

# **WA-472-P and WA-473-P Anchor Holding Test Environment Plan Summary**

**Exploration, Drilling and Completions**

Rev 0

November, 2015

**THIS PAGE HAS BEEN INTENTIONALLY LEFT BLANK**

## TABLE OF CONTENTS

|   |  |           |
|---|--|-----------|
| <b>1.</b>   | <b>INTRODUCTION.....</b>                                     | <b>6</b>  |
| <b>2.</b>   | <b>LOCATION OF THE ACTIVITY .....</b>                        | <b>6</b>  |
| <b>3.</b>   | <b>DESCRIPTION OF THE ACTIVITY .....</b>                     | <b>7</b>  |
| 3.1   | Timing of the Activities .....                               | 7         |
| <b>4.</b>   | <b>DESCRIPTION OF THE RECEIVING ENVIRONMENT .....</b>        | <b>7</b>  |
| 4.1   | Physical.....  | 7         |
| 4.2   | Biological.....  | 8         |
| 4.3   | Socio-Economic and Cultural.....                             | 12        |
| <b>5.</b>   | <b>ENVIRONMENTAL IMPACTS AND RISKS .....</b>                 | <b>14</b> |
| 5.1   | Risk Identification and Evaluation .....                     | 14        |
| 5.2   | Planned (Routine and Non-routine) Activities .....           | 16        |
| 5.3   | Unplanned (Accidents/Incidents) Activities .....             | 17        |
| <b>6.</b>   | <b>ONGOING MONITORING OF ENVIRONMENTAL PERFORMANCE .....</b> | <b>17</b> |
| 6.1   | Environment Plan Revisions .....                             | 18        |
| <b>7.</b>   | <b>CONSULTATION.....</b>                                     | <b>18</b> |
| 7.1   | Engagement Activities .....                                  | 18        |
| 7.2   | Ongoing consultation .....                                   | 19        |
| <b>8.</b>   | <b>TITLEHOLDER NOMINATED LIAISON PERSON.....</b>             | <b>20</b> |
| <b>APPENDIX A: ENVIRONMENTAL IMPACTS AND RISKS.....</b>                                     |  | <b>21</b> |
| <b>APPENDIX B: SUMMARY OF RESPONSE ARRANGEMENTS FROM OIL POLLUTION EMERGENCY PLAN .....</b> |  | <b>27</b> |
| <b>APPENDIX C: SUMMARY OF STAKEHOLDER FEEDBACK AND WOODSIDE’S RESPONSE .....</b>            |  | <b>32</b> |

### List of Tables

|   |    |
|---|----|
| Table 2.1 Approximate location details for the Petroleum Activities Program .....   | 7  |
| Table 4.1 Summary of Established and Proposed Marine Protected Areas (MPAs) and other sensitive locations in the region relating to the Operational Areas. .... | 8  |
| Table 8.1 WA-472-P and WA-473-P Anchor Holding Test control mitigation measures for potential environmental impacts associated with response activities.....    | 29 |

### List of Figures

|  |    |
|--|----|
| Figure 2.1: Location of the proposed well locations and Operational Areas.....               | 6  |
| Figure 4.1 Established and proposed Commonwealth and State marine protected areas .....      | 10 |
| Figure 4.2 Location of identified other oil and gas operations located within the area ..... | 13 |
| Figure 5.1: Key steps in Woodside’s Risk Management Framework.....                           | 14 |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

Controlled Ref No:

Revision: 0

Native file DRIMS No: 10500757

Page v

Uncontrolled when printed. Refer to electronic version for most up to date information.

