Greater Western Flank Phase 2 Tieback Environment Plan Summary

Development Division
Revision 1
January 2016

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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 development drilling, completions, subsea hardware installation, flowline installation, tie-in and pre-commissioning activities for the project known as Greater Western Flank phase two (GWF-2), and hereafter referred to as the Petroleum Activities Program, where relevant to do so. The Petroleum Activities Program is a new stage of an existing activity, given it is a subsea tieback to the Goodwyn Alpha (GWA) platform. The GWA facility was commissioned in 1995 and operates under an existing Environment Plan (WEL Doc No: A1800RH158693).

This Environment Plan (EP) Summary has been prepared as part of the requirements under the Environment Regulations, as administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). This document summarises the GWF-2 Tieback EP, accepted by NOPSEMA under Regulation 10A of the Environment Regulations.

2. LOCATION OF THE ACTIVITY

The proposed Petroleum Activities Program is located in production licences WA-5-L, WA-6-L, WA-24-L and retention lease WA-51-R in Commonwealth waters approximately 135 km north-west of Dampier (**Figure 2-1**). The submerged shoals of Rankin Bank lie within the northern half of WA-51-R, with other sensitive environment receptors including the Montebello Commonwealth Marine Reserve (Multiple Use Zone) approximately 16 km south of the Operational Area. The closest landfall to the Petroleum Activities Program is the Lowendal Islands, approximately 57 km to the south at their closest point to the Operational Area. Approximate location details for the Petroleum Activities Program are provided in **Table 2.1**.

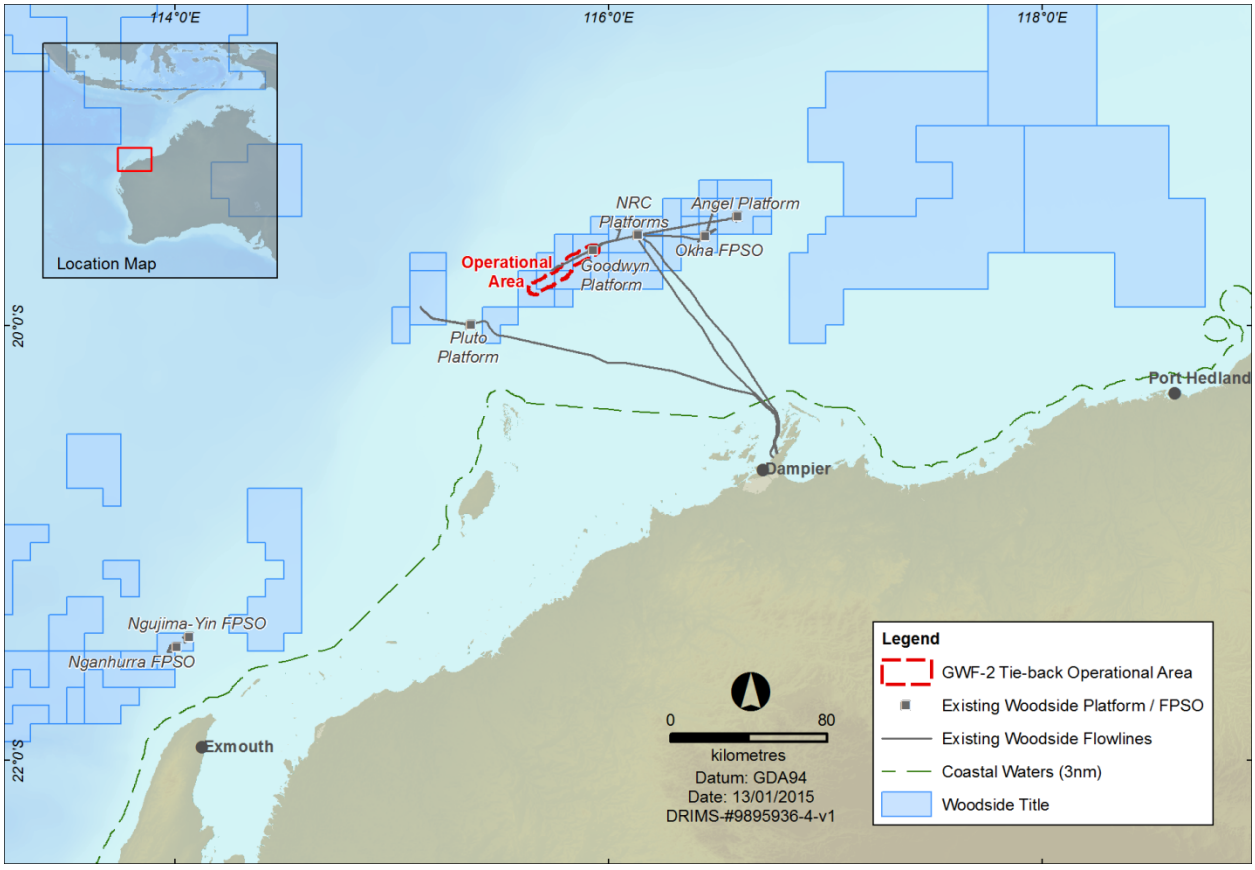

Figure 2-1: Location of Petroleum Activities Program

Table 2.1: Locations details for the Petroleum Activities Program

Activity	Water depth (Approx. m LAT)	Latitude	Longitude	Production Licence
Well and well centre locations (from most distant location from GWA facility to closest location to GWA facility)				
Lady Nora Pemberton (LPA) Well Centre Manifold	79m	-19° 49' 46.360"	115° 39' 28.480"	WA-51-R
LPA-A well	79m	-19° 49' 46.337"	115° 39' 29.415"	WA-51-R
LPA-B well	79m	-19° 49' 46.453"	115° 39' 27.558"	WA-51-R
LPA-C well	79m	-19° 49' 45.485"	115° 39' 28.597"	WA-51-R
Sculptor Rankin (SRA) Well Centre Manifold	94m	-19° 47' 39.280"	115° 43' 24.879"	WA-24-L
SRA-R well	94m	-19° 47' 38.715"	115° 46' 25.485"	WA-24-L
SRA-B well	94m	-19° 47' 39.845"	115° 43' 24.273	WA-24-L
Keast Dockrell (KDA) Well Centre Manifold	124m	-19° 45' 28.116"	115° 47' 07.627"	WA-5-L
KDA-A well	124m	-19° 45' 27.547"	115° 47' 07.026	WA-5-L
KDA-B well	124m	-19° 45' 27.547"	115° 45' 08.228"	WA-5-L
Dockrell (DOA) Well Centre Manifold	130m	-19° 42' 59.551"	115° 48' 54.582"	WA-6-L
DOA-A well	130m	-19° 43' 00.124"	115° 48' 55.179"	WA-6-L
Flowline route corridor location (from the most distant location from GWA facility to closest location to GWA facility)				
Flowline Route – Start*	79m	-19° 49' 44.971"	115° 39' 27.798"	WA-51-R
Flowline Route - End	130m	-19° 39' 04.439"	115° 55' 41.445"	WA-6-L

*Note – Flowline installation may commence at any location along the flowline route.

The Operational Area defines the spatial boundary of the petroleum activities that will be managed under the EP. The Operational Area is located in waters approximately 135 km north-west of Dampier in water depths of between 79 m and 130 m. Transit to and from an Operational Area by support vessels, installation vessels and drill rigs/ships; and, port activities associated with the support vessels, is not within the scope of the EP.

