



Proposed Ichthys Umbilicals, Risers and Flowlines and Subsea Production System Installation EP revision

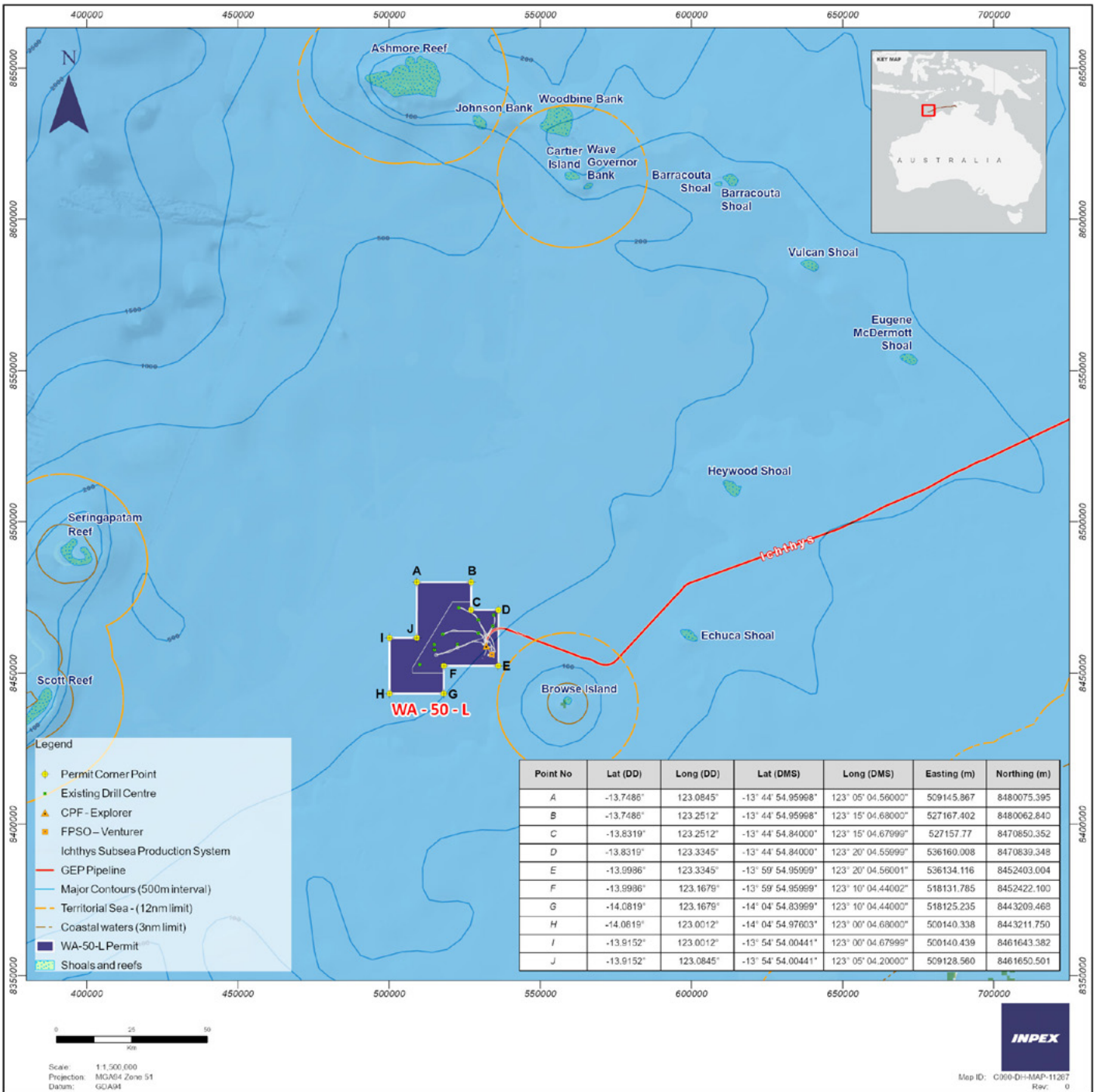


Figure 1: Location and coordinates of production licence, WA-50-L in the Browse Basin

Introduction

INPEX Ichthys Pty Ltd (INPEX), on behalf of the Ichthys Upstream Unincorporated Joint Venture Participants, is developing the Ichthys Field in the Browse Basin off the north-west coast of Western Australia (WA). Condensate produced offshore is exported predominantly to Japan, and export gas is sent via subsea pipeline for further processing at the Ichthys liquefied natural gas (LNG) plant near Darwin.