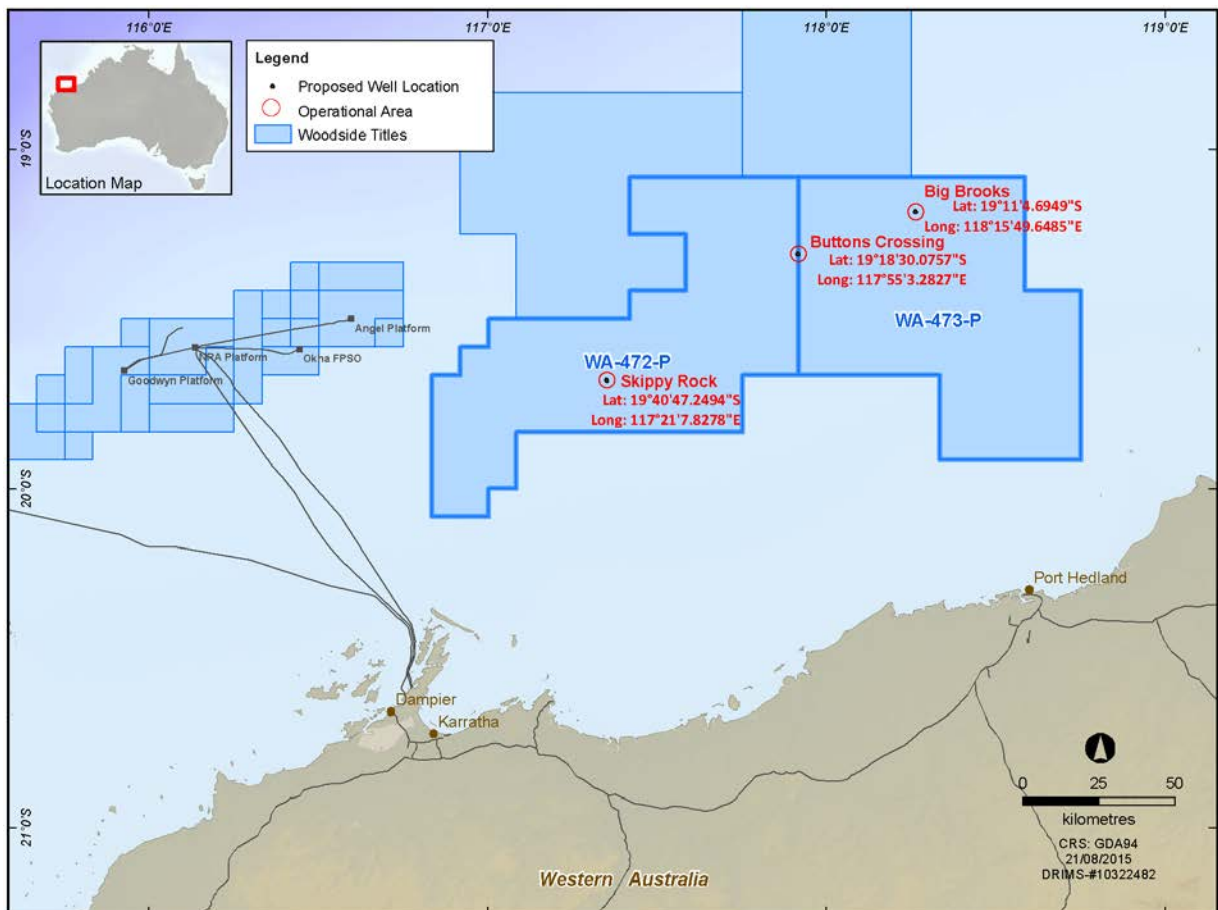
## 1. INTRODUCTION

Woodside Energy Ltd (Woodside), as titleholder, under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth)(referred to as the Environment Regulations), proposes to undertake anchor holding testing within permit areas WA-472-P and WA-473-P; hereafter referred to as the Petroleum Activities Program. The anchor test is being conducted to ensure mooring capability for a mobile offshore drilling unit (MODU) proposed to be used for future drilling of up to three exploration wells in the area.

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 Anchor Holding Test 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**). There are no environmental values and sensitivities (protected areas) located within the Petroleum Activities Program (as described in **Section 4.2**).



**Figure 2.1: Location of the potential well locations and Operational Areas**

The area in which the Petroleum Activities Program can occur is defined by the Operational Area which encompasses a radius of 4000 m from each potential well centre. The 4000 m Operational Area allows for anchor holding testing activities and vessel mobility around the area.

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

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 this EP.

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 proposed 'Skippy Rock' and potential 'Buttons Crossing' exploration wells are located in WA-472-P and the potential 'Big Brooks' exploration well is in WA-473-P.

**Table 2.1 Approximate location details for the Petroleum Activities Program**

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

### 3. DESCRIPTION OF THE ACTIVITY

To ensure MODU mooring capability can be met, Woodside proposes to undertake an anchor holding test around the Skippy Rock location, with potential testing around the Buttons Crossing and Big Brooks locations.

The anchor holding testing activity is planned to be carried out using up to two anchor handling vessels (AHV) and associated support vessels. Some support vessels may be required on an ad-hoc basis to support periods of high activity.

The AHV(s) will drop an anchor and provide tension, to ensure embedding of the anchor occurs. The vessel will then drift back and may use a Remotely Operated Underwater Vehicle (ROV) to examine the level of embedding on the seafloor. The anchor will then be removed and another test conducted at a different location (locations determined by proposed mooring spread for the MODU).

A 1 nm radius precautionary zone will be in place around the AHV when anchor testing is being conducted.

#### 3.1 Timing of the Activities

The proposed Petroleum Activities Program is scheduled to commence in Q4 2015 and is expected to take up to approximately 14 days (including mobilisation, demobilisation and contingency) to complete. The timing and duration of these activities is subject to change due to project schedule requirements, vessel availability, unforeseen circumstances and weather.

### 4. DESCRIPTION OF THE EXISTING ENVIRONMENT

There are no environmental values and sensitivities (protected areas or KEFs) located within the Petroleum Activities Program.

#### 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 NWS Province is the only NWMR bioregion within the wide Zone of Consequence (ZoC).

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 m 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 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.

