Thevenard Island Care and Maintenance / Retirement Phase

Environment Plan Summary

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1.0 Introduction

Chevron Australia Pty Ltd (Chevron) is the proponent and nominated operator of the Thevenard Island (Thevenard Island) Joint Venture within the Petroleum Titles containing the Saladin, Cowle, Yammaderry, Crest, Roller and Skate oilfield infrastructure (Figure 1 1).

The Thevenard Island facilities are no longer operational and have been cleaned, flushed and depressurised following the cessation of production activities in 2014. The facilities are now under a care and maintenance regime until decommissioning and rehabilitation of the site commences. Since the cessation of production activities in 2014, care and maintenance activities have been undertaken by personnel on-site. In November 2015, all personnel were demobilised from Thevenard Island, and all ongoing care and maintenance activities will be undertaken on a periodic basis, with personnel mobilised from the Western Australia (WA) mainland (and on occasion, Barrow Island). No personnel will be accommodated on Chevron's Thevenard Island facilities, and all utilities have been shut in (i.e. power supply, wastewater treatment). Decommissioning activities are scheduled to commence on Thevenard Island, along with pre-decommissioning activities offshore.

1.1 Scope

The scope of the Plan includes the care and maintenance of Thevenard Island Joint Venture idle infrastructure, comprising of two to three monthly campaigned inspection, monitoring and maintenance visits to Thevenard Island. In addition, campaign specific onshore decommissioning and offshore pre-decommissioning scopes will be undertaken. There are no longer any accommodation facilities or utilities operational on Thevenard Island; therefore, the scope of this EP is limited to the periodic visits and campaigns to Thevenard Island, surrounding waters and the Australian mainland to undertake inspection, maintenance and monitoring activities, along with onshore decommissioning and offshore pre-decommissioning activities located within the Petroleum Titles outlined in Section 1.2.

Separate Environment Plan/s addressing the management of potential environmental impacts and risks will be submitted to DMIRS for assessment and approval prior to the commencement of activities related to offshore decommissioning.

1.2 Location

Thevenard Island is approximately 25 km north-west of Onslow and 70 km south-west of Barrow Island (BWI) in the Carnarvon Basin, WA. Thevenard Island is approximately 5 km in length, 1 km at its greatest width and covers an area of approximately 550 ha.

Table 1-1: Thevenard Island Location

Location Point (GDA94)	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Thevenard Island	21	27	33.00	115	0	34.00

The Thevenard Island idle assets are located on Thevenard Island within petroleum Production Licences L12 and L13 and in surrounding waters within petroleum Production Licences TL/4 and TL/7 and Retention Lease TR/4 (Figure 1-1). Pipeline Licences TPL/6 and TPL/11 tie the shut in offshore wells back to the idle, cleaned and depressurised Thevenard Island processing facilities. The idle assets also include mainland facilities; the onshore Roller/Skate gas export pipeline and the Tubridgi Metering Station is within

petroleum Pipeline Licence PL 21 which is located on Urala pastoral land, approximately 20 km south of Onslow.

1.3 Timeframes

Onshore decommissioning and offshore pre-decommissioning commenced in 2020, and mainland decommissioning activities will follow. Onshore decommissioning, offshore pre-decommissioning and mainland decommissioning are expected to be completed by the end of 2023. This timing is indicative and subject to potential delays caused by weather events, vessel availability, internal and external approvals and other unforeseen factors. Care and maintenance activities will be undertaken as required throughout this period.

1.4 Nominated Operator Contact Details

Chevron Australia Pty Ltd (Chevron) is the proponent and the nominated operator for the Thevenard Island Joint Venture., which includes the following participants:

- Chevron Australia Pty Ltd
- Chevron (TAPL) Pty Ltd
- Santos Offshore Pty Ltd
- Mobil Australia Resources Company Pty Ltd.

Further information regarding Thevenard Island care and maintenance activities can be obtained by contacting the Thevenard Island Retirement Project Manager, contact details are listed in Table 1-2.

