



Title: **Jabiru and Challis Fields (Decommissioned State)
Environment Plan Summary**



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1 INTRODUCTION

This Environment Plan summary document has been prepared to comply with the requirements of Regulation 11(3) and (4) of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (OPGGs(E)R).

The Jabiru and Challis Fields (Decommissioned State) Environment Plan (IC-HSE-D30-854824) (EP) was submitted by PTTEP Australasia (Ashmore Cartier) Pty Ltd (PTTEP AA) as the operator and nominated titleholder of AC/L1 (Jabiru Field) and AC/L3 (Challis Field), located in Commonwealth waters. The EP was accepted by NOPSEMA in accordance with Regulation 11 of the OPGGS(E)R on 21 May 2014.

PTTEP AA has decommissioned the Jabiru and Challis Fields, located approximately 600 km north-west of Darwin and 750 km north-east of Broome. No further activities are planned.

On 10 June 2013, NOPSEMA requested PTTEP AA submit revised EP's associated with Jabiru and Challis Field Decommissioning with in accordance with Regulation 18(8) of the OPGGS(E)R (as in force before 28 February 2014). In response to NOPSEMA's request for revised plans, PTTEP AA submitted the EP for the combined Jabiru and Challis Facilities to document their decommissioned state.

2 LOCATION OF ACTIVITY

The location of permit areas AC/L1 (Jabiru) and AC/L3 (Challis) containing the infrastructure is provided in Figure 1 and Table 1. Locations of abandoned infrastructure are provided in Section 3.

Table 1: Permit Area Coordinates

Permit Corner Point (Refer Figure 1)	Longitude	Latitude-	Permit
1	124° 55' 0.0012"	12° 19' 59.9982"	AC/L3
2	125° 10' 0.0012"	12° 19' 59.9982"	AC/L3
3	125° 10' 0.0012"	12° 4' 59.9982"	AC/L3
4	124° 55' 0.0012"	12° 4' 59.9982"	AC/L3
5	125° 0' 0"	11° 54' 59.997"	AC/L1
6	124° 55' 0.0012"	11° 54' 59.997"	AC/L1
7	124° 55' 0.0012"	12° 0' 0"	AC/L1
8	125° 4' 59.9982"	12° 0' 0"	AC/L1
9	125° 4' 59.9982"	11° 54' 59.997"	AC/L1
10	125° 10' 0.0012"	11° 54' 59.997"	AC/L1
11	125° 10' 0.0012"	11° 49' 59.9982"	AC/L1
12	125° 0' 0"	11° 49' 59.9982"	AC/L1

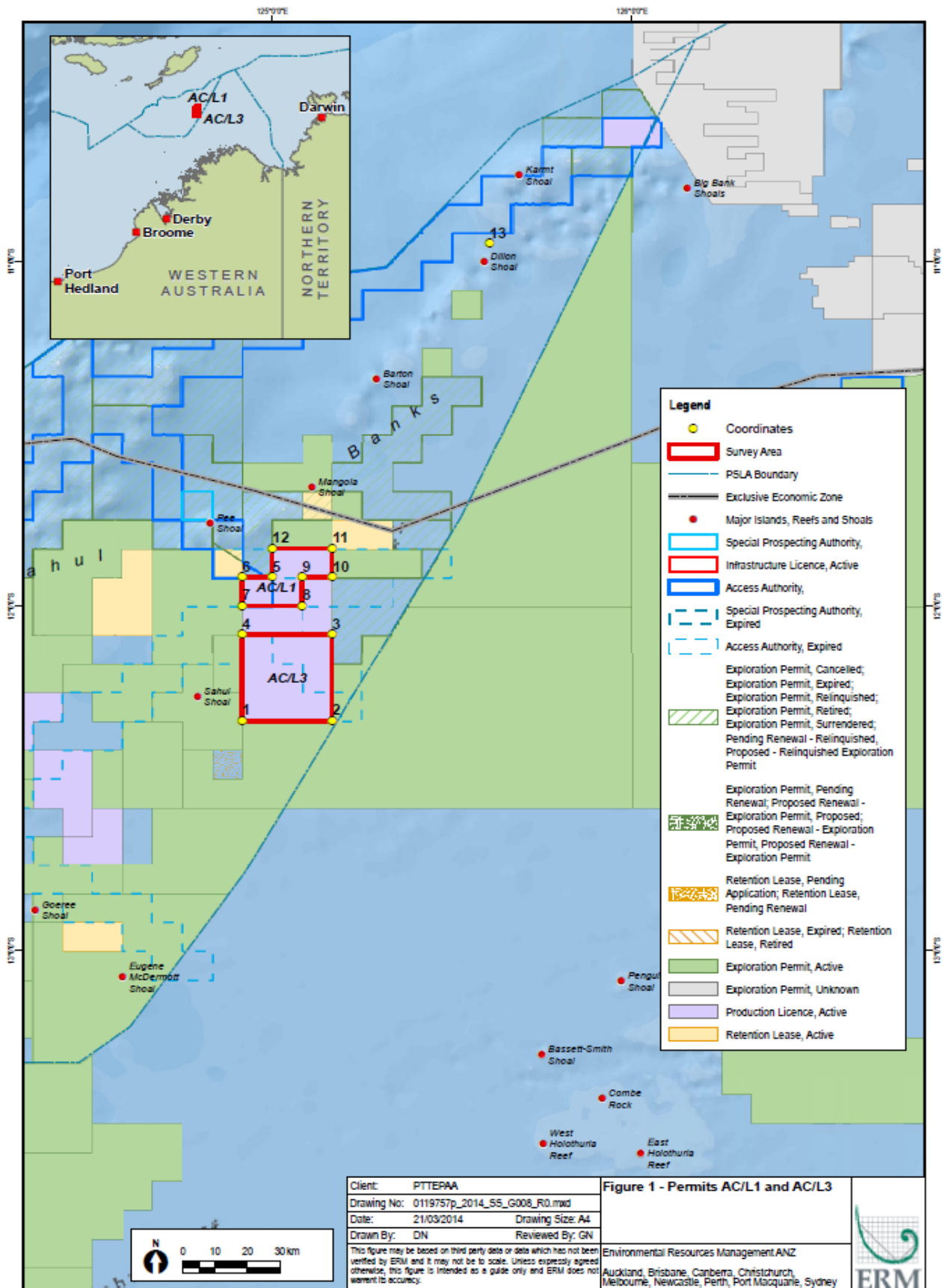


Figure 1 – Permit Location Map



3 DESCRIPTION OF ACTIVITY

Activities associated with the Jabiru and Challis abandonment have been complete since 7 June 2013. No further actions are proposed for the decommissioned in-situ subsea infrastructure located in the Jabiru and Challis Fields, as the decommissioning has been completed. This section details the current status and location of the decommissioned in-situ infrastructure within the Jabiru and Challis Fields.