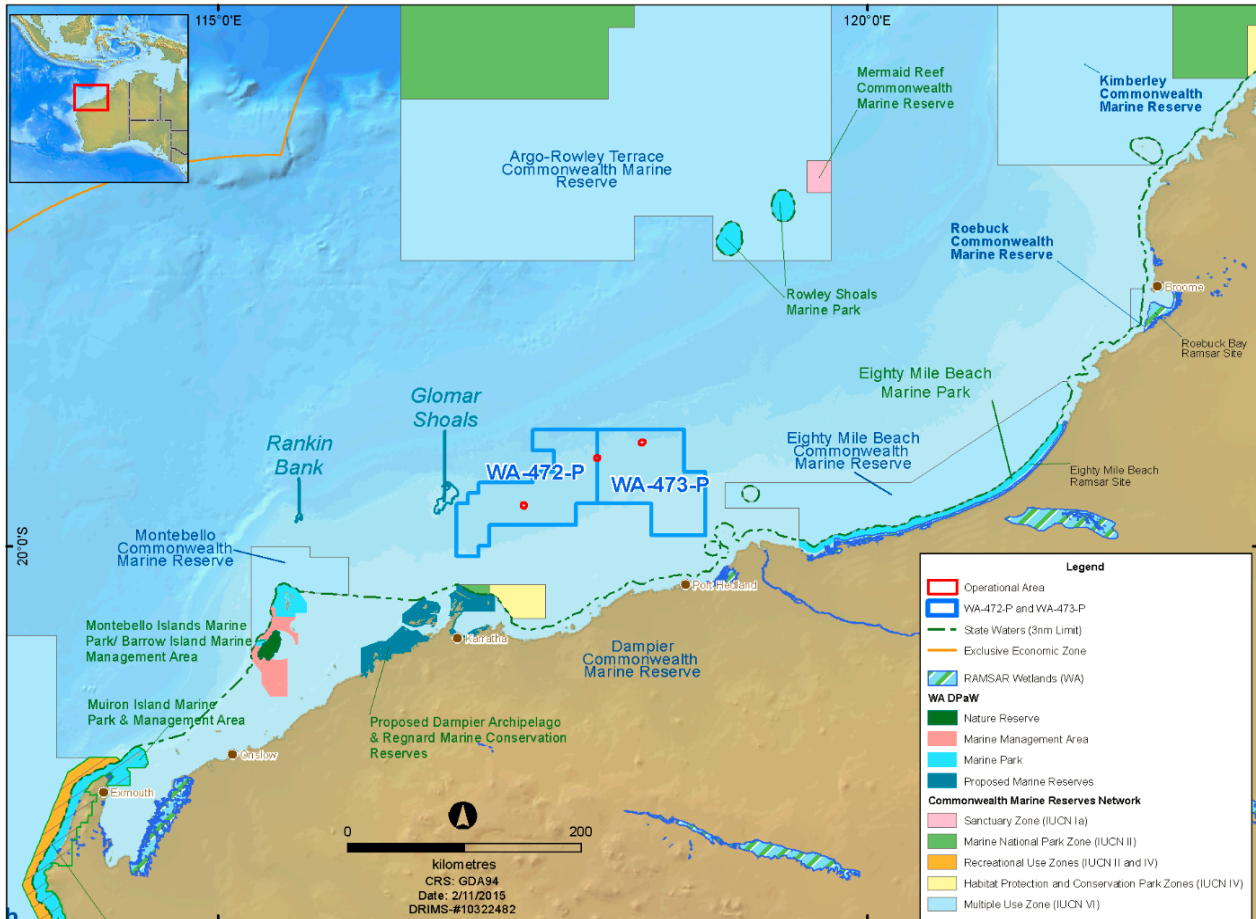
The nearest sensitive habitat to the Operational Areas are the Glomar Shoals (KEF), located approximately 53 km away (**Figure 4.1**). Values and sensitivities of the established marine protected areas and other sensitive areas in the wider regional setting are listed in

**Table 4.1.**

**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 |
|--|--|------------------------------|
| <b>Nearest habitat of significant conservation value</b> |  |                              |
| Glomar Shoals  | 53   |                              |
| <b>Commonwealth Marine Reserves (CMR)</b>                |  |                              |

|   | <b>Closest Point from Operational Areas over water (km)</b> | <b>IUCN Protected Area Category</b>                            |
|---|---|--|
| Dampier CMR   | 69  | II – Marine National Park Zone<br>IV – Habitat Protection Zone |
| Montebello CMR  | 151   | VI – Multiple Use Zone   |
| <b>State Marine Parks, Nature Reserves and Management Areas</b>                                   |   |  |
| <b><i>Established</i></b>   |   |  |
| Dampier Archipelago Nature Reserves   | 89  | Ia – Sanctuary Zone<br>II – Marine National Park Zone          |
| Montebello Islands Marine Park / Barrow Island Marine Park / Barrow Island Marine Management Area | 137   | Ia – Sanctuary Zone  |
| <b><i>Proposed</i></b>  |   |  |
| Proposed Dampier Archipelago Marine Park and Regnard Marine Management Area                       | 116   | N/A  |
| <b>Key Ecological Features (KEFs)</b>   |   |  |
| Ancient Coastline at 125 m depth contour  | 25  | N/A  |
| Glomar Shoals   | 53  | N/A  |



**Figure 4.1 Established and proposed Commonwealth and State marine protected areas**

**Habitats**

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

*Benthic Habitats in the Operational Area*

Sea floor communities such as coral reel habitats, seagrasses, macroalgae and mangroves do not occur within the Operational Areas.

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 and ZoC, including Glomar Shoals and the Dampier Archipelago, comprise important benthic primary producer habitats such as coral reefs, seagrass beds and macroalgae communities, and mangroves. 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 within the wider ZoC include the Dampier Archipelago and the Montebello/Barrow/Lowendal Islands Group.

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.



Within the NWS Province, filter feeders at Glomar Shoals make up minor components of the benthic communities, with sponges being among the most abundant filter feeders. Within the wider ZoC, 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 Dampier Archipelago. The area between Dampier and Port Hedland is also considered a sponge diversity hotspot.

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 ZoC.

#### *Resident/Demersal Fish Populations*

Fish species in the NWMR (including the Operational Areas, NWS Province and the wider ZoC) comprise small and large pelagic fish as well as demersal species. Large pelagic fish in the NWMR include commercially targeted species such as mackerel, wahoo, tuna, swordfish and marlin. 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 ZoC, 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.

#### **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 Biologically Important Areas (BIA) by the Department of the Environment (DoE), however a review of the Conservation Values Atlas confirmed that the BIA lies outside the Operational Areas. 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.