Table 1-2: Nominated Operator Contact Details

Company Name	Chevron Australia Pty Ltd
Contact Person	Chris Jones
Business Address	GPO Box S1580, Perth WA 6845
Telephone Number	08 9216 4000
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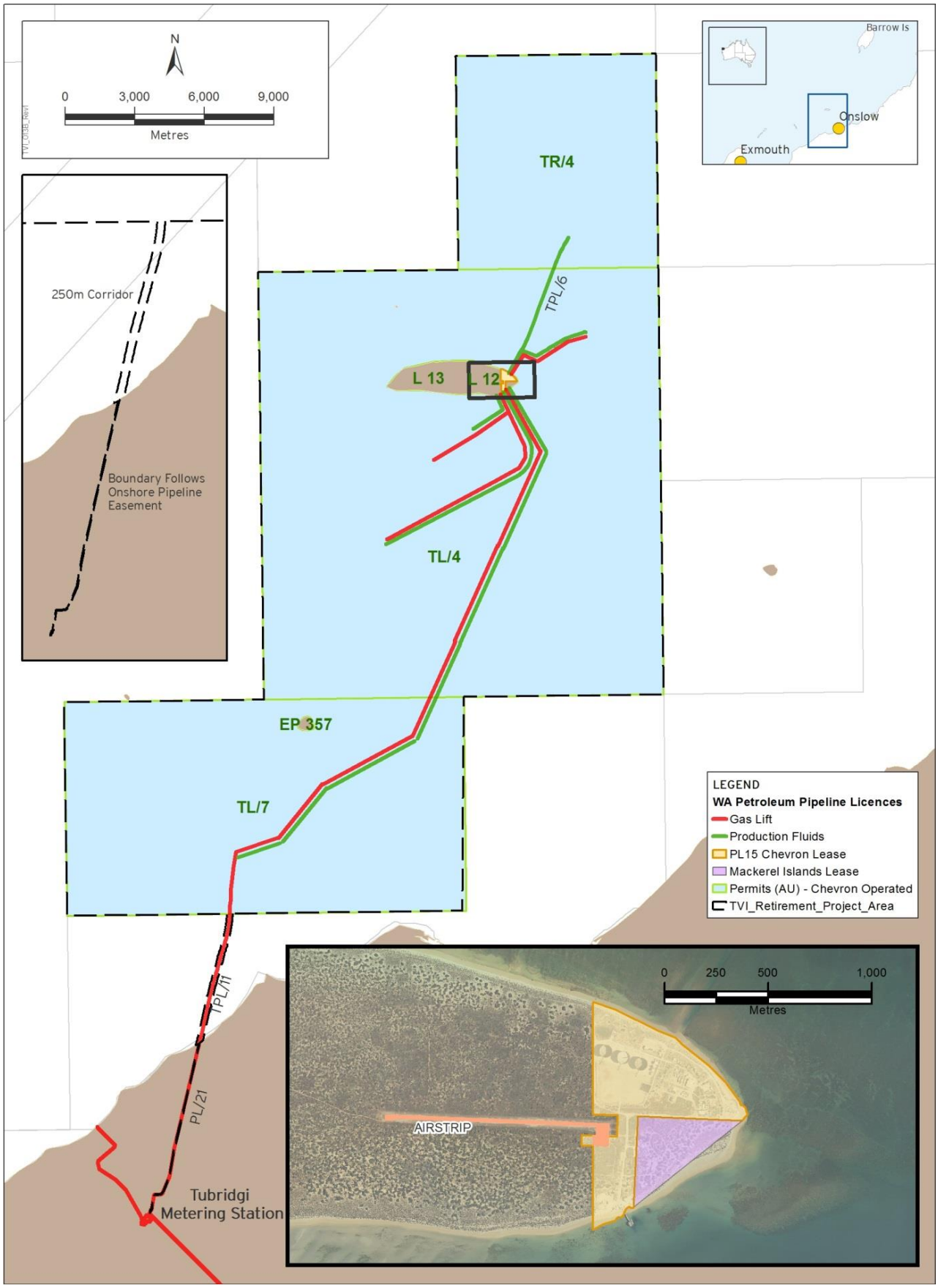

Figure 1-1: Thevenard Island Petroleum Permit Areas

2.0 Description of the Petroleum Activity

The care and maintenance, onshore decommissioning and offshore pre-decommissioning activities detailed in this EP Summary relate to the now idle infrastructure previously used to support production on Thevenard Island prior to field closure in 2014. This idle infrastructure includes:

- Onshore production facilities and associated infrastructure
- Onshore accommodation and associated utilities
- 3 tripods (Saladin A, B, C) – offshore platforms
- 6 monopods (Cowle, Skate, Yammaderry, Roller A, B, C) – offshore platforms
- Subsea pipelines (conditioned during the cessation of production so that they contain water with ≤30 ppm of hydrocarbon in water content)
- Tanker loading facilities
- Onshore development wells (plugged in accordance with the Chevron Well Barrier Design Technical Standard and isolated from pipelines)
- Offshore development wells (shut-in and isolated from pipelines)
- 1 suspended offshore exploration well (Australind 1)
- Tubridgi metering station (onshore mainland).

All production pipelines and vessels have been cleaned and flushed and all production plant and Metering Station facilities are isolated, depressurized and free of residual hydrocarbon. The diesel network has been cleaned and flushed. All 14 onshore production wells and the Thevenard Island-1 exploration well were plugged and abandoned in 2019 and the plug and abandonment of all offshore wells was completed in 2020.

The facilities (including the Tubridgi Metering Station on the mainland) have been secured, which includes measures such as exclusion fencing, sumps have been cleaned and sealed and/or filled, where possible, and fauna egress measures and gratings are in place, where required.

2.1 Care and Maintenance

2.1.1 Facility Inspections and Maintenance

Maintenance and inspections on offshore infrastructure may include offshore platform maintenance, such as navigation lights, solar power system, winches and cranes, safety critical equipment, cathodic protection systems, and a structural integrity maintenance program.

Offshore inspections and maintenance may include the use of remotely operated vehicles (ROV), autonomous underwater vehicles (UAV) or divers deployed from a vessel, and marine acoustic surveys (use of multibeam echosounder and/or side-scan sonar from a vessel). Inspections and maintenance may be routine, or be triggered by specific events (such as cyclones or seismic events) that have the potential to affect infrastructure.

Inspections occurring onshore will include environmental or security surveys, and inspection of well cellars and sumps to ensure fauna egress measures are in place and cellar covers are in place and effective. Maintenance events onshore may include repairs to the jetty, buildings or other infrastructure, or maintenance of vehicles.

Prior to decommissioning an annual inspection of the Tubridgi Metering Station is planned to check equipment status is unchanged and security fencing and signage is

functioning. This involves a day trip for visual inspection of the facility, the pipeline (along a designated road) and the beach valve enclosure.

2.1.2 Environmental Monitoring

The scheduled campaign visits to Thevenard Island will include environmental monitoring activities. Environmental monitoring has occurred throughout operations on Thevenard Island and is conducted to identify potential impacts on the environment resulting from ongoing care and maintenance activities. Environmental monitoring programs include:

- Groundwater monitoring
- Weed management
- Terrestrial ecological monitoring
- Rehabilitation trials

2.2 Onshore Decommissioning

Onshore decommissioning activities will be undertaken along with mainland decommissioning associated with the Tubridgi metering station. Other than vessels that may standby overnight at or near the Thevenard Island jetty, or on anchor at installed clump weight (outside of turtle nesting season only), or vessels that are undertaking crew transfers at the jetty, onshore decommissioning activities will be undertaken within daylight hours unless an emergency situation occurs that requires works to be undertaken during non-day light hours. Emergency nightworks onshore are included in this EP as a contingency only.

Infrastructure to be decommissioned on Thevenard Island generally includes all infrastructure included within Section 2.2 with the exception of the Thevenard Island some infrastructure where ownership is expected to be handed over to third parties.