The Ichthys LNG offshore facilities were constructed, installed and commissioned from 2014 through 2018 with the assets commencing production in July 2018.

The existing facilities consist of a subsea production system (SPS) (e.g. drill centres, manifolds, subsea control systems, umbilicals, risers and flowlines (URF), and the gas export riser base), which connect the

production wells to the Central Processing Platform (CPF Ichthys Explorer) and Floating Production Storage Offtake (FPSO Venturer) facility.

Between 2020-2024 INPEX has continued to develop the Ichthys Field, including undertaking URF and SPS installation activities under the Ichthys URF and SPS installation environment plan (EP) accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and valid until April 2025. INPEX is now preparing an EP revision to complete outstanding activities not yet completed and undertake pre-engineering survey activities for future planned activities in WA-50-L.

The scope of this EP revision includes:

- Ongoing installation, tie-in, pre-commissioning, mechanical completion and commissioning of well jumpers and associated control systems at existing drill centres in WA-50-L, as part of a continuation of the activities described in the Ichthys URF and SPS installation EP that have not yet been completed due to delays. The proposed installation activities are expected to last for approximately 100 days.
- Geophysical and geotechnical surveying of the seabed within WA-50-L for future URF and SPS installation activities lasting approximately 30 days.

The URF activity, comprising of installation and survey activities, will be subject to regulation by NOPSEMA - the national regulatory body for health and safety, well integrity and environmental management for all offshore petroleum and greenhouse gas storage activities. The EP and an Oil Pollution Emergency Plan (OPEP) will describe all the potential environmental impacts and risks associated with the URF activity, and how they will be managed to meet the requirements of the Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006.

Location

Production licence, WA-50-L, is located within the Browse Basin in Commonwealth waters within Western Australia. It is approximately 230 kilometres north west of the Kimberley coastline, at its closest point (refer Figure 1). Water depths in the licence area range between 235 metres and 275 metres at lowest astronomical tide (LAT). The closest major town is Derby, located approximately 390 kilometres south of the licence area.

Schedule

The installation and survey activities are both currently scheduled to be undertaken mid-2025 and will last for approximately 100 days and 30 days respectively, with operations conducted 24 hours per day. The duration of this EP is for 24 months from acceptance of this EP by NOPSEMA to allow for any delays to project schedule.



Overview of activity description

Table 1: Summary of proposed activities

Summary of activity	
Petroleum production licence area	WA-50-L
Basin	Browse
Activity location	Wholly located within Commonwealth waters approximately 390 kilometres north of Derby, Western Australia in the Northwest Marine Region (NWMR) of the Timor Sea.
Water depth	Ranges from 235–275 metres at Lowest Astronomical Tide
Vessels	Offshore construction, installation, support, survey vessels and remotely operated vehicles and autonomous underwater vehicles.
Activities	<p>Ongoing installation, tie-in, pre-commissioning, mechanical completion and commissioning of well jumpers and associated control systems at WA-50-L drill centres.</p> <p>Geophysical surveying within WA-50-L including the use of multi-beam echo-sounder, side-scan sonar and sub-bottom profiling.</p> <p>Geotechnical surveying within WA-50-L including collection of seabed samples (box core), piston coring/sampling, penetration testing and geotechnical boreholes.</p>
Duration of the EP	24 months from the date this EP is accepted by NOPSEMA.

Environment

Environmentally sensitive areas, including distances to production licence area WA-50-L, within the environment that may be affected (EMBA) are described in Table 2 and shown in Figure 2. In addition to these, the environmental values that may be impacted by the proposed activities include:

- Benthic and shoreline habitats at Browse Island and Cartier Island.
- Marine fauna including listed and migratory species identified under the EPBC Act and biologically important areas associated with those species.
- Cultural heritage including underwater cultural heritage.
- Socio-economic receptors such as commercial fisheries.