Pygmy blue whales (*Balaenoptera musculus brevicauda*) may occur in the Operational Area, however, the Pygmy blue whale migration is thought to follow along the 500 m to 1000 m depth contour on the edge of the continental slope, which has been defined by the Department of Environment (DoE) as a biologically important area (BIA) within the Operational Area for this species. The Operational Areas do not represent any critical habitat (feeding, resting or breeding aggregation areas) for the pygmy blue whale. The Operational Area may be visited by other cetacean species, but it is likely to be 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.

It is considered that seasnake sightings will be infrequent and likely comprise a few individuals within the Operational Areas. The nearby Glomar Shoals provide habitat that may be suitable for seasnakes. Although turtle and seasnake species have the potential to be found in the Operational Area, the distance offshore, depth range or 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 (*Isurus 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.

The Operational Areas may be occasionally visited by migratory and oceanic 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 during its breeding period (August – April) and (2) the lesser frigate bird 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 frequency within the Operational Area is likely to be a remote occurrence and limited to a few individuals transiting the area. Dugong 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 ZoC, 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). The Onslow Prawn Managed Fishery, Beche de Mer (sea cucumber) Fishery, Marine Aquarium and Specimen Shell Collection Fisheries and the Pearl Oyster Managed Fishery operate within the wider ZoC. 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.

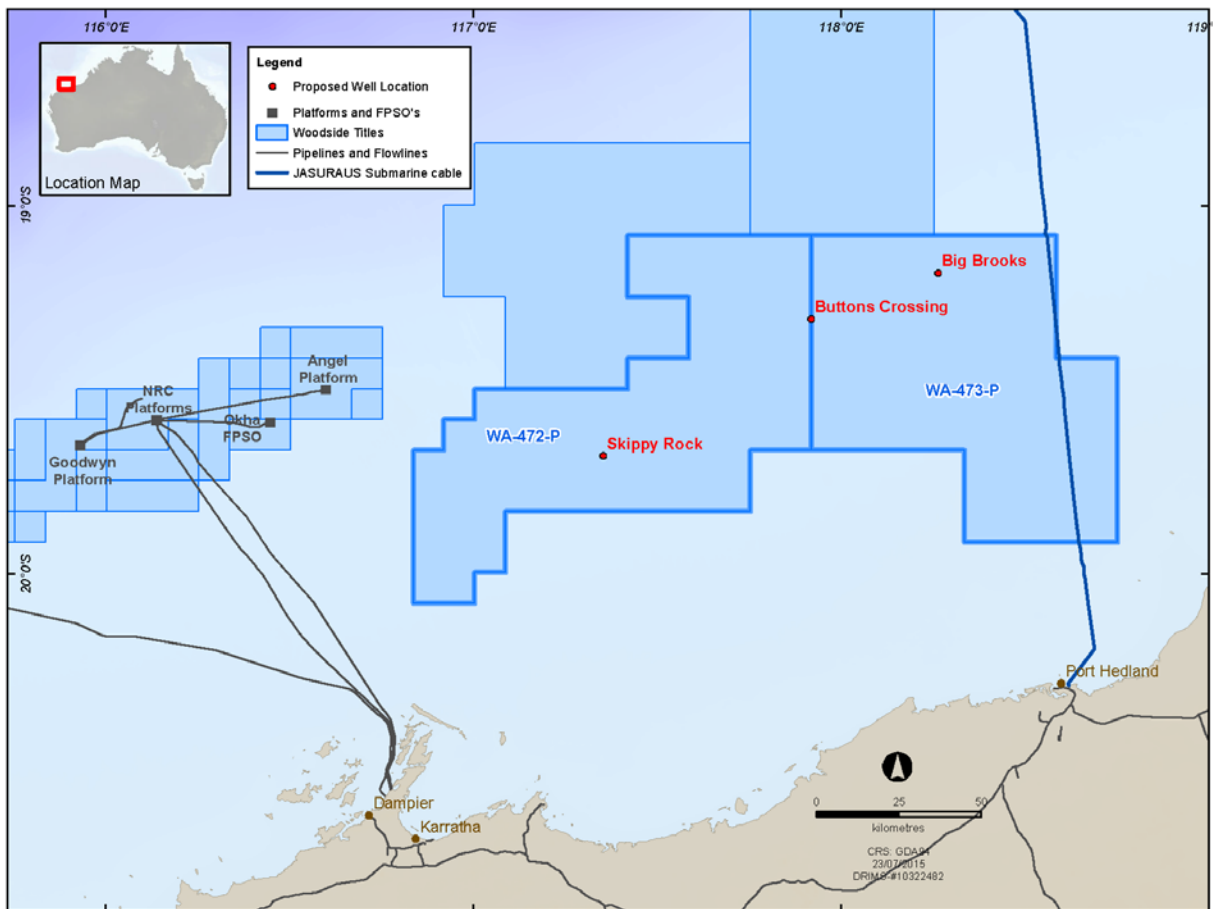
No known tourism activities take place specifically within or adjacent to the Operational Areas, however, the wider regional context includes recreational beaches and tourist spots. The Dampier Archipelago (approximately 89 km from the Operational Areas) and the Montebello Islands (202 km from the Operational 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. Data collected from the Australian Maritime Safety Authority (AMSA) indicates that between 1 and 3 bulk carriers a day may transit through the Operational Areas.

The Operational Area is 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 (**Figure 4.2**).

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 (**Figure 4.2**).

