prior to use. Dispersant Application Log records of volume and type of dispersant applied. Whether the release and the application of subsea dispersant causes an impact on the submerged shoals (Glomar Shoals and Rankin Bank), and to what extent, would be evaluated through monitoring to determine the plume trajectory and scientific monitoring of the Glomar Shoals and Rankin Bank against the existing baseline surveys.
3	Surface Dispersant Application	Air and noise emissions Vessel operational discharges, presence and anchoring Proximity to other vessels (shipping and fisheries) Lighting for night work/ navigational safety Invasive Marine Species (IMS) Collisions with marine fauna Disturbance to seabed Dispersant application and toxicity	Operational NEBA undertaken to determine if there is net environmental benefit to continuing dispersant application Access to OMPs and SMPs Potential impacts of the response activities will be monitored and reported back for input into the daily planning and operational NEBA process Dispersant operations executed within a defined Zone of Application Aerial dispersant operations in accordance with the FWADC Concept of Operation Dispersants "approved" or "listed" (transitional) on the Oil Spill Control Agents Register (OSCAR) will be preferentially applied. Alternative

	Source of Risk / Response Activity	Potential Environmental Impact	Control Mitigation Measures
			dispersants may also be used subject to: • Toxicity testing being undertaken in a NATA (or equivalent) accredited laboratory to demonstrate compliance with AMSA National Plan 'Protocol for the register of oil spill agents' (or equivalent international toxicity standards) • Efficacy testing will be conducted to confirm effectiveness of alternative dispersants prior to use Application after an in-situ efficacy test on the leading edge of the oil. The primary methodology to be visual-based to assess mixing and dispersion through the water column guided by: • OSRL's Dispersant Application Monitoring Field Guide: Tier 1 Visual Observation Dispersant Application Log records of location, volume and type of dispersant applied.
5	Containment and Recovery	Air and noise emissions Vessel operational discharges, presence and anchoring Proximity to other vessels (shipping and fisheries) Lighting for night work/ navigational safety Invasive Marine Species (IMS) Collisions with marine fauna Equipment/material/work transport impacts on wildlife and habitat	Access to OMPs and SMPs Potential impacts of the response activities will be monitored and reported back for input into the daily planning and operational NEBA process Operational NEBA will be undertaken to determine if there is net environmental benefit to continuing containment and recovery operations. Equipment will be operated in accordance with manufacturer's instructions/guidance Decanting (from vessel tanks and temporary storage) will occur in accordance with AMSA guidance and under the following circumstances: • Daylight hours only • Discharged into apex of containment boom • Discharge following minimum residence time of 30 minutes to allow settling of water: oil interface • Records maintained in daily log and include volume decanted, location and date/time.
6	Shoreline Protection and Deflection	Noise emissions Lighting for night work/ navigational safety Equipment/material/work transport impacts on wildlife and habitat Human presence impacts on wildlife and habitat Waste generation/disposal	Access to personnel and equipment stockpiles Access to OMPs and SMPs A shoreline protection and deflection operational NEBA will be completed to determine whether there is a net environmental benefit to continued deployment of protection and deflection equipment. NEBA will consider potential environmental risks and impacts,