Table 2: Environmental sensitivities in the EMBA

Key Ecological Features	Distance from WA-50-L
Continental slope demersal fish communities	Overlaps WA-50-L
Ancient coastline at 125 metres depth contour	20 kilometres south
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	130 kilometres north
Seringapatam Reef and Commonwealth waters in the Scott Reef complex	100 kilometres west
Marine parks/nature reserves (Commonwealth and State)	
Browse Island Nature Reserve	26 kilometres south-east
Scott Reef Nature Reserve	125 kilometres west
Cartier Island Australian Marine Park	130 kilometres north
Coral reefs	
Browse Island	26 kilometres south-east
Cartier Island	130 kilometres north
Scott Reef	125 kilometres west

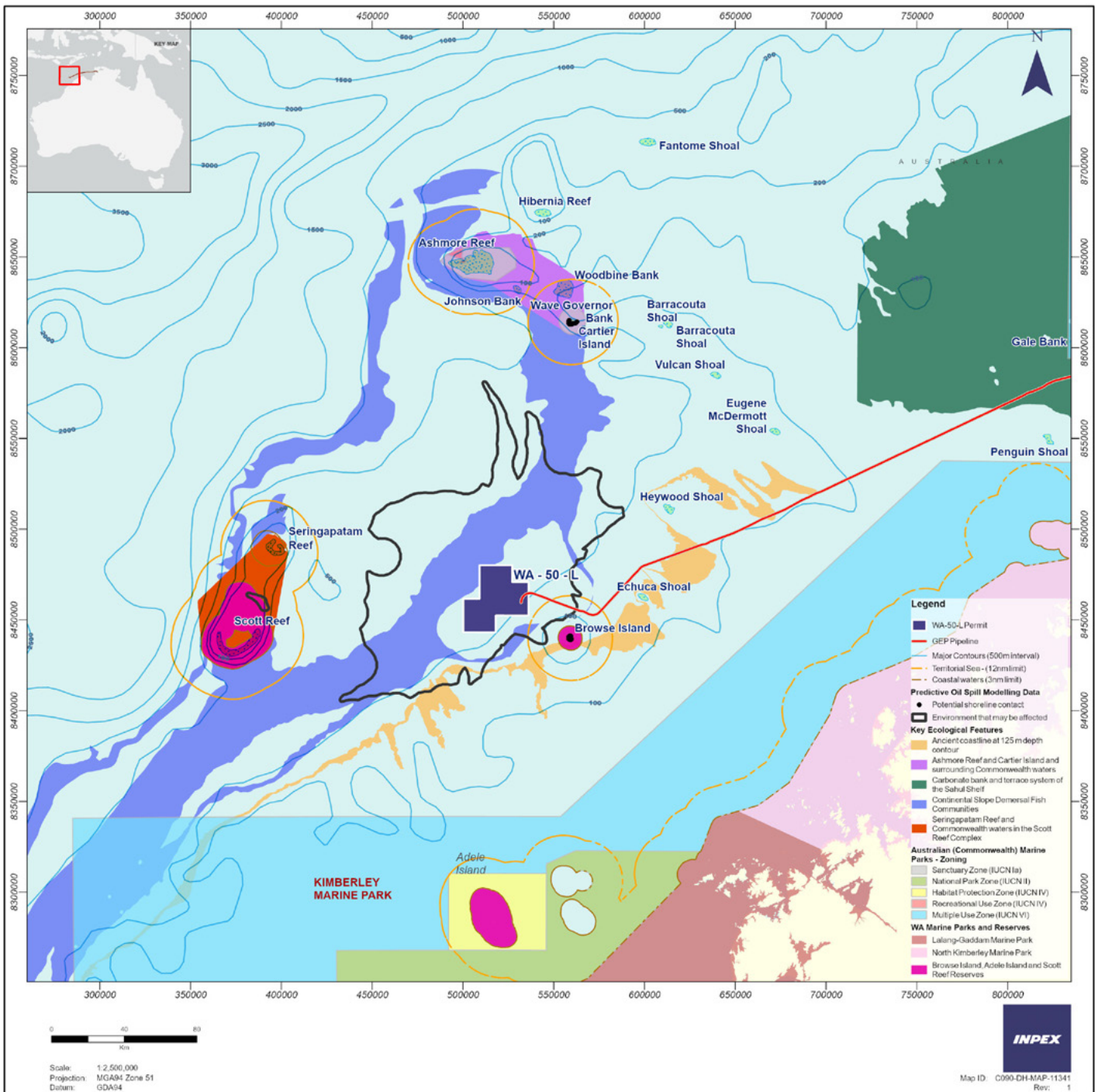


Figure 2: Environmental sensitivities in the EMBA (Key Ecological Features, marine parks and reserves, banks and shoals)