For the purposes of this EP, the following Operational Area will apply:

- A radius of 3,000 m from each well centre has been defined as the area in which drilling related petroleum activities will take place and will be managed under this EP. This includes a

500 m designated exclusion/safety zone around the Mobile Offshore Drilling Unit (MODU) to manage vessel movements

- A radius of 2,500 m around the GWF-2 subsea installation locations has been defined as the area in which subsea installation, pipelay and pre-commissioning petroleum activities will take place and will be managed under this EP.

3. DESCRIPTION OF THE ACTIVITY

Woodside proposes to develop and produce hydrocarbons from the Keast, Dockrell, Sculptor, Rankin, Lady Nora and Pemberton hydrocarbon fields. To achieve this, Woodside plan to drill eight development wells within the reservoirs, and undertake subsea installation, flowline installation, tie-in and associated pre-commissioning activities to enable hydrocarbons from these wells to be produced through the existing nearby GWA facility. Should any of the eight wells not produce as anticipated, then there is the potential that up to three infill wells will be drilled. The key activities proposed for within the Operational Area are:

- Development drilling and completions including:
    - drilling and completions of eight wells
    - potential drilling and completions of infill wells (up to three)
    - pile based mooring systems at LPA and SRA
    - well testing and formation logging
- Installation of subsea hardware including manifolds, xmas trees, midline connection, structures, spools, flying leads, umbilical termination assemblies
- Flowline installation (approximately 36 km)
- Tie-in to existing GWF-1 umbilical termination assembly
- Pre-commissioning of the flowline and all subsea hardware

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

- Well workover – may include recovering and replacing the completion string and associated components
- 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)
- Wireline logging – using monitoring tools for depth correlation, to verify cement integrity, formation pressures, etc.
- Well intervention - including coil tubing and wire line
- Well abandonment - may be required to abandon the lower section of a well, prior to side-tracking, where a new lower well section is drilled
- 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
- Sediment relocation – an appropriate suction pump/dredging unit may be used to relocate sediment prior to infrastructure installation in localised areas
- Pipeline dewatering may occur after a wet buckle or during commissioning and includes contingency elevated pressure for stuck pigs.

The development drilling and completions activities will be completed using a moored MODU. Subsea installation, flowline installation, tie in and pre-commissioning activities will be completed using a

primary installation vessel (PIV). During the Petroleum Activities Program, the MODU and PIVs will be supported by other vessels, such as tugs, barges, anchor handling, platform support, multiservice construction and heavy lift vessels. The support vessels will primarily be used to transport equipment and materials between the MODU/PIVs and port and assist during required installation activities. During the Petroleum Activities Program, crew changes will be undertaken using helicopters. Helicopter operations are limited to the landing and take-off the helicopter on the heli-deck of the MODU or PIVs.

3.1 Timing of the activities

The proposed Petroleum Activities Program is anticipated to commence in 2016. The indicative durations of activities are outlined in **Table 3.1.** The schedule may be subject to change as project definition develops through Front End Engineering Design (FEED) and Execute. Timing and duration may also be subject to change due to MODU/vessel availability, unforeseen circumstances and prevailing weather conditions. The Petroleum Activities Program has been risk assessed throughout the year (all seasons) to provide operational flexibility for the MODU/vessel availability and schedule changes.

Table 3.1 Indicative timing for the Petroleum Activities Program

Activity	Duration (months)
Drilling and completions	2 months per well
Flowline installation	8
Subsea hardware installation and tie-in to GWA	6
Pre-commissioning	1
Drilling and completions of infill well(s)	2 months per well

4. DESCRIPTION OF THE RECEIVING ENVIRONMENT

4.1 Physical

The Operational Area is located in Commonwealth waters of the North West Shelf (NWS) Province approximately 135 km north-west of Dampier and in water depths of approximately 79 to 130 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 in the region is tropical monsoon, exhibiting a hot, wet summer season from October to April and a milder, dry winter season between May and September. Rainfall in the region predominantly occurs during the wet season (summer), with highest rains occurring during late summer, often associated with the passage of tropical low pressure systems and cyclones. There are often distinct transition periods between the summer and winter regimes, which are characterised by periods of relatively low winds.

Water circulation in the NWS Province and Operational Area is primarily influenced by the Indonesian Throughflow (ITF) and the Leeuwin Current. The ITF and Leeuwin Current are strongest during later summer and winter. Flow reversals to the north-east associated with strong south-westerly winds are typically weak and short lived but can generate upwelling of cold deep water onto the shelf. Tides in the NWS Province are semi-diurnal and have a pronounced spring-neap cycle, with tidal currents flooding towards the south-east and ebbing towards the north-west.

The bathymetry of the Operational Area indicates a gradual gradient with the water depth increasing from the southern to northern extent and seabed topography being more complex in the southern area. The seabed in the south-west portion of the Operational Area is characterised by low relief,

dominated by sandy patches or sandy veneer over consolidated limestone substrate. Further along the Operational Area, beyond the ridge, the depth gradually increases and the seabed comprises homogenous soft sediment that extends beyond the GWA facility.

An escarpment occurs along the seabed slope at a depth of approximately 125 m, known as the Ancient Coastline and is a key ecological feature (KEF) identified from the *Environmental Protection and Biodiversity Conservation Act* (EPBC Act) Protected Matters Search Report as occurring within the Operational Area.

Sediments within the Operational Area comprise coarse sands, silts, fine sands and some gravel. Sediment grain size in the north-east section of the Operational Area (closer to the GWA facility) is dominated by coarse sand, whereas sediment in the south-western section is predominantly fine sand. In the wider NWMR, sediments are comprised of bio-clastic, calcareous and organogenic sediments. On the continental shelf, sediment is primarily sand and gravels, while the slope and deep ocean seabed is primarily mud.

4.2 Biological

The offshore environment of the NWS Province contains environmental assets/receptors of high value or sensitivity, including habitats and species within Commonwealth offshore waters and coastal waters such as the Montebello/Barrow Island group. Furthermore, the region is noted for its resident, temporary or migratory marine fauna, including EPBC Act listed species such as marine mammals, turtles and birds. The marine environment of these offshore locations is pristine and many sensitive receptor locations are protected as part of Commonwealth and State managed areas.