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



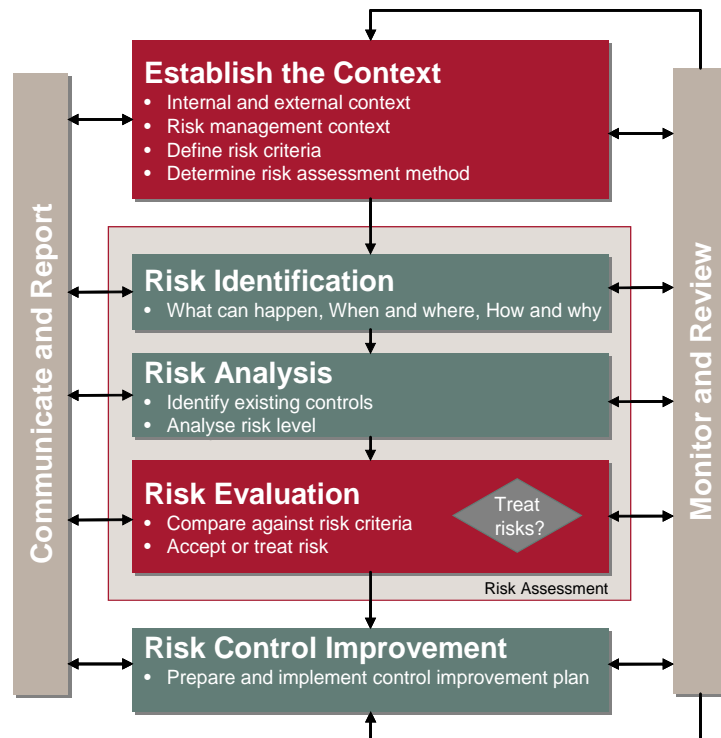
**Figure 4.2 Location of identified other oil and gas operations located within the area**

## 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 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 risk assessment workshop for the proposed 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 12 sources of environmental risk. These risks are divided into two broad categories: planned (routine and non-routine); and unplanned (accidents/incidents) activities. The 12 sources of environmental risk comprised seven planned and five 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 majority of the sources of environmental risk identified for the proposed Petroleum Activities Program relate to those activities which are planned and either undertaken on a routine or non-routine basis. These sources of risk include:

- Proximity of project vessels causing interference with or displacement to third party vessels (commercial shipping and fishing)
- Disturbance to seabed from activities including:
  - Anchor holding testing
  - ROV operation.
- Generation of noise from project vessels and ROV during normal operations
- Internal combustion engines on project 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.

### 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 hydrocarbons to marine environment due to a vessel collision (e.g. project vessels or other marine users)
- Accidental discharge of other hydrocarbons / chemicals from vessel deck activities and equipment (e.g. cranes) including subsea ROV hydraulic leaks
- Accidental loss of hazardous or non-hazardous wastes to the marine environment (excludes sewage, grey water, putrescible waste and bilge water)
- 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 Anchor Holding Test 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 Anchor Holding Test 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:

- Environmental Performance Report will be submitted to NOPSEMA within 3 months of the activity completion 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 Anchor Holding Test 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

Revision of the WA-472-P and WA-473-P Anchor Holding Test 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 Anchor Holding Test 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 this 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 <ul style="list-style-type: none"> <li>• Western Tuna and Billfish Fishery</li> <li>• North West Slope Trawl Fishery</li> <li>• Western Skipjack Fishery</li> <li>• Southern Bluefin Tuna</li> </ul> Western Australian Fisheries <ul style="list-style-type: none"> <li>• Mackerel Fishery</li> <li>• Pilbara Trawl Fishery</li> <li>• Pilbara Line Fishery</li> <li>• Pilbara Trap Fishery</li> <li>• Gascoyne Demersal Scalefish</li> </ul> |
| 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 and commercial fishing organisations. Issues of interest or concern included the location of the proposed activities across commercial fishing areas. 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 advice was supported by engagement with potentially affected stakeholders. Consultation activities for the proposed 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.

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

## 8. TITLEHOLDER NOMINATED LIAISON PERSON

For further information about this activity, please contact:

Kate McCallum

Woodside Energy Ltd

Woodside Plaza, 240 St Georges Terrace, Perth WA 6000

T: +61 8 9348 4000

E: Kate.McCallum@woodside.com.au

## APPENDIX A: ENVIRONMENTAL IMPACTS AND RISKS

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

Controlled Ref No:

Revision: 0

Native file DRIMS No: 10500757

Page 21 of 35

Uncontrolled when printed. Refer to electronic version for most up to date information.

| Source of Risk (Hazard)                             |  | Potential Environmental Impact  | Residual Risk | Control Mitigation Measures   |
|---|--|---|---------------|---|
| <b>Planned (routine and non-routine) Activities</b> |  |   |               |   |
| 1   | Proximity of project vessels causing interference with or displacement of third party vessels (commercial shipping and fishing). | Temporary, localised interference with or displacement of other sea users (e.g. fishing and shipping) | Low           | <p>Vessels compliant with Marine Order 30 (Prevention of Collisions) 2009:</p> <ul style="list-style-type: none"> <li>• adhere to steering and sailing rules including maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar)</li> <li>• adhere to navigation light display requirements, including visibility, light position/shape appropriate to activity</li> <li>• adhere to navigation noise signals as required.</li> </ul> <p>Vessels compliant with Marine Order 21 (Safety of navigation and emergency procedures) 2012:</p> <ul style="list-style-type: none"> <li>• adherence to minimum safe manning levels</li> <li>• maintenance of navigation equipment in efficient working order (compass/radar)</li> <li>• navigational systems and equipment required are those specified in Regulation 19 of Chapter V of SOLAS</li> <li>• AIS installed as required by vessel class in accordance with Regulation 19 of Chapter V of SOLAS.</li> </ul> <p>As determined through vessel contracting requirements outlined in Woodside Marine Operating Standard (Woodside Doc No. WM6070SV7193964).</p> <p>Notify AHS to generate Maritime Safety Information Notifications (MSIN) and Notice to Mariners (NTM) – navigation warning.</p> <p>AMSA RCC is notified of the Petroleum Activities Program.</p> <p>Send consultation Fact Sheet to State and Commonwealth fisheries.</p> <p>Precautionary zone around AHV of 1NM whilst anchor holding test underway.</p> |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