3.1.1 Plugged and Abandoned Wells

The wells within the Jabiru and Challis Fields were plugged and abandoned between June 2011 and May 2012 in accordance with the JV CV Phase 1 Abandonment Programme (IC-DR-041-810381) approved by the Northern Territory Department of Resources on behalf of the Commonwealth and in accordance with the Phase 2 Outline Abandonment Programme (IC-DR-041-811102) approved by the National Offshore Petroleum Safety Authority (approval reference R006116-R006130:A185415ID:1411-1425).

The wells were abandoned in accordance with the Oil and Gas United Kingdom's Guidelines for the Suspension and Abandonment of Wells, Issue 3, January 2009. All wellheads were removed; in accordance with the environmental approval (EPBC 2003/942) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The locations of all wells are provided below.

Location	Latitude	Longitude	Water Depth	Permit
Jabiru-1A	11° 55' 55.554" S	125° 00' 19.022" E	123.1 mAHD	AC/L1
Jabiru-5	11° 56' 19.664" S	124° 59' 26.98" E	120.0 mAHD	AC/L1
Jabiru-6	11° 55' 43.654" S	125° 00' 50.672" E	120.0 mAHD	AC/L1
Jabiru-7ST1	11° 55' 08.774" S	125° 01' 06.741" E	121.6 mAHD	AC/L1
Jabiru-8AST1	11° 56' 05.314" S	125° 00' 42.232" E	120.9 mAHD	AC/L1
Jabiru-11ST1	11° 56' 26.815" S	124° 59' 40.122" E	121.9 mAHD	AC/L1
Jabiru-13ST1	11° 56' 50.405" S	124° 58' 42.763" E	124.9 mAHD	AC/L1
Jabiru-14ST1	11° 55' 53.868" S	125° 00' 43.466" E	121.0 mAHD	AC/L1
Challis-1	12° 07' 20.395" S	125° 00' 20.532" E	106.0 m to mean sea level	AC/L3
Challis-2	12° 07' 12.149" S	125° 01' 10.851" E	105.0 m to mean sea level	AC/L3
Challis-2A	12° 07' 11.563" S	124° 01' 11.313" E	105.0 m to mean sea level	AC/L3
Challis-3	12° 07' 49.337" S	125° 01' 26.851" E	102.0 m to mean sea level	AC/L3
Challis-4	12° 07' 40.288" S	124° 59' 46.744" E	108.0 m to mean sea level	AC/L3
Challis-5	12° 07' 15.064" S	124° 59' 52.376" E	108.0 m to mean sea level	AC/L3
Challis-6	12° 06' 29.689" S	125° 02' 08.993" E	100.0 m to mean sea level	AC/L3
Challis-7	12° 06' 14.239" S	125° 02' 30.465" E	104.0 m to mean sea level	AC/L3
Challis-8	12° 06' 02.691" S	125° 02' 56.597" E	103.0 m to mean sea level	AC/L3
Challis-9	12° 05' 52.681" S	125° 03' 03.794" E	104.0 m to mean sea level	AC/L3
Challis-10	12° 07' 31.183" S	125° 02' 06.896" E	103.0 m to mean sea level	AC/L3
Challis-11	12° 05' 51.84" S	125° 03' 20.815" E	103.0 m to mean sea level	AC/L3
Challis-12	12° 07' 24.007" S	125° 00' 13.212" E	108.0 m to mean sea level	AC/L3
Challis-13	12° 06' 08.055" S	125° 02' 43.528" E	102.3 m to mean sea level	AC/L3
Challis-14	12° 06' 36.583" S	125° 01' 58.427" E	99.0 m to mean sea level	AC/L3
Challis-15	12° 06' 06.33" S	125° 02' 48.42" E	106.0 m to mean sea level	AC/L3

Location	Latitude	Longitude	Water Depth	Permit
Cassini-1	12° 08' 42.35" S	124° 58' 09.749" E	116.0 m to mean sea level	AC/L3
Cassini-2	12° 08' 49.719" S	124° 57' 02.347" E	113.0 m to mean sea level	AC/L3

3.1.2 Challis Single Anchor Leg Rigid Arm Mooring (SALRAM)

The Challis SALRAM was intentionally sunk during the decommissioning programme in March 2012, in accordance with condition 6 of the Sea Dumping Permit for the in-situ decommissioning of the SALRAM at the Challis Field under the Environment Protection (Sea Dumping) Act 1981. The Challis SALRAM is a steel structure consisting of a mooring arm, a mooring column and a gravity mooring base with dimensions displayed in Figure 3.1 and location coordinates provided below:

Location	Latitude	Longitude	Water Depth (m)
SALRAM Mooring Arm	12° 07' 16.286" S	125° 00' 47.805" E	85.81m to mean sea level
SALRAM Gravity Base	12° 07' 12.453" S	125° 00' 48.113" E	88.82m to mean sea level