Onshore decommissioning will take place on Thevenard Island with the aim of dismantling and removal from Island of idle plant, pipework, tanks, pipe racks, barriers, access platforms, buildings, well cellars, pipelines, underground services, communication structures and other associated infrastructure.

Major onshore decommissioning activities are planned to include:

- Demolition and removal of processing plant and associated infrastructure
- Post plug and abandonment well removal (well casings cut at a depth below natural grade suitable for the long-term landform rehabilitation)
- Onshore pipeline removal
- Abandonment and/or removal of groundwater monitoring wells, water source wells, anode wells, and cuttings wells
- Removal of the barge landing
- Mainland decommissioning activities

Decommissioning activities to be undertaken on mainland Western Australia include removal of onshore infrastructure such as the beach valve and the Tubridgi Metering Station. An evaporation pit at the Tubridgi Metering Station has been previously cleaned and fenced off, infrastructure associated with the evaporation pit will be removed along with fencing.

2.3 In addition to the facility demolition and removal, the Onshore Decommissioning scope includes activities associated with

rehabilitation such as bulk earthworks and materials handling to re-contour the landform to a state compatible with the adjacent environment, erosion control, revegetation and weeding. Uncontaminated stabilised sand, removed concrete and brick pavers will be excavated, crushed and incorporated into the landform on Thevenard Island. In support of revegetating the site, seeds and cuttings will be collected from the lease area and Nature Reserve, in accordance with other legislation and a third party nursery contractor will propagate seedlings which, once established and hardened will be used to revegetate the lease area. Propagation, plant establishment and hardening activities will be undertaken on the mainland and are outside of the scope of the EP. Quarantine management and sterilisation processes are in place to ensure that all seedlings and associated materials are free of soil-borne pathogens, invertebrates, non-endemic flora, viruses and other contaminants. Offshore Pre-Decommissioning

Targeted campaigns are planned to complete portions of work that are considered offshore pre-decommissioning activities. This would include grooming ahead of any major offshore platform or pipeline removal scope, which will be covered in a separate Environment Plan(s).

Offshore decommissioning grooming may include:

- Subsea non-platform infrastructure, debris and/or pipeline tie-in recovery
- Topside grooming activities including equipment, pipework, instrumentation and services removal
- Offshore pipeline removal at shore crossing areas (north and south)

The following activities are excluded from this EP and will be included in future decommissioning focused Environment Plans:

- Full decommissioning and removal or reefing of offshore platform topsides and substructures
- Decommissioning of tanker loading facilities
- Offshore pipeline removal works at northern shore crossing areas
- Decommissioning of offshore pipelines from beach crossing approaches to offshore platform tie in locations
- Decommissioning of the TVI jetty.

2.3.1 Logistics

2.3.1.1 Personnel and Transport

Transfer of personnel and equipment required to complete the activities will occur via vessel transit from the WA mainland and on occasion, Barrow Island. Fixed wing aircraft transfers may also occur occasionally. The vessels used during care and maintenance activities will be approximately 15 m – 30 m in length, Class 2C vessels. Larger vessels may be used less frequently for offshore pre-decommissioning work scopes.

Transportation on Thevenard Island will be via utility vehicles and/or Polaris buggy. Fuel required for mobile equipment and vehicles in order to complete the planned work scopes will be transported to Thevenard Island during the campaign.

2.3.1.2 Waste Management

Island, the waste generated from Care and Maintenance activities is limited to the campaign visits to the island. Wastes generated during Care and Maintenance campaign visits to Thevenard Island will be appropriately contained and removed from Thevenard Island and returned to the mainland for disposal. The waste streams generated will largely comprise of general daily wastes (e.g. putrescibles, plastics, metallic scrap, etc.) and given the nature and scale of activities occurring during campaign visits, the volume of waste being generated will be minimal. Discharge of sewage to the environment from vessels activities will be in accordance with MARPOL.

Wastes generated during decommissioning activities will be more extensive and will be produced as plant and equipment is demolished and dismantled. Waste materials will be transferred to a staging/laydown area or areas on Thevenard Island where they will be segregated into waste and recyclable streams and disposed of off island. Solid wastes will be transported from the established laydown area via landing craft for disposal at an approved waste disposal facility.

In the event of evidence of contaminated soil following the removal of other infrastructure, excavation and stockpiling of topsoil, cement stabilised material, or other materials may be required, along with sampling of material (as required) prior to amendment and reuse on-site or removal from Thevenard Island.

Minor volumes of naturally occurring radioactive material (NORMS) may be present as surface contaminated objects (SCO) such as on wellheads, within process pipes and valves, and within glass reinforced epoxy (GRE) pipelines. If waste is identified as NORMs contaminated, it will be managed in accordance with the NORM Management Plan and disposed at a Chevron approved waste disposal facility.

Liquid waste will be generated as a result of flushwater and residual fluids located within processing plant infrastructure, onshore and offshore pipelines risers, sump piles etc which may require fluid collection. Saline water may also be generated during wellhead removal and the abandonment of non-petroleum steel-cased bores and groundwater monitoring bores. Saline water waste may also be generated during well head and casing cut offs of production and non-production wells. Small quantities of waste oil may be generated such as mobile plant lubricant. Machinery will be washed down using a high-pressure washer. This will occur within a designated wash down facility and liquid waste contained. Onshore residual fluids will be captured where possible, however some minor release may occur to the terrestrial environment and release will occur offshore (refer to Section 4).

Accommodation and mess facilities will be provided by a third party and any waste streams generated in these facilities will be dealt with by the third party. Minor volumes of waste from crib meals will be generated. Portable toilets and washing facilities may be used at the work location. The black and greywater from these facilities will be contained in such a way that it can be transported off Thevenard Island to the mainland and disposed of at an appropriate location.

3.0 Description of the Environment

Thevenard Island is a Nature Conservation Reserve (Reserve No. 33174) vested in the Conservation Commission of WA, primarily for the protection of seabird and shorebird populations utilising coastal habitats. Thevenard Island is also part of the Islands Exmouth Gulf and Rowley Shelf listed on the Register of the National Estate (No. 5/08/190/004) for the conservation value of their seabed, turtle nesting sites, and populations of small mammals on some islands.