| Source of Risk (Hazard) |  | Potential Environmental Impact   | Residual Risk | Control Mitigation Measures   |
|-------------------------|--|--|---------------|---|
| 2                       | Disturbance to seabed from activities including: <ul style="list-style-type: none"> <li>• anchor holding testing</li> <li>• ROV operation</li> </ul> | Temporary and localised disturbance to the seabed composed of soft sediments from anchoring and ROV activities   | Low           | <p>Woodside Anchor Handling and Marine Operations Standard (Woodside Doc No. W1000SG0102): Preliminary Mooring Analysis Report completed and used to select broad anchor test locations.</p> <p>Use ROV to survey representative anchor test locations to check for and subsequently avoid potentially sensitive environments.</p>  |
| 3                       | Generation of noise from project vessels and ROV during normal operations  | Temporary and minor behavioural disturbance (e.g. avoidance or attraction) to fauna, including protected species   | Low           | <p>Woodside will comply with <i>EPBC Regulations 2000 – Part 8 Division 8.1</i> 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).</p> <p>The above requirements provided to the vessel masters.</p> |
| 4                       | Internal combustion engines on project vessels   | Reduced local air quality from atmospheric emissions   | Low           | <p>Compliance with Marine Order 97 (marine pollution prevention – air pollution) vessels have :</p> <ul style="list-style-type: none"> <li>• a valid IAPP Certificate,</li> <li>• a SEEMP, where required by class</li> <li>• use of low sulphur fuel when available.</li> </ul>  |
| 5                       | 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           | <p>Compliance with MARPOL73/78 Annex IV, Marine Order 96 (Pollution prevention – sewage), as required by vessel class:</p> <ul style="list-style-type: none"> <li>• a valid International Sewage Pollution Prevention (ISPP) Certificate</li> </ul>   |
| 6                       | Routine discharge of deck and bilge water to marine environment  | Localised and temporary effects to water quality and marine biota in the water column only (e.g. plankton)   | Low           | <ul style="list-style-type: none"> <li>• sewage treatment plant</li> <li>• sewage comminuting and disinfecting system</li> <li>• sewage holding tank</li> </ul>   |
| 7                       | Routine discharge of cooling water or brine to the marine environment  | Localised and temporary effects to water quality and water column marine biota   | Low           | <p>Compliance with MARPOL73/78 Annex IV, Marine Order 95 (pollution prevention – garbage), as required by vessel class:</p> <ul style="list-style-type: none"> <li>• Putrescible waste and food scraps are passed through a</li> </ul>  |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

| Source of Risk (Hazard)                              |   | Potential Environmental Impact  | Residual Risk | Control Mitigation Measures   |
|--|---|---|---------------|---|
|  |   |   |               | <p>macerator so that it is capable of passing through a screen with no opening wider than 25 mm</p> <p>Vessel sewerage system shall be capable of servicing 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.</p> <p>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.</p> |
| <b>Unplanned (accidents or incidents) Activities</b> |   |   |               |   |
| 8  | Loss of hydrocarbons to marine environment due to a vessel collision (e.g. project vessels or other marine users)                                   | <p>Minor and temporary disruption to protected species such as oiling of marine mammals, reptiles and seabirds.</p> <p>Minor and/or temporary contamination of water which may lead to toxic effects on marine biota in the water column in offshore waters and sessile benthos in the shallow sub-tidal and intertidal zone of the coral reefs</p> | Low           | <p>Comply with Marine Order 30 and 21 (as described in row 1)</p> <p>Notify AHS and AMSA RCC.</p> <p>Send consultation Fact Sheets to fisheries.</p> <p>See Appendix B for controls for spill response activities.</p>  |
| 9  | Accidental discharge of other hydrocarbons / chemicals from 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           | <p>Compliance with MARPOL 73/78 Annex I, as applied in Australia under the Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Part II Prevention of pollution from oil); and Marine Order 91 (Marine pollution prevention – oil) 2006, where applicable:</p> <ul style="list-style-type: none"> <li>vessels hold a valid IOPP Certificate, as required by vessel class</li> <li>equipment for the control of oil discharge from machinery space bilges and oil fuel tanks (e.g. oil separating/filtering equipment [15 ppm] and oil content meter)</li> </ul>  |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