	Source of Risk / Response Activity	Potential Environmental Impact	Control Mitigation Measures
			temporal sensitivities, situational awareness and whether additional controls are required Potential impacts of the response activity will be monitored and reported back for input into daily planning and operational NEBA process.
7	Shoreline Cleanup	Air and noise emissions Lighting for night work/ navigational safety Invasive Marine Species (IMS) Collisions with marine fauna Chemical and mechanical cleaning Human presence (manual cleaning) Waste generation/disposal Sediment reworking Vegetation cutting	Access to OMPs and SMPs Access to equipment stockpiles Access to the following personnel: • Woodside trained personnel in Shoreline Assessment to undertake shoreline assessment. • Woodside Core Group members and oil spill response operations trained personnel. • Industry Core Group members through AMOSC arrangements. Additional response personnel can be supplemented through AMSA via MoU and OSRL via Participating Membership. Shoreline assessment undertaken in accordance with Operational Monitoring and guided by: • DoT's Oiled Shoreline Field Booklet • Relevant receptor Tactical Response Plans • Local oil spill contingency planning resources where available (i.e. DoT, other operators). Shoreline cleanup implemented when NEBA indicates a net environmental benefit. NEBA will consider potential environmental risks and impacts, temporal sensitivities, situational awareness and concentration of potential or actual oiling and whether additional controls are required. Potential impacts of the response activity will be monitored and reported back for input into the daily planning and operational NEBA process. Equipment will be operated in accordance with manufacturer's instructions/guidance.
8	Oiled wildlife response	Air and noise emissions Vessel operational discharges and anchoring Proximity to other vessels (shipping and fisheries) IMS Capturing and transporting wildlife	OMPs and SMPs outline the programs that will apply during the wildlife response. Potential environmental impacts will be monitored and reported back for input into the daily planning and operational NEBA process. Operational NEBAs undertaken to determine if there is environmental

	Source of Risk / Response Activity	Potential Environmental Impact	Control Mitigation Measures
		Stabilisation Cleaning and rinsing (including post-cleaning stabilisation) Rehabilitation (diet quality, cage sizes etc.) Release Waste generation/ disposal Lighting for night work/ navigational safety Collisions with marine fauna	benefit to continuing the response activity. Implementation in accordance with the primary, secondary and tertiary response strategies outline in the Pilbara Regional OWROP. Waste management contract for safe disposal of carcasses after necessary autopsies.
9	Waste management	Air and noise emissions Waste generation/ disposal	Waste management contractor has identified relevant legislation, conventions and standards that must be complied with and has established it's own management systems certified in accordance with the following standards: • AS/NZS 4801 OHS Management System • ISO 14001 Environmental Management System • ISO 9001 Quality Management System. The plan includes a regular review of available resources. In environmentally sensitive locations, the impact of waste management activities will be monitored and appropriate controls implemented based on regular NEBAs.

APPENDIX C: SUMMARY OF STAKEHOLDER FEEDBACK AND WOODSIDE'S RESPONSE

Stakeholder	Summary of Stakeholder Feedback	Woodside assessment of feedback	Woodside Response
AMSA (maritime safety)	AMSA acknowledged by letter on 13 August that it had received advice about Woodside's petroleum activities. AMSA advised that each of the proposed wells sites are inside established shipping fairways. The Authority provided two maps showing the shipping traffic in the areas of interest. AMSA advised that each charted fairway is three nautical miles wide and that our request to observe a 2.5 km radius precautionary zone around each drilling location will encroach into each shipping fairway. AMSA provided shipping statistics on the number of ships a rig can expect to encounter within each shipping fairway of the proposed well sites. AMSA stated that the establishment of exploration wells within an established fairway may result in increased risk of collision. The Authority strongly recommends that Woodside reconsider positioning drilling rigs or other infrastructure within charted shipping fairways.	Woodside acknowledge the concerns raised by AMSA. Woodside completed a risk assessment to reposition the well locations outside of established fairway. The assessment confirmed that drilling from alternative locations would require complex design that is not technically achievable. Movement of the wells reduces the likelihood that reservoir targets would be reached, given the formation uncertainties in the area and the geological targets are unable to be moved also due to their relatively small size and nature of occurrence. Due to safety reasons and risk assessment findings, Woodside still requests marine users to observe the 2.5 km precautionary zone into the shipping fairways. Woodside acknowledges that during the proposed drilling activity, commercial shipping vessels are likely to be operating within the shipping fairway, with credible accident scenarios being vessel-vessel collision and vessel-MODU collision. To maintain safety and reduce risk to as low as reasonably practicable, Woodside will adopt a number of controls consistent with previous drilling activity (Gumbo, Toro, Ragnar & Anhalt wells) in or adjacent to shipping fairways.	Woodside will adopt control measures consistent with previous drilling activity and will continue engagement with AMSA.
Australian Maritime Safety Authority (maritime safety)	AMSA responded to Woodside via letter on 19 October 2015, following a phone conversation and email from Woodside in September 2015, which aimed to address AMSA's concerns and provide mitigation measures for the proposed drilling activities in shipping fairways. AMSA's letter provided background to consultation undertaken with industry, including Woodside, to introduce shipping fairways, which would avoid traffic with oil and gas infrastructure, and be easily moved once charted. AMSA expressed its concern with the proposed drilling to be undertaken within a charted fairway.		Woodside responded to AMSA's letter on 12 November 2015. Woodside advised it only plans to drill the Skippy Rock exploration well and potentially another exploration well in WA-472-P in 2016. In this context Woodside anticipates only using the Skippy Rock well location in 2016. Woodside has offered to provide a briefing to AMSA to explain its forward plan and processes to establish the proposed drilling areas, risk assessment and risk mitigation to