The closest marine reserve to the Operational Area is the boundary of the Montebello Commonwealth Marine Reserve (CMR) which is located 16 km south of the Operational Area (**Figure 4.1**). The nearest habitat of significant conservation value is Rankin Bank, located 2 km west of the Operational Area (**Figure 4.1**). One KEF (the Ancient coastline at 125 m depth contour) was identified within the Operational Area. 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 Marine Protected Areas (MPAs) and other sensitive locations

	Distance from Operational Area to sensitivity boundary (km)	IUCN Protected Area Category
Nearest habitat of significant conservation value		
Rankin Bank (50 m bathymetric contour)	2 km	N/A
Commonwealth Marine Reserves (CMR) / World Heritage Areas (WHA)		
Montebello CMR	16 km	VI – Multiple Use Zone
Dampier CMR	116 km	II – Marine National Park Zone IV – Habitat Protection Zone
Argo – Rowley Terrace CMR	214 km	II – Marine National Park Zone VI – Multiple use Zone
Gascoyne CMR	218 km	II – Marine National Park Zone IV – Habitat Protection Zone VI – Multiple use Zone
Ningaloo CMR and Ningaloo Coast WHA	232 km	II – Marine National Park Zone
Mermaid Reef CMR	465 km	Ia – Sanctuary Zone

	Distance from Operational Area to sensitivity boundary (km)	IUCN Protected Area Category
Shark Bay CMR and WHA	570 km	II – Marine National Park Zone VI – Multiple use Zone
Carnarvon Canyon CMR	580 km	IV – Habitat Protection Zone
Abrolhos CMR	730 km	II – Marine National Park Zone IV – Habitat Protection Zone VI – Multiple use Zone VI – Special Purpose Zone
State Marine Parks,Nature Reserves and Marine Management Areas		
Established		
Lowendal Islands Nature Reserve	57 km	Ia – Sanctuary Zone
Montebello Islands Marine Park / Barrow Island Marine Management Area (jointly managed)	81 km	Ia – Sanctuary Zone
Barrow Island Nature Reserve	92 km	Ia – Sanctuary Zone
Dampier Archipelago Nature Reserve	108 km	Ia – Sanctuary Zone II – Marine National Park Zone
Pilbara Northern Islands Group	114 km	Ia – Sanctuary Zone
Pilbara Islands - Southern Island Group (Serrurier, Thevenard and Bessieres Islands Nature Reserves)	169 km	Ia – Sanctuary Zone
Muiron Islands Marine Management Area*	232 km	Ia – Sanctuary Zone (islands) II – Marine National Park Zone
Ningaloo Marine Park*	232 km	Ia – Sanctuary Zone (islands) II – Marine National Park Zone
Rowley Shoals Marine Park	380 km	II – Marine National Park Zone
Shark Bay Marine Park	630 km	II – Marine National Park Zone
Houtman Abrolhos Islands Nature Reserve	730 km	II – Marine National Park Zone
Proposed		
Proposed Dampier Archipelago and Cape Preston Marine Conservation Reserves	108 km	N/A
KEFs		
Ancient Coastline at 125 m depth contour	Within Operational Area	N/A
Continental Slope Demersal Fish Communities	24 km	N/A
Glomar Shoals	85 km	N/A
Exmouth Plateau	131 km	N/A

	Distance from Operational Area to sensitivity boundary (km)	IUCN Protected Area Category
Canyons liking the Cuvier Abyssal Plain and the Cape Range Peninsula	204 km	N/A
Commonwealth waters adjacent to Ningaloo Reef	250 km	N/A
Mermaid Reef and Commonwealth Waters surrounding Rowley Shoals	465 km	N/A
Wallaby Saddle	745 km	N/A
Other		
Pilbara Northern Islands Group	114 km	N/A
Exmouth Gulf	270 km	N/A

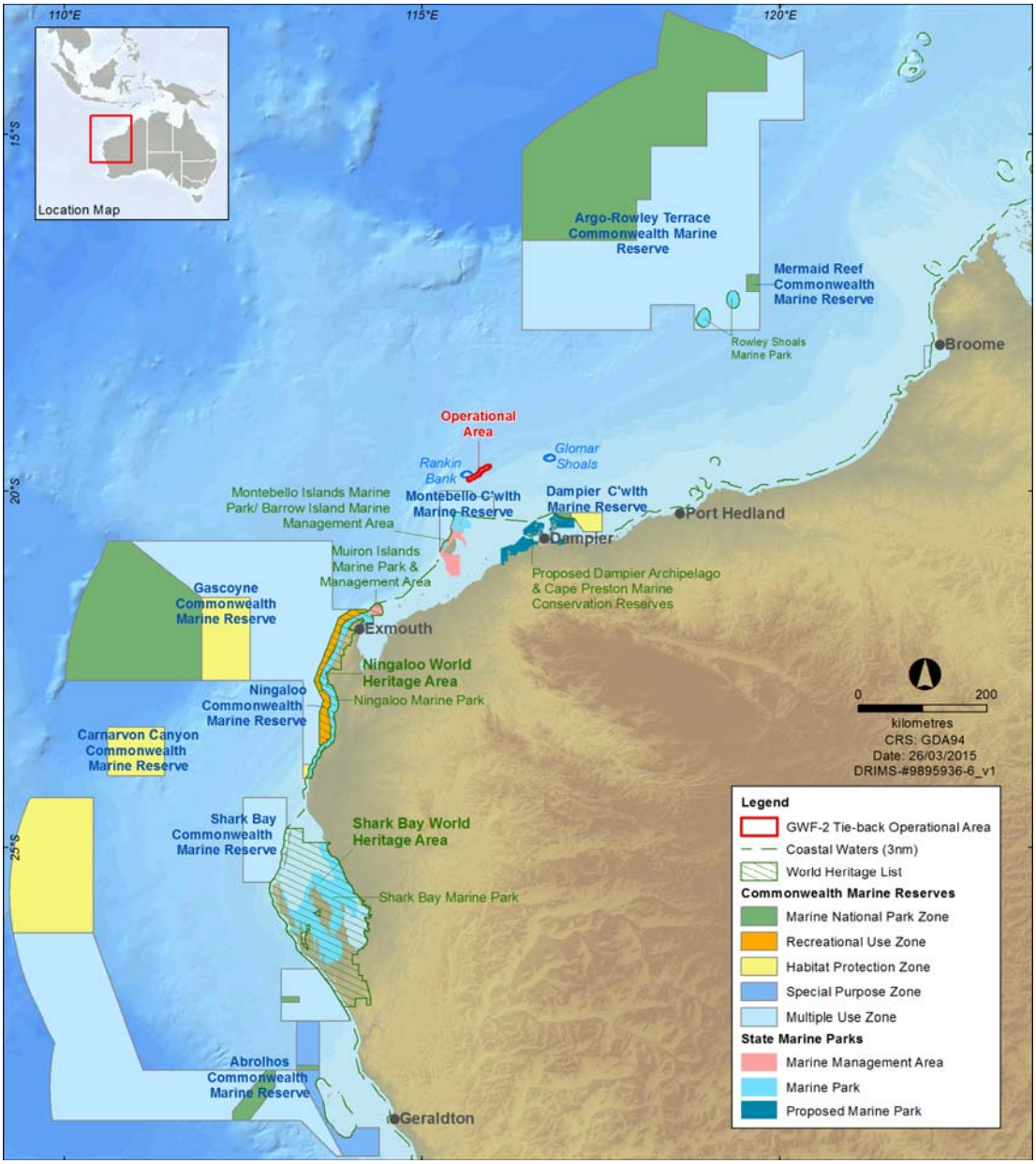

Figure 4-1 Established and Proposed Commonwealth and State Marine Protected Areas in relation to the Operational Area

Habitats

No critical habitats or threatened ecological communities (TECs), as listed under the EPBC Act, are known to occur within the Operational Area.

Benthic Habitats in the Operational Area

No seagrass beds, macroalgae, mangroves or reef building corals occur in the Operational Area. Surveys within the Operational Area found that the south-west section of the Operational Area comprised mostly sparse and medium density filter feeder communities, including bryozoans, sponges, gorgonians and hydroids attached to the consolidated substrate. The north-east section of the Operational Area is unlikely to contain suitable habitat for filter feeder communities as it comprises mostly homogenous soft sediments with little or no hard substrate.