|    | Source of Risk (Hazard)   | Potential Environmental Impact   | Residual Risk | Control Mitigation Measures   |
|----|---|--|---------------|---|
|    |   |  |               | <ul style="list-style-type: none"> <li>oil residue holding tanks</li> <li>standard discharge connections</li> <li>Ship Oil Pollution Emergency Plans (SOPEP)/ Shipboard Marine Pollution Emergency Plan (SMPEP)</li> </ul> <p>Selection and approval of chemicals is as per Woodside's Environment Procedure Offshore Chemical Assessment (Woodside Doc No: A1000PH9105410).</p> <p>The Chemical Selection List (Woodside Doc No: DC0000PH9673510) and ALARP Chemical Justifications will be reviewed during a Six Month Chemical Review Meeting.</p> <p>Compliance with Woodside's Environmental Performance Operating Standard; Storage (WEL Doc No. WM1050SH5099397): Chemicals will be stored safely and handled to prevent the release to the marine environment.</p> <p>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.</p> |
| 10 | 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           | <p>Comply with Marine Order 95 (as described in row 5)</p> <p>Compliance with Marine Order 94 (pollution prevention – packaged harmful substances), as required by vessel class: no disposal overboard.</p> <p>The Contractor Waste Management Plan is consistent with the Woodside Waste Management Plan.</p> <p>Solid waste dropped to the marine environment are recovered where safe and practicable to do so.</p>  |
| 11 | 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 <i>EPBC Regulations 2000 – Part 8 Division 8.1</i> (as described in row 3)  |
| 12 | Dropped objects overboard   | Localised short-term disturbance of benthic habitat localised to the dropped object. Pollution and contamination of the marine | Low           | <p>Safe Work Procedures developed and followed on project vessels to prevent objects being dropped.</p> <p>Personnel will be trained with regard to the prevention of dropped objects during relevant meetings and the appropriate</p>  |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

|  | Source of Risk (Hazard) | Potential Environmental Impact   | Residual Risk | Control Mitigation Measures   |
|--|-------------------------|--|---------------|---|
|  |                         | environment and secondary impacts to marine fauna (e.g. ingestion, entanglement, toxicity) |               | inductions.<br>Equipment and materials dropped to the marine environment are recovered where safe and practicable to do so. |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

Controlled Ref No:

Revision: 0 Native file DRIMS No: 10631207

Page 26 of 35

Uncontrolled when printed. Refer to electronic version for most up to date information.



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

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

Controlled Ref No:

Revision: 0

Native file DRIMS No: 10500757

Page 27 of 35

Uncontrolled when printed. Refer to electronic version for most up to date information.

### **Woodside's Oil Spill Planning Arrangements**

The key response planning scenarios associated with the Petroleum Activities Program are vessel based spills. Therefore, upon notification from the Vessel Master, AMSA will assume the role as Control Agency under the conditions of the National Plan for Maritime Environmental Emergencies. If requested by AMSA, Woodside can provide support to a spill response, based on the capabilities detailed below:

### **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;
- 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;
- 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 Anchor Holding Test Oil Pollution First Strike Plan**

The WA-472-P and WA-473-P Anchor Holding Test 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.

The AHV(s) and associated support vessels will have Ship Oil Pollution Emergency Plans (SOPEPs) in accordance with the requirements of MARPOL 73/78 Annex I. These plans outline responsibilities, specify procedures and identify resources available in the event of a hydrocarbon or chemical spill from vessel activities. The Oil Pollution First Strike Plan is intended to work in conjunction with the SOPEPs.

Woodside's oil spill arrangements are tested by conducting periodic exercises in which the AHV(s) and support vessels respond to incidents and emergencies. These exercises are conducted to test the response arrangements outlined in the WA-472-P and WA-473-P Anchor Holding Test 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 Anchor Holding Test**

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 to support AMSA, if requested, 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. Shoreline Cleanup - If requested by AMSA, 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.
  3. 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.
  4. 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 shoreline cleanup and oiled wildlife 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 facilities in Dampier and Exmouth as well as waste storage equipment from AMOSC, AMSA and OSRL.

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 Anchor Holding Test control mitigation measures for potential environmental impacts associated with response activities**

|   | <b>Source of Risk / Response Activity</b>                               | <b>Potential Environmental Impact</b>  | <b>Control Mitigation Measures</b>  |
|---|---|--|---|
| 1 | Monitor and evaluate (Operational Monitoring) and Scientific Monitoring | Air and noise emissions<br>Vessel operational discharges, presence and anchoring<br>Proximity to other vessels (shipping and fisheries)<br>Lighting for night work/ navigational safety<br>Invasive Marine Species (IMS)<br>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 (NEBA) process.<br><br>Operational NEBAs will be undertaken to determine if there is net environmental benefit to continuing the response activity<br><br>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.<br><br>The SMP will be continually reviewed and updated based on the situational awareness information generated by the OMPs. |
| 2 | Shoreline Cleanup   | Air and noise emissions<br>Lighting for night work/ navigational safety<br>Invasive Marine Species (IMS)<br>Collisions with marine fauna<br>Chemical and mechanical  | Shoreline assessment undertaken in accordance with Operational Monitoring and guided by: <ul style="list-style-type: none"> <li>• DoT’s Oiled Shoreline Field Booklet</li> <li>• Relevant receptor Tactical Response Plans</li> <li>• Local oil spill contingency planning</li> </ul>   |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