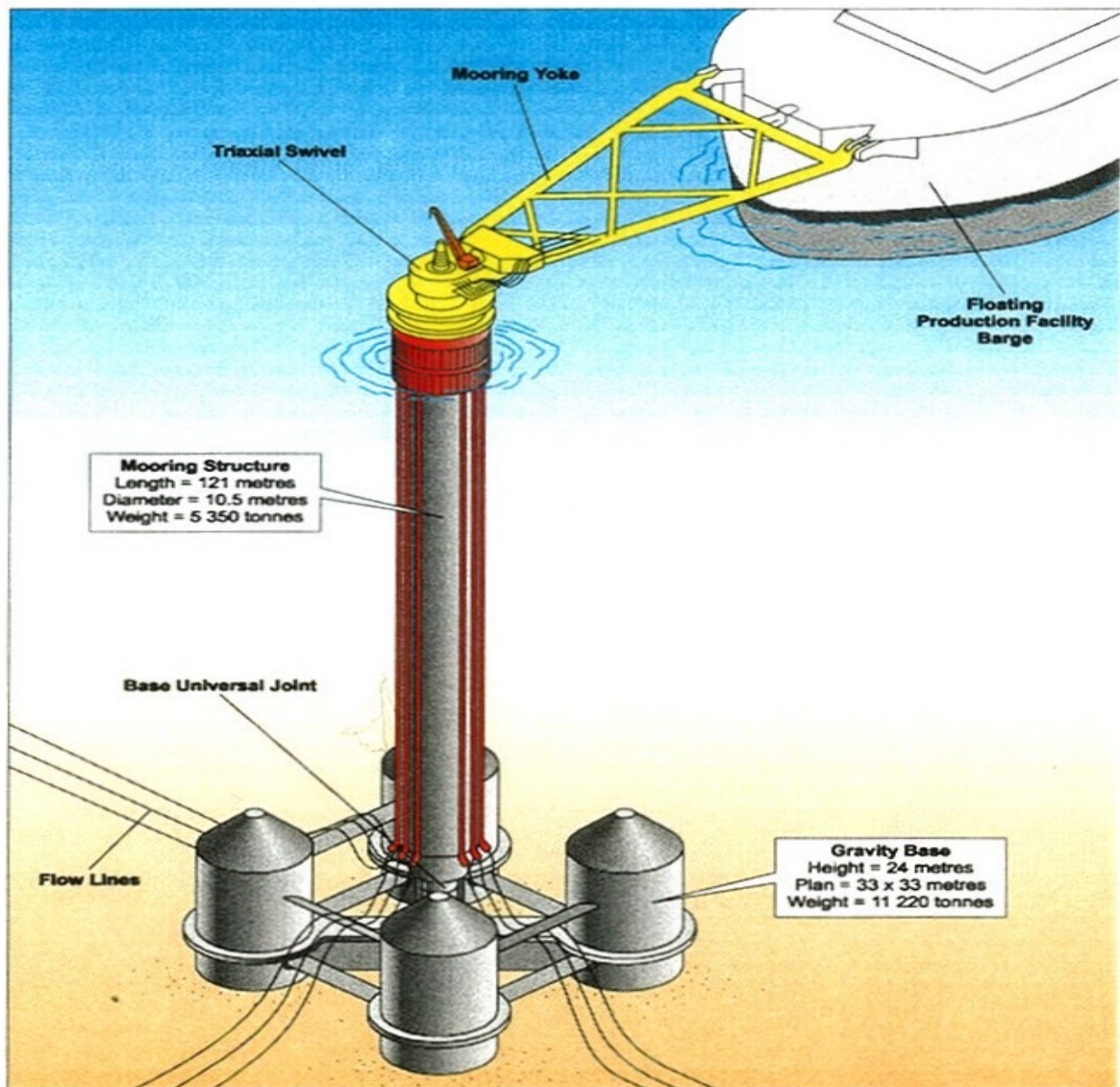


Figure 3.1 SALRAM Details



3.1.3 Jabiru Mid-Water Buoys (MWB)

The Jabiru MWBs were intentionally sunk during the decommissioning programme from 28 May 2013 to 7 June 2013, in accordance with Condition 13 of the Jabiru RTM and MWB Sea Dumping Permit (SD2011/2062) at the Challis Field under the *Environment Protection (Sea Dumping) Act 1981*. The Jabiru MWB's are four steel structures, approximately 6 m long and 3m in diameter, sitting in 105m water depth at Challis. Coordinates of the MWBs decommissioning locations are provided below:

Location	Easting (m)	Northing (m)	Permit Area
J1A Centre	718966.20	8659124.46	AC/L3
J11/J13 Centre	718964.69	8659054.41	AC/L3
J7 Centre	718892.73	8659125.41	AC/L3
J8A Centre	718893.60	8659053.34	AC/L3

3.1.4 Jabiru Riser Turret Mooring (RTM)

The Jabiru RTM is a 93 m long, cylindrical steel structure, approximately 6 m in diameter used as a mooring for the Jabiru Venture FPSO during its operation, providing support for the flowlines rising from the seabed onto the FPSO. The RTM has been made safe in a horizontal position on the seafloor in accordance with Sea Dumping permit SD2011/2062. It is located in approximately 120m of water at the coordinates below:

Location	Latitude	Longitude	Permit Area
RTM	11° 55' 27" S	125° 00' 27" E	AC/L1

3.1.5 Jabiru and Challis Flowlines

The Challis Field subsea flowlines comprise a total of 80 km of flowlines and control umbilicals that have been left decommissioned in-situ in accordance with the Challis decommissioning approval under the EPBC Act (2003/942). Similarly, the Jabiru Field subsea flowlines comprise a total of 50 km of flowlines and umbilicals that have been left decommissioned in-situ. Over the 22 years since their installation the flowlines have had some produced water scale deposited internally, and have become embedded in the seabed with typically only the upper 10-25% of the line exposed at the surface. A combination of settlement and sediment transport is considered the most likely process that results in the flowlines becoming buried into the seabed and should this process continue it is possible within the next 10-50 years the flowlines may become completely buried. The flowlines are expected to have a long lifetime. They are constructed of very stable, non-biodegradable materials (high grade polyamide nylon and stainless steel) and expected to have a service life of many decades, with design parameters of 70°C and 172 bar. Out of service, and in the stable environment of the sea floor (temperature approximately 23°C and no differential pressure), the flowlines are expected to retain its general integrity for much longer, likely many hundreds of years. The layouts of the flowlines and umbilicals can be seen in Figures 3.2 & 3.3 and the locations of the flowlines can be seen in relation to locations of the wells with well coordinates provided in Section 3.1.1.