3.1 Physical Environment

Thevenard Island is a low, relatively flat, vegetated mid shelf cay approximately 5 km long by 1 km wide. Thevenard Island covers an area of approximately 550 ha with an average height above sea level of 5 m Australian Height Datum (AHD). The surrounding shallow sea constitutes the continental shelf and comprises up to 250 m of lime cemented sand, grit, conglomeratic and coral reef deposits of Quaternary age, overlying Tertiary limestones of the Cape Range Group (LeProvost et al., 1987). No natural drainage patterns exist on TVI and rainfall infiltrates the sandy soils and directly recharges the shallow unconfined superficial groundwater. The unconfined groundwater aquifer is present within the Aeolian sands between 1 and 7 m (Golder 2011).

Water depths near the Thevenard Island marine facilities and offshore areas range from ~1 m to ~17 m (Fugro 2013). Around Thevenard Island, which forms part of the Rowley Shelf, sediments are mainly composed of sand particles, with the largest particles either medium or coarse sand (Oceanica 2013).

The benthic marine environment within the Thevenard Island area is broadly characterised by five intertidal and subtidal habitats (sandy beaches, intertidal limestone pavement, subtidal limestone pavement, coral communities, subtidal sand).

3.2 Biological Environment

To date, 104 plant taxa have been identified on the CALM Act Lease and the DBCA Nature Reserve. The 104 plant taxa represent 27 families and 70 genera. The Fabaceae (beans and peas) family are best represented with 21 species, two hybrid species and five subspecies, followed by Poaceae (grasses) with 17 species. The most represented genus is Acacia with nine species (two of which are mainland introductions), two hybrid species and five subspecies (Astron Environmental 2013).

According to the DBCA Declared Rare and Priority Flora list for the Pilbara region, no Declared Rare Flora (DRF) species are known to occur on Thevenard Island, nor would any be expected to occur (DEC 2009). A single Priority 3 flora species, *Carpobrotus sp. Thevenard Island* (M. White 050) has been recorded on Thevenard Island. This species was located during all but the 2017 survey.

The house mouse (*Mus domesticus*) and the Thevenard Island mouse (*Leggadina lakedownensis*) are the only two terrestrial mammal species found on Thevenard Island. The Thevenard Island mouse was recorded in 1985 (LeProvost et al. 1987), and the house mouse is believed to have been anthropogenically introduced to Thevenard Island in approximately 1985 (Astron Environmental 2011).

A total of 76 bird species have been recorded during avifauna surveys on TVI between 1985 and 2013 (Astron Environmental, 2013). These bird species consist of resident and migratory bird species that utilise suitable habitats on Thevenard Island.

Five species of sea turtle occur in the waters of north-western WA, with Green Turtles (*Chelonia mydas*) particularly abundant in this region (Pendoley 1997). All five species are listed as Threatened and Migratory under the WA Wildlife Conservation Act 1950 and the Environmental Protection and Biological Conservation Act 1999.

Migrating humpback whales may be encountered in the offshore area of Thevenard Island between September and November, however the offshore area does not contain recognised migratory routes, known feeding, breeding or resting areas. Whale sharks are known to pass through and potentially feed in the offshore area of Thevenard Island while migrating to aggregation areas on the Ningaloo Coast. Dugongs are also likely to be present in the nearshore waters around Thevenard as seagrass around the island has been suggested to be important Dugong habitat (Preen et al. 2007).

3.3 Cultural Heritage

Tubridgi forms part of the Thalanyji Native Title Consent Determination, which was granted on 18 September 2008 and is registered on the National Native Title Tribunal Register. Thevenard Island is not within the Thalanyji Native Title Consent Determination and there are no Aboriginal heritage places or registered sites within the CALM Act Lease on Thevenard Island. An Aboriginal archaeological survey of the Roller A to Tubridgi gas pipeline corridor on the mainland was conducted in 2014, and found one previously unidentified site within the survey corridor.

3.4 Socio-Economic Environment

The Pilbara coastal region is one of WA's largest resource development and industrial areas. Important industries include petroleum, iron ore export, salt production and aquaculture. A major shipping port is located at Dampier to facilitate exports from this region, as well as a number of smaller ports in the region.

Major commercial fisheries, particularly prawn trawling, operate out of both Exmouth and Onslow. Exmouth also supports a growing tourism industry, primarily centred on the area's marine attractions. Recreational fishing charters regularly visit the waters around the offshore islands of the region during the winter tourist season.

The Mackerel Islands Resort operates a lease within the south-east corner of Thevenard Island as a tourist recreational fishing facility.

4.0 Major Environmental Hazards and Controls

The risk assessment for the Thevenard Island care and maintenance, onshore decommissioning and offshore pre-decommissioning activities was undertaken in accordance with the Chevron Australia Health, Environment, and Safety (HES) Risk Management Process. This approach is consistent with the processes outlined in ISO 31000:2009 Risk Management – Principles and Guidelines and Handbook 203:2012 Managing Environment-related Risk.

The risk assessment process and evaluation involved numerous consultations and risk assessment workshops on 9 September 2015, April 2017 and 14th March 2019. Aspects associated with the activities have been subject to an impact and risk assessment to understand the potential environmental risks associated with the activity and identify relevant controls to reduce impacts and risks to as low as reasonably practicable (ALARP) and an acceptable level.

The evaluation has assumed care and maintenance activities on and offshore of Thevenard Island will be undertaken during periodic campaign inspection, monitoring and maintenance visits on an ongoing basis until such time that decommissioning of infrastructure has occurred. Therefore, care and maintenance activities will progressively reduce as infrastructure is decommissioned. For onshore decommissioning, the evaluation has assumed activities will occur intermittently during 2020 and on an ongoing basis for approximately three years from 2021 through to the end of 2023. At any given time work activities may occur at a single location or multiple different locations within the Chevron lease area on Thevenard Island. For offshore pre-decommissioning, the evaluation has assumed that activities will occur on an intermittent basis over a four year duration, with the potential for up to five individual campaigns assumed to occur per year in the risk assessment. The locations of these campaigns will be across the offshore title areas.