Environmental management of key aspects

Aspect	Potential impacts	Proposed controls
<p>Light emissions - Sources of artificial light include vessel navigational and deck lighting.</p>	<p>Light emissions generated from vessel navigational and deck lighting are not expected to cause any discernible effect on adult turtles' or hatchlings' abilities to orientate to water at Browse Island (the closest turtle nesting habitat located over 26 kilometres away).</p> <p>Adult turtles undertaking internesting, migration, mating or foraging activities are reported to not use light cues to guide these behaviours with no evidence to suggest adult turtles (internesting) are attracted to artificial light from offshore vessels. Any impacts are expected to be insignificant.</p> <p>WA-50-L does not overlap any important bird habitats and the closest breeding/resting areas are over 50 kilometres from the proposed activity.</p>	<p>Vessel personnel will receive an induction/training to inform them of the requirements to minimise external artificial lighting.</p> <p>Premobilisation review and planning of vessel lighting to be undertaken prior to activities commencing.</p> <p>Lighting is directed to working areas (rather than overboard) to minimise light spill to the ocean.</p> <p>Reduce light spill from internal light sources by using blinds on windows.</p>
<p>Air and GHG emissions</p>	<p>Atmospheric emissions will be generated through the use of combustion engines, compressors, steam generators and ODS containing equipment on board the vessels.</p> <p>Atmospheric emissions from the petroleum activity will contribute to overall GHG concentrations and have the potential to result in localised changes in air quality and subsequent exposure of marine avifauna to air pollutants.</p> <p>Exposure to air pollutants may cause respiratory distress in birds. Individuals may develop some short-term symptoms if they remain in the immediate vicinity of an emissions source where the pollutants are most concentrated. Rapid recovery is expected after individuals move away from the source.</p> <p>Chronic exposures are not considered plausible given that marine avifauna would move away (i.e. continue migration or undertake foraging activities elsewhere).</p> <p>WA-50-L does not overlap any important bird habitats and the closest breeding/resting areas are over 50 kilometres away from the proposed activity.</p>	<p>Vessels will:</p> <ul style="list-style-type: none"> • comply with the air emission requirements of Marine Order 97 (as applicable to vessel and engine size, type and class) including sulfur content of fuel oil • comply with ODS and energy efficiency requirements of Marine Order 97. <p>Vessel contractors have a preventative maintenance system to ensure diesel powered, power generation equipment is maintained.</p> <p>Measurement and monitoring of emissions data to enable legislative reporting requirements under the <i>National Greenhouse and Energy Reporting Act 2007</i> to be met for the petroleum activity.</p>
<p>Waste – inappropriate waste handling and disposal</p>	<p>Vessels associated with the activity will generate a variety of non-hazardous and hazardous wastes, which will not be intentionally discharged to the marine environment.</p> <p>Unsecured or incorrectly stored waste may be windblown or displaced into the ocean where it has the potential to negatively affect marine ecosystems.</p> <p>Wastes can cause contamination of the ocean resulting in changes to water quality e.g. through the leaching of chemicals from wastes, which can cause changes to ecosystem productivity and diversity.</p> <p>Certain types of waste can cause injury to marine fauna through entanglement or may affect the health of marine species that ingest waste materials.</p>	<p>Premobilisation HSE inspection of vessels and waste contractors confirm capability for the correct storage, labelling and handling of wastes.</p> <p>Waste management awareness materials communicated to site personnel.</p> <p>Garbage management plans will be maintained and implemented on vessels in accordance with Marine Order 95.</p> <p>Loss of equipment or materials lost to sea will be reported.</p>