Figure 3.2 Challis Field Layout

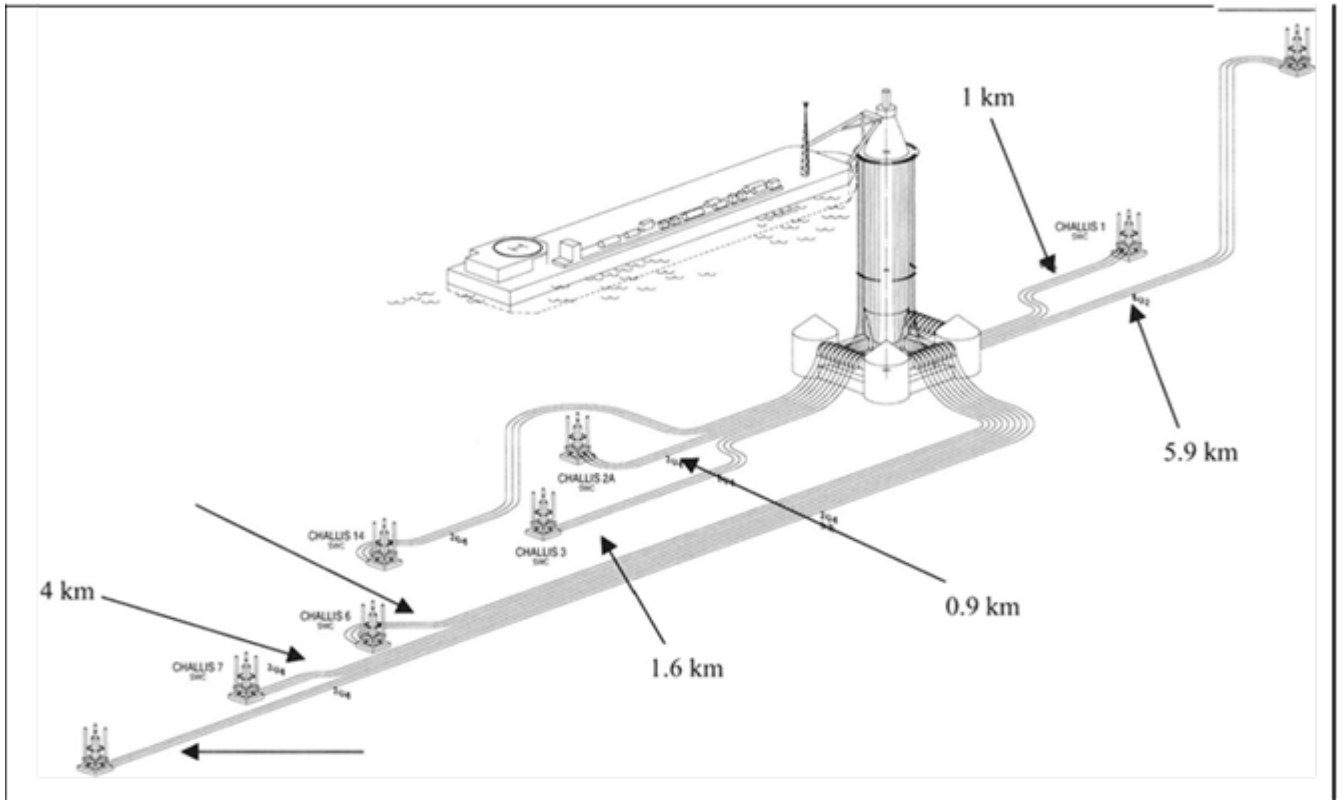
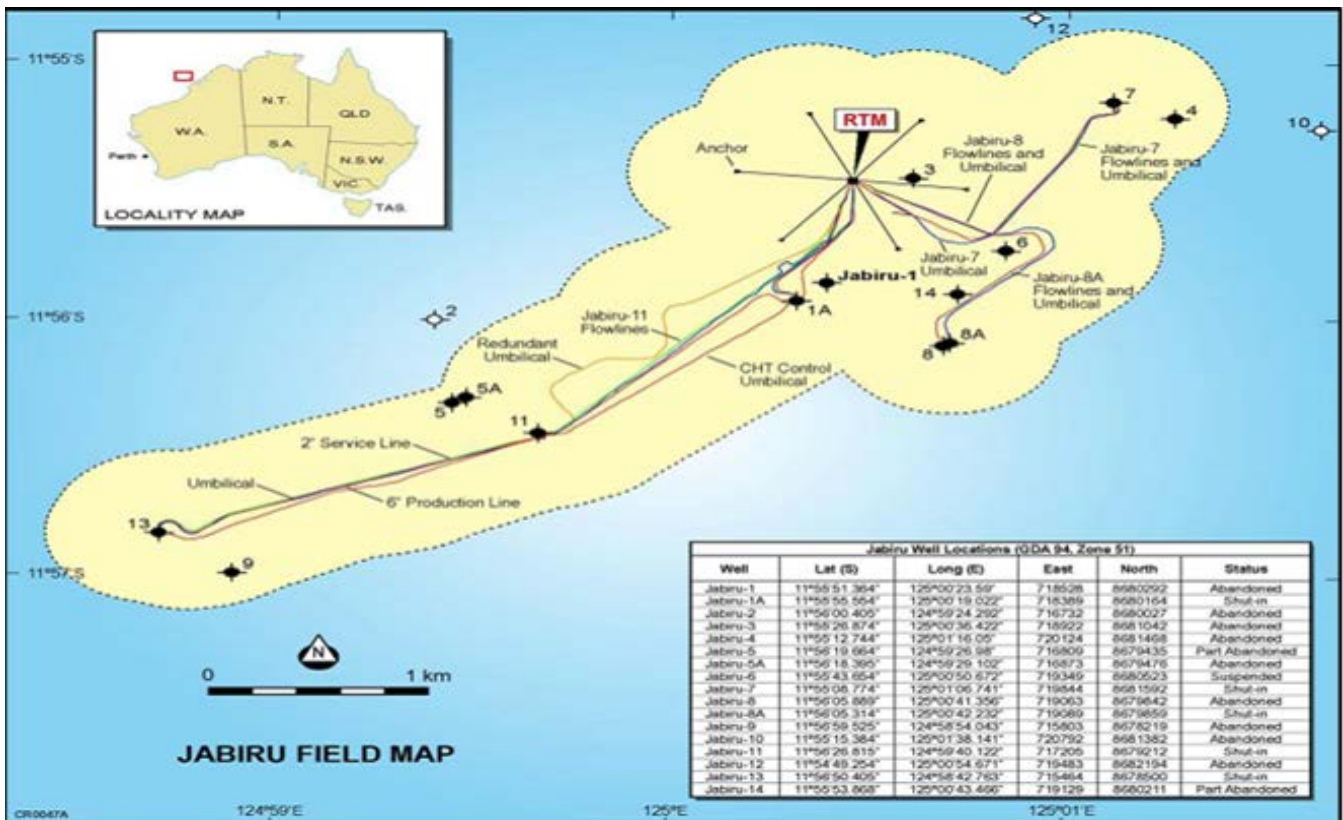