Benthic grab sampling in the north-east section of the Operational Area, around the GWA facility, has revealed infauna communities that are in low abundance, highly variable and diverse. Further, seabed

sediment sampling within the Operational Area supported these findings and found there was a highly diverse invertebrate faunal composition, dominated by burrowing polychaete worms and crustaceans.

Habitats in the Wider Region

The wider region, including the Montebello Islands and other sensitive areas such as Rankin Bank, comprise important benthic primary producer habitats such as coral reefs, seagrass beds and macroalgae communities, and mangroves. The nearest location to the Operational Area with these benthic primary producer habitats is the Montebello/Barrow/Lowendal Islands Group (located approximately 57 – 92 km south). Rankin Bank (located approximately 2 km west of the Operational Area) is the nearest coral reef habitat. Coral reef habitats 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.

NWS sampling programs indicate a widespread and well represented infauna assemblage along the continental shelf and upper slopes, with seabed surveys identifying infauna communities to be dominated by polychaetes and crustaceans associated with the soft, unconsolidated sediment.

Resident/Demersal Fish Populations

Fish communities 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 include commercially important species such as groper, cod and snapper. The Operational Area comprises mostly featureless, flat soft sediment seabed, with more complex hard substrate only occurring in the south-western section in water depths of 79 m to 130 m. Therefore, habitat in the south-western section of the Operational Area may support diverse and abundant fish communities. However, studies have found that species richness and abundance at Rankin Bank decreased with water depth with the highest diversity found in depths of less than 40 m.

Species

A total of 57 EPBC Act listed marine species were identified as potentially occurring within the Operational Area. Of those listed, 12 are considered threatened marine species and 18 migratory species under the EPBC.

Operational Area

Pygmy blue whales (*Balaenoptera musculus brevicauda*) may occur in the Operational Area, however individuals generally transit the deeper offshore waters to the west of the Operational Area during the migration. Transitory humpback whales (*Megaptera novaeangliae*) may also occur within the Operational Area between June and October, during both their northern and southern migrations, although the Depratment of Environment (DoE) has defined migratory corridor Biologically Important Area (BIA) to be 25km form the operational area. The Operational Area may infrequently be visited by other cetacean species transiting through. The Operational Area does not represent any critical habitat (feeding, resting or breeding aggregation areas) for cetacean species that may occur in the area.

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 (C*helonia 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, however, it is possible that marine turtles may transit the Operational Area, and forage in the waters of Rankin Bank (located 2 km west of the Operational Area). A BIA for internesting flatback turtles overlaps with the Operational Area. However, considering the distance from known key marine turtle habitats, the absence of potential nesting (at least 57 km from the nearest nesting beach) and the water depth of the activity (approximately 79 to 130 m), it is considered that the Operational Area is unlikely to represent important habitat (including internesting habitat) for marine turtles, although individuals may transit the area.

Rankin Bank provides habitat for sea snakes with recent surveys confirming the presence of seasnakes in limited abundance. Given the offshore location of Rankin Bank (i.e. distance from

shallow reef flats) and water depth (greater than 18 m), it is unlikely to represent important habitat for seasnakes. It is considered that sea snake sightings within the Operational Area will be infrequent and likely to comprise a few individuals.

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). For the period 2011 to 2014, Woodside's megafauna sightings register (DRIMS No. 9269185) recorded sightings of individuals within and in the vicinity of the Operational Area in April, July, August, September and October, corresponding with the whale shark's seasonal migration to and from the Ningaloo Reef. 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 overlaps with the Operational Area. Whale shark presence within the Operational Area 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 Area, for short durations when individuals transit the area.

Migratory shorebirds may be present in, or fly through the Operational Area between July and December and again between March and April. A BIA defined by the DoE for the migratory wedge-tailed shearwater during its breeding period (August – April) overlaps with the Operational Area. The Endangered and migratory Southern Giant-Petrel (*Macronectes giganteus*) was identified as potentially occurring within the Operational Area but no critical habitat associated with these species have been identified within the Operational Area.

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. The killer whale (*Orcinus orca*) and spotted bottlenose dolphin (*Tursiops aduncus*) have widespread geographical distributions and their presence is likely to be remote and limited to infrequent transiting of the area. Dugong occurrence within the Operational Area is considered unlikely due to lack of seagrass habitat.

Four of the EPBC listed turtle species (green, loggerhead, flatback and hawksbill) have significant nesting beaches along the mainland coast and islands in the region including the Montebello Islands, Barrow Island Dampier Archipelago, Muiron Islands, the North West Cape and Ningaloo Reef.

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 Montebello/Barrow/Lowendal Island Groups (approximately 57 km south-east of the closest point of the Operational Area) are important seabird and shorebird nesting and foraging habitats. The Operational Area may be occasionally visited by migratory shorebirds, but it does not contain critical habitats for any species.

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 Area.

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

Commonwealth fisheries operating within or adjacent to the Operational Area 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 operating within of adjacent to the Operational Area include the West Australian Mackerel Fishery, North Coast Demersal Scalefish Fisheries (comprised of the Pilbara Trawl, Trap

and Line Fisheries), Nickol Bay Prawn Fishery, and the Onslow Prawn Managed Fishery. There are no aquaculture activities within or adjacent to the Operational Area.

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 Area, however, the wider regional context includes recreational beaches and tourist spots. The Montebello Islands are the closest location for tourism to the Operational Area with some charter boat operators taking visitors to these remote islands. Many areas along the coast are popular and support recreational activities such as boating, diving, sightseeing, swimming, fishing and wildlife viewing. Occasional recreational fishing occurs at Rankin Bank and Glomar Shoals (located approximately 2 km and 85 km from the Operational Area respectively).

The region supports significant commercial shipping activity, the majority of which is associated with the mining, and oil and gas industries. The Australian Maritime Safety Authority (AMSA) has introduced a network of marine fairways in the NWS region in order to reduce the risk of vessel collisions with offshore infrastructure. The fairways are not mandatory, but AMSA strongly recommends commercial vessels remain within the fairway when transiting the region. One shipping fairway passes through the Operational Area. Major shipping routes in the area are associated with entry to the ports of Dampier and Barrow Island.

The Operational Area is located within an area of oil and gas operations, with the GWA Facility located within the Operational Area. As such, there is subsea infrastructure in the Operational Area, including subsea wellheads, subsea umbilicals and flowlines.

There are designated defence practice areas in the offshore marine waters off Ningaloo and the North West Cape. The Operational Area is not located within these defence practise areas. Consultation with the Department of Defence confirmed that there was no objection to the proposed activities.

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 Petroleum Activities 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 Petroleum Activities Program is provided below.