The environmental impact identification and risk assessment process comprised the following components:

- Identification of petroleum activities
- Identification of particular environmental values and sensitivities within the environment that may be affected
- Identification of relevant aspects with the potential to pose a hazard to identified particular environmental values and sensitivities
- Evaluation of the potential consequences to the identified values and sensitivities without controls
- Identification of control measures to reduce the potential likelihood of the consequence occurring
- Evaluation of the likelihood of the consequence occurring with planned and confirmed control measures in place
- Quantification of the risk ranking with controls in place
- Determination of whether the potential environmental impacts and risks are ALARP after considering the effectiveness of the identified controls
- Determination of whether the potential environmental impacts and risks are acceptable

Control measures (Environmental Performance Standards) were identified during the environmental risk workshop to ensure identified risks were reduced to ALARP and of an acceptable level. Control measures were considered in terms of both preventing the impact occurring, and mitigating the severity of the consequence, drawing on the

hierarchy of controls, identified as Elimination, Substitution, Isolation, Engineering, and Administration and Procedures.

A summary of the major environmental hazards and controls in place to manage each environmental aspect is detailed in Table 4-1.

Table 4-1: Major Environmental Hazards and Controls

Source of Environmental Impact or Risk (Hazard)	Potential Environmental Impact or Risk (Consequence)	Control Measures
Vehicle movements, vegetation clearing and other ground disturbing activities	• Ground and vegetation disturbance • Disturbance to potential heritage sites – assessed as Not Applicable	• All personnel have completed site inductions which includes vehicle movements restricted to the CALM Act Lease, and *Land Administration Act 1997* easement on the mainland, designated roads and tracks unless approval to access has been granted by Parks and Wildlife Services where it is required • Activities will be undertaken in accordance with the *Environmental Protection Act 1986;* Part IV approval obtained which permits clearing in the CALM Act Lease area or Part V approval is obtained to authorise clearing outside of lease area
Vessel anchoring, use of clump weights, use of baskets positioned on the seafloor, unburial, cutting and removal of offshore sections of pipelines and landing vessels	• Seabed disturbance • Increased sedimentation and/or water quality changes resulting in physical disturbance through smothering of benthic habitats.	• Anchoring and deployment of baskets occurs within Chevron-approved areas (within 200 m of infrastructure) to avoid environmental sensitivities • If anchoring or basket deployment is required further than 200 m from infrastructure, a risk assessment will be undertaken to plan anchor and basket locations so that disturbance to sensitive benthic habitat is minimised where possible • Loading and unloading of equipment from vessels at Thevenard Island use the barge landing area or jetty only to avoid environmental sensitivities • Marine sediment dispersal activities will be limited to within 100 m of the barge landing area to enable landing craft to access Thevenard Island • Clump weight anchor placement will be limited to the defined area

Terrestrial and marine fauna interaction resulting from: • fauna strike including from ground disturbance and clearing activities and aviation activities • entrapment (onshore) • infrastructure dismantling (communications tower) • entrapment (nearshore – seawater intake) • barge landing (clearing of sand)	• Terrestrial or marine fauna injury / casualty	• Barge landing hardstand area will be demarcated to prevent disturbance to adjacent beach during turtle nesting and hatching season (Nov–Apr) • Prevent clearing of sand at the barge landing area through the use of matting during turtle nesting and hatching season • If sand clearing activities on the barge landing are required during turtle nesting season (Nov – Apr) a pre-inspection will be undertaken and consultation with DBCA will occur prior to clearing taking place • If sand clearing activities on the barge landing are required in areas that provide suitable turtle nesting habitat (i.e. the area above high water mark) during turtle nesting season (Nov – Apr), all sand removed from the barge landing area will be stockpiled within the laydown area providing a 2 metre buffer away from the beach / laydown area interface, or at other areas further away from the beach • Seawater extraction is undertaken in accordance with a Work Method Statement and/or Hazard Analysis which requires that the intake hose has a screen to prevent fauna ingress • Speed restrictions and approach distances as described in Part 8 of EPBC regulations 2000 will be implemented. Specifically, caution and no approach zones will be implemented as described in the Australian National Guidelines for Whale and Dolphin Watching 2017 • All personnel have completed site inductions, which include fauna management measures, personnel access restrictions, and speed restrictions on Thevenard Island (40 km/h) • Active bird nests will not be disturbed unless approval from the regulator is received • Site inspection of sumps, well cellars, removed infrastructure and excavations conducted when they are exposed to ensure fauna exclusion/egress controls are in place and operational and that excavations are sloped for stability and fauna egress • Onshore decommissioning activities (excluding barge landing maintenance) that require ground disturbance on the beach will not occur during turtle nesting season (Nov–Apr) • Use of deterrents such as matting and/or flagging where necessary to reduce the likelihood of bird nesting within work areas