Figure 3.3 Jabiru Field Layout





4 DESCRIPTION OF RECEIVING ENVIRONMENT

4.1 PHYSICAL AND BIOLOGICAL ENVIRONMENT

The permits are located on Australian continental shelf in the Timor Sea. In general, the continental shelf is a flat featureless submarine plain that dips gently northward toward the edge of the shelf, but scattered throughout the region are sea mounts, shoals and occasional islands that support a diverse flora and fauna. The Timor Trough, with water depths up to 9,000 m, marks the northern boundary of the continental shelf.

Regionally, the permits are located in the Timor Province Bioregion of the North West Marine Region and within the larger Northwest Marine Region (NWMR) Planning Area. The variety of geomorphic features in the Timor Province results in several distinct habitats and biological communities, many of which are in close proximity to each other. The reefs and islands of the bioregion are regarded as particular hotspots for biodiversity and support a range of important pelagic and benthic ecological communities. A high level of endemism has been identified in demersal fish communities of the continental slope in the Timor Province, with two distinct communities identified (upper slope and mid slope). Almost half of the reefs in the NWMR occur in the Timor Province Bioregion, including Ashmore Reef, Cartier Island, Seringapatam Reef and Scott Reef which occur in excess of 130 km south west of the well locations.

The permit areas fall in the continental shelf zone on the Sahul Shelf in approximately 100m of water. The Sahul Shelf is predominantly comprised of soft sediment with little topographic relief and subsequently little diversity in habitat. The extensive soft sediment habitat, in combination with little topographic relief, has very large expanses of monotonous benthos because there are limited different habitats or niches for animals to occupy.

A number of ecologically rich shoals are found within a 200 km radius of the permit areas, with Sahul Shoal the closest at approximately 20km distant. Studies of a number of these shoals by the Australian Institute of Marine Science and ERM (2012) confirmed that they contained diverse communities of flora and fauna dominated by photosynthetic organisms and there are pronounced differences in abundances of species between each shoals yet similarities in the species found (Heyward et al., 2010; Heyward et al, 2011).

4.2 PROTECTED FAUNA

An EPBC Act Protected Matters Database search for endangered and vulnerable marine species was undertaken based on the permit areas. The search identified a total of eight species listed as Threatened and Migratory and six species listed as Migratory that may occur, or are known to occur, within a 20 km radius of the permit areas (Table 2). The search did not identify listed TECs or recorded sensitive environments within a 20 km radius of the permit areas.

Table 2: EPBC Listed and or Migratory Species that May Occur in the Permit Areas

Species Type	Scientific Name	Common Name	Status	Type of Presence
Cetaceans	<i>Balaenoptera musculus</i>	Blue whale	Endangered, Migratory	Species or species habitat <u>may</u> occur within area
	<i>Megaptera novaeangliae</i>	Humpback whale	Vulnerable, Migratory	Species or species habitat <u>may</u> occur within area
	<i>Balaenoptera bonaerensis</i>	Antarctic minke whale	Migratory	Species or species habitat <u>may</u> occur within area
	<i>Balaenoptera edeni</i>	Bryde's whale	Migratory	Species or species habitat <u>may</u> occur within area
	<i>Orcinus orca</i>	Killer whale, orca	Migratory	Species or species habitat <u>may</u> occur within area
	<i>Physeter macrocephalus</i>	Sperm whale	Migratory	Species or species



Species Type	Scientific Name	Common Name	Status	Type of Presence
				habitat <u>may</u> occur within area
	<i>Tursiops aduncus</i>	Spotted bottlenose dolphin	Migratory	Species or species habitat <u>may</u> to occur within area
Marine Reptiles	<i>Aipysurus foliosquama</i>	Leaf-scaled Seasnake	Critically Endangered	Species or species habitat <u>likely</u> to occur within area
	<i>Caretta caretta</i>	Loggerhead turtle	Endangered, Migratory	Foraging, feeding or related behaviour <u>likely</u> to occur within area
	<i>Chelonia mydas</i>	Green turtle	Vulnerable, Migratory	Foraging, feeding or related behaviour <u>known</u> to occur within area
	<i>Dermochelys coriacea</i>	Leatherback turtle	Endangered, Migratory	Foraging, feeding or related behaviour <u>likely</u> to occur within area
	<i>Eretmochelys imbricata</i>	Hawksbill turtle	Vulnerable, Migratory	Foraging, feeding or related behaviour <u>likely</u> to occur within area
	<i>Lepidochelys olivacea</i>	Olive ridley turtle	Endangered, Migratory	Foraging, feeding or related behaviour <u>likely</u> to occur within area
	<i>Natator depressus</i>	Flatback turtle	Vulnerable, Migratory	Foraging, feeding or related behaviour <u>known</u> to occur within area
Sharks	<i>Rhuncodon typus</i>	Whale shark	Vulnerable	Foraging, feeding or related behaviour <u>known</u> to occur within area
	<i>Isurus oxyrinchus</i>	Shortfin mako	Migratory	Species or species habitat <u>likely</u> to occur within area
	<i>Isurus paucus</i>	Longfin mako	Migratory	Species or species habitat <u>likely</u> to occur within area
Marine Birds	<i>Anous tenuirostris melanops</i>	Australian Lesser Noddy	Vulnerable	Species or species habitat <u>may</u> occur within area
	<i>Calonectris leucomelas</i>	Streaked shearwater	Migratory	Species or species habitat <u>may</u> occur within area
	<i>Puffinus leucomelas</i>	Streaked shearwater	Migratory	Species or species habitat <u>may</u> occur within area