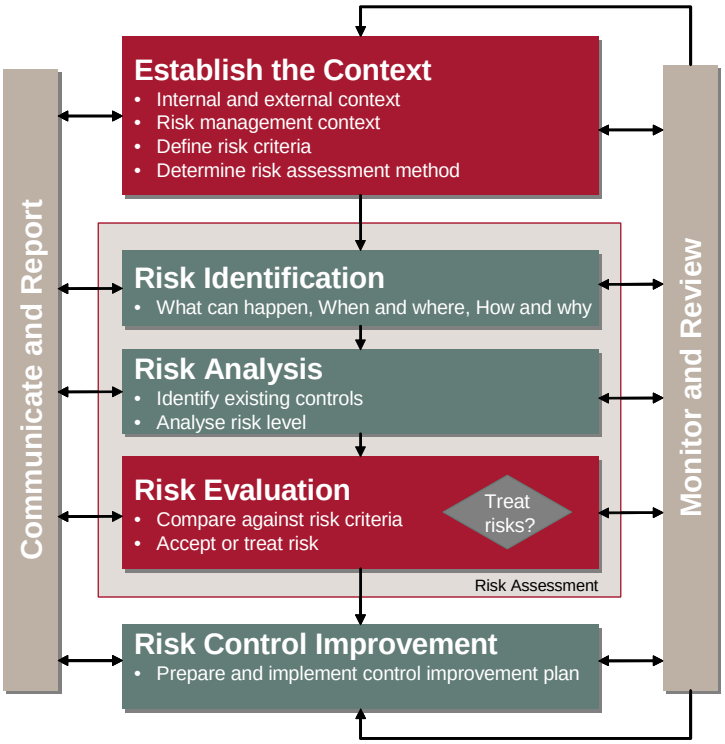

Figure 5-1: Key steps in Woodside's Risk Management Framework

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 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 Petroleum Activities 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

- 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 environmental hazard identification (ENVID) for the Petroleum Activities Program identified 24 sources of environmental risk. These risks are divided into two broad categories: planned (routine and non-routine); and unplanned (accidents/incidents) activities. The 24 sources of environmental risk comprised 10 planned and 14 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; and
  - 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 MODU and project vessels to third party vessels (commercial shipping and fishing) and shipping fairway
- Disturbance to seabed from activities including: drilling activities (conductor installation), MODU mooring (including piles), pipelay activities, installation of subsea infrastructure and ROV operation (including localised sediment relocation from jetting activities)
- Generation of noise from project vessels during normal operations
- Generation of noise from piling
- Atmospheric emissions from internal combustion engines on project vessels and planned flaring
- Atmospheric emissions from planned flaring
- Routine discharge of sewage, grey water and putrescible wastes to the marine environment, drain, deck and bilge water to marine environment, and cooling water or brine to the marine environment from project vessels
- Routine use and discharge of drilling and completions fluids to the marine environment
- Routine discharge of WBM and NWBM drill cuttings, WBM muds and non-routine discharge of wash water from mud pits discharge to the marine environment at the seabed and surface
- Routine use and discharge of flowline and subsea installation fluids to the marine environment including: flood/clean/gauge/test, contingency re-flooding, hydrotest, dewatering, leak test.

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 separation with existing facilities (e.g. GWA) resulting in a hydrocarbon release
- Loss of containment of subsea flowline
- Loss of hydrocarbons to marine environment from a vessel collision resulting in a breach of fuel tank
- Loss of hydrocarbons to marine environment during bunkering activities (not including NWBM)
- Minor deck and subsea spills including:
    - drilling and completions fluids stored on MODU and support vessels
    - flowline and subsea installation fluids stored on vessels
    - small subsea leaks from ROV use
    - small subsea leaks from wireline logging activities
- Accidental discharge of NWBM or base oil to marine environment during bulk transfer or due to failure of slip joint packers or emergency disconnect system
- Accidental discharge of solid wastes to marine environment from project vessels (excludes sewage, grey water, putrescible waste and bilge water)
- Wet buckle contingency discharge
- Unplanned venting of gas during drilling (well kick).
- Introduction of invasive marine species (IMS)
- Accidental collision between project vessels and marine fauna
- Dropped objects overboard resulting in seabed disturbance
- Disturbance to the seabed from loss of mooring integrity.

6. ONGOING MONITORING OF ENVIRONMENTAL PERFORMANCE

The Petroleum Activities Program will be managed in compliance with the EP 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 (consistent with the performance standards) 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 EP 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 EP, 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 Petroleum Activities 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 EP 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 GWF-2 Tieback EP 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 for routine operations 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.

Table 7.1: Relevant stakeholder identified for the Petroleum Activities Program

Stakeholder	Relevance
Department of Industry	Department of relevant Commonwealth Minister
Department of Mines and Petroleum	Department of relevant State Minister
Australian Maritime Safety Authority (maritime safety)	Maritime safety
Australian Fisheries Management Authority	Commonwealth fisheries management
Department of Fisheries (Western Australia)	State fisheries management
Commonwealth fisheries • Western Tuna and Billfish Fishery • North West Slope Trawl Fishery • Western Skipjack Fishery • Southern Bluefin Tuna Western Australian Fisheries • Mackerel • Pilbara (NCDSF) • Onslow Prawn Fishery • Northern Demersal Fishery	Commonwealth and State commercial fisheries
Department of Transport (Western Australia)	State marine pollution response
Department of Defence – Defence Property Services Group	Defence estate management
Australian Hydrographic Office	Marine safety (navigation and charts)

The following are stakeholders that have been identified as interested in the Petroleum Activities Program:

- Australian Maritime Safety Authority (marine pollution)
- Department of Environment
- 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

- North West Shelf Project participants:
    - BHP Billiton Petroleum
    - BP
    - Shell
    - MIMI
    - Chevron.

Woodside received feedback on the proposed Petroleum Activities Program from a range of relevant and interested 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 Petroleum Activities Program build upon Woodside’s extensive and ongoing stakeholder consultation for offshore petroleum activities in this area.

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.**

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 PUBLIC AFFAIRS 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 project vessels to third party vessels (commercial shipping and fishing) and shipping fairway	Isolated social impact potentially resulting from interference with other sea users (e.g. commercial and recreational 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 of permanent subsea infrastructure locations, and to generate Maritime Safety Information Notifications (MSIN) and Notice to Mariners (NTM) – navigation warning. Send consultation Fact Sheet to State and Commonwealth fisheries. AMSA RCC is notified of the Petroleum Activities Program. 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. Conduct activity specific (drilling and completions, flowline installation, subsea installations) risk assessment focusing on interactions with commercial shipping prior to commencing an activity.
2	Disturbance to seabed from activities including: • Drilling activities (conductor installation) • MODU mooring (including piles) • Pipelay activities • Installation of subsea infrastructure • ROV operation (including localised sediment relocation from jetting activities)	Damage to benthic habitats from anchoring, placement of flowline and subsea equipment including stabilisation materials	Medium	*Basis for well design (BfWD)* completed for each well to determine well locations to avoid hard substrate sensitive benthic habitats where possible to do so. *Woodside Anchor Handling and Marine Operations Standard & Woodside Engineering Standard – Rig Equipment* Piles for MODU mooring installed at the Lady Nora Pemberton and Sculptor Rankin well centres.