Stakeholder	Summary of Stakeholder Feedback	Woodside assessment of feedback	Woodside Response
	AMSA stated that the establishment of exploration wells within an established fairway may result in increased risk of collision. The Authority strongly recommends that Woodside reconsider positioning drilling rigs or other infrastructure within charted shipping fairways.	To date, Woodside has sought environment approval to undertake drilling activities for wells (Gumbo, Toro, Ragnar, Anhalt) and a marine seismic survey (MSS) for Centaurus 3D MSS, within established shipping fairways. Woodside has provided mitigation measures that have previously been considered by AMSA to be acceptable.	ensure marine safety is maintained.
Australian Maritime Safety Authority (maritime safety)	Woodside met with AMSA in Canberra on 27 November 2015. AMSA agreed to work with Woodside to find an acceptable outcome for the proposed drilling program. AMSA offered assistance with messaging to mariners and provided a focal point. AMSA recommended an AIS base station for the Eagle rather than an AIS A which is for shipping. AMSA raised that Woodside's advice on 20 November, was late timing to notify that the Skippy Rock anchor testing in the fairway was commencing on 23 November.	Woodside to contact AMSA focal point moving forward. Woodside to consider AMSA's recommendation of an AIS base station. Woodside to provide AMSA with explanation for late notification.	Woodside emailed AMSA to advise it will be in contact regarding distribution of necessary information prior to drilling of Skippy Rock-1. Woodside's drilling department is looking into AMSA's AIS Base Station recommendation. Woodside confirmed that AMSA's emergency response centre was notified about the Skippy Rock anchor test on 13 November and acknowledged advice to AMSA's nautical department on 23 was late. Woodside agreed to work with internal functions to improve timeliness of notifications.
Australian Maritime Safety Authority (maritime safety)	AMSA responded to Woodside's email, following the meeting held on 27 November. AMSA confirmed Atwood Eagle was following up on AIS base station recommendation. AMSA advised it would respond to Atwood Eagle. AMSA confirmed email address for further advice regarding Skippy-1 drilling activity.	Atwood Oceanics lodged application for AIS base station on the Atwood Eagle MODU with AMSA on 10 December. AMSA issued application to Spectrum Engineering Australia Pty Ltd on 10 December for a new AIS aid to navigation. AMSA authorised application to ACMA on 11 December for licencing of radio	AIS aid to navigation has been ordered and Atwood will install it on Atwood Eagle upon licence approval from ACMA.