It is possible that all listed Threatened or Migratory species mentioned above may traverse the permit areas but they are not expected to be present in significant numbers as there are no recognised migratory routes, feeding, resting or breeding areas within the permit areas, as detailed below. Additionally these species are unlikely to be affected by the in-situ subsea infrastructure within the permit areas.

- Turtles observed in this area are likely to be migrating and would not be expected to spend long periods in the area foraging at the seafloor due to the absence of suitable and significant foraging habitat.



- The bottle-nose dolphin is the most commonly seen cetacean in the permit areas. The permit areas are located approximately 300 km to the north of Camden Sound, a significant calving location for the humpback whale. Due to the absence of any known cetacean migration route within proximity to the permit areas, cetaceans would not be expected to spend long periods in the area.
- Foraging seabirds are irregularly distributed in the open ocean and small aggregations of these birds are associated with schooling pelagic fish. The most abundant seabird observed in the area is the wedge-tail shearwater. Due to the absence of significant reefs that will habituate schooling pelagic fish, seabirds would not be expected to spend long periods in the area.
- Sharks are likely to be migrating through the area and would not be expected to spend long periods in the area due to the absence of suitable foraging habitat.

4.3 SOCIAL ENVIRONMENT

Indigenous Heritage

A search of the Department of Indigenous Affairs (DIA) Aboriginal Heritage Inquiry System did not identify any heritage sites within the permit area and surrounds (DIA 2012).

Non-Indigenous Heritage

There are no national heritage places or areas of archaeological significance within, or in the immediate vicinity of, the permit areas and surrounds.

There are no known historical shipwrecks in the permit area and surrounds.

Defence Activities

Customs Coastwatch and both Navy and Customs vessels, undertake civil and maritime surveillance within the boundaries of the Memorandum of Understanding (MOU), the Australian Exclusive Economic Zone and Territorial seabed of the Continental Shelf, an area extending roughly 200 nm from the mainland (McCormick 2001). The primary purpose of these activities is to monitor the passage of suspect illegal entry vessels and illegal fishing activity.

Commercial Fisheries

Commonwealth

The North Coast bioregion of Western Australia (Pilbara/Kimberley) supports a number of commercial fisheries. Commonwealth fisheries are managed by the Australian Fishing Management Authority (AFMA) and extend from 3 nm to 200 nm which is the extent of the Australian Fishing Zone (AFZ). The following commonwealth managed fisheries are licenced to operate within the permit areas associated with this EP (AC/L1 and AC/L3) although consultation with AFMA in 2014 identified that there has been no fishing activity in the permit areas over the past few years.

- North West Slope Trawl Fishery
- Western Tuna and Billfish Fishery
- Western Skipjack Tuna Fishery
- Northern Prawn Fishery

North West Slope Trawl Fishery

The North West Slope Trawl Fishery (NWSTF) extends from 114°E to about 125°E off the Western Australian coast between the 200 m isobath and the outer limit of the Australian Fishing Zone (DAFF, 2013). Fishing is conducted with demersal trawls along bathometric contours depending on the target species sought. Traditionally, deepwater prawns were targeted; however the main species currently targeted are scampi (*Metanephrops australiensis*, *M. boschmai*, *M. velutinus*). As



of June 2012, there were seven permits in the fishery with only two vessels actively fishing (DAFF, 2013). Fishing effort is restricted in the NWSTF by limiting the number of vessel permits and effort in 2012 suggests that fishing effort did occur within a small portion of the permit area AC/L1 (Woodhams *et al.* 2013).

Western Tuna and Billfish Fishery

The Western Tuna and Billfish Fishery (WTBF) management area extends over a large area westward from Cape York Peninsula (142°30'E) off Queensland to 34°S off the west coast of WA, seaward of the 200 m isobath (DAFF, 2013). The key target species include marlin, swordfish and various species of tuna. Recently published data from DAFF indicates that this long-line fishery has been in decline since 2001 with only 3 active pelagic longline vessels, and two minor line vessels actively fishing in 2012. No fishing was undertaken in the permit areas in 2012 (Woodhams *et al.* 2013).

Western Skipjack Tuna Fishery

Skipjack tuna are widely distributed throughout tropical waters of the Indian and Pacific Oceans. Skipjack distribution in the Australian Fishing Zone on the east coast is from far north Queensland to Tasmania, excluding the Great Barrier Reef, off southern Australia from Kangaroo Island in the Great Australian Bight, and up the west coast to Broome. Skipjack tuna is the only target species in the fishery. Although in 2012 there were 14 licenses associated with the Western Skipjack Tuna Fishery, there has been no catch or effort in the fishery since the 2008–09 fishing season (Woodhams *et al.* 2013).

Northern Prawn Fishery

The Northern Prawn Fishery management area spans the majority of the north coast of Australia from the low water mark to the outer edge of the Australian Fishing Zone (AFZ). The target species are white banana prawns and two species of tiger prawn with the principal method being otter trawling on seafloor. In 2012, the banana prawn season ran from 1 April to 15 June with the total catch accounting for over 75% of the landed catch (AFMA, 2013). The tiger prawn season ran from 1 August to 22 November with the total catch accounting for just under 20 % of the landed catch (AFMA, 2013). The fishery has two seasons: a short banana prawn fishery of 6-10 weeks (6-12 weeks from 2011) starting around April, and a longer tiger prawn season, running from July/August to November/December. In 2012 there were 53 active fishing vessels, with the highest fishing effort within occurs in the area of the Gulf of Carpentaria, with the remainder occurring off Arnhem Land and in the Joseph Bonaparte Gulf (Woodhams *et al.* 2013). No Fishing effort was undertaken in the permit areas in 2012 (Woodhams *et al.* 2013).