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				Wet stored items are logged and retrieved. Only DP vessels used for pipelay and subsea installation activities. Prelay surveys of flowline installation corridor and route identifies hard substrate sensitive benthic habitats to be avoided, where possible to do so. Buckle initiators and PLETs (and other subsea infrastructure as required) will be positioned on the seabed without the requirement for dragging, using LBL or USBL positioning technology.
3	Generation of noise from project vessels during normal operations	Temporary and minor disruption (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 (modified to include turtles). • Department of Parks and Wildlife's Whale Shark Code of Conduct The above requirements provided to the vessel masters.
4	Generation of noise from piling	Environmental impact - temporary disruption to fauna, including protected species	Low	For subsea hammer driven activities: • Marine fauna observer (MFO) will make observations for marine fauna prior to piling start-up, and maintain observations during activities, • application of a soft-start procedure at the commencement of piling, • piling activities will cease as soon as safely practicable in the event that marine fauna are identified in exclusion zones (species specific). Recommencement of activities will occur after fauna have moved out the exclusion zone or have not

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				been sighted for 20 minutes, • during humpback whale migration period (1st June – 31st October inclusive) use Passive Acoustic Monitoring (PAM) for cetacean observations relating to night time operations. At night time, no subsea hammer piling where there have been: • 3 or more shut-downs instigated from whales other than humpbacks entering exclusion zones while operating at full power, during the preceding day's daylight hours • 3 or more shut-downs instigated from Humpback whales entering exclusion zones while operating at full power, during the preceding day's daylight hours (only in periods where PAM is not utilised at night) • 3 or more shut-downs instigated from Whale sharks entering exclusion zones while operating at full power, during the preceding day's daylight hours • 3 or more shut-downs instigated from turtles entering exclusion zones while operating at full power, during the preceding d ay's daylight hours.
5	Internal combustion engines on project vessels	Reduced local air quality from atmospheric emissions	Low	Compliance with Marine Order 97 (marine pollution prevention – air pollution) vessels as required by vessel class
6	Planned flaring	Reduced local air quality from atmospheric emissions	Low	A well unloading package will be set-up and designed to minimise potential impacts during

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				well unloading operations. Woodside will review the contractor operational procedure to ensure it maximises flare efficiency and includes the requirements for a flare watcher.
7	Routine discharge of sewage, grey water and putrescible wastes to the marine environment	Localised and temporary effects to water quality and marine biota in offshore waters	Low	Compliance with MARPOL73/78 Annex IV, Marine Order 96 (Pollution prevention – sewage), as required by vessel/MODU class. Compliance with MARPOL73/78 Annex IV, Marine Order 95 (pollution prevention – garbage), as required by vessel/MODU class. 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 drain, deck and bilge water to marine environment	Localised and temporary effects to water quality and marine biota in offshore waters		
9	Routine discharge of cooling water or brine to the marine environment from project vessels	Localised and temporary effects to water quality and marine biota in offshore waters		
10	Routine use and discharge of drilling and completions fluids to the marine environment	Toxic effects to marine biota and reduction in water quality	Low	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). Bulk operational discharges conducted under MODU's PTW system (to operate discharge valves/pumps). Intervention fluids or suspension brine which may have come into contact with reservoir hydrocarbons should be processed through a water treatment package on the MODU prior to

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				discharge.
11	Routine discharge of WBM and NWBM drill cuttings, WBM muds and non-routine discharge of wash water from mud pits discharge to the marine environment at the seabed and surface	Localised burial and smothering of benthic habitats. Localised and temporary minor effects to water quality (e.g. turbidity increase) and marine biota in offshore waters and at Rankin Bank	Medium	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 and Part 2 – Rig.* NWBM drill cuttings returned to the MODU will be processed using SCE equipment prior to discharge. WBM mud cuttings returned to the MODU will be processed using SCE equipment prior to discharge. Cuttings must be discharged below the water line. NWBM cuttings treated to contain on average less than 10% oil by weight prior to 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. At the end of the Petroleum Activities Program, if there are excess WBM drilling fluids, opportunities to re-use those drilling fluids for other Woodside drilling activities will be reviewed. Mud pit discharges at Lady Nora Pemberton and Sculptor Rankin well centres will not be released at slack tidal velocity. Reuse of drilling muds during batch drilling of the same well sections at multi well drill centres where mud integrity is not compromised. Woodside procedure used to assess and

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				select chemicals (as described in row 10).
12	Routine use and discharge of flowline and subsea installation fluids to the marine environment including: • Flood, Clean, Gauge and Test • Contingency Re-flooding • Hydrotest • Dewatering • Leak test	Localised and temporary effects to marine biota and water quality	Low	Woodside procedure used to assess and select chemicals (as described in row 10). Compliance with *Woodside's Engineering Standard Pipelines Pre-commissioning / Commissioning* A procedure for hydrotesting work will be developed and implemented, that shall include ROV inspection during test to identify leakage and trigger activity to stop. Compliance with *Woodside Engineering Standard Pipelines Flooding, Cleaning, Gauging and Hydrotesting* Preferential discharge of pre-commissioning and preservation fluids at the GWA facility end of the flowline to limit potential impacts to sensitive benthic habitats.
Unplanned (accidents or incidents) Activities				
13	Loss of well integrity (well blowout) resulting in loss of hydrocarbons to the marine environment	Short to medium term impacts to the offshore marine environment Long-term impacts to sensitive shoals (e.g. Rankin Bank), nearshore areas of offshore islands (e.g. the Montebello/Barrow/Lowendal Island Group) and coastal shorelines (e.g. Ningaloo Coast) Disruption to marine fauna, including protected species. Potential medium-term interference with or displacement of other sea users (e.g. fishing and shipping)	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

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				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 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

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				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*. MODU and PIV Safe Work Procedures developed and followed for bulk transfer to prevent objects being dropped overboard onto well heads. Isolations must be tested (proven) prior to the commencement of any subsea installation activities. A detailed set of procedures for putting isolations in place will be developed prior to commencing subsea installation activities. See Appendix B for controls for spill response activities.
14	Loss of separation with existing facilities (e.g. GWA) resulting in a hydrocarbon release	Short to medium term impacts to the offshore marine environment Long-term impacts to sensitive shoals (e.g. Rankin Bank), nearshore areas of offshore islands (e.g. the Montebello/Barrow/Lowendal Island Group) and coastal shorelines (e.g. Ningaloo Coast) Disruption to marine fauna, including protected species Potential medium-term interference with or displacement of other sea users (e.g. fishing and shipping)	Medium	Comply with Marine Order 30 and 21 (as in row 1) *Woodside Anchor Handling and Marine Operations Standard*, *Woodside Engineering Standard – Rig Equipment* and *Woodside engineering Standard Mobile Offshore Drilling Unit Mooring Design*. *Woodside Engineering Standard - Anchoring a MODU in a Developed Subsea Field*. All project vessels operating on DP within the GWA facility 500 m safety exclusion zone are required to: • conduct Pre-activity DP trial before entering.