Inappropriate management of solid and liquid wastes may result in accidental releases to the environment from uncontrolled releases during storage and transport	• Contamination of terrestrial or marine environment • injury and entanglement of marine fauna and seabirds	• Site inductions which includes waste management requirements on Thevenard Island and offshore facilities • Solid waste is segregated, labelled and contained within covered receptacles (where there is the potential for material to be wind-blown), removed from Thevenard Island at appropriate intervals and returned to the mainland for disposal with the exception of waste streams that will be reused • Flush water is contained and transferred to the Oily Water Storage Pond or API Separator on Thevenard Island where it will evaporate • Hazardous waste including Dangerous Goods will be stored in accordance with relevant regulations • Groundwater monitoring purge water and water from bore and well decommissioning is collected and decanted into Oily Water Storage Pond or API Separator • Water from the wash down facility is contained and evaporated within the washdown facility or transferred to the OWSP where it will evaporate • Vessel wastes are managed in accordance with MARPOL 73/78 (The International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978) including: o treated sewage effluent will only be discharged through an approved Sewage Treatment Plant (STP) certified by the Administration to meet the operational requirements referred to in regulation 9.1.1 of MARPOL Annex IV (may require specific Port of Onslow or Port of Ashburton approval within port limits) o vessels will have sufficient sullage capacity on-board to store sewage for disposal onshore. o food waste will be managed in accordance with MARPOL Annex V. As all petroleum activities within the scope of this EP will occur inside the limit of 'nearest land' as defined by MARPOL, food waste will not be discharged overboard whilst undertaking activities within the scope of EP, this includes no discharge of food waste within Port Limits. Food waste will either be disposed of on the Australian mainland or discharged at sea during transit once the vessel is located greater than or equal to 3 nautical miles from the nearest land (outside the scope of this EP) • Approval for discharge of any treated effluent will be obtained prior to any discharges within Port Limits, where required • No oily mixture (bilge) or food waste discharge from vessels within port limits • No discharge of oily/water mixture containing >15ppm hydrocarbon outside port boundaries

The release of fluids remaining in onshore pipelines which contain residual hydrocarbons and saline water	• Localised contamination of soil from residual hydrocarbons and saline water resulting in potential toxicity to vegetation from hydrocarbon exposure and release of saline water	• Process pipelines verified to have been flushed to residual oil in water concentration of ≤ 30 mg/L, or alternative concentrations including ≤ 200 mg/L (other onshore lines), ≤10,000 mg/L (diesel line) • Pipelines evacuated via pump, vacuum or other means prior to removal • Use of pipe clamps (where applicable) and spill trays or other form of containment to contain residual fluids when breaking containment • Implement clean up procedures i.e. collection and removal of contaminated soil, in the event that flush water with an oil in water concentration of 10 000mg/L is released to the ground
The release of fluids remaining in offshore infrastructure which contain residual hydrocarbons	• Changes to water quality, leading to potential toxicological effects on marine fauna.	• Subsea pipelines, subsea flowlines, risers and near shore pipelines verified to have been flushed to ≤30 mg/L • Containment dome used to contain fluids when breaking containment, if verification that a residual oil in water concentration of ≤30 mg/L cannot be provided or undertaken. • Seawater extraction and discharge is undertaken in accordance with a Work Method Statement and/or Hazard Analysis which requires that the RO brine discharge outlet is within the subtidal zone
Presence of ignition sources causing fire	• Terrestrial flora, fauna and ecological community disturbance	• Vehicle fitted with fire extinguisher • All personnel have completed site inductions which includes smoking restrictions, permit to work and emergency response procedures • Permit to work obtained prior to conducting any hot work
Movement of personnel and mobile equipment onshore, including from ground disturbance and revegetation activities including the transportation of seedlings and growing media to TVI and the introduction or spread of marine pests due to vessel usage	• Potential to introduce new non indigenous species (NIS) to Thevenard Island, or proliferate existing NIS. • The introduction or spread of marine pests can result in changes to habitat and ecological structure, by predation or out-competing native species.	• All personnel have completed site inductions which includes an overview of quarantine requirements for Thevenard Island • Personnel and equipment quarantine checks undertaken prior to travelling to Thevenard Island, as per Quarantine Management Plan • As per the Thevenard Island Quarantine Management Plan, tubestock is quarantine assessed prior to release from hardening and prior to transport to Thevenard Island • International vessels will have Department of Agriculture and Water Resources clearance to operate in Australian waters prior to arriving within the operational area, if applicable • A biosecurity risk assessment will be conducted for any international vessels or vessels coming from interstate, in accordance with DoA and DPIRD vessel risk assessment requirements • Weed inspections and control field visits undertaken as per the Weed Management Plan

Presence of night lighting	• Artificial light has the potential to alter the behaviour of marine turtles and reduce their chances of survival (e.g. through misorientation, disorientation, exhaustion, or predation).	• No onshore care and maintenance, onshore decommissioning or nearshore pipeline crossing decommissioning activities planned to occur at night • In the event emergency nightworks are required during turtle nesting or hatching season, lighting impacts shall be reduced as far as practicable by implementing mitigation measures such as: – Use only the minimal amount of light for the minimal amount of time required to safely executed the emergency activities, – Shielded, directed away from the beach and directed on the work area only, – Where possible, lower-frequency light sources (i.e. red or orange) shall be used, and blue/white lights avoided • Lighting mitigations for vessels on stand-by overnight at the jetty or at offshore platforms: – External lights will be turned off at night – All window coverings will be drawn • All personnel will undertake a site induction which will include environmental measures for the use of emergency lighting

Loss of diesel or petrol during storage or refuelling, or chemical spill (terrestrial) Loss of diesel or chemicals, or hydraulic oil to the marine environment from mechanical, structural failure or human error during refuelling and personnel transfers	• Contamination of soil • Localised reduction in water quality	• All personnel have completed site inductions which includes spill response procedures and responsibilities • Spill trays will be incorporated in Hazard Analysis and/or Work Method Statements where a spill risk is identified • Duramats and spill protection matting or similar, will be used under equipment during abandonment of the two wells which are located within the intertidal zone on the South side of the island of the lease • Refuelling undertaken in accordance with Hazard Analysis and/or Work Method Statement, which includes the following safeguards: • Use of spill tray during refuelling • Monitoring of fuel tank levels to avoid overfilling • Refuelling equipment has automatic shutoff nozzle and an emergency stop mechanism • Spill response equipment on-site during refuelling operations • Chemicals stored on Thevenard Island are kept in secondary containment • Bulk diesel fuel will be stored in double-skinned containers / self bunded tank • A spill kit is maintained on-site during activities • Any leak / spill is to be cleaned up immediately, including collection and removal or treatment of contaminated soil • Traffic Management Plan is implemented • Bulk diesel storage containers have cyclone tie downs
Noise generation from the operation of plant, equipment and aviation logistics	• Behavioural disturbance of fauna	• Equipment will be maintained in accordance with relevant preventive maintenance system • Activities undertaken in accordance with the Environmental Protection (Noise) Regulations 1997 • All personnel have completed site inductions, which include management measures aimed at reducing noise where possible
Dust emissions may result from ground disturbing activities, stockpiling soil and crushing activities	• Localised reduction in air quality	• Crushing plant is fitted with water sprays, or a sprinkler system or water cart is used to suppress dust as necessary • Dust suppression is applied as necessary when undertaking activities that have the potential to generate dust, such as earthworks or stockpiling soil