State

Western Australian fisheries are managed by the Department of Fisheries (DoF). The survey area falls within the North Coast fishing bioregion. The DoF has advised that the following state managed fisheries are licenced to operate in or within close proximity to the permit areas:

- Northern Demersal Scalefish Fishery
- North Coast Prawn Managed Fishery (Kimberley Prawn Managed Fishery)
- Mackerel Managed Fishery
- Northern Shark Fisheries
- Pearl Oyster Managed Fishery

Northern Demersal Scalefish Fishery

The Northern Demersal Scalefish Fishery is managed by the Western Australian Department of Fisheries (DoF) and includes an extensive area adjacent to Western Australia from the Bonaparte Gulf to the west and the Pilbara to the south (DoF 2013). There are a total of 11 licences issued for the fishery and in 2012, nine vessels operated the effort assigned to these 11 licenses (DoF, 2013). Line fishing has not been reported for this fishery since 2002. Fish traps are used to principally target high-value scalefish species such as emperors, snappers and cod. In 2012, the major species taken by the NDSF were goldband snapper, saddletail snapper and red emperor.



Kimberley Prawn Managed Fishery

The Kimberley Prawn Managed Fishery (KPMF) operates off the north of the state between Koolan Island and Cape Londonderry. The key target species are banana prawns (*Penaeus merguensis*), however tiger prawns, (*Penaeus esculentus*), endeavour prawns (*Metapenaeus endeavouri*) and western king prawns (*Penaeus latisulcatus*) are also caught with the principal method being otter trawling on seafloor. The operating season varies slightly between years, with the 2012 season being between April to May and August to November (DoF, 2013). In 2012, there were 124 boats licensed to this fishery areas, however only 15 were reported to have fished (DoF, 2013).

Mackerel Managed Fishery

The Mackerel Managed Fishery uses near-surface trolling gear from small vessels in coastal areas around reefs, shoals and headlands to target Spanish mackerel (*Scomberomorus commerson*) (DoF, 2013). The fishery extends from the West Coast Bioregion to the WA/NT border, with most effort and catch recorded north in the Kimberley area reflecting the tropical distribution of mackerel species (DoF, 2013). There are currently 49 licenses in this fishery, with 15 license holders having the potential to operate within the permit areas. In 2012, the commercial catch was near record levels indicating that there is a relatively high abundance of mackerel in the Kimberley region.

Northern Shark Fishery

The Northern Shark Fishery is jointly managed by the Australian Fisheries Management Authority (AFMA) and DoF and extends from 123°45' E (Koolan Island) to the Western Australian/Northern Territory border. In 2005, the western Australian managed sector of the fishery was closed under Section 43 of the Fish Resources Management Act 1994, and the commonwealth managed sector was in 2008 when EPBC approval was revoked due to a lack of formal management arrangements (DoF, 2013). As such, The Northern Shark Fishery has not operated since 2008/2009 (DoF, 2013).

Pearl Oyster Managed Fishery

The Pearl Oyster Fishery is a quota-based, dive fishery, operating in shallow coastal waters along the North West Shelf. The species targeted is the Indo-Pacific, silver-lipped pearl oyster (*Pinctada maxima*) which are collected mainly for use in the culture of pearls (DoF, 2013). The permit areas overlap the Kimberley Development Zone, of which all license holders (17) have access to this area (DoF, 2013). Although exploratory fishing in this area has shown that stocks in this area are not economically viable, and this fishery is unlikely to be impacted (confirmed by consultation with the Pearl Producers Association).

Traditional and Subsistence Fisheries

Along the north-western coastline of Australia, traditional and subsistence fishing is generally limited to shorelines, creeks and near shore reefs (LeProvost Dames and Moore 1997).

A Memorandum of Understanding (MOU) between the governments of Australia and Indonesia, allows traditional Indonesian fishing practices and was formalised In November 1974. The MOU, represents an area of approximately 50,000 km² within the Australian Fishing Zone and encompasses Scott Reef and associated reefs, including Seringapatam Reef, Browse Island, Ashmore Reef, Cartier Island and various banks. Under the MOU, Indonesian and Timorese fishermen are legally permitted to harvest marine products using traditional methods. Fishing is concentrated on reefs or in reef lagoons and target species include trochus, sea cucumbers, abalone, sponges, giant clams, reef fish and finfish, including sharks. The peak fishing season is between August and October with fishers departing the region at the onset of the northwest monsoon season.

Tourism and Recreational Activities

Recreational fisheries are managed by WA DoF which states that recreational fishing occurs mostly in State waters adjacent to populated coastal areas (DoF, 2011). The closest Australian shoreline is approximately 400 km south. Creek systems, mangroves and rivers, and ocean beaches provide shore and small boat fishing for a variety of species including barramundi, tropical emperors, mangrove jack, trevallies, sooty grunter, threadfin, mud crabs and cods. Offshore islands, coral reefs and continental shelf provide species of major recreational interest including saddletail snapper, red emperor, cods, coral and coronation trout, sharks, trevally, tuskfish, tunas,



mackerels and billfish (DoF, 2011). Most angling activity is boat-based, with beach fishing limited to periods of flood tides and high water off Broome (DoF, 2011).

No recreational fishing activity has been observed in the licence area or would be anticipated in the future, given the distance offshore and remoteness of the area and the low density of potential target species.

Petroleum Exploration and Production

Oil and gas exploration activities in the Timor Sea commenced in the late 1960s. Today the petroleum exploration and production industry is a significant user of offshore waters in the region particularly within, and adjacent to the offshore area of the Territory of Ashmore and Cartier Islands and the Joint Petroleum Development Area (JPDA) between Timor Leste and Australia.