Aspect	Potential impacts	Proposed controls
Underwater noise emissions	<p>Noise emissions from the use of underwater acoustic survey equipment and from the operation of vessels may be audible to marine fauna (cetaceans, turtles and whale sharks) and fish species targeted by commercial fisheries.</p> <p>There are no known marine fauna aggregation areas that would result in sedentary behaviour in WA-50-L.</p> <p>Marine fauna with the potential to be exposed to increased noise levels are transient in nature and have the ability to avoid the area. Any potential impacts are likely to be localised and temporary given the short duration of the survey activities (30 days).</p> <p>Commercially important fish species may be exposed to increased noise levels; however, any impacts would be localised to individuals and would not result in any detrimental impacts in stock levels.</p>	<p>Vessel contractors will comply with relevant requirements of the EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.05 Interacting with cetaceans) including:</p> <ul style="list-style-type: none"> • vessels will not travel faster than 6 knots within 300 m of a cetacean or turtle (caution zone) and minimise noise. • vessels will not approach closer than 50 m to a dolphin or turtle and/or 100 metres for a whale (with the exception of bow riding). • if a cetacean shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots.
Biosecurity (invasive marine species)	<p>Benthic communities the closest of which is Browse Island, and fisheries all have the potential to be impacted by IMS. To pose a biosecurity risk viable IMS propagules/ individuals must be able to transfer from the colonised area (e.g. a vessel hull), survive in the surrounding environment, find a suitable habitat, and establish a self-sustaining population.</p> <p>The introduction/transfer of IMS propagules to sensitive benthic habitats in the wider region may result in local to medium scale impacts. It may also result in community disruption with potential impacts to fisheries.</p>	<p>Vessels will</p> <ul style="list-style-type: none"> • complete biofouling risk assessment and implement any associated biofouling reduction and management measures. • comply with the Australian Ballast Water Requirements • have an approved ballast water management plan and valid ballast water management certificate, unless an exemption applies or is obtained. • have a biofouling management plan in accordance with the Biosecurity Amendment (Biofouling Management) Regulations 2021 and the Australian biofouling management requirements.
Displacement of other marine users	<p>Other marine users in the vicinity of WA-50-L may be impacted by the presence of the vessels through the loss of navigable space available to conduct their activities. The implications of such disruptions include changes to sailing routes and journey times, or reduced ability to fish in an area.</p> <p>The worst-case consequence from a loss of access to an area could result in economic losses and/or potential reduction in employment levels.</p>	<p>Stakeholder consultation with relevant stakeholders.</p> <p>Vessels fitted with lights, signals and navigation equipment as required by the <i>Navigation Act 2012</i>.</p>
Vessel collision	<p>Potential for exposure to floating oil at the sea surface and within the water column.</p> <p>Potential accumulation on shorelines; however, not exceeding concentrations that may result in ecological impact.</p> <p>Marine mammals, marine reptiles and marine avifauna could be impacted through direct hydrocarbon exposure in the water column or at the sea surface. They may also be indirectly impacted through ingestion during foraging activities.</p> <p>Fisheries may be impacted by the presence of exclusion zones and the oiling of nets and lines. Fish communities may be impacted by exposure to oil within the water column.</p>	<p>Marine vessels > 400 tonne will carry shipboard oil pollution emergency plan.</p> <p>All vessels fitted with lights, signals and navigation equipment as required by the <i>Navigation Act 2012</i>.</p> <p>All vessels will use only marine diesel fuel and the maximum volume of fuel contained in any tank will not exceed 400 m³.</p> <p>Installation vessels used will have dynamic positioning equipment and have a backup DP system as a failsafe.</p>

Further information

Image: Fugro

Further information can be found online:

Via QR Code

Instructions for accessing QR code:



1. Open your camera app on your Apple or Android device.
2. Point your camera at the QR code as if you are about to take a picture of it.
3. If your device recognises the code, a link will appear at the top of your screen. Tap on the link when it appears.

Via website

<https://anz.planengage.com/ichthysurf/page/Home>

Alternatively, you can request further information by calling 1800 705 010.

Comments and enquiries

INPEX welcomes your feedback on the proposed Ichthys URF activities.

You can provide comment about the proposed Ichthys URF activities in the following ways:

Via email

Contact: INPEX Environment Plan Consultation Team
Subject: Proposed Ichthys URF EP Revision
E-mail: urfconsultation@inpex.com.au

Via website

www.inpex.com.au

Via phone

Call 1800 705 010 regarding proposed Ichthys URF EP revision.

How is your feedback used?

Your feedback assists INPEX with understanding the environment, identifying potential environmental impacts and risks, and enables INPEX to refine its management measures if needed to reduce potential impacts.

All communications will be logged, assessed and acknowledged with a response.

To ensure transparency and in accordance with regulatory requirements, INPEX provides NOPSEMA with full copies of all feedback within the EP submission, together with INPEX's initial correspondence and responses to feedback.

Petroleum titleholders are required to publish full copies of new EPs on the NOPSEMA website. Accordingly, those who provide feedback should advise INPEX if any part of their feedback is not suitable for public disclosure (i.e. is 'sensitive information'). Sensitive information will be removed or redacted from the published EP and provided to NOPSEMA in a separate, private document.

Any stakeholder feedback received after acceptance of an EP will be managed through INPEX's formal stakeholder engagement process.



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