|   | Source of Risk / Response Activity | Potential Environmental Impact  | Control Mitigation Measures  |
|---|------------------------------------|---|--|
|   |                                    | cleaning<br>Human presence (manual cleaning)<br>Waste generation/disposal<br>Sediment reworking<br>Vegetation cutting   | resources where available (i.e. DoT, other operators).<br>Shoreline cleanup implemented when NEBA indicates a net environmental benefit.<br>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.<br>Potential impacts of the response activity will be monitored and reported back for input into the daily planning and operational NEBA process.<br>Equipment will be operated in accordance with manufacturer's instructions/guidance.                                     |
| 3 | Oiled wildlife response            | Air and noise emissions<br>Vessel operational discharges and anchoring<br>Proximity to other vessels (shipping and fisheries)<br>IMS<br>Capturing and transporting wildlife<br>Stabilisation<br>Cleaning and rinsing (including post-cleaning stabilisation)<br>Rehabilitation (diet quality, cage sizes etc.)<br>Release<br>Waste generation/ disposal<br>Lighting for night work/ navigational safety<br>Collisions with marine fauna | OMPs and SMPs outline the programs that will apply during the wildlife response.<br>Potential impacts of response activities will be monitored and reported back for input into the daily planning and operational NEBA process.<br>Operational NEBAs undertaken to determine if there is environmental benefit to continuing the response activity.<br>Implementation in accordance with the primary, secondary and tertiary response strategies outline in the Pilbara Regional OWROP.<br>Waste management contract for safe disposal of carcasses after necessary autopsies.  |
| 4 | Waste management                   | Air and noise emissions<br>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: <ul style="list-style-type: none"> <li>• AS/NZS 4801 OHS Management System</li> <li>• ISO 14001 Environmental Management System</li> <li>• ISO 9001 Quality Management System.</li> </ul> The plan includes a regular review of available resources.<br>In environmentally sensitive locations, the impact of waste management activities will be monitored and appropriate controls implemented based |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

|  | <b>Source of Risk /<br/>Response Activity</b> | <b>Potential<br/>Environmental Impact</b> | <b>Control Mitigation Measures</b> |
|--|---|---|------------------------------------|
|  |   |   | on regular NEBAs.                  |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

Controlled Ref No:

Revision: 0

Native file DRIMS No: 10500757

Page 31 of 35

Uncontrolled when printed. Refer to electronic version for most up to date information.

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

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

Controlled Ref No:

Revision: 0

Native file DRIMS No: 10500757

Page 32 of 35

Uncontrolled when printed. Refer to electronic version for most up to date information.

| Stakeholder                   | Summary of Stakeholder Feedback   | Woodside assessment of feedback   | Woodside Response  |
|-------------------------------|---|---|--|
| <p>AMSA (maritime safety)</p> | <p>AMSA acknowledged by letter on 13 August that it had received advice with regards to Woodside seeking environment approval for three exploration wells as part of exploration permit requirements for WA-472-P and WA-473-P.</p> <p>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.</p> <p>AMSA advised that each character 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.</p> <p>AMSA provided shipping statistics on the number of ships a rig can expect to encounter within each shipping fairway of the proposed well sites.</p> <p>AMSA stated that the establishment of exploration wells within an established fairway may result in increased risk of collision.</p> <p>The Authority strongly recommends that Woodside reconsider positioning drilling rigs or other infrastructure within charactered shipping fairways.</p> | <p>Woodside acknowledge the concerns raised by AMSA.</p> <p>Woodside completed a risk assessment to reposition the well locations outside of established fairway. The assessment confirmed that drilling from alternative locations is not technically achievable. Movement of the wells reduces the likelihood that reservoir targets would be reached.</p> <p>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.</p> <p>Woodside acknowledges that during the proposed activity, commercial shipping vessels are likely to be operating within the shipping fairway, with credible accident scenarios being vessel-vessel collision.</p> <p>To maintain safety and reduce risk to as low as reasonably practicable, Woodside will adopt a number of controls consistent with previous activity in or adjacent to shipping fairways.</p> <p>To date, Woodside has sought environment approval to undertake drilling activities for wells and a marine seismic survey within established shipping fairways. Woodside has provided mitigation measures that have previously been considered by AMSA to be acceptable.</p> | <p>Woodside will adopt control measures consistent with previous drilling activity and will continue engagement with AMSA.</p> |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

| Stakeholder  | Summary of Stakeholder Feedback  | Woodside assessment of feedback  | Woodside Response   |
|--|--|--|---|
| <p>Department of Fisheries (Western Australia)</p> | <p>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.</p> <p>The Department recommended that Woodside engage WAFIC, Recfishwest and directly with fishers.</p> <p>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.</p> <p>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.</p> <p>The Department recommended resources to demonstrate Woodside has taken reasonable measures to reduce its chances of carrying out offences under the <i>Fish Resources Management Act 1994</i> and associated regulations.</p> <p>The Department requested that suspected or confirmed marine pest or disease is reported within 24 hours.</p> <p>All requests provided by the Department are to be shared with all vessel operators associated with the proposed petroleum activity.</p> <p>The Department requests all potential impacts and Woodside strategies to mitigate are identified in the final EP and PEPs.</p> <p>The Department requested a written response from Woodside addressing all concerns raised in its letter..</p> | <p>Woodside notes the Departments advice. Woodside confirmed its liasion 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.</p> <p>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.</p> <p>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.</p> <p>Woodside ensures compliance with biosecurity requirements through its 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.</p> <p>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.</p> | <p>Woodside to accept feedback from Pilbara Line Fishery about proposed activity.</p> |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.



| Stakeholder   | Summary of Stakeholder Feedback  | Woodside assessment of feedback                 | Woodside Response  |
|---|--|---|--|
| 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                        | <p>The Department advised by email that it had no specific comments in relation to the proposed petroleum activities.</p> <p>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.</p> <p>The Department expects Woodside to maintain capacity to provide an oiled wildlife response.</p> <p>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.</p> <p>The Department advised that it has prepared industry guidance and standards documents for the treatment and rehabilitation of oiled wildlife.</p> <p>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.</p> | The stakeholder raised no claims or objections. | No action required.  |

This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.

Controlled Ref No:

Revision: 0 Native file DRIMS No: 10500757

Page 35 of 35

Uncontrolled when printed. Refer to electronic version for most up to date information.