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				• comply with the DP Environmental Limits as defined in each vessels DP Operations Manual • have DP reference system redundancy and DP power system redundancy • comply with a project SIMOPS management plan. Pipelay PIV is accompanied and tethered to the assist tug at all times during laydown of the flowline when present within the GWA facility 500 m safety exclusion zone. See Appendix B for controls for spill response activities.
15	Loss of containment of subsea flowline, as a result of the following: • failure of flowline isolation barrier during tie-back activities to the GWF-1 flowline • dropped object from project vessels onto live flowline • MODU anchor drag over live flowline during drilling. • abandonment and recovery line dragged over existing subsea assets	Short to medium term disruption to marine fauna, including protected species Short to medium term impacts to water quality	Low	*Woodside Anchor Handling and Marine Operations Standard, Woodside Engineering Standard – Rig Equipment* Woodside Engineering Standard - Anchoring a MODU in a Developed Subsea Field). MODU and PIV Safe Work Procedures developed and followed for bulk transfer to prevent objects being dropped. Pre-laid mooring system deployed for anchoring a MODU at Dockrell and Keast Dockrell where the mooring analysis determines this to be required. Contractor flowline protection study/philosophy completed and requirements included into flowline design. See Appendix B for controls for spill response activities.
16	Loss of hydrocarbons to marine environment from a vessel collision resulting in a breach of fuel tank	Localised, long term impacts to key primary producer habitat at Rankin Bank Minor and temporary disruption to marine	Medium	Comply with Marine Order 30 and 21 (as in row 1)

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
		fauna, including protected species Minor and/or temporary impacts to water quality		Notify AHS (see row 1) Send consultation Fact Sheet to State and Commonwealth fisheries. Notify AMSA RCC (see row 1) Establish and enforce a 500 m safety / exclusion zone (see row 1) Conduct activity specific risk assessment (see row 1) *Woodside Marine – Charters Instructions* See Appendix B for controls for spill response activities.
17	Loss of hydrocarbons to marine environment during bunkering activities (not including NWBM)	Minor and temporary disruption to marine fauna, including protected species Minor and/or temporary impacts to water quality	Low	Compliance with MARPOL 73/78 Annex I. As per Woodside Standards: Rig Equipment • 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 • all bulk transfer hoses shall be tested for integrity before use

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				Construction Vessels A detailed bunkering plan and procedures will be developed for all vessels that will bunker in Operational Areas. The plans/procedures shall include, but not be limited to: • bunkering capacity, frequency and volumes • nominal limiting metocean conditions for bunkering operations • minimum contingency bunker volume required onboard Construction Vessel before operations must cease, both for cyclonic and non-cyclonic operations • the capacity and specification of proposed bunker vessels • emergency procedures in the event of spill, loss of position, mooring system failure etc. Contractor bunkering procedure to be implemented during MODU/PIV bunkering activities, and must be assessed by Woodside as meeting a number of requirements (controls).
18	Minor deck and subsea spills including: • drilling and completions fluids stored on MODU and support vessels • flowline and subsea installation fluids stored on vessels • small subsea leaks from ROV use • small subsea leaks from wireline logging activities	Minor and temporary disruption to marine fauna, including protected species Minor and/or temporary impacts to water quality	Low	Compliance with MARPOL 73/78 Annex I. Woodside procedure used to assess and select chemicals (as described in row 10). Compliance with Compliance with *Woodside's Storage Requirements* Drum and paint storage shall be bunded with drains directed to a holding tank; all deck drainage in areas where there is potential for

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				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. Wireline equipment will be designed to enable (1) lubricators bled through a controlled system and the gas is vented, and (2) block and bleed valves that can be isolated on all flexible lines and hoses. PIVs have self-containing hydraulic oil drip tray management system to contain any on-deck spills of hydraulic oil from ROVs. See Appendix B for controls for spill response activities.
19	Accidental discharge of NWBM or base oil to marine environment during bulk transfer or due to failure of slip joint packers or emergency disconnect system	Minor and temporary disruption to marine fauna, including protected species Minor and/or temporary impacts to water quality	Low	Rig Equipment Standards (see row 17) *Woodside NWBM Start-up Checklist* (see row 11). Deck areas on the MODU are bunded and bunged (see row 18). North West European Area (NWEA) Guidelines. 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,

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
				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. See Appendix B for controls for spill response activities.
20	Accidental discharge of solid wastes to marine environment from project vessels (excludes sewage, grey water, putrescible waste and bilge water)	Minor and temporary disruption to marine fauna, including protected species Minor and/or temporary impacts to water quality	Low	Compliance with Marine Order 95 (see row 9). Compliance with Marine Order 94 (pollution prevention – packaged harmful substances), as required by vessel/MODU 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.
21	Wet buckle contingency discharge	Minor and temporary disruption to marine fauna Minor and/or temporary impacts to water quality	Low	Woodside procedure used to assess and select chemicals (as described in row 10). A procedure for hydrotesting work will be developed and implemented (see row 12) Compliance with *Woodside Engineering Standard Pipelines Flooding, Cleaning, Gauging and Hydrotesting*
22	Unplanned venting of gas during drilling (well kick).	Localised and temporary reduction in air quality as the gas vents to the atmosphere	Low	*As per Woodside standards and procedures* (as described in row 13) Well specific barrier elements, and the specified verification requirements, are identified in accordance with *Well Acceptance Criteria Procedure*
23	Accidental introduction of invasive marine species	Introduction and establishment of IMS (invasive marine species) in Rankin Bank	Medium	Adherence to the Woodside Energy Limited

	Source of risk (Hazard)	Potential environmental impact	Residual risk	Control mitigation measures
		and change in community structure / displacement of native marine species		*Invasive Marine Species Management Plan* Implementation of the GWF-2 Invasive Marine Species Management Plan. The GWF-2 IMS Management Plan aims to mitigate IMS risks specifically to Rankin Bank.
24	Accidental collision between support vessels and marine fauna	Minor and temporary disruption to marine fauna, including protected species	Low	EPBC Regulations 2000 – Part 8 Division 8.1 (modified to include turtles) & Department of Parks and Wildlife's Whale Shark Code of Conduct (see row 3).
25	Dropped objects overboard resulting in seabed disturbance	Localised short-term damage of benthic subsea habitats in the immediate location of the dropped object	Low	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.
26	Disturbance to the seabed from loss of mooring integrity	Localised and long term physical damage to corals and hard substrate at Rankin Bank as well as hard substrate around Rankin Bank and any associated filter feeder communities (other benthic habitats)	Medium	*Woodside Anchor Handling and Marine Operations Standard* *Woodside Engineering Standard – Rig Equipment* *Woodside engineering Standard Mobile Offshore Drilling Unit Mooring Design*

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) describes Woodside's role as a control agency and details the following support arrangements:

- Master services agreement with Australian Marine Oil Spill Centre (AMOSC) for the supply of experienced personnel and equipment, including a subsea first response toolkit; and
- 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.

Oil pollution First Strike Plan – GWF-2 Tieback

The GWF-2 Tieback 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 project 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. These exercises are conducted to test the response arrangements outlined in the GWF-2 Tieback 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 assessment for GWF-2 Tieback

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 proposed Petroleum Activities Program would be mitigated and managed to as low as reasonably practicable (ALARP) and would be of an acceptable level.

The following oil spill response strategies were evaluated and subsequently pre-selected for a significant oil spill event (level 2 or 3 under the National Plan) from the proposed Petroleum Activities Program. Implementation of these response strategies would be re-assessed during a spill event, with consideration of the size of spill, weather conditions and other constraints:

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:
    - Source control (well capping); and
    - Well intervention (relief well drilling).
3. 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.
4. Shoreline protection – Shoreline protection 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.
5. Shoreline cleanup – Woodside has access to equipment stockpiles to support initial response requirements at priority receptors and would supplement resources, depending on the type of cleanup required, through contractors. Some equipment maybe procured locally on the day with additional equipment being sourced within Western Australia, interstate and internationally, commensurate with the scale and progressive nature of shoreline impact.
6. 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.
7. 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
    - Arrange for sufficient waste storage, handling, transport and disposal capability to support continuous response operations.

To achieve these objectives, Woodside has access to waste storage in Exmouth and Karratha 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.