For the period 2010 – 2014, a minimum nominated expenditure of a total of \$775 million has been committed on petroleum projects within the Territory of Ashmore and Cartier Islands Offshore Area comprising drilling of 27 well and acquiring 4,950 kilometres of 2D and 6,002 square kilometres of site data (DoR, 2011). The Jabiru and Challis infrastructure is not in close proximity to any current production facilities with the closest planned operation being the Cash Maple field located approximately 50km distant.

Ports and Commercial Shipping

The major commercial shipping route through the Timor Sea passes to the north of the permit area. Vessels utilising this route include bauxite carriers servicing terminals at Gove (Northern Territory) and Weipa on the Cape York Peninsula, Queensland, and coal carriers and container vessels departing Queensland ports for destinations in the Middle East, Europe and South Africa. Based on AMSA AusRep position reports for the Timor Sea there are no known recognised shipping routes through the permit areas, although trading vessels may pass through the general area.

5 ENVIRONMENTAL RISK ASSESSMENT

An environmental hazard identification and risk assessment was undertaken using methods consistent with AS/NZS ISO 31000:2009 (AS/NZS 2009) and the PTTEP AA SSHE Risk Management Standard (SSHE-106-STD-400, Rev 3).

The key environmental hazards and control measures for the activity are presented in Appendix A. All control measures detailed in the EP will be implemented to ensure risk is managed to as low as reasonably practicable (ALARP) and will be of an acceptable level.

6 MANAGEMENT APPROACH

PTTEP AA is committed to proactive management of its environmental responsibilities in all its activities. The elements of the management approach include the specific systems, procedures and practices which are used to ensure that the environmental impacts and risks of the activity are reduced to as low as reasonable practicable (ALARP) and that the environmental performance objectives are met. The implementation strategy include roles and responsibilities of personnel, training and awareness of personnel, reporting framework, mitigation and emergency response arrangements, and compliance monitoring and auditing procedures.

PTTEP AA, as the nominated titleholder of the Jabiru and Challis Fields, is responsible for ensuring the activity is managed in accordance with the accepted EP.

Environmental performance objectives, standards and criteria have been defined in the accepted EP and are monitored and reviewed to ensure effective implementation of the environmental requirements and continual improvement in achieving environmental outcomes.

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

- Record keeping;



- External reporting, such as incident and regulatory reporting (Annual Environmental Report);
- Auditing and assurance; and
- Periodic EP review

The EP details specific performance objectives, standards and procedures, and identifies the range of controls to be implemented (consistent with the standards) to achieve the performance objectives. The controls for the survey activities are summarised in Appendix A. The EP also identifies the specific measurement criteria and records to be kept to demonstrate the achievement of each performance objective.

As described in the EP, the implementation strategy includes the following:

- Details on the systems, practices and procedures to be implemented;
- Key roles and responsibilities;
- Training, competencies and on-going awareness;
- Monitoring, auditing, management of non-conformance and review;
- Records Management;
- Incident response including an Oil Spill Contingency Plan (OSCP); and
- Reporting.

The reporting requirements for routine events and environmental incidents (recordable and reportable) and reporting on overall compliance of the activity with the EP are also detailed.

7 STAKEHOLDER CONSULTATION

PTTEP AA has conducted consultation with a range of government, industry and community stakeholders for the Jabiru and Challis decommissioning program. The most extensive consultation was with Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), Australian Hydrographic Office and the Department of Environment (DoE) (formally known as DSEWPaC).

In reviewing previous stakeholder consultation records, and following input from several key stakeholders on their specific consultation requirements, PTTEP AA identified the following relevant stakeholders' in relation to the Jabiru and Challis in-situ abandonment of subsea infrastructure, pursuant to Regulation 11A of the OPGGS(E)R:

The following relevant stakeholders have been consulted via electronic fact sheet during preparation of the EP with details on the location and infrastructure along with a request for any feedback on potential issues or concerns. No concerns were raised:

Commonwealth Government

NOPSEMA, NOPTA, DoE; Australian Radiation Protection and Nuclear Safety Agency (ARPANSA); Australian Fisheries Management Authority (AFMA); Australian Customs Border Protection Service, Australian Hydrographic Service.

State/Territory Government

Department of Resources, NT; Department of Fisheries, WA

Organisation(s) whose functions, interests or activities may be affected

Peak fishing bodies and license holders.



Ongoing Consultation

Due to the remote location, depth of the decommissioned items and the identification of the infrastructure on navigational charts as an obstruction, no ongoing consultation is considered necessary unless a review of the risks associated with the infrastructure to stakeholders, or changes in the EP relevant to the particular stakeholder, are identified.

8 CONTACT DETAILS

Further details on the activity can be obtained from the following nominated liaison person for the EP:

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APPENDIX A: ENVIRONMENTAL RISK ASSESSMENT AND CONTROLS SUMMARY

Hazard	Impacts	Control and Mitigation Measures	Residual Risk
Routine/Planned Aspects			
Infrastructure left on the seabed	Habitat modification	No critical habitat or protected species known in the permit areas	Low
Naturally Occuring Radiation Material (NORM) scale contained within flowlines interacting with marine fauna	Localised gamma radiation exposure leading to marine biota absorbing radionuclides.	Survey and risk assessment endorsed by relevant authority (ARPANSA) has identified radiation at levels that would result in minimal impact to individual organisms, species and biodiversity. No critical habitat or protected species known in the permit areas	Low
Non-Routine/Unplanned Aspects			
Interference with fishing operations	Potential for obstruction to fishing operations due to presence of decommissioned in-situ infrastructure on the seabed and tangling incident	Decommissioned in-situ infrastructure marked on nautical navigational charts.	Low
Interference with fishing, shipping or petroleum operator activities	Potential for obstruction due to presence of infrastructure in seabed	Decommissioned in-situ infrastructure marked on nautical navigational charts.	Low
Movement of in-situ subsea flowlines interacting with benthic habitat	Potential for disturbance to benthic habitat.	No critical habitat or protected species known in the permit areas Buried state of flowlines Low current environment	Low