Stakeholder	Summary of Stakeholder Feedback	Woodside assessment of feedback	Woodside Response
		communications services.	
Australian Maritime Safety Authority (maritime safety)	Woodside sought advice with AMSA that notification to AHS within 10 working days of rig being on location is sufficient notice. AMSA advised that the notification period will change to 4 working weeks.	Woodside notes AMSA advice for AHS communications advice and timing.	Woodside to contact AHS at hydro.ntm@defence.gov.au no less than 4 working weeks before activity commences
Department of Fisheries (Western Australia)	The Department acknowledged by letter that it had received advice about Woodside's petroleum activities. The Department advised Woodside that its advice was valid for 6 months and was valid for the duration of the EP subject to the activity commencing within six months and provision of regular updates. The Department expects to be notified that the activities are planned to commence no less than three months before the proposed commencement date. The Department recommended that Woodside engage WAFIC, Recfishwest and directly with fishers. The Department requested contact by phone and email in the event of a hydrocarbon spill within 24 hours of Woodside reporting the incident to the relevant authority. The Department requested that specific strategies are developed in the EP to mitigate impacts of survey activities on fish spawning. The Department provided a list of species. The Department recommended resources to demonstrate Woodside has taken reasonable measures to reduce its chances of carrying out offences under the Fish Resources Management	Woodside notes the Departments advice. Woodside confirmed its liaison with WAFIC and Recfishwest. Woodside provided advice about fisheries it contacted and advice about fisheries that were not engaged. Woodside engaged two line fishers, from the Pilbara Line Fishery, post receiving the Department's advice. Woodside has asked for feedback about the proposed activity by 9 October 2015. In the unlikely event of an oil spill or discharge into the environment, Woodside will notify relevant agencies and organisations as appropriate to the nature and scale of the event, as soon as practicable following the occurrence. Woodside selects oil spill response strategies based on the NEBA. The NEBA process takes into account potential benefits/impacts of response strategies to all environmental sensitivities. Woodside confirms that the NEBA process includes analysis of potential benefits/impacts of spawning grounds and nursery areas. Woodside ensures compliance with biosecurity requirements through its	Woodside to accept feedback from Pilbara Line Fishery about proposed activity.

Stakeholder	Summary of Stakeholder Feedback	Woodside assessment of feedback	Woodside Response
	Act 1994 and associated regulations. The Department requested that suspected or confirmed marine pest or disease is reported within 24 hours. All requests provided by the Department are to be shared with all vessel operators associated with the proposed petroleum activity. The Department requests all potential impacts and Woodside strategies to mitigate are identified in the final EP and PEPs. The Department requested a written response from Woodside addressing all concerns raised in its letter..	implementation of its own Invasive Marine Species Management Plan, which is supported at a Commonwealth level. This process demonstrates compliance with the Fish Resources Management Act 1994. Woodside strongly encourages its contractors to use the Department's Vessel Check tool to proactively manage Invasive Marine Species risk when not on contract to the company.	
Australian Maritime Safety Authority (marine pollution)	AMSA suggested, via email, updating the website link to Marine Pollution Report in Woodside's draft Oil Pollution First Strike Plan for the proposed drilling activity.	The stakeholder raised no claims or objections.	Update reference in Woodside's draft Oil Pollution First Strike Plan
Department of Parks and Wildlife	The Department advised by email that it had no specific comments in relation to the prosed petroleum activities. The Department advised that it expects operators to acquire or gain access to baseline water and sediment quality data for lands and waters managed by the Department or within marine reserves that may be affected by petroleum activities or incidents. In the absence of baseline data, the Department expects that the baseline state of areas is likely to be pristine and that operators are responsible to return an area to this same condition in the event of any impacts.	The stakeholder raised no claims or objections.	No further action required.

Stakeholder	Summary of Stakeholder Feedback	Woodside assessment of feedback	Woodside Response
	The Department expects Woodside to maintain capacity to provide an oiled wildlife response. The Department advised that it will maintain its advisory and regulatory roll in the event of spills and requests Woodside engage the Department in any industry-coordinated-incident response. The Department provided advice about the support it could provide in the event of a response. The Department advised that it has prepared industry guidance and standards documents for the treatment and rehabilitation of oiled wildlife. The Department requests that the use of dispersants is restricted in areas likely to impact water quality and that any application is used in accordance with the Department of Transport Dispersant Use Guidelines only.		