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's feedback acknowledged Woodside had identified that the Operational Area overlaps a promulgated shipping fairway and proposed well sites would be located very close to or within the shipping fairway. AMSA have requested the Rescue Coordination Centre is contacted before any operations commence with information about the vessels, area of operation and the activity's start/end dates so an Auscoast warning can be broadcast. Additionally, the Australian Hydrographic Service must be contacted no less than two working weeks before commencing operations for the promulgation of related Notices to Mariners. AMSA have also requested to be contacted at the conclusion of the activity to comment on the operations and the interaction with commercial shipping at the time of the survey (i.e. any lessons learned with regard to the amount and type of vessels sighted in the area of operations).	Woodside acknowledges the Department's response. AMSA data is consistent with Woodside's assessment of commercial shipping in the region. Section 5.6.1 details the risk assessment for the physical presence of activity related rigs and support vessels and interactions with other users in the area including shipping. This section outlines the performance standards and measurement criteria including all notification requirements identified by AMSA. Woodside notes AHS communications advice and timing, which has been included in the appropriate performance standard and measurement criteria. Woodside is also committed to sharing lessons learned and will contact AMSA Nautical Advice at the conclusion of the activity, or sooner, should there be opportunities to improve the way the activity is conducted or if there are lessons that could be shared with other operators.	Woodside acknowledged receipt of feedback provided by AMSA and held two telephone meetings to discuss the issue, which included discussion of other instances where similar activities had been successfully undertaken within or near a shipping fairway. Additional correspondence was provided by AMSA on 27 February relating to advice provided to Woodside on a previous activity conducted within a shipping fairway.

Stakeholder	Summary of stakeholder feedback	Woodside assessment of feedback	Woodside response
Australian Hydrographic Service	Activities noted.	Australian Hydrographic Service are responsible for issuing Notices to Mariners. In accordance with feedback provided by AMSA, Woodside will contact the Australian Hydrographic Service at least two weeks before the commencement of operations, and as appropriate through the course of the activity, so that Notices to Mariners can be issued.	No immediate action required. Australian Hydrographic Service to be contacted no less than 2 working weeks before commencing operations, and as appropriate through the course of the activity, for the promulgation of Notices to Mariners

Stakeholder	Summary of stakeholder feedback	Woodside assessment of feedback	Woodside response
Western Australian Department of Transport (DoT)	Activities noted. DoT acknowledged receipt of the First Strike Plan for the GWF-2 Tieback, confirmed that all references to DoT notifications are appropriate and that the document will be kept on their records. DoT requested that they be sent any significant updates that you make to this document.	Woodside acknowledges the Department's response. Woodside maintains a regular dialogue with DoT. Provision of the draft Pollution First Strike Plan for the GWF- 2 Tieback follows on from previous discussions that outlined that the Activity First Strike Plan and associated response plans are based on oil spill modelling which has been used as a guide to define feasible response strategies. The Activity First Strike Plan aligns with response strategies discussed in a meeting with DoT on Wednesday 25 March 2015. This first strike plan was provided as part of preparations for the submission of the EP for this activity which is supported by our Oil Pollution Emergency Arrangements (Australia), for which WA DoT is on our controlled document distribution list.	No immediate action required. Any significant updates to the document to be provided to DoT. Woodside maintains a regular dialogue with the Department of Transport to advise and seek input on planned and upcoming activities. Woodside will provide the Department of Transport with further information about the activity, such as vessel information and start dates when confirmed, ahead of the activity commencing.

Stakeholder	Summary of stakeholder feedback	Woodside assessment of feedback	Woodside response
Commonwealth fisheries: Western Tuna and Billfish Fishery North West Slope Trawl Fishery Western Skipjack Fishery Southern Bluefin Tuna Fishery	No response at the time of submission.	Limited historical fishing activity conducted within the Operational Area.	No action required.
Western Australian fisheries: Mackerel Pilbara (NCDSF) Onslow Prawn Northern Demersal Fishery	No response at the time of submission.	Limited historical fishing activity conducted within the Operational Area.	No action required.
Department of Industry	No response at the time of submission.	Woodside believes it has given the Department of Industry adequate time and information upon which to provide feedback about the proposed activity.	No action required.
Department of Mines and Petroleum	DMP acknowledged receipt of information, that the activity will be assessed by NOPSEMA and that no further information is required at this stage. DMP requested to be kept informed on the progress of the development.	Woodside acknowledges the Department's response. Woodside concurs with Department's view on activity assessment.	No immediate action required. Notifications to be provided in accordance with regulation 30 of the OPGGSER.

Stakeholder	Summary of stakeholder feedback	Woodside assessment of feedback	Woodside response
Australian Fisheries Management Authority (AFMA)	AFMA acknowledged receipt of information and recommended consulting with fishers in the area as per guidance provided on AFMA's website.	Woodside acknowledges AFMA's feedback and has provided information on the proposed activity to fishers in the area in accordance with AFMA's guidance.	No further action required.
Department of Fisheries	No response at the time of submission.	Woodside believes it has given the DoF adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
Department of Defence – Defence Property Services Group	No response at the time of submission.	Woodside believes it has given the Department of Defence adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
AMSA (Marine Pollution)	No response at the time of submission.	The first strike plan was provided as part of preparations for the submission of the Environment Plan for this activity which is supported by our Oil Pollution Emergency Arrangements (Australia), for which AMSA is on our controlled document distribution list. Woodside has provided a copy of the first strike plan for AMSA's review and comment.	No immediate action required. A copy of the final accepted first strike plan will be provided to AMSA.
Border Protection Command	Activities noted; no further comments at the time of submission.	Woodside acknowledges the Border Protection Command's response	No immediate action required. Woodside will advise Border Protection Command ahead of the activity with further information such as vessel information and start dates when confirmed, ahead of the activity commencing.

Stakeholder	Summary of stakeholder feedback	Woodside assessment of feedback	Woodside response
Department of Environment	No response at the time of submission.	Woodside believes it has given the Department of Environment adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
Commonwealth Fisheries Association	No response at the time of submission.	Woodside believes it has given the Commonwealth Fisheries Association adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
Western Australian Fishing Industry Council	No response at the time of submission.	Woodside believes it has given the Western Australian Fishing Industry Council adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
Pearl Producers Association	No response at the time of submission.	Woodside believes it has given the Pearl Producers Association adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
Recfishwest	No response at the time of submission.	Woodside believes it has given the Recfishwest adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
WWF	No response at the time of submission.	Woodside believes it has given the WWF adequate time and information upon which to provide feedback about the proposed activity.	No further action required.

Stakeholder	Summary of stakeholder feedback	Woodside assessment of feedback	Woodside response
Australian Conservation Foundation	No response at the time of submission.	Woodside believes it has given the Australian Conservation Foundation adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
Wilderness Society	No response at the time of submission.	Woodside believes it has given the Wilderness Society adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
International Fund for Animal Welfare	No response at the time of submission.	Woodside believes it has given the International Fund for Animal Welfare adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
APPEA	No response at the time of submission.	Woodside believes it has given APPEA adequate time and information upon which to provide feedback about the proposed activity.	No further action required.
North West Shelf Project participants	No formal response at the time of submission.	Woodside, as operator of the NWS Project, maintains regular engagement with the NWS Project participants on a range of matters related to this activity.	No further action required.