Onshore decommissioning activities and associated aspects (noise, dust, visual amenity)	• Potential impacts to Mackerel Island Pty Ltd (MIPL) operations on Thevenard Island	• Consult with MIPL to provide an update on the proposed schedule for onshore decommissioning activities scheduled to occur in 2020 and then annually, following partner approval of the Work Program and Budget each year

5.0 Implementation Strategy

The implementation strategy in the EP identifies the systems, practices, and procedures used to ensure the environmental impacts and risks of the activities are continuously reduced to ALARP and the environmental performance outcomes and standards are met.

5.1 Operational Excellence Management System

The implementation strategy of the Plan has been developed in line with Chevron Australia's OEMS. Chevron's Operational Excellence Management System is aligned to ISO 14001:2004 and key components of the management system are described in Table 5-1.

Table 5-1: OEMS Elements Relevant to this Activity

Common Expectation – Risk Management	Risk Management - Operate and maintain facilities to prevent injuries, illness, and incidents	ABU OE Risk Management (Chevron, 2020a)
Focus Area - Process safety, reliability and integrity	Management of Change - Manage both permanent and temporary changes to prevent incidents	ABU Management of Change for Facilities and Operations (Chevron, 2021b)
Common Expectation – Incident investigation and reporting	Incident investigation and Reporting - Investigate and identify root causes of incidents to reduce or eliminate systemic causes to prevent future incidents	ABU Incident Investigation and Reporting (Chevron, 2021b)
Common expectation - Assurance	Assurance - Verify conformance with applicable legal and company requirements	ABU – OE Assurance (Chevron 2018)
Focus Area - Stakeholders	Stakeholder Engagement and Issues Management - Reach out to the community and engage in open dialogue to build trust	Community and Stakeholder Engagement (Chevron 2015b)
Common Expectation – Competency	Competency – Identify, build and sustain competency standards for roles critical to OE performance.	Competency Development and Assurance (2015c)

5.2 Environment Plan Review

Chevron's Management of Change process will be followed to document and assess the impact of changes to the petroleum activities described in the Plan. These changes will be addressed to determine if there is potential for any new or increased environmental impact or risk not already provided for in the Plan. Where required, the Plan or bridging

document will be re-submitted to DMP for approval in accordance with Regulation 18 of the of the Petroleum (Submerged Lands) (Environment) Regulations 2012.

6.0 Stakeholder Consultation

Chevron has continued to liaise with relevant stakeholders to advise and consult on Thevenard Island care and maintenance activities addressed in this EP. Relevant stakeholders have been engaged in relation to the demobilisation of personnel from Thevenard Island and the movement to periodic, campaigned care and maintenance visits to Thevenard Island.

Table 6-1 provides a summary of communications with stakeholders regarding the change in the execution of Thevenard Island care and maintenance activities from on-site management to periodic, campaigned inspection, maintenance and monitoring and more recent consultation on onshore decommissioning and offshore pre-decommissioning programs. Consultation with stakeholders will be ongoing, as required.

Table 6-1: Stakeholder Consultation for Care and Maintenance, Onshore Decommissioning and Offshore Pre-Decommissioning Activities

Stakeholder	Issues Discussed and Outcomes
Department of Mines, Industry Regulation and Safety (DMIRS) (formerly Department of Mines and Petroleum)	Initial notification of intent to remove permanent presence on Thevenard Island made on 31 August 2015. Ongoing consultation with regard to planning and development of Well Management Plan, Safety Case and Environment Plan requirements to address change in management of care and maintenance phase. Meeting held with DMIRS (Environment Division) on the 5 September 2019 outlining revision of the EP to include onshore decommissioning and offshore pre-decommissioning along with and associated environmental hazards and environmental performance standards.
Department of Water and Environmental Regulation, (DWER) (formerly Department of Environmental Regulation)	Initial discussion with DWER occurred on 28 October 2015 to discuss Chevron's plan to go to zero-manning for the Thevenard Island asset. DWER Licencing Branch advised in December 2015 that the production facilities on Thevenard Island are no longer manned. Discussions with DWER continue regarding Licence L4467/1988/13 and ongoing contaminated site requirements. Consultation with DWER has occurred from September 2020 to current in relation to TVI decommissioning activities and licencing requirements. Crushing of material and temporary storage of waste exceeding threshold volumes are prescribed activities. Works Approval W6469/2020/1 was issued on the 21 April 2021. The Works Approval provides for 180 days of time limited operations. Chevron will apply for a licence prior to the end of time limited operations.
Department of Transport (DoT)	Letter sent to the Department of Transport on 11 December 2015 advising that the production facilities on Thevenard Island are no longer manned. No issues were raised. Email sent 1 August 2019 to DoT outlining revision of the EP to include onshore decommissioning and offshore pre-decommissioning along with and associated environmental hazards and environmental performance standards. No issues were raised.

Stakeholder	Issues Discussed and Outcomes
	Discussions with DoT, PPA and DMIRS 9/9/2020 to ensure alignment on use of containment dome. Alignment achieved prior to use of containment dome. Containment dome subsequently successfully used during flexibles removal campaign. DoT were sent a summary of EP activity updates and additional control measures on 1 April 2021. DoT responded on 19 April 2021 advising that they have no concerns with the additional activities planned and the additional control measures.
Mackerel Island Pty Ltd (MIPL)	Chevron representatives met with MIPL on 24 September 2015 and advised of intent to remove permanent presence on Thevenard Island. Discussions with MIPL are ongoing and will be conducted throughout the care and maintenance period. Meeting with MIPL on 20 August 2019 to provide a detailed overview of revisions to the EP to include onshore decommissioning and offshore pre-decommissioning along with associated environmental hazards and environmental performance standards. Follow up email sent 23 August 2019 requesting formal feedback. Response received from MIPL 25 September 2019 thanking Chevron for the EP summary email. States they are currently working through the larger impacts to their business with Chevron as a result of the plant remaining in care and maintenance, and again during planned works. Stated, thankyou for noting our request to water the rehabilitation site and our offer of assistance to make this happen. Our business cannot grow until the site is deemed natural by tourists. Response received from MIPL 21 October 2019. MIPL raised concerns that the EP provided Chevron with blanket approval for all onshore decommissioning activities. This item and other items raised including the presence of Non Indigenous Species on Thevenard Island and rehabilitation methodology are not specifically related to the environmental risk assessment or environmental management strategy detailed within the EP and are being addressed outside of the EP through ongoing consultation with MIPL and inclusion of rehabilitation methodology in other regulatory approvals. A response outlining Chevron's position on the items raised by MIPL was provided to MIPL on the 11 November 2019. MIPL (Drew Norrish) responded on the 12 November via email to confirm receipt of Chevron's letter 'Received thanks Chris and Shannon.' As of the 19 December 2019 Chevron have not received further consultation from MIPL specifically related to the Environment Plan and therefore Chevron's considers that items raised by MIPL on the EP have been adequately addressed closed out appropriately. Ongoing consultation with MIPL on the implementation of site activities has occurred during 2020 and into 2021. In December 2020 discussions were held in relation to noise management and monitoring associated with the Part V works approval for crushing activities. Chevron revised the TVI Noise Management Plan to include the requirement for monitoring to be installed and to be in place during

Stakeholder	Issues Discussed and Outcomes
	operation of the crushing plant. The Noise Management Plan was accepted by the Shire of Ashburton on 23/12/2020 and was provided to DWER for review as part of their assessment of the Works Approval application. Consultation in 2021 included provision of an update on the 2021 work program including information on timing and work scopes planned. MIPL were sent a summary of EP activity updates and additional proposed controls on the 19 April 2021. MIPL provided feedback on the EP on 4/5/2021 related to siting of the RO plant and clump weight and timing of jetty removal. MIPL requested that the location of the RO Plant is reviewed as part of ongoing meetings with Chevron. Chevron advised why the location had been selected and confirmed that this matter would be discussed at ongoing meetings with MIPL and noise monitoring leveraged to inform adaptive management. Chevron advised that the location of the clump weight is at MIPL's preferred location (South-West of the jetty). Chevron advised that detail on timing and equipment to be used to remove the jetty is not yet understood. Chevron advised that, as previously discussed with MIPL, removal of the jetty is currently planned for the end of the decommissioning program and forecast to occur towards the end of 2022, but prior to the commencement of turtle nesting season in November. Chevron will continue to update MIPL on jetty removal timing and methodology as planning and contracting progresses. MIPL were sent a summary of EP activity updates associated with revegetation and additional controls on the 16 November 2021. MIPL responded on the 18 November 2021 thanking Chevron for the information. No further response was provided.
Department of Biodiversity, Conservation and Attractions (DBCA) (formerly Department of Parks and Wildlife)	DBCA were engaged during the development of the EP, and items raised were discussed during a meeting held between DBCA and Chevron WA Oil Environment representatives on 14/04/2016. No further concerns were raised, and Chevron will continue to liaise with DBCA in relation to long term management of the environment on Thevenard Island. Email sent 1 August 2019 to DBCA detailing revision of the EP to include onshore decommissioning and offshore pre-decommissioning along with associated environmental hazards and environmental performance standards. Response received from DBCA seeking clarification on what constitutes an emergency situation and view that onshore decommissioning during turtle nesting season could result in increased likelihood of emergency events. DBCA recommendation that: • Onshore decommissioning commence after the turtle nesting season. • If this is not possible, clearing of the barge landing area should occur before November 2019 to minimise works on turtle nesting

Stakeholder	Issues Discussed and Outcomes
	habitat during the turtle nesting season in line with your proposed amendments to the EP. • Thought be given to commencing the pre-decommissioning of offshore infrastructure prior to onshore decommissioning. Environment Plan amended to include: • definition of emergency scenario in Section 5.9 • requirement to consult with DBCA prior to clearing sand from the barge landing area as performance standard in Section 5.3 Concerns raised around lighting and timing of activities have been addressed. Chevron will continue to liaise with DBCA in relation to long term management of the environment on Thevenard Island and will provide DBCA a copy of the EP once approved and as requested. Discussion and email engagement between September 2020 and December 2020 to align on access and end state for minor infrastructure within the TVI Nature Reserve and subsequent issue of Reg 4 Access Authority. DBCA were sent a summary of EP activity updates, along with a track change version of the revised EP on the 1 April 2021, with an additional minor update provided on the 19 April 2021. DBCA sought clarification on a number of aspects include water sourcing and RO operations, works to occur outside of turtle nesting and hatching season, methodology of bore and well decommissioning, groundwater well decommissioning and controls associated with vegetation disturbance outside of the lease area. Chevron responded to DBCA on the 27 April 2021. DBCA advised on the 30 April 2021 that they had no further comments. DBCA were sent a summary of EP activity updates along with a track change version of the EP on the 16 November 2021, with an additional minor update provided on the 25 November 2021. DBCA are completing their review of the EP updates during the DMIRS assessment period. Any feedback received will be closed out prior to DMIRS completing their assessment.
Pilbara Port Authority	Email sent 1 August 2019 to Pilbara Port Authority detailing revision of the EP to include onshore decommissioning and offshore pre-decommissioning along with associated environmental hazards and environmental performance standards. No concerns raised. Discussions with DoT, PPA and DMIRS 9/9/2020 to ensure alignment on use of containment dome. Alignment achieved prior to use of containment dome. Containment dome subsequently successfully used during flexibles removal campaign.